4.7 User Services Tools

This section describes the User Services Tools used by DAAC operators:

This page intentionally left blank.

4.7.1 Database Installation and Maintenance Scripts

A set of eleven standard database scripts have been created to facilitate database installation and database administration activities for the ECS databases (INGEST, OMS, SSS and AIM). These scripts are designed to be accessible from both the command line and the Stage Install function of ECS Assist. The scripts follow a standard naming convention across each subsystem consisting of a prefix, of the format ***EcXXXX***, identifying the subsystem component and a root identifying the primary database command or purpose performed by the script. For example a script to define login IDs used by the Ingest subsystem would be called EcInDbLogin.

A description of each of the suggested standard scripts is given Table 4.7.1-1. The DbLogin, DbUser, DbBuild, and DbPatch scripts are available for each ECS database. Other scripts are available for some or all of the ECS databases. Details on the applicable scripts for each subsystem can be found in the corresponding subsystem-specific 311-database documentation.

Table 4.7.1-1. Common ECS Operator Functions Performed with Database Installation and Maintenance Scripts (1 of 2)

Operating Function	Command	Description	When and Why to Use
Add Login	DbLogin	Add existing system login to the SQL server.	Use when installing an ECS custom application to add the pre-defined set of database user ids into the master tempdb table used by the application to the appropriate SQL server.
Add User	DbUser	Add user ID to a database.	Use when installing an ECS custom application to add the pre-defined set of User IDs used by the application to the appropriate database.
Create Database	DbBuild	Build a new empty database and load with initial start-up data.	Use when installing an upgraded Release/drop or an ECS custom application into a mode where there is no existing data that needs to be retained.
Upgrade Database	DbPatch	Upgrade tables to new schema while retaining existing data.	Use when installing an upgraded Release/Drop of an ECS custom application into a mode containing existing data that needs to be retained.

Table 4.7.1-1. Common ECS Operator Functions Performed with Database Installation and Maintenance Scripts (2 of 2)

Operating Function	Command	Description	When and Why to Use
Drop objects	DbDrop	Remove all database objects (tables, triggers, stored procedures, domains, rules, user-defined data types) from a database.	Should not be used independently by the Operator. Used by DbBuild script during installation to remove obsolete objects from the database.
Backup database	DbDump	Create a backup file for the database.	Use to create a backup of the database that can be used in the event of database corruption or disk failure.
Restore database	DbLoad	Restore a database from a backup file.	Use to recover from database corruption or disk failure.

4.7.1.1 Quick Start Using Database Installation and Maintenance Scripts

The database installation and maintenance scripts are a custom developed utility and should be used only by database administration personnel.

To execute Database Installation and Maintenance Scripts from the command line prompt use:

Scriptname <*mode*> <*dbo_id*> <*sqlserver*> <*dbname*><*port*> where:

Scriptname specifies the name of the database script to be executed.

The <***mode***> parameter specifies the mode (e.g., OPS, TS1, or TS2) in which the database to be used is found.

The <***dbo_id***> parameter specifies the user ID of the database owner for the database to be used.

The <***sqlserver***> parameter specifies the name of the SQL server under which the database to be used is found.

The <***dbname***> parameter specifies the name of the database to be used.

The <port> parameter specifies the port number of the database instance used.

NOTE: Password Entry will be prompted during script execution.

4.7.1.1.1 Invoking Database Installation and Maintenance Scripts using ECS Assist

Database Build, Patch, Migrate, Dump, Load, Drop and Valid scripts, can be invoked using the ECS Assist installation tool using the DATABASE command button. All other database utility scripts must be invoked from the command line. Further information on using ECS Assist can be found elsewhere in this document (see sub-section 4.1.5).

4.7.1.2 Required Operating Environment

The Database Installation and Maintenance Scripts can run on Linux 2.x platforms.

Table 4.7.1-2 identifies the supporting products this tool depends upon to function properly.

Table 4.7.1-2. Support Products for Database Installation and Maintenance Scripts

Interface (facility)
Postgres SQL Server

4.7.1.2.1 Interfaces and Data Types

None

4.7.1.3 Databases

The Database Installation and Maintenance Scripts use the INGEST, OMS, SSS and/or AIM database as applicable. Descriptions of each of these databases are found in the following documents:

311-EED-001, *Release 8.3 INGEST (INS) Database Design and Schema Specifications for the EED Project*

311-EED-002*, Release 8.3 Order Manager Database Design and Schema Specifications for the EED Project*

311-EED-003, *Release 8.3 Spatial Subscription Server Database Design and Schema Specifications for the EED Project*

311-EED-005*, Release 8.3 Archive Inventory Management (AIM) Database Design and Schema Specifications for the EED Project*

4.7.1.4 Special Constraints

None

4.7.1.5 Outputs

Script outputs can be found in the "/usr/ecs/<MODE>/CUSTOM/logs" directory on the database server.

4.7.1.6 Event and Error Messages

The PostgreSQL Database Installation and Maintenance Scripts issue error messages, which are reported on the PostgreSQL error log. All custom code database utilities provide output reports to the "/usr/ecs/<MODE>/CUSTOM/logs" directory on the database server where the report name is (script/utility name).log.

4.7.1.7 Reports

None

This page intentionally left blank

4.7.2 Using the Spatial Subscription Server (NBSRV) GUI

The NBSRV GUI provides an operator interface to place a standing order (hereinafter called "subscription") on an ECS event. Capabilities provided to an operator depend on the operator access level. A full capability operator has access to all NBSRV GUI features while a read only operator has access to all non-management features. Specifically, the capabilities of NBSRV GUI are as follows:

ROLE	CAPABILITY
Full Capability Operator (FC)	Add a subscription with an action for distribution of standard ECS products from the ECS archive holding or email notification. The subscription can be qualified with spatial, temporal, integer, string and floating point qualifiers Θ Associate a Data Pool insert action with a subscription. Θ Update and Delete an existing subscription. Θ Suspend and Resume an existing subscription. Θ Add, update, or cancel a bundling order. Θ Associate a bundling order with a subscription. Θ List the status of email notification and distribution actions in the action queue. Θ
Limited Capability Operator (LC)	
FC or LC Operators	
Administrator	

- List the types of subscribable events.
- Associate a Data Pool theme with a Data Pool insert action (Available to only full capability Operator).
- List the subscriptions which have been previously entered.
- View an existing subscription.
- Suspend, resume, or delete the subscriptions associated with a Data Pool theme. **
- List the bundling orders associated with a user.
- List the subscriptions associated with a bundling order.
- Determine the number of subscribed events left to dequeue.
- Determine the number of actions left to dequeue.
- List statistics relating to Spatial Subscription Server performance.

Θ = Only available to full capability operators.

4.7.2.1 Starting the NBSRV GUI

Pre-conditions:

- Javascript must be enabled for the Web Browser.

- The designated size of the Web Browser cache should be at least 5000 kbytes for Disk and Memory cache.

Consult with your Web Administrator, if you have any problems verifying or setting these parameters.

Bring up a Web Browser and then access the URL for the NBSRV GUI web page.

For example: http://yourserver.domain/NBSRV.html

4.7.2.2 NBSRV Home Page

The NBSRV Home Page screen, shown in Figure 4.7.2.2-1 allows the operator to navigate to the List Events, Manage Subscriptions, Manage Bundling Orders, Monitor Queues and Help pages. See Table 4.7.2.2-1 for a brief description of the functions.

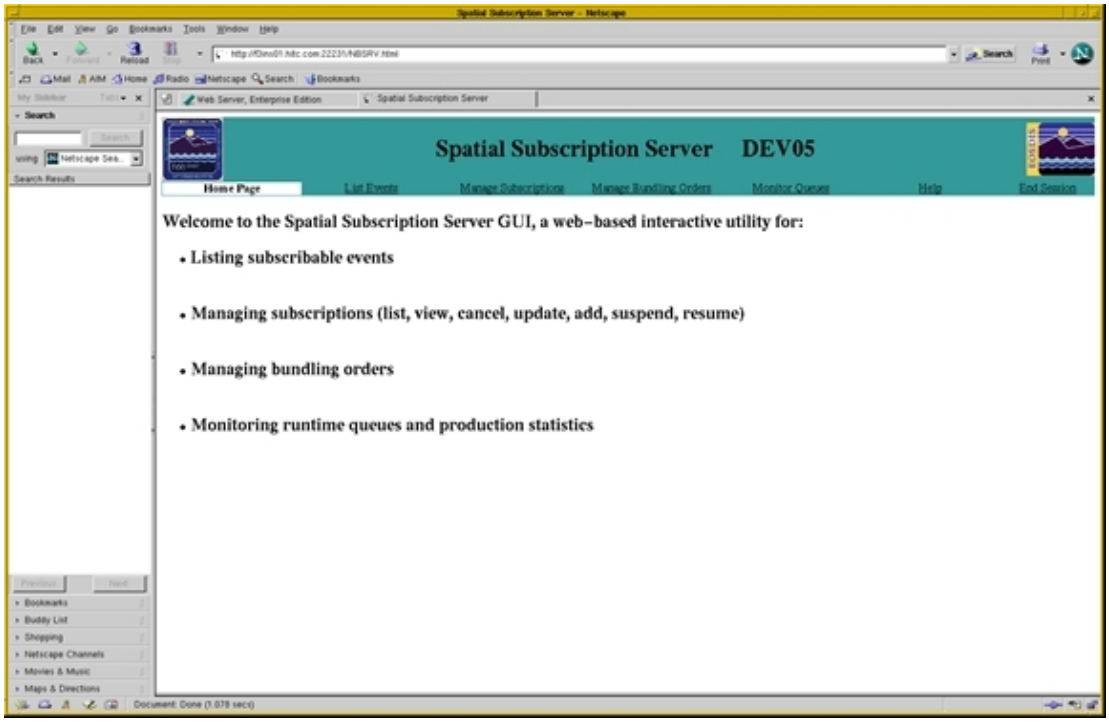


Figure 4.7.2.2-1. NBSRV Home Page

Table 4.7.2.2-1. Spatial Subscription Server (NBSRV) GUI Operator Functions (1 of 2)

GUI/Command	Description	When and Why to Use
List Events tab	View the types of subscribable events.	If operator needs to view ECS events before entering a subscription.
Manage Subscriptions tab	List, view, add, cancel, update subscriptions.	If operator needs to view, add, change, suspend, resume or delete subscriptions.

Table 4.7.2.2-1. Spatial Subscription Server (NBSRV) GUI Operator Functions (2 of 2)

GUI/Command	Description	When and Why to Use
Manage Bundling Orders tab	List, view, add, cancel, update bundling orders.	If operator needs to view, add, change, cancel bundling orders or list the subscriptions for a bundling order.
Monitor Queues tab	View action queue or statistics relating to Spatial Subscription Server performance.	If operator needs to view statistics or look at the action queue.
Help tab	Describes the NBSRV GUI functions.	If operator needs help in navigating through the NBSRV GUI.
End Session	Allows Operator to End a session.	Whenever an Operator wishes to end the current session.

4.7.2.3 List Events Tab

The List Events screen shown in Figure 4.7.2.3-1 allows the operator to view the subscribable events in the ECS system. The operator can sort the list by Collection, EventType or Version by clicking on the **Collection**, **Version** or **Event Type** link. The operator can also filter the list by any combination of Collection, Version and EventType. After selecting the filtering criteria from the pull-down list(s), click on the **Filter** button.

Figure 4.7.2.3-1. SSS - List Events

4.7.2.4 Manage Subscriptions Tab

The Manage Subscriptions screen shown in Figure 4.7.2.4-1 allows the operator to list the subscriptions in the NBSRV database. The list can be sorted by clicking on the **Subscription Id**, **User**, **Collection**, **Status**, **TimeLastUpdated** or **Expiration Date** link. The operator can also filter the list by any combination of User, Collection and Status. After selecting the filtering criteria from the pull-down list(s), click on the **Filter** button.

The operator can view the contents of a subscription by clicking on the **View** button associated with that subscription and pressing the **Apply** button. This will take the operator to the screens shown in Figures 4.7.2.4-2a and 4.7.2.4-2b.

The operator can cancel a subscription by clicking on the **Cancel** button associated with that subscription and pressing the **Apply** button. This will take the operator to the deletion confirmation screen shown in Figure 4.7.2.4-3. If the operator clicks on the Yes button, the screen shown in Figure 4.7.2.4-4 will be displayed. If the operator clicks on the No button, the screen shown in Figure 4.7.2.4-1 will be displayed.

The operator can update a subscription by clicking on the **Update** button associated with the subscription and pressing the **Apply** button. This will take the operator to the screens in Figures 4.7.2.4-5a through 4.7.2.4-5d, followed by the screen in Figure 4.7.2.4-6a or 4.7.2.4-6b.

The operator can add a new subscription by clicking on the **Add Subscriptions** tab. This will take the operator to the screens in Figures 4.7.2.4-7 through 4.7.2.4-13. Tables 4.7.2.4-1 through 4.7.2.4-5 lists the field descriptions for the identified screens used in this activity.

Please note that **Cancel, Update and Add Subscriptions** functionality is accessible to only full capability Operators.

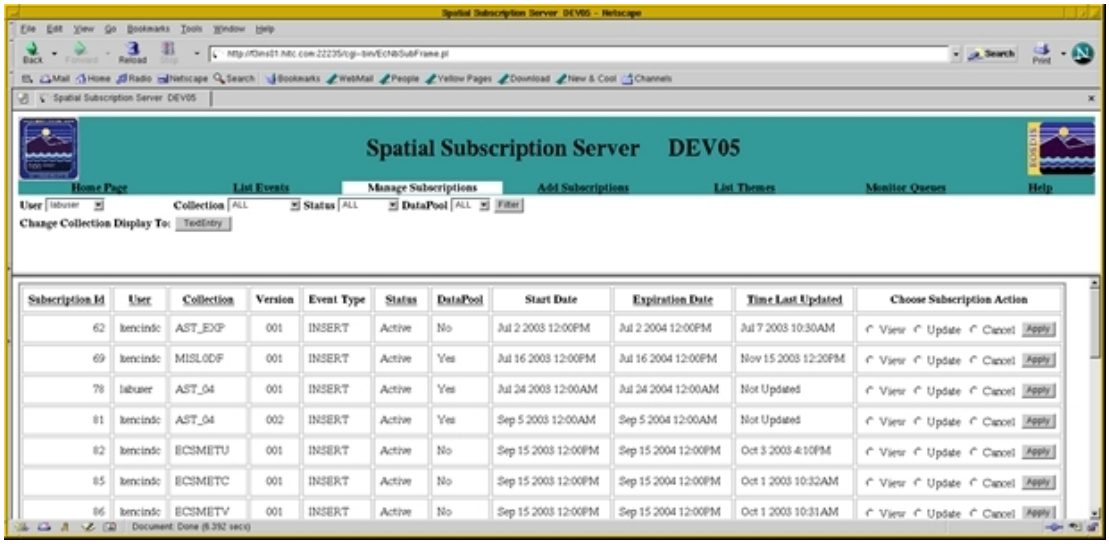


Figure 4.7.2.4-1. Manage Subscriptions: List of All the Subscriptions in the NBSRV Database. Note that Cancel, Update and Add Functionality are Accessible Only to Full Capability Operators

Limited Capability Users

Limited Capability users cannot use **Cancel, Update and Add** functionality.

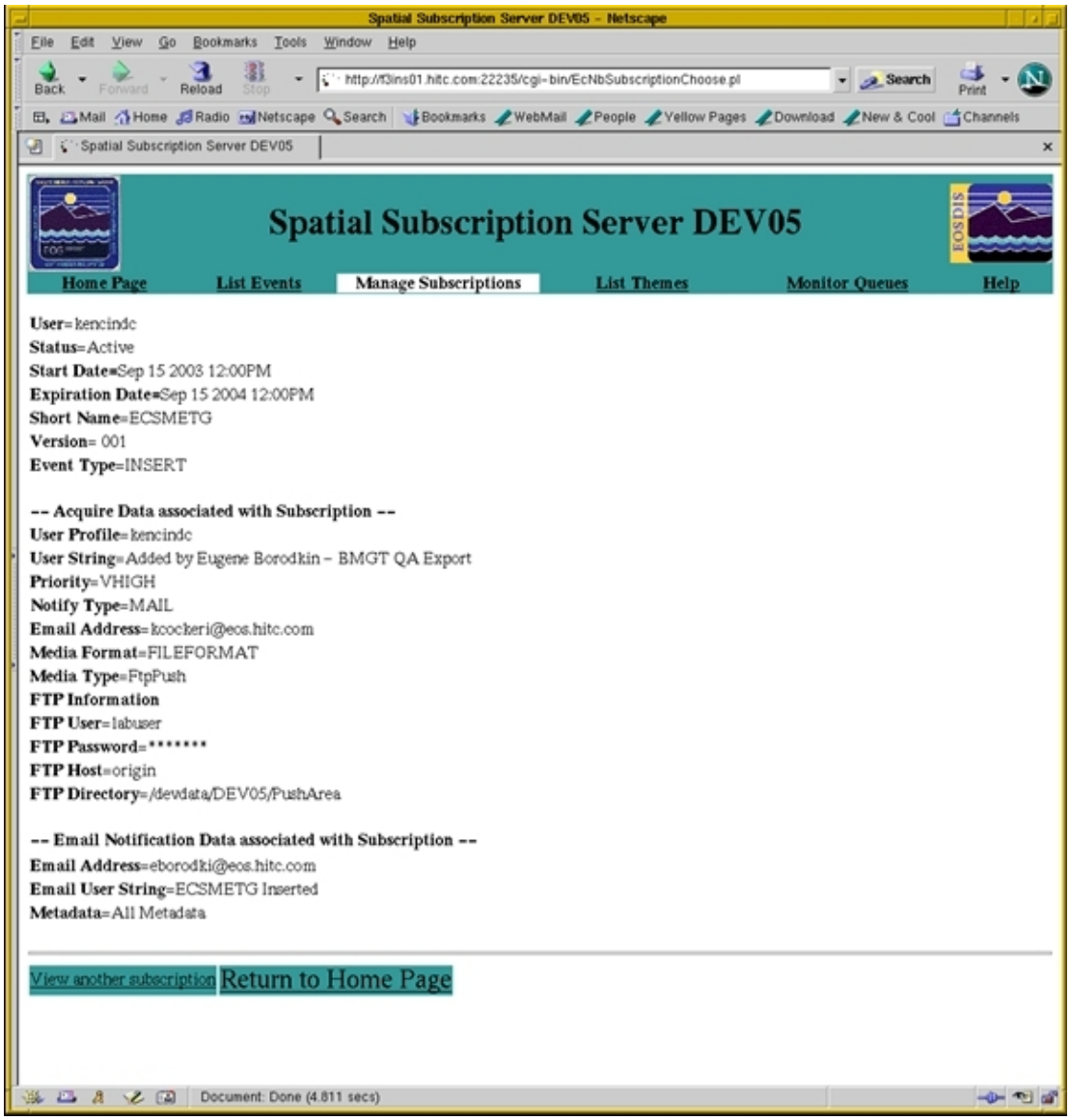


Figure 4.7.2.4-2a. View Contents of a Subscription in the NBSRV Database

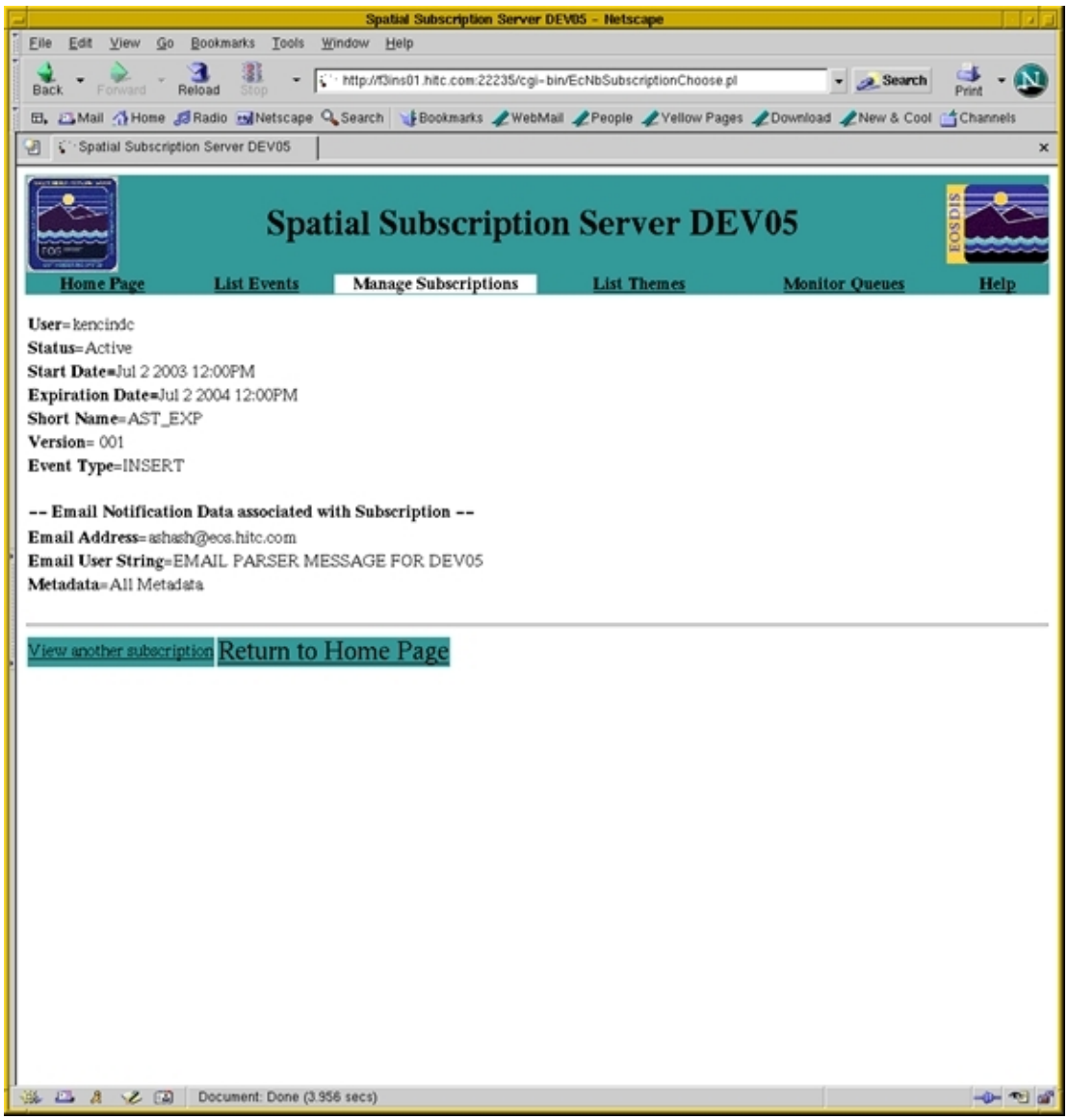


Figure 4.7.2.4-2b. View Contents of a Subscription with Associated Email Notificaiton Action (Continuation)

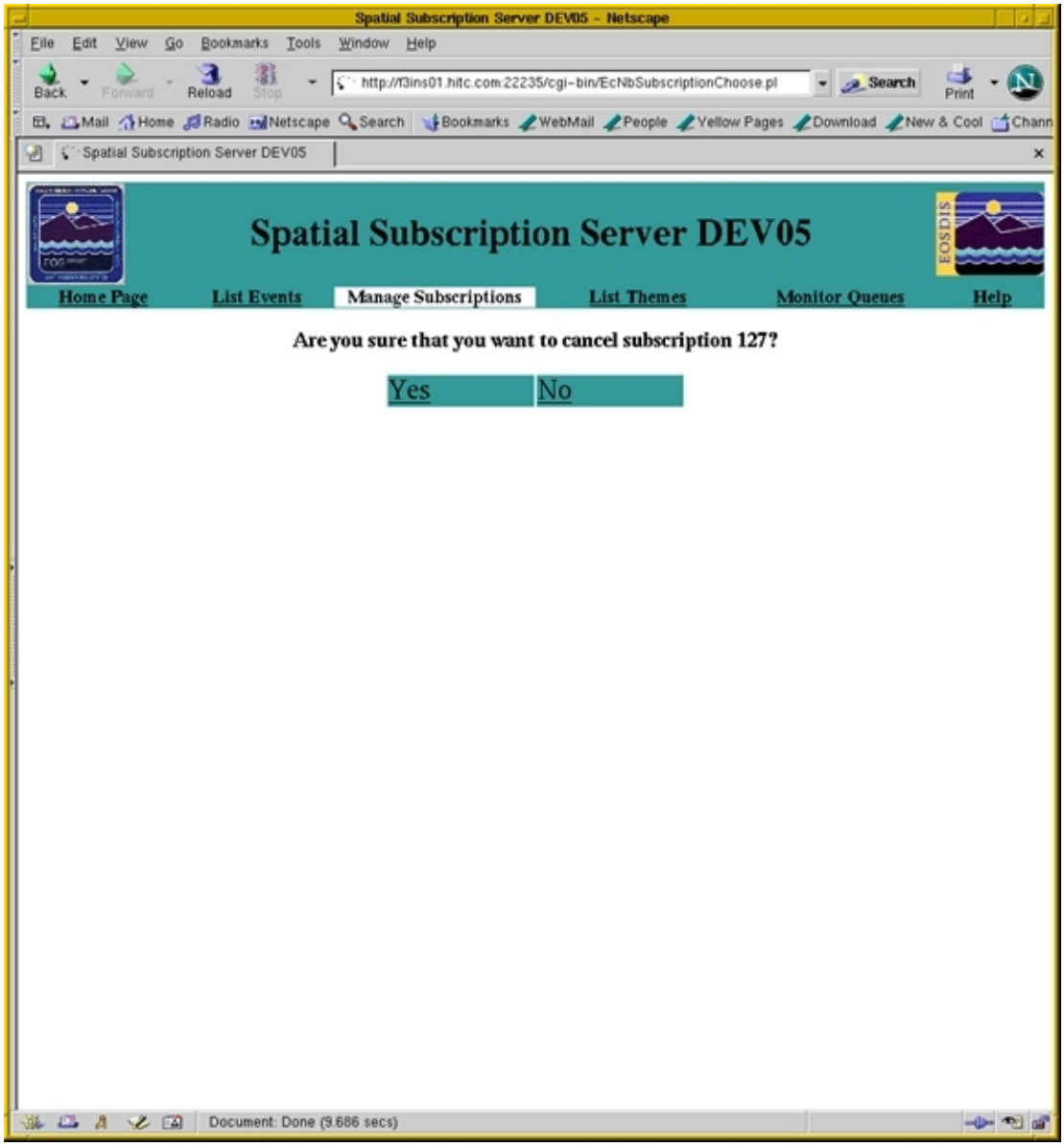


Figure 4.7.2.4-3. Cancel Subscription Confirmation Request. Note that Cancel Functionality is Accessible to Only Full Capability Operator

Limited Capability Operators

Limited Capability operators cannot use/access this functionality.

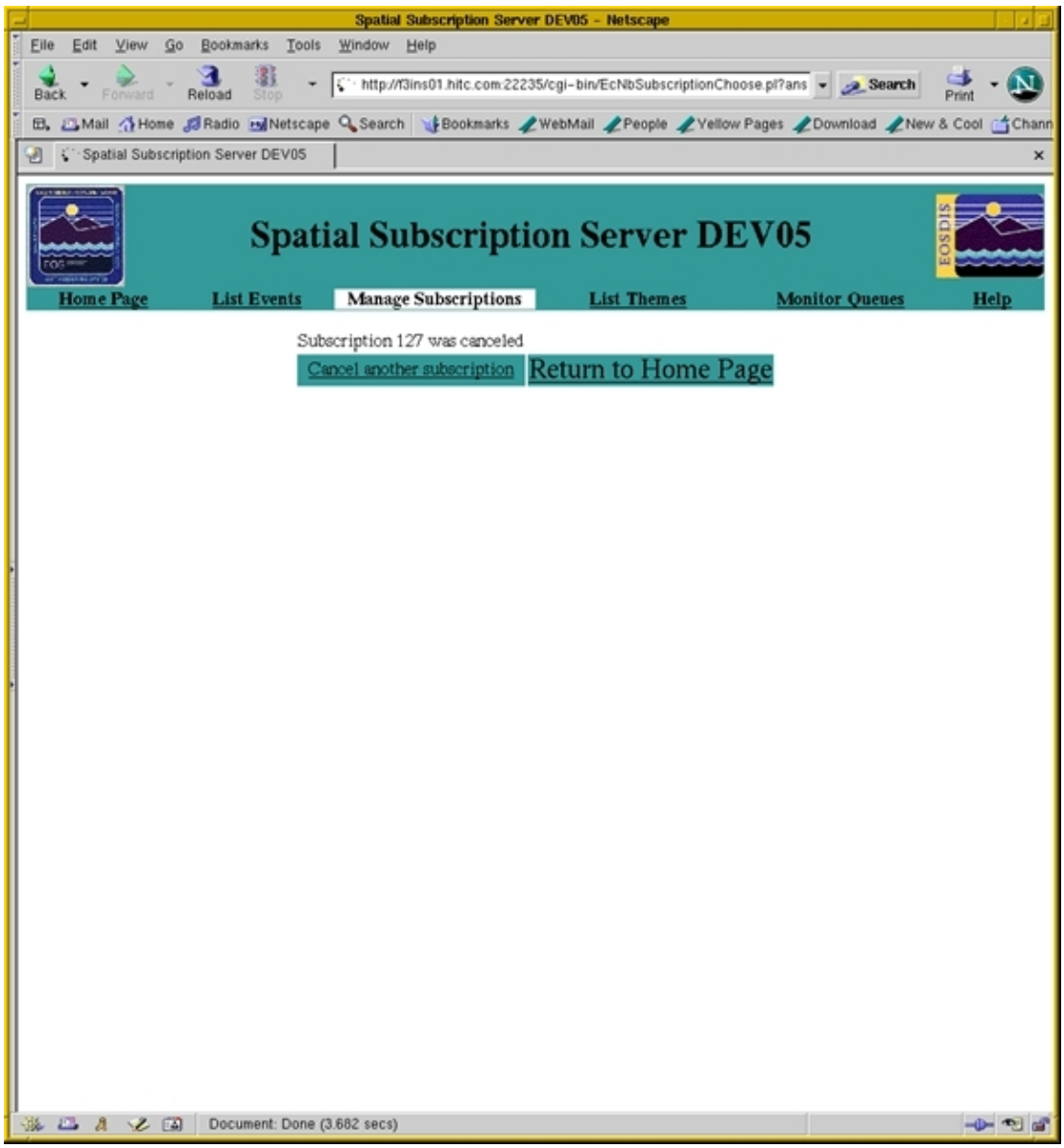


Figure 4.7.2.4-4. Cancel Subscription Confirmation Acknowledgement. Note that This Functionality is Accessible Only to Full Capability Operator

Limited Capability Users

Limited Capability users cannot use this functionality.

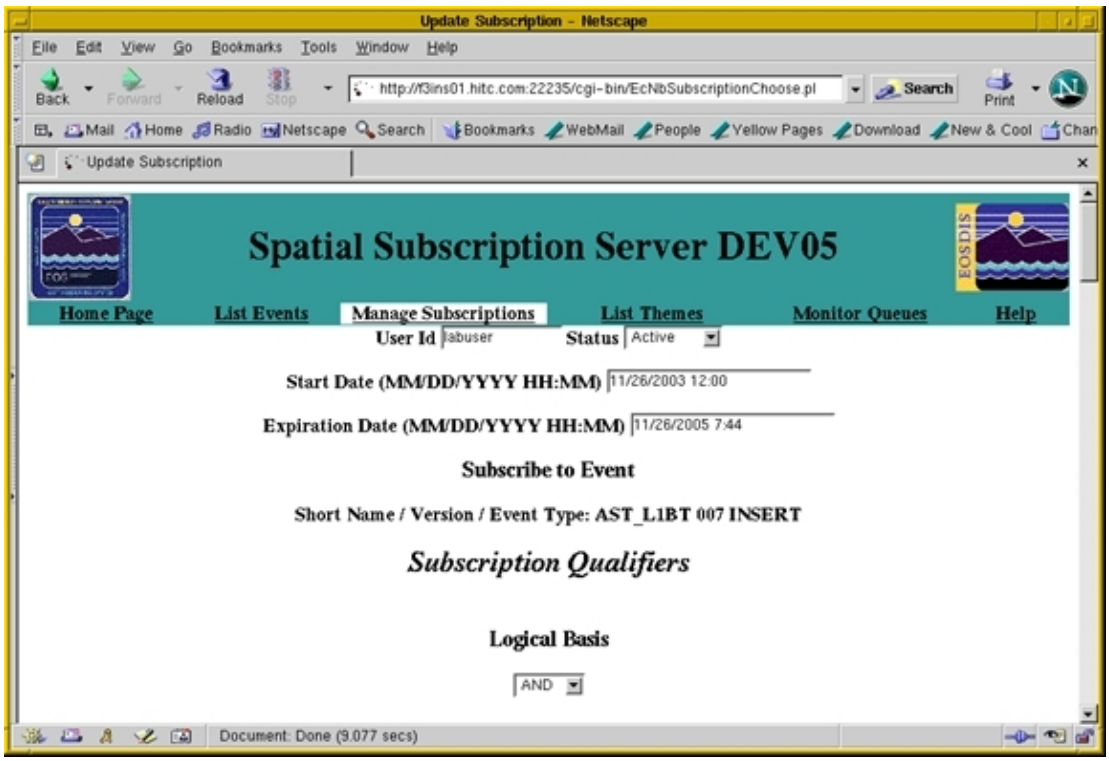


Figure 4.7.2.4.5-a. Update a Subscription in the NBSRV Database. Note that This Functionality is Available Only to Full Capability Operator

Limited Capability Users

Limited Capability users cannot use this functionality.

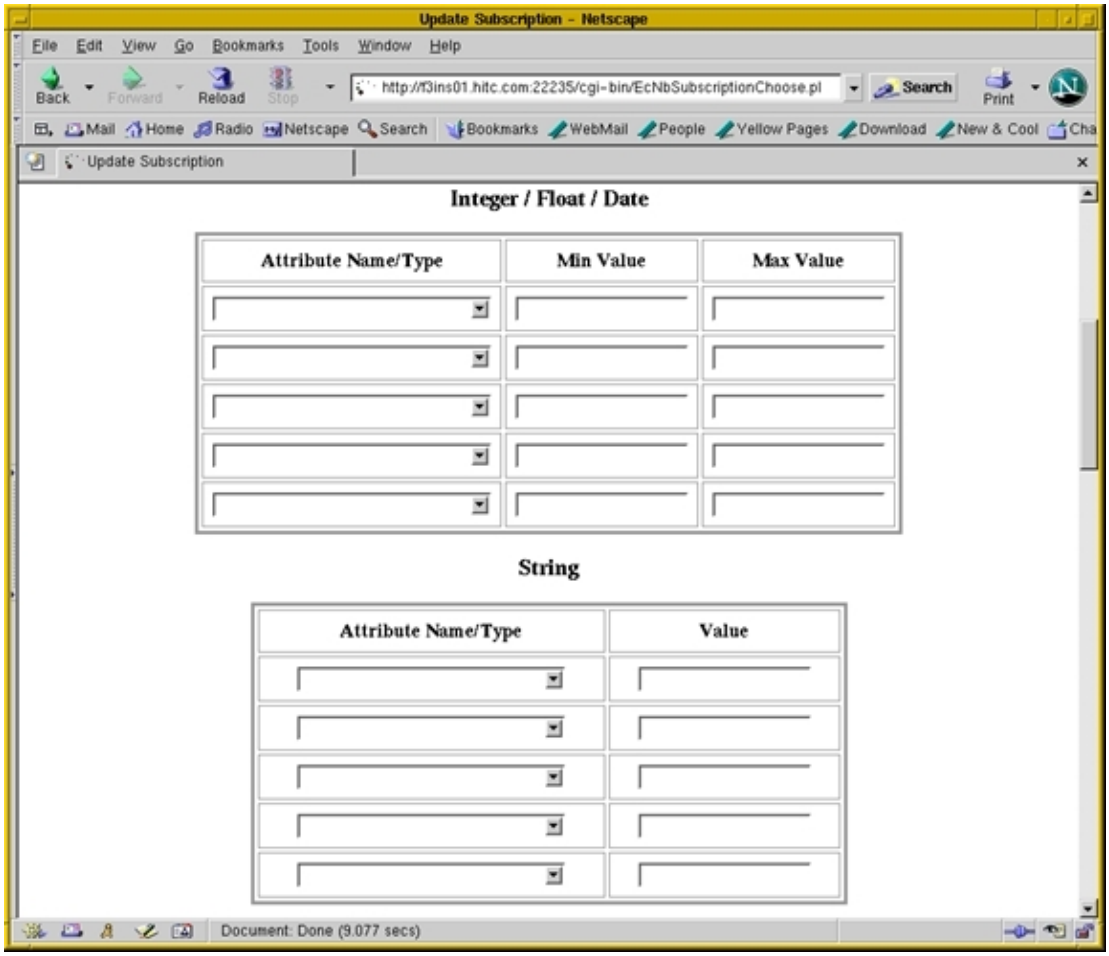


Figure 4.7.2.4-5b. Update a Subscription in the NBSRV Database. Note that This Functionality is Available Only to Full Capability Operator. (Continuation to Add or Modify String or Spatial Qualifiers Associated with an Existing Subscription)

Limited Capability Users

Limited Capability users cannot use this functionality.

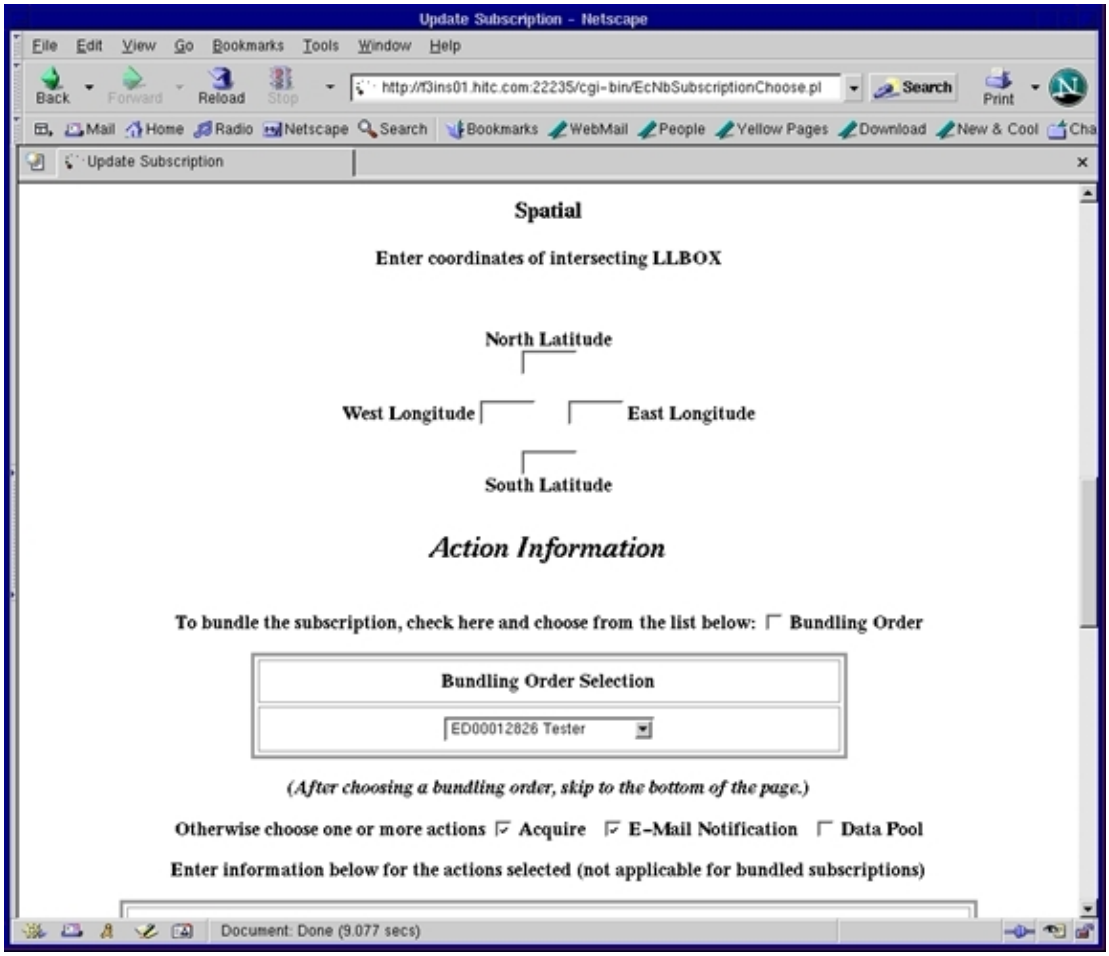


Figure 4.7.2.4-5c. Update a Subscription in the NBSRV Database. Note that This Functionality is Only Available to Full Capability Operators. (Continuation to Add or Update Action Information for an Existing Subscription)

Limited Capability Users

Limited Capability users cannot use this functionality.

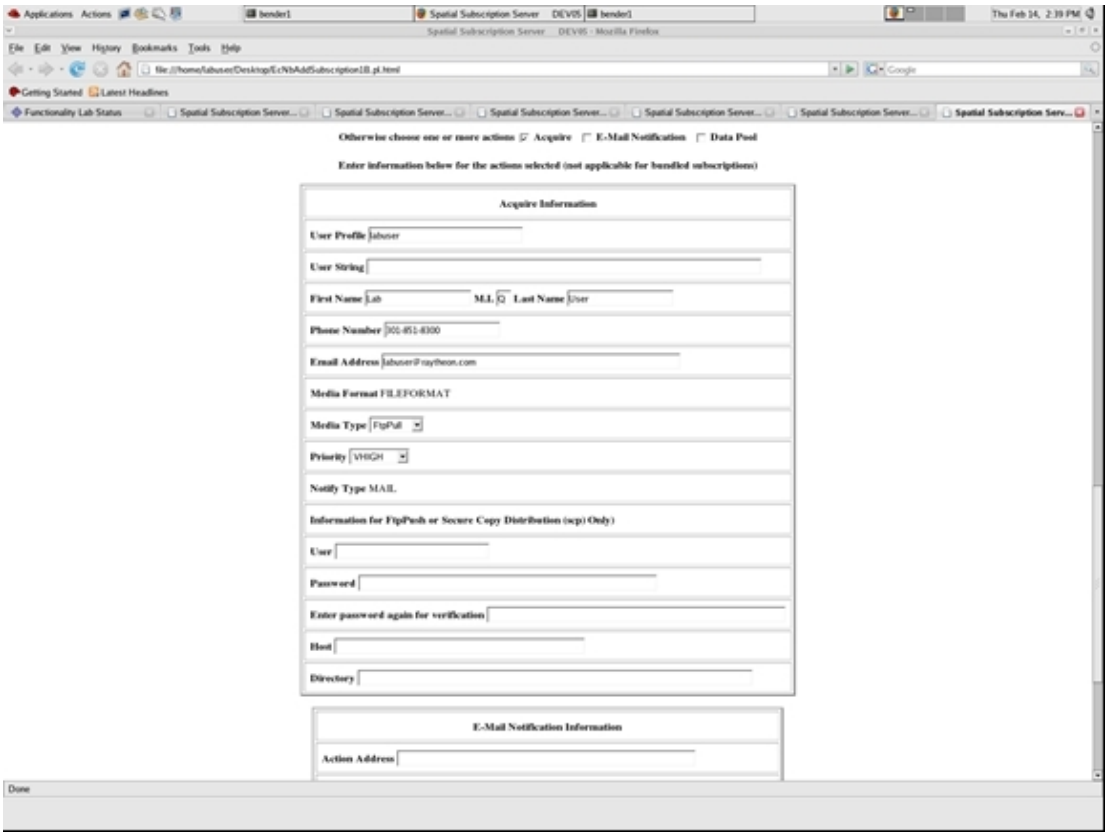


Figure 4.7.2.4-5d. Update a Subscription in the NBSRV Database. Note that This Functionality is Available to Only Full Capability Operators. (Continuation to Update Ftp Action Information for an Existing Subscription).

Limited Capability Users

Limited Capability users cannot use this functionality.

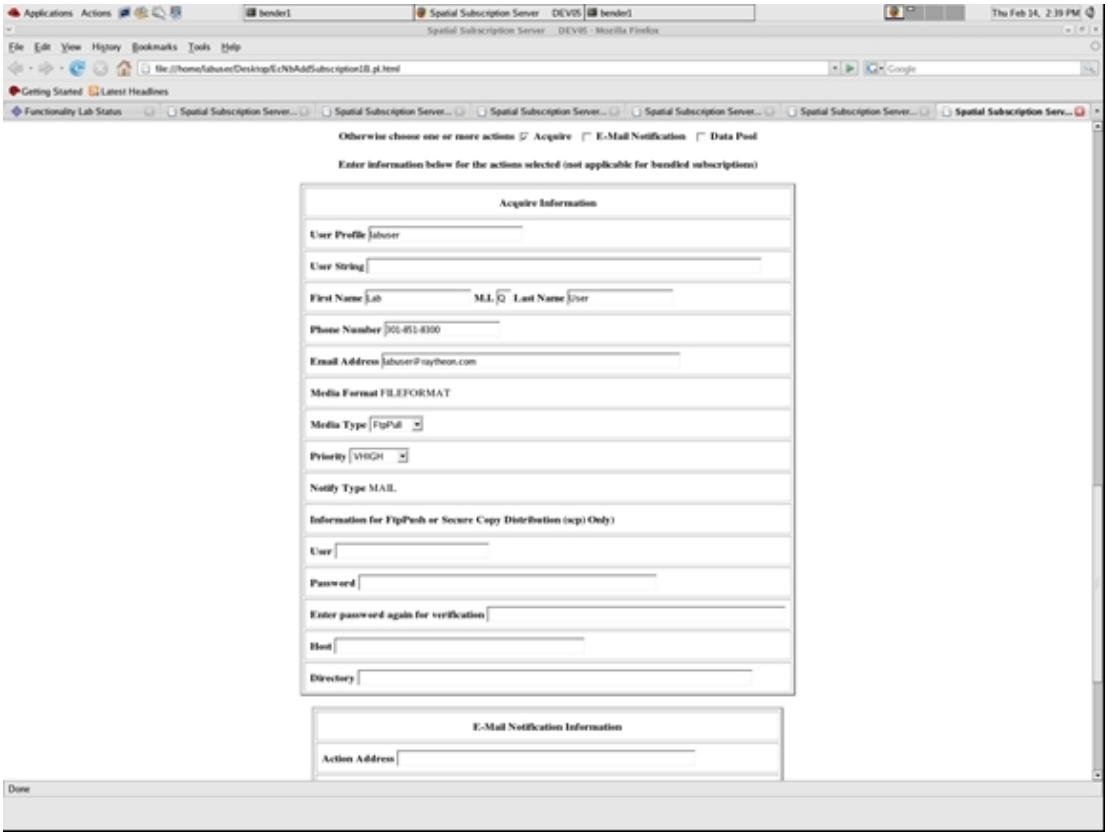


Figure 4.7.2.4-5e. Update a Subscription in the NBSRV Database (Continuation to Update E-Mail Action Information, Data Pool Information, or the Bundling Order Selection for an Existing Subscription)

Note: The operator must click on the Update Subscription button to initiate the updating of a subscription.

Limited Capability Users

Limited Capability users cannot use this functionality.

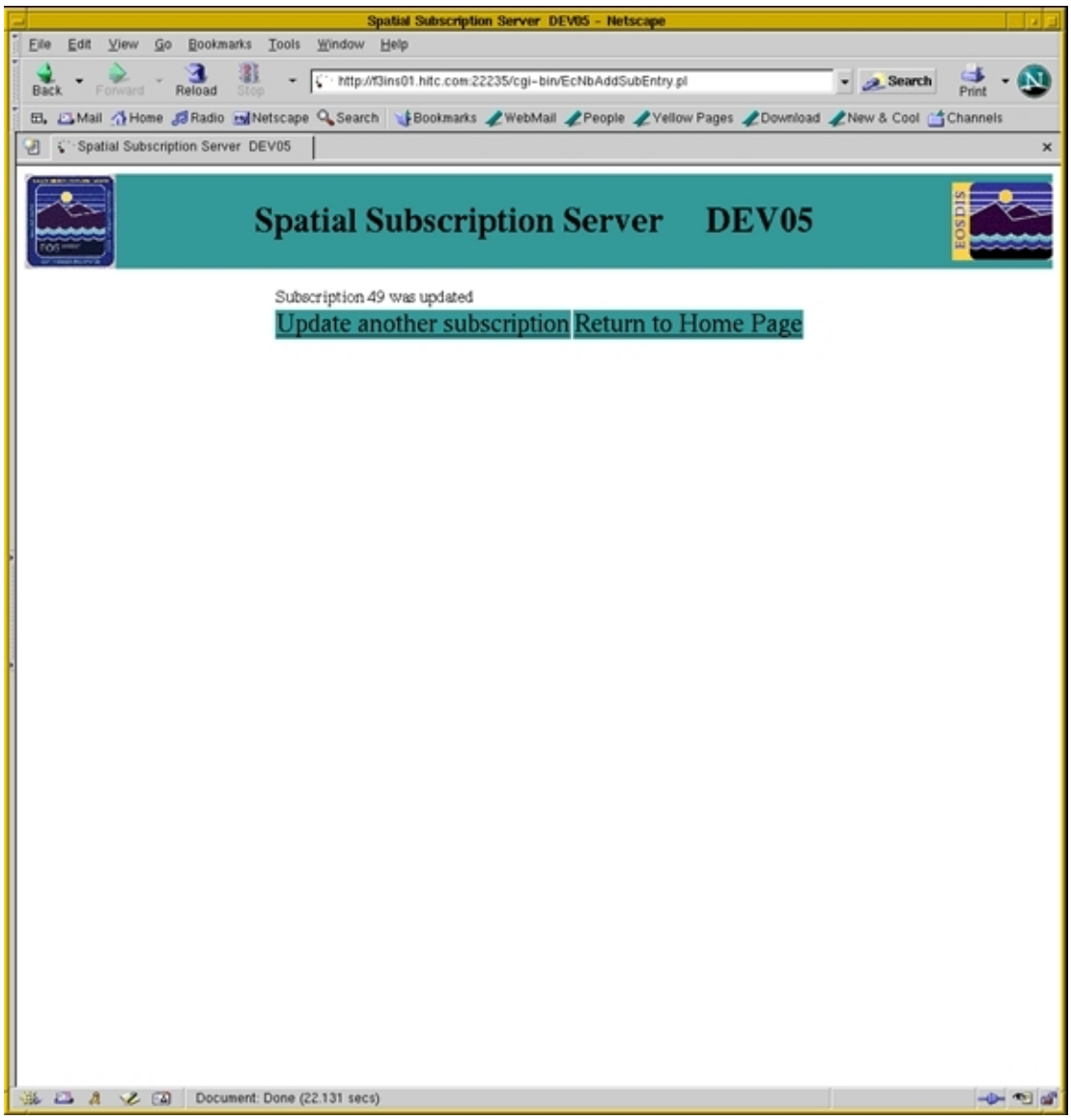


Figure 4.7.2.4-6a. Update Confirmation Screen. Note that This Screen is Seen by Only Full Capability Operator (Confirms Successful or Unsuccessful Updating of the Subscription)

Note: If invalid or missing data is detected for the subscription the errors will be displayed to the operator for correction. If a theme was to be associated with a data pool action, the screen will appear as in Figure 4.7.2.4-6b.

Limited Capability Users

Limited Capability users cannot use this functionality.

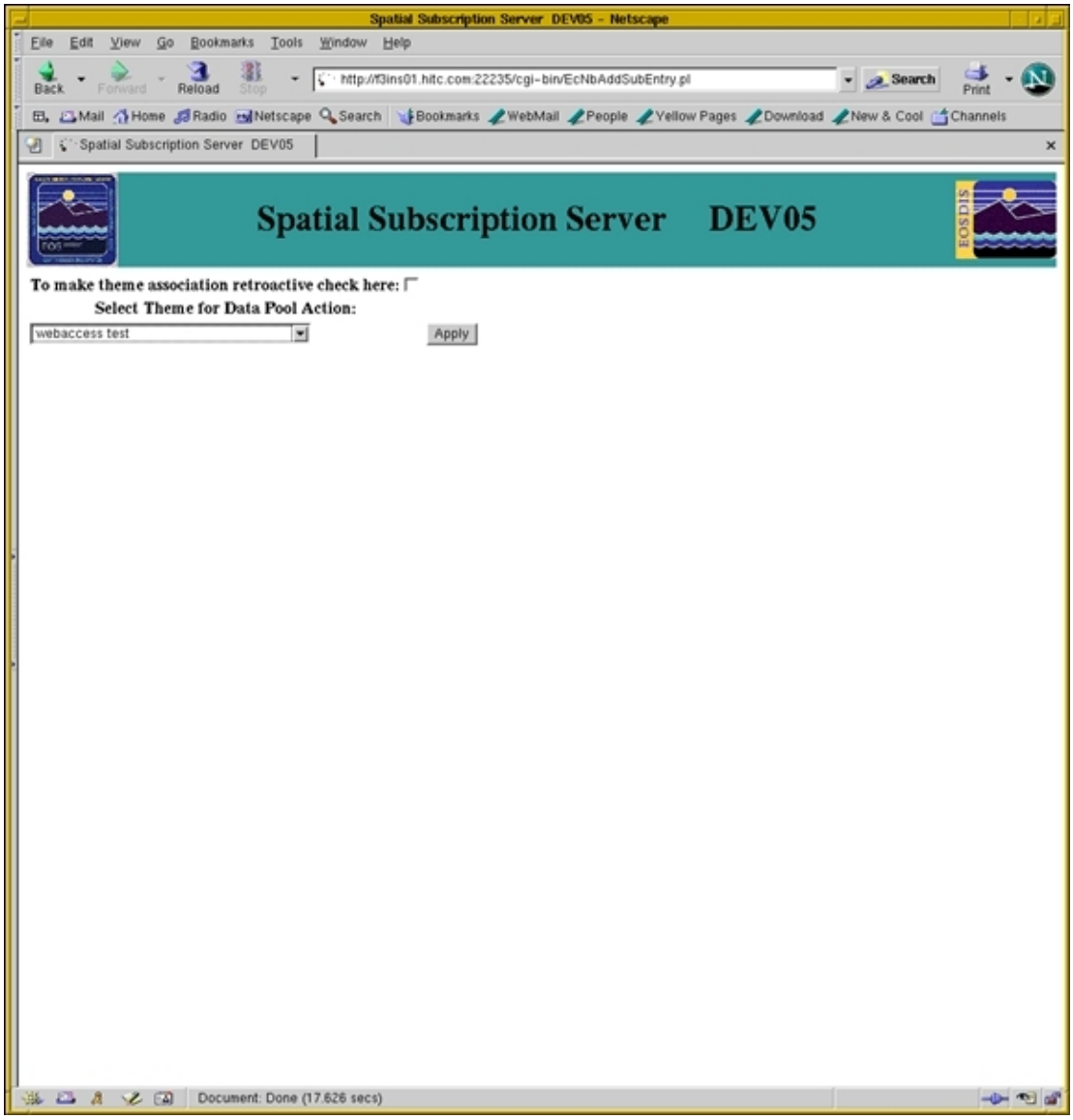


Figure 4.7.2.4-6b. Data Pool Action Associated with a Theme. Note that This Screen is Seen by Only Full Capability Operator. (Alternative to Update Confirmation Screen Figure 4.7.2.4-6a)

Note: The user first indicates whether the association is to be retroactive. Retroactive means that any granules already in the Data Pool due to the subscription being updated will be associated with the theme. The user then selects a theme from the pulldown list and clicks on Apply. The screen in Figure 4.7.2.4-6a will be displayed, signaling a successful update.

Limited Capability Users

Limited Capability users cannot use this functionality.

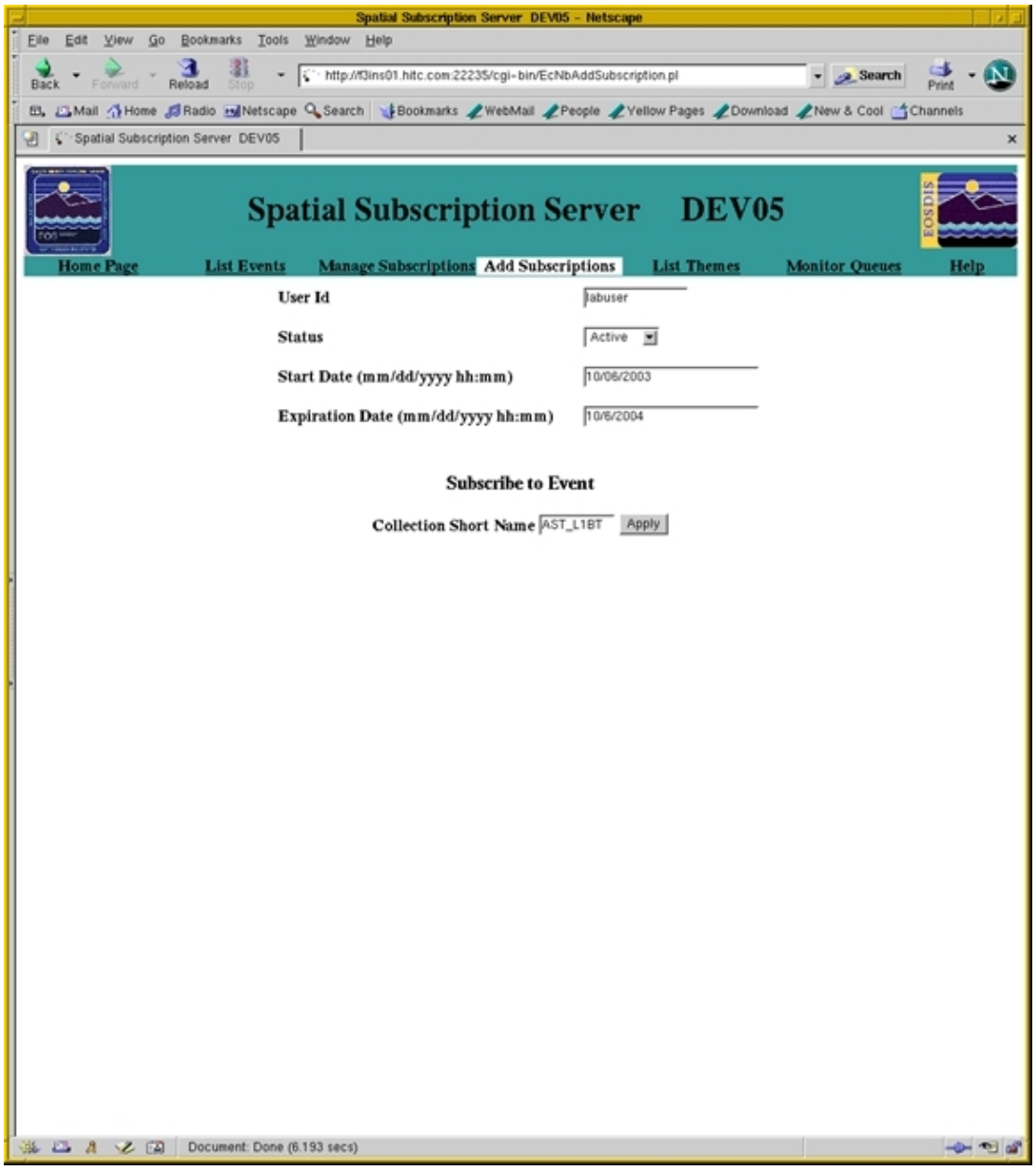


Figure 4.7.2.4-7. Add a New Subscription for a Valid ECS User. Note that This Functionality is Accessable to Only Full Capability Users.

Limited Capability Users

Limited Capability users cannot use this functionality.

Table 4.7.2.4-1. Add Subscriptions Screen Field Description

Field Name	Data Type	Size	Entry	Description
User Id	character	14	required	Allows the operator to enter a valid ECS user.
Status	n/a	n/a	required, selection from dropdown list	Allows the operator to select 'Active', 'Inactive' or "Canceled". Normally, the operator will choose 'Active'. 'Inactive' means that the subscription exists but has been temporarily suspended. 'Canceled' means that the subscription has been planned for deletion and will be deleted by the Deletion Driver once a configurable amount of time has passed. The default value for the status field is 'Active'.
Expiration Date	dateTime	12	required	Allows the operator to enter the date on which the subscription will expire. The default is one year from the current date (although this is configurable).
Collection Short Name	character	10	optional	Allows the operator to enter the first few characters of the Collection for the event that will be subscribed to. If left blank all Collections will be retrieved. The operator must click on the **APPLY** button to obtain a pull-down list of collection, version, event type combinations.

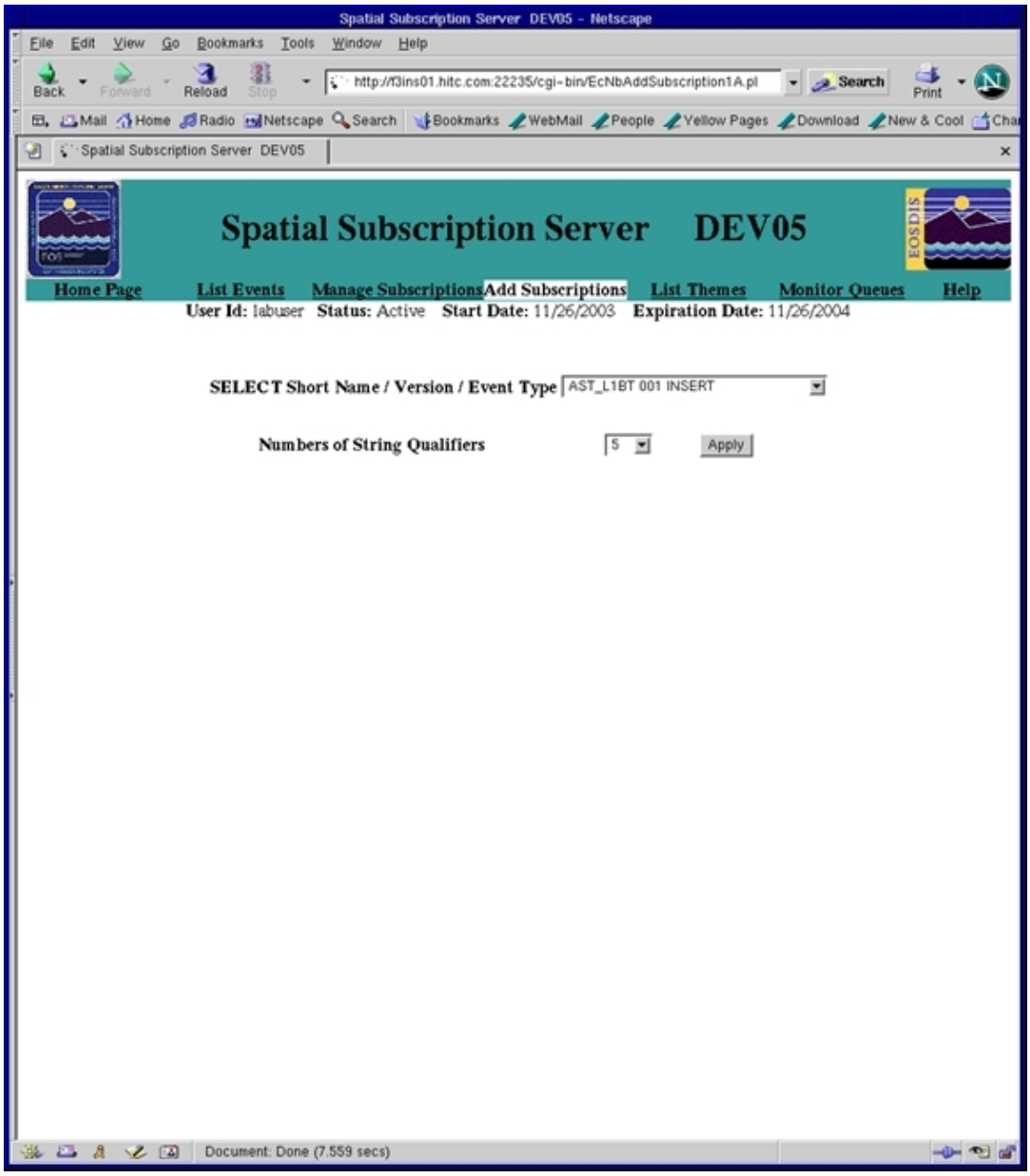


Figure 4.7.2.4-8. Event Selection (Continuation of Figure 4.7.2.4-7). Note that This Functionality is Accessible to Full Capability Operators.

Note: This screen depicts the operator selecting the 'AST_L1BT 001 INSERT' event from the pull-down list.

Limited Capability Users

Limited Capability users cannot use this functionality**.**

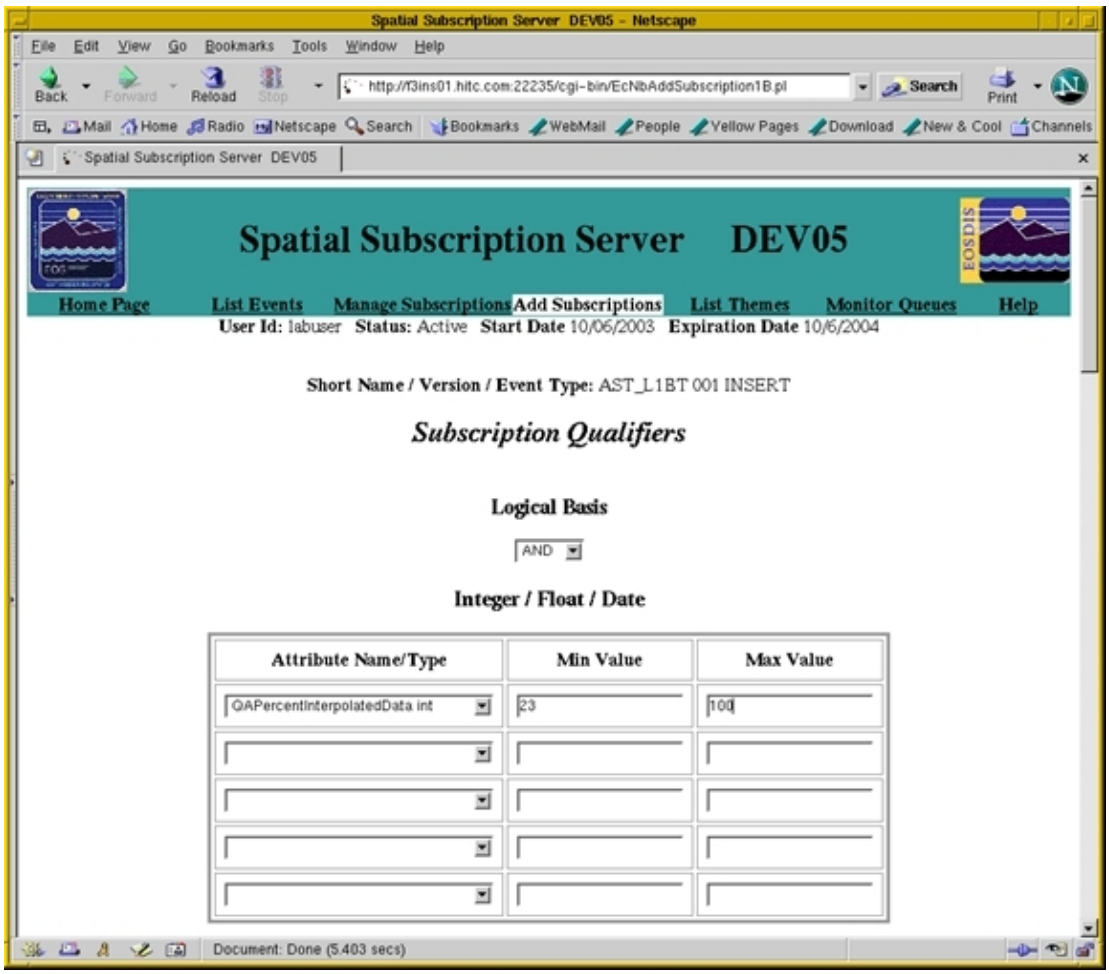


Figure 4.7.2.4-9. Add Subscription Continuation Information. Note that This Functionality is Accessible to Only Full Capability Operators.

Note: This screen is displayed after the operator clicks on the Apply button in Figure 4.7.2.4-8. It depicts the operator adding an integer qualifier to the new subscription.

Limited Capability Users

Limited Capability users cannot use this functionality**.**

Table 4.7.2.4-2. Add Subscriptions Screen Continuation Field Description

Field Name	Data Type	Size	Entry	Description
Attribute Name/ Type	n/a	n/a	optional, selection from dropdown list	Allows the operator to select Integer, Float or date qualifier. Note that only attributes associated with the current collection will be displayed. If the measured Parameter QAPercentCloudCover is valid for the Collection and the operator elects to qualify on it as part of the subscription, a pop-up window will be displayed requesting that the operator enter a valid parameter name for the attribute.
Min Value	character	20	optional	Allows the operator to enter valid minimum value for the qualifier selected.
Max Value	character	20	optional	Allows the operator to enter valid maximum value for the qualifier selected. For exact matching, enter the same value for the minimum and maximum.

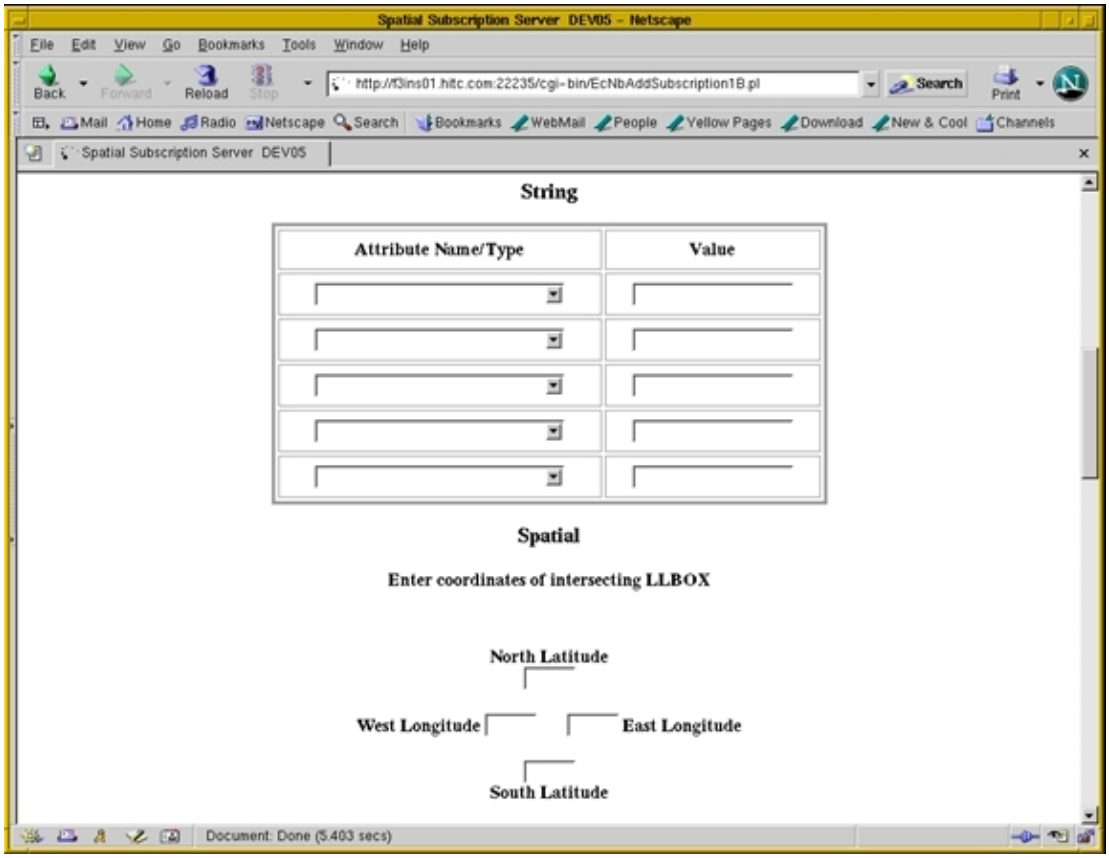


Figure 4.7.2.4-10. Add Subscription Screen Continuation (Adding String and Spatial Qualifiers)

Limited Capability Users

Limited Capability users cannot use this functionality.

Table 4.7.2.4-3. Add Subscriptions Continuation Field Description

Field Name	Data Type	Size	Entry	Description
Attribute Name / Type	n/a	n/a	optional, selection from dropdown list	Allows the operator to select String qualifier.
Value	character	20	optional	Allows the operator to enter valid string value for qualifier selected.
Lat/Long Coordinates	character	6	optional	Allows the operator to define the latitude and longitude coordinates for an intersecting LLBOX. The coordinates are entered in degrees.

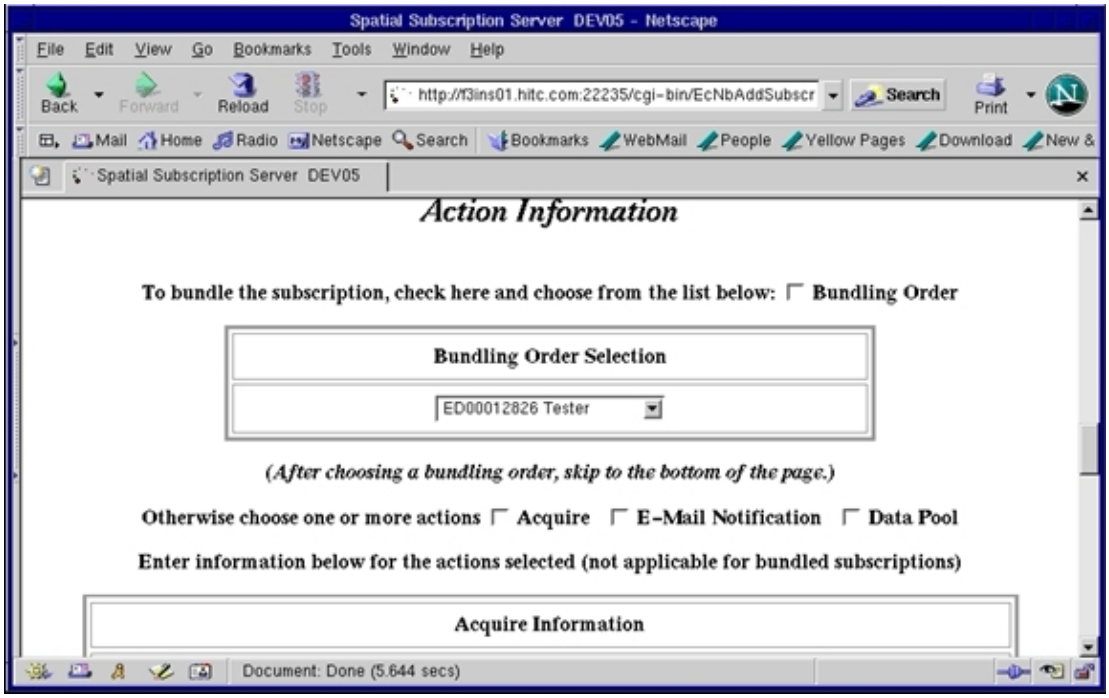


Figure 4.7.2.4-11. Add Subscription Screen Continuation (Bundling Order). Note that This Functionality is Accessable to Only Full Capability Operators.

Limited Capability Users

Limited Capability users cannot use this functionality.

Table 4.7.2.4-4. Add Subscriptions Continuation Field Description

Field Name	Data Type	Size	Entry	Description
User Profile	character	30	required, for Acquire	This will default to the User Id from the Add Subscriptions form.
User String	character	30	optional, for Acquire	A secondary qualifier used to distinguish this request from others with the same user profile. The user string will appear in the distribution notice.
First Name	character	20	optional	First name of the user receiving the data.
Middle Initial	character	1	optional	Middle initial of user receiving the data.
Last Name	character	20	optional	Last name of the user receiving the data.
Phone Number	character	22	optional	Phone number of the user receiving the data.
Email Address	character	50	required, for Acquire	The e-mail address that is used by the Data Distribution to e-mail notification of the acquire. NOTE: a granule will be distributed at most once to a given email address, regardless of the number of matching subscriptions.
Media Format	n/a	n/a	required, for Acquire	The format of the Media. The only default value is FILEFORMAT.
Media Type	n/a	n/a	required, for Acquire	The type of the Media. The valid values are FtpPull, FtpPush and Secure Copy. The default value is FtpPush.
Priority	n/a	n/a	required, for Acquire	The distribution priority of the acquire. The valid values are VHIGH, HIGH, NORMAL, LOW, XPRESS. The default priority value is the distribution priority in the user profile of the userID associated with the subscription.
Notify Type	n/a	n/a	required, for Acquire	The method of notification for the acquire. The only default value is MAIL. (When the Media Type is scp, notifications are also sent via scp).
FTP User	character	30	optional, for Acquire	The Unix login ID of the FTP recipient. **Required for FtpPush and SecureCopy**.
FTP Password	character	16	optional, for Acquire	The Unix password for the FTP recipient. **Required for FtpPush and SecureCopy**.
FTP Password Verification	character	16	optional, for Acquire	The Unix password verification for the FTP recipient. **Required for FtpPush and SecureCopy.**
FTP Host	character	80	optional, for Acquire	The Unix hostname of the FTP recipient. **Required for FtpPush and SecureCopy**.
FTP Directory	character	80	optional, for Acquire	The pathname of the Unix directory where the acquired files are to be stored. **Required for FtpPush and SecureCopy**.

Figure 4.7.2.4-12a and 4.7.2.4-12b show the Add Subscription Screen Continuation.

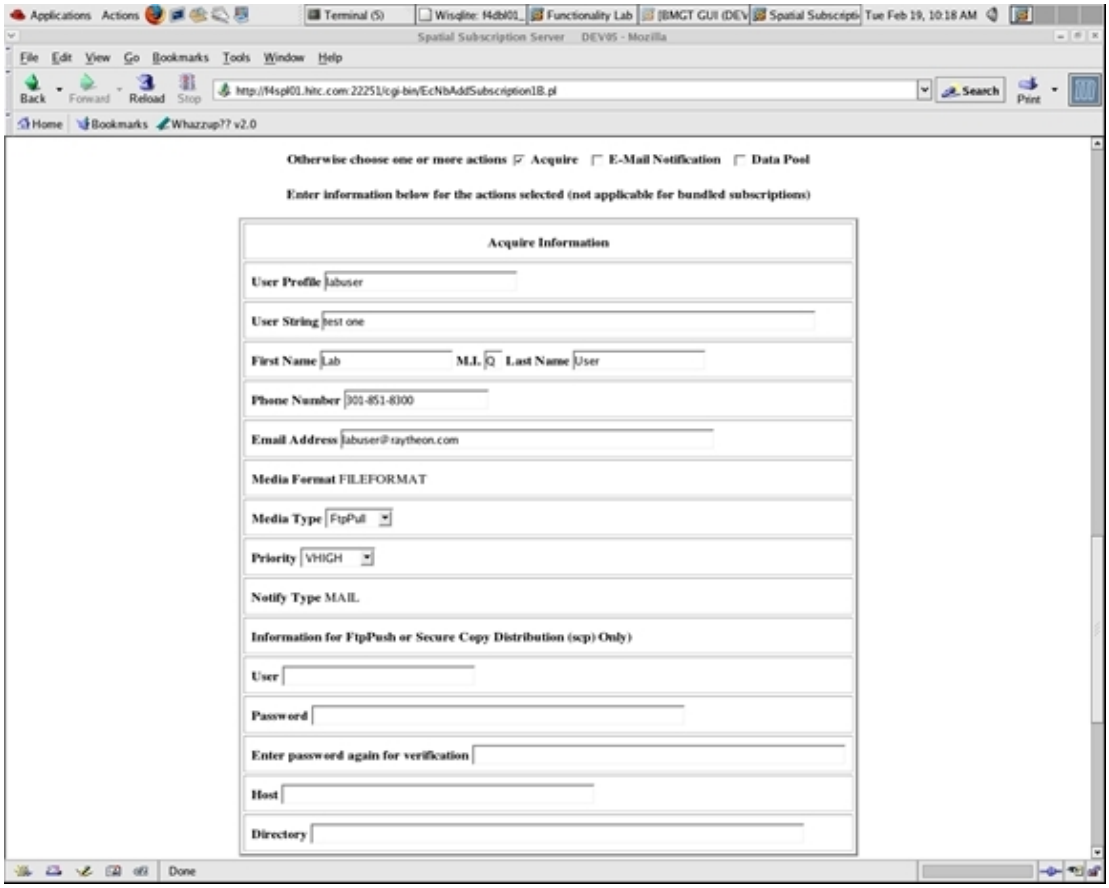


Figure 4.7.2.4-12a. Add Subscription Screen Continuation. Note that This Functionaliy is Accessable to Only Full Capability Operators. (Information for the E-Mail Notification or Data Pool Actions)

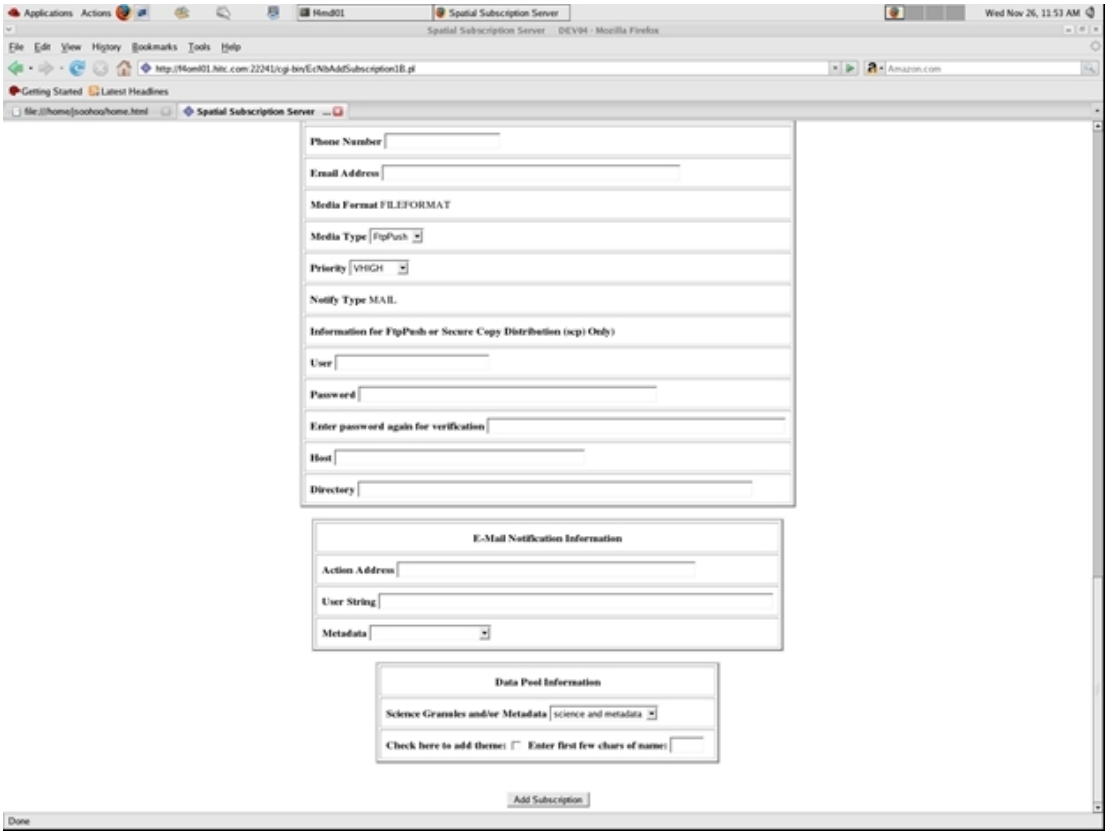


Figure 4.7.2.4-12b. Add Subscription Screen Continuation. Note that This Functionality is Accessable to Only Full Capability Operators. (Information fo the E-Mail Notification or Data Pool Actions)

Limited Capability Users

Limited Capability users cannot use this functionality**.**

Note: A data pool action may be associated with a theme by clicking the theme box. The theme will be chosen in the next screen. The operator can optionally enter the first few characters of the theme name in order to shorten the list of possibilities. The operator must click on the Add Another Subscription button to initiate the addition of the subscription to the NBSRV database.

Table 4.7.2.4-5. Add Subscriptions Continuation Field Description

Field Name	Data Type	Size	Entry	Description
Action Address	character		required for Notify	The email address of the registered ECS user associated with the subscription.
User String	n/a	n/a	optional, for Notify	The user string to be included in the message text for each email notification.
Metadata	n/a	n/a	required, for Notify	Allows the operator to include names and values for all metadata attributes or only include names and values for the metadata attributes associated with the subscription qualifiers in the email notification text. The valid values are Qualifying Metadata Only and All Metadata.
Science Granules and/or Metadata	enumeration		required	Indicates whether both the granule and its metadata are to be inserted into the Data Pool or just the metadata.
Associated Theme	character	40	optional	Theme associated with the subscription.
Bundling Order	character	10	optional	Associates the subscription with a previously defined bundling order. The pulldown list displays the bundling order ID followed by its user string, if defined.
Check Here To Add Theme	checkbox	n/a	optional	Add theme associated with the subscription.
Enter First Few Chars of Name	character	5	optional	The first few characters of the associated theme's name.

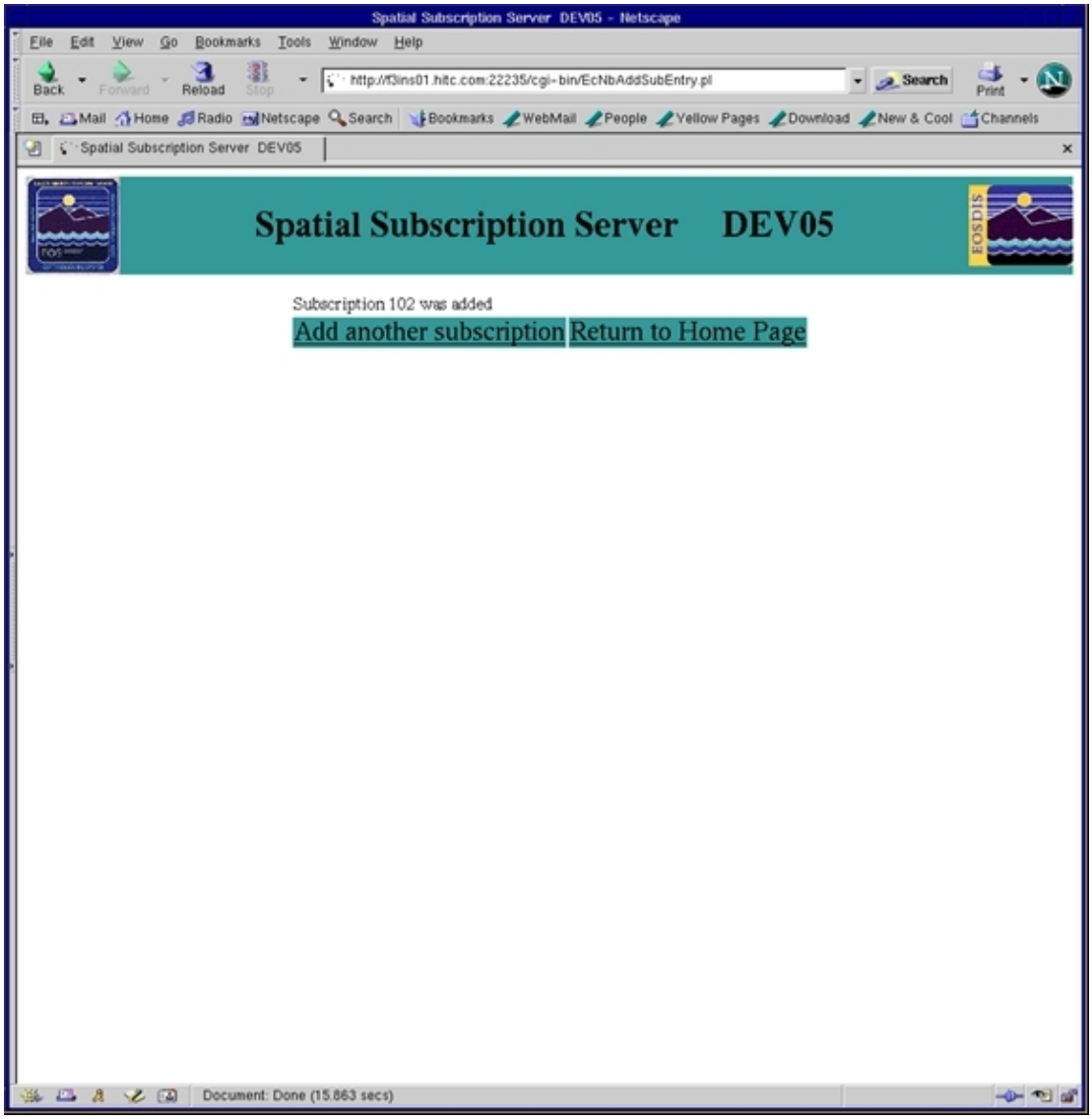


Figure 4.7.2.4-13a. Add Confirmation Screen. Note that This Functionality is Accessable to Only Full Capability Operators. (Confirms Successful or Unsuccessful Adding of the Subscription)

Limited Capability Users

Limited Capability users cannot use this functionality**.**

Note: If invalid or missing data is detected for the subscription, the errors will be displayed to the operator for correction.

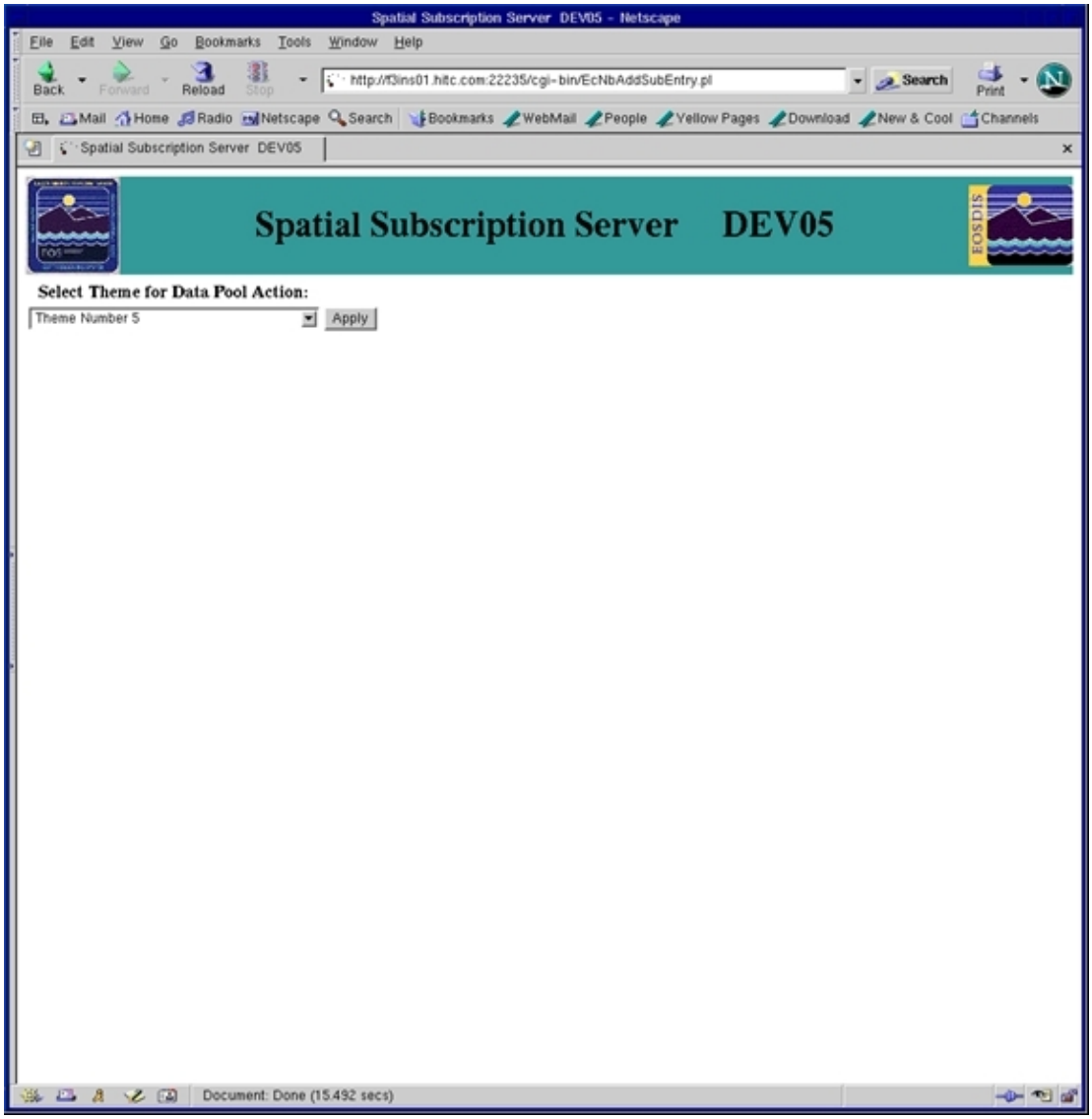


Figure 4.7.2.4-13b. Data Pool Action Associated with a Theme (Alternative to Add Confirmation Screen Figure 4.7.2.4-13a). Note that This Functionality is Accessible to Only Full Capability Operators.

Limited Capability Users

Limited Capability users cannot use this functionality**.**

Note: The operator selects a theme name from the pulldown list and clicks on the Apply button. Confirmation that the subscription was successfully added appears as in Figure 4.7.2.4-13a. **NOTE**: The subscription is actually created prior to displaying this screen, and the association of the theme with the subscription is implemented as an update operation.

4.7.2.5 List Themes Tab

The List Themes screen, called from Monitor Subscriptions and shown in Figure 4.7.2.5-1 allows the operator to see a list of known themes which are enabled for insert. Table 4.7.2.5-1 lists the field descriptions for the List Themes Request screen.

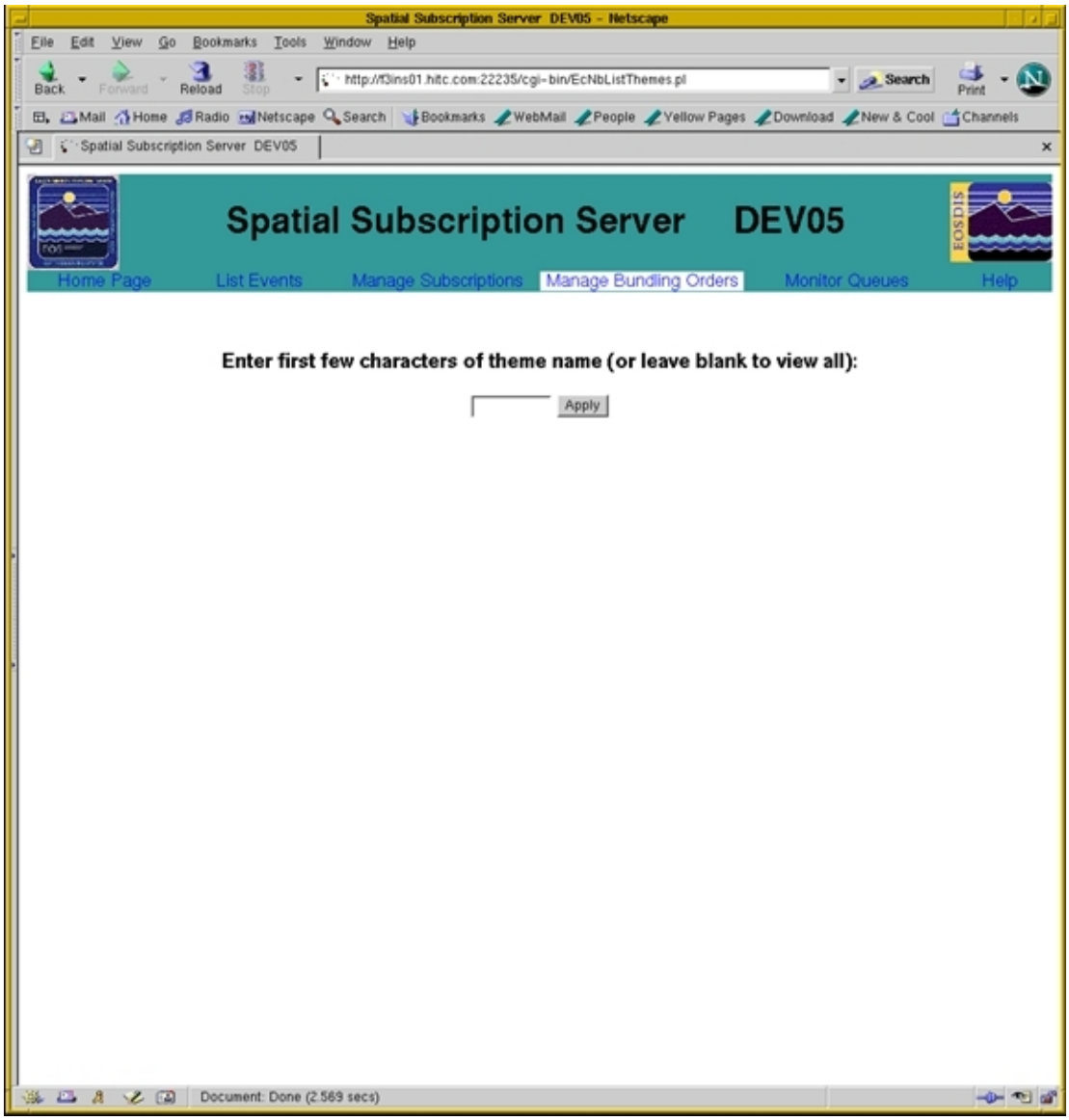


Figure 4.7.2.5-1. List Themes Screen Request

Note: The list may be filtered by entering the first few characters of the theme name.

Figure 4.7.2.5-2 below is the screen that is displayed after the operator enters information in the list themes screen (Figure 4.7.2.5-1).

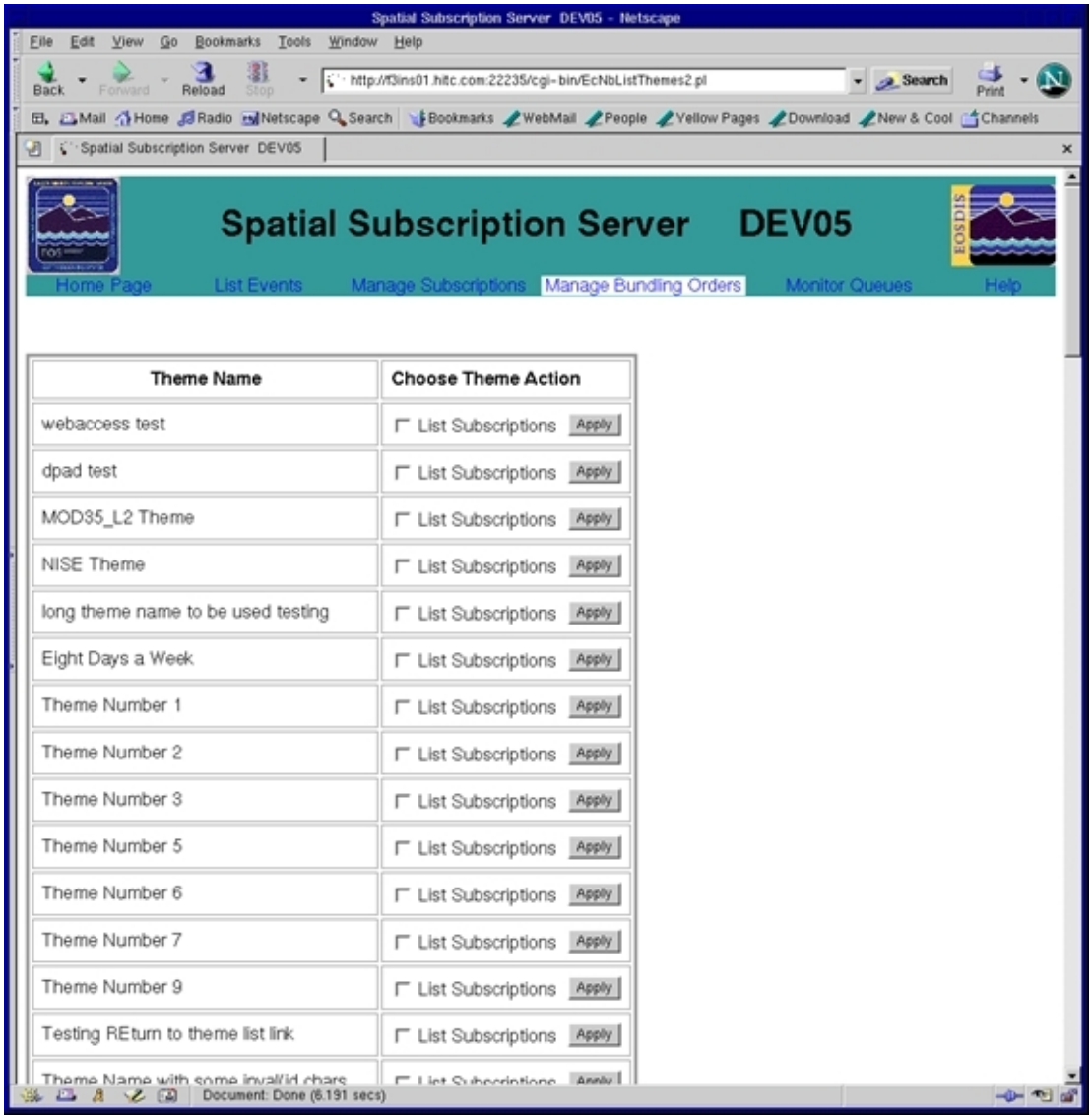


Figure 4.7.2.5-2. Theme List and Associated Action

Note: This screen allows the operator to see the list of themes enabled for insert and to view the list of subscriptions associated with a particular theme.

Table 4.7.2.5-1. Theme List Field Description

Field Name	Data Type	Size	Entry	Description
Choose Theme Action	checkbox	1	optional	To view the subscriptions associated with a particular theme, check the box and click on Apply.
Continue	link	n/a	optional	To continue viewing the list of theme names, click on the continue link.

4.7.2.6 List Subscriptions box

The List Subscriptions for Theme screen, called from List Themes and shown in Figure 4.7.2.6-1 allows the operator to see a list of subscriptions associated with a particular theme.

Please note that **Update, Cancel, Suspend All, ResumeAll** and **Cancel All** functionality is accessible only to full capability Operators.

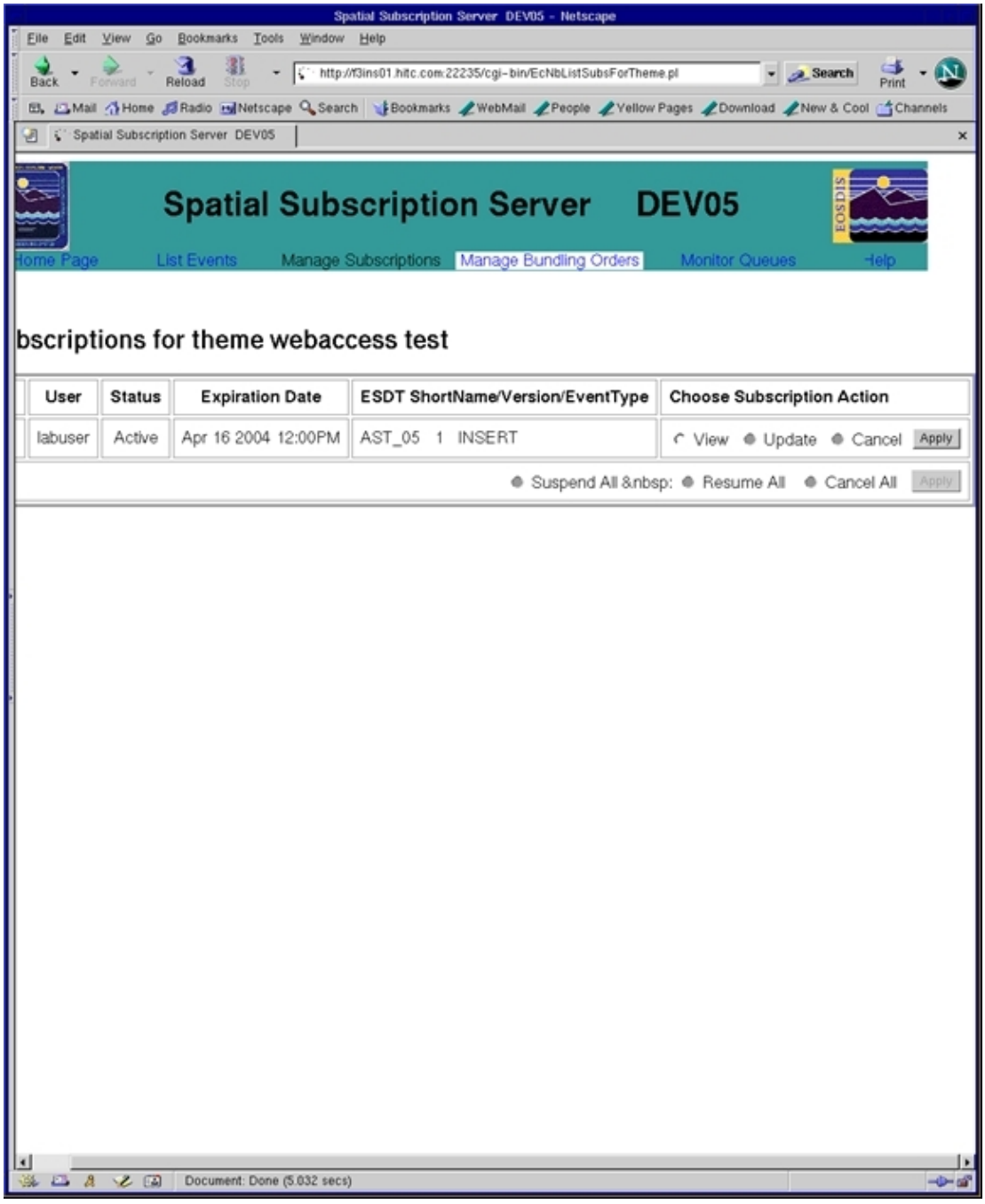


Figure 4.7.2.6-1. Theme and Associated Subscriptions

Note: This screen allows the operator to see the list of subscriptions associated with a particular theme and to select one of them for View, Update, or Cancel. The operator also has the option to suspend, resume, or cancel all subscriptions by clicking on the appropriate link.

4.7.2.7 Manage Bundling Orders tab

The Manage Bundling Orders screen shown in Figure 4.7.2.7-1 allows the operator to View, Update, or Cancel bundling orders or to create new bundling orders. The operator can also list the subscriptions associated with a particular bundling order.

Please note that **Update** and **Cancel** functionality can only be performed by an Operator with full capability access.

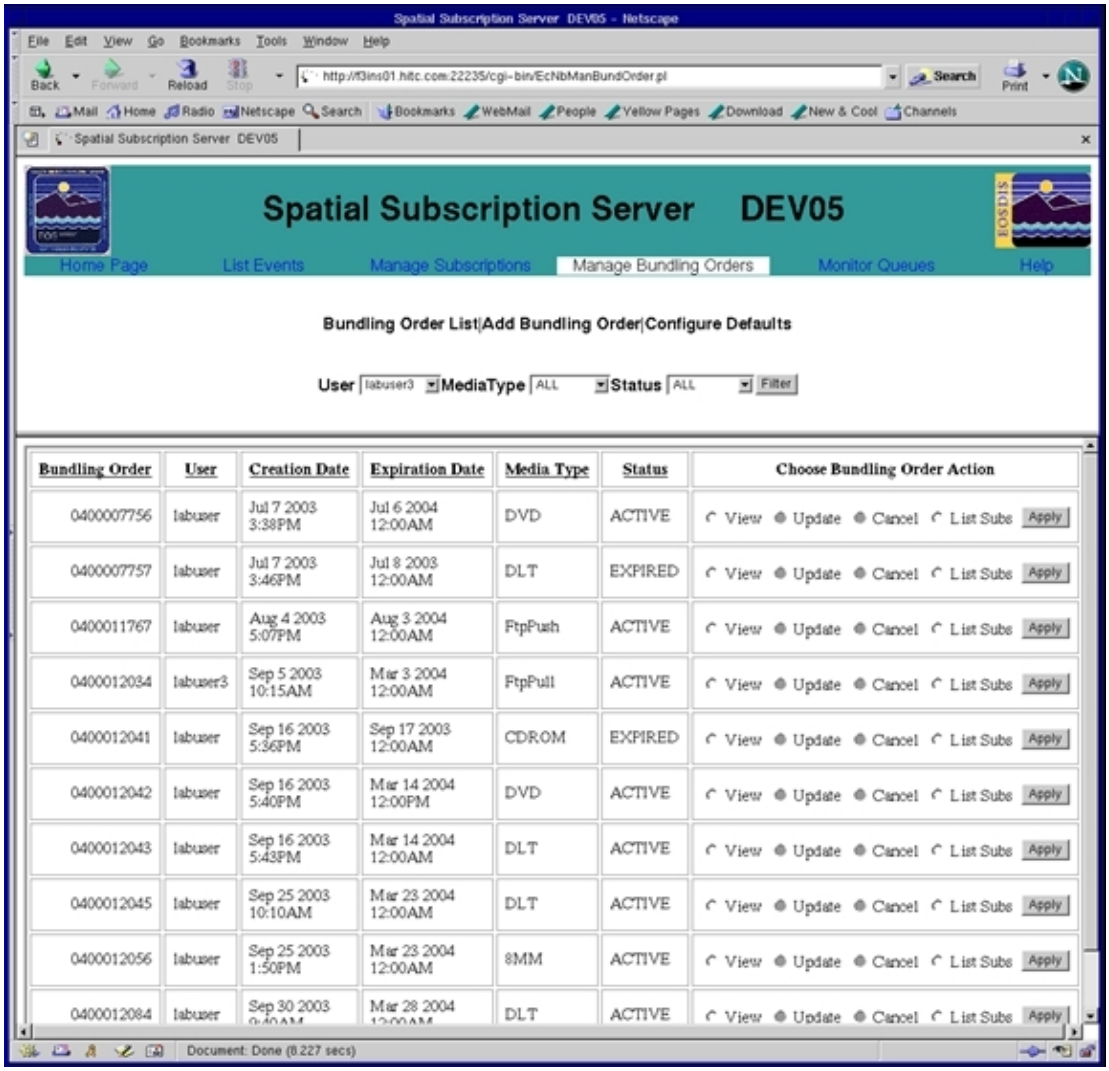


Figure 4.7.2.7-1. Bundling Orders List

Limited Capability Users

Limited Capability users use **Update** and **Cancel** functionality.

Note: This screen allows the operator to view previously defined bundling orders; to view, update, or cancel a particular bundling order; or to list the subscriptions associated with a particular bundling order.

Figure 4.7.2.7-2 displays the configured defaults for a bundling order, which is accessible to full capability operators.

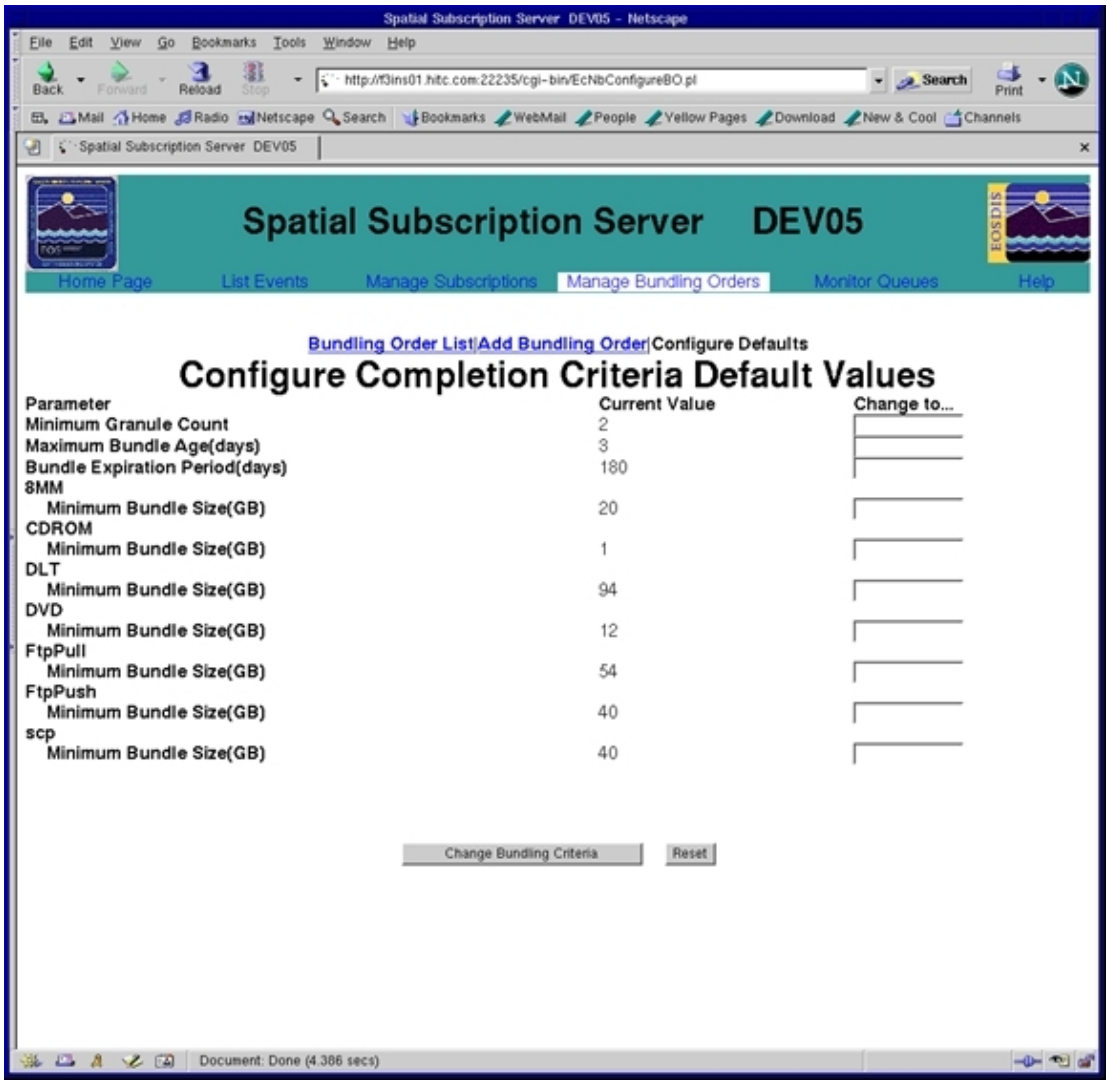


Figure 4.7.2.7-2. Configure Defaults for Bundling Order. This Screen is Only Accessible to Full Capability Operator.

Limited Capability Users

Limited Capability users cannot use this functionality**.**

Note: This screen is called from Figure 4.7.2.7-1 when the operator selects the Configure Defaults tab. It allows the operator to configure default values for bundling orders. The completion criteria values may vary among media types. To change a value the operator enters the new value in the Change to... column. When all changes have been made the operator clicks the Change Bundling Criteria button.

Figure 4.7.2.7-3 displays the bundling criteria change confirmation screen, which is accessible to full capability operators.

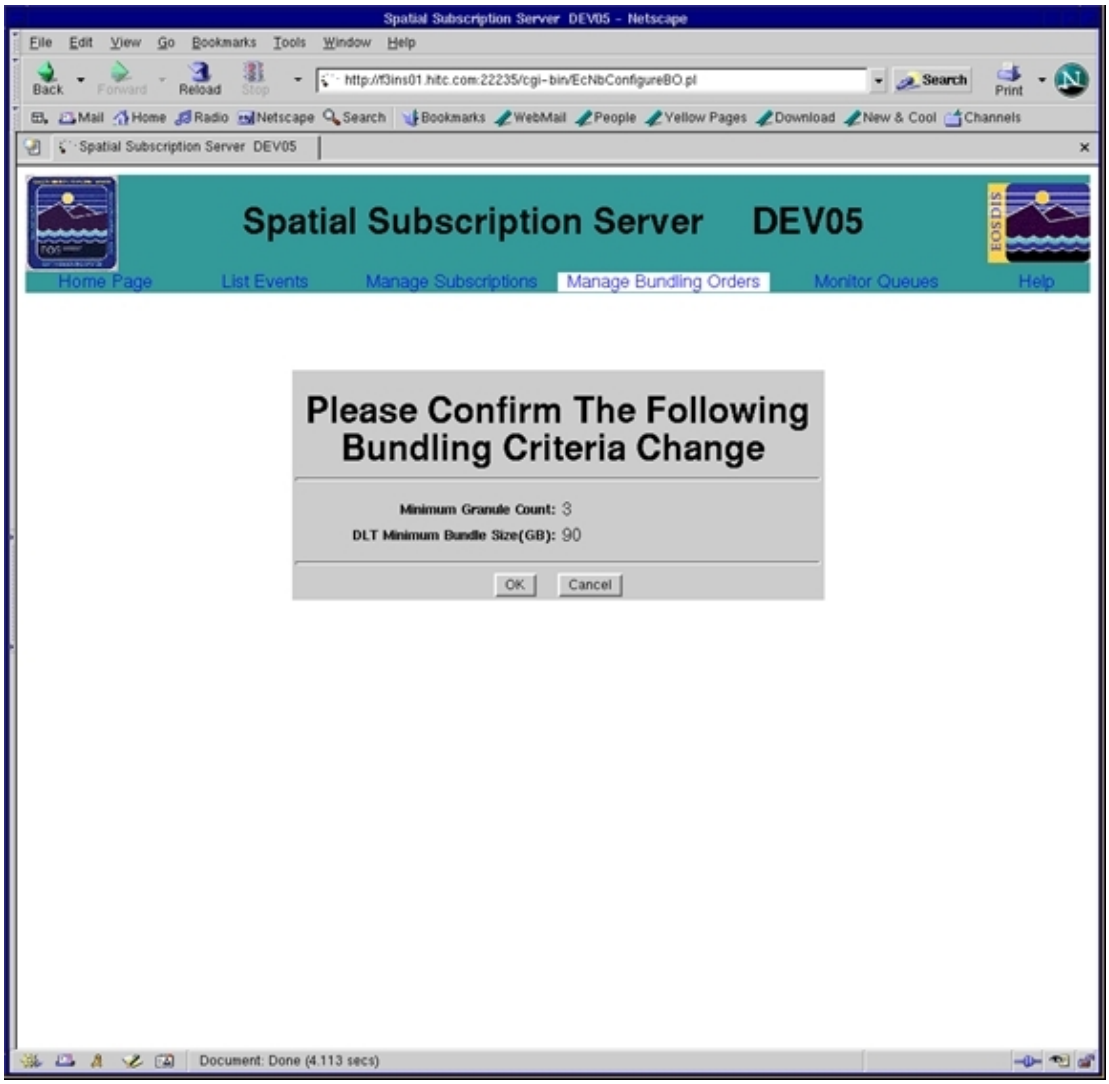


Figure 4.7.2.7-3. Bundling Criteria Change Confirmation Screen. This Screen is Only Accessible to Full Capability Operators.

Limited Capability Users

Limited Capability users cannot use this functionality.

Note: This screen asks for confirmation for the new configuration value(s). The operator would click OK to confirm. The configuration page will appear again after the parameter has been updated.

4.7.2.8 Add Bundling Order

The Add Bundling Order screen shown in Figure 4.7.2.8-1 allows the operator to create a new bundling order. There are two screens involved. In the first screen (Figure 4.7.2.8-1), the user enters name, an expiration date (a default is provided), and the physical media type. Based on this information, further information is requested in the second screen (Figure 4.7.2.8-2). Figures 4.7.2.8-3 and 4.7.2.8-4 show the screen provided when media types FTPPULL and FTPPUSH, respectively, are selected. Table 4.7.2.8-1 lists the description of the fields associated with the bundling order screens.

When the applicable bundling order information has been entered, the operator clicks the Add Bundling Order button. The screen in Figure 4.7.2.8-5 is displayed when the result is successful.

Please note that **Add Bundling Order** functionality is only accessible to full capability Operators.

Figure 4.7.2.8-1. Add New Bundling Order Screen (Part 1). This Screen is Only Accessible to Full Capability Operators.

Limited Capability Users

Limited Capability users cannot use this functionality**.**

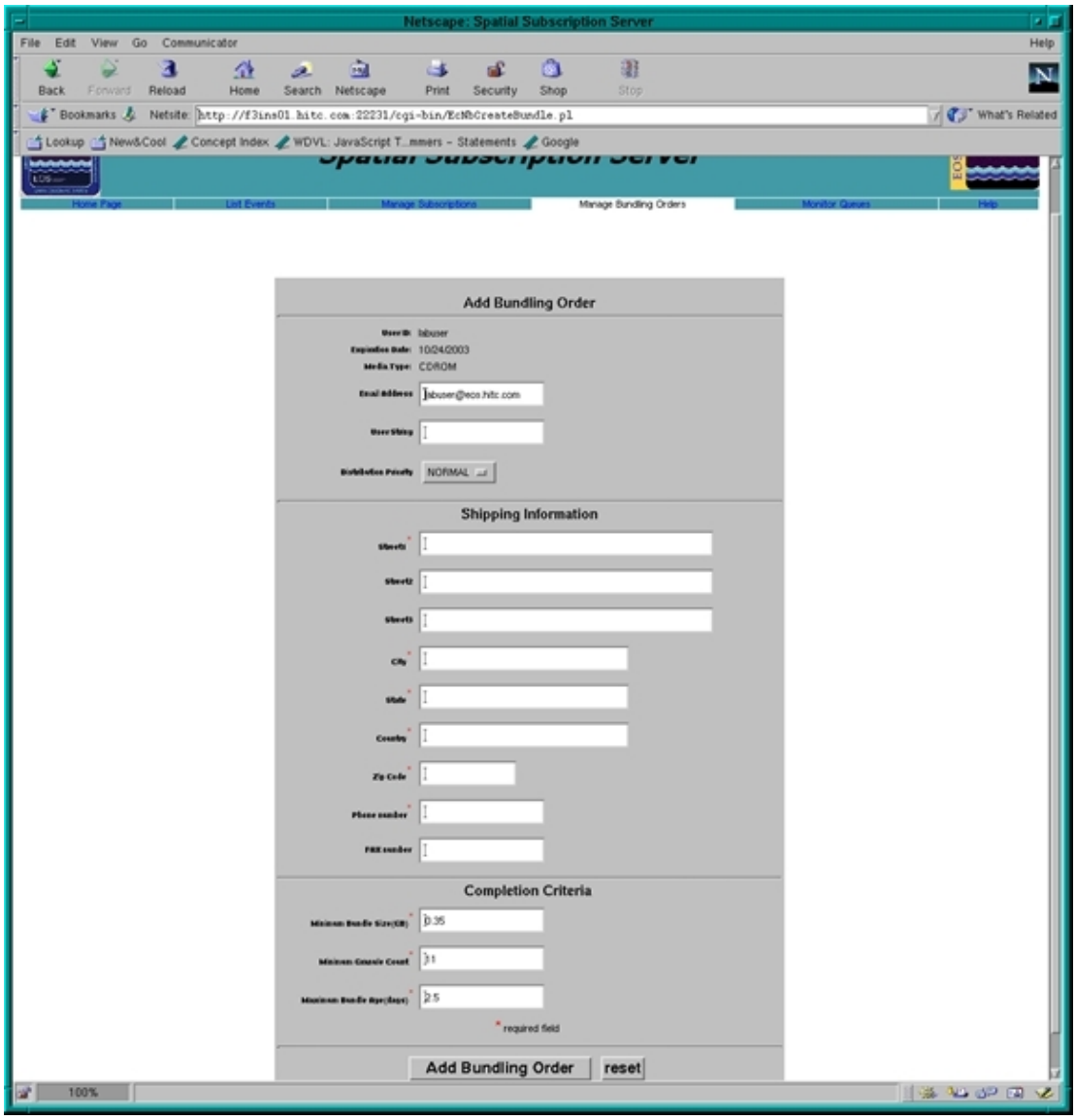


Figure 4.7.2.8-2. Add New Bundling Order Screen (Part 2). This Screen is Only Accessible to Full Capability Operators.

Limited Capability Users

Limited Capability users cannot use this functionality.

Note: Information entered in the previous screen is used to provide options in the current screen. For example, for a physical media type, shipping information will be displayed.

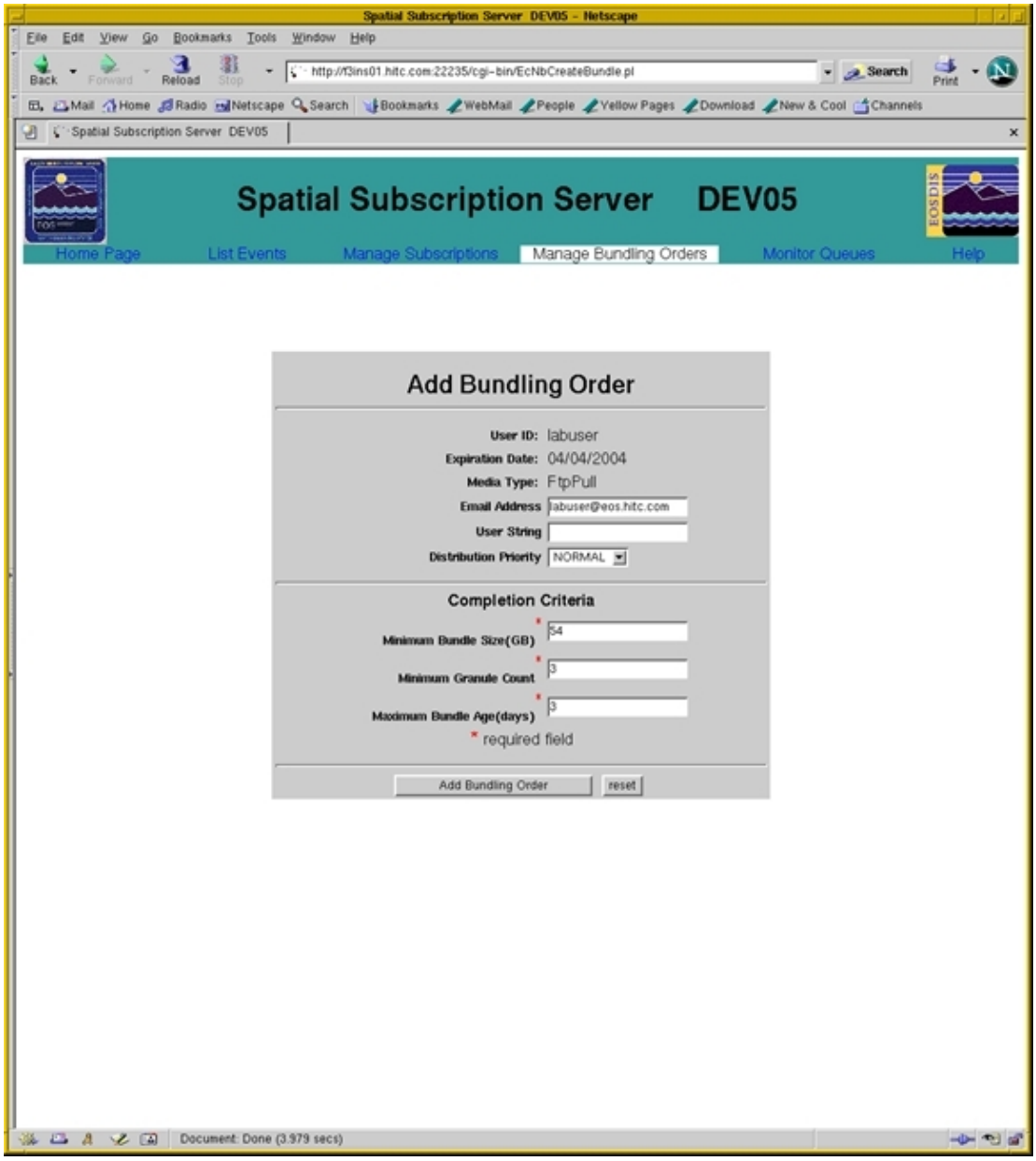


Figure 4.7.2.8-3. Add Bundling Order - Media Type Selected is FTPPULL. This Screen is Only Accessible to Full Capability Operators.

Limited Capability Users

Limited Capability users cannot use this functionality**.**

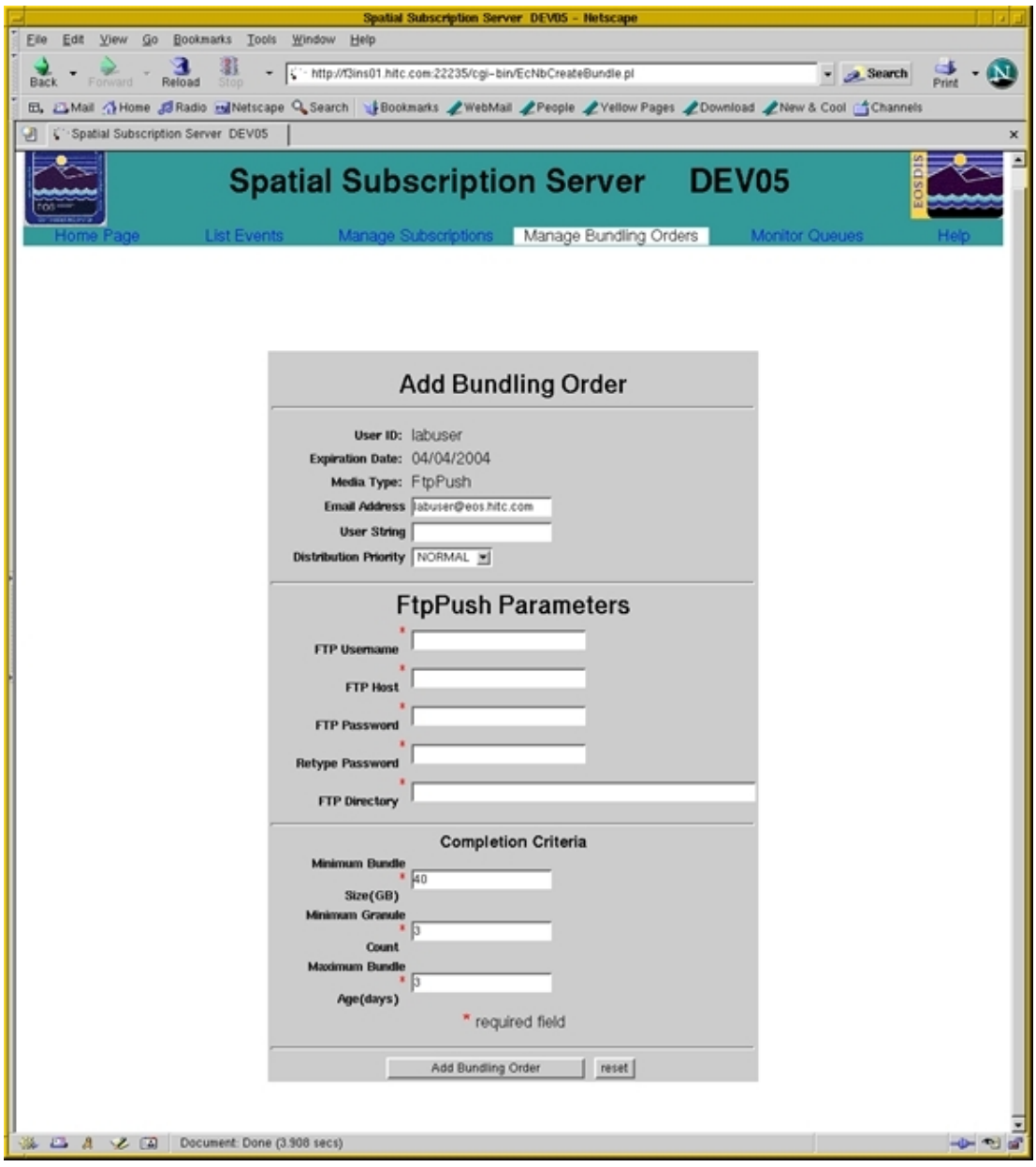


Figure 4.7.2.8-4. Add Bundling Order - Media Type Selected is FTPPUSH. This Screen is Only Accessible to Full Capability Operators.

Limited Capability Users

Limited Capability users cannot use this functionality**.**

Table 4.7.2.8-1. Field Descriptions for the Bundling Order Screens (1 of 2)

Field Name	Description	When and Why to Use
User Id	Name of the owner of the bundling order	Required for creating a bundling order.
Expiration Date	Date of expiration for the bundling order.	The bundling order and any associated subscriptions will be canceled after this date.
Media Type	The type of media on which the granules will be stored.	The bundle of granules will be delivered in this format.
Email Address	User's email notification.	Notification will be sent to this address when the bundle is complete.
User String	An optional string associated with the bundling order.	This string will be included in the email notification. It is also used as a secondary identifier when listing bundling orders to associate with a subscription.
Distribution Priority	The priority level associated with the distribution of the order.	Defaults to the priority found in the user profile.
Street1	Street address where media is to be shipped.	Shipping information is required for physical media distributions.
Street2	A continuation of the Street1 field.	Shipping information is required for physical media distributions.
Street3	A continuation of the Street2 field.	Shipping information is required for physical media distributions.
City	City where media is to be shipped.	Shipping information is required for physical media distributions.
State	State where media is to be shipped.	Shipping information is required for physical media distributions.
Country	Country where media is to be shipped.	Shipping information is required for physical media distributions.
Zip Code	The zip code for the shipping address.	Shipping information is required for physical media distributions.
Phone Number	Phone number of recipient.	Shipping information is required for physical media distributions.
FAX Number	FAX number of recipient.	Shipping information is required for physical media distributions.
FTP Username	For an FTP Push, the user login name to be used.	Required for FTP Push distributions.
FTP Host	For an FTP Push, the hostname to be used.	Required for FTP Push distributions
FTP Password	For an FTP Push, the password for the user/host.	Required for FTP Push distributions
Retype Password	Same as FTP password.	The password is typed twice for validation purposes.

Table 4.7.2.8-1. Field Descriptions for the Bundling Order Screens (2 of 2)

Field Name	Description	When and Why to Use
FTP Directory	For an FTP Push, the directory on the host where the data is to be pushed.	Required for FTP Push distributions
Minimum Bundle Size (GB)	The minimum total size of all granules before the bundle can be considered complete.	See the Order Manager design documentation for further details.
Minimum Granule Count	The minimum number of individual granules before the bundle can be considered complete.	See the Order Manager design documentation for further details
Maximum Bundle Age (days)	The maximum length of time that any granule can remain in the bundle before the bundle is considered complete.	See the Order Manager design documentation for further details

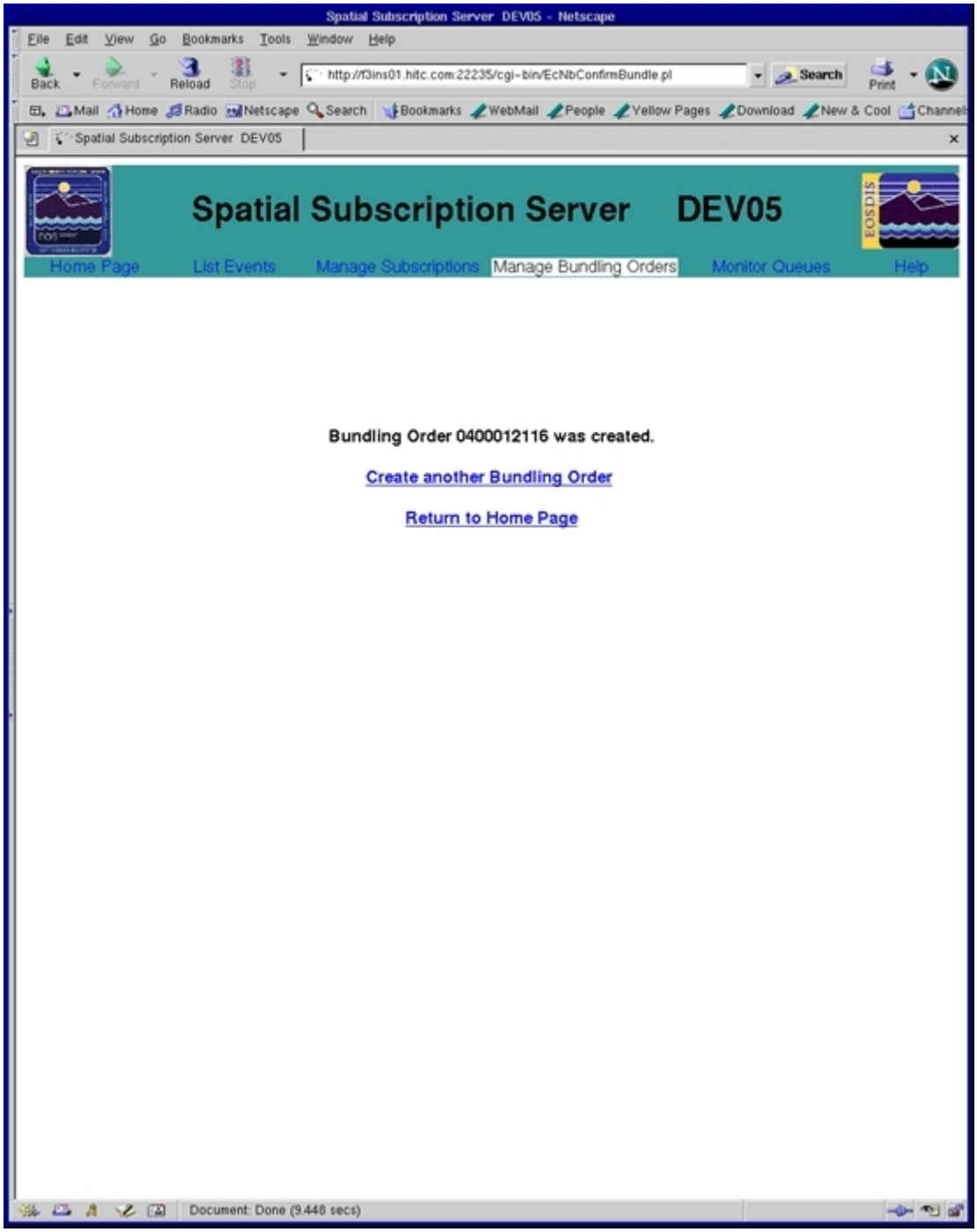


Figure 4.7.2.8-5. Successful Results for Bundling Order. This Screen is Only Accessible to Full Capability Operator.

Limited Capability Users

Limited Capability users cannot use this functionality**.**

4.7.2.9 View Bundling Order

The View Bundling Order screen shown in Figure 4.7.2.9-1 allows the operator to view the details of a particular bundling order.

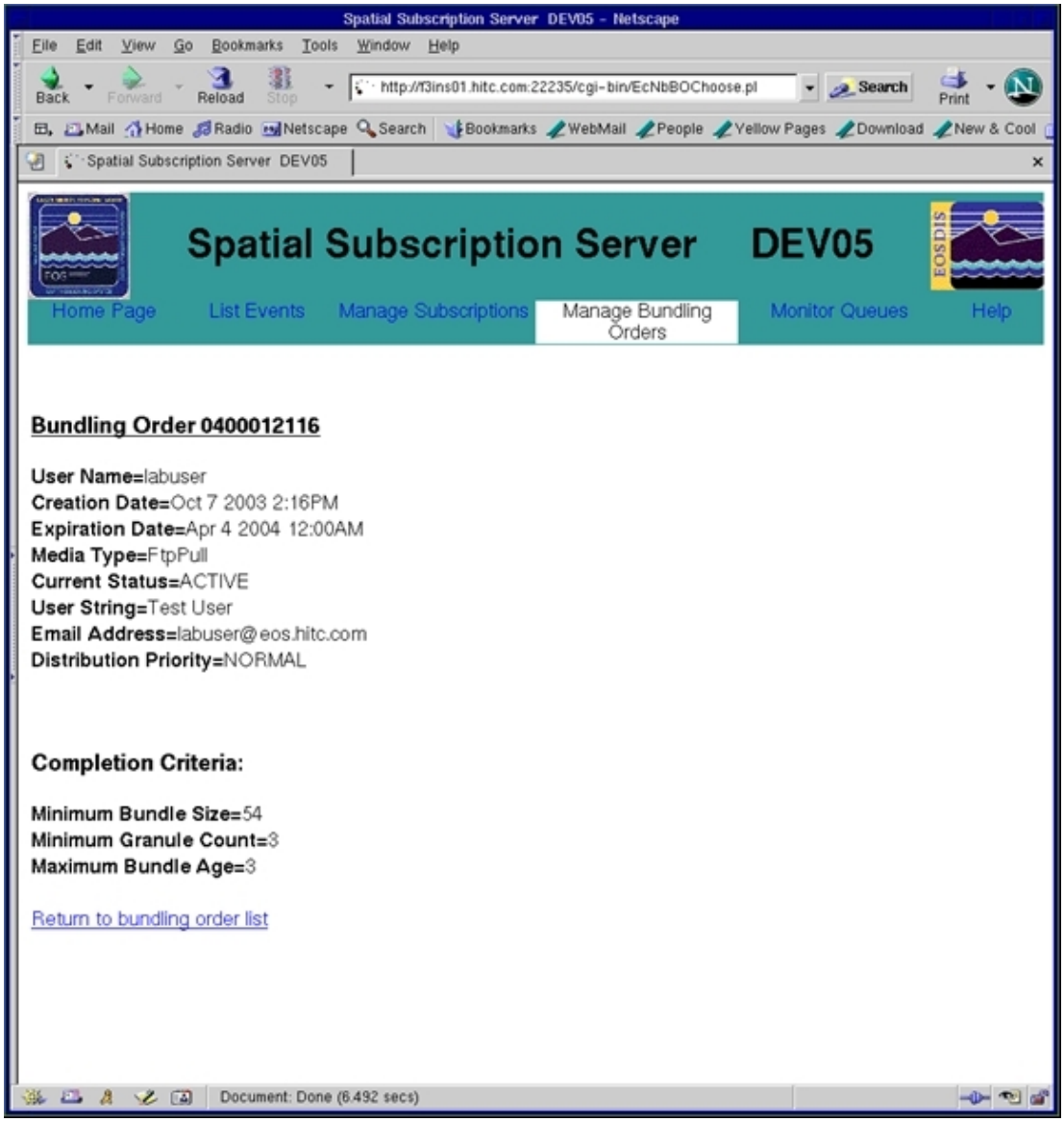


Figure 4.7.2.9-1. Bundling Order Detailed Information

Note: From this screen, the operator may choose to return to the list of bundling orders.

4.7.2.10 Update Bundling Order

The Update Bundling Order screen shown in Figure 4.7.2.10-1 allows the operator to update an existing bundling order. There are two screens involved. In the first screen (Figure 4.7.2.10-1), the user selects the physical media type for the order selected. Based on the media type, a second screen is displayed (Figure 4.7.2.10-2). Figures 4.7.2.10-3 and 4.7.2.10-4 show the specific screen provided when media types FTPPULL and FTPPUSH, respectively, are identified.

When the applicable update bundling order information has been entered, the operator clicks the Update Bundling Order button. The screen in Figure 4.7.2.10-5 is displayed when the result is successful.

Please note that **Update Bundling Order** functionality is only available to full Capability Operators.

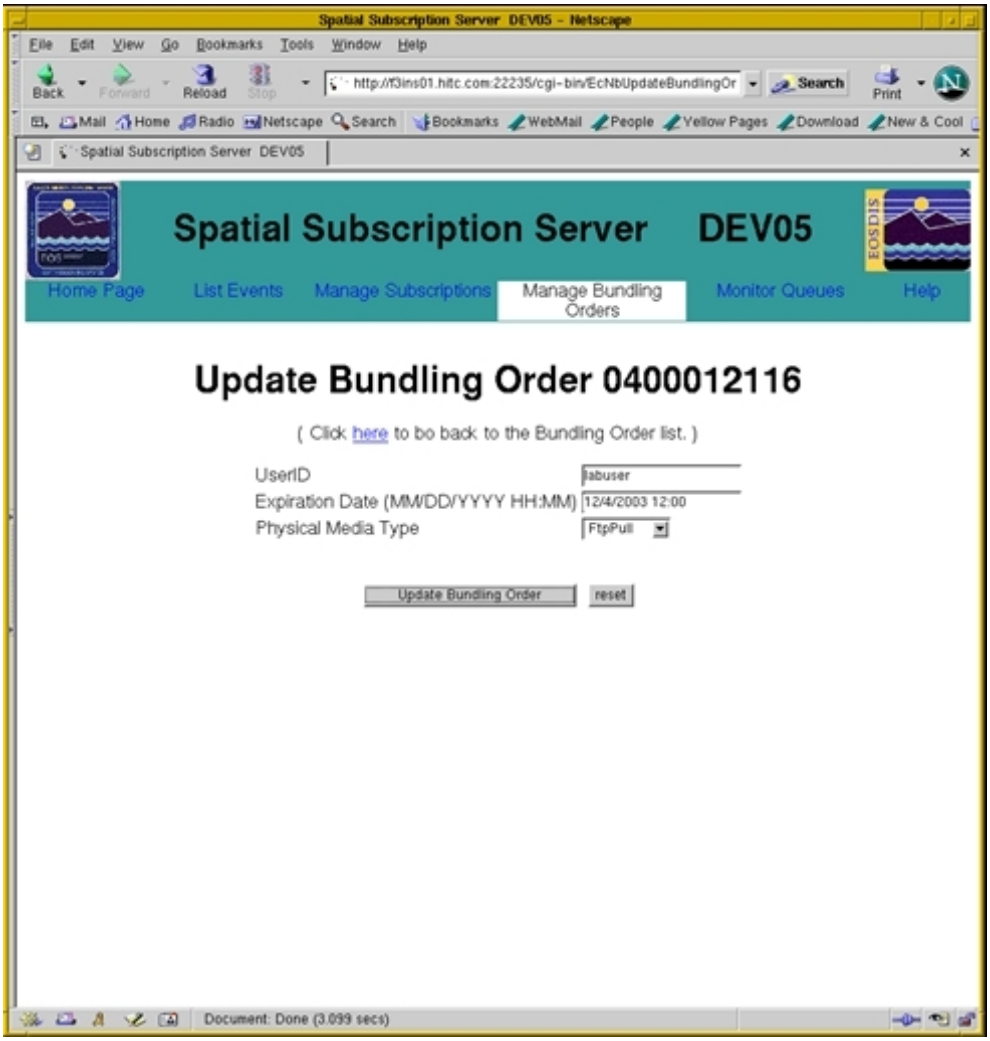


Figure 4.7.2.10-1. Update Existing Bundling Order (Part 1). This Screen is Only Accessible to Full Capability Operator.

Limited Capability Users

Limited Capability users cannot use this functionality.

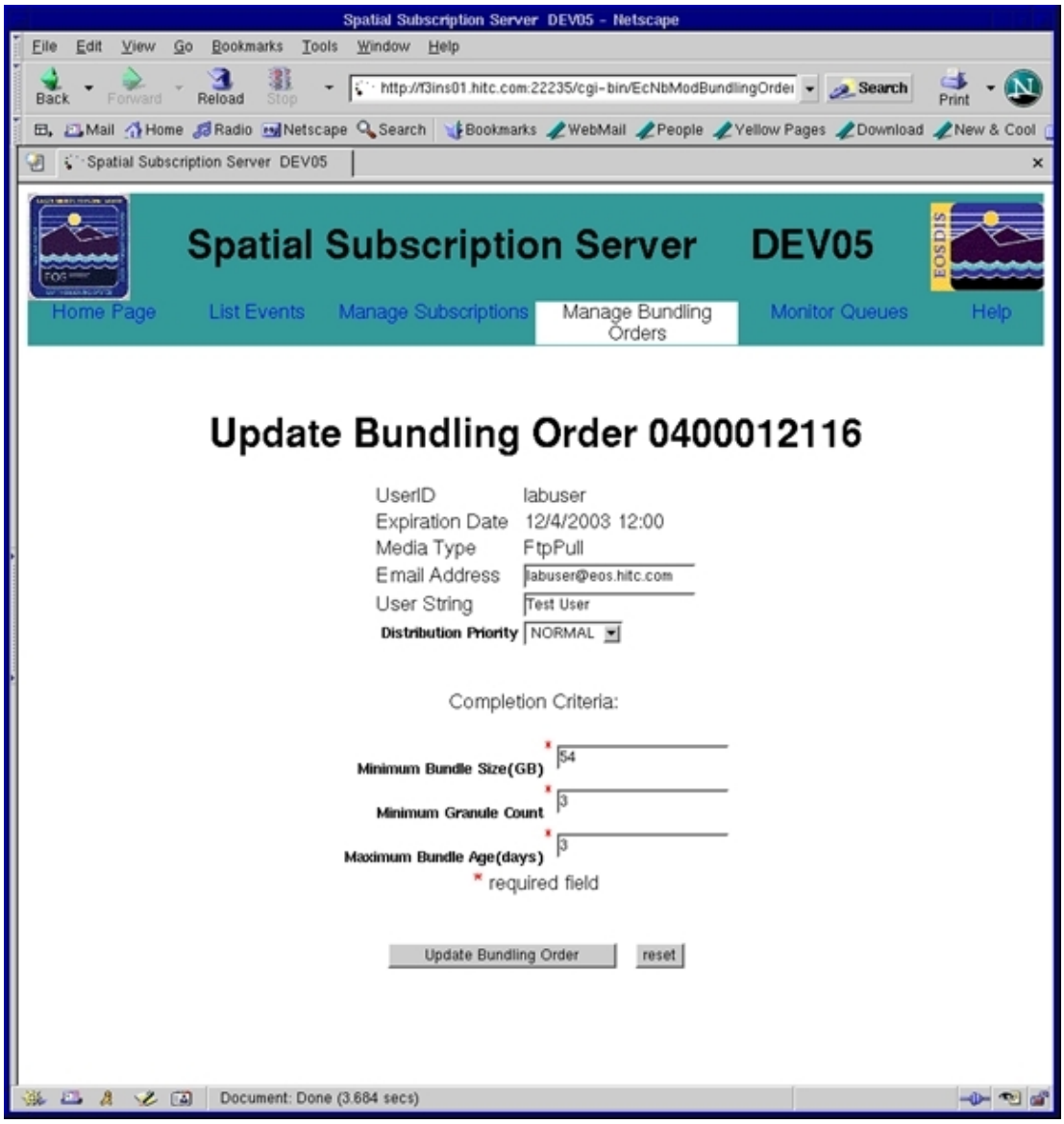


Figure 4.7.2.10-2. Update Existing Bundling Order (Part 2). This Screen is Only Accessible to Full Capability Operator.

Limited Capability Users

Limited Capability users cannot use this functionality.

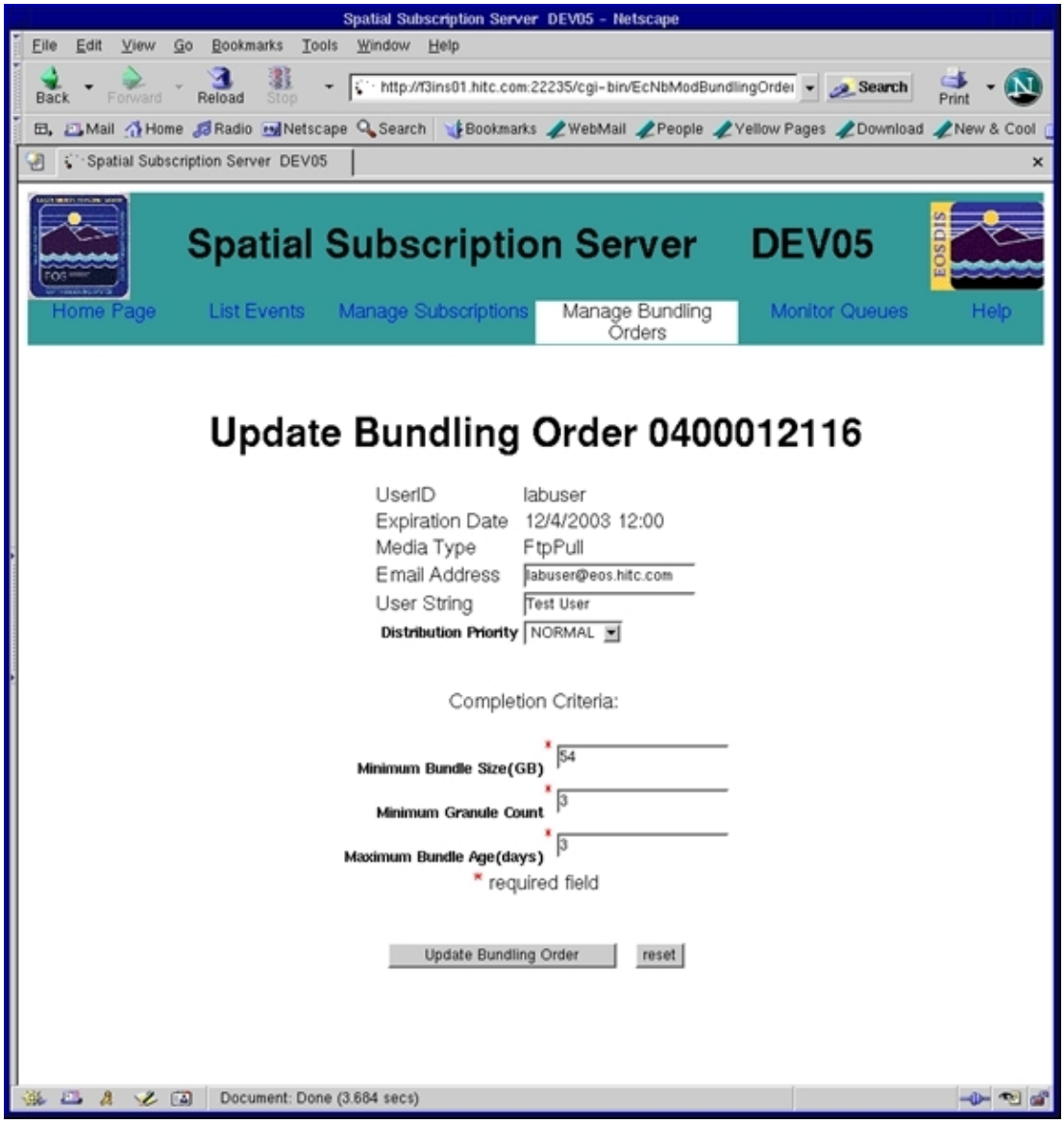


Figure 4.7.2.10-3. Update Existing Bundling Order (Media Type is FTP PULL). This Screen is Only Accessible to Full Capability Operator.

Limited Capability Users

Limited Capability users cannot use this functionality**.**

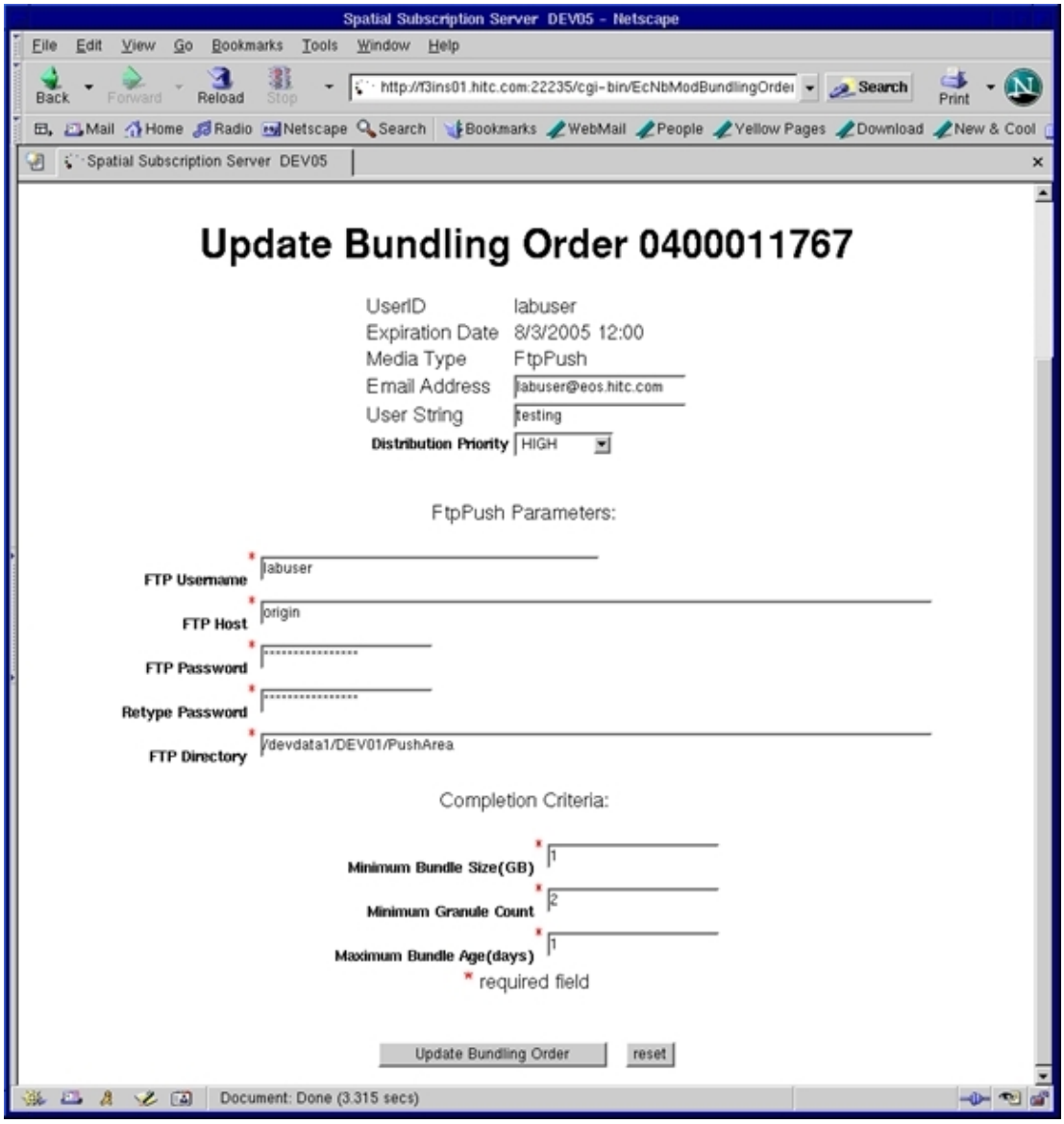


Figure 4.7.2.10-4. Update Existing Bundling Order (Media Type is FTP PUSH). This Screen is Only Accessible to Full Capability Operator.

Limited Capability Users

Limited Capability users cannot use this functionality**.**

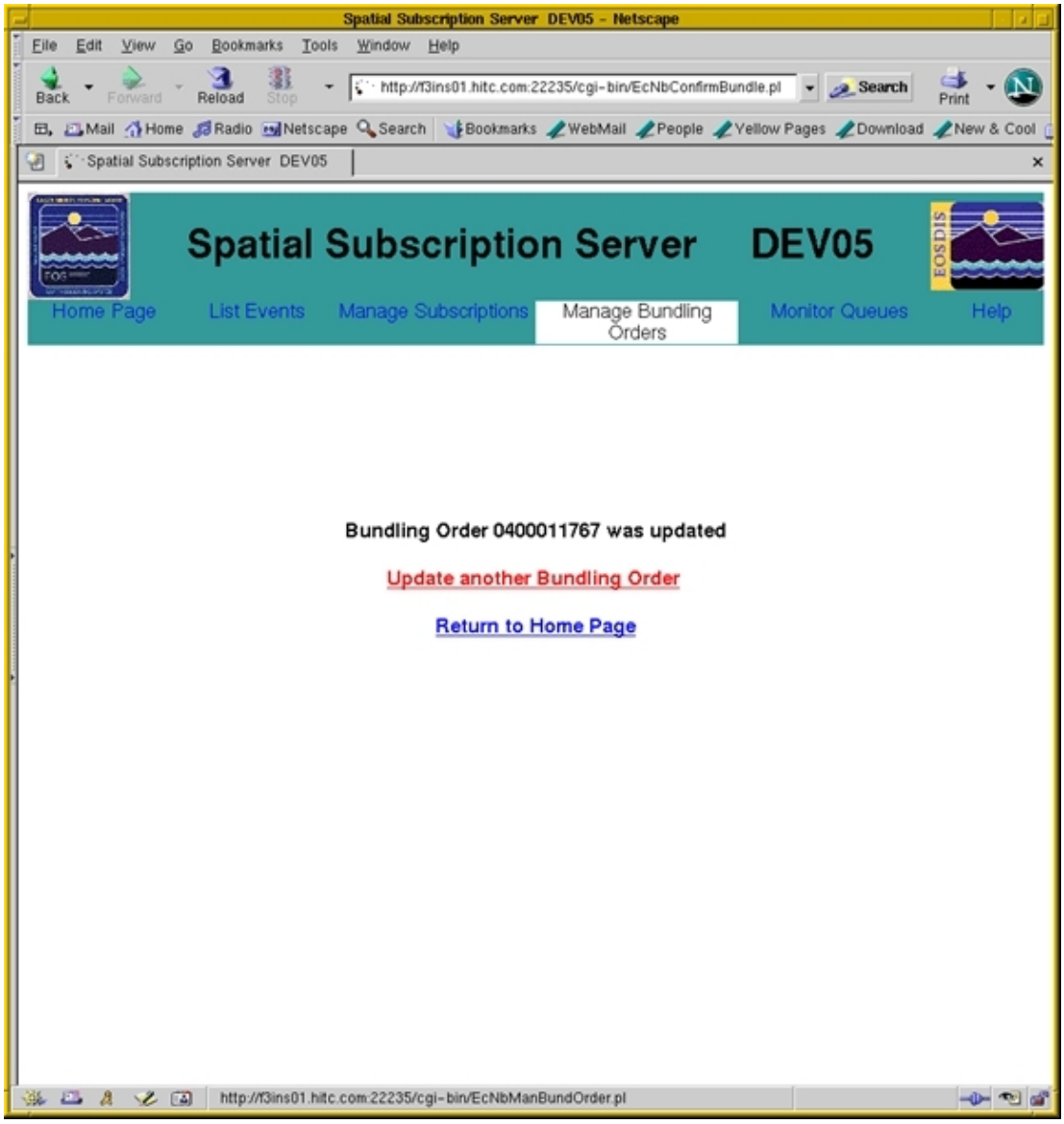


Figure 4.7.2.10-5. Update Existing Bundling Order (Successful Update). This Screen is Only Accessible to Full Capability Operators.

Limited Capability Users

Limited Capability users cannot use this functionality**.**

4.7.2.11 Cancel Bundling Order

The Cancel Bundling Order screen shown in Figure 4.7.2.11-1 requests confirmation from the operator when the cancel option has been selected. If the operator selects **Yes,** the screen in Figure 4.7.2.11-2 is displayed if the cancellation was successful.

Please note Cancel Bundling Order functionality is only available to full capability Operators.

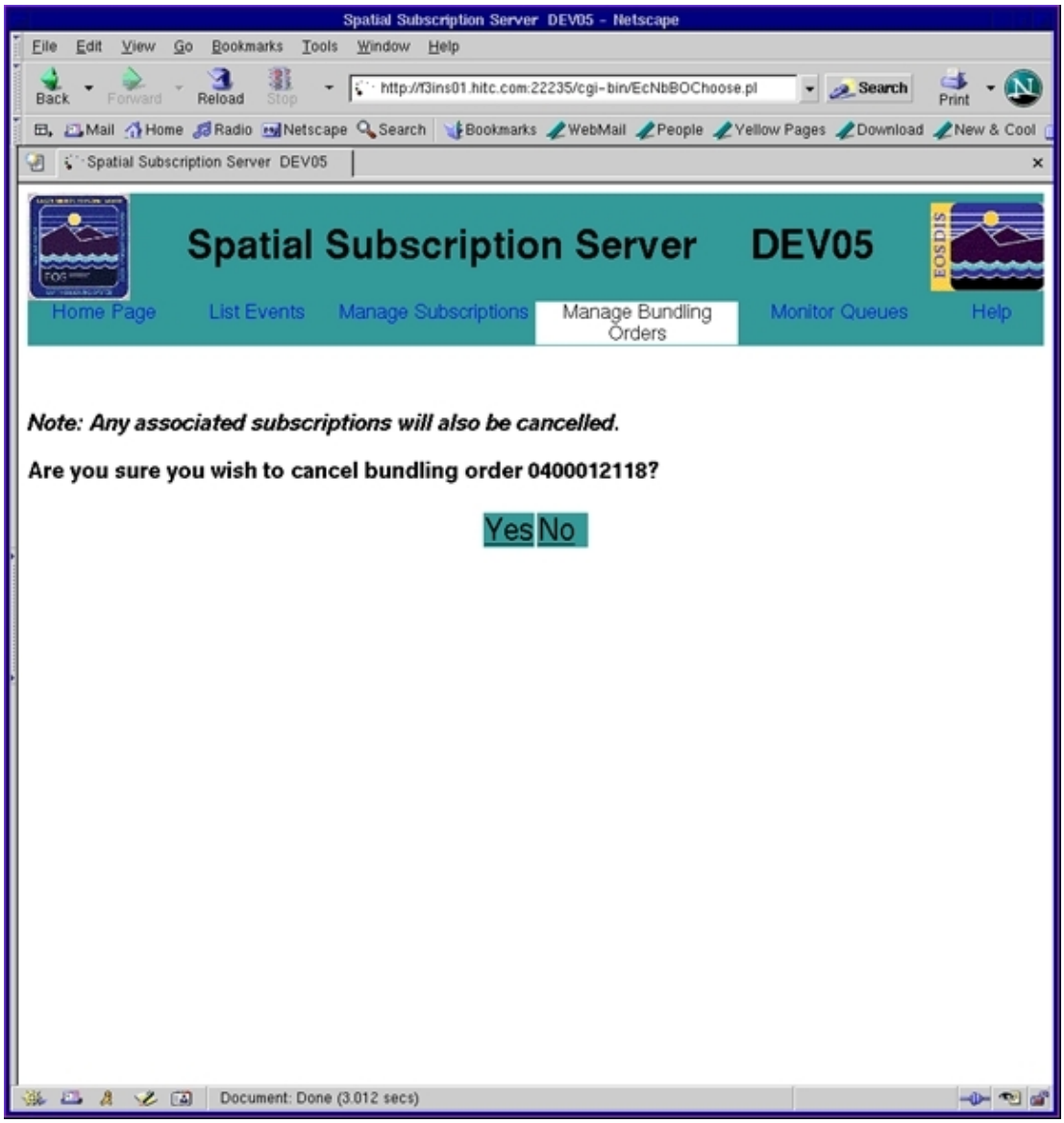


Figure 4.7.2.11-1. Cancel Bundling Order Request. This Screen is Only Accessible to Full Capability Operator.

Limited Capability Users

Limited Capability users cannot use this functionality**.**

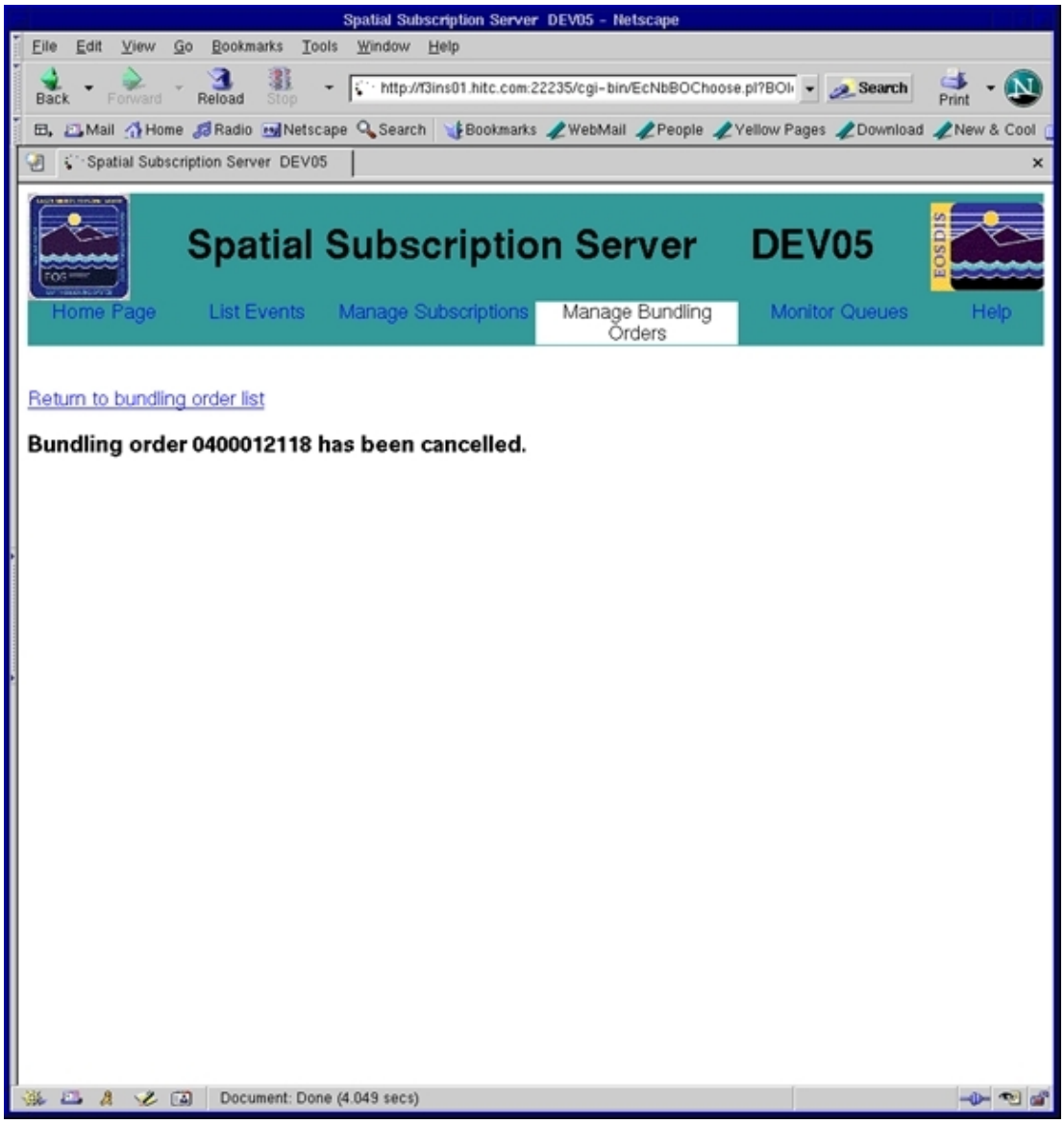


Figure 4.7.2.11-2. Cancel Bundling Order (Successful Cancellation). This Screen is Only Accessible to Full Capability Operators.

4.7.2.12 List Subscriptions Associated with Bundling Order

The list subscriptions screen shown in Figure 4.7.2.12-1 Lists the subscriptions associated with a bundling Order. Note that selecting "**View**" or "**Update**" or "**Cancel**" button and clicking on "**Apply**" would provide similar functionality as in Section 4.7.2.4.

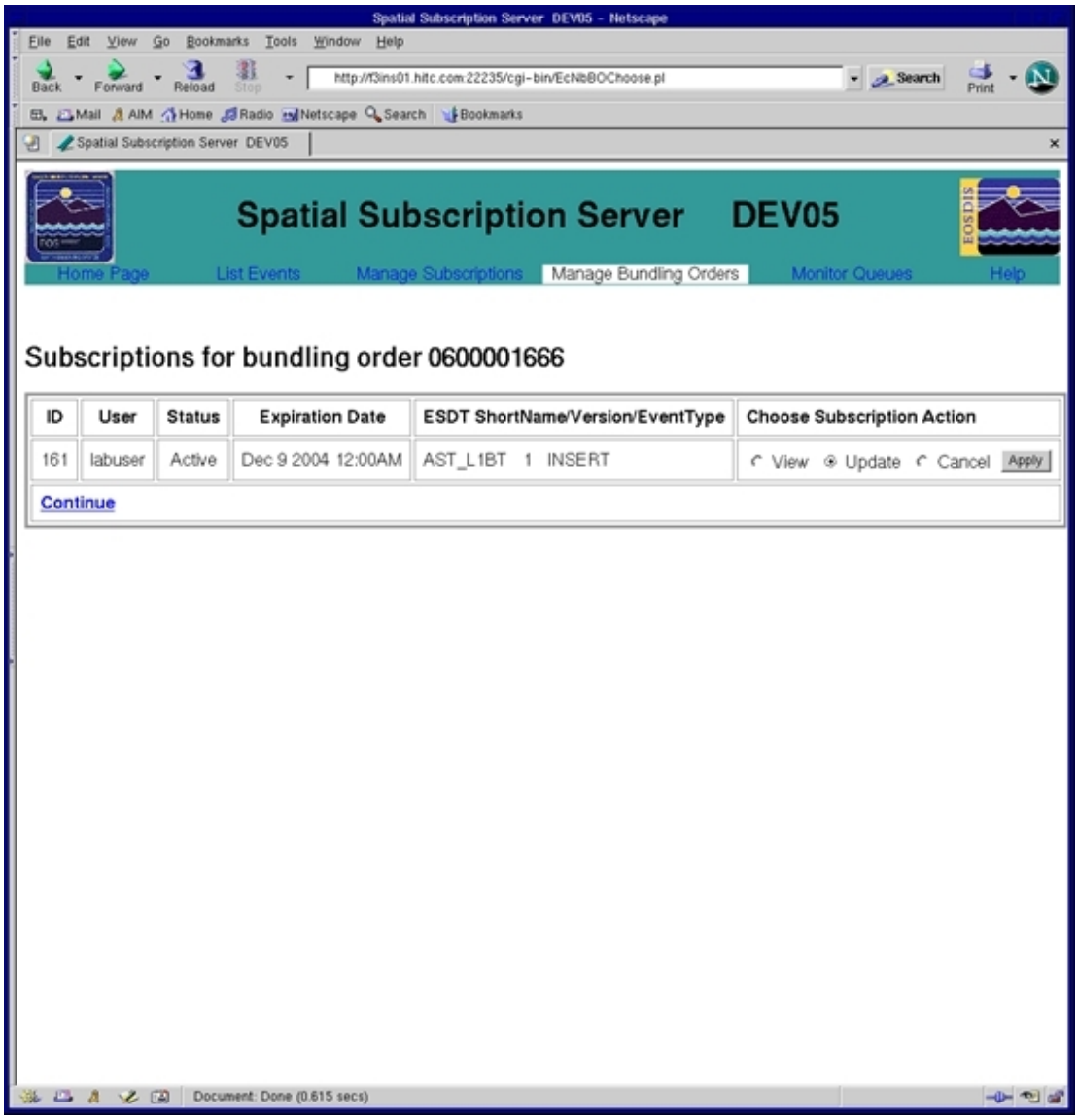


Figure 4.7.2.12-1. List Subscriptions Associated with a Bundling Order

4.7.2.13 Monitor Queues Tab

When the operator selects the Monitor Queues tab, the List Action Queue page (see Section 4.7.2.14) will be displayed by default. From this page, the operator can view production statistics by selecting the List Statistics tab.

4.7.2.14 List Action Queue tab

The List Action Queue screen shown in Figure 4.7.2.14-1 allows the operator to view the Acquire and E-Mail Notification actions that are being processed. The operator can sort the list by Action Type and Subscription Id by clicking on the **Action Type** or **Subscription Id** link. The operator can also filter the list by any combination of **Action Type**, **Subscription** and **Status**. After selecting the filtering criteria from the pull-down list(s), click on the **Filter** button.

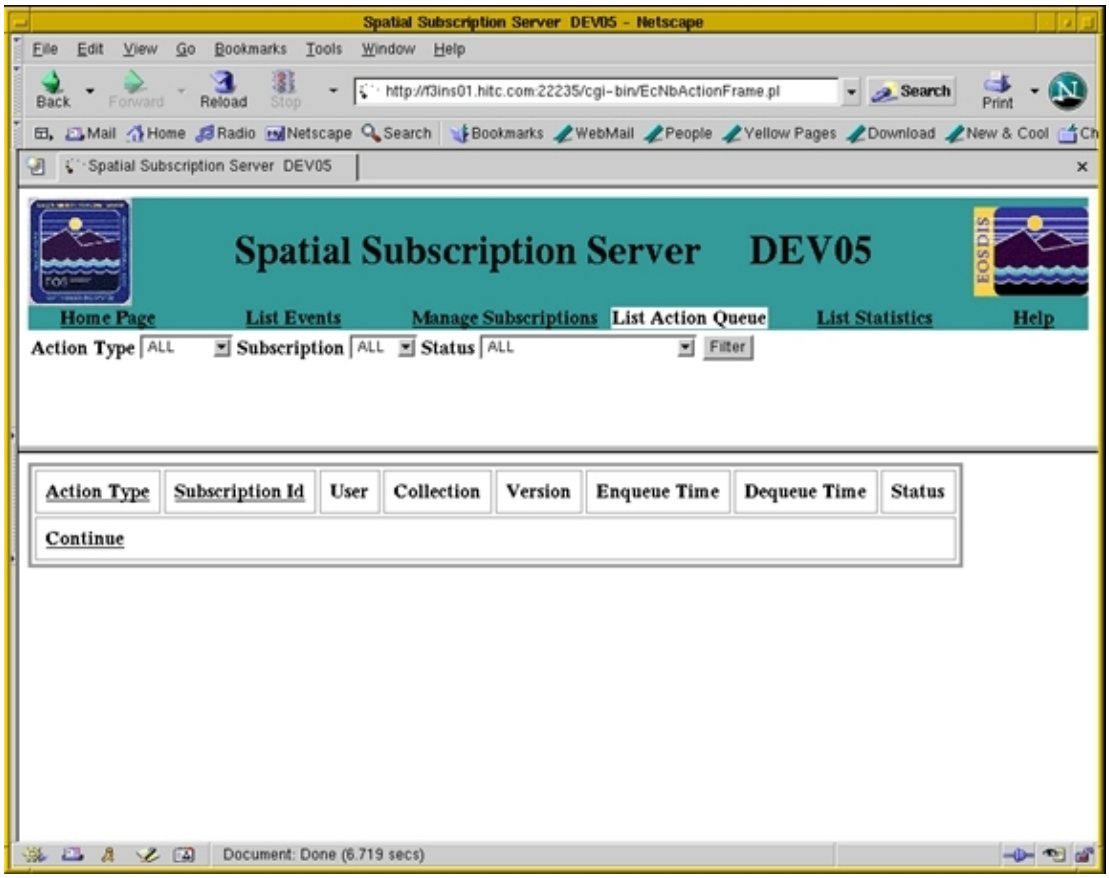


Figure 4.7.2.14-1. List Action Queue (Acquire and E-mail Notifications)

4.7.2.15 List Statistics Tab

The List Statistics screen shown in Figure 4.7.2.15-1 allows the operator to view the statistics relating to subscribed events and matched subscriptions. Note that the statistics are based only on data in the NBSRV database at the time the GUI page is displayed. The subscription statistics

are retained in the NBSRV database only until they are cleaned up by the Deletion Driver. The Deletion Driver runs periodically at an interval specified in its configuration parameters.

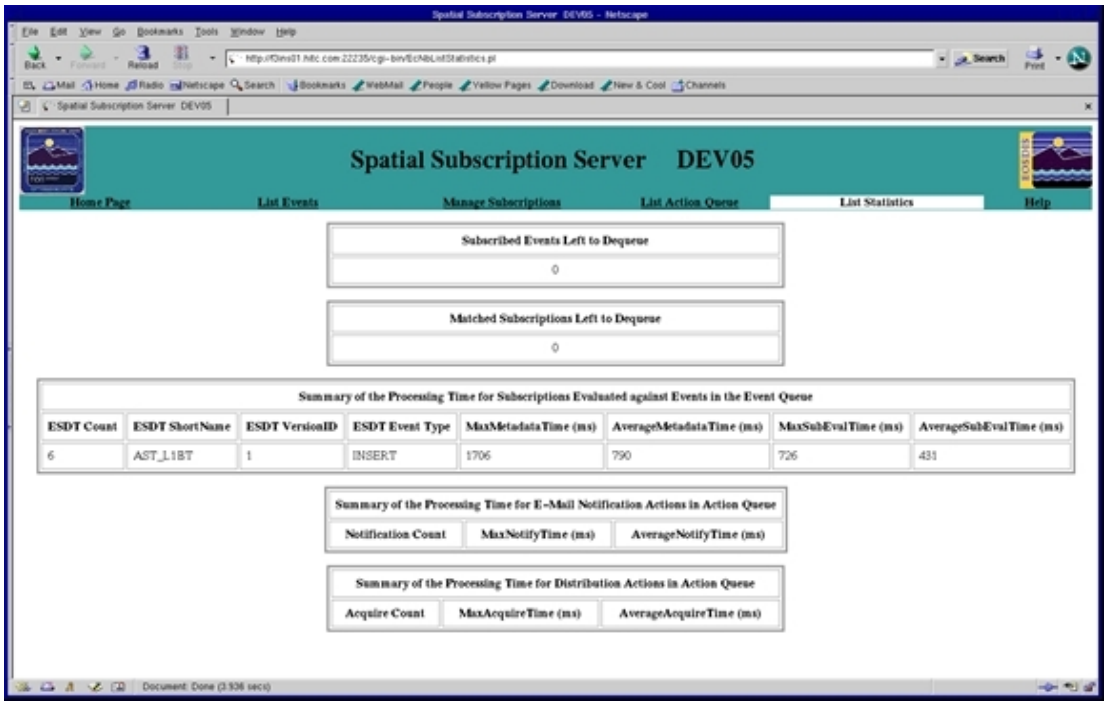


Figure 4.7.2.15-1. List Statistics Screen

Note: This screen will allow the operator to view statistics relating to subscribed events and matched subscriptions. The statistics will also reflect the processing time for e-mail notification and distribution actions.

4.7.2.16 List Failed Actions

Figure 4.7.2.16-1 displays failed actions present within the system. Figure 4.7.2.16-2 shows the screen displayed on clicking on "**Remove Action**".

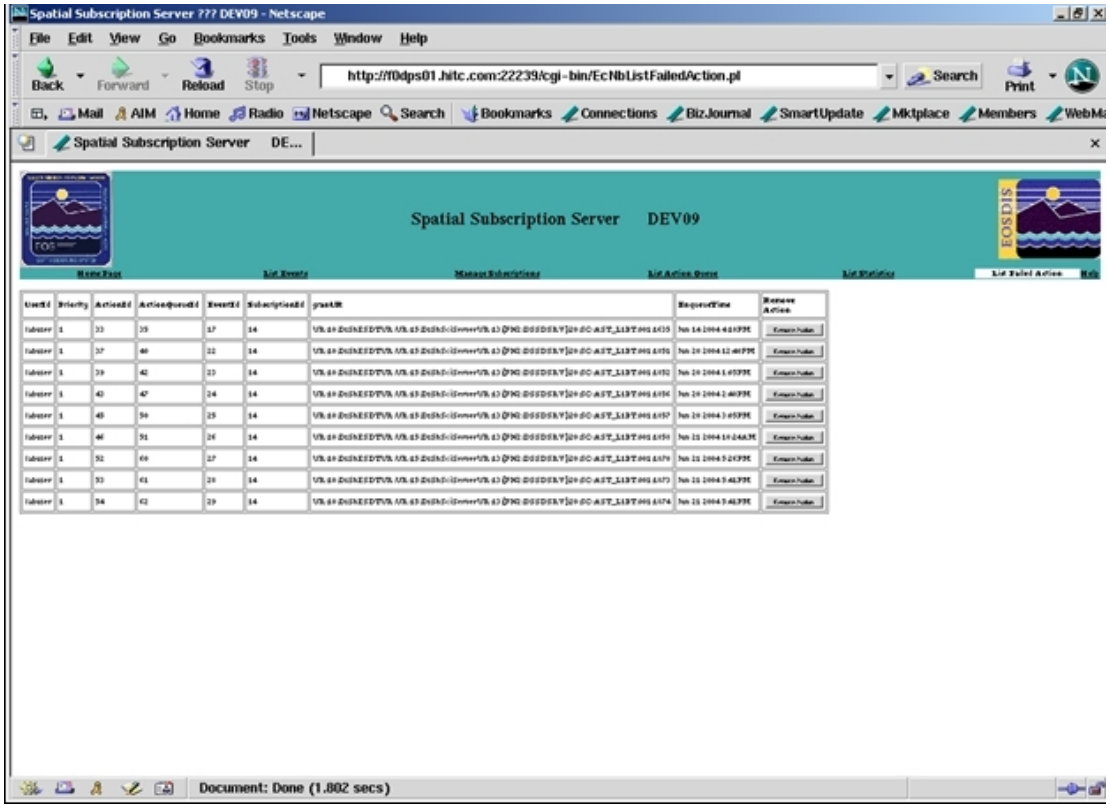


Figure 4.7.2.16-1. List of Failed Actions

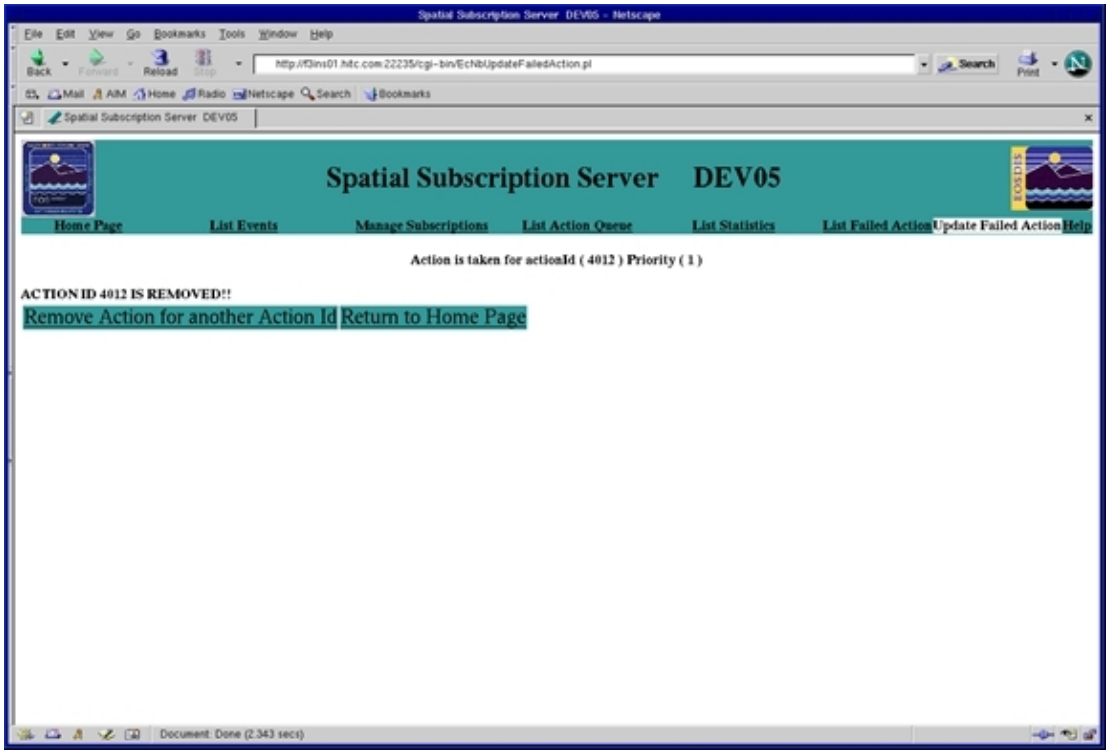


Figure 4.7.2.16-2. Removing a Failed Action

4.7.2.17 Security Considerations

With Security Enabled, Figure 4.7.2.17-1 is displayed anytime a user logs in for the first time. On selecting the End Session tab on NBSRV.html page, Figure 4.7.2.17-2 is displayed. Clicking on the ShutDown button in Figure 4.7.2.17-2 closes the Browser.

The session time out page shown in Figure 4.7.2.17-3 is displayed anytime a user session times out. Note that session time out is part of the security feature.

After a session times out and an invalid password is entered by the Operator, page shown in Figure 4.7.2.17-4 is displayed.

For a user attempting to access SSS GUI using a non certified browser, the page shown in Figure4.7.2.17-5 is displayed.

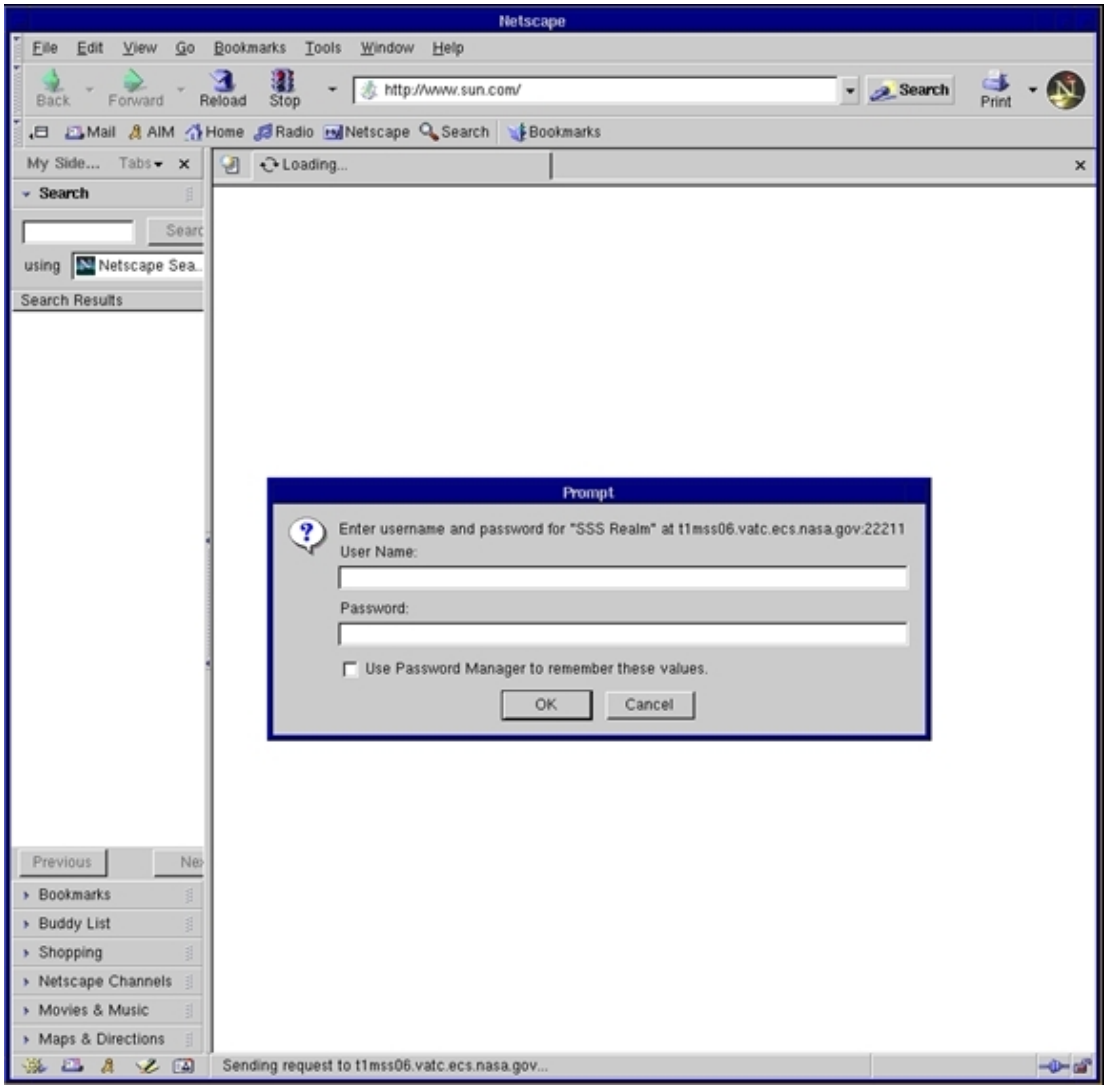


Figure 4.7.2.17-1. Login Dialog Box

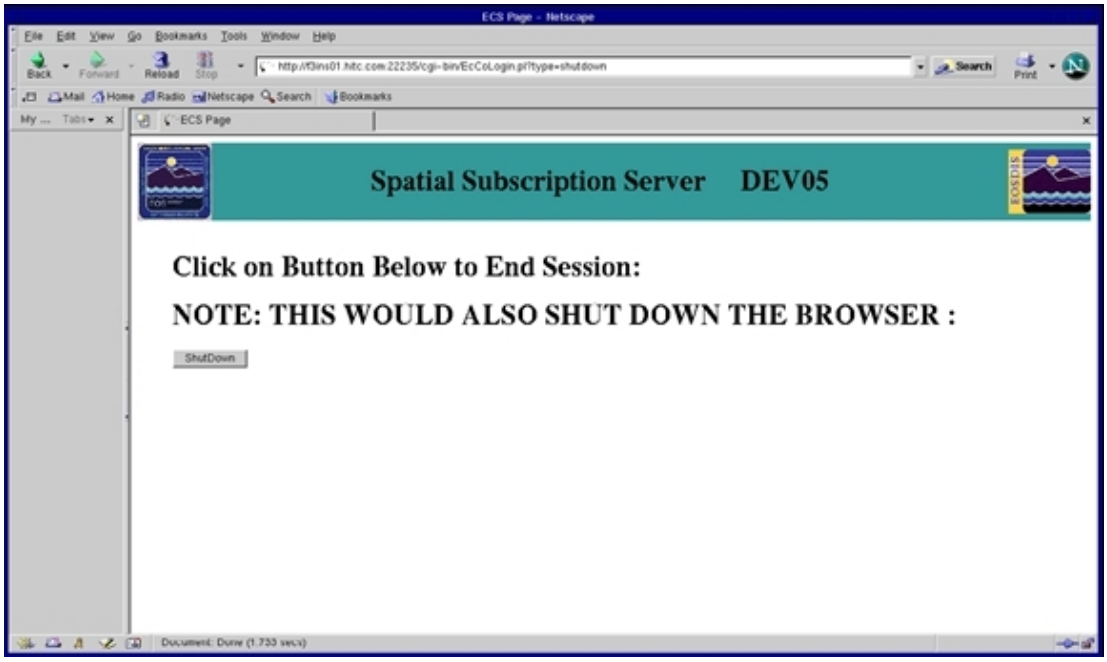


Figure 4.7.2.17-2. Shut Down Page

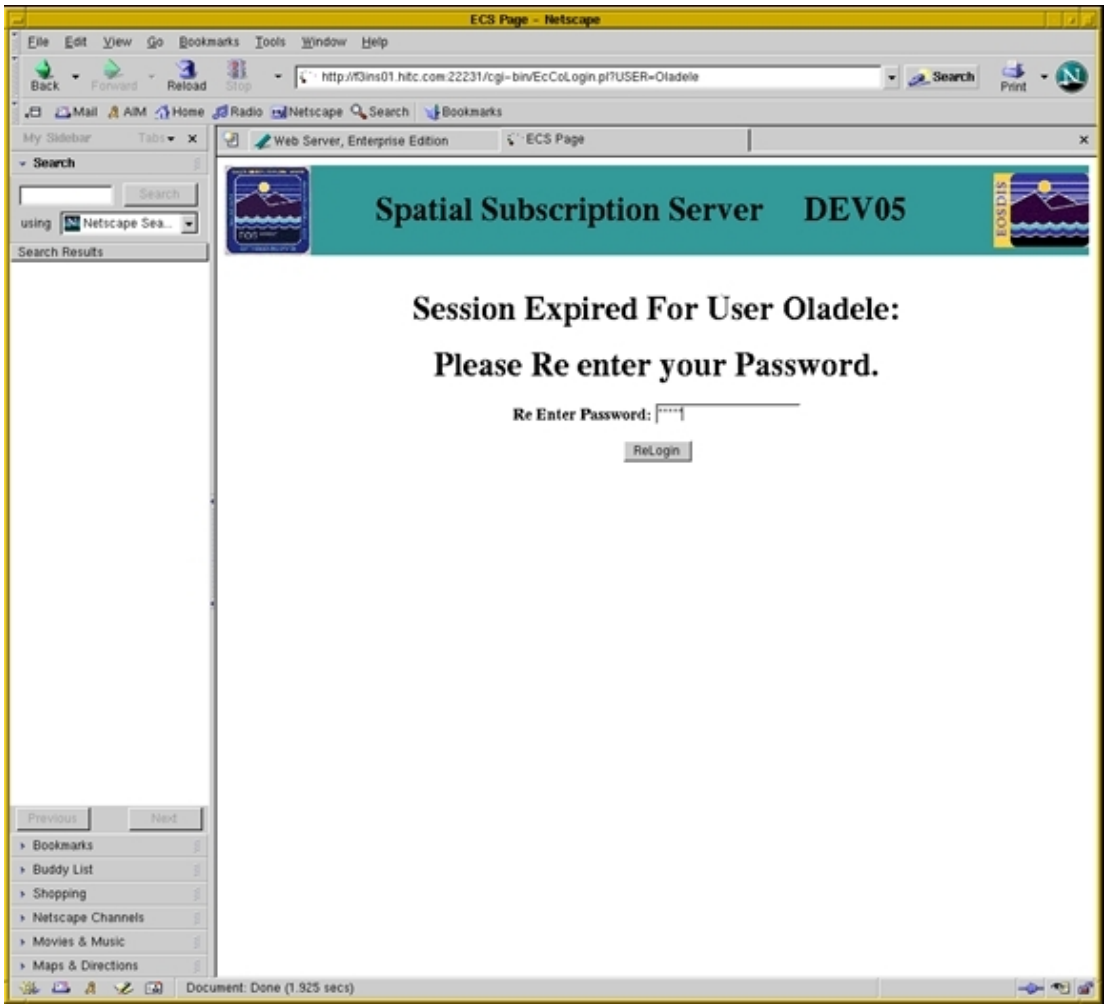


Figure 4.7.2.17-3. Session Timed-Out Page

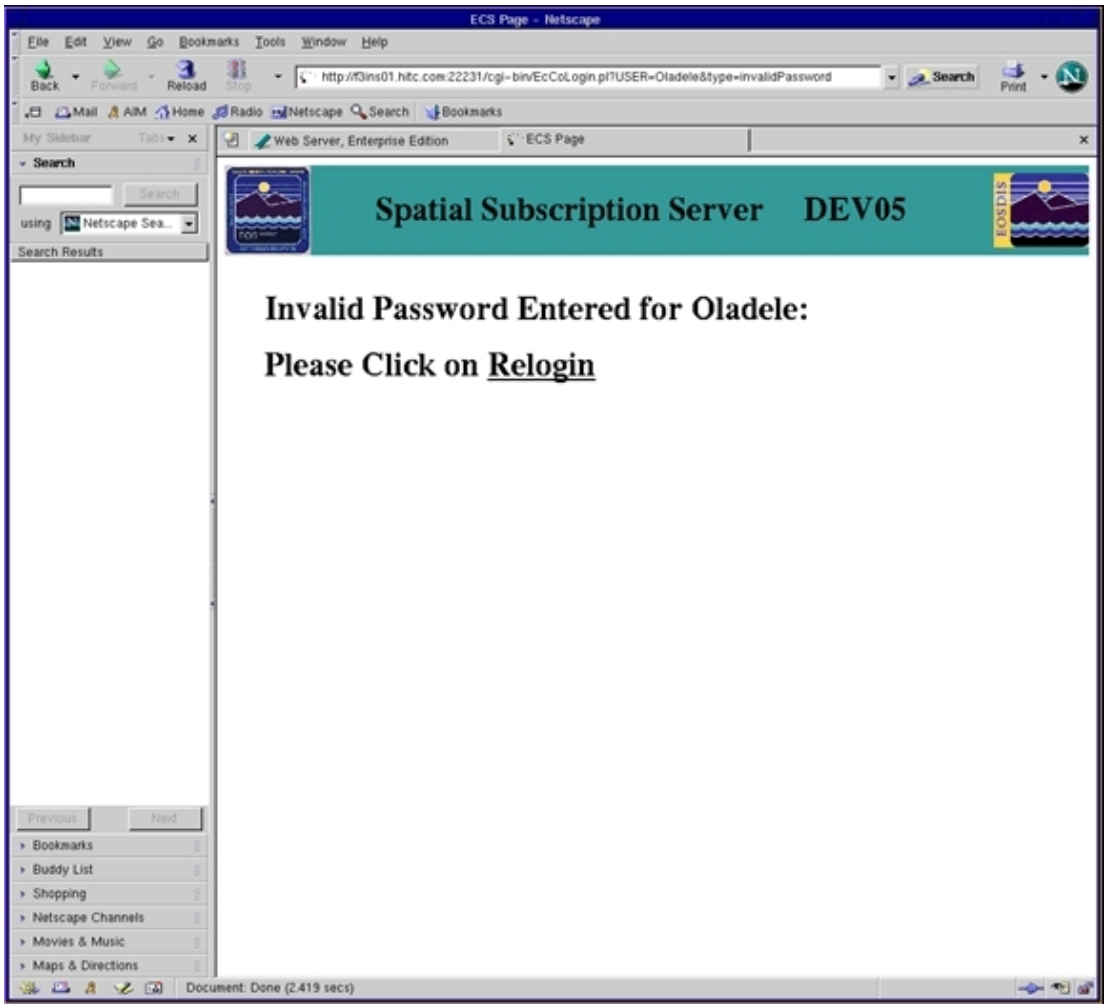


Figure 4.7.2.17-4. Invalid Password Entered by Operator

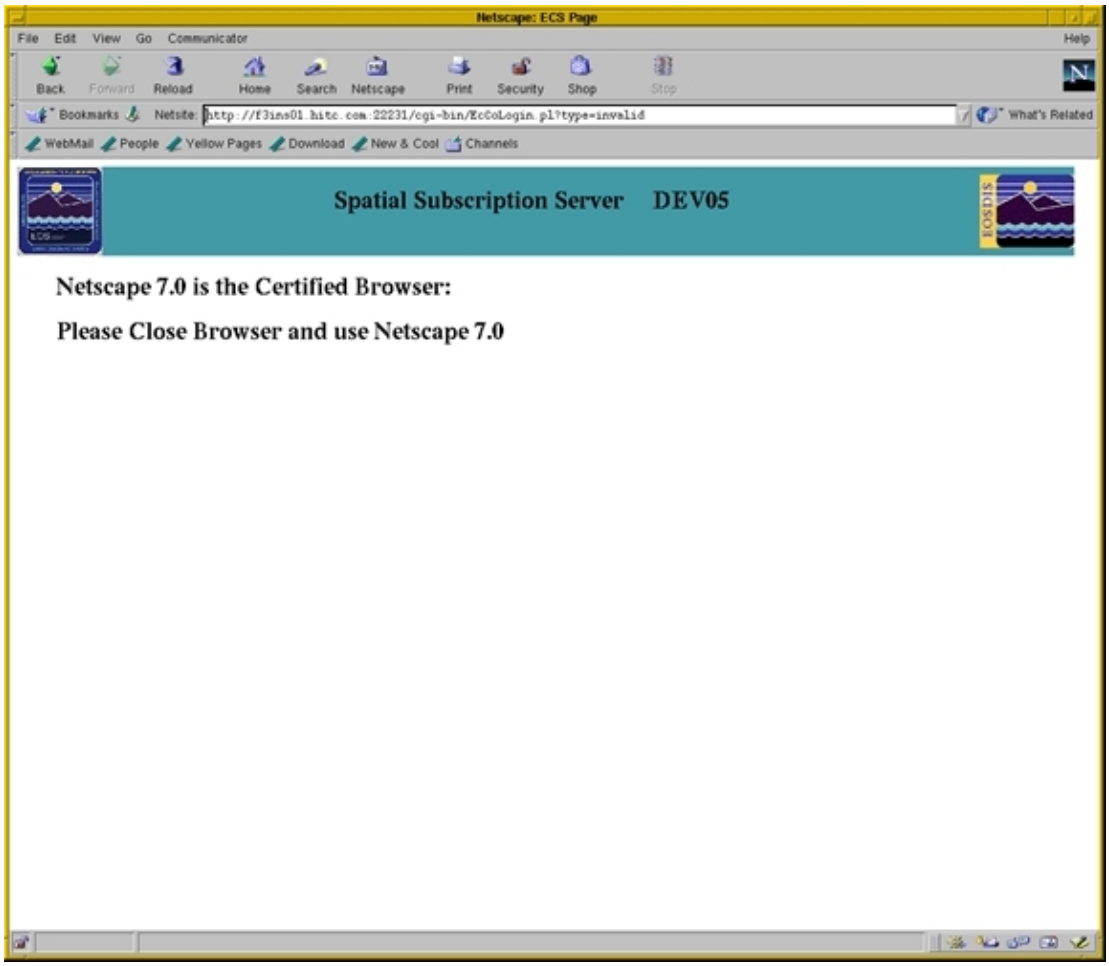


Figure 4.7.2.17-5. Invalid Client Browser

4.7.2.18 Required Operating Environment

This following environment is required for the NBSRV GUI to work properly.

- O/S requirements are Linux 2.x.

4.7.2.19 Interfaces and Data types

The NBSRV GUI exchanges data between the Web Browser and PostgreSQL using Perl CGI and DBI Modules for the interface.

4.7.2.20 Databases

The NBSRV GUI accesses the NBSRV, Inventory, DataPool, OMS, and MSS databases.

4.7.2.21 Special Constraints

There are no special constraints to running the NBSRV GUI.

4.7.2.22 Outputs

There are no outputs from the NBSRV GUI except for status and error messages.

4.7.2.23 Events and Messages

The NBSRV GUI issues client side validation errors when adding or modifying a subscription. If the operator does not correct the validation errors the subscription will be rejected when the operator attempts to add or update the subscription. The NBSRV GUI writes status and error messages to the EcNbGUI.log file in the directory /usr/ecs/<MODE>/CUSTOM/logs.

4.7.2.24 Reports

The NBSRV GUI does not generate reports.

This page intentionally left blank.

4.7.3 Spatial Subscription Server Command Line Interface

The Spatial Subscription Server (SSS) Command Line Interface (CLI) allows the user to add a new subscription, delete a subscription, update a subscription, view a subscription, or batch update subscriptions without using a GUI. The details of the subscription are contained in a text file.

The CLI is installed in the utilities directory for each mode. You must go to the appropriate mode directory to access the correct database for a particular mode.

4.7.3.1 Quick Start Using Spatial Subscription Server Command Line Interface

To execute the CLI, run the script EcNbSubscriptionCLIStart.

For Add, Delete, Update and View, this script takes three parameters: (1) the mode, (2) the function (Add, Delete, Update and View), and (3) a third parameter, which depends on the function in (2).

If the function selected was Delete or View, the third parameter must be the subscription number to be deleted or viewed. If the function selected was Add or Update, the third parameter must be the name of the text file containing the subscription information. This file is assumed to reside in the current directory unless expressed as a qualified pathname.

For BatchUpdate, this script takes four parameters: (1) the mode, (2) the function (BatchUpdate), (3) the match file, which contains "NAME=value" pair(s) that define the search criteria for subscriptions to be updated (this is an "AND" relationship), and (4) the update file, which contains "NAME=value" pair(s) that will replace the existing values associated with matching subscriptions.

4.7.3.1.1 Invoking Spatial Subscription Server from the Command Line Interface

The Spatial Subscription Server Command Line Interface (CLI) allows the user to add a new subscription, delete a subscription, update a subscription, view a subscription, or batch update a set of subscriptions without using a GUI.

To execute the Spatial Subscription Server from the command line interface (Add, Delete, Update, View):

EcNbSubscriptionCLIStart <mode> <function> <function dependent parameter>

Examples:

```
EcNbSubscriptionCLIStart   OPS   Add      MyNewSubscription.txt
EcNbSubscriptionCLIStart   TS1   Delete   5199
EcNbSubscriptionCLIStart   TS2   Update   /home/daacUser/MyOldSubscription.txt
EcNbSubscriptionCLIStart   OPS   View     2355
```

To execute the Spatial Subscription Server from the command line interface (BatchUpdate):

EcNbSubscriptionCLIStart <mode> <function> <matchfile> <updatefile>

Example:

```
EcNbSubscriptionCLIStar   OPS   BatchUpdate   matchFile   updateFile
```

Notes:

1. When adding a subscription, a new subscription number is assigned and returned as output to stdout.
2. When deleting a subscription, the user is prompted to confirm the delete.
3. When updating a subscription, the number of the subscription to be updated must appear within the text file containing the subscription data.
4. When viewing a subscription, the output appears in a new file called sub.*nnn*.txt, where *nnn* refers to the subscription number. This file is created in the current directory.
5. To save on typing when adding a subscription, it is helpful to start by viewing a subscription similar to the one being added, edit the resulting text file, and then submit that file as input to the Add command.
6. Prior to updating a subscription, always view the subscription first and then make your changes in the resulting text file, submitting it as input to the Update command.
7. Physical media distributions for subscriptions are now supported through the use of bundling orders. The simplest way to do this is to create a bundling order via the GUI and then "bundle" the subscription by specifying the bundling order ID (see table below). Alternatively, if a bundling order ID is not specified for a physical media distribution, a bundling order is automatically created for the subscription; however, in this case, all of the required information for the bundling order (such as shipping information) must be specified in the input file for the subscription.
8. If the user updates a bundled subscription without altering the bundling order ID, the bundling order is updated along with the subscription.
9. When batch updating a set of subscriptions, all matching subscription IDs will be displayed on the screen. After viewing all the subscription ids, the user is prompted to confirm whether or not to save the details of the matched subscriptions into a file. The user can choose his own output file name. If the user does not enter anything, then the default file name "matchSub.txt" will be used. Using the saved output file (matchSub.txt) as a reference, the user can always change the values back if any subscriptions are mistakenly updated.
10. When batch updating subscriptions, the user is prompted to confirm or abort the batch update after reviewing the set of matched subscriptions retrieved.
11. The user can batch update granule collections by batch updating the granule version ID.
12. The user can batch delete granules by batch updating the status to "Canceled". The Spatial Subscription Server deletion driver will remove all the canceled subscriptions from the database after a configured amount of time.
13. For batch updating subscriptions, the name and value pairs of the form "NAME=value" (one per line both in matchfile and updatefile) must be chosen from the list in Table 4.7.3-2 TextFile Contents (BatchUpdate List).Otherwise, an error will be raised and the match/update parameter function will not work for the unsupported "NAME"s.

14. For batch update, the granule start date and granule end date, if used, must always appear together in the match file or update file. If either is used without the other, the SSS CLI will raise an error and will not process the batch update.

There is a log file called EcNbSubscriptionCLI.log in the logs directory for each mode. If your command did not appear to succeed, be sure to check the log file to see what went wrong.

The text file generated by the View command, or used as input to the Add or Update commands, consists of several lines of name and values pairs of the form "NAME=value", one per line. If you wish to introduce comments into your text file, you may do so by starting the line for the comment with the "#" character.

Table 4.7.3-1 shows all possibilities for rows in the text file. This table is intended for reference only. If you have never entered a subscription before, it is recommended that you start by entering a few subscriptions using the GUI. Then use the View command of the CLI to generate text files for these subscriptions. Modify these text files to serve as input for adding or updating subscriptions.

Table 4.7.3-2 shows all possibilities for rows in the match file or update file when batch updating a set of subscriptions.

Table 4.7.3-1. Text File Contents (1 of 5)

Name	Type	Mandatory	Description
SUBSCRIPTION	Integer	Yes for Update or View; ignored by Add	The subscription number.
USERNAME	Variable Character	Yes	The name of the owner of the subscription.
STATUS	Variable Character	Yes	The subscription status: Active, Inactive or Canceled.
EXPIRATION	Date/Time	No (defaults to one year from the current date if not specified)	The expiration date for the subscription.
ESDT_SHORT_NAME	Variable Character	Yes	The short name for the ESDT being subscribed to.
ESDT_VERSION	Integer	Yes	The version for the ESDT being subscribed to (e.g., 1, if version ID is 001).
EVENT_TYPE	Variable Character	Yes	The type of event being subscribed to: INSERT, DELETE, or UPDATEMETADATA.

Table 4.7.3-1. Text File Contents (2 of 5)

Name	Type	Mandatory	Description
NOTE: The next four lines should appear as a block in the text file. Up to five such blocks may be used.			
ATTRIBUTE_NAME	Variable Character	No	The name of a qualifying numeric attribute. Use this only for attributes of type Integer, Float, or Date/Time.
ATTRIBUTE_TYPE	Variable Character	No	The type of a qualifying attribute: Integer, Float, or Date/Time.
ATTRIBUTE_MIN_VALUE	Integer, Float, or Date/Time	No	The smallest acceptable value for this attribute.
ATTRIBUTE_MAX_VALUE	Integer, Float, or Date/Time	No	The largest acceptable value for this attribute.
NOTE: The next three lines should appear as a block in the text file. Up to five such blocks may be used.			
STRING_ATTRIBUTE_NAME	Variable Character	No	The name of a qualifying string attribute.
STRING_ATTRIBUTE_TYPE	Variable Character	No	This is always 'varchar'.
STRING_ATTRIBUTE_VALUE	Variable Character	No	The value that this attribute must have in order to qualify.
NOTE: The next six lines should appear as a block in the text file. Only one such block may be used.			
SPATIAL_ATTRIBUTE_NAME	Variable Character	No	The name of a qualifying spatial attribute: GPolygonContainer, BoundingRectangle, or Nose.
SPATIAL_ATTRIBUTE_TYPE	Variable Character	No	The type of a qualifying spatial attribute: gpolygon, llbox, or PathBlock, respectively.
SPATIAL_VALUE_SOUTH	Float	No	The lower latitude value for the qualifying rectangle.
SPATIAL_VALUE_WEST	Float	No	The lower longitude value for the qualifying rectangle.
SPATIAL_VALUE_NORTH	Float	No	The upper latitude value for the qualifying rectangle.
SPATIAL_VALUE_EAST	Float	No	The upper longitude value for the qualifying rectangle.
NOTIFY_EMAIL_ADDRESS	Variable Character	No	The email address of the recipient if email notification is desired.

Table 4.7.3-1. Text File Contents (3 of 5)

Name	Type	Mandatory	Description
NOTIFY_USER_STRING	Variable Character	No	An optional user string to be included in the email.
NOTIFY_METADATA	Character	No	Indicates whether the email should include all metadata (Y) or just metadata associated with the subscription qualifiers (N).
ACQUIRE_USERNAME	Variable Character	No	The name of the user requesting an acquire.
ACQUIRE_USERSTRING	Variable Character	No	An optional string to be included in the distribution notice.
ACQUIRE_USER_FIRST_NAME	Variable Character	No	First name of user receiving the data.
ACQUIRE_USER_MIDDLE_INIT	Fixed Character	No	Middle initial of user receiving the data.
ACQUIRE_USER_LAST_NAME	Variable Character	No	Last name of user receiving the data.
ACQUIRE_USER_MAIL_ADDRESS_PHONE	Variable Character	No	Phone number of user receiving the data.
ACQUIRE_EMAIL_ADDRESS	Variable Character	No	The email address for "acquire" notification.
ACQUIRE_MEDIA_FORMAT	Variable Character	No	At present, this value should always be FILEFORMAT,
ACQUIRE_MEDIA_TYPE	Variable Character	No	The type of acquire: FtpPush or FtpPull.
ACQUIRE_PRIORITY	Variable Character	No	The distribution priority: VHIGH, HIGH, NORMAL, LOW, or XPRESS.
ACQUIRE_NOTIFY_TYPE	Variable Character	No	At present, this should always be MAIL.
ACQUIRE_FTP_USER	Variable Character	No	The FTP login name for an FTP push operation.
ACQUIRE_FTP_PASSWORD	Variable Character	No	The password for an FTP push operation.
ACQUIRE_FTP_HOST	Variable Character	No	The destination hostname for an FTP push operation.
ACQUIRE_FTP_DIR	Variable Character	No	The destination directory for an FTP push operation.
BUND_USER_NAME	Variable Character	Yes, if adding a new bundling order	If present, it must be the same as USERNAME.

Table 4.7.3-1. Text File Contents (4 of 5)

Name	Type	Mandatory	Description
BUND_ORDER_ID	Variable Character	No	The ID of the bundling order to be associated with this subscription. If present, a new subscription is associated with the existing bundling order. If absent, a new order in EcAcOrder is created using the information in BUND_MEDIA_TYPE, BUND_SHIP_PHONE, BUND_SHIP_CTRY, BUND_SHIP_STATE, BUND_SHIP_CITY, BUND_SHIP_FAX, BUND_SHIP_STREET_1, BUND_SHIP_STREET_2, BUND_SHIP_STREET_3, BUND_SHIP_ZIP, BUND_DIST_PRIOR. A new request in EcAcRequest is created using the above and some or all of BUND_FTP_HOST, BUND_FTP_PASSWORD, BUND_FTP_DIR, and BUND_FTP_USER.
BUND_MAX_BUND_AGE	Float	No	The number of hours which a bundle can have requests incorporated before it is expired.
BUND_MEDIA_TYPE	Variable Character	Yes, if adding a new bundling order	The media type for bundled requests.
BUND_MIN_GRAN_COUNT	Integer	No	The minimum number of granules a bundle can contain before it is distributed.
BUND_MIN_BUND_SIZE	Float	No	The minimum size in MB a bundle must attain before it is distributed.
BUND_EMAIL_NOTIFICATION_ADDR	Variable Character	No	Free text field to record the optional distribution parameter NOTIFY.
BUND_USER_STRING	Variable Character	No	Optional distribution option, which identifies a request.
BUND_DIST_PRIOR	Variable Character	No	Distribution priority of the bundling order.
BUND_FTP_HOST	Variable Character	No	The destination hostname for an FTP push operation.

Table 4.7.3-1. Text File Contents (5 of 5)

Name	Type	Mandatory	Description
BUND_FTP_PASSWORD	Variable Character	No	The FTP password for an FTP push operation.
BUND_FTP_DIR	Variable Character	No	The destination directory for an FTP push operation.
BUND_FTP_USER	Variable Character	No	The FTP login name for an FTP push operation.
BUND_SHIP_PHONE	Variable Character	No	The phone number for the user requesting the order.
BUND_SHIP_CTRY	Variable Character	No	The country the order should be shipped to.
BUND_SHIP_STATE	Variable Character	No	The state the order should be shipped to.
BUND_SHIP_CITY	Variable Character	N	The city the order should be shipped to.
BUND_SHIP_FAX	Variable Character	No	The fax number for the user requesting the order.
BUND_SHIP_STREET_1	Variable Character	No	The street address to which the order should shipped.
BUND_SHIP_STREET_2	Variable Character	No	The street address to which the order should shipped.
BUND_SHIP_STREET_3	Variable Character	No	The street address to which the order should shipped.
BUND_SHIP_ZIP	Variable Character	No	The zip code of address to which the order should be shipped.

Table 4.7.3-2. Text File Contents (BatchUpdate List) (1 of 2)

Name	Type	Description
USERNAME	Variable Character	The name of the subscription owner.
STATUS	Variable Character	The subscription status: Active, Inactive or Canceled.
START_DATE	Date/Time	The start date for the subscription
EXPIRATION	Date/Time	The expiration date for the subscription.
ESDT_SHORT_NAME	Variable Character	The short name for the ESDT being subscribed to. A wildcard can be used in the matchfile by including a subset of the ShortName for the value instead of full ShortName. Any ESDT ShortNames that include this subset as a string are considered a match.
ESDT_VERSION	Integer	The version for the ESDT being subscribed to (e.g., 1, if version ID is 001).
EVENT_TYPE	Variable Character	The type of event being subscribed to: INSERT, DELETE, or UPDATEMETADATA.

Table 4.7.3-2. Text File Contents (BatchUpdate List) (2 of 2)

Name	Type	Description
ACQUIRE_USERNAME	Variable Character	The name of the user requesting an acquire.
ACQUIRE_EMAIL_ADDRESS	Variable Character	The email address for "acquire" notification.
ACQUIRE_MEDIA_TYPE	Variable Character	The type of acquire: FtpPush, FtpPull or scp.
ACQUIRE_PRIORITY	Variable Character	The distribution priority: VHIGH, HIGH, NORMAL, LOW, or XPRESS.
ACQUIRE_FTP_USER	Variable Character	The FTP login name for an FTP push operation.
ACQUIRE_FTP_HOST	Variable Character	The destination hostname for an FTP push operation.
ACQUIRE_FTP_DIR	Variable Character	The destination directory for an FTP push operation.
NOTIFY_EMAIL_ADDRESS	Variable Character	The email address of the recipient if email notification is desired.
GRANULE_START_DATE	Date/Time	The start date of the granule.
GRANULE_END_DATE	Date/Time	The end date of the granule.

4.7.3.2 Spatial Subscription Server Command Line Interface Main Screen

The Spatial Subscription Server (NBSRV) Command Line Interface does not have a main screen. It is a command line interface only.

4.7.3.3 Required Operating Environment

O/S requirements are Linux 2.x platforms.

4.7.3.4 Databases

The Spatial Subscription Server CLI accesses the Spatial Subscription Server, Inventory, and OMS schema within the "ecs" database.

4.7.3.5 Special Constraints

There are no special constraints to running the Spatial Subscription CLI.

4.7.3.6 Outputs

In addition to status and error messages, there will be an output file called sub.*nnn*.txt (where *nnn* refers to the subscription number) when viewing a subscription.

There also will be an output file for matched subscriptions when using "BatchUpdate" function if the user chooses to save the information.

4.7.3.7 Event and Error Messages

The Spatial Subscription Server CLI issues validation errors when adding or updating a subscription. If the operator does not correct the validation errors, the subscription is rejected when the operator attempts to add or update the subscription. The SSS CLI writes status and error messages to the EcNbSubscriptionCLI.log file in the directory /usr/ecs/<MODE>/CUSTOM/logs.

4.7.3.8 Reports

The SSS CLI does not generate reports.

This page intentionally left blank.

4.7.4 Bulk Metadata Generation Tool

The Bulk Metadata Generation Tool (BMGT) is a utility which exports metadata for granules and collections in the ECS archive to the EOS ClearingHouse (ECHO). This metadata is utilized by ECHO to allow users to search for and order data from the ECS archive. BMGT is used to keep ECHO in sync with ECS archive holdings. BMGT can be run in four different ways, "AUTOMATIC", "MANUAL", "CORRECTIVE", and "VERIFICATION" which are covered in this section. "VERIFICATION" actually covers three export types itself, "VER_LONG", "VER_SHORT", and "VER_INC". In any of its modes of use, BMGT exports metadata individually to ECHO (instead of in packages or zip files).

4.7.4.1 BMGT Automatic Driver

The BMGT Automatic Driver is used by a DAAC to export changes to the holdings of the ECS inventory almost in real time. BMGT Automatic Pre Processor (BAPP) is a server process (a timer task) that creates Export requests at regular intervals, configurable via the "BMGT.AutoDriver.PollingFrequency" parameter in the Bg_Configuration_Property table. The Automatic Driver executes a stored procedure that picks up qualified BMGT events from the DsMdGrEventHistory table and creates Export Requests (Bg_Export_Request table) for the Dispatcher to process and export metadata to ECHO.

4.7.4.1.1 BMGT Automatic Driver Usage

EcBmBMGTAutoStart <MODE>

BMGT Automatic Driver usage

4.7.4.2 BMGT Manual Driver

The BMGT Manual Driver provides another interface through which the operator can initiate an export of ECS metadata through BMGT. Unlike an 'AUTOMATIC' instantiation of BMGT, which exports metadata in response to changes or 'events', a 'MANUAL' BMGT run will export the current metadata for an operator-provided set of granules and/or collections. An operator is able to specify which metadata products are desired, or can request the generation of all of them. An operator is also able to use the Manual Driver to re-run a previous AUTOMATIC export which has failed, or to export the contents of the Corrective Queue. The operator is also able to use the manual Driver to initiate one of three types of "Verification" exports which will re-export metadata which has already been exported to verify that there are no discrepancies between ECS and ECHO holdings. Once the Manual Driver is run (in any of its modes of operation), the desired products will be created by the BMGT Generator server and are exported to ECHO similarly to automatic exports. The Manual Driver is meant primarily for use when errors occur in the normal automatic processing flow, or when DAAC Operations would like to verify the consistency of ECS and ECHO holdings either routinely or due to some known issue. It can also be used for any other situation in which the normal, automatic export of BMGT metadata is not sufficient, such as exporting historical metadata. The Manual Driver does not prevent multiple exports of the same metadata like Automatic BMGT does. For this reason, DAAC Operations Staff should inform ECHO Staff before using the Manual Driver for export to ECHO, and exercise discretion as to what is exported in a manual run.

4.7.4.2.1 Using the BMGT Manual Driver

The BMGT Manual Driver is executed via a start script (EcBmBMGTManualStart, located in the /usr/ecs/<mode>/CUSTOM/utilities directory), which takes one or more parameters. Tables 4.7.4-1 through 4.7.4-11 provide descriptions of these parameters.

4.7.4.2.2 Manual Driver Guidelines:

- All parameters are optional except --mode, but at least one additional parameter must be specified.
- If another BMGT process is currently running, the operator will be prompted as to whether they would like to continue, or try again later if another Verification(long form, shortform or incremental) run is initiated.
- Except when using --help, --corrective, --incremental, at least one option from SELECTION CRITERIA must be specified.

Table 4.7.4-1. General Options

Option	Notes	Description
--help | -h	Overrides all other options	Display a detailed help page.
--mode <*MODE*>	Required	Run in ECS mode <*MODE*>.

Table 4.7.4-2. Generated Product Options

Option	Notes	Description
--metg	Requires one or more selection criteria options groups, groupfile collections, collectionfile, granules, granulefile or start and end dates.	Creates requests for generating granule metadata.
--metc	Requires one or more selection criteria options -- groups, groupfile collections, collectionfile, or start and end dates.	Creates requests for generating collection metadata.

Table 4.7.4-3. Run Type Options

Option	Notes	Description
--del | --deleteonly	requires one or more SELECTION CRITERIA options	Generate deletion metadata. Granules and collections being processed with delete option must be either physically or logically deleted. If a granule is logically or physically deleted from the archive, it must be explicitly specified (with the **--granules** or **--granulefile** option) by geoid rather than dbid.
--ins | --insertonly		Option for generating InsertOnly metadata This option enables only exporting existing granules and collections (not physically or logically deleted). Any granules marked for deletion are ignored by this option.
--fd | --forcedelete		Option for generating Deletes for collection metadata that still currently exists in ECS inventory. This option is used in rare cases where the user wishes to delete specific collections from ECHO that still exist in ECS.
--collupd		Option for generating full collection update. This option exports the entire collection metadata followed by exporting all granules for the collection that are not logically or physically deleted.
--vs | --short		A short form run is used for performing existence checks with ECHO. Only collections and collectionfile options are supported by short verification. If collections/collectionfile are specified all the granules for those collections will be checked for their existence in ECHO. If the aboveoptions are missing there will only be a check for existence of the entire collections. Creates requests for either collections or granules based on comparison results between data items between SDPS and ECHO.
--vl | --long		A long form verification request generates the full metadata for selected collections/granules, and is used for performing full metadata comparison with ECHO. **--metg** and/or **--metc** may be specified with –long. Options supported for metc and metg can be provided for generating long form verification requests. –delete option is not supported for long form verification.
--inc | --incremental		Initiate an incremental verification export, in which the granules to be exported as long form metadata are selected automatically based on an algorithm that exports granule verification in batches for eventual total coverage. An optional list of collections to consider for verification using this algorithm may be specified.
--corrective		A corrective export is used to generate reports, re-enable or Cancel BLOCKED requests. Collections or GranuleIds can be used with –c, -cf, -g, -gf options to refine the selection of BLOCKED requests. One of the 4 corrective run options in table 1-5 can be used optionally.

The following options can be used to specify the collections and/or granules for which metadata export is desired. At least one of these options must be specified, except when **–corrective** or **incremental** option is being used. No metadata will be generated unless the associated

collection is defined in the groups configuration table (Bg_Collection_Configuration), and has CollectionExportFlag set to 'Y'. No granule level metadata will be generated unless the collection also has GranuleExportFlag set to Y.

The options below allow specifying granules by dbid or geoid, and also specifying collections by shortname/versionid or group name. Each of these options can take a comma separated (with no spaces) list on the command line, or a file containing one or more values (one value per line). Using an input file is strongly recommended if the list contains more than 2 or 3 items. If one or more collections are specified (by shortname/versionId or group), a start and/or end date may be specified to limit granules in those collections for which granule metadata (if any) is generated by insert or lastupdate time (depending on whether --**lastupdate** is specified).

Table 4.7.4-4. Item Selection Options (1 of 2)

Option	Notes	Description
--collections | –c <shortname.versionID>[,<shortname.versionID>,...]		Generate metadata for collection <shortname.versionID>. Multiple collections can be specified, separated by a comma and no space.
--collectionfile | --cf <filename>		Same as **--collections**, but specifies a file which contains one or more collections. The collections can be on one or multiple lines and must be separated either by newlines or whitespace.
--granules | -g <ID>[,<ID>,...]		Where <ID> is either a dbid or a geoid in the form: <SC/BR>:<SHORTNAME>.<VERSIONID>:<DBID> Generate metadata for the listed granules. Multiple granules can be specified, separated by a comma and no space.
--granulefile | --gf <filename>		Same as **--granules**, but specifies a file which contains one or more dbids and/or geoids. The ids can be on one or more lines and must be separated either by newlines or whitespace.
--p | --group |<groupName>[,<groupName>,...]		Generate metadata for the collections and/or granules in the specified group(s).
--pf | --groupfile <filename>		Generate metadata for the collections and/or granules in the group(s) listed in the specified file.

Table 4.7.4-4. Item Selection Options (2 of 2)

Option	Notes	Description
--st | --starttime <datetime>	**requires –groups, groupsfile, collectionfile or --collections**	Defines the starting time (inclusive) of a datetime range for which to generate granule metadata. This parameter is used only if **-- ---groups, --groupsfile, --collection**, or **collectionfile** is specified. It will be used to select a subset of granules from the specified collection(s) for which metadata will be generated. <datetime> should be in the format "YYYY-MM-DD HH:MM:SS" [quotes are required].
--et | --endtime <*datetime*>	**requires –groups, groupsfile, collectionfile or --collections**	Defines the end time (non-inclusive) of a datetime range for which to generate granule metadata. This parameter is used only if **--groups, --groupsfile, --collection,** or **--collectionfile** is specified. It will be used to select a subset of granules from the specified collection(s) for which metadata will be generated. <*datetime*> should be in the format "YYYY-MM-DD HH:MM:SS" [quotes are required]. Current time is used as endTime if only –st is provided as an option for the run.
--lastupdate	**requires --endtime and/or --starttime**	Causes the **--starttime** and **--endtime** values to be used to select granules based on lastupdate rather than insert time.

Table 4.7.4-5. Corrective run Options

Only one of the following four options is supported for a given corrective run. If none of the options is provided, the default behavior (moving a BLOCKED request to PENDING state) for corrective run is applied.

Option	Notes	Description
--cancel		Additional option supported by a corrective export run. This option is used to CANCEL a BLOCKED request instead of moving it to a state to be retried by the dispatcher.
--report		Additional option supported by a corrective export run. This option prints a report of the existing BLOCKED requests in the export request table to the console.
--statistics		Additional option supported by a corrective run. This options prints collectionId and the number of blocked requests for that collection in the export request table.
--cr | --correctivereport		Additional option supported by a corrective export run. This option first generates a corrective report followed by the actual corrective run by moving all the BLOCKED requests to PENDING state for re processing.

4.7.4.2.3 Examples

Request a manual BMGT export containing all relevant granules and collection metadata for all granules in all collections in the file './collections':

EcBmBMGTManualStart –mode <MODE> --metg --metc –collectionfile ./collections

Request the generation of a BMGT manual export containing the METG and METC for the granules and collections specified in the command options. In addition, METG metadata will be generated for the granules that belong to the specified collections and were inserted into the inventory between the specified start and end dates:**EcBmBMGTManualStart –mode <MODE> --metg --metc–collections AST_L1A.001,MOD29P1N.001,MOD29P1D.002 –granules 213388,213400,213402,212100,213395 –starttime "2006-02-21 14:07:00" –endtime "2008-01-18 09:54:22"**

Request the export of a listing of all granules in the specified collections to be compared against the ECHO holdings for the collections:

EcBmBMGTManualStart --mode <MODE> --short --metg -c MOD29P1D.001, MYD29P1N.001

Request the export of full granule and collection metadata for all collections in the group 'MOLT' and all of the granules in those collections which have a lastUpdate value within the provided

boundaries. This metadata will be compared against that which ECHO already has to find and repair any discrepancies:

```
EcBmBMGTManualStart --mode <MODE> --long --metg --metc --p MOLT --starttime "2006-02-21 14:07:00" --endtime "2008-01-18 09:54:22" --lastupdate
```

Request the export of full granule metadata for a set of granules determined by the BMGT based on a configured time interval, max number of granules per instance (both configured via the BMGT GUI), and the lastUpdate of the granules:

```
EcBmBMGTManualStart --mode <MODE> --incremental
```

NOTE: it is recommended that incremental mode be set up as a cron job to run on a regular interval.

Request a full report of the 'BLOCKED' requests by running a corrective export run. All the information will be printed to the users' console:

```
EcBmBMGTManualStart --mode <MODE> --corrective -report
```

A corrective export can be used to cancel BLOCKED requests for a particular collection:

```
EcBmBMGTManualStart --mode <MODE> --corrective –cancel –c <shortname.vid>
```

4.7.4.3 BMGT Configuration

Configuration of the BMGT is stored in a text file and a database table that are shared by all of the BMGT components. The following file is used to store properties related to database connection: /usr/ecs/<MODE>/CUSTOM/cfg/EcBmBMGT.properties. The fields in this file are automatically populated by mkcfg and should not need to be modified.

All other properties are stored in the bg_configuration_property database table. The values in this table are initially populated using mkcfg. Mkcfg calls EcBgPopulateConfigurationTable.ksh to load static default values. This script will NOT overwrite existing values in the table. Dynamic values are prompted for via Ecs Assist. Changes made in Ecs Assist will overwrite current database values.

The following values are prompted for in Ecs Assist.

Table 4.7.4-6. BMGT Configuration Parameters

Property Name (EcsAssist Name)	Description
BMGT.EmailLogger.SMTPHost (EMAIL_SMTP_HOST)	SMTP host used for sending email alerts.
BMGT.EmailLogger.From (EMAIL_FROM_ADDRESS)	Fully qualified email address from which alert emails should be sent.
BMGT.EmailLogger.To (EMAIL_TO_ADDRESS)	Email address(es) to which alerts should be sent. Multiple addresses must be separated by a comma
BMGT.Common.CollectionMetadataFilePathPrefix (COLL_METPATH_PRE)	Path to directory under which collection descriptors are found
BMGT.Exporter.TokenClient.URL (ECHO_TKN_CLIENT_URL)	URL to the ECHO token REST endpoint (depends on whether Partner Test or Operations)
BMGT.Exporter.TokenClient.Username (ECHO_TKN_CLIENT_USERNAME)	ECHO/URS user who will perform ingest requests
BMGT.Exporter.TokenClient.ProviderID (ECHO_TKN_CLIENT_PRVDRID)	Name of the provider to ingest on behalf of
BMGT.Exporter.IngestClient.URL (ECHO_ING_CLIENT_URL)	URL to the ECHO ingest REST endpoint (depends on whether Partner Test or Operations)
BMGT.Generator.DataCenterId (DATA_CENTER_ID)	The name of the data center. Used to override the value in native metadata if BMGT.Generator.ReplaceDataCenterId = 'Y'

Passwords, such as the ECHO password (BMGT.Exporter.TokenClient.Password) must be set manually in BMGT GUI and will be automatically encrypted. Additional information on changing configuration parameters via the GUI can be found in the BMGT GUI section of this document.

4.7.4.3.1 Component Configuration

The table below describes the various BMGT component configurations that can be modified from the GUI. Additional information on changing configuration parameters via the GUI can be found in the BMGT GUI section of this document.

Table 4.7.4-7. BMGT Configuration Parameters (1 of 3)

Property Name	Default Value	Description
BMGT.Dispatcher.QueueSize	250	Max number of requests to read into memory for each queue at any given time
BMGT.Dispatcher.BucketSize	300	Max number of requests per queue read per polling cycle
BMGT.Dispatcher.NConsumers	5	Number of threads to work on each queue. Note that when a queue is empty, its threads can be pulled and used for other queues
BMGT.Dispatcher.RetryRequestWait	300000-5min	Interval in milliseconds on which to retry a request which failed with a retriable error
BMGT.Dispatcher.Monitor.pollingFrequency	180000-3min	Frequency in milliseconds on which to poll for configuration changes
BMGT.Dispatcher.Producer.PollingFrequency	30000-30sec	Frequency in milliseconds on which dispatcher polls for new requests
BMGT.Dispatcher.MaxAutoResumeRetries	6	Maximum number of times to auto resume the dispatcher after an pausing due to an export error
BMGT.Dispatcher.AutoResumeWait	600000-10min	Time in milliseconds after which to auto resume the dispatcher when paused due to an export error
BMGT.Dispatcher.StopTimeOut	15000-15sec	Amount of time to wait for in process requests to complete before shutting down
BMGT.GUI.DefaultTimeRange	1d	Default time range for GUI request and activity display
BMGT.GUI.WriteAccessPassword		Password for full access to GUI. Must be set in GUI to be properly encrypted
BMGT.AutoDriver.PollingFrequency	30000-30sec	Frequency in milliseconds to poll for new events in DsMdGrEventHistory
BMGT.AutoDriver.MaxEvents	5000	Maximum number of events to pull from DsMdGrEventHistory per polling cycle
BMGT.ResponseHandler.Monitor.PollingFrequency	180000-3min	Polling frequency in milliseconds on which to check whether error thresholds are exceeded and an alert email should be sent
BMGT.ResponseHandler.Monitor.MaxErrorCount	50	Number of errors allowed before processing is paused and an alert email is sent

Table 4.7.4-7. BMGT Configuration Parameters (2 of 3)

Property Name	Default Value	Description
BMGT.ResponseHandler.Monitor.MaxBlockCount	50	Number of blocked requests allowed before processing is paused and an alert email is sent
BMGT.ResponseHandler.Monitor.MaxSkipCount	50	Number of skipped requests allowed before processing is paused and an alert email is sent
BMGT.ResponseHandler.MaxRetryCount	10	Number of retries before a request is blocked
BMGT.ResponseHandler.BlockCorrectiveExports	true	True to block
BMGT.ResponseHandler.Monitor.EmailTimeOut	86400000-24hr	Number of seconds after which any alert messages will be sent regardless of whether threshold counts are met
BMGT.EmailLogger.DefaultSubject		Subject for error alert emails
BMGT.Monitor.pollingFrequency	21600000-6hr	Polling interval in milliseconds on which to look for requests which are stale or can be cleaned up
BMGT.Monitor.purgeOlderThan	2592000000-30days	Age in milliseconds after which a terminal request is eligible for cleanup
BMGT.Monitor.staleAfter	864000000-10days	Age in milliseconds after which an alert will be sent of a request has not been processed to a terminal state
BMGT.Monitor.batchMonitorPollingFrequency	180000-3min	Polling interval in milliseconds on which to check the status of batched requests for the purpose of assembling batch statistics once the batch completes.
bmgt.granule.url.base	http://f4ftl01/	Base host and port for all datapool URLs
BMGT.Common.CoordinateSystemDefault	CARTESIAN	default value to use when bg_collection_configuration.collectioncoordinatesystem is not set
BMGT.Generator.IOError.NumRetries	10	number of tiems the generator will retry after an IO error
BMGT.Generator.IOError.RetryInterval	6000-1min	Interval in milliseconds on which generator will retry after an IO error
BMGT.Exporter.IngestClient.Compression	false	true to compress ingest requests
BMGT.Exporter.IngestClient.UsePersistence	true	true to re use HTTP connections between export requests
BMGT.Exporter.IngestClient.RetryRequestCount	10	number of times to retry an HTTP error before failing an export activity
BMGT.Exporter.IngestClient.RetryRequestWait	6000-6sec	retry time in milliseconds for HTTP errors
BMGT.Exporter.IngestClient.UseSemanticDiff	true	true to use more lenient comparison for long form/incremental verification

Table 4.7.4-7. BMGT Configuration Parameters (3 of 3)

Property Name	Default Value	Description
BMGT.ResponseHandler.Ignorable*		regular expressions matching verification errors which should be ignored
BMGT.ResponseHandler.IgnorableMillisecondDelta	1000-1sec	number of milliseconds difference to ignore when receiving verification mismatches
BMGT.Verification.MaxGranules	50000	maximum number of granules per incremental batch
BMGT.Incremental.Duration	10	maximum number of days worth of updates to include in an incremental batch
BMGT.Manual.ShortVer.ReqStatus	PENDING	status of new export requests enqueued as a result of short form verification. "PENDING" will cause such requests to be immediately eligible for export. "BLOCKED" will require operator approval before being eligible for export.
BMGT.Manual.ShortVer.Tolerance	1	number of seconds difference to allow in lastupdate times without flagging an error

4.7.4.3.2 Collection Configuration

Collection configurations are stored in the database and initially populated with known collections. The configurations are configurable via a script or the GUI. The script can be run as follows:

EcBmConfigureCollection.pl [-u] mode csv_file_path

In this example, the csv_file_path points to a file with one row per collection in the format:

shortname, versionid, granuleexportflag, collectionexportflag, orbitgroup, granulespatialrepresentation, collectioncoordinatesystem, twodcoordinatesystem, difid, maxgranulestoverify

And –u is specified to update existing records.

Null values should be indicated either by the literal value ‘null’ or no value between the commas.

The individual collection configurations are described in detail in the BMGT GUI section of this document.

4.7.4.4 Required Operating Environment

BMGT runs on a Linux platform.

4.7.4.5 Interfaces and Data Types

Table 4.7.4-12 lists the supporting products that this tool depends upon in order to function properly.

Table 4.7.4-8. Interface Protocols

Product Dependency	Protocols Used	Comments
Inventory database	SQL	Via SQL server machines
Java JRE version 1.7.0_21	Linux system call	
ECHO	REST	Via WebService calls

4.7.4.6 Outputs

The Manual and Automatic Drivers enqueues requests which will cause XML documents to be output to ECHO following the HTTP protocol. The following provides additional details on the output metadata sent to ECHO.

4.7.4.6.1 BMGT Generator Workflow

The workflow for processing metadata in the Generator depends on the type of item (Granule or Collection) and the metadata Type (ECS or ISO). This work flow is shown below:

Collection

- Both ECS and ISO:

1. Get metadata file path from database.
2. **ECS Only** – Convert ODL descriptor file to ECS XML metadata.
3. Translate XML to ECHO 10 schema via a stylesheet.
4. Perform programmatic insertions/conversions described below.

Granule

- Both ECS and ISO:

1. Get metadata file path from database.
2. Translate XML to ECHO 10 schema via a stylesheet.
3. Perform programmatic insertions/conversions described below.

The following sections describe the items in the native granule and collection metadata which must be modified prior to export to ECHO, as well as those elements which must be inserted.

4.7.4.6.2 Generator Server Metadata Additions – All Metadata Types

InsertTime & lastUpdate (Granule & Collection)

Insert and last update times (lastUpdate and insertTime from AmGranule and AmCollection) shall be converted to UTC format (e.g. '2003-04-06T03:39:33.241Z') and write it to the proper location in the XML file. In order to be consistent with some legacy design decisions, these times must be treated as if they are in Greenwich Mean Time. In other words, 10:15:00 AM Eastern Standard Time on 1/22/2013 becomes '2013-01-22T10:15:00Z' even though this is the incorrect timezone identifier and therefore is technically a number of hours off from the actual intended time. All scientific datetimes (such as RangeBeginning/Ending time) are already in UTC format, so this will only apply to local datetimes and internal consistency between these times will be maintained.

Datapool URLs (Granule)

The datapool URLs provide public anonymous FTP or HTTP access to the science granule and its associated metadata, browse, QA, PH, and HDF Maps, for public granules. The URLs are constructed by obtaining the file path in the datapool filesystem for each of the above listed files, and appending it to a prefix (which contains the protocol[http or ftp.], hostname, and filesystem root). The science granule URL is inserted in the metadata as an OnlineAccessURL element, and all other URLs are inserted as OnlineResource elements. Each OnlineResource has an associated Type element which contains one of the following values ("METADATA", "BROWSE", "Quality Assurance", "Production History", "HDF MAP") depending on what type of file it is. In addition, it contains a MimeType element which specifies the mime type of the file (which comes from the database). Note that browse linkages will now be handled through this URL mechanism as well, and therefore browse URLs will be inserted for non-public granules.

For SMAP, all URLs are added as gmd:MD_DigitalTransferOptions.

Browse Links (Granule)

An additional OnlineResource URL, which is obtained from the database slightly differently than above. This URL will be added for any granule, public or hidden, which has a browse link.

4.7.4.6.3 Generator Server Metadata Additions – ECS Metadata

Visible and Orderable flags (Granule & Collection)

BMGT will insert into all Collection metadata the Visible flag value of 'true' and the Orderable flag value of 'false'. For all Granule metadata, the Orderable flag will be set to 'true' and the Visible flag set to 'true' unless the granule is DFA'ed (i.e. GranuleRestrictionFlag == 255).

Granule UR (Granule)

This is the primary identifier for a granule in ECHO. It is calculated as "SC:<shortname>.<versionid>:<granuleid>" where shortname, versionid, and granuleid are

obtained from the database. Versionid is padded with leading zeroes so that it contains 3 characters.

DataSetId (Granule & Collection)

The DataSetId is the primary key for a collection, and also used to link a granule to its associated collection. It is constructed as "<Collection Long Name> V<VersionId – zero padded>" where long name and version id come from the database.

RestrictionFlag (Granule)

The RestrictionFlag element is used to indicate that a granule is restricted to access from only adequately authenticated users. This is a decimal value between 0 and 255, and comes from the DsMdGranuleRestriction database. 255 is a special reserved value, which will be automatically inserted in the metadata for any granule which has DeleteFromArchive set to Y.

GranuleSpatialRepresentation (Collection)

This element specifies the spatial representation of granules in a collection (and the spatial metadata defined for each granule must match the representation defined for its collection). This value must be one of the following: CARTESIAN, GEODETIC, ORBIT, NO_SPATIAL.

This value can be automatically populated from the value of AmCollection.SpatialSearchType as follows:

SpatialSearchType	=>	GranuleSpatialRepresentation
Gpolygon	=>	GEODETIC
Orbit	=>	ORBIT
Point	=>	GEODETIC
Rectangle	=>	CARTESIAN
NotSupported	=>	NO_SPATIAL

There are a small number of known cases where this mapping is not correct. Therefore, BMGT must allow the operator to configure an override to this mapping for a given collection.

BMGT will read the proper value for GranuleSpatialRepresentation from bg_collection_configuration.granulespatialrepresentation. If the value of this column is null, the default value as derived from AmColelction.spatialSearchType will be used. Otherwise, the specified value will be used.

Coordinate System (Collection)

This element specifies the Coordinate System of the collection. This value must be one of the following: CARTESIAN, GEODETIC. Currently, all collections have a value of CARTESIAN. BMGT shall have a default value, which at least initially will be set to "CARTESIAN", as well as a mechanism to override the default for a particular collection.

The default value is defined by the configuration property BMGT.Common.CoordinateSystemDefault.

A collection specific override can be specified by setting bg_collection_configuration.CollectionCoordinateSyatem. If this value is null, the default will be used.

See the XML snippet below for the placement of CoordinateSystem and GranuleSpatialRepresentation in the ECHO XML schema:

```
<CollectionMetaDataFile xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="http://www.echo.nasa.gov/ingest/schemas/testbe
d//Collection.xsd">
    <DataCenter>EDF</DataCenter>
    <Collections>
        <Collection>
        ...
            <Spatial>
                ...
                <HorizontalSpatialDomain>
                   ...
                    <Geometry>
                        <CoordinateSystem>CARTESIAN</CoordinateSystem>
                        ...
                    </Geometry>
                </HorizontalSpatialDomain>

<GranuleSpatialRepresentation>CARTESIAN</GranuleSpatialRepresentation>
            </Spatial>
        </Collection>
    </Collections>
</CollectionMetaDataFile>
```

4.7.4.6.4 Backtrack orbit metadata (Granule & Collection)

ECHO provides the ability to perform backtrack orbit searches, provided that the proper metadata is given for granules. This metadata is mostly contained in ECS granule and collection metadata, but is not in the proper format. It is either contained in the OrbitCalculatedSpatialDomain hierarchy, PSA values, or must be calculated from these values using standard rules and/or ancillary files. A number of classes or groups of orbit processing have been established, each with different rules for generating granule and collection backtrack

metadata. Each collection may be associated with one of these groups via the Collection Configuration database table.

Backtrack orbit metadata is not required. This metadata will be generated for collections which have a non null value in bg_collection_configuration.orbit group. If this value is null, then no backtrack metadata will be generated.

Valid values for BackTrack Orbit Group are (values in parenthesis refer to alternative names used in legacy code):

- GLAS Quarter Orbit (AKA GLAS1)
- GLAS Two Orbit (AKA GLAS2)
- GLAS 14 Orbit (AKA GLAS3)
- AMSR-E (AKA AMSR1)
- AMSR-A (AKA AMSR2)
- MISR (LARC)
- AQUARIUS

The rules for each group are defined below, but first is a list of the variables that the rules reference, and where they are obtained from.

Values obtained from OrbitCalculatedSpatialDomainContainer

FIRST_ASC_CROSS = the EquatorCrossingLongitude value of the OrbitCalculatedSpatialDomainContainer enclosure with the earliest EquatorCrossingTime.

SECOND_ASC_CROSS = the EquatorCrossingLongitude value of the OrbitCalculatedSpatialDomainContainer enclosure with the second earliest EquatorCrossingTime.

Values obtained from PSAs

TRACK_SEGMENT = The value of the 'Track_Segment' PSA.

START_BLOCK = The value of the 'SP_AM_MISR_StartBlock' PSA.

END_BLOCK = The value of the 'SP_AM_MISR_EndBlock' PSA.

ASC_DESC_FLAG = The value of the 'AscendingDescendingFlg' PSA.

Values obtained from separate MISRBlockLat.xml file

Format:

```
<properties>
        <property>
                <Block>180</Block>
                <FirstEdge>-66.695034</FirstEdge>
```

```
                <LastEdge>-65.502984</LastEdge>
        </property>
...
</properties>
```

FIRST_EDGE = The FirstEdge value of the property with Block = START_BLOCK

LAST_EDGE = The LastEdge value of the property with Block = END_BLOCK

Group Rules:

GLAS Quarter Orbit

Collection:

```
<OrbitParameters>
  <SwathWidth>2.0</SwathWidth>
  <Period>96.7</Period>
  <InclinationAngle>94.0</InclinationAngle>
  <NumberOfOrbits>0.25</NumberOfOrbits>
  <StartCircularLatitude>-50.0</StartCircularLatitude>
</OrbitParameters>
```

Granule:

TRACK_SEGMENT = 1

```
<Orbit>
  <AscendingCrossing>FIRST_ASC_CROSS</AscendingCrossing>
  <StartLat>50.0</StartLat>
  <StartDirection>A</StartDirection>
  <EndLat>50.0</EndLat>
  <EndDirection>D</EndDirection>
</Orbit>
```

TRACK_SEGMENT = 2

```
<Orbit>
  <AscendingCrossing>FIRST_ASC_CROSS</AscendingCrossing>
  <StartLat>50.0</StartLat>
  <StartDirection>D</StartDirection>
  <EndLat>-50.0</EndLat>
  <EndDirection>D</EndDirection>
</Orbit>
```

TRACK_SEGMENT = 3

```
<Orbit>
  <AscendingCrossing>FIRST_ASC_CROSS</AscendingCrossing>
  <StartLat>-50.0</StartLat>
  <StartDirection>D</StartDirection>
  <EndLat>-50.0</EndLat>
  <EndDirection>A</EndDirection>
</Orbit>
```

TRACK_SEGMENT = 4

```
<Orbit>
  <AscendingCrossing>SECOND_ASC_CROSS</AscendingCrossing>
  <StartLat>-50.0</StartLat>
  <StartDirection>A</StartDirection>
  <EndLat>50.0</EndLat>
  <EndDirection>A</EndDirection>
</Orbit>
```

GLAS Two Orbit

Collection:

```
<OrbitParameters>
  <SwathWidth>2.0</SwathWidth>
  <Period>96.7</Period>
  <InclinationAngle>94.0</InclinationAngle>
  <NumberOfOrbits>2.0</NumberOfOrbits>
  <StartCircularLatitude>50.0</StartCircularLatitude>
</OrbitParameters>
```

Granule:

```
<Orbit>
  <AscendingCrossing>FIRST_ASC_CROSS</AscendingCrossing>
  <StartLat>50.0</StartLat>
  <StartDirection>A</StartDirection>
  <EndLat>50.0</EndLat>
  <EndDirection>A</EndDirection>
</Orbit>
```

GLAS 14 Orbit

Collection:

```
<OrbitParameters>
```

```
  <SwathWidth>2.0</SwathWidth>
  <Period>96.7</Period>
  <InclinationAngle>94.0</InclinationAngle>
  <NumberOfOrbits>14.0</NumberOfOrbits>
  <StartCircularLatitude>50.0</StartCircularLatitude>
</OrbitParameters>
```

Granule:

```
<Orbit>
  <AscendingCrossing>FIRST_ASC_CROSS</AscendingCrossing>
  <StartLat>50.0</StartLat>
  <StartDirection>A</StartDirection>
  <EndLat>50.0</EndLat>
  <EndDirection>A</EndDirection>
</Orbit>
```

AMSR-E

Collection:

```
<OrbitParameters>
  <SwathWidth>1450.0</SwathWidth>
  <Period>98.88</Period>
  <InclinationAngle>98.15</InclinationAngle>
  <NumberOfOrbits>0.5</NumberOfOrbits>
  <StartCircularLatitude>-90.0</StartCircularLatitude>
</OrbitParameters>
```

Granule:

ASC_DESC_FLAG = 'Ascending' or 'ASCENDING'

```
<Orbit>
  <AscendingCrossing>FIRST_ASC_CROSS</AscendingCrossing>
  <StartLat>-81.8</StartLat>
  <StartDirection>A</StartDirection>
  <EndLat>81.8</EndLat>
  <EndDirection>A</EndDirection>
</Orbit>
```

ASC_DESC_FLAG = 'Descending'

```
<Orbit>
  <AscendingCrossing>FIRST_ASC_CROSS - 167.64</AscendingCrossing>
  <StartLat>81.8</StartLat>
```

```
  <StartDirection>D</StartDirection>
  <EndLat>-81.8</EndLat>
  <EndDirection>D</EndDirection>
</Orbit>
```

AMSR-A

Collection:

```
<OrbitParameters>
  <SwathWidth>1600.0</SwathWidth>
  <Period>101.0</Period>
  <InclinationAngle>98.62</InclinationAngle>
  <NumberOfOrbits>0.5</NumberOfOrbits>
  <StartCircularLatitude>-90.0</StartCircularLatitude>
</OrbitParameters>
```

Granule:

ASC_DESC_FLAG = 'Ascending' or 'ASCENDING'

```
<Orbit>
  <AscendingCrossing>FIRST_ASC_CROSS</AscendingCrossing>
  <StartLat>-81.8</StartLat>
  <StartDirection>A</StartDirection>
  <EndLat>81.8</EndLat>
  <EndDirection>A</EndDirection>
</Orbit>
```

ASC_DESC_FLAG = 'Descending' or 'DESCENDING'

```
<Orbit>
  <AscendingCrossing>FIRST_ASC_CROSS - 167.375</AscendingCrossing>
  <StartLat>81.8</StartLat>
  <StartDirection>D</StartDirection>
  <EndLat>-81.8</EndLat>
  <EndDirection>D</EndDirection>
</Orbit>
```

MISR

Collection:

```
<OrbitParameters>
  <SwathWidth>400.0</SwathWidth>
  <Period>98.88</Period>
  <InclinationAngle>98.3</InclinationAngle>
```

<NumberOfOrbits>1.0</NumberOfOrbits>

</OrbitParameters>

Granule:

FIRST_ASC_CROSS > 347.65

<Orbit>

<AscendingCrossing>FIRST_ASC_CROSS - 527.65</AscendingCrossing>

<StartLat>FIRST_EDGE</StartLat>

<StartDirection>D if START_BLOCK between 19 and 162. A otherwise</StartDirection>

<EndLat>LAST_EDGE</EndLat>

<EndDirection>D if END_BLOCK between 19 and 162. A otherwise </EndDirection>

</Orbit>

FIRST_ASC_CROSS < -12.35

<Orbit>

<AscendingCrossing>FIRST_ASC_CROSS + 192.35</AscendingCrossing>

<StartLat>FIRST_EDGE</StartLat>

<StartDirection>D if START_BLOCK between 19 and 162. A otherwise</StartDirection>

<EndLat>LAST_EDGE</EndLat>

<EndDirection>D if END_BLOCK between 19 and 162. A otherwise </EndDirection>

</Orbit>

FIRST_ASC_CROSSbetween -12.35 and 347.65

<Orbit>

<AscendingCrossing>FIRST_ASC_CROSS - 167.65</AscendingCrossing>

<StartLat>FIRST_EDGE</StartLat>

<StartDirection>D if START_BLOCK between 19 and 162. A otherwise</StartDirection>

<EndLat>LAST_EDGE</EndLat>

<EndDirection>D if END_BLOCK between 19 and 162. A otherwise </EndDirection>

</Orbit>

AQUARIUS

Collection:

<OrbitParameters>

<SwathWidth>390.0</SwathWidth>

```
  <Period>97.87</Period>
  <InclinationAngle>98.00</InclinationAngle>
  <NumberOfOrbits>1.0</NumberOfOrbits>
  <StartCircularLatitude>-90.0</StartCircularLatitude>
</OrbitParameters>
```

Granule:

```
<Orbit>
  <AscendingCrossing>FIRST_ASC_CROSS</AscendingCrossing>
  <StartLat>-90.0</StartLat>
  <StartDirection>A</StartDirection>
  <EndLat>-90.0</EndLat>
  <EndDirection>A</EndDirection>
</Orbit>
```

4.7.4.6.5 TwoDCoordinateSystems (Granule & Collection)

TwoCoordinateSystem metadata facilitates searching for data using alternative coordinate systems besides the traditional geographic system. This includes MISR Path and Block, or MODIS grid. Valid TwoDCoordinateSystems are defined in an external file, EcBmBmgtTwoDCoords.xml. This file defines the name of each system, min and max x and y coordinates, and the ProductSpecificAttributes (PSAs) in the native ECS metadata from which the x and y start and end values for a given granule in this coordinate system should be obtained. Collections are mapped to a TwoDCoordinateSyatem using the bg_collection_configuration.TwoDCoordinateSystem column. If this column is null, then no TwoDCoordinateSyatem metadata will be generated. Below is the definition of valid TwoD coordinate systems (as defined in the file /usr/ecs/<MODE>/CUSTOM/data/BMGT/EcBmBmgtTwoDCoords.xml):

```
<TwoDCoordinateSystems>
<!-- MISR Coordinate System -->
    <TwoDCoordinateSystemDefinition>
        <TwoDCoordinateSystem>
            <TwoDCoordinateSystemName>MISR</TwoDCoordinateSystemName>
            <Coordinate1>
                <MinimumValue>1</MinimumValue>
                <MaximumValue>233</MaximumValue>
            </Coordinate1>
            <Coordinate2>
                <MinimumValue>1</MinimumValue>
```

```
                <MaximumValue>180</MaximumValue>
            </Coordinate2>
        </TwoDCoordinateSystem>
        <XBeginName>SP_AM_PATH_NO</XBeginName>
        <YBeginName>SP_AM_MISR_StartBlock</YBeginName>
        <YEndName>SP_AM_MISR_EndBlock</YEndName>
    </TwoDCoordinateSystemDefinition>
<!-- MODIS Tile EASE Coordinate System -->
    <TwoDCoordinateSystemDefinition>
        <TwoDCoordinateSystem>
            <TwoDCoordinateSystemName>MODIS Tile
EASE</TwoDCoordinateSystemName>
            <Coordinate1>
                <MinimumValue>0</MinimumValue>
                <MaximumValue>18</MaximumValue>
            </Coordinate1>
            <Coordinate2>
                <MinimumValue>0</MinimumValue>
                <MaximumValue>38</MaximumValue>
            </Coordinate2>
        </TwoDCoordinateSystem>
        <XBeginName>HORIZONTALTILENUMBER</XBeginName>
        <YBeginName>VERTICALTILENUMBER</YBeginName>
    </TwoDCoordinateSystemDefinition>
<!-- MODIS Tile SIN Coordinate System -->
    <TwoDCoordinateSystemDefinition>
        <TwoDCoordinateSystem>
            <TwoDCoordinateSystemName>MODIS Tile
SIN</TwoDCoordinateSystemName>
            <Coordinate1>
                <MinimumValue>0</MinimumValue>
                <MaximumValue>35</MaximumValue>
            </Coordinate1>
            <Coordinate2>
                <MinimumValue>0</MinimumValue>
                <MaximumValue>17</MaximumValue>
```

```
            </Coordinate2>
         </TwoDCoordinateSystem>
         <XBeginName>HORIZONTALTILENUMBER</XBeginName>
         <YBeginName>VERTICALTILENUMBER</YBeginName>
     </TwoDCoordinateSystemDefinition>

<TwoDCoordinateSystemMappings>
   <TwoDCoordinateSystemMapping>
              <!-- Note: Mapping of collections to 2D coord systems will now
be done in DB -->
      <TargetCollection>
         <ShortName>MIBTRPEP</ShortName>
         <VersionId>1</VersionId>
      </TargetCollection>
   ...
      <TwoDCoordinateSystem>
         <TwoDCoordinateSystemName>MISR</TwoDCoordinateSystemName>
         <Coordinate1>
            <MinimumValue>1</MinimumValue>
            <MaximumValue>233</MaximumValue>
         </Coordinate1>
         <Coordinate2>
            <MinimumValue>1</MinimumValue>
            <MaximumValue>180</MaximumValue>
         </Coordinate2>
      </TwoDCoordinateSystem>
      <XBeginName>SP_AM_PATH_NO</XBeginName>
      <YBeginName>SP_AM_MISR_StartBlock</YBeginName>
      <YEndName>SP_AM_MISR_EndBlock</YEndName>
      <XEndName>SP_AM_PATH_NO</XEndName>
   </TwoDCoordinateSystemMapping>
</TwoDCoordinateSystemMappings>
```

Valid values for bg_collection_configuration.TwoDCoordinateSystem TwoDCoordinateSystems, are defined in EcBmBmgtTwoDCoords.xml, and are as follows:

- MISR
- MODIS TILE EASE
- MODIS TILE SIN

The TwoDCoordinateSystem configuration is used in both granule and collection metadata. The contents of the <TwoDCoordinateSystem> element will be copied verbatim to the collection metadata for all collections mapped to that coordinate system.

For granules contained in the mapped collections, the values from the mapping file are used to populate the <TwoDCoordinateSystem> element of the granule metadata file as follows:

Values populated based on the mapping file:

NAME = Value of <TwoDCoordinateSystemName> from mapping file.

X_START=Value of the PSA specified by <XBeginName>

X_END=Value of the PSA specified by <XEndName>

Y_START=Value of the PSA specified by <YBeginName>

Y_END=Value of the PSA specified by <YEndName>

Resultant granule metadata content:

```
<TwoDCoordinateSystem>
  <TwoDCoordinateSystemName>NAME</TwoDCoordinateSystemName>
    <StartCoordinate1>X_START</StartCoordinate1>
    <EndCoordinate1>X_END</EndCoordinate1>
    <StartCoordinate2>Y_START</StartCoordinate2>
    <EndCoordinate2>Y_END</EndCoordinate2>
 </TwoDCoordinateSystem>
```

4.7.4.6.6 AdditionalAttributes (Granule & Collection)

The ECHO schema contains 'AdditionalAttributes' which are equivalent to ECS PSAs. PSA to AdditionalAttribute translation is mostly a one to one conversion, however, Collection AdditionalAttribute metadata must have datatype information, against which granule AddiitonalAttribute values will be validated on ECHO ingest. This is all handled in the XML stylesheets.

ECS Collection Descriptor (converted from ODL to XML)

```
<AdditionalAttributesContainer CLASS="1" DATA_LOCATION="NONE"
MANDATORY="FALSE">
     <AdditionalAttributeDatatype CLASS="1" DATA_LOCATION="MCF"
MANDATORY="FALSE" NUM_VAL="1">
          int
     </AdditionalAttributeDatatype>
     <AdditionalAttributeDescription CLASS="1" DATA_LOCATION="MCF"
MANDATORY="FALSE" NUM_VAL="1">
          Horizontal tile number of a grid, which increases from left to
right.
     </AdditionalAttributeDescription>
     <AdditionalAttributeName CLASS="1" DATA_LOCATION="MCF" MANDATORY="FALSE"
NUM_VAL="1">
          HORIZONTALTILENUMBER
     </AdditionalAttributeName>
</AdditionalAttributesContainer>
```

Collection:

```
   <AdditionalAttributes>
      <AdditionalAttribute>
         <Name>HORIZONTALTILENUMBER</Name>
         <DataType>INT</DataType>
         <Description>Horizontal tile number of a grid, which increases from
left to right.</Description>
      </AdditionalAttribute>
   </AdditionalAttributes>
```

Granule

```
  <AdditionalAttributes>
      <AdditionalAttribute>
         <Name>HORIZONTALTILENUMBER</Name>
         <Values>
            <Value>06</Value>
         </Values>
      </AdditionalAttribute>
   </AdditionalAttributes>
```

ECS PSA datatypes map to ECHO AdditionalAttribute types as follows:

ECS	=>	ECHO
VARCHAR	=>	STRING
FLOAT	=>	FLOAT
INT	=>	INT
DATETIME	=>	DATETIME_STRING
TIME	=>	TIME_STRING
DATE	=>	DATETIME_STRING
DATE	=>	DATE_STRING (for NISDC and EDF)

For AST_L1T granules two <AdditionalAttributes> FullResolutionVisibleBrowseAvailable, FullResolutionThermalBrowseAvailable are added based on the existence of *_V.tif and *_T.tif files in the metadata.

```
<AdditionalAttribute>
    <Name>FullResolutionVisibleBrowseAvailable</Name>
    <Values>
      <Value>Y</Value>
    </Values>
  </AdditionalAttribute>
  <AdditionalAttribute>
    <Name>FullResolutionThermalBrowseAvailable</Name>
    <Values>
      <Value>Y</Value>
    </Values>
  </AdditionalAttribute>
```

4.7.4.6.7 CloudCover (Granule)

The ECHO schema contains a single configuration parameter for the location of granule cloud cover percent metadata, while in the ECS schema, this percentage may be contained in one of many locations (core metadata, PSA, etc). Sometimes, there may be multiple cloud cover percentage values in the metadata of a given granule, and which one is most reliable depends on the collection. BMGT will use the cloudSourceId column in AmCollection to determine the correct location for cloud cover metadata for each collection. Each CloudCoverSourceId maps to a record in DlCloudCoverSource. Each configured cloudcover source has a sourceType(C or P) and a sourceName. If the sourceType is C, then the CloudCover is inserted into the granule metadata as the result of the following xpath(in the ECS schema):

MeasuredParameter/MeasuredParameterContainer/QAStats/QAPercentCloudCover (use the largest value if multiple are present)

If the sourceType is P, then the CloudCover is inserted into the granule meatdata as the value of the following XPath(in the ECS schema):

PSAs/PSA[PSAName=$sourceName]/PSAValue

Where $sourceName is the value of the sourceName column. If there is no value at the specified location, or if the value of sourceType is neither C nor P, then no CloudCover element is inserted.

4.7.4.6.8 DIF ID (Collection)

A DIF ID is used to map a collection in ECHO to a collection in the Global Change Master Directory (http://gcmd.nasa.gov). This ID is usually, but not always, equivalent to "<ShortName><VersionID>". Since the rule does not apply universally, the Dif ID for a collection will be obtained from the difid column in the bg_collection_configuration table. All collections should have a value specified, but if they do not, then the DIF ID will be omitted from the xml metadata. An example of the DIF ID metadata is shown below.

```
<AssociatedDIFs>
    <DIF>
        <EntryId>MIL2ASAE2</EntryId>
    </DIF>
</AssociatedDIFs>
```

4.7.4.6.9 Convert ECS to ECHO10 schema (Granule & Collection)

In addition to adding metadata fields, and making specific conversions as outlined above, there are many simple one to one translations which are made to BMGT products in order to conform to the ECHO 10 schema. These conversions are primarily done in the GranTransform.xsl and CollTransform.xsl stylesheets which convert from ECS metadata schema into ECHO 10 schema. The exact mapping between ECS and ECHO schemas is not contained here, as is exists in the stylesheets referenced above.

Part of the conversion process is to convert all datetimes in the ECS metadata to UTC compliant datetimes. In general, this involves simply adding a 'T' between date and time, and adding a 'Z' at the end of the datetime string. Unlike insert and last update times as discussed above, the remaining datetimes are science datetimes and already in GMT time, so the addition of the T and Z does not modify the time, only puts it in the correct syntax and does not modify the logical values of these datetimes at all. Whereas in previous versions, BMGT truncated or padded datetimes to contain 3 decimal digits for milliseconds, BMGT will now preserve the precision form the native metadata where possible.

Table 4.7.4-9. XPaths ECS Metadata Insertion XPaths

Item	ECHO 10 Path
Collection:	**CollectionMetadataFile/Collections/Collection**
InsertTime	InsertTime
LastUpdate	LastUpdate
Visible	Visible
Orderable	Orderable
DatasetId	DataSetId
GranuleSpatialRepresentation	Spatial/GranuleSpatialRepresentation
CoordinateSystem	Spatial/HorizontalSpatialDomain/Geometry/CoordinateSystem
BacktrackOrbitMetadata	Spatial/OrbitParameters
TwoDCoordinateSystem	TwoDCoordinateSystems/TwoDCoordinateSystem/*
AdditionalAttributes	AdditionalAttributes/AdditionalAttribute/*
DIF ID	AssociatedDIFs/DIF
Granule:	**GranuleMetadataFile/Granules/Granule/**
InsertTime	InsertTime
LastUpdate	LastUpdate
OnlineAccessURL	OnlineAccessURLs/OnlineAccessURL/URL
OnlineAccessURL/MIMEType	OnlineAccessURLs/OnlineAccessURL/MimeType
OnlineResource	OnlineResources/OnlineResource/URL
OnlineResource/MIME	OnlineResources/OnlineResource/MimeType
OnlineResource/Type	OnlineResources/OnlineResource/Type
Visible	Visible
Orderable	Orderable
GranuleUR	GranuleUR
DatsetId	Collection/DataSetId
RestrictionFlag	RestrictionFlag
BacktrackOrbitMetadata	Spatial/HorizontalSpatialDomain/Orbit/*
TwoDCoordinateSystem	TwoDCoordinateSystem/*
AdditionalAttribute Name	AdditionalAttributes/AdditionalAttribute/Name
AdditionalAttribute Value	AdditionalAttributes/AdditionalAttribute/Values/Value
CloudCover	CloudCover

Table 4.7.4-10. SMAP Metadata Insertion XPaths (1 of 4)

Item	Source	ISO Path
Collection:		
Relative to: //gmi:MI_Metadata/gmd:identificationInfo/		
DataSetId	BMGT	gmd:MD_DataIdentification[gmd:citation/gmd:CI_Citation/gmd:title/gco:CharacterString='DataSetId']/gmd:aggregationInfo/gmd:MD_AggregateInformation/gmd:aggregateDataSetIdentifier/gmd:MD_Identifier/gmd:code/gco:CharacterString
LastUpdate	BMGT	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation[gmd:title/gco:CharacterString='UpdateTime']/gmd:date/gmd:CI_Date/gmd:date/gco:DateTime
InsertTime	BMGT	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation[gmd:title/gco:CharacterString='InsertTime']/gmd:date/gmd:CI_Date/gmd:date/gco:DateTime
DIF	BMGT	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation[gmd:title/gco:CharacterString='DIFID']/gmd:identifier/gmd:MD_Identifier/gmd:code/gco:CharacterString
ShortName	Native	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation/gmd:identifier/gmd:MD_Identifier[gmd:description/gco:CharacterString='The ECS Short Name']/gmd:code/gco:CharacterString
VersionId	Native	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation[gmd:identifier/gmd:MD_Identifier/gmd:description/gco:CharacterString='The ECS Short Name']/gmd:edition/gco:CharacterString
LongName	Native	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation[gmd:identifier/gmd:MD_Identifier/gmd:description/gco:CharacterString='The ECS Short Name']/gmd:title/gco:CharacterString
Description	Native	gmd:MD_DataIdentification[gmd:citation/gmd:CI_Citation/gmd:identifier/gmd:MD_Identifier/gmd:description/gco:CharacterString='The ECS Short Name']/gmd:abstract/gco:CharacterString
RevisionDate	Native	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation[gmd:identifier/gmd:MD_Identifier/gmd:description/gco:CharacterString='The ECS Short Name']/gmd:date/gmd:CI_Date/gmd:date/gco:Date
BoundingRectangle	Native	gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:geographicElement/gmd:EX_GeographicBoundingBox/gmd:northBoundLatitude/gco:Decimal
	Native	gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:geographicElement/gmd:EX_GeographicBoundingBox/gmd:southBoundLatitude/gco:Decimal

Table 4.7.4-10. SMAP Metadata Insertion XPaths (2 of 4)

Item	Source	ISO Path
Collection:		
	Native	gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:geographicElement/gmd:EX_GeographicBoundingBox/gmd:westBoundLongitude/gco:Decimal
	Native	gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:geographicElement/gmd:EX_GeographicBoundingBox/gmd:eastBoundLongitude/gco:Decimal
ArchiveCenter	Native	gmd:MD_DataIdentification/gmd:pointOfContact/gmd:CI_ResponsibleParty[gmd:role/gmd:CI_RoleCode='distributor']/gmd:organisationName/gco:CharacterString
ProcessingCenter	Native	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation/gmd:citedResponsibleParty/gmd:CI_ResponsibleParty[gmd:role/gmd:CI_RoleCode='originator']/gmd:organisationName/gco:CharacterString
VersionDescription	Native	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation/gmd:otherCitationDetails/gco:CharacterString
BeginningDateTime	Native	gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:temporalElement/gmd:EX_TemporalExtent/gmd:extent/gml:TimePeriod/gml:beginPosition
EndingDateTime	Native	gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:temporalElement/gmd:EX_TemporalExtent/gmd:extent/gml:TimePeriod/gml:endPosition
Granule:		
Relative to //gmi:MI_Metadata/gmd:identificationInfo/		
GranuleUR	BMGT	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation[gmd:abstract/gco:CharacterString='GranuleUR']/gmd:title/gco:CharacterString
ShortName	Native	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation/gmd:identifier/gmd:MD_Identifier[gmd:description/gco:CharacterString='The ECS Short Name']/gmd:code/gco:CharacterString
VersionID	Native	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation[gmd:identifier/gmd:MD_Identifier/gmd:description/gco:CharacterString='The ECS Short Name']/gmd:edition/gco:CharacterString
BoundingRectangle	Native	gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:geographicElement/gmd:EX_GeographicBoundingBox/gmd:northBoundLatitude/gco:Decimal
	Native	gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:geographicElement/gmd:EX_GeographicBoundingBox/gmd:southBoundLatitude/gco:Decimal

Table 4.7.4-10. SMAP Metadata Insertion XPaths (3 of 4)

Item	Source	ISO Path
Collection:		
	Native	gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:geographicElement/gmd:EX_GeographicBoundingBox/gmd:westBoundLongitude/gco:Decimal
	Native	gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:geographicElement/gmd:EX_GeographicBoundingBox/gmd:eastBoundLongitude/gco:Decimal
BeginningDateTime	Native	gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:temporalElement/gmd:EX_TemporalExtent/gmd:extent/gml:TimePeriod/gml:beginPosition
EndingDateTime	Native	gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:temporalElement/gmd:EX_TemporalExtent/gmd:extent/gml:TimePeriod/gml:endPosition
DataSetId	BMGT	gmd:MD_DataIdentification[gmd:citation/gmd:CI_Citation/gmd:title/gco:CharacterString='DataSetId']/gmd:aggregationInfo/gmd:MD_AggregateInformation/gmd:aggregateDataSetIdentifier/gmd:MD_Identifier/gmd:code/gco:CharacterString
LastUpdate	BMGT	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation[gmd:title/gco:CharacterString='UpdateTime']/gmd:date/gmd:CI_Date/gmd:date/gco:DateTime
InsertTime	BMGT	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation[gmd:title/gco:CharacterString='InsertTime']/gmd:date/gmd:CI_Date/gmd:date/gco:DateTime
RestrictionFlag	BMGT	gmd:MD_DataIdentification[gmd:citation/gmd:CI_Citation/gmd:title/gco:CharacterString='RestrictionFlag']/gmd:resourceConstraints/gmd:MD_LegalConstraints/gmd:otherConstraints/gco:CharacterString
Relative to //gmi:MI_Metadata/gmd:distributionInfo/gmd:MD_Distribution/gmd:distributor/gmd:MD_Distributor/gmd:distributorTransferOptions/gmd:MD_DigitalTransferOptions/:		
OnlineResource	BMGT	gmd:onLine/gmd:CI_OnlineResource[string-length(gmd:name/gco:CharacterString) != 0]
>URL	BMGT	gmd:onLine/gmd:CI_OnlineResource[string-length(gmd:name/gco:CharacterString) != 0]/gmd:linkage/gmd:URL
>MIME	BMGT	gmd:onLine/gmd:CI_OnlineResource[string-length(gmd:name/gco:CharacterString) != 0]/gmd:applicationProfile/gco:CharacterString
>Type	BMGT	gmd:onLine/gmd:CI_OnlineResource[string-length(gmd:name/gco:CharacterString) != 0]/gmd:name/gco:CharacterString
OnlineAccessURL	BMGT	gmd:onLine/gmd:CI_OnlineResource[string-length(gmd:name/gco:CharacterString) = 0]

Table 4.7.4-10. SMAP Metadata Insertion XPaths (4 of 4)

Item	Source	ISO Path
Collection:		
>URL	BMGT	gmd:onLine/gmd:CI_OnlineResource[string-length(gmd:name/gco:CharacterString) = 0]/gmd:linkage/gmd:URL
>MIME	BMGT	gmd:onLine/gmd:CI_OnlineResource[string-length(gmd:name/gco:CharacterString) = 0]/gmd:applicationProfile/gco:CharacterString
Relative to //gmi:MI_Metadata /		
LocalGranuleID	Native	gmd:fileIdentifier/gmx:FileName
ProductionDateTime	Native	gmd:dataQualityInfo/gmd:DQ_DataQuality/gmd:lineage/gmd:LI_Lineage/gmd:processStep/gmi:LE_ProcessStep/gmd:dateTime/gco:DateTime

4.7.4.7 Event and Error Messages

Error messages will be displayed to either the log file or the User Interface, depending on at what point during execution they occur.

4.7.4.8 Logs

Logging for all parts of the BMGT system will be handled by a uniform logging interface which is built on top of the log4j framework. All logs are written to /usr/ecs/<mode>/CUSTOM/logs directory unless configured differently via a properties file. Log files are recognizable as they contain the name of the component writing the log. For example, EcBmBMGTManualDriver.log is the log file written by the Manual Driver.

Logging parameters are initially configured via mkconfig, but are re-configurable at run-time. Configuration files are located at:/usr/ecs/mode/CUSTOM/data/BMGT/config/*/log4j.properties. Each top level component has its own log and configuration file: Monitor, Manual Driver, Auto Driver, and Gui. The Dispatcher has a log and configuration file for each subcomponent: Dispatcher, Generator, Exporter, etc.

An example of the properties found in a log4j configuration file are as follows:

Table 4.7.4-11. Logging Configurations

Property	Description	Value
log4j.rootLogger	Root logger with appender manualLog, with log level	INFO,manualLog
log4j.appender.manualLog	Defines manual log appender.	org.apache.log4j.RollingFileAppender
log4j.appender.exceptionLog.MaxBackupIndex	Maximum number backups.	50
log4j.appender.exceptionLog.MaxFileSize	Maximum size for exception log.	200
log4j.appender.manualLog.File	The absolute location of the log file	/usr/ecs/<MODE>/CUSTOM/logs/EcBmBMGTManualDriver.log
log4j.appender.manualLog.ImmediateFlush	This flag is by default set to true, which means the output stream to the file being flushed with each append operation.	TRUE
log4j.appender.manualLog.layout	Layout for file appender.	org.apache.log4j.PatternLayout
log4j.appender.manualLog.Layout.ConversionPattern	Pattern of elements that will be written to the appender using the gathered data	%d{ISO8601} %5p [THREAD %t] %c{1} - %m%n
log4j.additivity.manualLog	Parameter to override the default behavior of appender accumulation	false
log4j.appender.notifier	Sends an e-mail when a specific logging event occurs, typically on errors or fatal errors	org.apache.log4j.net.SMTPAppender
log4j.appender.notifier.layout	Layout for messages in emails.	org.apache.log4j.PatternLayout
log4j.appender.notifier.layout.ConversionPattern	Pattern of elements that will be written to the appender using the gathered data	%m%n
log4j.logger.emailLogger	Email logger with appender notifier, with log level	info,notifier
log4j.additivity.emailLogger	Parameter to override the default behavior of appender accumulation	false
log4j.logger.org.hibernate	Log level of hibernate messages.	ERROR
log4j.logger.org.hibernate.sql	Log level for logging hibernate sql.	INFO
log4j.logger.org.hibernate.cfg.HbmBinder	Logging level for which java class is bound to which DB table	ERROR

See http://logging.apache.org/log4j/1.2/manual.html for more info on log4j configuration.

4.7.4.9 Recovery

4.7.4.9.1 Manual Driver

There is no manual recovery required for the Manual Driver. If it is killed by a user interrupt, or encounters a fatal error, the operator is free to try the same command again once the cause of the failure is corrected, but there is no need, or ability, to recover the failed initial request.

4.7.4.9.2 Automatic Driver

If the Automatic Driver fails to complete while in the middle of querying the database or enqueueing requests, recovery is as simple as rerunning it. It is transactional and will not change the state of any requests until they have completed, so therefore a subsequent run will retrieve the same request and do all of the necessary processing as if it had not been done before.

4.7.4.9.3 Dispatcher

If the Dispatcher fails, recovery is as simple as rerunning it. If it dies ungracefully, it will move any in-process requests back to the Pending state. These requests will then be picked up again and restarted. No operator interaction is required prior to the restart, other than fixing whatever problem may have caused the server to die.

4.7.4.10 Postgres Error Handling

All BMGT components will attempt to deal with Postgres errors gracefully, usually by retrying the query. Much of this database interaction logic is handled via a framework called Hibernate. If a request resulted in a query of invalid SQL, the error would be logged to the log file and the request could move to the BLOCKED state. If there is a invalid SQL error while the Dispatcher is starting up, this could potentially result in Dispatcher being paused and would need to be resumed once the invalid data is fixed. Analysis would be required to determine what caused this issue. All Postgres errors will be reported to the log of the BMGT component in which the error occurred.

This page intentionally left blank.

4.7.5 Bulk Metadata Generation Tool GUI

The Bulk Metadata Generation Tool (BMGT) GUI is a web-based interface that allows the operator to monitor the export of metadata via BMGT (in Automatic, Manual, Corrective, or Verification mode). The primary purpose of the GUI is to provide the operator with a list of recent exports and their status as well as overall statistics. In addition, the operator can use it to configure various BMGT tuning parameters, such as ECHO connection properties. The GUI also displays the status of all BMGT components and will reflect any errors which arise during processing and export of requests.

The BMGT GUI splits its content across a number of tabs.

4.7.5.1 Content Tabs

Figure 4.7.5-1. Home Page and Navigation Panel

On first access to the GUI, the user is presented tabs at the top of the page. These tabs allow the user to switch between the various content pages of the GUI:

- Welcome/Login
- System Status
- Export Requests
- Export Activity/Activity-Errors
- Collection Configuration
- BMGT Configuration

The tab selections are displayed on each of the GUI pages to provide the user the ability to switch between the GUI content pages. The System Status tab provides the system statistics and process control. Here the user can view the state of the BMGT queues, pause queues and request processing, and view the status of incremental verification. The Export Requests tab provides a list of all export requests, with the ability to filter the list of the items of interest. In addition, a table showing aggregate request statistics is displayed. The Export Activity tab provides a list of all export activities performed on behalf of export requests, as well as any errors encountered. This tab also provides aggregate statistics for all activities in the system. The Collection Configuration tab allows the user to view and modify the collections enabled for BMGT export. The BMGT configuration tab allows the user to view and update the BMGT configuration parameters.

4.7.5.2 Login page

Figure 4.7.5-2. Login Page

The first page which the operator will see when accessing the BMGT GUI is the login page. This page allows the operator to log-in if desired. By default, the operator is not logged in and therefore has read-only access. The operator can view the various tabs of the GUI in read-only access mode. Upon entering the password and clicking the login button, the operator is given read-write access. An operator must be logged-in in order to modify process status, modify queue status (pause/resume), reset incremental verification, release or cancel a blocked request, or modify the values in the Collection or BMGT Configuration tabs.

4.7.5.3 System Status

The System Status tab provides a top level view of the current status of BMGT and allows control of BMGT processing. The tab is broken in to three main sections – Process status, Request Queue status and Incremental Verification status.

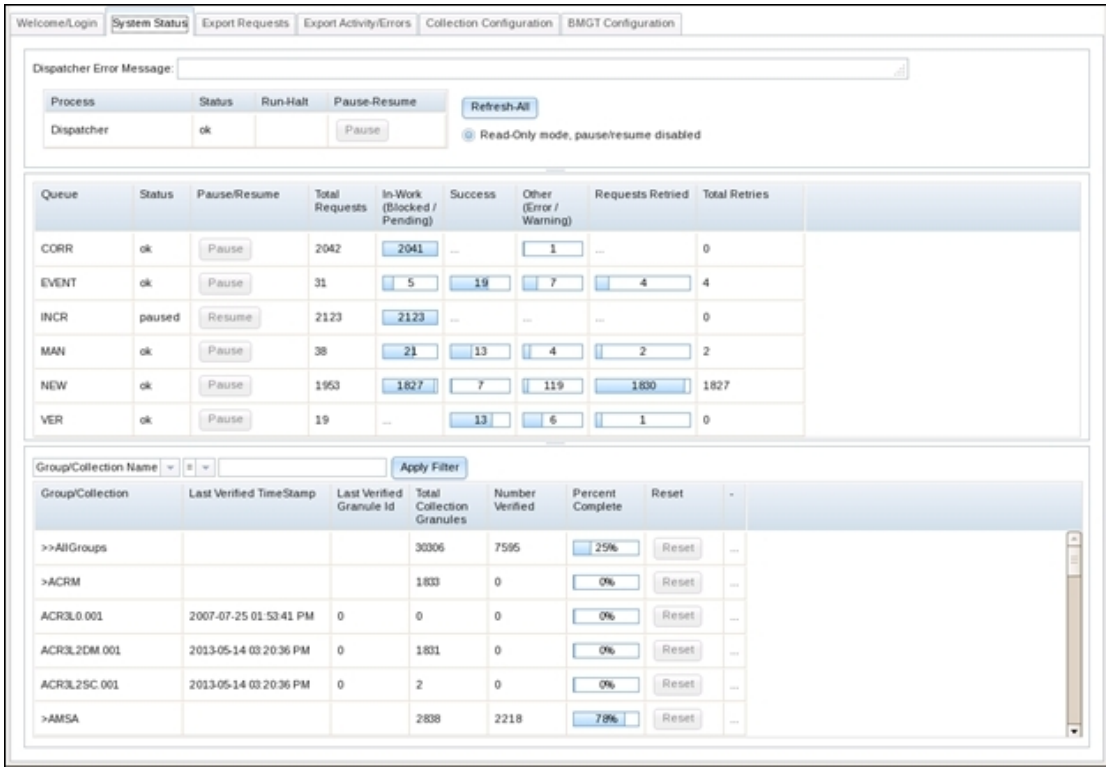


Figure 4.7.5-3. System Status Tab

Process Status and Control

The first section lists the main BMGT processes and their current state, and also allows control of those processes. The BMGT GUI currently has one controllable process:

Dispatcher – The main BMGT application which processes enqueued export requests for ingest into ECHO. Processing can be halted, paused and resumed within the system status tab.

A display box at the top of the process-status panel shows any messages from the dispatcher. A timer-based monitor function checks for any such messages. When found, the system-status tab will turn red and the message box will display the message.

Also visible to the right of the Process Status table are the refresh-all button and an indicator of read-only status. If the radio indicator is filled, the GUI is in read-only mode and certain features are disabled, such as the resume/pause button for the dispatcher process. The Refresh-All button activates a refresh of all data on this tab. All three panels will be updated.

Note the small dashes between sections. Clicking on these dashes allows the relative size of each panel to grow and shrink, allowing one section to fill more of the screen as desired.

Queue	Status	Pause/Resume	Total Requests	In-Work (Blocked / Pending)	Success	Other (Error / Warning)	Requests Retried	Total Retries
CORR	ok	Pause	2042	2041	...	1	...	0
EVENT	ok	Pause	31	5	19	7	4	4
INCR	paused	Resume	2123	2123	...	...	...	0
MAN	ok	Pause	38	21	13	4	2	2
NEW	ok	Pause	1953	1827	7	119	1830	1827
VER	ok	Pause	19	...	13	6	1	0

Figure 4.7.5-4. System-Status, Request Queue Status Panel

Queue Status and Control

The second section lists the BMGT export queues, their status, statistics on the contents of each queue, and the ability to pause or resume each queue.

CORR – (Corrective Queue) Contains export requests which have been enqueued automatically in order to repair an error. Two significant examples include the export of a collection metadata in response to an error when exporting the granule metadata, and export of collection or granule metadata in response to a discrepancy found by short form verification.

EVENT – (Catalog Event, aka Auto Queue) Contains any export requests that are enqueued in response to events in DsMdGrEventHistory. Usually these events are the result of a database trigger being fired due to an insert, delete, or update.

INCR – (Incremental Verification Queue) Contains requests enqueued for incremental verification.

MAN – (Manual Export Queue) Contains manually enqueued export requests.

NEW – (New Collection Export Queue) Contains export requests for newly enabled collections and their granules. This queue is separate from the EVENT queue so that the large volume of exports triggered by enabling a new collection for granule export does not drown out other types of export requests.

VER – (Verification Queue) Contains export requests for long form verification.

Each queue is processed independently. When multiple queues have requests to be processed, no one queue will be able to use all of the processing resources. However, resources are dynamically allocated and when only one queue is active, it will be able to use all of the resources.

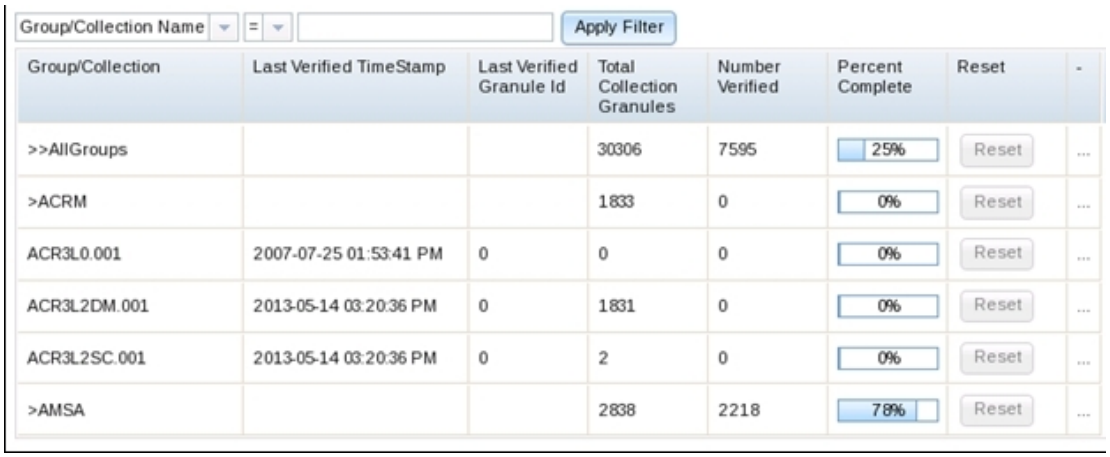


Figure 4.7.5-5. System Status, Incremental Verification Status Panel

Incremental Verification Status and Control

The third section displays the current incremental verification status for the entire system, as well as for each group and each collection. For each row, the total and verified number of granules is listed, as well as the percent verified. Each collection is listed with the lastUpdate time-stamp and granule ID of the most recently verified granule. Incremental verification can also be reset for each collection.

A filter specification setup is available at the top of this panel, allowing the choice of data-column, comparison operator and comparison value to be applied as a filter to the verification status table. Filtering by Group Id applies to a hidden column defining the group of the collection. Filtering by Group/Collection Name applies to the Group/Collection column as displayed, i.e., including any > or >> and the group id or "AllGroups". Note only one column/criteria can be defined at a time, and all filtering is cleared by clearing the comparison value field.

The table is also sortable by clicking on the column heading for Group/Collection (sorting is only allowed for this column). The sort can be undone by clicking on the "-" column heading on the right side, a sort of "dummy" column present specifically to allow undoing the sort selection on the Group/Collection column.

4.7.5.4 Export Requests Tab

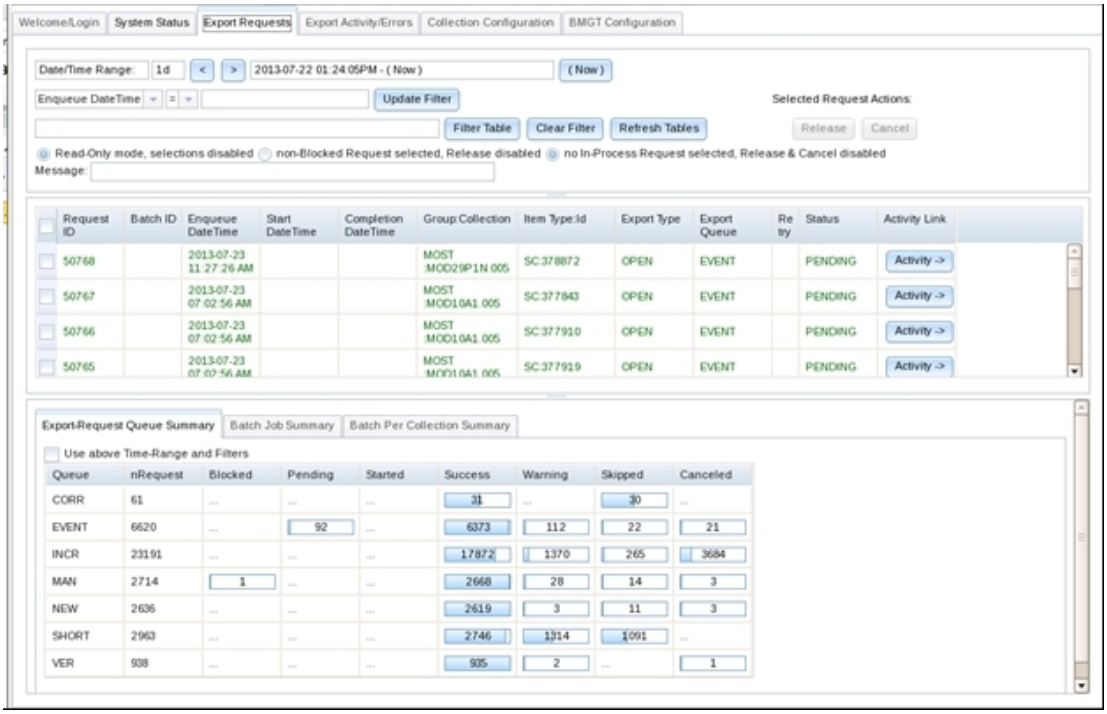


Figure 4.7.5-6. Export Requests Tab

The Export Requests tab lists all enqueued requests for metadata export. Requests can be added as a result of automatic database triggers, manual invocation, and as part of a verification invocation. Export requests are the driver of BMGT exports. These requests are placed on one of BMGT's 6 queues, each of which are worked off independently by the Dispatcher. Since the number of active and complete export requests can be quite large at any given time, the Export Request tab provides a filtering capability so that the operator can easily view only the requests they are interested in. The Export Requests tab also displays summary statistic for the export queues.

Export Request Filter

At the top of the Export Requests tab is a panel of filter controls which allow the operator to select the requests which they would like to view. The filter applies to the main export request listing, and when enabled, to the per-queue summary. The filter also applies to the per-batch summary listing, when this summary is activated – it cannot be disabled for this summary.

The first filter control allows selection by enqueue date-time range and is applied by default when the tab is first opened. The user can select a date/time range or time-window (e.g. 1h = 1 hour, 1d = 1 day) to view at a time. With a time-range defined, the user can press the buttons marked '<' and '>' to slide the time-window forward or backwards. For instance, if the time-range is set to '1h' (1 hour) the '<' and '>' buttons allow the operator to move the time-window by

one hour increments and view the requests enqueued during that time. Note that in general, the date-time filter is applied before any other filters, and the remaining filters will be applied to the results of date-time filtering. For requests, the date-time filter applies to the enqueue-time. (The date-time filter is not applied if a user explicitly defines a separate filter constraint against enqueu-time).

When first opened, the more-recent time boundary is set the marker (now), and the least-recent time boundary is set to (now) minus the time window. Pressing '<' will set the more-recent boundary to its current setting (or now) minus the time range value, and the least-recent time boundary will be set to establish the time-range (more-recent time boundary minus time range). Pressing the '>' button will move the time range closer to (now) but cannot exceed this value. Reaching this limit, the more-recent time boundary is set to (now).

(Now) is distinctive in that as the display data is refreshed for whatever reason, (now) will refer to the moment when the expression is evaluated. In any other case, the more-recent time boundary value will have the specified value during data refresh. The time range can be pegged to (now) at any time by pressing the "(Now)" button.

In addition to filtering based on a sliding date time window, the Export Request tab allows the user to filter based on many other criteria. A drop down is included to allow the user to select a table-column to filter on. The table-column in this case refers to BMGT database table columns, not specifically to the columns display, but all of the data displayed is contained in one of the table columns listed. Next, a drop down allows selection of the operator to use on the selected attribute (e.g. '=', '!=', '<', 'contains' etc). Finally, a text box is provided to specify the value (or values) to compare against. Multiple values, e.g. for between operator, are provided in a comma separated list.

Once a filter criteria is specified, pressing the 'Update Filter' button will add this filter to the filter list. Pressing the 'Filter Table' button will apply this filter. A 'Clear Filters' button is provided to remove any filters (besides the date-time window) and a 'Refresh Tables' button is provided to refresh the contents of the table to get any recent status changes or new requests.

Note that the current filter specification cannot itself be edited. To make changes, selecting any existing table-column from the filter specification will preset the current operator and comparison value for editing. Make any changes, including clearing the comparison value to remove this criterion, and press 'Update Filter'.

The date-time filter applies before any other filter criteria except if the request criteria itself contains a date-time constraint, or if the request criteria contains the request-id. The later exception, in particular, allows the Activity-to-Request link to be implemented by means of an activity-id criteria and remain independent of the date-time filter.

Below the filter criteria are a series of radio indicators and a message box. The radio indicators call out three specific status-conditions of the tab that affect the GUI behavior. Read-Only mode implies that selections are disabled (and a warning message will be displayed if request-selection is attempted). If Read-Only is cleared (read-write mode), the Release and Cancel buttons remain disabled until a selection is made. There is a radio indicator indicating this case, if no in-progress selection is made. Note that only in-progress requests can be selected for further action, and a warning message is displayed if non-in-progress request selection is attempted. Finally,

the release button is disabled if any requests are selected with status other than BLOCKED, and a radio indicator indicates this condition.

Export Request List

The next section of the Export Requests tab is a grid displaying the current contents of the bg_export_request table. This grid shows information about each request. The contents of the grid are dependent on the filters and date time window constraints described above. In addition, the request list uses a 'dynamic paging' approach, meaning that as the user scrolls through the list, items are pulled from the database on demand.

Request ID	Batch ID	Enqueue DateTime	Start DateTime	Completion DateTime	Group:Collection	Item Type:Id	Export Type	Export Queue	Retry	Status	Activity Link
50768		2013-07-23 11:27:26 AM			MOST :MOD29P1N.005	SC:378872	OPEN	EVENT		PENDING	Activity ->
50767		2013-07-23 07:02:56 AM			MOST :MOD10A1.005	SC:377843	OPEN	EVENT		PENDING	Activity ->
50766		2013-07-23 07:02:56 AM			MOST :MOD10A1.005	SC:377910	OPEN	EVENT		PENDING	Activity ->
50765		2013-07-23 07:02:56 AM			MOST :MOD10A1.005	SC:377919	OPEN	EVENT		PENDING	Activity ->

Figure 4.7.5-7. Export-Requests Tab, Requests Listing Table

The columns of the table are as follows:

RequestId – Unique and sequential identifier of the request.

Batch ID – ID given to export requests enqueued by the manual/verification driver. This batch ID is shared between all requests enqueued by the same invocation and allows tracking of the progress of that invocation.

Enqueue DateTime – The date and time at which the request was added to the queue.

Start DateTime – The date and time that the request was picked up for processing. Note that this timestamp will be updated if the request is retried.

Completion DateTime – The date and time that the request was completed.

Group:Collection – The Collection Group and Collection SNVI (Shortname/VersionID).

Item Type:ID – The item type (CL – collection, SC – granule) of the item whose metadata is requested, followed by the identifier of that item CollectionUR or GranuleUR).

Export Type – The type of export being requested. This is one of:

- OPEN – Export the current state of the item.
- ADD – Export an insert of the item (i.e. its full metadata). If the item is logically or physically deleted, export nothing.
- DEL – Export a deletion of the item. If the item is not logically or physically deleted, export nothing.
- VER – Export a verification request for the item (i.e. its full metadata with a verification flag). If the item is logically or physically deleted, export nothing.
- FORCE_DEL – Export a deletion for the item (only supported for collections). The current state of the item is not checked and therefore this export may introduce an

inconsistency with ECHO. Such a request will delete all granules in the collection from ECHO and it should be used only when absolutely necessary to repair incorrect collection metadata which can only be repaired by deleting and re exporting the metadata.

- COLL_UPDATE – Export a full collection update. This will result in a deletion export activity followed by the enqueueing of a COLL_ADD_ALL export after the initial deletion succeeds. Such a request will delete all granules in the collection from ECHO and it should be used only when absolutely necessary to repair incorrect collection metadata which can only be repaired with a full update.
- COLL_ADD_ALL – Export the collection and all of its granules. This will result in an export activity for adding the collection metadata, followed by the automatic enqueueing of requests for all of its granules (ADD) after the initial collection export succeeds. This export type is used when enabling a new collection for granule export. Note that in order to prevent drowning out other export types with a huge number of export requests, COLL_ADD_ALL requests, and the subsequent granule ADD requests will be placed on the NEW queue.

Export Queue – The queue which the request resides on. See discussion of queues in the System Status Tab section above.

Status – The current status of the request:

- PENDING – Initial state of a most requests. Request has been enqueued, but not yet picked up for processing.
- STARTED – Request has been picked up for processing and a corresponding Export Activity has been created.
- SUCCESS – Request has completed and has not encountered any errors.
- BLOCKED – Request is blocked awaiting release by the operator. This occurs when a corrective export request is added to the queue in response to an error, OR when a request encounters an ECHO ingest error which requires operator attention before the request can be processed.
- CANCELED – Request has been canceled. This is a terminal state and the request will not be retried or considered for processing.
- SKIPPED – Request was skipped due to a data related error during verification. The error must be fixed and an export or verification of the item re requested.
- ERROR – Request encountered an error. Currently all errors map to SKIPPED or BLOCKED status, but this status is reserved for future use.
- WARNING – The request has encountered a warning during ingest into ECHO. The associated metadata has been ingested, but the operator may want to investigate the error.

Retry – shows '*' when the request has been retried at least once, and blank otherwise.

Activity Link – Button which links to a list of any export activities (i.e. export attempts) associated with the request.

To the left of each export request is a check box. This checkbox may be selected (for Pending or Blocked requests), and then the user may click the 'Release' (Blocked only) or 'Cancel' buttons to either release the request(s) for processing or cancel the request(s).

Summary Statistics Table

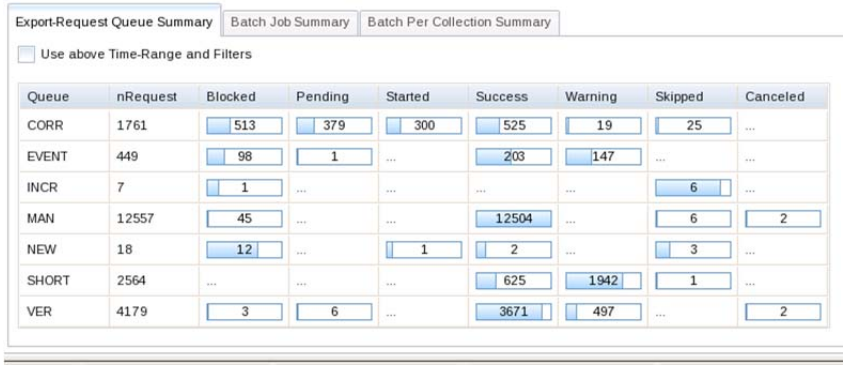


Figure 4.7.5-8. Export-Requests – Requests Queue Summary

The final section of the Export Requests tab provides various types of summary statistics. This section itself has three separate tabs, providing different views of the requests currently shown in the Export Request List.

The Export-Request Queue Summary sub tab provides a count of the requests in each state in each queue. The counts are shown as a bar graph representing the portion of the total count on that queue. If the Apply-Filters checkbox is checked, the counts shown here are dependent on the filters and date-time window specified above.

Figure 4.7.5-9. Export-Requests – Export Batch Summary

The Batch Job Summary sub tab shows statistics for each batch (matching the above filter settings). Batches are logical groupings of export requests that were invoked together in a single manual or verification export. This sub tab shows the start and end time as well as counts for different statuses within each batch. A 'Per-Collections View' button is provided which jumps to the Batch Per Collection Summary tab for that batch.

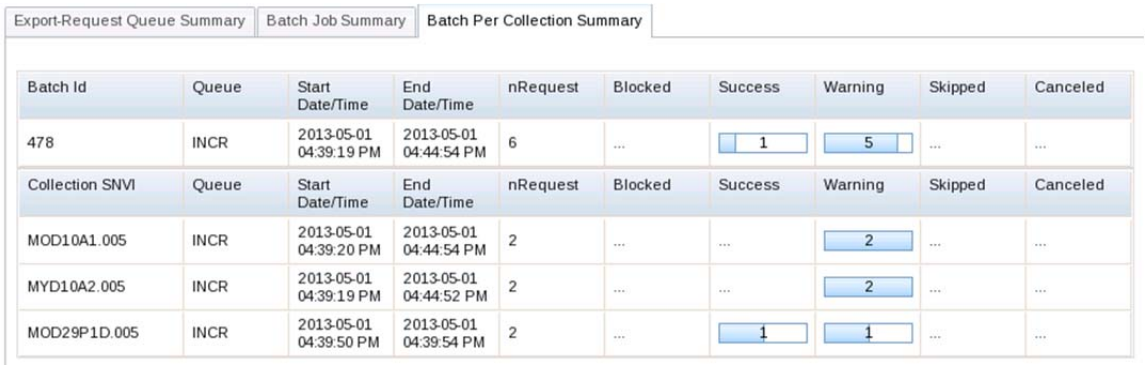


Figure 4.7.5-10. Export-Requests – Batch per Collection Summary

The Batch Per Collection Summary sub tab shows the statistics for a single batch, broken down by collection.

4.7.5.5 Export Activity /Activity-Errors

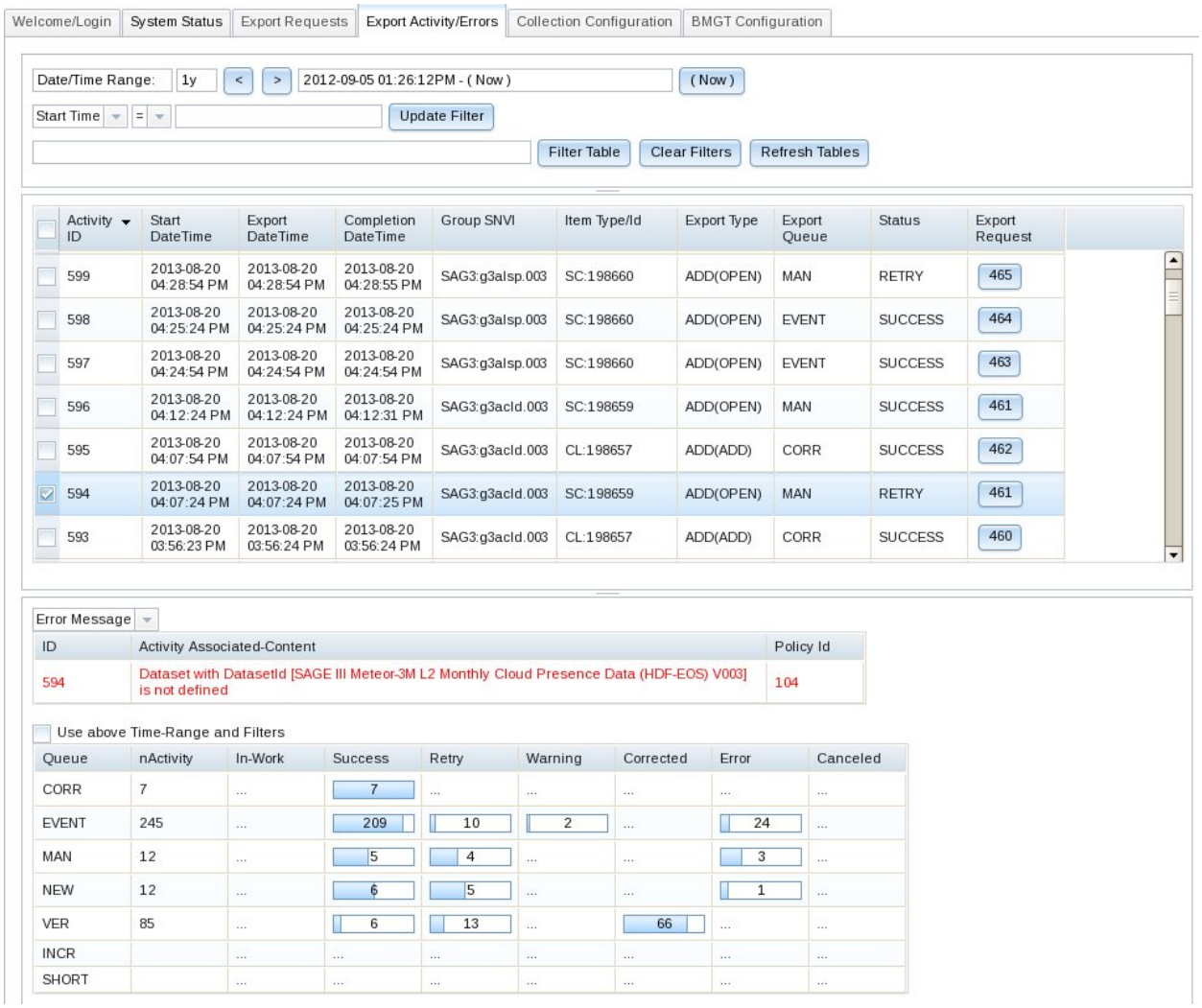


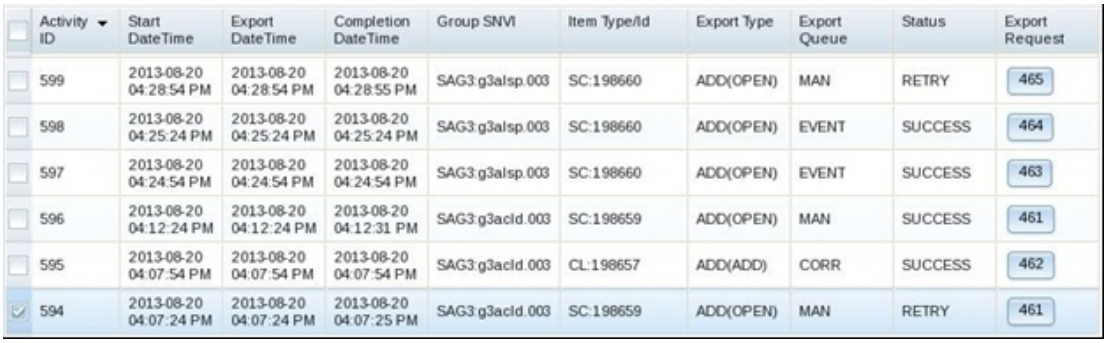
Figure 4.7.5-11. Export Activity / Errors

The Export Activity tab displays information on export activities (i.e. data-preparation and export to Echo). Each export request that has been processed by the dispatcher has one or more export activities associated with it, each representing a distinct attempt to process and export the associated metadata. If an export activity encounters an error, it will have associated error message(s) linked to it.

Export Activity Filter

The Export Activity tab contains the same filtering mechanism as the Export Request tab. See the filter description in that section above. For Activities, the date-time filter applies to Activity Start-Time.

Export Activity List



Activity ID	Start DateTime	Export DateTime	Completion DateTime	Group SNVI	Item Type/Id	Export Type	Export Queue	Status	Export Request
599	2013-08-20 04:28:54 PM	2013-08-20 04:28:54 PM	2013-08-20 04:28:55 PM	SAG3:g3alsp.003	SC:198660	ADD(OPEN)	MAN	RETRY	465
598	2013-08-20 04:25:24 PM	2013-08-20 04:25:24 PM	2013-08-20 04:25:24 PM	SAG3:g3alsp.003	SC:198660	ADD(OPEN)	EVENT	SUCCESS	464
597	2013-08-20 04:24:54 PM	2013-08-20 04:24:54 PM	2013-08-20 04:24:54 PM	SAG3:g3alsp.003	SC:198660	ADD(OPEN)	EVENT	SUCCESS	463
596	2013-08-20 04:12:24 PM	2013-08-20 04:12:24 PM	2013-08-20 04:12:31 PM	SAG3:g3acld.003	SC:198659	ADD(OPEN)	MAN	SUCCESS	461
595	2013-08-20 04:07:54 PM	2013-08-20 04:07:54 PM	2013-08-20 04:07:54 PM	SAG3:g3acld.003	CL:198657	ADD(ADD)	CORR	SUCCESS	462
594	2013-08-20 04:07:24 PM	2013-08-20 04:07:24 PM	2013-08-20 04:07:25 PM	SAG3:g3acld.003	SC:198659	ADD(OPEN)	MAN	RETRY	461

Figure 4.7.5-12. Export Activity / Errors – Export Activity List

The next section of the Export Activity tab is a grid displaying the current contents of the bg_export_activity table. This grid shows information about each activity. The contents of the grid are dependent on the filters and date time window constraints described above. In addition, the request list uses a 'dynamic paging' approach, meaning that as the user scrolls through the list, items are pulled from the database on demand.

The columns of the table are as follows:

ActivityId – Unique and sequential identifier of the activity.

Start DateTime – The date and time that the export activity was picked up for processing.

Export DateTime – The data and time that the export to ECHO occurred.

Completion DateTime – The date and time that the export activity completed processing.

Group:Collection – The Collection Group and Collection SNVI (Shortname/VersionID).

Item Type:ID – The item type (CL – collection, SC – granule) of the item whose metadata is requested, followed by the identifier of that item (CollectionUR or GranuleUR).

Export Type – The type of export being requested. This is a combination of the export type of the export request and of the export activity in the format:

"activity_export_type(request_export_type)".

The export request type and export activity type may be different.For instance, an OPEN export request will export the current state of a granule or collection. The type of the export activity (ADD or DEL) will reflect what the actual exported state is. The possible export request types are listed above in the Export Request tab description. The valid Export Activity types are as follows:

- ADD – Export an insert of the item (i.e. its full metadata). If the item is logically or physically deleted, export nothing.
- DEL – Export a deletion of the item. If the item is not logically or physically deleted, export nothing.
- VER – Export a verification request for the item (i.e. its full metadata with a verification flag). If the item is logically or physically deleted, export nothing.

Export Queue – The queue which the request resides on. See discussion of queues in the System Status Tab section above.

Status – The current status of the request:

- NEW – Initial State of an Export Activity.
- GENERATING – Metadata is being generated (NOTE: this is a transient state and not persisted to the database, so will not be visible in the GUI).
- EXPORTING – Metadata is in process of being exported to ECHO.
- EVALUATING – BMGT is evaluating the response received from ECHO (NOTE: this is a transient state and not persisted to the database, so will not be visible in the GUI).
- SUCCESS – Export Activity has been successfully exported an encountered no errors.
- WARNING – Export Activity has been successfully exported to ECHO but encountered a warning. A warning indicates that the metadata was ingested successfully, but some unexpected state was found along the way. For instance a collection or granule delete could get a warning if the item has already been deleted (DEL) or was never exported to ECHO (ADD).
- CORRECTED_BY_ECHO – Verification exports only. ECHO was found to have incorrect metadata. The discrepancy has been automatically repaired, but an operator should look into why it occurred.
- RETRY – Export Activity has failed. The associated Export Request will be returned to the queue and will usually and eventually result in a new Export Activity being created and processed.
- CANCELED – The associated Export Request has been cancelled.
- ERROR – The Export Activity has failed and will not be retried (Verification only). This occurs when a data error is encountered (by BMGT or Echo) leading to the export request being skipped.

Request Link – Button which links to the associated Export Request.

Error Messages

Figure 4.7.5-13. Export Activity / Errors – Error Messages

The section below the Export Activity List will display any error messages associated with the currently selected Activity. There may be multiple error messages for a given Activity if that activity encountered multiple ingest errors from ECHO. Multiple error messages are displayed with errors having a Policy Id in red and preceding all others. This highlights the critical errors needing to be addressed vs. other errors found but which can be ignored.

Summary Statistics Table

Figure 4.7.5-14. Export Activity / Errors – Summary Statistics

The final section of the Export Activity tab provides a count of the Activities in each state in each queue. The counts are shown as a bar graph representing the portion of the total count on that queue. If the Apply-Filters checkbox is checked, the counts shown here are dependent on the filters and date-time window specified above.

4.7.5.6 Collection Configuration Tab

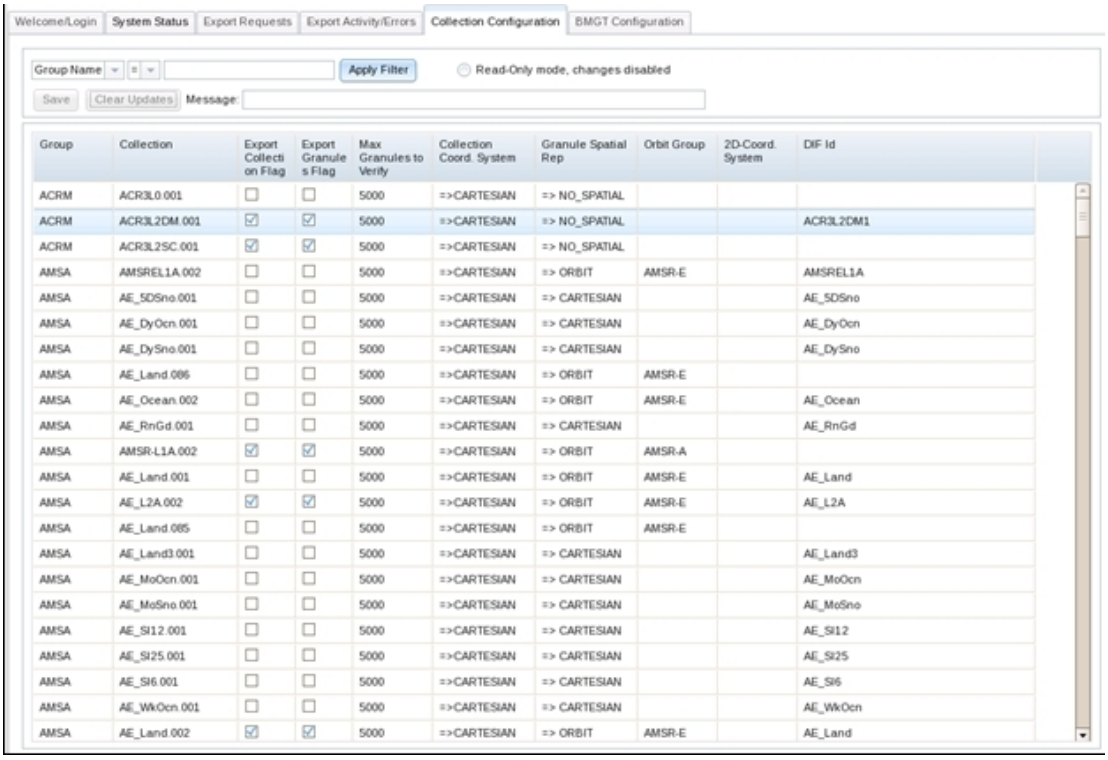


Figure 4.7.5-15. Collection Configuration

The Collection Configuration tab displays and allows the modification of configuration for all collections which BMGT is configured to export metadata for. This tab is essentially a table with each row representing a collection and each column representing some property of that collection. Many of the properties are changeable, assuming the user is logged in for update. Double clicking a text value or clicking a check box will allow it to be edited, and once a value has been changed, the Save and Clear Updates buttons will be enabled at the top left. Click Save to persist the changes, or Clear Updates to discard them.

Once a change has been made, the other BMGT GUI tabs will be disabled until Save or Clear is pressed. A message is displayed in the message box if another tab is clicked. Other messages are possible if e.g.,

- an attempt is made to set the Export Granules Flag when the Export Collection Flag is not set (not allowed),
- if the Export Collection Flag is cleared when the Export Granules Flag is set (allowed, but both are cleared), or
- if a checkbox is checked in read-only mode.

There is a filter specification feature at the top of the tab that will allow the user to limit the collections displayed. This includes a drop-down selection of the column – Group name or Collection name, a drop-down selection for the comparison operator, and a comparison value(s) box. The filter behaves very similarly to the filters for Export Requests and Export Activity, but here only one column/criteria can be defined at a time, and all filtering is cleared by clearing the comparison value field.

The properties displayed for each collection are as follows (properties which can be edited are indicated with a '*'):

Group – The datapool group associated with the collection.

Collection – The Shortname and Version ID (SNVI) of the collection.

Export Collection Flag* - Indicates whether collection metadata shall be exported for this collection. Note that a collection could be disabled for export, but ECHO may still have its metadata, if it had been previously exported. BMGT will not automatically delete any metadata upon disabling of a collection. If the Export Collection Flag is cleared, the Export Granules Flag will be cleared (if it was previously set).

Export Granules Flag* - Indicates whether granule metadata shall be exported for this collection. Note that a collection cannot be enabled for granule export if it is not already enabled for collection export.

Max Granules to Verify* – The maximum number of granules from this collection to include in each incremental verification export batch.

Collection Coordinate System – The Coordinate System of the collection. This is usually set to a configurable default value, but can be overridden in the database (but not by the GUI). If the default value is used, it is prefixed by '=>', otherwise it has no prefix. See the document BE_82_01_AdditionalMetadataDescription.doc for more details on Collection Coordinate System.

Granule Spatial Representation – The spatial representation of the granules in this collection. This is usually derived from the spatialSearchType of the collection (in amCollection), but can also be manually specified in the database (but not by the GUI). If the value is automatically derived from spatialSearchType, it is prefixed with '=>'. If it is explicitly set, it has no prefix. See the document BE_82_01_AdditionalMetadataDescription.doc for more details on collection GranuleSpatialRepresentation.

Orbit Group – The "Backtrack" Orbit Group, if any associated with the collection. See the document BE_82_01_AdditionalMetadataDescription.doc for more details on Orbit Groups.

2D Coordinate System – The TwoDCoordinateSystem to use for this collection. See the document BE_82_01_AdditionalMetadataDescription.doc for more details on TwoDCoordinateSystems.

DIF Id* – The DIF ID for the collection, as defined in the Global Change Master Directory (http://gcmd.nasa.gov).

4.7.5.7 BMGT Configuration Tab

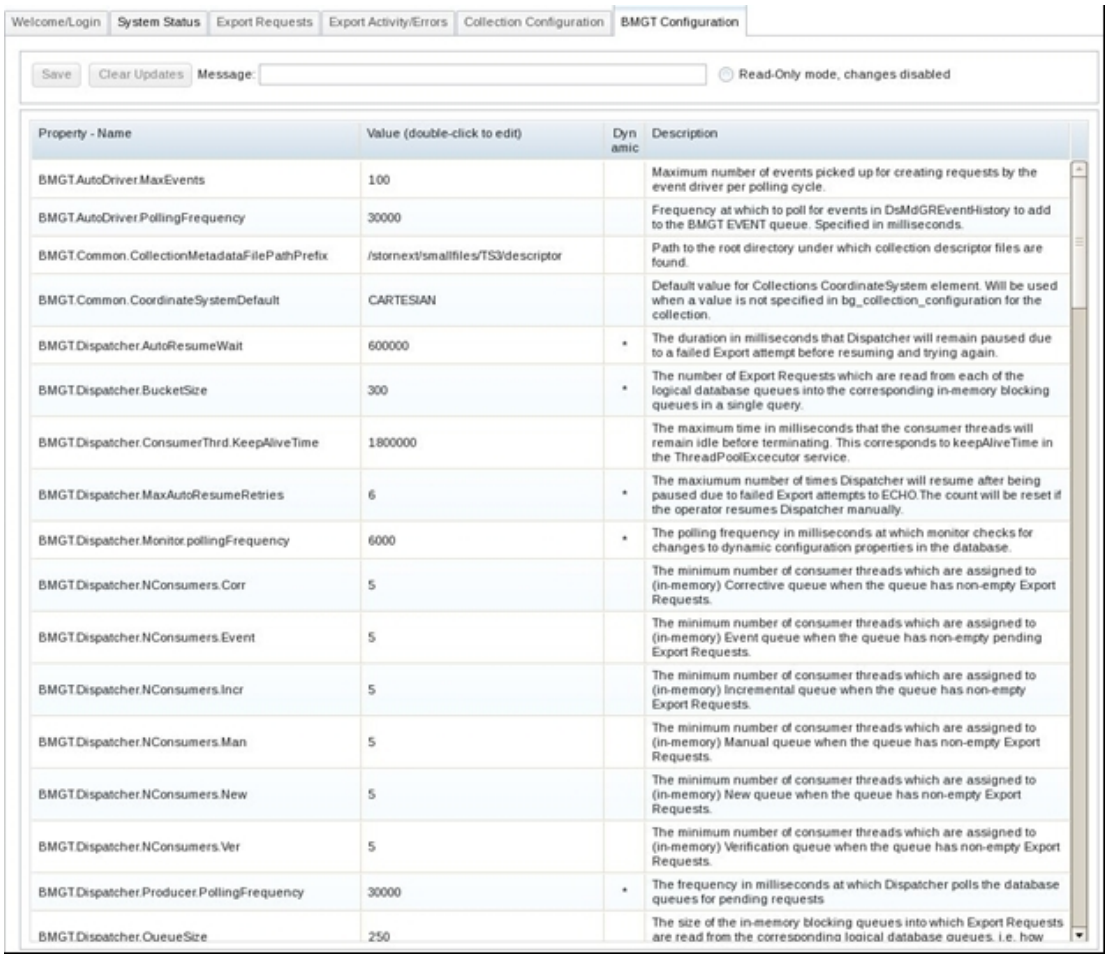


Figure 4.7.5-16. BMGT Configuration

The Bmgt Configuration Tab allows the viewing, and if logged in, the modification of BMGT configuration properties. Most BMGT properties, besides those required for connection to the database, and those require to set up logging (which are defined in EcBmBMGT.properties and log4j.properties respectively), are configured through this tab. The columns displayed on this tab for each property are as follows:

Property-Name – The name of the property.

Value – The value of the property. All properties are treated as strings. See the description to determine whether a numeric or textual value is expected.

Dynamic – A star indicates a configuration setting is dynamic if the configuration change will take effect with no server restarts being required. If it is not dynamic (not starred), then a restart of the associated server would need to be performed prior to the configuration change taking effect.

Description – A detailed description of the property.

A property can be modified by clicking on the value. If a property contains a password, a button is shown, rather than the value. Clicking the button will pop-up a new window where the value is hidden but can be edited. Upon saving the value, it will be encrypted before being saved to the database.

4.7.6 Data Pool Maintenance GUI

The Data Pool Maintenance (DPM) GUI provides an operator interface to monitor the current status of Data Pool Inserts and to maintain specific Data Pool parameters. This GUI manages ECS and Non-ECS data collections. Specifically, the DPM GUI provides the following capabilities:

- Monitor the active insert processes
- Monitor the Data Pool Insert Queue
- Manage existing Data Pool Collection Groups
- Add new Data Pool Collection Groups (includes ECS and Non-ECS)
- Manage existing Data Pool Collection Themes
- Add new Data Pool Collection Themes
- Suspend and Resume Data Pool Inserts
- Turn the NoFreeSpace Flag on or off
- Configure parameters used by the Data Pool Action Driver (DPAD) and the Data Pool Insert Utility (DPIU)

4.7.6.1 Quick Start Using the Data Pool Maintenance GUI

Bring up the Web Browser and then access the URL for the DPM GUI web page. The operator may be prompted by a dialogue box similar to that shown in Figure 4.7.6-1. The requested information must be entered to continue.

For example, http://<host name location>:22111/DataPool.html

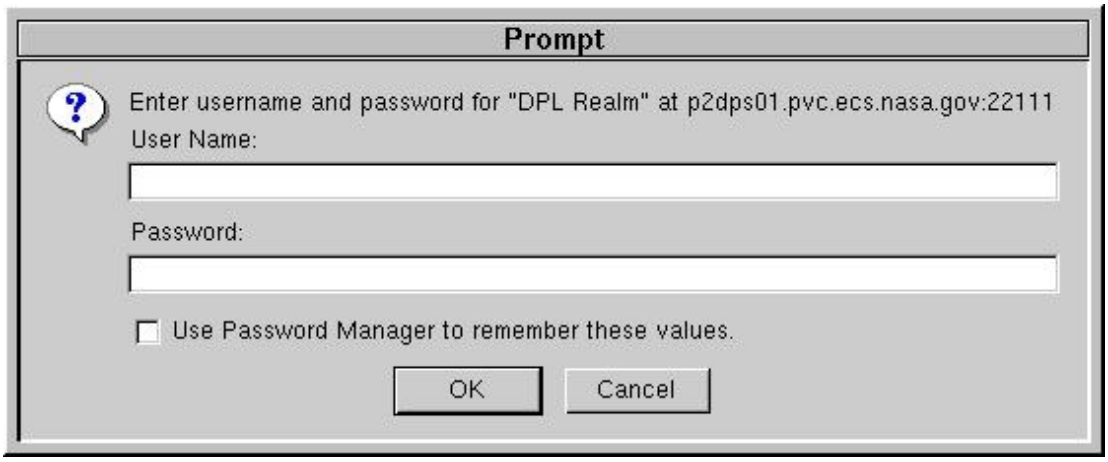


Figure 4.7.6-1. Login Prompt

4.7.6.1.1 DPM Home Page

The DPM Home Page screen shown in Figure 4.7.6-2 gives the operator current status of Data Pool Inserts. The screen is refreshed automatically. The operator is shown the current screen

refresh rate, the current chunk size for the list of active insert processes. Minimum values for screen refresh rate is 60 seconds and Active Insert Process List row size is 1. Maximum value for Active Insert Process List row size is 100. The operator must click on the adjacent **Apply** button to initiate changes. Summary of Data Pool File System table displays current status of the FreeSpace Flag, Availability Flag, and amount of desired free space in megabytes for each file system. Summary of Active Processes table displays configured number of Maximum Allowed Processes, the Maximum Allowed Processes from ARCHIVE cache, the Maximum Allowed Processes from ARCHIVE tape, the total number of active insert processes running, the number of active insert processes using ARCHIVE cache, the number of active insert processes using ARCHIVE tape. The list of Active Insert Processes table displays the current status of the active insert processes. The screen can be immediately refreshed by clicking on the **Refresh Home Page** link. Use the tab buttons at the top to navigate to the Home Page, Batch Summary, List Insert Queue, Collection Groups, Themes, Data Pool File System, Cloud Cover, Configuration Parameters, Aging Parameters, and End Session screens. See Table 4.7.6-1 for descriptions of the Home Page elements.

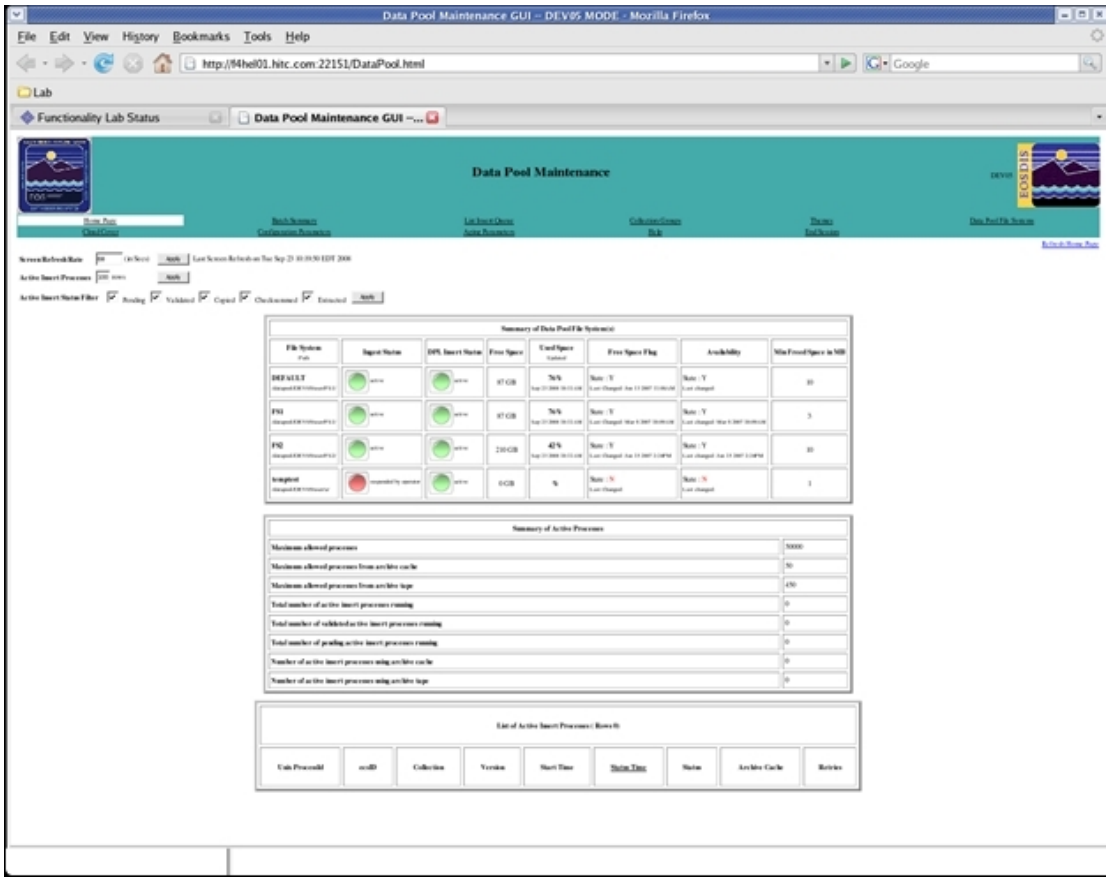


Figure 4.7.6-2. Data Pool Maintenance Home Page

Table 4.7.6-1. DPM Home Page Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
Screen Refresh Rate	Integer	4	Optional	Allows the operator to adjust the Screen Refresh Rate in seconds.
Active Insert Processes	Integer	4	Optional	Chunk size to set for the list of active insert processes. Default is 100
Active Insert Process Filter	Check box	5	Optional	Filters Active Insert Processes based on process status
File System Label	char	10	Required	File System Label. Limited to 10 characters.
Free Space Flag	char	1	Optional	Indicates if space is available for Data Pool insert. 'ON' value indicates that space is available. Default is 'ON'.
Ingest Status	Int	1	Derived	Indicates if the file system is enabled for DPL ingest processes.
DPL Insert Status	Int	1	Derived	Indicates if the file system is enabled for public datapool insert processes.
Free Space	Int	5	Derived	Indicates the space available on this file system (in GB)
Used Space	Int	2	Derived	Indicated the percentage of the file system used and the date this statistic was last updated.
Availability	char	1	Optional	File system available for insert. Value 'YES' indicate it is available and value 'NO' it is not available. The default value is 'YES'.
Min Freed Space in MB	int	4	Optional	Amount space must be freed in order to make the file system available
Maximum allowed processes	int	4	System Generated	Maximum allowed processes for Data Pool
Maximum allowed processes from ARCHIVE cache	int	4	System Generated	Maximum allowed processes from ARCHIVE cache
Maximum allowed processes from ARCHIVE tape	int	4	System Generated	Maximum allowed processes from ARCHIVE tape
Total number of active insert processes running	int	4	System Generated	Total number of active insert processes running
Number of active insert processes using ARCHIVE cache	int	4	System Generated	Number of active insert processes using ARCHIVE cache
Number of active insert processes using ARCHIVE tape	int	4	System Generated	Number of active insert processes using ARCHIVE tape
Unix Process ID	char	10	System Generated	Unix Process ID

Table 4.7.6-1. DPM Home Page Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
ECS ID	char	10	System Generated	ECS ID number
Collection	char	20	System Generated	Name of collection
Version	int	4	System Generated	Version number
Start Time	char	10	System Generated	Process start time
Status Time	char	10	System	Process status time
Status	char	10	System Generated	Status of the process
ARCHIVE Cache	char	1	System Generated	Indicates if the process belongs to ARCHIVE cache or not
Retries	int	4	System Generated	Number of retries in case of failures

4.7.6.1.2 Batch Summary Tab

The Batch Summary Screen shown in Figure 4.7.6-3 displays a summary of the status of Data Pool inserts for each batch label. Status includes new, completed, failed, retried, and cancelled inserts. Minimum refresh rate is 1 minute. The **Apply Refresh Rate** button will refresh the screen with any updated information in the fields within a specified amount of time. See Table4.7.6-2 for a description of the Batch Summary's entries.

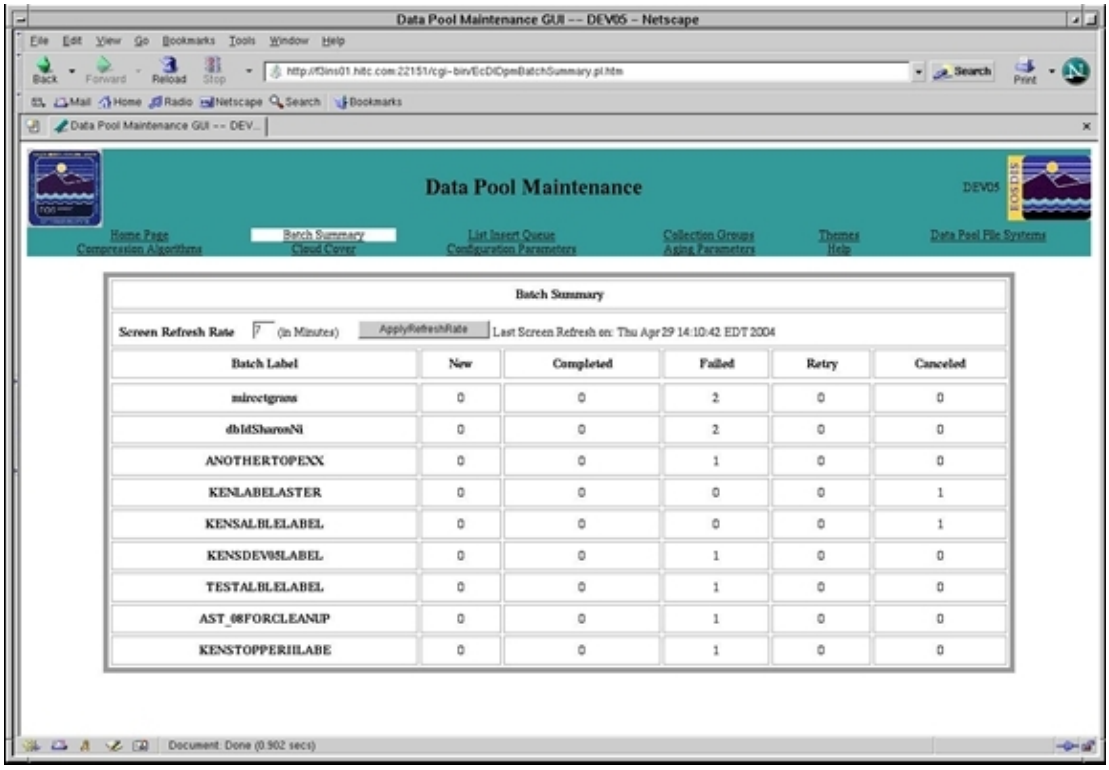


Figure 4.7.6-3. Batch Summary Screen

Table 4.7.6-2. Batch Summary Screen Field Descriptions

Field Name	Data Type	Size	Entry	Description
Batch Label	int	4	System Generated	Name of the batch label
New	int	4	System Generated	Number of batch inserts in NEW state
Completed	int	4	System Generated	Number of batch inserts in COMPLETED state
Failed	int	4	System Generated	Number of batch inserts in FAILED state
Retry	int	4	System Generated	Number of batch inserts in RETRY state
Cancelled	int	4	System Generated	Number of batch inserts in CANCELLED state

4.7.6.1.3 List Insert Queue Tab

The List Insert Queue Screen shown in Figure 4.7.6-4 allows the operator to monitor the Data Pool Inserts that still need to be processed or retried. The operator can cancel Inserts that are in the Insert Queue by clicking on the checkbox adjacent to the Status column. After selecting all desired inserts, click on the **Apply Change** button to initiate changes. The Inserts will be marked as "CANCELED" in the Data Pool database. The List Insert Queue screen will be

refreshed with only inserts left to be processed. The DPAD driver will cleanup all canceled inserts at a configured interval. The List Insert Queue Screen can be filtered using the File System Label drop down list, Batch Label drop down list and Status drop down list. Clicking on the **File System** Label drop down list will display all the File System Labels in database. The operator can choose 'ALL' from the **File System** Label drop down list and choose one label from **Batch Label** drop down list and choose 'ALL' from Status drop down list to view all insert statuses for that label in all File Systems. The operator can also narrow down the list by choosing one batch label from the **Batch Labels** drop-down list, a specific status from the **Status** drop down list and a specific file system from the **File System** Label drop down list. After selecting the filter options, click on the **Apply Filter** button to display a filtered list. The XML file and path name for a Non-ECS granule insert action can be viewed by clicking on "NONECS" from the Data Source column. XML file path is displayed in Figure 4.7.6-5. The content of the XML file can be viewed by clicking on the file path. This will display the text of the file as shown in Figure 4.7.6-6.

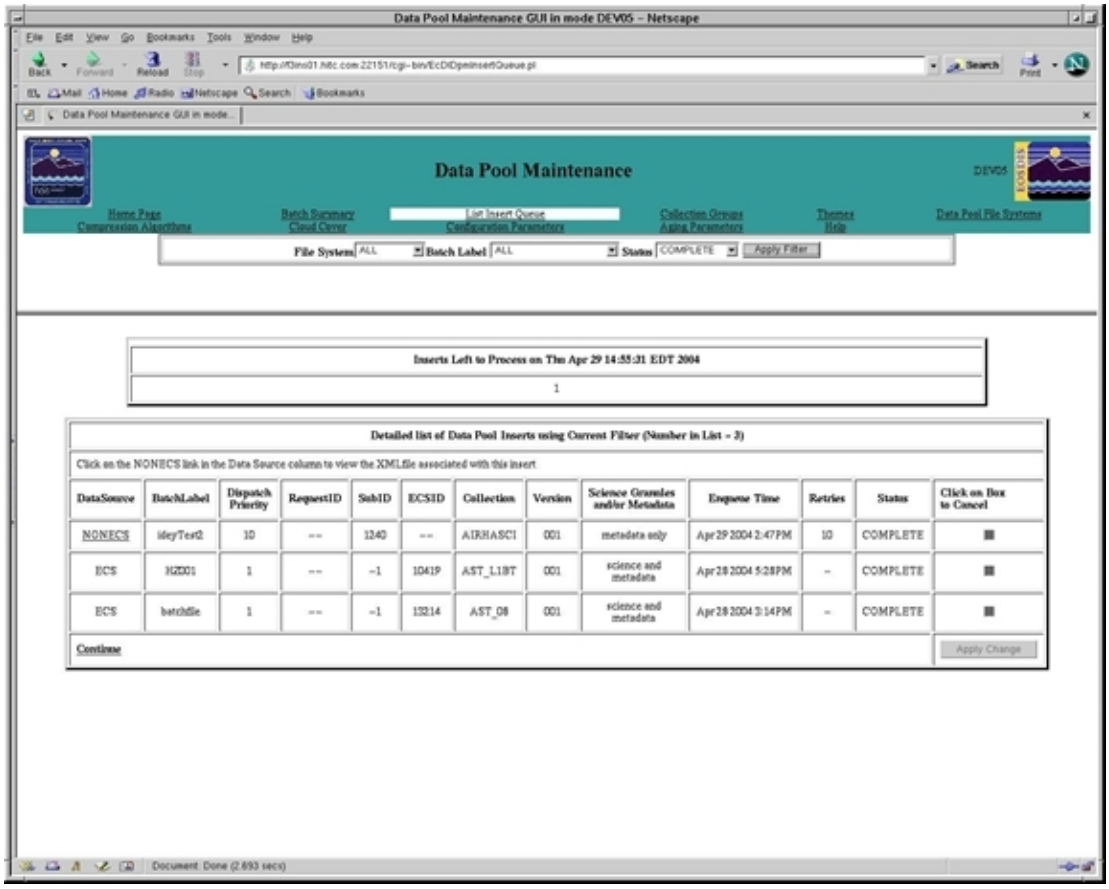


Figure 4.7.6-4. List Insert Queue Screen

See Table 4.7.6-3 for a description of the List Insert Queue's field descriptors.

Table 4.7.6-3. List Insert Queue Screen Field Descriptions

Field Name	Data Type	Size	Entry	Description
Data Source	char	6	Required	To describe the source of the data whether ECS or NONECS.
Batch Label	char	20	System Generated	Name of batch
Dispatch Priority	int	4	System Generated	Number of priority by which requests will be processed
RequestID	char	10	System Generated	Request ID of the order
SubID	char	10	System Generated	Submission ID number
ESCID	char	10	System Generated	ECS ID number
Collection Version	int	4	System Generated	Version number of collection.
Science Granules and/or Metadata	char	n/a	Optional	Indicate whether collection whether collection is Science Granules and/or Metadata.
Enqueue Time	char	10	System Generated	Time in queue
Retries	int	4	System Generated	Number of retries
Status	char	10	System Generated	Status of the input process
Click on Box to Cancel	checkbox	1	Optional	Select when cancellation of request is needed

Note: This screen depicts the total number of Data Pool Inserts left to process and retry. It also displays a detailed list of Data Pool Inserts using the current filter and total number of rows in the database. Default filter is set to ignore for Batch Label and NEW/RETRY for Status. Full capability users can cancel an insert.

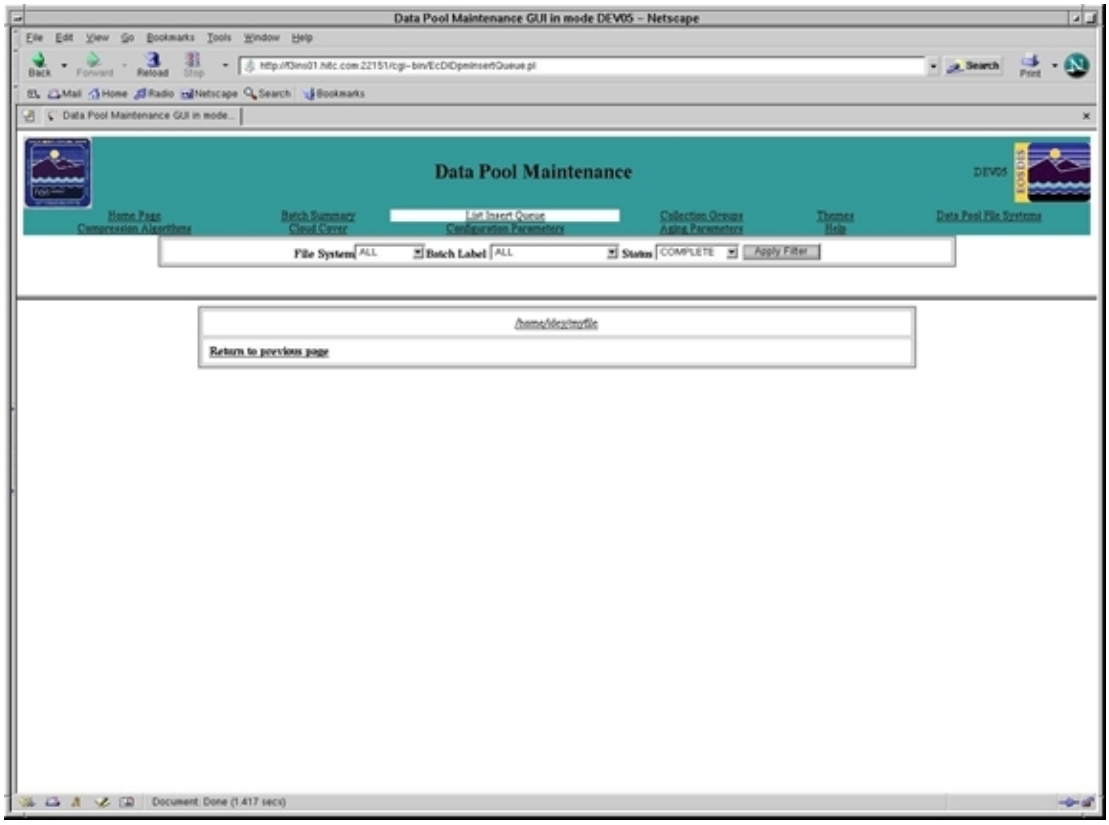


Figure 4.7.6-5. List Insert Queue Screen - Absolute xml File Path

The screen in Figure 4.7.6-5 depicts the absolute XML file path for Non-ECS Data Pool inserts.

Note: Limited capability users cannot cancel any inserts.

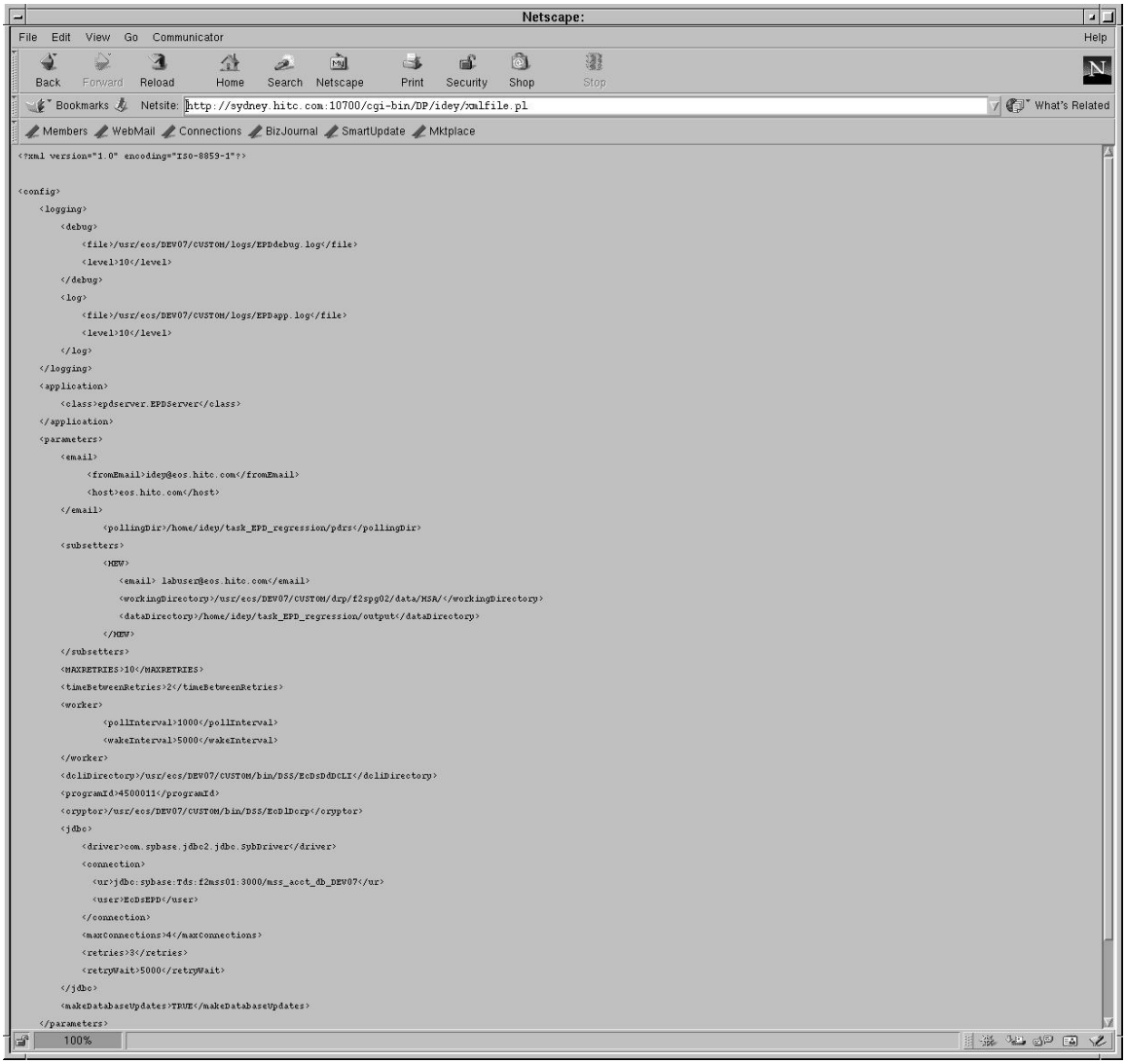


Figure 4.7.6-6. List Insert Queue Screen - XML File Content

4.7.6.1.4 Configuration Parameters Tab

The Configuration Parameters Screen shown in Figure 4.7.6-7 allows all operators to display the current values for the Data Pool Configuration Parameters. Full-capability operators can adjust the values for the parameters by entering new values in the input box. After making all changes, click on the **Click on Box to Modify Parameter** checkbox adjacent to the configuration parameters. Click on the **Apply Change** button to initiate the changes. See Table 4.7.6-4 for a description of the configuration parameters.

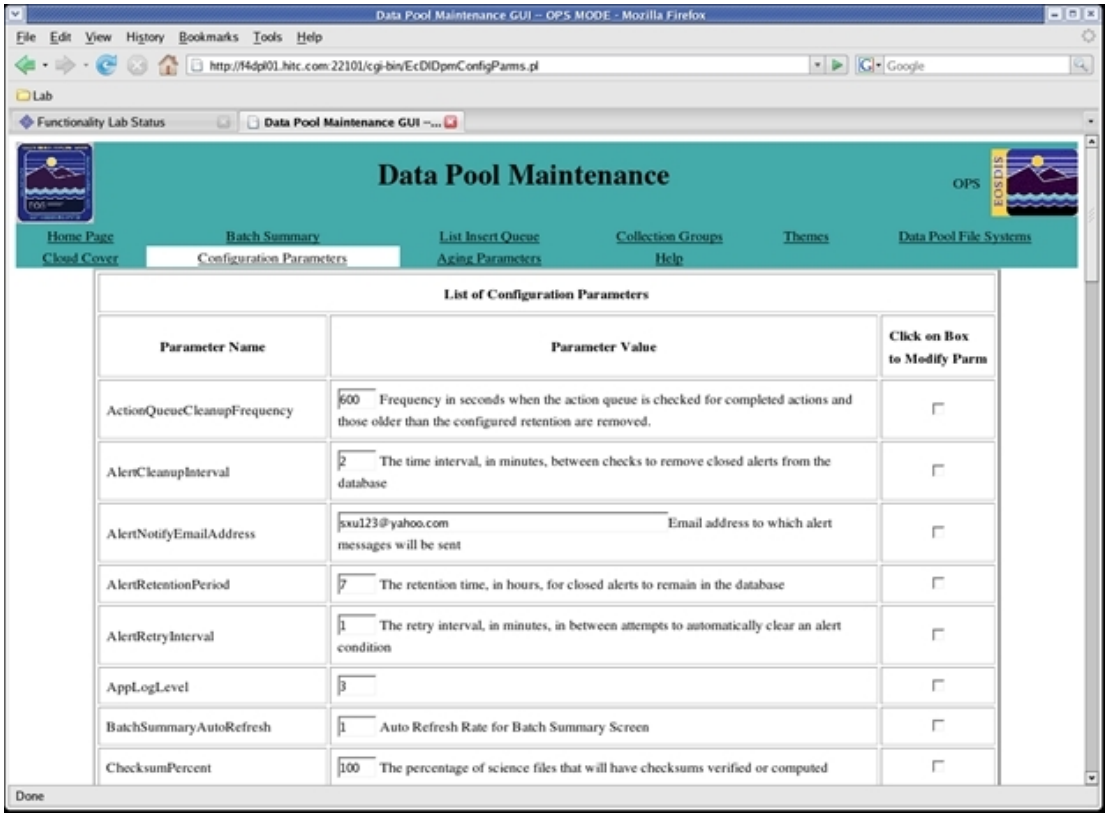


Figure 4.7.6-7. Configuration Parameters Screen

The screen in Figure 4.7.6-7 depicts the Data Pool configuration parameters. The full capacity operator can update the parameters.

Note: Limited Capability users cannot update any parameters. Check boxes and button are non clickable.

Table 4.7.6-4. Manage Configuration Parameters Field Description (1 of 5)

Field Name	Data Type	Size	Entry	Description
ActionQueueCleanUpFrequency	Integer	4	Optional	Frequency in seconds when the action queue is checked for completed actions and those older than the configured retention are removed.
AlertCleanupInterval	Integer	2	Optional	The time interval, in minutes, between checks to remove closed alerts from the database.
AlertNotifyEmailAddress	Char	2	Optional	Email address to which alert messages will be sent.
AlertRetentionPeriod	Integer	2	Optional	The retention time, in hours, for closed alerts to remain in the database.
AlertRetryInterval	Integer	2	Optional	The retry interval, in minutes, in between attempts to automatically clear an alert condition.
BatchSummaryAutoRefresh	Integer	4	Optional	The frequency in minutes when the batch summary front is refreshed.
ChecksumPercent	Integer	2	Optional	The percentage of science files that will have checksums verified or computed.
Clean703Orders	Char	1	Optional	Flag indicating whether DPL should clean up order only granules: Y or N
DPLRetentionPatchInstalled	Char	1	Optional	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	Integer	2	Optional	The number of times a retryable database error may be retried before being considered failed.
DatabaseRetryInterval	Integer	2	Optional	The number of seconds to wait between retries of a retryable database error.
DefaultRetentionPeriod	Integer	4	Optional	The default retention period in days for all Data Pool Insert Actions.

Table 4.7.6-4. Manage Configuration Parameters Field Description (2 of 5)

Field Name	Data Type		Entry	Description
DefaultRetentionPriority	Integer	4	Optional	The default retention priority for all Data Pool Insert actions. The valid range is 1 – 255.
DeleteCompleteActionsAfter	Integer	4	Optional	The time in minutes that operators let completed actions stay in the insert action queue before making them eligible for removal. This is intended to provide the operator with some ability to check on past actions. The time period should not be configured too long.
DisplayAIPChunkSize	Integer	4	Optional	Number of rows return per chunk for the Active Insert Processes List.
FileSystemCheckInterval	Integer	2	Optional	The time interval, from 1 to 10 minutes, in between attempts to automatically clear a Data Pool file system alert condition.
FileSystemRefreshRate	Integer	2	Mandatory	Time in minutes before the File Systems Page Refreshes. Values: Never, 1,5,10,15,30 mins
FilterChecksumAIP	Char	1	Mandatory	Show Checksummed Active Insert Processes on the Data Pool Maint. GUI page. Values: YES, NO
FilterCopiedAIP	Char	1	Mandatory	Show Copied Active Insert Processes on the Data Pool Maint. GUI page. Values: YES, NO
FilterExtractedAIP	Char	1	Mandatory	Show Extracted Active Insert Processes on the Data Pool Maint. GUI page. Values: YES, NO
FilterPendingAIP	Char	1	Mandatory	Show Pending Active Insert Processes on the Data Pool Maint. GUI page. Values: YES. NO
FilterValidAIP	Char	1	Mandatory	Show Validated Active Insert Processes on the Data Pool Maint. GUI page. Values: YES. NO

Table 4.7.6-4. Manage Configuration Parameters Field Description (3 of 5)

Field Name	Data Type	Size	Entry	Description
FreeSpaceResumePercent	Integer	2	Mandatory	The percentage of free space required before a Data Pool file system full condition may be cleared.
GranuleLockRetentionPeriod	Integer	2	Optional	The age in hours that determines when a granule lock should be considered stale.
GranuleOmLockRetentionPeriod	Integer	2	Optional	The age in minutes that determines when a granule lock by OMS should be considered stale.
HEGCleanupAge	Integer	4	Optional	HEG cleanup age in days
IdleSleep	Integer	4	Optional	The number of seconds when there is nothing to do. Obsolete in 7.20
InCacheTimeLimit	Integer	4	Optional	The max time in minutes that operators are willing to wait for a DPIU process to complete whose files are in cache. After the time, DPAD kills the process and retries the action. Obsolete in 7.20
InsertRetryWait	Integer	4	Optional	The number of seconds to wait before an insert that failed should be resubmitted.
MAX_READ_DRIVES_<ARCHIVE>	Integer		Optional	One parameter per archive, Max number of simultaneous tape drives in used for the archive <ARCHIVE>.
MFSOnInsert	Char	1	Optional	Availability of multiple file system on insert. Actual value set to Y(YES) / N(NO). Default is N (NO). Obsolete in 7.20
MaxConcurrentBandExtract	Integer	2	Optional	The maximum number of concurrent Band Extraction operations.
MaxConcurrentDPIUThreads	Integer	2	Optional	The concurrency limit for the DPIU processing queue.
MaxConcurrentEventThreads	Integer	2	Optional	The concurrency limit for the DPAD event processing queue.

Table 4.7.6-4. Manage Configuration Parameters Field Description (4 of 5)

Field Name	Data Type	Size	Entry	Description
MaxConcurrentPublish	Integer	2	Optional	The maximum number of concurrent Data Pool publication operations.
MaxConcurrentReadsPerTape	Integer	2	Optional	The maximum number of concurrent tape read (stage) operations for a single tape.
MaxConcurrentRegister	Integer	2	Optional	The maximum number of concurrent Data Pool registration operations.
MaxConcurrentRegister	Integer	2	Optional	The maximum number of concurrent Data Pool registration operations.
MaxConcurrentValidate	Integer	2	Optional	The maximum number of concurrent request validation operations.
MaxConsecutiveErrors	Integer	2	Optional	The maximum number of consecutive errors or timeout conditions for a service before an alert will be raised.
MaxInsertRetries	Integer	4	Optional	The maximum number of times an insert should be tried again (-1 means forever).
MaxReadDrivesPerRequest	Integer	2	Optional	Max number of simultaneous tape drives in used.
MaxTapeMountPerRequest	Integer	4	Optional	Maximum number of tape mount allow per request.
NewActionCheckFrequency	Integer	4	Optional	The frequency in seconds for checking for new actions. DPAD always checks if 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	Integer	4	Optional	The maximum number of insert processes that require ARCHIVE access to cache.
NumOfAllowedInsertProcesses	Integer	4	Optional	The maximum number of insert processes running at any time.
NumOfAllowedNonCacheProcesses	Integer	4	Optional	The maximum number of insert processes that require ARCHIVE access to tape.

Table 4.7.6-4. Manage Configuration Parameters Field Description (5 of 5)

Field Name	Data Type	Size	Entry	Description
OnTapeTimeLimit	Integer	4	Optional	The maximum time in hours operators are willing to wait for a DPIU process to complete whose files are not in cache. After that time, DPAD kills the process and retries the action.
OrderOnlyFSLabel	Char	1	Optional	Order only file system label.
RefreshRate	Integer	4	Optional	The DPM Home Page refresh rate in seconds.
PerfLogLevel	Integer	1	Optional	Level for perf logging, 1-3.
RunAwayCheckFrequency	Integer	4	Optional	The frequency in seconds for checking for runaway processes. Recommend not making it much smaller than InCacheTimeLimit. Obsolete in 7.20.
RunawayDuration	Integer	4	Optional	Max period of time to wait for an insert to complete. Obsolete in 7.20.
SizeOfInsertQueueList	Integer	4	Optional	The number of Data Pool Insert Queue entries that can be displayed at any one time by the DPM GUI.
StartUpWait	Integer	4	Optional	The number of seconds to delay start-up while trying to clean out left over DPIU processes. Obsolete in 7.20.

The Collection Groups Screen shown in Figure 4.7.6-8 allows the operator to view collection groups in the Data Pool database and navigate to the functions described in the following sections. See Table 4.7.6-5 for descriptors of the Collection Group screen.

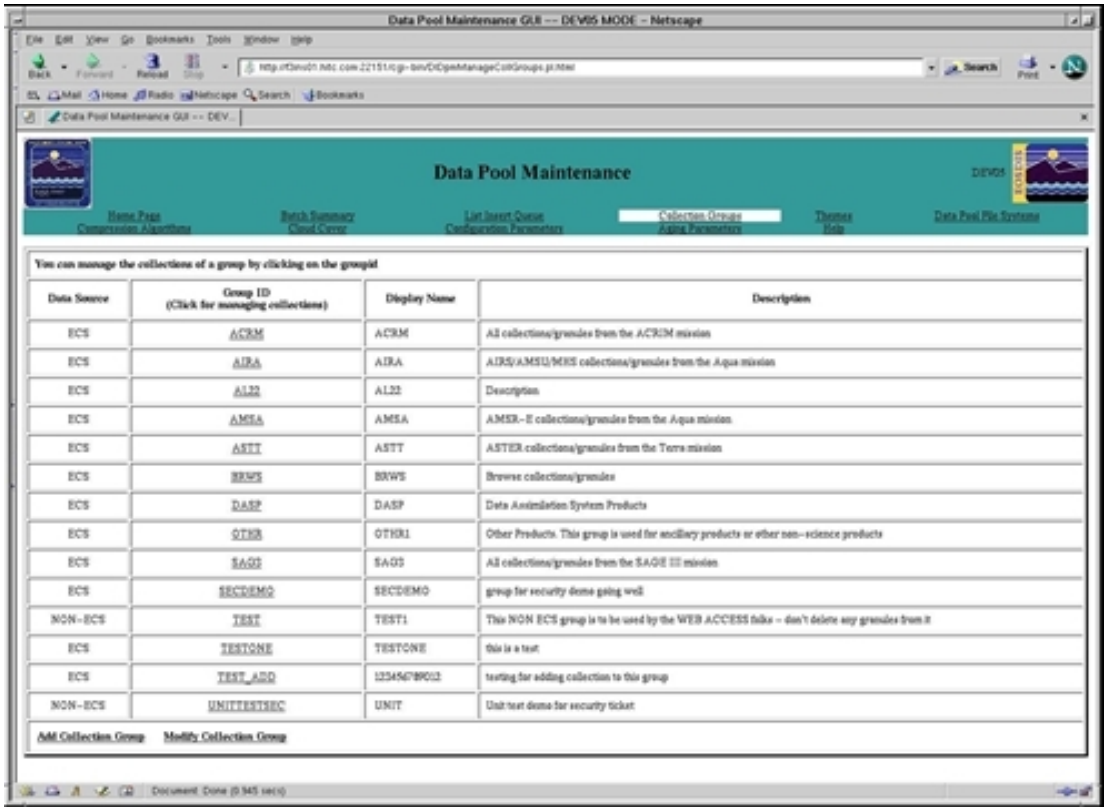


Figure 4.7.6-8. Collection Groups Screen Currently in the Data Pool

Table 4.7.6-5. Collection Group Field Descriptions

Field Name	Data Type	Size	Entry	Description
Data Source	Character	6	Required	To describe the source of the data whether ECS or NONECS.
Group ID	Character	12	Required	An up-to twelve letter identifier ([A-Z],[0-9] or underscore) of the group.
Display Name	Character	12	Optional	A twelve letter identifier of the display name (if left blank defaults to Group ID). (possible characters are [A-Z],[0-9], underscore or blank).
Description	Character	255	Required	A description for the collection group. It is scrollable up to 255 characters.

The **Add Collection Group** link will allow the user to add a new collection to the collection group and the **Modify Collection Group** link allows any changes to be made to the collection group.

Note: Limited capability users cannot click 'Add Collection Group' or 'Modify Collection Group' links.

4.7.6.1.4.1 Add New Collection Group

The full-capability operator can add a new ECS or Non-ECS collection group by clicking on the **Add Collection Group** link shown in Figure 4.7.6-8. This link will take the operator to the screen shown in Figure 4.7.6-9. To create a new group, the operator is required to enter the Group ID and Description, the Display Name is optional, and will default to the Group ID if nothing is entered. The Display Name is used for Web Drill Down. After entering the new collection group, click on the **Apply Change** button. The new collection group will be added to the Data Pool database and the List of Collection Groups screen will be refreshed. See Table 4.7.6-6 for Add Collection Group parameters.

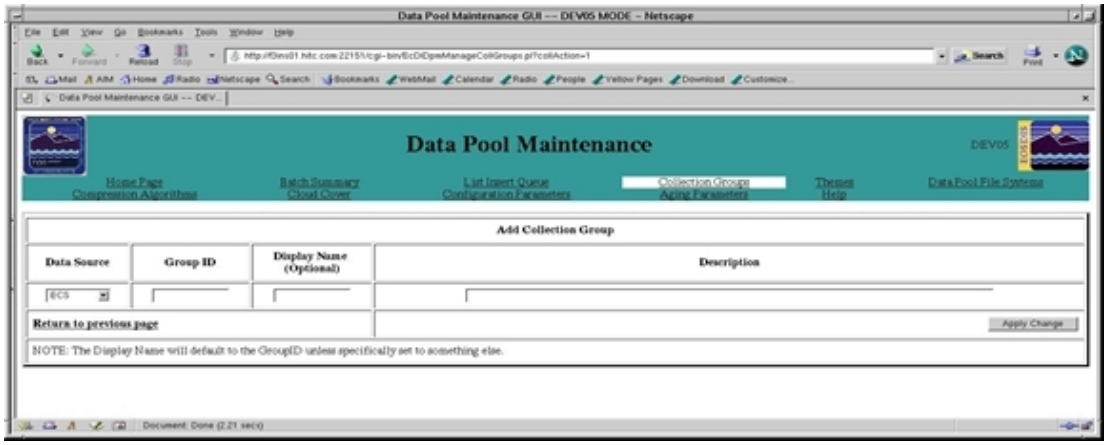


Figure 4.7.6-9. Add Collection Group Screen

Note: Limited Capability users cannot use this functionality.

Table 4.7.6-6. Add Collection Group Field Description

Field Name	Data Type	Size	Entry	Description
Data Source	Character	6	Required	To describe the source of the data whether ECS or NONECS.
Group ID	Character	12	Required	An up-to twelve letter identifier ([A-Z], [0-9] or underscore) of the group.
Display Name	Character	12	Optional	A twelve letter identifier of the display name (if left blank defaults to Group ID). (Possible characters are [A-Z], [0-9], underscore or blank).
Description	Character	255	Required	A description for the collection group. It is scrollable up to 255 characters.

4.7.6.1.4.2 Modify Collection Group Description

The full-capability operator can modify the description and display name for a collection group by clicking on the **Modify Collection Group** link shown in Figure 4.7.6-8. This link will take the operator to the screen shown in Figure 4.7.6-10. The operator can modify the description and display name for a collection group. After making a change, click on the **Check Box To Modify** checkbox, adjacent to the collection group description. After making all changes, click on the **Apply Change** button. The changes will be applied to the Data Pool database and the **List of Collection Groups** screen will be refreshed. See Table 4.7.6-7 for a description of the Modify Collection Group parameters.

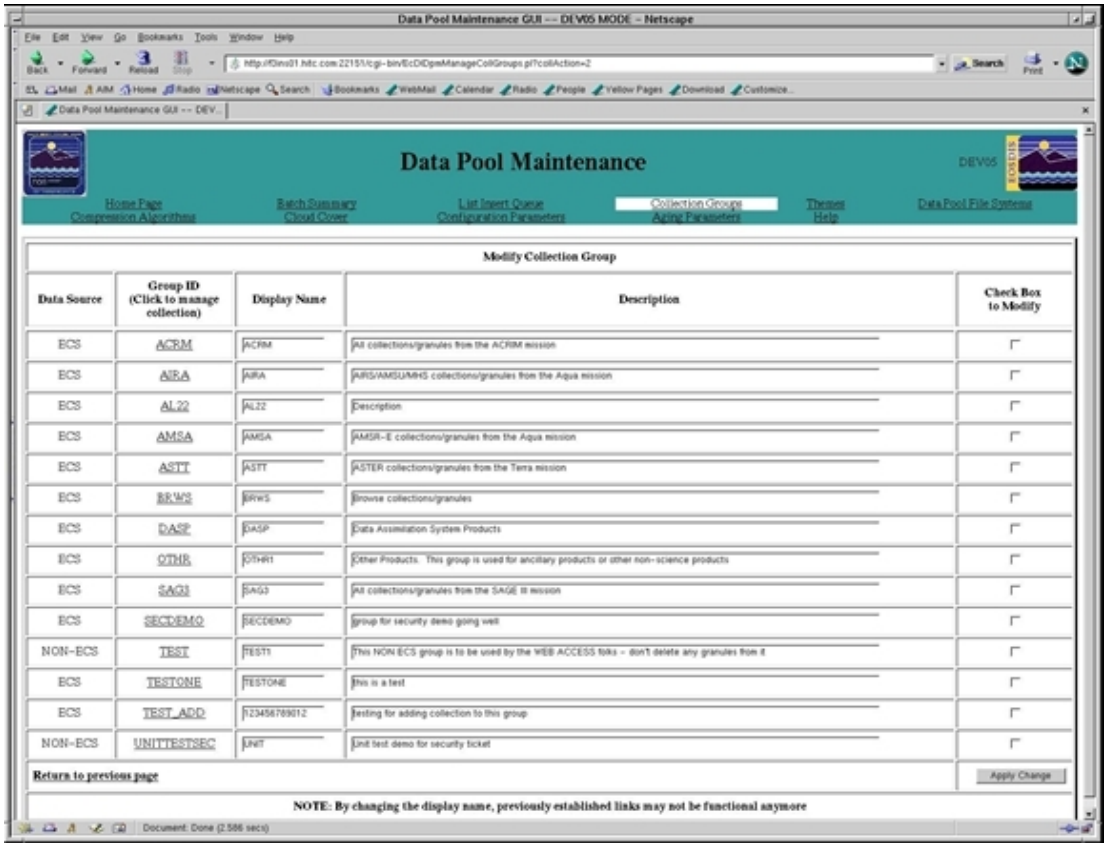


Figure 4.7.6-10. Modify Collection Group Screen

The screen in Figure 4.7.6-10 is called from Figure 4.7.6-8 and allows the full capacity operator to modify the collection group.

Note: Limited Capability users cannot use this functionality.

Table 4.7.6-7. Modify Collection Group Field Description

Field Name	Data Type	Size	Entry	Description
Data Source	Character	6	Required	To describe the source of the data whether ECS or NONECS.
Group ID	Character	12	Required	An up-to twelve letter identifier ([A-Z],[0-9] or underscore) of the group.
Display Name	Char	12	Optional	Display name for the collection group.
Description	Char	100	Optional	A description for the collection group.

4.7.6.1.4.3 View Collections

The operator can view the collections associated with a collection group by clicking on the **GroupId** link shown in Figure 4.7.6-8. This link will take the operator to the Collections Associated with an ECS and Non-ECS Collection Group screen shown in Figure 4.7.6-11. **File System** l indicates a particular Data Pool file system. The default is to show all the collections from all Data Pool file system for a group. A drop down list will provide the operator the labels of all available file systems. The operator can use this list to filter the display of collections. The **Data Source** and **Group ID** are presented at the top of the table as a reference for which group is currently being viewed. See Table 4.7.6-8 for descriptions of the View Collection page entries.

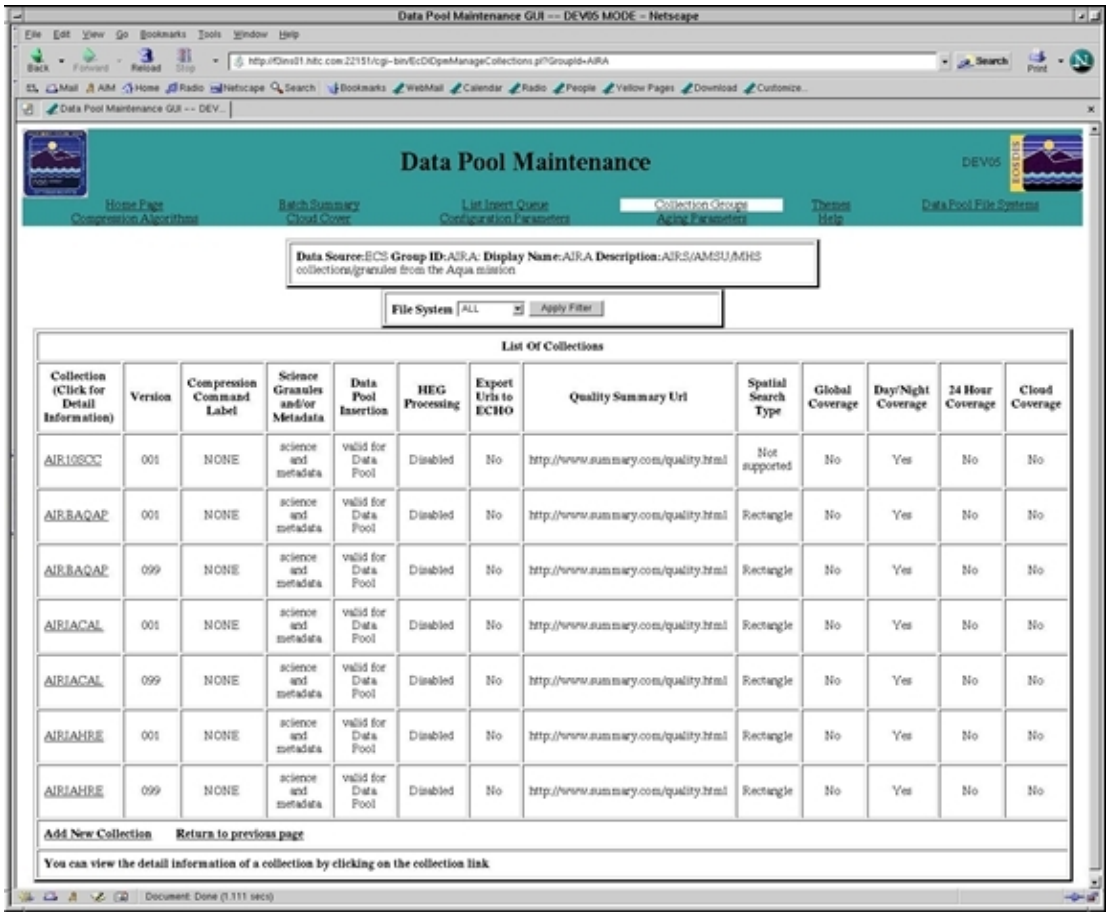


Figure 4.7.6-11. Collections Associated with Collection Groups

Note: Limited Capability users cannot click 'Add Collection' link.

Table 4.7.6-8. View Collection Group Field Description

Field Name	Data Type	Size	Entry	Description
Data Source	Character	6	Required	To describe the source of the data whether ECS or NONECS.
Group ID	Character	12	Required	An up-to twelve letter identifier ([A-Z], [0-9] or underscore) of the group.
Display Name	Char	12	Optional	Display name for the collection group.
Description	Char	100	Optional	A description for the collection group.
Collection	Char	8	System Generated	Name of a collection.
Version	Integer	1	System Generated	Version number of collection.
Science Granules and/or Metadata	Char	n/a	Optional	Indicate whether collection whether collection is Science Granules and/or Metadata.
Data Pool Insertion	Char	n/a	Optional	Indicates if the collection is eligible for insertion into Data Pool.
HEG Processing	Char	n/a	System Generated	Indicates if HEG processing is available or not
Export Urls to ECHO	Char	n/a	System Generated	Indicates in URL need to be exported or not
Quality Summary Url	Char	80	Optional	URL that describes the quality summary of a collection. Scrollable up to 255 characters
Spatial Search Type	Char	n/a	System Generated	Indicates if Spatial Search is required/needed.
Global Coverage	Char	1	Optional	Indicated if global coverage is needed.
Day/Night Coverage	Char	1	Optional	Indicate if day or night coverage is needed.
24 Hour Coverage	Char	1	Optional	Indicate if 24-hour coverage is needed.
Cloud Coverage	Char	1	Optional	Indicate if cloud coverage is needed.

The **Add Collection Group** link will allow the user to add a new collection to the collection group and the **Return to previous page** link will the take the user to the page prior.

4.7.6.1.4.4 View Collection Description

The operator can view the detail description for a collection by clicking on the Collection link shown in Figure 4.7.6-11. This link will take the operator to the Description of a Collection screen shown in Figure 4.7.6-12. This page will give detail information about an ECS or Non-ECS collection. Modify Collection will display the modify collection page for full capability operators. The operator can return to the previous page by clicking on the 'Return to previous page' link.

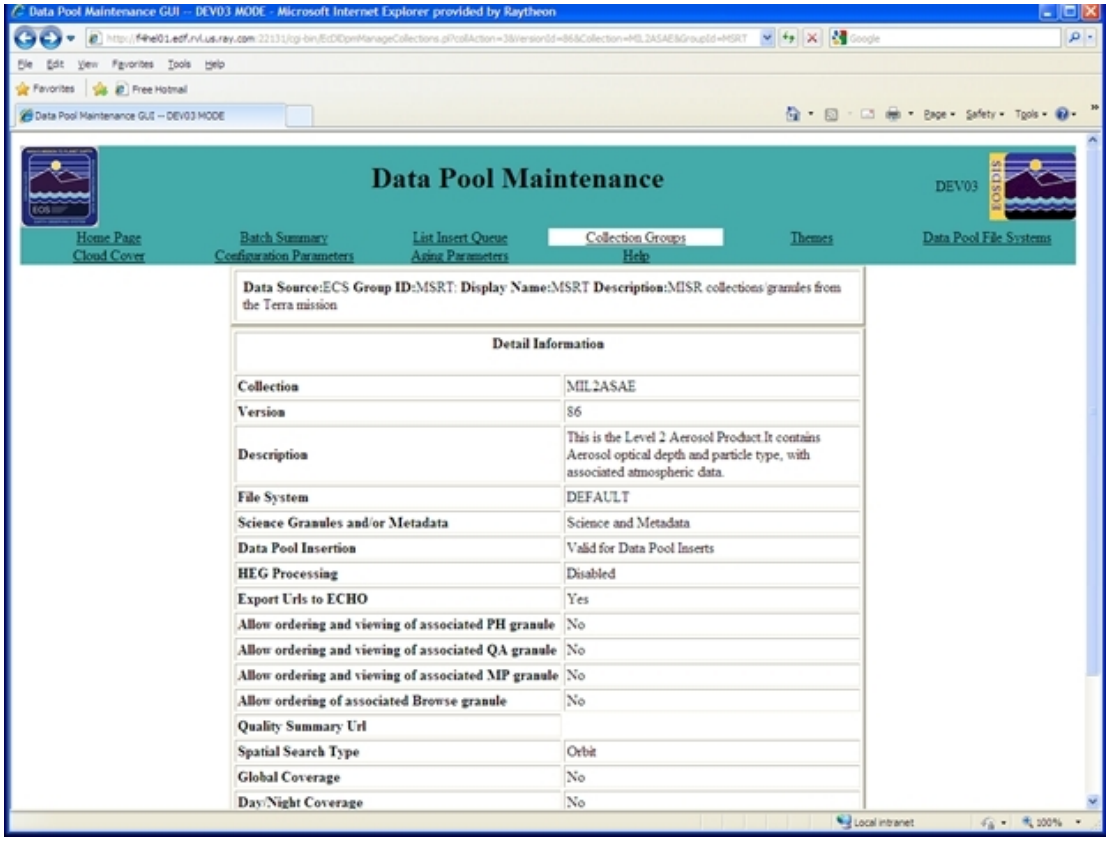


Figure 4.7.6-12. Description of a Collection

Field descriptions for the screen can be found in Table 4.7.6-9.

Note: Limited Capability users cannot click 'Modify Collection' link.

4.7.6.1.4.5 Add New Collection to Existing Collection Group

The full-capability operator can add an ECS collection by clicking on the **Add New Collection** link shown in Figure 4.7.6-11. An ECS collection can be added to an ECS Collection Group and a Non-ECS collection can be added to a Non-ECS group. The procedure for adding collections for ECS and Non-ECS groups are different. The operator can add a collection by clicking on the **Add New Collection** link in Figure 4.7.6-11. For ECS Group this link will take the operator to Figure 4.7.6-13, which displays a list of collections with its version number and description that are not in the Data Pool database. The operator can add any one of these collections to the group by clicking on the collection link. This will bring up the Add Collection page for an ECS Collection shown in Figure 4.7.6-12. The operator can add a Non-ECS collection to a Non-ECS group by clicking on an **Add New Collection** link on a Non-ECS Collection Group Screen. This action will bring up Add Collection screen for a Non-ECS Collection shown in Figure 4.7.6-16.

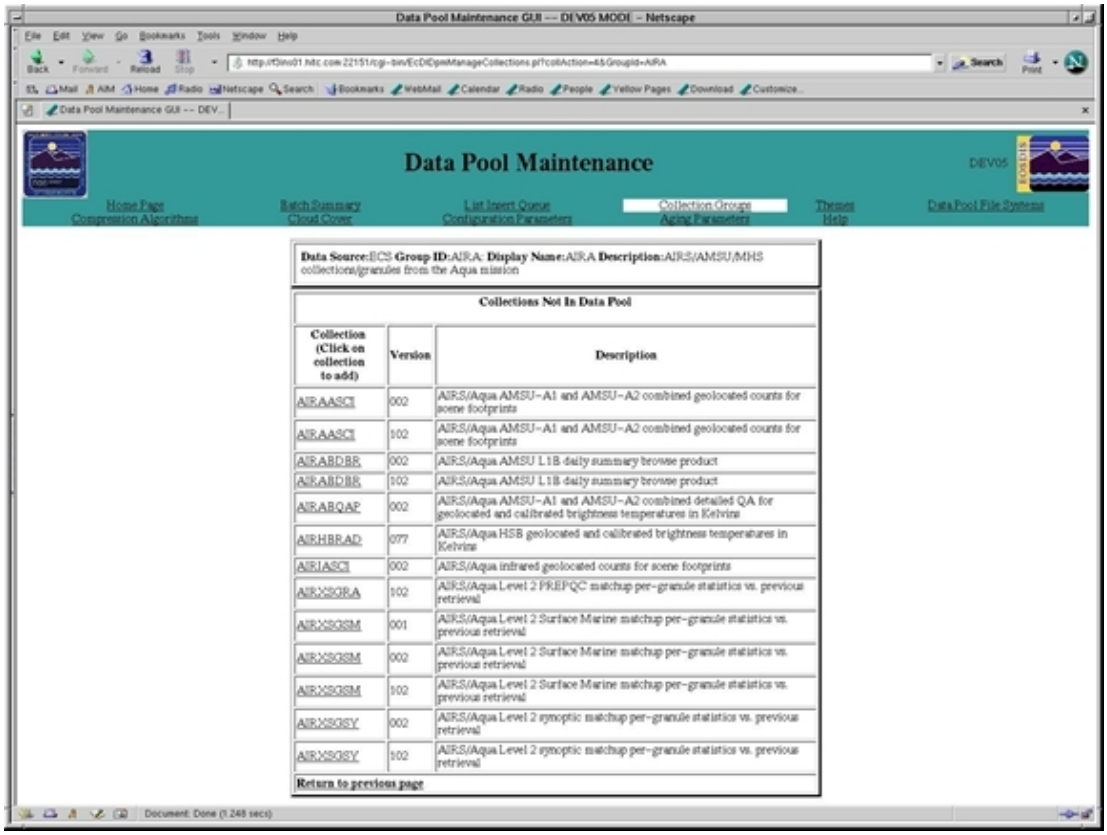


Figure 4.7.6-13. List of Collection Not in Data Pool

Note: This page is not accessible by Limited Capability users.

The full-capability operator can arrive at the Add ECS Collection page shown in Figure 4.7.6-14 by clicking on a collection link shown in Figure 4.7.6-11. Collection name, Version and Descriptions are predefined and cannot be changed. The operator can associate a collection with a File System label. Defaults for these two items are nulls. The Science Granules and /or Metadata row indicates if the collection is valid for science granule and metadata insertion or metadata only. The default value is science and metadata insertion. The operator can set the value to Metadata Only to indicate Metadata insertion only. The Data Pool Insertion indicates if the collection is eligible for insertion into Data Pool. The default value is invalid for data pool. The operator must set the value to valid for data pool to make the collection eligible for insertion into Data Pool. The Spatial Search Type indicates the types of search criteria used for Spatial searches such as GPolygon, Rectangle, or Orbit. The operator can also set the global coverage flag to on/off. Default value for this flag is on. There are two more flag has on/off values can be set for a collection. Default for Day/Night flag is on and 24 hour flag is off. After creating the Quality Summary web page, the operators will enter the URL in the text area reserved for quality summary URL and thus associate the URL for the Quality Summary web page. A collection can be associated with a cloud cover attribute and its type. The operator can configure that in this

page. There is also a text area to enter the cloud cover description. Defaults for quality summary, cloud cover attribute, cloud cover type and cloud cover description are nulls.

After making necessary selections the operator must press on **Apply Change** button to add the collection.

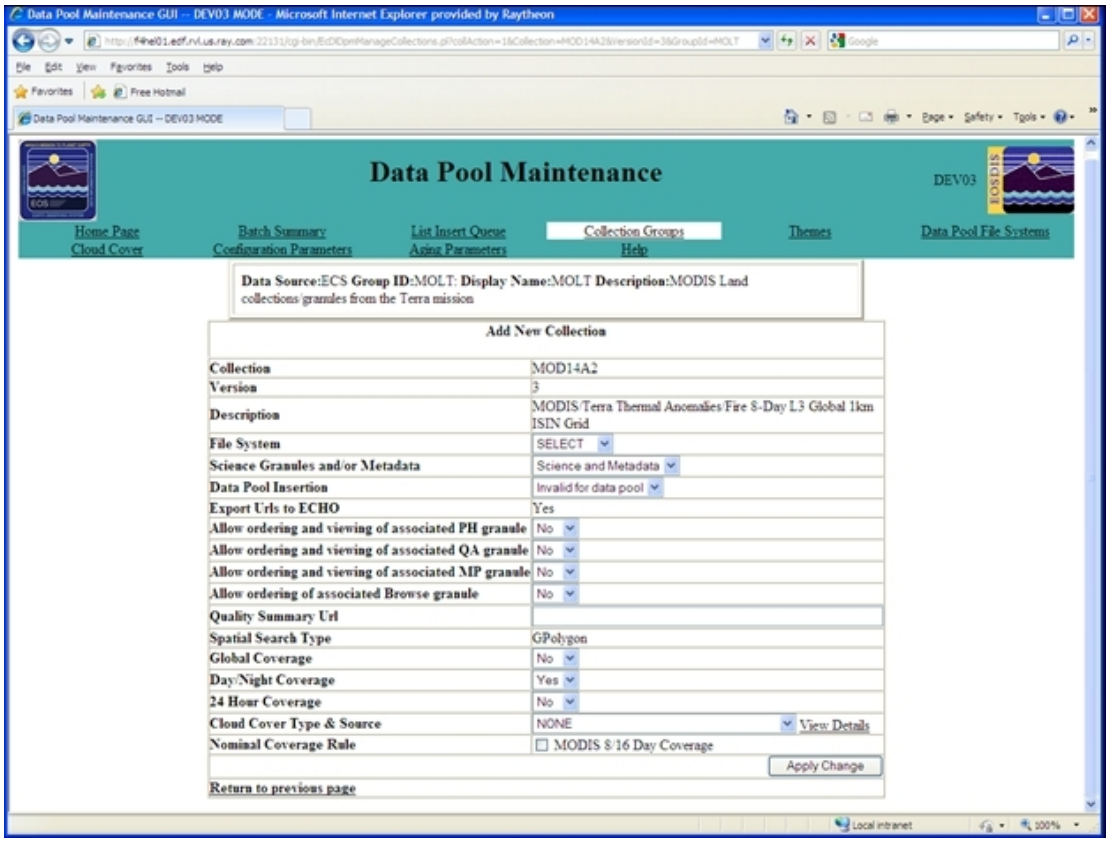


Figure 4.7.6-14. Add ECS Collection Page (This Page is only Accessible by Full Capability Operators)

Table 4.7.6-9. Add ECS Collection

Field Name	Data Type	Size	Entry	Description
Collection	Char	8	System Generated	Name of a collection.
Version	Integer	1	System Generated	Version number of collection.
Description	Char	80	Optional	Description of collection. Scrollable up to 255 characters.
File System	Char	n/a	Optional	File system path
Science Granules and/or Metadata	Char	n/a	Optional	Indicate whether collection whether collection is Science Granules and/or Metadata.
Data Pool Insertion	Char	n/a	Optional	Indicates if the collection is eligible for insertion into Data Pool.
Export Urls to ECHO	Char	1	Optional	Indicates if this collection is to be exported to ECHO.
Order PH	Char	1	Mandatory	If set to 'Y', allows associated PH granules to be ordered. The default value is 'N'. (Not applicable for Non-ECS or collection group 'OTHR'.)
Order QA	Char	1	Mandatory	If set to 'Y', allows associated QA granules to be ordered. The default value is 'N'. (Not applicable for Non-ECS or collection group 'OTHR'.)
Order MP	Char	1	Mandatory	If set to 'Y', allows associated MP granules to be ordered. The default value is 'N'. (Not applicable for Non-ECS or collection group 'OTHR'.)
Order Browse	Char	1	Mandatory	If set to 'Y', allows associated browse granules to be ordered. The default value is 'N'. (Not applicable for Non-ECS or collection group 'OTHR'.)
Quality Summary URL	Char	80	Optional	URL that describes the quality summary of a collection. Scrollable up to 255 characters
Spatial Search Type	Char	n/a	System Generated	Indicates if Spatial Search is required/needed.
Global Coverage	Char	1	Optional	Indicated if global coverage is needed.
Day/Night Coverage	Char	1	Optional	Indicate if day or night coverage is needed.
24 Hour Coverage	Char	1	Optional	Indicate if 24-hour coverage is needed.
Cloud Cover Type and Source	Char	n/a	Optional	Source and type name for a cloud cover.

Entries for Cloud Cover attribute and type must be verified against the XML small file archive.

An error window as shown in Figure 4.7.6-15 will pop up to indicate that collection cannot be added due to wrong cloud cover information. Click **OK** to dismiss the error window.

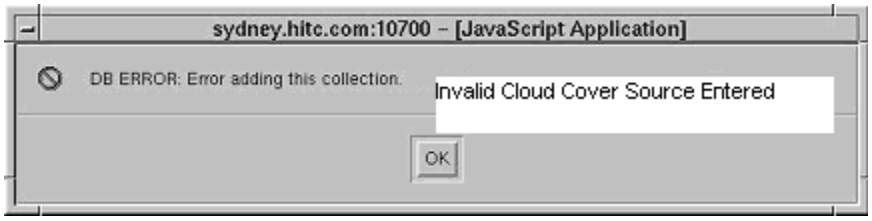


Figure 4.7.6-15. Error Window

The operator can add a Non-ECS collection to a Non-ECS group by clicking on an **Add New Collection** link in a Collections Associated with a Non-ECS Collection Group Screen. This action will bring up Add Collection screen for a Non-ECS Collection shown in Figure 4.7.6-16. The operator needs to enter a Collection name and Version number. These two fields are required. The operator can provide an optional collection Description for the collection. The operator can associate a collection with a File System label. Defaults for these two items are nulls. The Science Granules and /or Metadata row indicates if the collection is valid for science granule and metadata insertion or metadata only. The default value is science and metadata insertion. The operator can set the value to Metadata Only to indicate Metadata insertion only. The Data Pool Insertion indicates if the collection is eligible for insertion into Data Pool. The default value is invalid for data pool. The operator must set the value to valid for data pool to make the collection eligible for insertion into Data Pool. NONECS collections can also have the option to configure Spatial Search Type for a collection. Options provided are 'Not supported', 'Rectangle', Gpolygon and 'Orbit'. Default value for Spatial Search Type is 'Not Supported'. The operator can also set the global coverage flag to on/off. Default value for this flag is on. There are two more flag has on/off values can be set for a collection. Default for Day/Night Coverage flag is on and 24 hour coverage flag is off. After creating the Quality Summary web page, the operators will enter the URL in the text area reserved for quality summary URL and thus associate the URL for the Quality Summary web page. A collection can be associated with a Cloud Cover Type and Source attribute. The operator can configure that in this page. There is also a text area to enter the cloud cover description. Defaults for quality summary, cloud cover attribute, cloud cover type and cloud cover description are null. After making necessary selections operator must press on **Apply Change** button to add the collection. Table 4.7.6-10 gives descriptors for each of the Add New Non-ECS Collection entries.

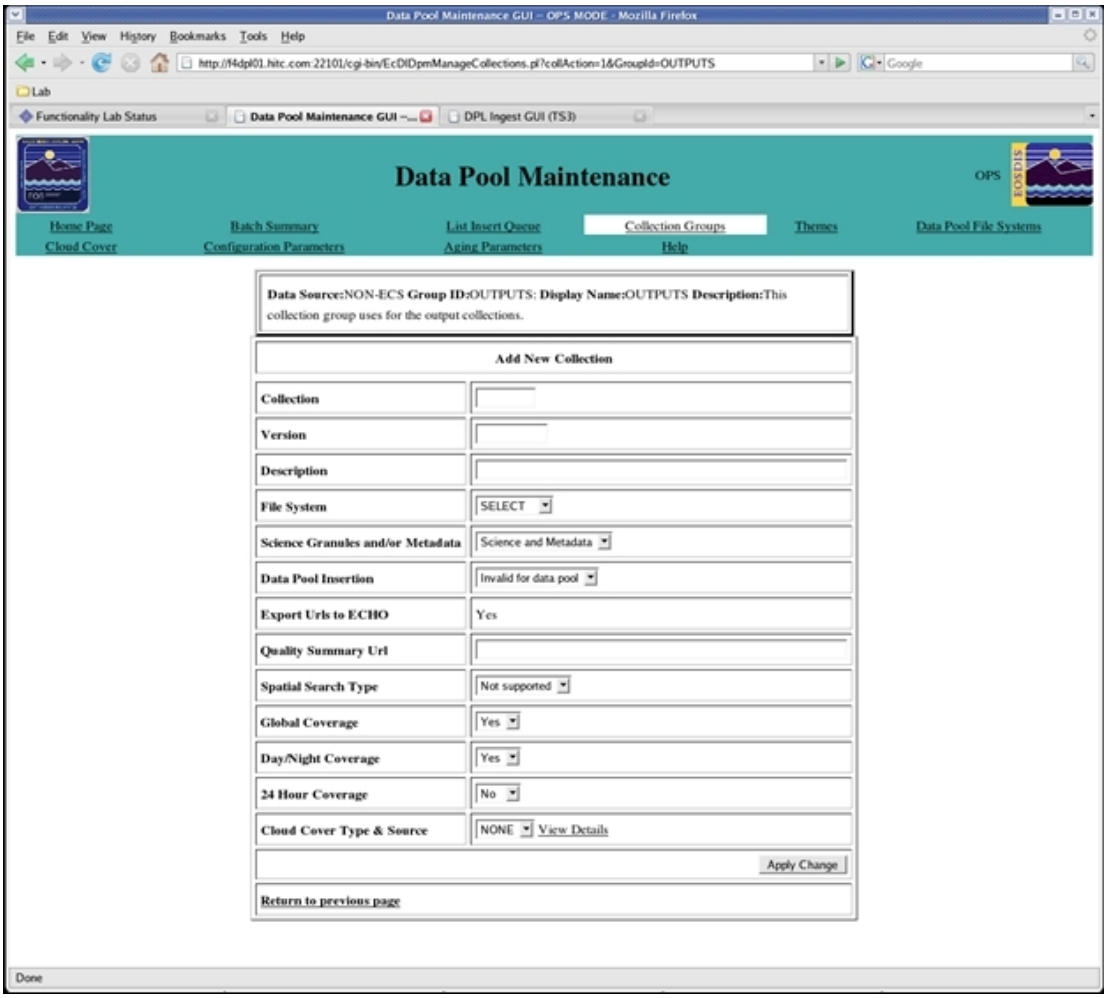


Figure 4.7.6-16. Add Non-ECS Collection Page (This Page is Only Accessible by Full Capability Operators)

Note: Limited Capability users cannot use this functionality.

Table 4.7.6-10. Add Non-ECS Collection

Field Name	Data Type	Size	Entry	Description
Collection	Char	8	Required	Name of a collection.
Version	Integer	1	Required	Version number of collection.
Description	Char	80	Required	Description of collection. Scrollable up to 255 characters.
File System	Char	n/a	Optional	File system path
Science Granules and/or Metadata	Char	n/a	Optional	Indicate whether collection whether collection is Science Granules and/or Metadata.
Data Pool Insertion	Char	n/a	Optional	Indicates if the collection is eligible for insertion into Data Pool.
Export Urls to ECHO	Char	1	Optional	Indicates if this collection is to be exported to ECHO.
Quality Summary URL	Char	80	Optional	URL that describes the quality summary of a collection. Scrollable up to 255 characters
Spatial Search Type	Char	n/a	Optional	Indicates if Spatial Search is required/needed and its type.
Global Coverage	Char	1	Optional	Indicated if global coverage is needed.
Day/Night Coverage	Char	1	Optional	Indicate if day or night coverage is needed.
24 Hour Coverage	Char	1	Optional	Indicate if 24-hour coverage is needed.

Entry for Non-ECS Collection name is verified against input error. It is also verified against same name and same version ID. An error window, as shown in Figure 4.7.6.17 and Figure4.7.6.18, will pop up for each case on the Add Collection screen. Click **OK** to dismiss the error window.

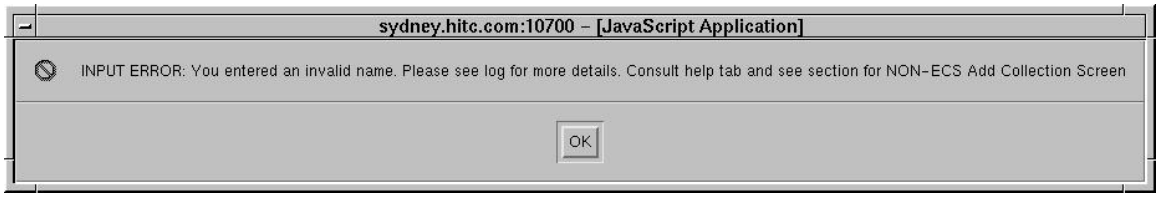


Figure 4.7.6-17. Input Error Window

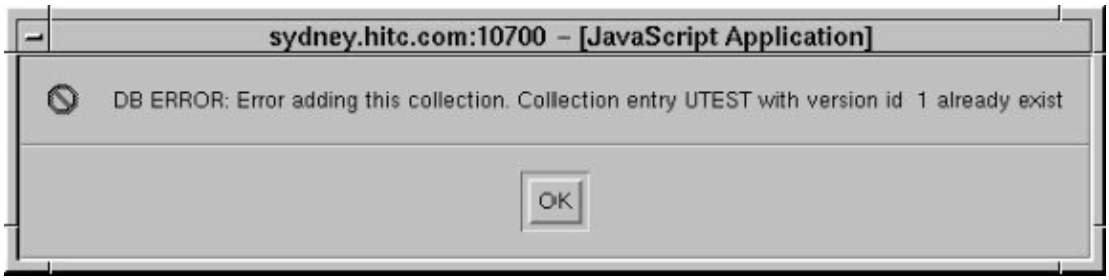


Figure 4.7.6-18. DB Error Window

4.7.6.1.4.6 Modify Existing Collection

The full-capability operator can modify a collection by clicking on the **Modify Collection** link shown in Figure 4.7.6-12 will take the operator to the Modify Collection page. There is one difference between the ECS and NON-ECS modify page. The ECS modify page does not allow the operator to modify a collection's description. The NON-ECS modify page allows the description field to be updated. Figure 4.7.6-19 describes modify an ECS collection example page and Figure 4.7.6-20 describes a NON-ECS modify page.

Both modify pages displays current information and allow operator modifications. After all desired changes are entered, the operator needs to click on the button called **Apply Change.** This action will change the data in database.

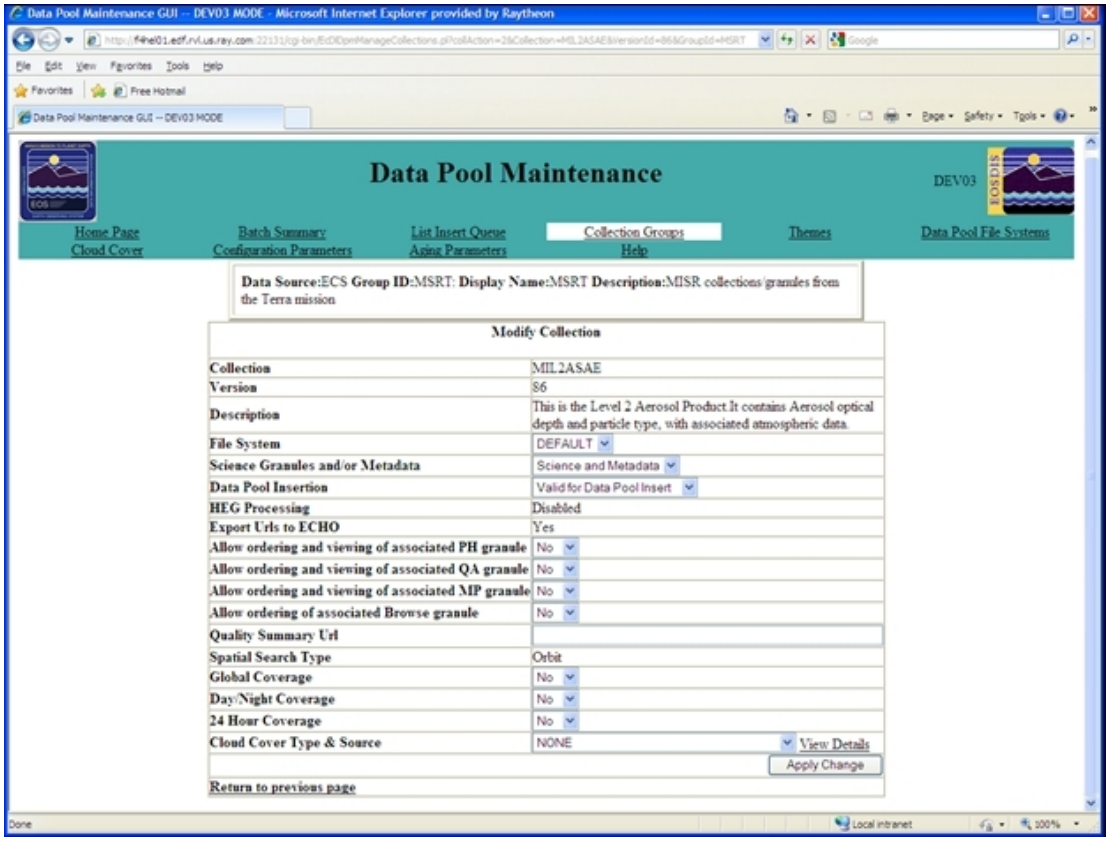


Figure 4.7.6-19. ECS Modify Collection Screen

Note: Limited Capability users cannot use this functionality.

Field descriptions for the screen can be found in Table 4.7.6-9.

Starting with Release 7.23, the cloud cover source can be modified for collections that already have granules in the public DPL, as opposed to 7.22, when the cloud cover source can be modified only for collection without DPL public granules. The following operations are permitted:

1. **Remove** the cloud cover source for a specified collection: set the cloud cover source for the collection to "NONE".
2. **Reconfigure** the cloud cover source for a specified collection: set the cloud cover source for the collection to the new source (if the new source doesn't already exist it will have to be created). This operation should be used when the DAAC determined that the cloud cover source has been incorrectly configured for a collection.
3. **Enable/Configure** the cloud cover source for a specified collection: set the cloud cover source for the collection to the desired cloud cover source (a new source must be created if necessary). This operation should be used when the DAAC determined that the cloud cover source is absent for a collection that should have had a cloud cover source.

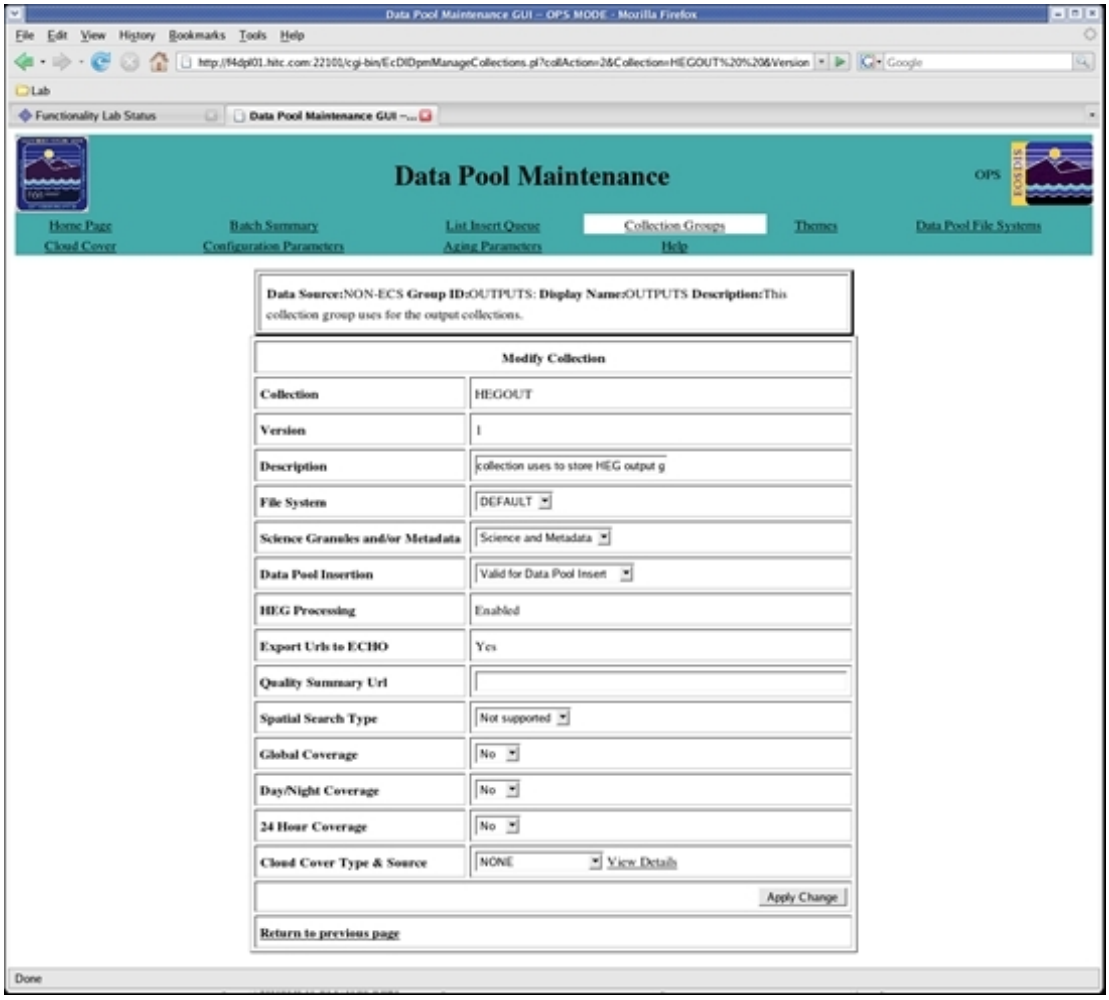


Figure 4.7.6-20. Non-ECS Modify Collections Screem

Field descriptions for the screen can be found in Table 4.7.6-10.

Note: Limited Capability users cannot use this functionality.

4.7.6.1.5 Data Pool File System Tab

Manage File System screen shown in Figure 4.7.6-21 allows the operator to view a list of file systems and information on Free Space Flag, Availability for insert, and Min Freed Space Amount. From this page the full capability operator can also configure a new file system and modifying an existing one by clicking on the link **Add New File System** and **Modify Data Pool File System Information** link respectively. Clicking on **Add New File System** will take the operator to 'Add New File System' page shown in Figure 4.7.6-22. The operators need to add five fields --- 1) File System Label: A label representing an existing Data Pool file system. 2) Free Space Flag: Value needs to be set is either ON or OFF. If is set to ON that means free space is available. If it is set to OFF then that means free space is not available. 3) Availability for

Insert: Value needs to be set is either 'Available' or 'Unavailable'. If the value is set to 'Available' that means file system is available for Data Pool insert. If the value is set to 'Unavailable' that means file system is not available for Data Pool insert. 4): Absolute Path: indicates path name to location. 5) Min Freed Space: Need to enter an integer value, which represent megabytes of space. This amount space must remain free in order to make the file system available for insert. Clicking on Modify File System will take the operator to 'Modify File System Information' page shown in Figure 4.7.6-23. The operator can change Free Space Flag, Availability for insert flag, and the Min Freed Space Amount in this page. There are check boxes associated with each file system. The operator can change multiple file system at one time by checking the desired file system's checkboxes and press on **Apply Change** button.

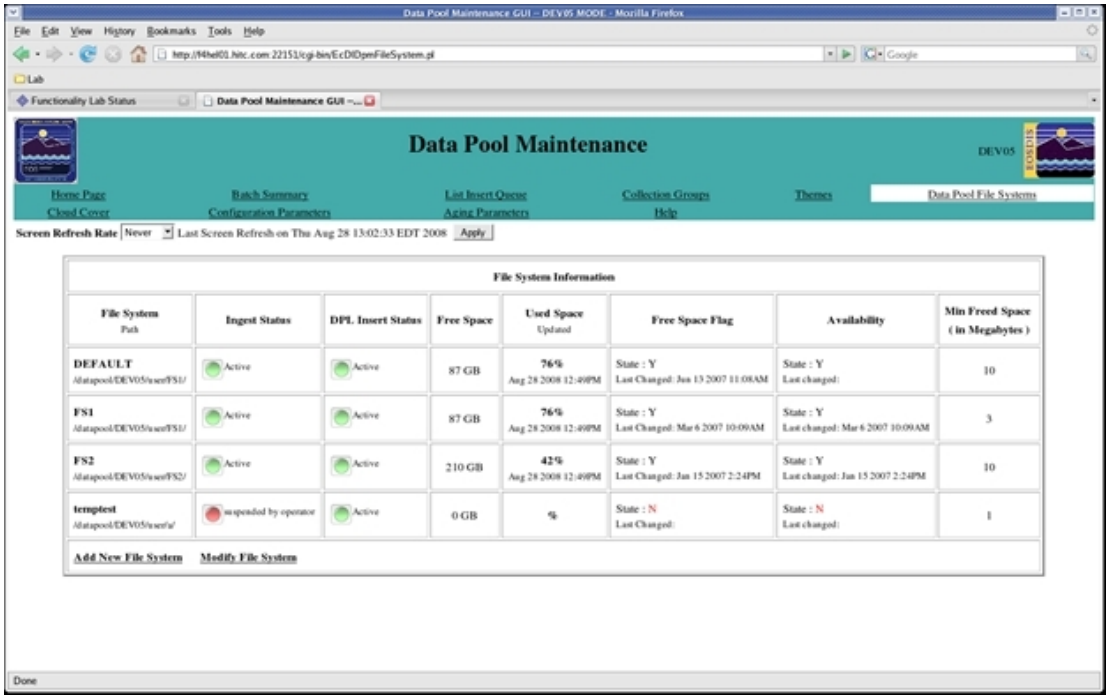


Figure 4.7.6-21. Data Pool File System Information Screen

Field descriptions for the screen can be found in Table 4.7.6-11.

Note: Limited Capability users cannot click 'Add New File System' or 'Modify File System' links.

Table 4.7.6-11. File System Information Field Description

Field Name	Data Type	Size	Entry	Description
Label	char	10	Required	File System Label. Limited to 10 characters. This is displayed in the File System Path column.
Absolute Path	char	255	Required	File system's absolute path. Only relative path is modifiable. Limited to 255 characters for the entire path. This is displayed in the File System Path column.
Ingest Status	Int	1	Derived	Indicates if the file system is enabled for DPL ingest processes.
DPL Insert Status	Int	1	Derived	Indicates if the file system is enabled for public datapool insert processes.
Free Space	Int	5	Derived	Indicates the space available on this file system (in GB)
Used Space	Int	2	Derived	Indicated the percentage of the file system used and the date this statistic was last updated.
Free Space Flag	char	1	Optional	Indicates if space is available for Data Pool insert. 'ON' value indicates that space is available. Default is 'ON'.
Availability	char	1	Optional	File system available for insert. Value 'YES' indicate it is available and value 'NO' it is not available. The default value is 'YES'.
Min Freed Space (in Megabytes)	int	4	Optional	Amount space must be freed in order to make the file system available

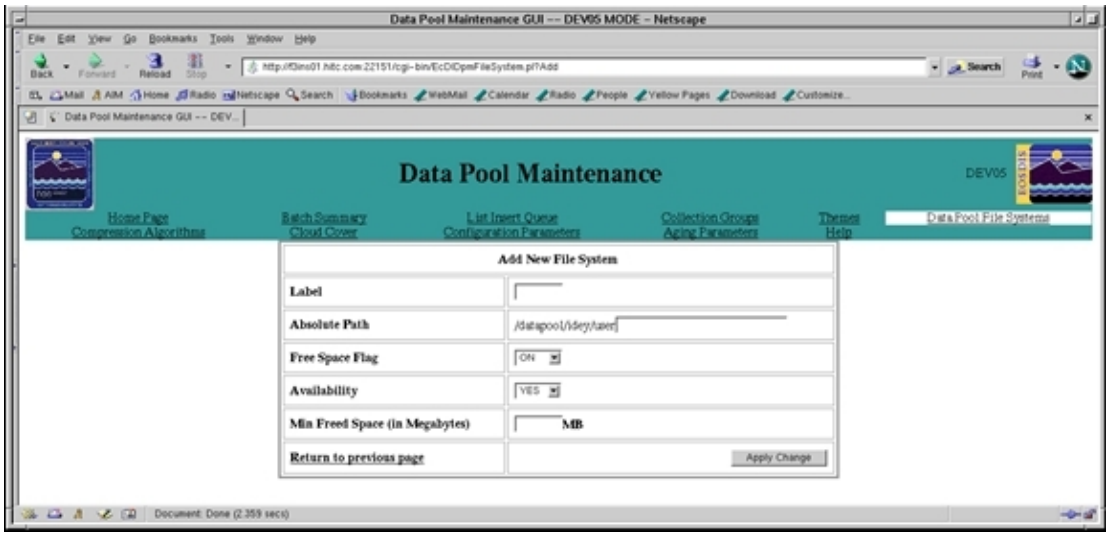


Figure 4.7.6-22. Add New File System Screen

Field descriptions for the screen can be found in Table 4.7.6-12.

Note: Limited Capability users cannot use this functionality.

Table 4.7.6-12. Add New File System Field Description

Field Name	Data Type	Size	Entry	Description
Label	char	10	Required	File System Label. Limited to 10 characters.
Absolute Path	char	255	Required	File system's absolute path. Only relative path is modifiable. Limited to 255 characters for the entire path.
Free Space Flag	char	1	Optional	Indicates if space is available for Data Pool insert. 'ON' value indicates that space is available. Default is 'ON'.
Availability	char	1	Optional	File system available for insert. Value 'YES' indicate it is available and value 'NO' it is not available. The default value is 'YES'.
Min Freed Space (in Megabytes)	int	4	Optional	Amount space must be freed in order to make the file system available

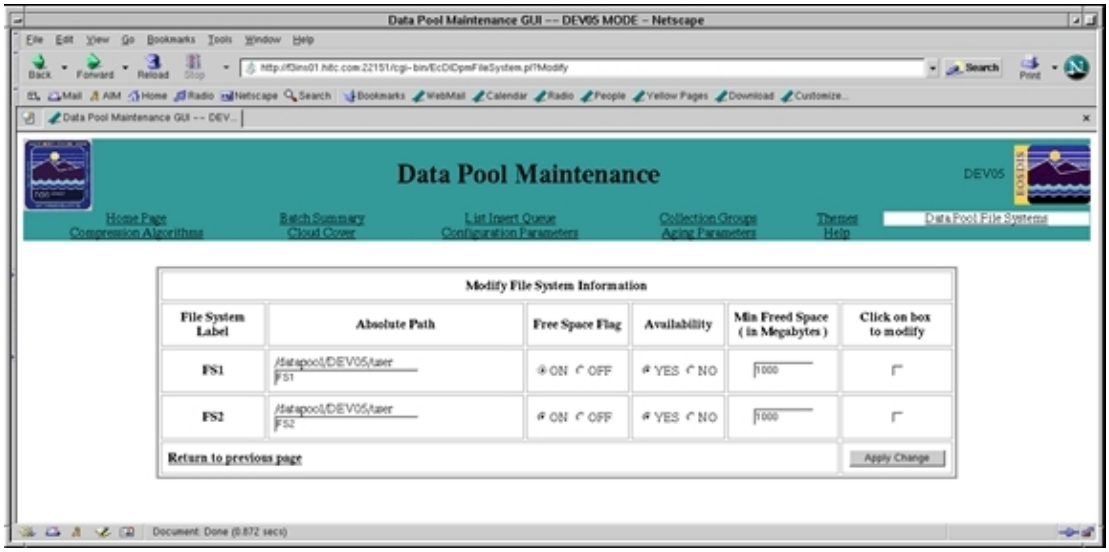


Figure 4.7.6-23. Modify File System Information Screen

Field descriptions for the screen can be found in Table 4.7.6-13.

Note: Limited Capability users cannot use this functionality.

Table 4.7.6-13. Modify File System Information Field Description

Field Name	Data Type	Size	Entry	Description
File System Label	char	10	Required	File System Label. Limited to 10 characters.
Absolute Path	char	255	Required	File system's absolute path. Only relative path is modifiable. Limited to 255 characters for the entire path.
Free Space Flag	char	1	Optional	Indicates if space is available for Data Pool insert. 'ON' value indicates that space is available. Default is 'ON'.
Availability	char	1	Optional	File system available for insert. Value 'YES' indicate it is available and value 'NO' it is not available. The default value is 'YES'.
Min Freed Space (in Megabytes)	int	4	Optional	Amount space must be freed in order to make the file system available
Click on box to modify	checkbox	1	Optional	Select when modifications are needed

4.7.6.1.6 Themes Tab

The Themes screen shown in Figure 4.7.6-24 allows the operator to view a list of themes in alphabetical order. This list can be filtered using three filter criteria: **Web Visible**, **Insert Enabled** and **Beginning Letters**. The options for **Web Visible**: Yes, No and ALL. The options for **Insert Enabled**: Yes, No and ALL. All of these criteria can be used together or separately. After selecting the option click **Apply Filter** button to view the filtered list of themes. From this page the operator can also delete a theme by selecting the corresponding Click On Box To Delete check box and clicking on the "**Apply Change"** button. The operator can add a new theme by clicking on the **Add A New Theme** link**.** This link will take the operator to "Add New Theme" page shown in Figure 4.7.6-25. The operator needs to add four fields regarding a theme: name, description, valid for insert or not and valid for web drill down or not. The operator also can modify an existing theme by clicking on the "**Modify Theme"** link from Figure 4.7.6-24. This link will take the operator to the Modify Theme page shown in Figure 4.7.6-28. 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 option for Insert enabled and web enabled by selecting or deselecting the appropriate boxes. After making the selection the operator needs to select the check box corresponding to the theme and then press the **Apply Change** button. Upon pressing this button the changes will take effect in the Data Pool database and also the Manage Themes page in Figure 4.7.6-24 will be refreshed.

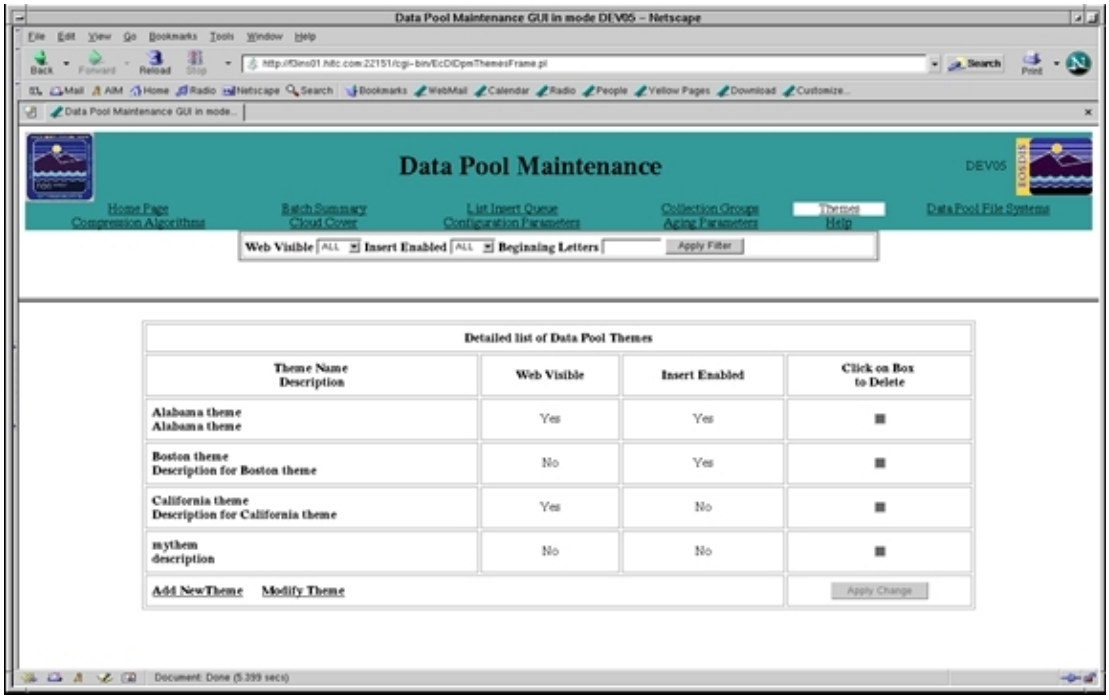


Figure 4.7.6-24. Themes Screen

Note: Limited Capability users cannot click 'Add New Theme' or 'Modify Theme' links. They also cannot delete themes. All check boxes and 'Apply Change' button cannot be clicked.

Table 4.7.6-14 lists the filter theme field descriptions.

Table 4.7.6-14. Filter Theme Field Description

Field Name	Data Type	Size	Entry	Description
Theme Name	char	40	Required	Partial or full name of a theme.
Description	char	100	Required	Description of the theme.
Web Visible	char	1	Optional	Availability for Web scroll down. The default will be system generated.
Insert Enabled	char	1	Optional	Enabled for Data Pool insert. The default will be system generated.
Click on Box to Delete	check box	1	Optional	Option to delete theme name and its corresponding information once box is checked

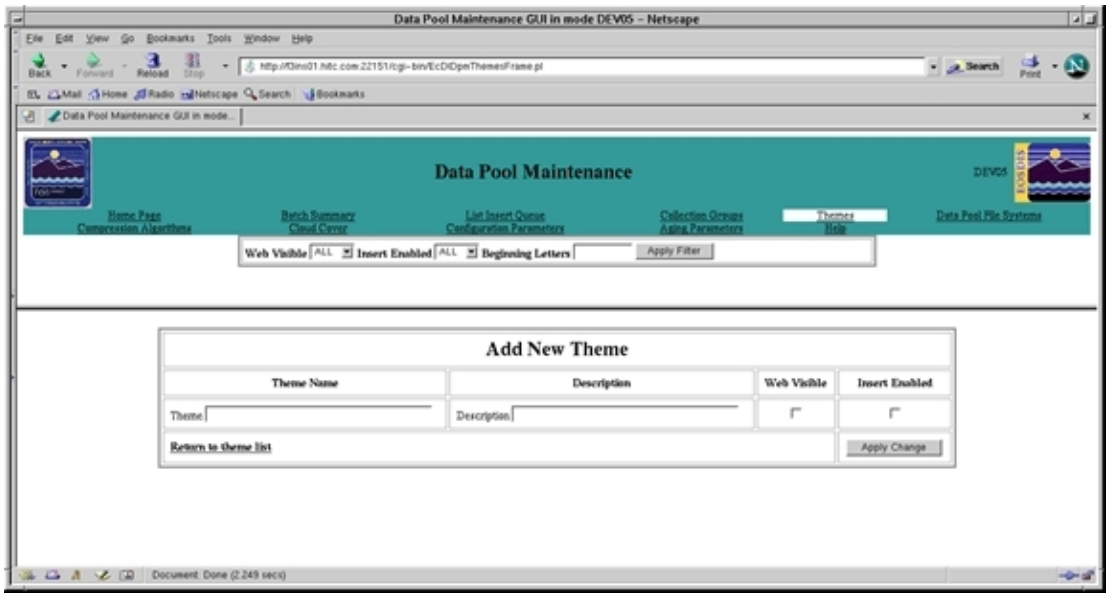


Figure 4.7.6-25. Add a New Theme Screen

Note: Limited Capability users cannot use this functionality

See Table 4.7.6-15 below for field descriptors for the Add New Themes page.

Table 4.7.6-15. Add a New Theme Field Description

Field Name	Data Type	Size	Entry	Description
Theme Name	char	20	Required	Name of a theme. Scrollable up to 40 characters.
Description	char	100	Required	Description of a theme. Scrollable up to 255 characters.
Web Visible	Check box	1	Optional	Availability for Web scroll down.
Insert Enabled	Check box	1	Optional	Enabled for Data Pool insert.

Theme names will be verified against input errors and name duplication. An error window will pop in each case over the **Add A New Theme** page to indicate the error, shown in Figure 4.7.6-26 and Figure 4.7.6-27. Click **OK** to dismiss the window.

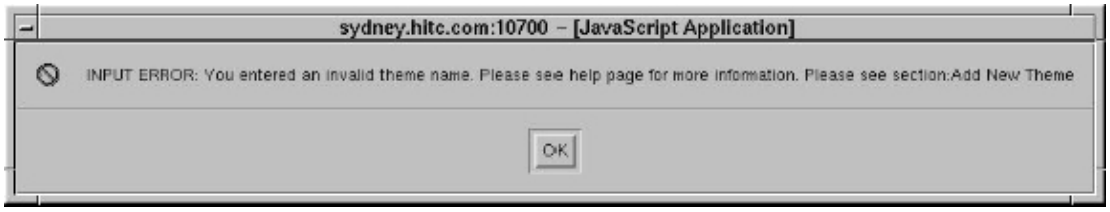


Figure 4.7.6-26. Input Error Screen

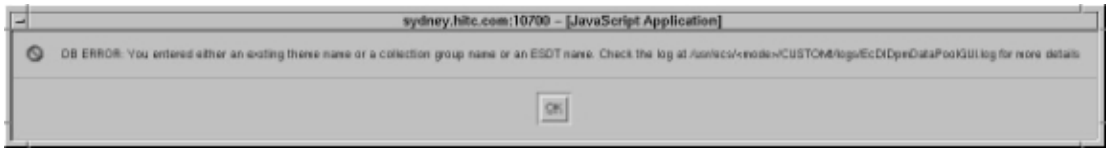


Figure 4.7.6-27. DB Error Screen

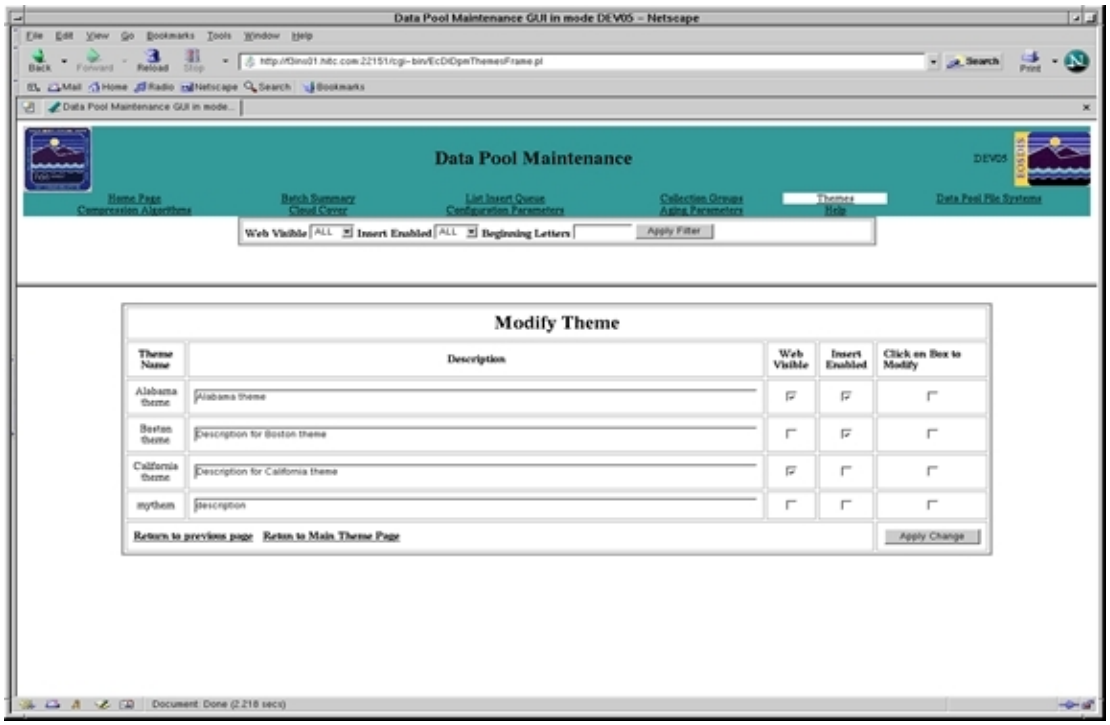


Figure 4.7.6-28. Modify Theme Screen

Note: Limited Capability users cannot use this functionality.

See Table 4.7.6-16 for Modify Theme Field Descriptions field descriptors.

Table 4.7.6-16. Modify Theme Field Description

Field Name	Data Type	Size	Entry	Description
Theme Name	char	20	Required	Name of a theme. Scrollable up to 40 characters.
Description	char	100	Optional	Description of a theme. Scrollable up to 255 characters.
Web Visible	check box	1	Optional	Availability for Web scroll down. Default will be not Web visible.
Insert Enabled	check box	1	Optional	Enabled for Data Pool insert. Default will be not available for insert.
Click on Box to Modify	checkbox	1	Optional	Select when modifications are needed

4.7.6.1.7 Cloud Cover Tab

Cloud Cover Information screen shown in Figure 4.7.6-29 allows the operator to view a list of Cloud Cover source names, their types and descriptions. It also provides check boxes beside each cloud cover information rows to delete any of the entries. Only full capability operators can execute this delete operation. The full capability operators can also configure a new cloud cover information and modifying description of an existing one by clicking on the link Add New Cloud Cover and Modify Source Description link respectively. Clicking on **Add New Cloud Cover** will take the operator to 'Add A New Cloud Cover Information' page shown in Figure 4.7.6-30. The operators need to add three fields --- 1) Source Type: A drop down list consisting of types. Currently there are two types: Core Metadata and PSA (Product Specific Attribute). If 'Core Metadata' is selected then source name will be automatically populated. 2) Source Name: Need to enter a valid source name if 'PSA' is selected for Source Type. 3) Source Description: Need to enter a description for the source. This description can be 255 characters long. Clicking on **Modify Source Description** will take the operator to **'Modify Cloud Cover Description'** page shown in Figure 4.7.6-31. The operator can change the source description. There are check boxes associated with each cloud cover information item. The operator can change information at one time by checking the desired cloud cover information's checkboxes and press on **Apply Change** button. See Table 4.7.6-17 for field descriptors of the cloud cover pages.

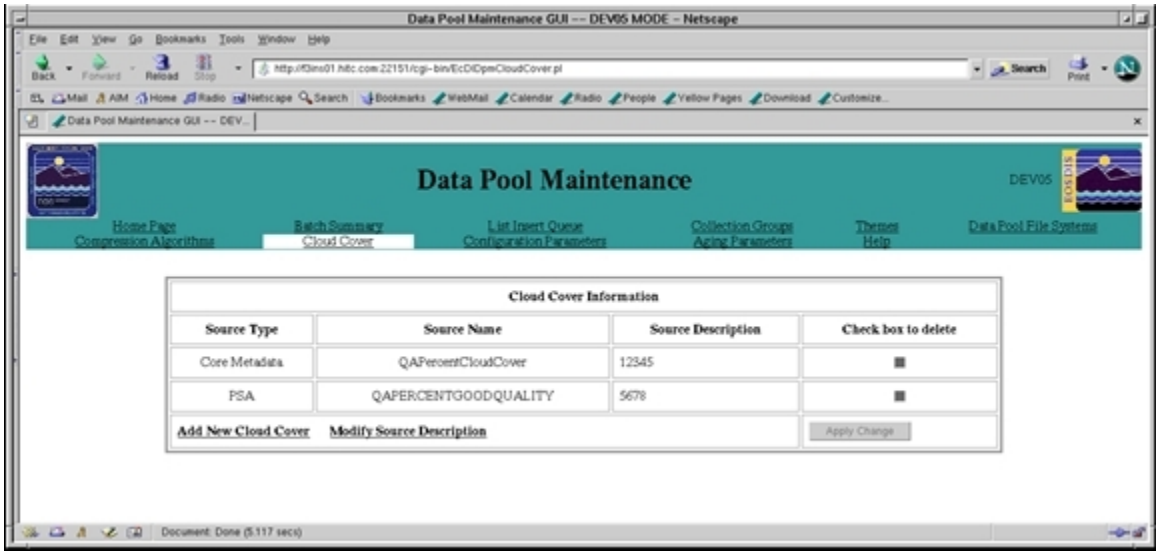


Figure 4.7.6-29. Cloud Cover Information Screen

Note: Limited Capability users are not allowed to delete cloud cover information.

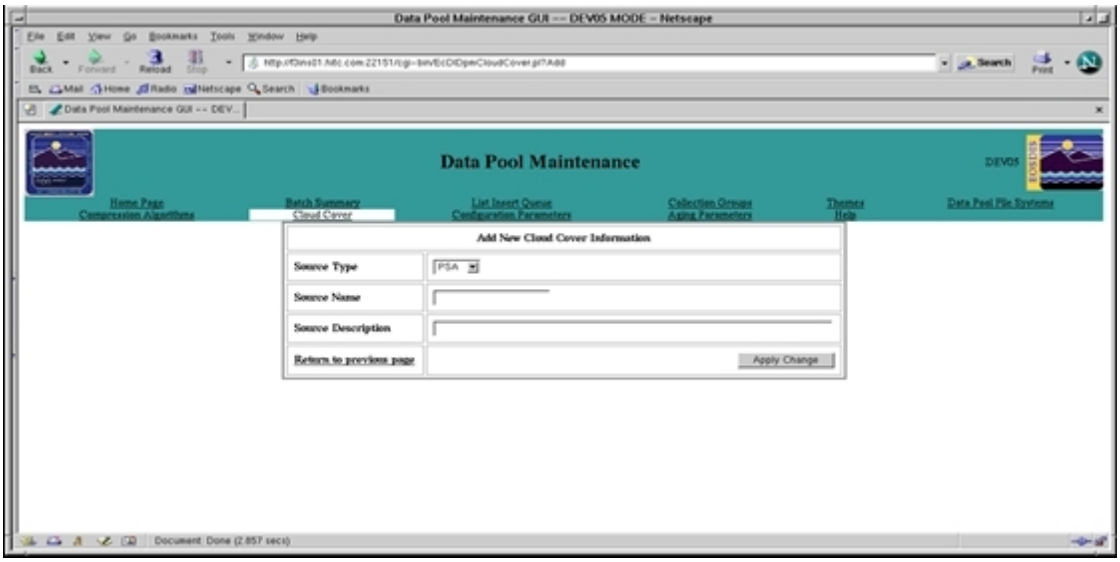


Figure 4.7.6-30. Add a New Cloud Cover Information Screen

Note: This page is not accessible by Limited Capability users.

Table 4.7.6-17. Add A New Cloud Cover Information Field Description

Field Name	Data Type	Size	Entry	Description
Source Type	char	30	Required	Cloud Cover source type
Source Name	char	20	Required	Valid source name
Source Description	char	30	Optional	Description about the source name. Up to 255 characters long
Click on box to delete	checkbox	1	Optional	Option to delete theme name and its corresponding information once box is checked

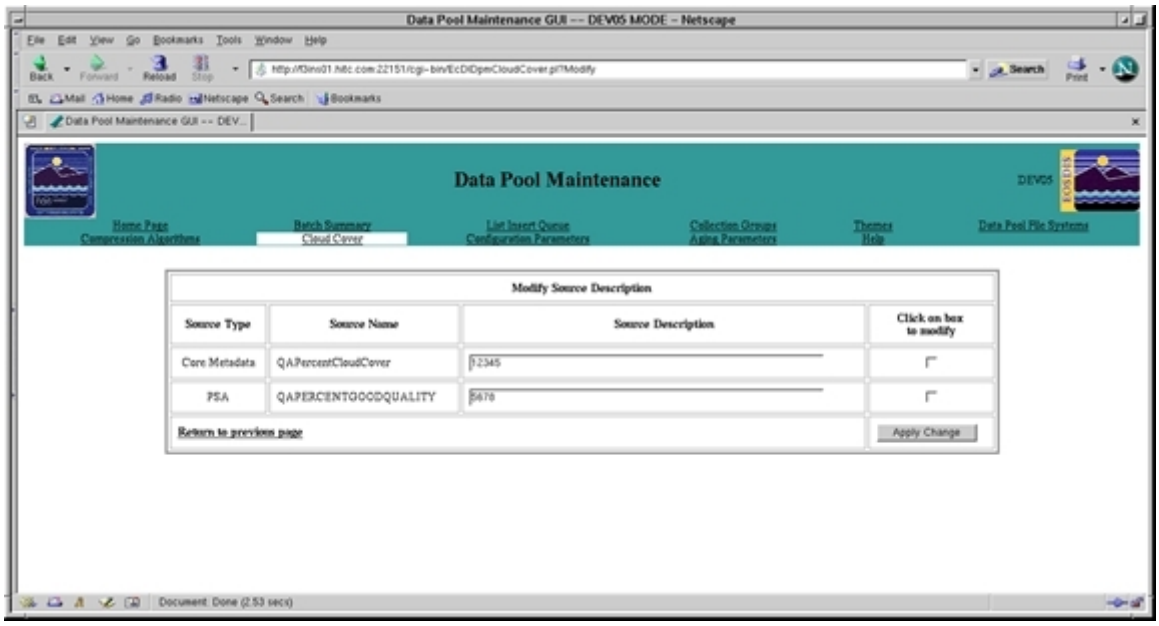


Figure 4.7.6-31. Modify Cloud Cover Description Screen

Note: This page is not accessible by Limited Capability users.

Table 4.7.6-18 describes the Modify Cloud Cover Description Fields.

Table 4.7.6-18. Modify Cloud Cover Description Field Description

Field Name	Data Type	Size	Entry	Description
Source Type	char	30	Required	Cloud Cover source type
Source Name	char	20	Required	Valid source name
Source Description	char	30	Optional	Description about the source name. Up to 255 characters long
Click on box to modify	check box	1	Optional	Select when medications are needed

4.7.6.1.8 Aging Parameters Tab

The Aging Parameters Page (Figure 4.7.6-32) allows the operator to view a list of Aging Parameters, their starting priority values, aging step values and maximum priority values. It also provides check boxes beside each aging parameter information rows to modify any of the entries.

Aging step values and priority values can be modified. Only full capability operators can execute this modify operation. The operator needs to add new values in the text boxes and then click the **Click On Box To Modify** checkbox at the end of the row. After making all changes click on **Apply Change** button. This will refresh the screen with new values and also update the database.

The fields of the Aging Parameters Page are described in Table 4.7.6-19.

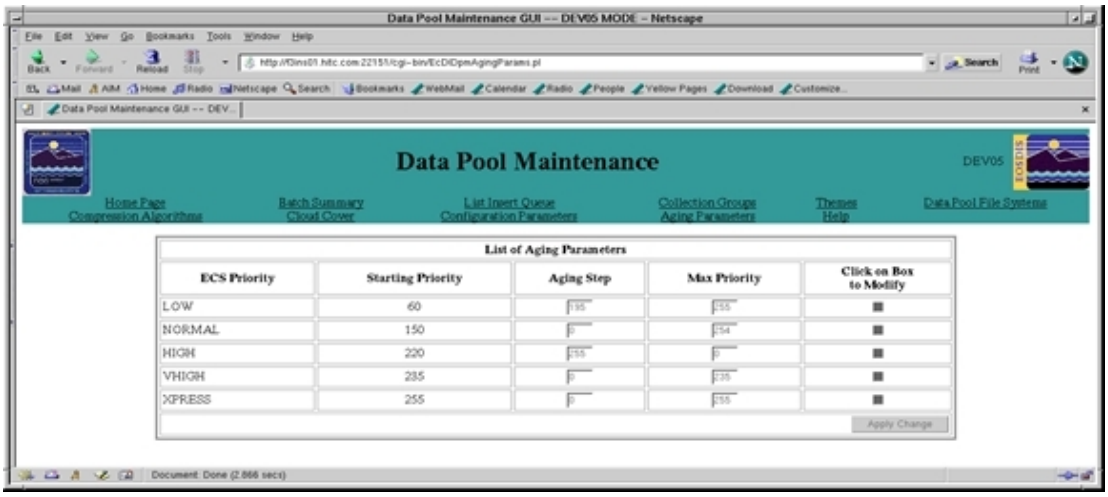


Figure 4.7.6-32. List of Aging Parameters Screen

Table 4.7.6-19. Aging Parameters Field Descriptions

Field Name	Data Type	Size	Entry	Description
ECS Priority	char	10	Required	Determines the level of priority for the Aging Parameter for ECS: Low, Normal, High, Very High, Express
Starting Priority	int	4	Required	Provides ascending order of Aging Parameters according to it priority number
Aging Step	int	4	Optional	Time interval to increase the priority value
Max Priority	int	4	Optional	Maximum priority value for an ECS priority level
Click on Box to Modify	checkbox	n/a	Optional	Select when modifications are needed

4.7.6.1.9 End Session Tab

The **End Session** tab is provided to end a session on demand. This tab is available only from the Data Pool Home Page. Upon clicking on **End Session** link it will bring up the **End Session** page shown in Figure 4.7.6-33.

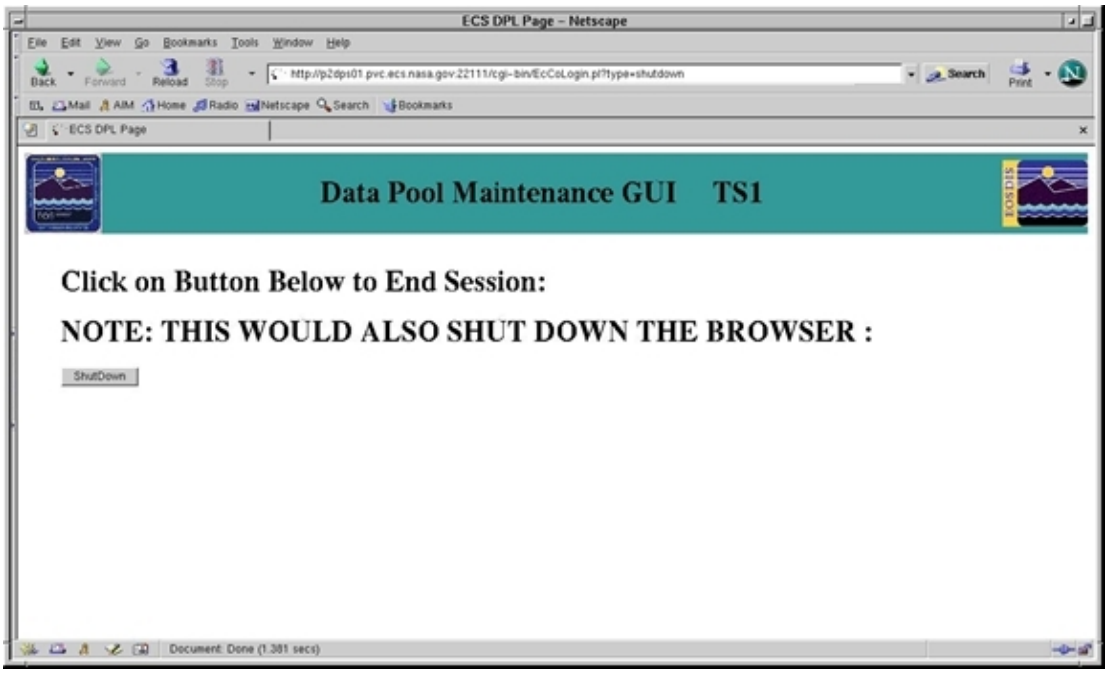


Figure 4.7.6-33. End Session Page

4.7.6.2 Data Pool Maintenance Main Screen

See Figure 4.7.6-2.

4.7.6.3 Required Operating Environment

The following environment is required for the DPM GUI to work properly:

- The O/S requirements are Linux 2.x or higher

4.7.6.4 Databases

The DPM GUI accesses the Inventory database.

4.7.6.4.1 Interfaces and Data Types

The DPM GUI exchanges data between the Web Browser and database, using Perl CGI and DBI Modules for the Interface.

4.7.6.5 Special Constraints

There are no special constraints to running the DPM GUI.

4.7.6.6 Outputs

There are no outputs from the DPM GUI except for status and error messages.

4.7.6.7 Event and Error Messages

The DPM GUI writes status and error messages to the EcDlDataPoolGUI.log file in the directory /usr/ecs/<MODE>/CUSTOM/logs.

4.7.6.8 Reports

The DPM GUI does not generate reports.

4.7.7 Using the Order Manager GUI

The Order Manager (OM) GUI provides operators with access to the Order Manager database. 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 requests that have failed. It also supports the processing of physical media requests; management of HEG orders; and user configuration of ODL metadata users, external subsetter and SCP policy.

Notes on Operator Capability Levels

In accordance with new Operator GUI security standards, the OM GUI will implement two levels of permissions, such that only Full Capability operators have the ability to configure parameters and perform certain actions, while Limited Capability operators are restricted to basic functionality as outlined in this document. To accomplish this, the OM GUI disables inputs, buttons, and access to certain pages for Limited Capability Operators.

All screenshots in this document show pages accessible to Full Capability Operators, with the understanding that certain elements will be visibly disabled in many pages. All functionality not available to Limited Capability Operators will be clearly outlined in this document.

The OM GUI provides Full Capability operators with the ability to:

- Monitor for Operator Interventions and modify request parameters associated with those interventions (such as update metadata format, SCP parameters).
- View Completed Interventions.
- View list of all Distribution Requests, Processing Service Requests, Ftp Push Distribution Requests, Staging Distribution Requests, Archived Requests and Archived Processing Requests.
- Filter Distribution Requests by individual order id, request id, e-mail address, first name, or last name. Filter Distribution Requests by combinations of status, media type, order type, user id, and creation start and end time.
- From any list of Distribution Requests, perform the following actions as appropriate: change priority, resubmit, suspend, resume, cancel or stop a request.
- View detailed distribution request information and perform the following actions as appropriate:
    - Change priority, resubmit, suspend, resume, cancel or stop the request.
    - Add or change operator notes.
    - Change address information.
- View details of an ECS Order.
- View the profile of a user associated with an ECS Order.
- View suspended Ftp Push / SCP destinations and resume dispatching.
- Suspend an active destination or view non-terminal requests for the destination

- View details for suspended Ftp Push / SCP destinations including Ftp Push / SCP Operations that caused the suspension and Ftp Push / SCP Requests that are not in a terminal state.
- View, update and cancel bundling order information (link to NSBRV GUI).
- Monitor for Operator Alerts caused by Ftp Push / SCP operations, Data Pool File System errors, Archive Server errors.
- Monitor and suspend/resume processing queue states.
- Monitor and suspend/resume staging states.
- Monitor the current staging status by media type, FTP Push or SCP.
- Configure OM Server and OM Database parameters.
- Configure the aging parameters for each ECS Priority level.
- Configure settings for each media type.
- Configure ODL metadata users.
- Configure the parameters for each external subsetter.
- Define and configure FTP Push / SCP destinations, as well as the "policies" for those destinations.
- Configure Archive Resource parameters.
- Monitor for OM Server statistics.
- Monitor for OM Staging statistics.
- Get general and context-based help for all OM GUI functions.

The OM GUI provides Limited Capability operators with the ability to:

- Monitor for Operator Interventions.
- View Completed Interventions.
- View list of all Distribution Requests, Ftp Push Distribution Requests or Staging Distribution Requests.
- Filter Distribution Requests by combinations of order id, request id, status, order type, media type, user id, first name, last name, e-mail address, or creation time.
- View detailed distribution request information.
- View processing service request information.
- View details of an ECS Order.
- View the profile of a user associated with an ECS Order.
- View archived distribution requests.
- View suspended Ftp Push / SCP destinations.
- View details for suspended Ftp Push / SCP destinations including Ftp Push / SCP Operations that caused the suspension and Ftp Push / SCP Requests that are not in a terminal state.

- View bundling order information (link to NSBRV GUI).
- Monitor for Operator Alerts caused by FTP Push operations, Data Pool File System errors, Archive Server errors, or Archive Tape errors.
- Monitor processing queue states.
- Monitor staging states.
- Monitor the current staging status by media type, FTP Push destination or SCP destination.
- View OM Server and OM Database parameters.
- View settings for each media type.
- View email settings for ODL metadata users.
- View configuration for each external subsetter.
- View FtpPush / SCP policy settings.
- View Archive Resource parameters.
- Monitor for OM Server statistics.
- Monitor for OM Staging statistics.
- Get general and context-based help for all OM GUI functions.

4.7.7.1 Starting the OM GUI

Start the web browser and then access the URL for the OM GUI web page with the format:

```
http://server:port
```

Example:

```
http://f4dp101.hitc.com:22401
```

There is no need to specify a cgi-bin directory or a specific HTML page. The GUI will open itself in a new window and will close the parent window. If run on a Windows or Linux platform, the parent window may not close.

Browser Requirements

The OM GUI is certified for use with any browser supporting the Mozilla standard. Many modern browsers support this standard, including Netscape 7+, Firefox, and others. 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.

Java, other scripting languages, or plug-ins are not used in the OM GUI.

4.7.7.1.1 OM GUI Home Page

The OM GUI Home Page screen shown in Figure 4.7.7-1 explains the basic services of the OM GUI. There is a static frame to the left that allows for easy and direct access to the desired pages. Due to the nature of this navigation method, the individual pages should not be viewed outside the frame environment. The navigation frame is also resizable if so desired.

Login and Sessions

The operator has the option of recalling a session by typing a name into the Login box in the left frame. This is only to recall particular session settings and is not intended for security in any way (see the GUI Security section later in this document). If the login name does not exist, a new session is created. If the operator does not choose to login, a temporary session is created.

Figure 4.7.7-1. Order Manager GUI Home Page

Note: This screen shows an operator logged in using the OM GUI's non-secure login system. This only appears if the security protocols were not installed.

The operator alerts are displayed at the top of the screen.

4.7.7.1.2 GUI Security

The OMS GUI can optionally be installed with the GUI Security feature enabled. If it is, you will be prompted for a user name and password once the GUI is started. This user name will also be used as the session identifier, so that the operator can recall session settings. See Figure 4.7.7-2 for an example of the login dialog box.

User Names and Passwords

The installation team will have to create user names and passwords using special utilities. The details on this are in a different document.

GUI Security Disabled

If GUI Security has not been installed, the operator can still "log in" using the OMS GUI's proprietary login system (see "Login and Sessions" under Section 4.7.7.2). See Figure 4.7.7-2 for an example of the login dialog box.

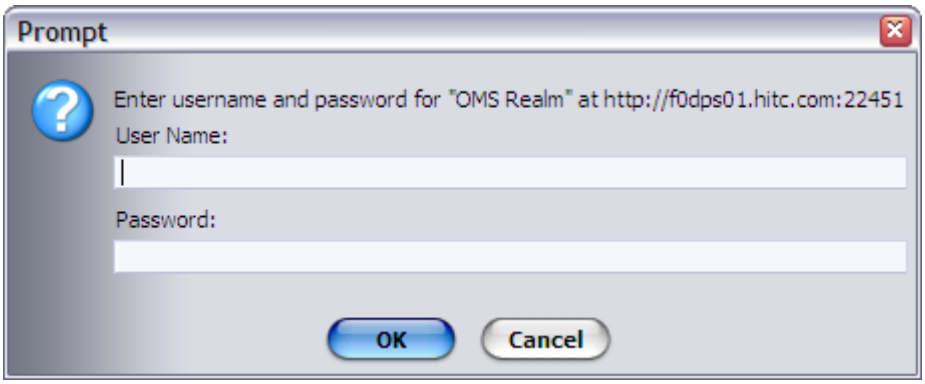


Figure 4.7.7-2. GUI Security Login

4.7.7.2 Request Management Pages

The Request Management section consists of several subsections that support a variety of capabilities allowing the operator to manage, modify, and monitor many aspects of distribution request processing. While the basic functionality of the Intervention pages remains the same, there are some enhancements, such as the ability to view Operator Interventions based on Staging errors.

In the event of a request failure, an operator intervention will appear on the "Open Interventions" page. In addition, an "Operator Alerts" page displays non-fatal warnings or errors that do not cause an Operator Intervention, but which otherwise might pose valuable to the operator. An example might be a suspended FTP Push destination.

4.7.7.2.1 Open Interventions Page

From the navigation menu, click on "Request Management" to display the available actions, and then click on **"Open Interventions"** to display the Open Interventions page, which contains a list of all the currently open Operator Interventions that require attention, as shown in Figure 4.7.7-3.

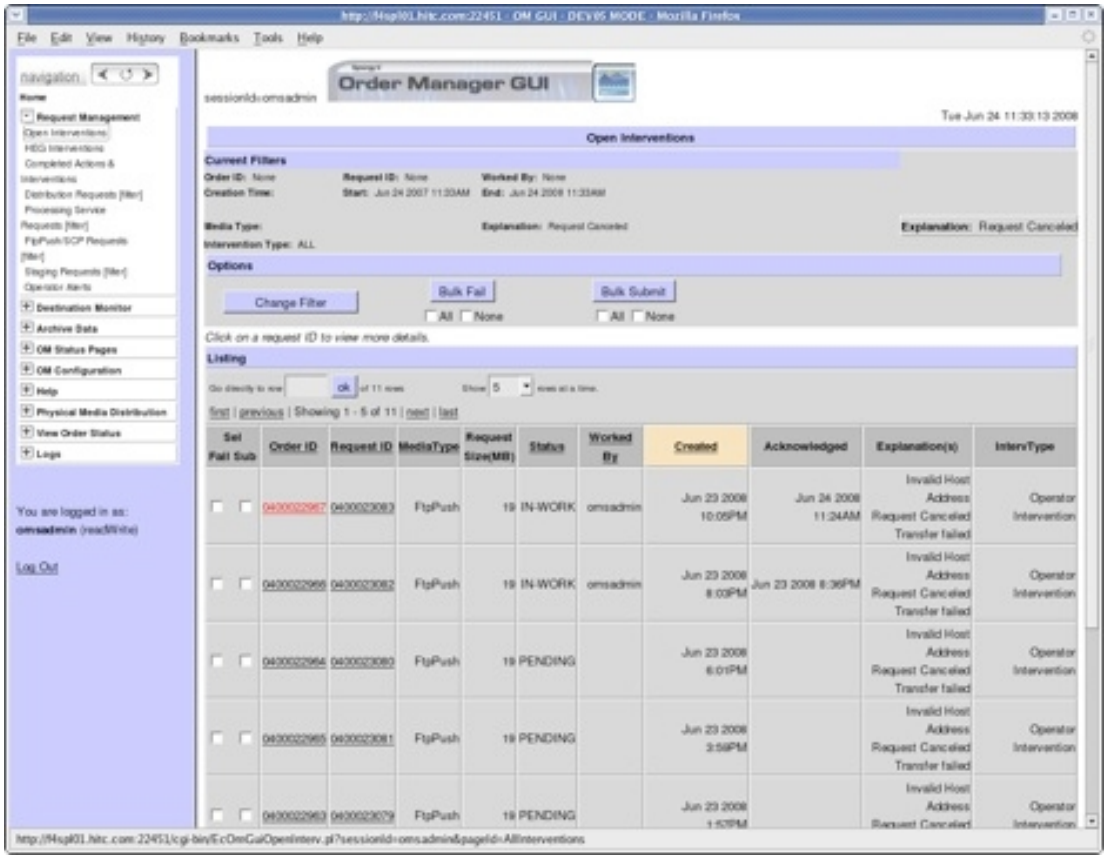


Figure 4.7.7-3. Open Interventions Page

The listing shows the Request ID that caused the intervention, as well as the associated Order ID, media type, request status, the operator who worked the intervention (no name will be shown if it has not been worked on), creation time, acknowledgement time, and the short explanation of whatcaused the request intervention. There are also checkboxes which can be used to select interventions to be acted upon for a **Bulk Fail** or **Bulk Submit**. Note that the highlighted column heading indicates which field is currently being used to sort the entries in the table. See Table4.7.7-1 for descriptions of each field on this page.

Table 4.7.7-1. Open Interventions

Field Name	Description
Sel Fail	Checkbox used to indicate the intervention to be acted upon for a **Bulk Fail.** If the box is checked, the request will be failed when the **Bulk Fail** button is pressed.
Sel Sub	Checkbox used to indicate the intervention to be acted upon for a **Bulk Submit.** If the box is checked, the request will be submitted when the **Bulk Submit** button is pressed.
Order ID	The Order ID associated with the Request. Clicking on the Order ID will display a "detail" of the Order information.
Request ID	The Request ID associated with the Intervention. Clicking on the Request ID will display a detail of the Intervention.
MediaType	The media type this Order/Request uses.
Request Size(MB)	Size of the request in megabytes.
Status	The current status of the Intervention. This can be one of: PENDING: No operator has been assigned nor any action has yet been taken for the Intervention. IN-WORK: An operator has been assigned to an Intervention. This does not necessarily mean an action has been taken.
Worked By	The operator currently working the intervention. If no name appears, the Intervention has not been worked or reviewed. An operator must assign a name to the intervention before any modifications can be made.
Created	The Creation Date/Time of the Intervention.
Acknowledged	The Date/Time that an action was first taken or when an operator assigned the intervention to a worker.
Explanation(s)	A description of the nature of the error. In the case of an FTP Push failure or Staging error, a special icon will appear to make it easily recognizable.
IntervType	Intervention type (new field). For normal interventions, this is simply "Operator Intervention". Three types have been added: • HEG – Interventions related to HEG processing errors • Media Creation Error – Interventions resulting from an error at the creation stage of a physical media volume or volumes • QC Failed – Interventions resulting from an error at the QC Verification stage of a physical media volume or volumes

Interventions List Bulk Actions

The interventions list bulk actions allow the operator to act on more than one intervention at the same time. Buttons are shown on the **Options** bar for the **Bulk Submit** and **Bulk Fail** actions. When the operator clicks the **Bulk Fail** button, any intervention whose **Sel Fail** checkbox has been checked will be failed. When the operator clicks the **Bulk Submit** button, any intervention whose **Sel Sub** checkbox has been checked will be submitted.

When the operator clicks the All checkbox below the **Bulk Fail** or **Bulk Submit** buttons, the corresponding checkboxes in the interventions list will be checked. When the operator clicks the

None checkbox below the **Bulk Fail** or **Bulk Submit** buttons, the corresponding checkboxes in the interventions list will be unchecked.

Intervention List Filters

As with the Distribution Request pages, the Intervention pages have a filtering capability. To access this filter, click on the "Change Filter" button at the top of the page. This will display a pop-up window, as shown in Figure 4.7.7-5, in which the user can change the filter settings. The top of the page also displays your current filtering options, as shown in Figure 4.7.7-4.

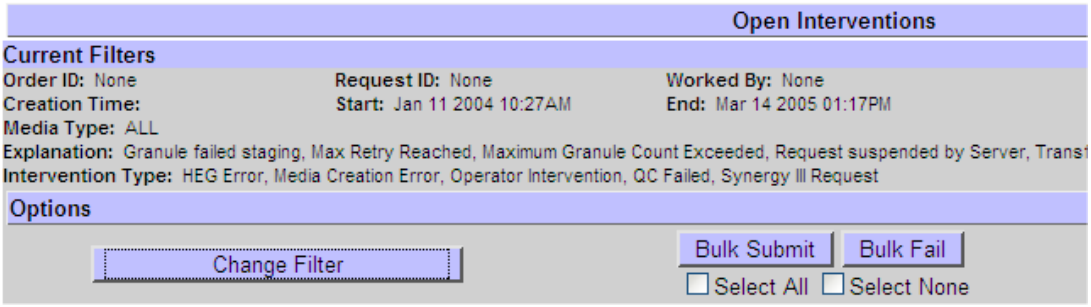


Figure 4.7.7-4. Current Intervention Filters

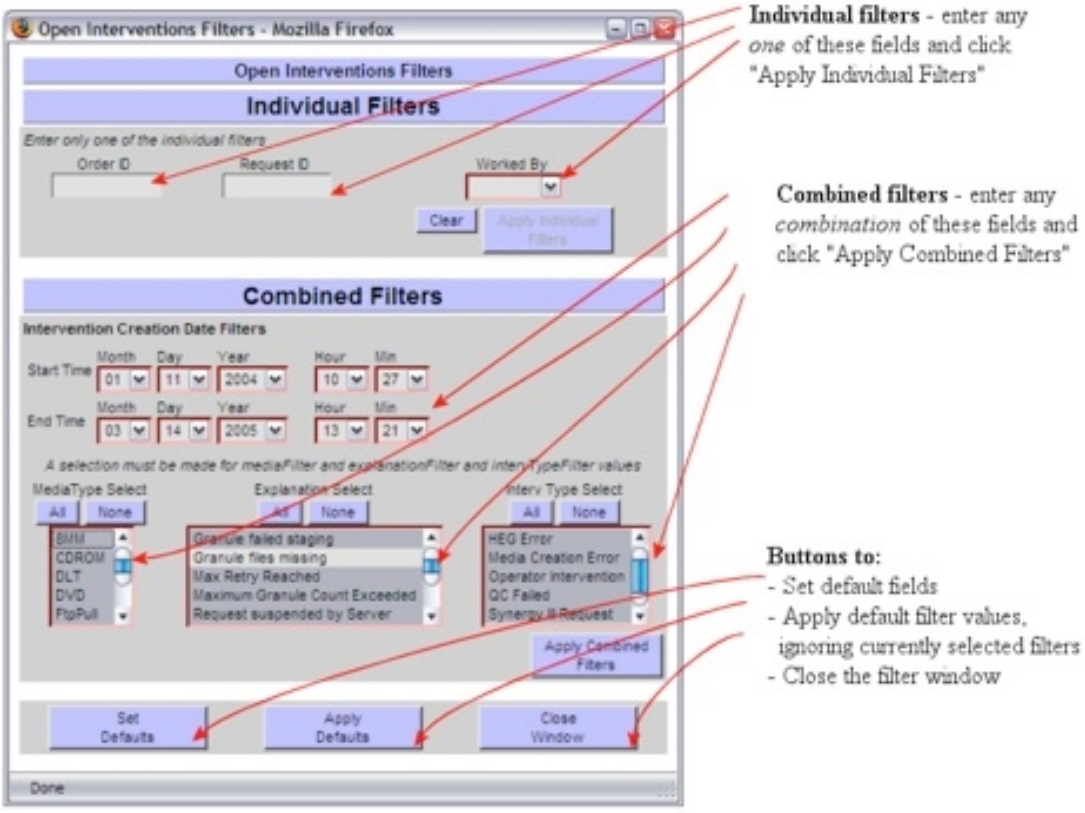


Figure 4.7.7-5. Filter Window diagram

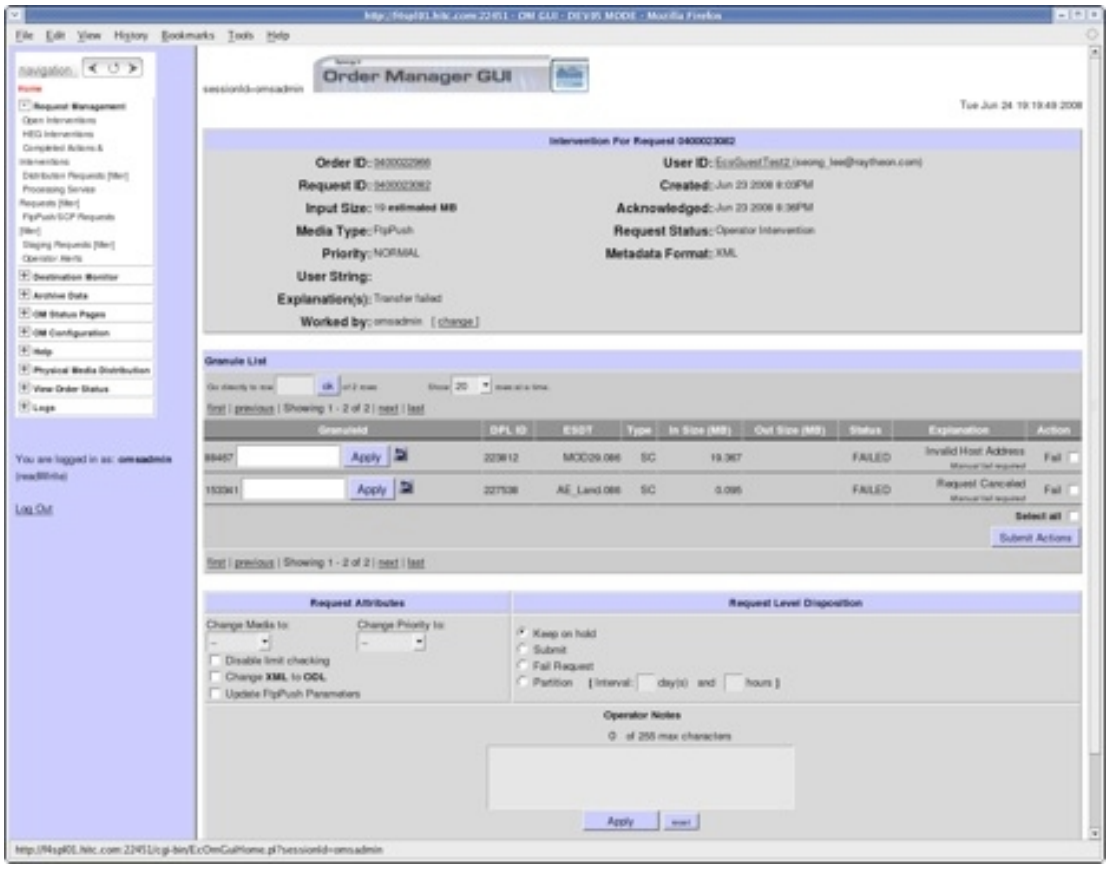


Figure 4.7.7-6. Open Intervention Detail

Note for Limited Capability Operators: The Open Intervention Detail page is limited to viewing the details of the intervention. Modifications may *not* be made to the Request or Granules for the Request. The operator is also prevented from taking any action on the Intervention.

To view the details of an intervention, click on its Request ID. This will bring you to a separate page (Figure 4.7.7-6) displaying all of the information on the previous listing, plus the user string (which would show the external request ID if the order source is the MTMGW), and the list of granules associated with the request.

From this page, the operator may take several actions to modify the request. First, any granule may be replaced with another by typing in a new granule ID and clicking "Apply". The granules may also be failed by clicking the "Fail" button in the far right column on the row for that granule.

Please note that modifications to the granules are independent of the request attributes – i.e., any changes made will not affect the status of the request, and the request will still be in "Intervention" status until the operator submits the request. See Table 4.7.7-2 for a description of each field on this page.

Legend:

FC = Full Capability operator only (the operator can only view this field or control)

all = This field or control does not have any restrictions

Table 4.7.7-2. Open Interventiln Detail Page (1 of 4)

Field Name	Perm. Level	Description
User ID	all	The "owner" of this order, in most cases the person who originated the order. Clicking on the User ID will display a complete profile of the User. In parentheses, also displayed is the e-mail address to which information about this order will be sent (e.g., a granule is failed or changed).
Priority	all	The ECS Priority level associated with this Request. These Priority levels are predetermined in the Data Pool. For example, a LOW priority might have a priority of 75. The Priority Levels can be viewed in the OM Configuration Pages under "Aging Parameters".
Order ID	all	The Order ID associated with the Request.
Request ID	all	The Request ID associated with the Intervention.
Input Size	all	The estimated size in MB of the Request.
Media Type	all	The media type this Order/Request uses.
Request Status	all	The current processing status of the Request. The Status can be one of "Intervention" or "Suspended" (this applies only FTP Push destination errors that have caused an Operator Intervention).
Worked by	FC	The operator currently working the intervention. If no name appears, the Intervention has not been worked or reviewed. An operator must assign a name to the intervention before any modifications can be made.
Created	all	The Creation Date/Time of the Intervention.
Acknowledged	all	The Date/Time that an action was first taken or when an operator assigned the intervention to a worker.
Explanation(s)	all	A description of the nature of the error. In the case of an FTP Push failure or Staging error, a special icon will appear to make it easily recognizable.

Table 4.7.7-2. Open Intervention Detail Page (2 of 4)

Field Name	Perm. Level	Description
Granule List		
GranuleId	FC	The ECS Granule ID for the granule. This is not the full Granule ID as stored in the MSS or Order Manager Database, rather it is the 16-digit ID as stored in the Data Pool database. The operator can change the GranuleId by entering the new one in the text box next to the current GranuleId and clicking apply. Granule IDs must be changed one at a time. Maximum length is 16 digits.
ESDT	all	The ESDT the granule is associated with, consisting of the ESDT short name and version ID.
Type	all	The type of granule, displayed as a two-character code. For example, SC is Science, BR is Browse, etc.
In Size (MB)	all	The input size in MB of the granule, before any processing (e.g. HEG). This field is always displayed, not matter what type of granule it may be.
Out Size (MB)	all	The output size in MB of the granule, after it has underwent processing (e.g. HEG). This field is only displayed if an output size exists in the database.
Status	all	The current status of the granule. Statuses can be: SKIPPED: The granule has been skipped because it has failed validation (e.g., the granule was not found). ***Note that FAILED and SKIPPED granules may be failed by the operator. Granules in any other state can not be failed.*** NULL: This is the initial state, essentially meaning the status is OK. TRANSFERRING: The granule is in the process of being pushed to a destination. SHIPPED: The granule has been delivered to the PDS to be put of a physical medium, or the granule has been pulled. FAILED: There are several explanations for failed granules. ***Note that FAILED and SKIPPED granules may be failed by the operator. Granules in any other state can not be failed.*** HOLD: The granules may be placed on "HOLD" if it has failed validation or there are problems writing the granules to the media.
Explanation	all	Provides a more detailed explanation of the granule Status.
Action	FC	If the granule is eligible to be failed a "Fail" button will be provided in this column.

Table 4.7.7-2. Open Intervention Detail Page (3 of 4)

Field Name	Perm. Level	Description
Request Attributes		
Disable limit checking	FC	When the request is submitted, the request size will not be taken into consideration. If the request was too small or too large, this option should be used to bypass these checks.
Change Media to	FC	Select the desired new media type for this request. If FtpPush is selected, the operator will be prompted for the FtpPush destination details on the next page.
Change Priority to	FC	Select the desired new priority for this request.
Change XML to ODL	FC	This option will only appear if the metadata format was XML. When the option is checked, the operator will receive metadata in ODL format.
Change ODL to XML	FC	This option will only appear if the metadata format was ODL. When the option is checked, the operator will receive metadata in XML format which is the default metadata format.
Update FTP Push Parameters	FC	This option will only appear if the media type was originally FtpPush. When this option is checked, the operator will be prompted to change the existing FtpPush parameters on the next page.
Update SCP parameters	FC	This option will only appear if the media type was originally SCP. When this option is checked, the operator will be prompted to change the existing SCP parameters on the next page.
Request Level Disposition		
Keep on hold	FC	This will keep the request on "Hold" – i.e., in Intervention status, and will stay on hold until the operator submits or fails the request. This option also saves the operator notes.
Submit	FC	This is in effect re-submitting the request with the altered attributes. Once the request is submitted, the Intervention is closed out. When this option is selected, the operator will be prompted to confirm the disposition on the next page (and will possibly be prompted for further details of an altered Request Attribute).
Fail Request	FC	Selecting this option will fail the entire distribution request and close out the intervention. The operator will be prompted for confirmation on the next page. A DN option is presented on the Close Confirmation page when this disposition is selected. By default, a DN will be sent, unless the operator selects the option not to send it.

Table 4.7.7-2. Open Intervention Detail Page (4 of 4)

Field Name	Perm. Level	Description
Partition	FC	This is in effect submitting the request but with the specification to partition it over the current partition size (see the Media Configuration section for more details on partitioning). If days and/or hours are provided, the request will be partitioned in this time interval. The days and hours fields must be whole numbers with no decimal fractions.
Operator Notes	FC	Up to 255 characters can be stored for notes. The notes will only be saved if a disposition is taken on the request, even if a request is failed. When a granule ID is changed, a record of the change is automatically appended in the notes.

Close Confirmation

When the actions have been finalized, click "Apply" at the bottom of the screen. This brings up the Close Confirmation page, where the operator will be prompted to verify any actions s/he wishes to take. If the action warrants an e-mail (failed request, partition, modified granules) the operator may add text to the standard e-mail preamble that will be sent to the configured e-mail address for that user. If the media type has been changed from FtpPush to a physical media type, the operator will be prompted for the shipping address. If the media type has been changed to either FtpPush or SCP, the operator will be prompted for the destination details; some of this destination information is dependent on the media type.

Note: Since Limited Capability operators cannot work on Interventions, the Close Confirmation screen will not be accessible to them.

Note: This screen is not visible to limited-capability operators.

After the operator has verified and confirmed the actions, the next screen shows the status of the submitted disposition. Figure 4.7.7-7 shows an example of a successful submission and verifies that the database has been updated with the changes. To get back to the Open Interventions listing, click OK.

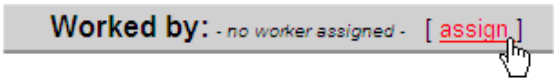
Figure 4.7.7-7. Close Confirmation Success Screen

Note: This screen is not visible to limited-capability operators.

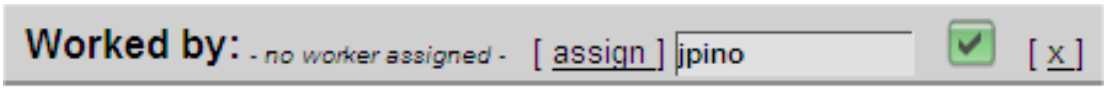
Instructions for Working an Intervention

The following are the operator steps to work on an intervention.

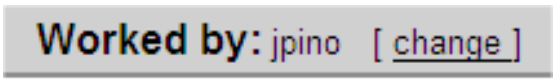
1. If a worker is not currently assigned to the intervention, *-no worker assigned-* will be displayed in the **Worked by** field. Click [assign]:



A text box will appear with your currently logged-on ID. You can also use a different ID. Click the green checkbox to assign the worker:



The page reloads with the new worker ID:



To assign a different worker, click [change] and put a new name in the textbox.

2. First, the operator can choose to fail or edit granules. For example, some granules that are inaccessible can be replaced by a new granule ID (the GranuleId). It is the operator's responsibility to obtain a suitable replacement, as the GUI/database will not automatically do this. Simply click the Apply button next to the granule to change it. Note: All granule changes are permanent. A granule cannot be un-failed, and no record is kept of previous granule IDs when changing the granule.
3. Next, the operator may change the request attributes, then select a disposition to close the intervention. There are four possible attributes the operator may change:

    a. **Disable limit checking –** *If this is selected, the request size limit checking will be disabled.*

    b. **Change Media to** – *Allows the request's media type to be changed to any physical or electronic media type. Some additional issues to be aware of:*

        - **Changing to SCP or FtpPush** – *When confirming the resubmission of the request, the operator will be prompted to enter destination parameters, some of which will depend on the new media type.*

    c. **Change Priority to –** *This changes the request's ECS priority level. A higher priority moves the request through the system more quickly.*

    d. **Change XML to ODL** – *This will appear if the metadata format for the request is XML. It allows the operator have the metadata to be delivered in ODL format.*

    e. **Change ODL to XML** – *This will appear if the metadata format for the request is ODL. It allows the operator have the metadata to be delivered in XML format.*

    f. **Update FtpPush Parameters** – *This will appear if the media type is FTP Push. It allows the operator to update any FTP parameters, including the destination information.*

    g. **Update SCP Parameters** – *This will appear if the media type is SCP. It allows the operator to update any SCP parameters, including the destination information.*

Dispositions

The available dispositions, or actions, the operator may make on the request are:

- **Keep on hold** – *Normally, the operator can use this disposition to add or update the operator notes on the intervention. The intervention will not be closed.*
- **Submit**. – *The operator can use this disposition to release the intervention, thus applying any new request attributes. Once the intervention is submitted, the request is no longer in Operator Intervention and will be sent back through validation and normal processing by the OMS Server.*
- **Fail Request** – *Completely fails the distribution request, at which point it is not sent back through validation, nor will it be processed by the OMS Server.*
- **Partition** – *For cases when a request size exceeds the maximum size limit. This is effectively submitting the request (see the **Submit** option above).*

4. The operator can also add to or edit the operator notes. (Note: there is a 255-character limit)
5. Then click the Apply button. A confirmation page will display to show the disposition information. For a failed request and granules, the additional e-mail text box will display to allow operator to optionally add additional e-mail text. The default is to send e-mail for failed request or granules. However, the operator can choose not to send e-mail.

4.7.7.2.2 Operator Alerts Page

From the navigation menu, click on "Operator Alerts" to open the **Operator Alerts** page (Figure4.7.7-8). By default, the filter is set to display all types of Alerts and the operator can filter the list for the various Alert types. The types of Operator Alerts that can be displayed are:

- FTP Push / SCP Destination Alerts (problems with the destination not causing an Operator Intervention)
- Data Pool File System Alerts
- Archive Server Alerts
- ECS Server Alerts – warnings about OMS resource errors

The list of alerts will also be sorted in ascending order by date (i.e., the oldest Alerts will appear first). For FTP Push Destination Alerts, the destination could be either a configured or a non-configured destination (not one in the Frequently Used Destinations list, as configured in the FTP Push Policy Configuration page).

The Alert Info will be shown in the column adjacent to the Alert Type. This column will contain more specific information about the nature of the problem. For example an FTP Push Alert would show the IP address (or configured alias, if appropriate) and why the destination is having problems.

For FTP Push or SCP Alerts, a link will appear in the Alert Details Column, and the operator may click on this to view a listing of all requests associated with the suspended destination. The operator can then modify the request attributes manually. No detail page is available for other types of alerts, as all of the pertinent details are already displayed.

Unlike an Operator Intervention, no specific action can be taken to close an alert. The Order Manager Server will automatically clear an alert once all conditions related to the problem have been resolved.

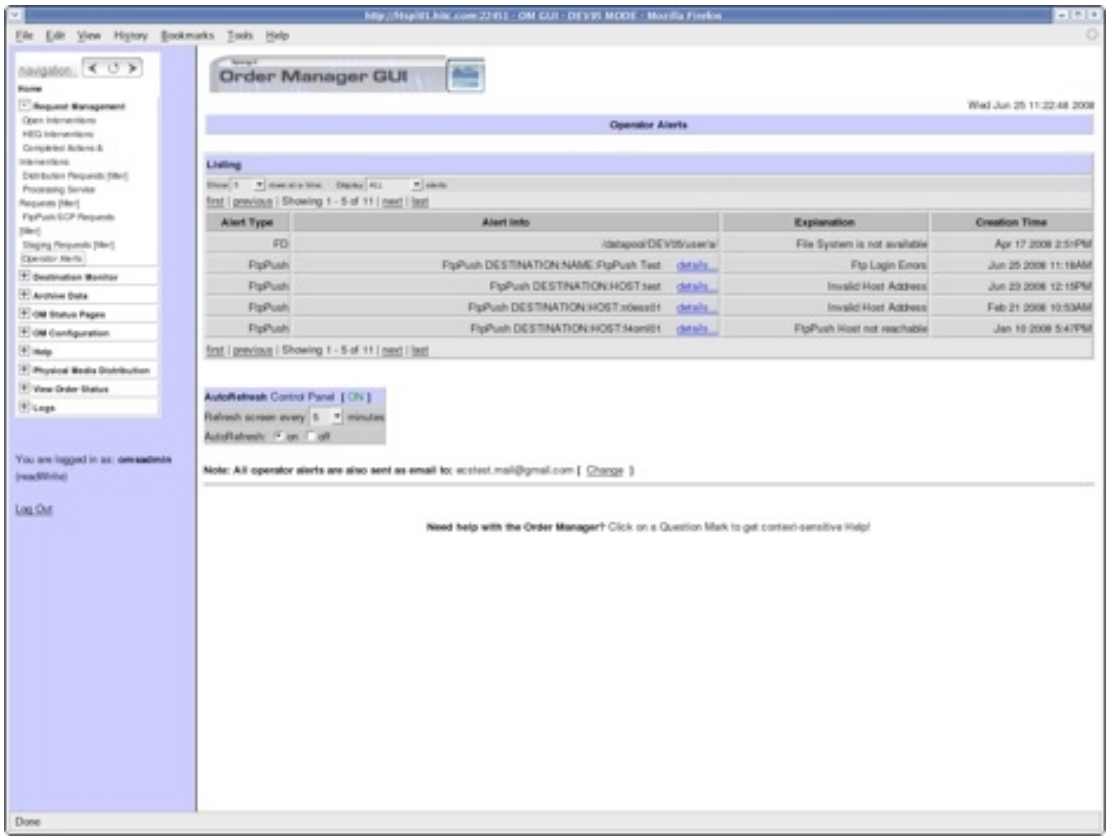


Figure 4.7.7-8. Operator Alerts

4.7.7.2.3 Completed Interventions Page

4.7.7.2.3.1 Completed Operator Actions and Interventions Page

From the navigation menu under the **Request Management** subheading, the operator can click on "Completed Actions & Interventions" to open the **Completed Operator Actions and Interventions** page (see Figure 4.7.7-9). This page displays all completed and closed Operator Interventions and Actions. Once the operator has completed work on an intervention or action, the item in that list is moved to this page. Table 4.7.7-3 describes all the fields on this page.

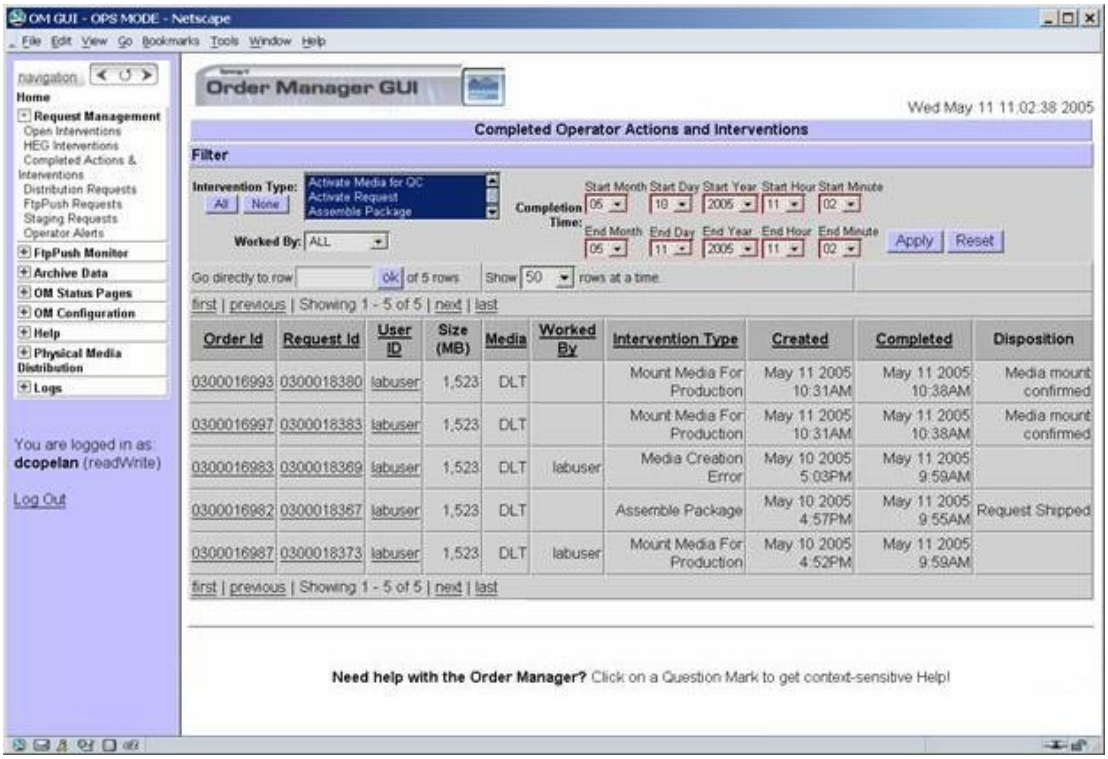


Figure 4.7.7-9. Completed Operator Actions and Interventions Page

Table 4.7.7-3. Fields on Completed Operator Actions and Interventions Page

Field Name	Description
Order Id	The Order ID associated with the Request. Clicking on the Order ID will display a "detail" of the Order information.
Request Id	The Request ID associated with the Closed Intervention. Clicking on the Request ID will display a detail of the Intervention.
User ID	The "owner" of this order, in most cases the person who originated the order. Clicking on the User ID will display a complete profile of the User.
Size (MB)	The estimated size in MB of the Request.
Media	The media type this Order/Request uses.
Worked By	The operator who last worked on, resolved, or closed the Intervention.
Intervention Type	The type of the Intervention or action.
Created	The Creation Date/Time of the Intervention.
Completed	The Closure Date/Time of the Interventions.
Disposition	The final action that was taken to resolve the Intervention.

Filtering the Completed Operator Actions and Interventions List

At the top of the page, the operator may select the time parameters, worker ID, and Intervention Type by which to filter the list. Once the operator clicks "Apply" in the filter window, the Completed Interventions page is reloaded with the applied filter values.

Completed Action/Intervention Detail

By clicking on a Request ID, the operator can view the same details of an Intervention or Action as contained on the Open Intervention Detail or Physical Media Console page (see Figure 4.7.7−10), except that the operator cannot take any action nor modify the Request in any way. To get back to the Completed Operator Actions and Interventions listing, the operator can click the back icon  on the top of the navigation frame.

4.7.7.2.3.2 Completed Interventions/ Actions Detail Page

When viewing the detail of a Completed Intervention, the operator can click the Order ID to view the Order information. Table 4.7.7-5 describes each field on this screen.

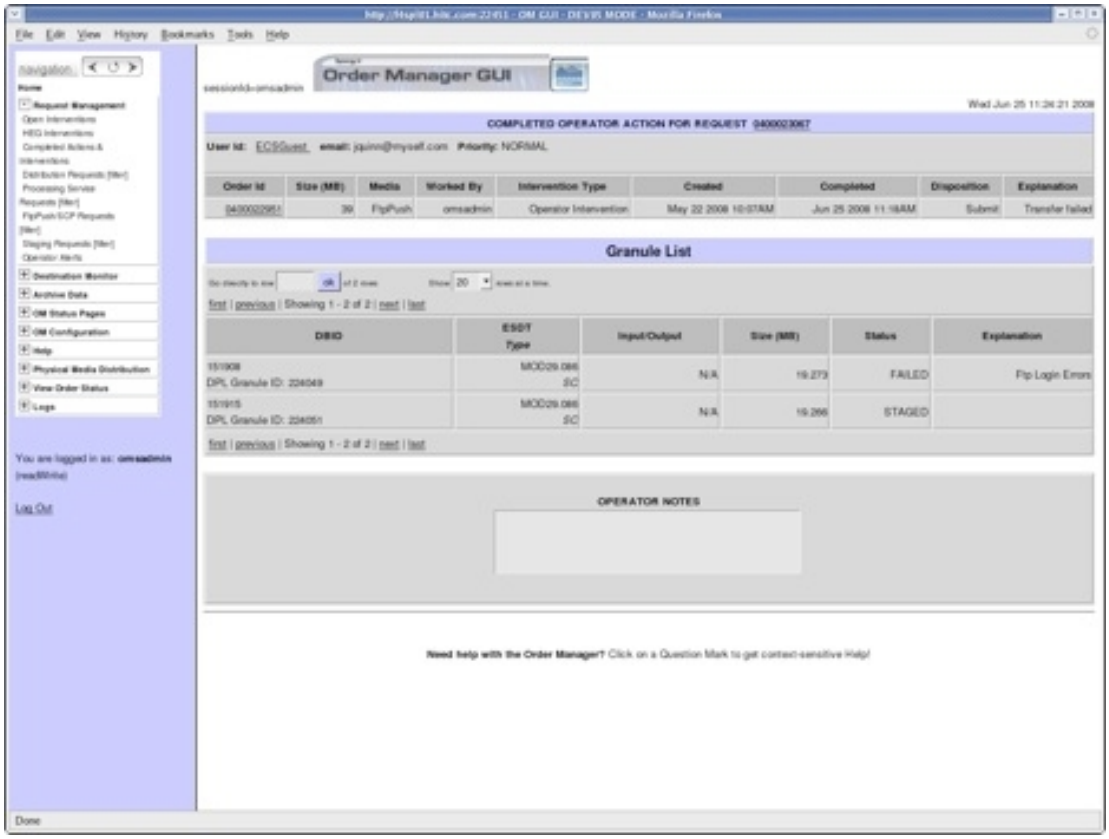


Figure 4.7.7-10. Completed Intervention/Action Detail Page

Table 4.7.7-4. Field on Completed Intervention Detail Page (1 of 2)

Field Name	Description
User Id	The "owner" of this order, in most cases the person who originated the order. Clicking on the User ID will display a complete profile of the User.
email	The e-mail address to which information about this order will be sent (e.g., a granule is failed or changed).
Priority	The ECS Priority level associated with this Request. These Priority levels are predetermined in the Data Pool. For example, a LOW priority might have a priority of 75. The Priority Levels can be viewed in the OM Configuration Pages under "Aging Parameters".
Order Id	The Order ID associated with the Request. Clicking on the Order ID will display a "detail" of the Order information.
Size (MB)	The estimated size in MB of the Request.
Media	The media type this Order/Request uses.
Worked By	For nonphysical media requests, shows the name of the worker who last worked this intervention.
Intervention Type	The type of the Intervention or action.
Created	The Creation Date/Time of the Intervention.
Completed	The Date/Time the Intervention was completed.
Disposition	The final action that was taken to resolve the Intervention.
Explanation	This is the explanation of any errors that occurred on the granule-level.
Fields on the Granule List	
DBID	The Database ID or "Granule ID" for the granule. This is not the full Granule ID as stored in the MSS or Order Manager Database, rather it is the 16-digit ID as stored in the Data Pool database.
ESDT Type	The ESDT type the granule is associated with, consisting of the ESDT short name and version ID.
Size (MB)	The size in MB of the granule.
Status	**The current status of the granule. Statuses can be:** SKIPPED: The granule has been skipped because it has failed validation (e.g., the granule was not found). NULL: This is the initial state, essentially meaning the status is OK. TRANSFERRING: The granule is in the process of being pushed to a destination. SHIPPED: The granule has been delivered to the PDS to be put of a physical medium, or the granule has been pulled. FAILED: FTP Push transfer failure. HOLD: The granules may be placed on "HOLD" if it has failed validation or there are problems writing the granules to the media.
Processing Instructions	Will be displayed when viewing a HEG intervention. A HEG order may contain a mix of granule types (those with and without processing instructions), if there are any to display, an additional column will be shown in the granule list. This column shows a link to view the processing instructions details, if any.
Explanation	Provides a more detailed explanation of the granule Status.

Table 4.7.7-4. Fields on Completed Intervention Detail Page (2 of 2)

Field Name	Description
Operator Notes Box	
OPERATOR NOTES	This will contain a record of the DBID changes, plus any notes the operator may have manually typed in.

Links to Other Pages

The operator may click on the Request Id, Order Id or User Id to view the Request Detail, or Order pages, respectively, associated with the request. For HEG requests, the operator may click on the **View** link to view the processing instructions associated with the granule.

4.7.7.2.4 Distribution Requests Pages

The subsections are:

- Distribution Requests
- Processing Service Requests
- Destination Monitor
    - Suspended Destinations
- Staging Requests
- Historical Requests
- Historical Processing Requests
- Order Detail

Lists of distribution requests also appear on the Order page, for bundling orders only, and on the Destination Detail page, requests not in a terminal state only. All actions that apply to other lists of distribution requests are available on these pages as well.

4.7.7.2.4.1 View Distribution Requests

There are six pages that display a Distribution Requests list. These are:

- Distribution Requests (All)
- Processing Service Requests
- FtpPush/SCP Requests
- Staging Requests
- Historical Distribution Requests
- Destination Monitor
- Order Page – Bundling Orders only

These pages share many common features. These shared features will be described in the next section, followed by descriptions of features that are unique to each page.

4.7.7.2.4.2 Distribution Requests Lists – Common Features

Request Lines

Each line of the request list shows pertinent fields for a specific request. A few fields are not shown in every list. These are specified in the unique features sections. Table 4.7.7-5 is a list of fields that appear for every request line.

Table 4.7.7-5. Fields Displayed (1 of 2)

Field Name	Data Type	Size	Description
Ord Typ	Character	8	"Regular", "Bundled", "MM" or "HEG".
OrderID	Integer	8	UID for this order created internally. This is a link to the Order page for this order.
RequestID	Link/Integer	10	UID for a request. This is a link to the Request Detail page.
Request Size(MB)	Integer	8	Cumulative size of granule science/metadata files in MB. Formatted as follows: for zero value – "0", for value > 0 and < .5 – "< .5", for all other values -rounded to the closest integer.
Gran Cnt	Integer	8	Number of granules associated with the request.
Staging Complete (Staging Requests Page)	Integer	8	Number of granules that have completed staging.
Complete (FtpPush /SCP Requests Page)	Integer	8	Number of granules that have completed FTP Push / SCP.
Media	Character	8	Type of media associated with the request.
Priority	Character	6	This is a list of possible request priorities if the following conditions do not apply, the request: • is in a terminal state , • has been submitted to PDS, • has a status of "QC Hold" or "Waiting for Shipment", • has a status of "Pending Media Prod" and the dispatch mode for its media type is manual, • has a status of "Transferring " and has a device assigned to it. The current priority of the request is highlighted and can be changed. If the request is in a terminated state, no priority is displayed. Otherwise, the current priority is displayed and cannot be changed.
Apply (priority) Button	Button	n/a	Click to change the priority of the request to the selected value.

Table 4.7.7-5. Fields Displayed (2 of 2)

Field Name	Data Type	Size	Description
Request Status	Character	21	Current status of the request. If the status is "Operator Intervention" and an OMS intervention exists, the status will be a link to the Intervention Detail page for the intervention.
Resource Class	Character	9	Resource class is an indicator of resource utilization based on archive resource demand. Values are: Cheap, Moderate, or Expensive.
ESDT	Character	12	Earth science data type.
UserID	Character	8	Identification of the user submitting the request.
Resub Cnt	Integer	5	Number of times specified request has been resubmitted.
Created	Date/Time	19	Date/time the request was created.
Last Update	Date/Time	19	Date/time the request was last updated.
Actions	Buttons	8	One button for each Action for which the request is eligible. See section "Actions" for details.

Navigation

The operator can scan through the list of requests by clicking on navigation links. These links permit selecting a specific starting row of requests or jumping to the **first**, **next**, **previous** or **last** block of requests. The operator can jump to a specified row by entering the row number in the box in the **Go directly to row __** of *n* **rows** line and clicking on the **OK** button. The pull down menu lets the operator select the number of requests displayed on a page; the available values are 5, 10, 20, 50 and 100 requests per page. If a value has been configured for the list, it will also be included as a selectable value. Table 4.7.7-6 provides descriptions of the navigation fields for the Distribution Requests page.

Table 4.7.7-6. Request Management Page Navigation Field Descriptions

Field Name	Data Type	Size	Entry	Description
Go directly to row (line no.) of nnnn rows	Integer	5	Optional	Line number of request to display at the top of the list.
ok	Button	n/a	Optional	Refreshes the list starting with request line entered.
first	Link	n/a	Optional	Selects first block of requests.
previous	Link	n/a	Optional	Selects previous block of requests.
next	Link	n/a	Optional	Selects next block of requests.
last	Link	n/a	Optional	Selects last block of requests.
Show nn rows at a time	Drop down list	3	Optional	Number of rows (nn) to display in the Distribution Requests listing. Default value is taken from the configuration file.

Refresh

This page will be refreshed by default every 5 minutes. The operator can change the refresh rate by selecting from the pull down menu. The operator can also choose to suspend refresh by clicking the **AutoRefresh Control Panel** on/off button. If any field is changed the new value is stored and the page refreshes immediately. See Table 4.7.7-7 for Field Descriptions.

Table 4.7.7-7. Request Management Page Refresh Field Descriptions

Field Name	Data Type	Size	Entry	Description
AutoRefresh	Toggle switch	n/a	Optional	Turns auto-refresh on or off depending upon the current state.
Auto-refresh screen every nn minutes	Drop down list	2	Optional	Interval in minutes for screen auto-refresh. Values are 1, 5, 10, 15, 30, 45, and 60.

Filters

The list of current filters for the displayed request list is shown at the top of the page. To change these filter values, the operator clicks on the **Change Filter** button. This causes a pop-up window containing fields for changing the various filters to appear. Once the operator has selected the desired filters and clicks the **Apply Individual Filters, the Apply Combined Filters** or the **Apply Defaults** button, the Distribution Requests list will be refreshed with the new filters. The Distribution Requests Filters page (Figure 4.7.7-11) field descriptions are shown in Table 4.7.7-8.

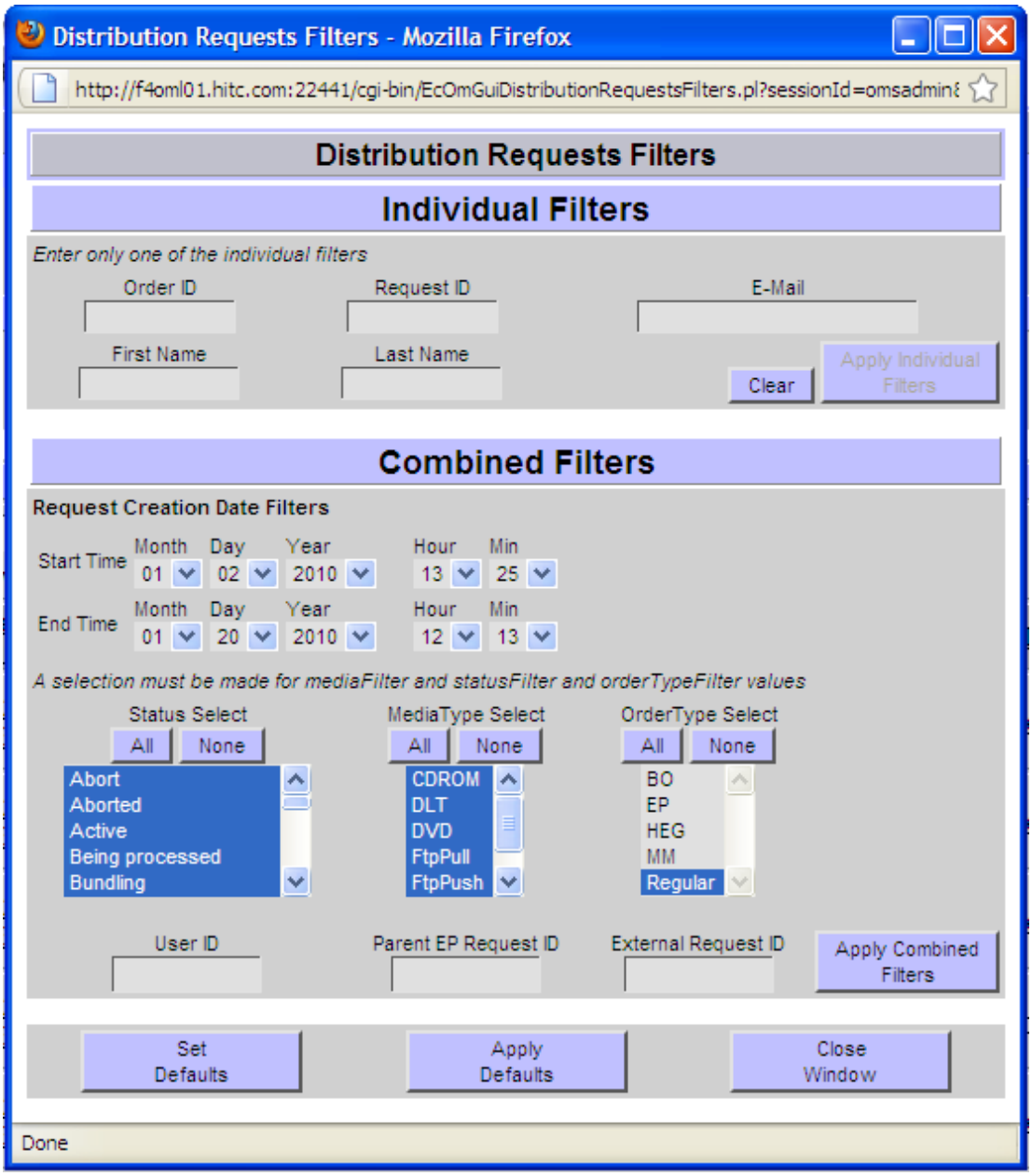


Figure 4.7.7-11. Distribution Request Filter Popup

Table 4.7.7-8. Distribution Requests Filter Page Field Descriptions (1 of 3)

Field Name	Data Type	Size	Entry	Description	Default Value
Individual Filters – only one item from this group may be entered					
Order ID	Integer	11	Optional	Order ID of requests to be selected.	None
Request ID	Integer	11	Optional	Request ID of request to be selected.	None
E-Mail	Character	15	Optional	E-Mail address of requests to be selected.	None
First Name	Character	12	Optional	First Name of requests to be selected.	None
Last Name	Character	12	Optional	Last Name of requests to be selected.	None
Clear Button	Button	n/a	Optional	Clears value in any field in this group and disables the Apply Individual Filters button.	n/a
Apply Individual Filters	Button	n/a	Optional	Applies the field in Individual filter group which has text entered.	n/a
Combined Filters – these filters will be "anded". At least one value for Status and Media Type is required.					
Creation time from/to	Character	n/a	Required Defaults need not be changed	Select from pull-down lists to specify a starting date and time and an ending date and time for filtering.	To: current date/time. From current date/time minus 24 hours.
Status Select - All	Button	n/a	Optional	Selects all status values in the status scrolling list.	n/a
Status Select - None	Button	n/a	Optional	De-selects all status values in the status scrolling list. The warning message "A selection must be made.." is highlighted until a selection for status is made.	n/a
Status Select List	Scrolling List	n/a	Optional	Clicking on an entry in the list selects it if it is de-selected or de-selects it if it is selected. Any number of entries may be selected.	All statuses are selected.

Table 4.7.7-8. Distribution Requests Filter Page Field Descriptions (2 of 3)

Field Name	Data Type	Size	Entry	Description	Default Value
MediaType Select - All	Button	n/a	Optional	Selects all media type values in the media type scrolling list.	n/a
MediaType Select - None	Button	n/a	Optional	De-selects all media type values in the media type scrolling list. The warning message "A selection must be made..." is highlighted until a selection for media type is made.	n/a
MediaType Select List	Scrolling List	n/a	Optional	Clicking on an entry in the list selects it if it is de-selected or de-selects it if it is selected. Any number of entries may be selected.	All Media Types are selected.
OrderType Select - All	Button	n/a	Optional	Selects all order type values in the media type scrolling list.	n/a
OrderType Select - None	Button	n/a	Optional	De-selects all order type values in the media type scrolling list. The warning message "A selection must be made..." is highlighted until a selection for media type is made.	n/a
OrderType Select List	Scrolling List	n/a	Optional	Clicking on an entry in the list selects it if it is de-selected or de-selects it if it is selected. Any number of entries may be selected.	All Order Types are selected.
User ID	Character	13	Optional	User ID, entered to specify a user ID for filtering.	None
Parent EP Request ID	Character	13	Optional	Request ID of the Parent EP request	None
External Request ID	Character	13	Optional	External Request ID, entered to specify an external request ID for filtering	None
Apply Combined Filters	Button	n/a	Optional	Applies above "Combined" filters to the request list.	n/a

Table 4.7.7-8. Distribution Requests Filter Page Field Descriptions (3 of 3)

Field Name	Data Type	Size	Entry	Description	Default Value
General Buttons					
Set Defaults	Button	n/a	Optional	Sets all filter selections to their default values on the Filters page.	n/a
Apply Defaults	Button	n/a	Optional	Sets all filter selections to their default values on the Filters page and applies these values to the corresponding requests List Page.	n/a
Close Window	Button	n/a	Optional	Closes the Requests Filter window.	n/a

Any attributes that the operator selects/enters will be remembered for the duration of the session and for future sessions when the operator logins in with the same User ID, but only those in the group whose Apply button has been clicked will be used to filter the distribution requests list. There are two categories of filtering attributes -- Individual Filters and Combined Filters. Either of these filter categories can be applied at one time.

To select Individual Filters, the operator enters one of the five fields displayed: Order ID, Request ID, E-Mail, First Name and Last Name. If a value is entered in one of the five fields, the other four fields become disabled. Deleting the entered value or clicking the Clear button reenables all of the Individual Filter fields. Clicking the Apply Individual Filters button applies the entered field entry and reloads the Distribution Requests window with the results.

To select Combined Filters, the operator selects or enters values for the desired attributes. The Creation Date Filters are initially set to: End Time - the current date/time, and Start Time - 24 hours before the current date/time. If initial (default) date/time values are not changed, they will update to the current time whenever they are applied. The operator can change these attributes by clicking on the down triangle, which appears next to the value of each attribute, and then clicking on a value from the drop-down list that is displayed. The drop-down lists show all possible values for month, day, hour and minute. For the year, only the current year and the previous year are shown for selection.

At least one value must be selected for each of Status, MediaType, and OrderType attributes. The selected/entered attributes are "anded" for filtering. This means that only requests having all of the selected attribute values will be displayed. If any of the Status, MediaType, and OrderType attributes is not selected, the warning message "A selection must be made ..." is highlighted and the Apply Combined Filters button is disabled until the required values are selected.

The Status Select, MediaType Select, and OrderType Select lists initially display all possible statuses/media types/order types for a request with all values selected. The operator can click on the **None** button to deselect all entries in a list or **All** button to select all entries again. Also, the operator can click on an individual status/media type entry in the scrolling list to select or

deselect it. If the entry was not selected, it will be selected. If the entry was selected, it will be deselected. Any number (more than 0) or combination of statuses, media types or order types may be selected. To select multiple values from one list, hold down the Ctrl key while clicking on values after the first. To select a range of values from one list, click on the value at the start of the range and then hold down the Shift key while selecting the value at the end of the range.

All Combined Filter attributes will be applied when the operator clicks the Apply Combined Filters button at the lower right corner of the group. The Distribution Requests window will be reloaded filtered by the selected/entered attributes.

The three buttons at the bottom of the window are Set Defaults, Apply Defaults and Close Window.

- **Set Defaults** restores the default values to all filter attributes shown on the filters page to global default values. The distribution requests page is not updated. The operator can make additional changes to the filters before applying them to the distribution requests page by using the "Apply Individual Filters" or "Apply Combined Filters" buttons.
- **Apply Defaults** restores the global default values to all filter attributes on the Filter page, and applies these values to the distribution requests page. The “applied” values will be used in the future until they are changed.
- **Close Window** closes the Request Filters window. It does not affect the Distribution Requests window.

Default global values are:

For Individual Filters, all values are cleared (made empty).

For Combined Filters, Table 4.7.7-9 shows the global default values by page.

Table 4.7.7-9. Global Default Values by Page

Page	Element	Default Value
Distribution Requests	End Time	The current date and time.
	Start Time	24 hrs prior to the End Time.
	Status	All values are selected.
	Media Type	All values are selected.
	Order Type	All values are selected.
Processing Service Requests	End Time	The current date and time.
	Start Time	24 hrs prior to the End Time.
	Status	All values are selected.
	Media Type	All values are selected.
FTP Push/ SCP Distribution Requests	End Time	The current date and time.
	Start Time	24 hrs prior to the End Time.
	Status	All values are selected.
Staging Distribution Requests	End Time	The current date and time.
	Start Time	24 hrs prior to the End Time.
	Status	All values are selected.
	Media Type	All values are selected.
Historical Distribution Requests	End Time	The current date and time.
	Start Time	One (1) month prior to the End Time.
	Status	All values are selected.
	Media Type	All values are selected.
	Order Type	All values are selected.
Open Interventions	End Time	The current date and time.
	Start Time	One (1) year prior to the End Time.
	Media Type	All values are selected.
	Explanation	All values are selected.
	Interv Type	All values are selected.
Open HEG Interventions	End Time	The current date and time.
	Start Time	One (1) year prior to the End Time.
	Media Type	All values are selected.
	Explanation	All values are selected.

The ECS ORDER and Destination Detail pages have fixed filters that cannot be changed by the operator. Table 4.7.7-10 shows the filter values used for these pages.

Table 4.7.7-10. Filters for The ECS ORDER and Destination Detail Pages

Page	Element	Default Value
ECS ORDER	End Time	The current date and time.
	Start Time	Jan 1 1900
	Status	All statuses
	Media Type	All media types
	OrderId	Current orderId
Destination Detail	End Time	the current date and time
	Start Time	Jan 1 1900
	Status	All statuses
	Destination Node or Name	Current destination

The Distribution Requests Filters window remains open until the operator clicks the Close Window button at the bottom of the window or until its corresponding distribution requests page is replaced by another page.

Sorting

The request list can be sorted by clicking on the column header links **Order Typ**, **Request ID**, **OrderID**, **Destination**, **Complete**, **Media, Priority**, **Request Status, Capacity Class**, **User ID**, **Created** and **Last Update** wherever they appear. The default sort column is **Created** (creation date).

Actions

Note: Limited Capability operators are not allowed to execute actions for requests.

The operator can execute the following actions for any request that is eligible for the action by clicking on the button of the action. The action buttons will appear for only actions for which the request is eligible. Table 4.7.7-11 explains the actions and the criteria for a request to be eligible for each action.

If the request processing state is "Cancelling," "Resuming," "Resubmitting," "Stopping," "Submitted to PDS" or "Granule Canceled," the processing state will be displayed in the action column and no actions are permitted.

Table 4.7.7-11. Eligibility Criteria for Each Action (1 of 2)

Action	Description	Criteria for Eligibility
Resubmit	Opens a new intervention for the request and loads the "Intervention Detail" page for subsequent action.	The request is in a terminated status (including cancel, abort, aborted and shipped).
Suspend	Suspends the request. The request is suspended, the distribution requests page is reloaded and the highlighted message "Suspending" is displayed in the Action column for the request until the OMS server completes the suspension of the request.	The request is not in a terminated status; And is not currently suspended and either: 1. non-failed granules still need to be staged or Ftp pushed and is not a physical media request with status "Transferring", "QC Hold" or "Waiting for Shipment"; or 2. is a physical media request with status "Pending Media Prod" and the dispatch mode for its media type is "automatic"
Resume	Resumes the request. A small popup window, "Confirm Resume for Request ID", appears for entry of the Worker name and Reason for Action. When login security is on, the operator's login id is inserted in the Worker name field. When the operator clicks the "Resume" action button, the request is resumed, the distribution requests page is reloaded and the highlighted message "Resuming" is displayed in the Action column for the request until the OMS server completes the resumption of the request.	The request is not in a terminated status; is suspended; was suspended by the operator; an OMS intervention exists; Or is a new request and processing of new requests is suspended.
Stop	Stops the request. The request is stopped, the distribution requests page is reloaded and the highlighted message "Stopping" is displayed in the Action column for the request until the OMS server completes the stopping of the request.	The request is not in a terminated status; is a physical media request; the Request Status is "Transferring"; Or the Request Status is "QC Hold" and at least one volume is "Verifying."

Table 4.7.7-11. Eligibility Criteria for Each Action (2 of 2)

Action	Description	Criteria for Eligibility
Cancel	Cancels the request. A small popup window, "Confirm Cancel for Request ID", appears for entry of the Worker name and Reason for Action. When login security is on, the operator's login id is inserted in the Worker name field. The operator is informed that any physical media volumes that are assigned to devices will be considered dismounted. When the operator clicks the 'Apply "Cancel Action"' button, an action is queued for the Order Manager server to cancel the request. The distribution requests page is reloaded and the highlighted message "Cancelling" is displayed in the Action column for the request until the OMS server finishes Cancelling the request. No other action buttons will be shown.	The request is not in a terminated status And is not suspended and has no OMS intervention.
Inactive	For external processing requests, if the request is in the terminal state or not under OMS control, the "Inactive" button is displayed which indicates no action for the request with current status.	The request is in a terminated status and is not under OMS control with status "waiting for data".

The OM GUI is designed to present to the operator only those Action buttons for which the request is eligible. However, if an action is not activated for a period of time, the Action may become "stale" if circumstances occur which change the status of the request such that it is no longer eligible for that Action. For example, the request may be canceled by an operator using a different instance of the OM GUI or the request may have terminated normally. In that case, when the operator clicks the Action button, an error message will be displayed by the database procedure which executes the action. After reading the message to understand the cause of the error, the operator may return to the original page (by using the Link provided) and refresh/reload that page to see the currently available actions.

Change Priority

Note: Limited Capability operators are not allowed to change the priority of a request.

The priority of a request can be changed while the request is eligible to have its priority changed. The criteria which determine when a request is eligible to have its priority changed are described in Table 4.7.7-6 The operator can change the priority of a distribution request by clicking on its Priority value and selecting the desired new priority value from the drop-down list. Then the operator must click on the associated **Apply** button. Once the new priority has been applied, the priority cell will display the highlighted message "Priority Changed".

Links

OrderID The operator can view the detailed information for the order to which a distribution request belongs by clicking on its OrderID.

RequestID The operator can view the detailed information for a distribution request by clicking on its Request ID.

UserID The operator can view the detailed information about the user who submitted the order containing the distribution request by clicking on its UserID.

Refresh Control

The operator can also choose to enable/disable auto-refresh by clicking on the corresponding AutoRefresh radio button. The operator can also change the refresh rate by selecting a rate from the pull down list (default 5 minutes).

4.7.7.2.4.3 Distribution Requests Lists – Unique Features

Distribution Requests Page

The following additional option buttons are available on the Distribution Requests page as shown in Figure 4.7.7-12b.

- **Bulk Cancel**
  - If there are Physical Media requests that are bulk cancelled the media volumes for these requests will be considered dismounted. The Bulk Cancel pop-up window is shown in Figure 4.7.7-12a.
- **Bulk Claim**
  - Operator Interventions can be bulk claimed using this button.
- **Bulk Resubmit**
  - Select all eligible requests for **Bulk Cancel or Resubmit**
  - Select no eligible requests for **Bulk Cancel or Resubmit**

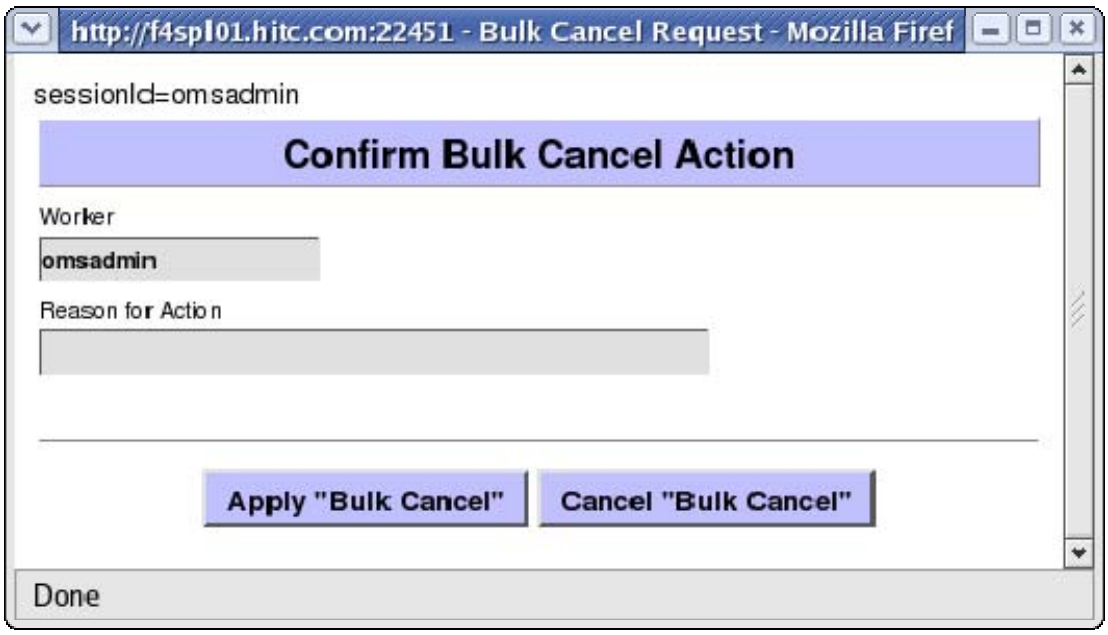


Figure 4.7.7-12a. Bulk Cancel Popup

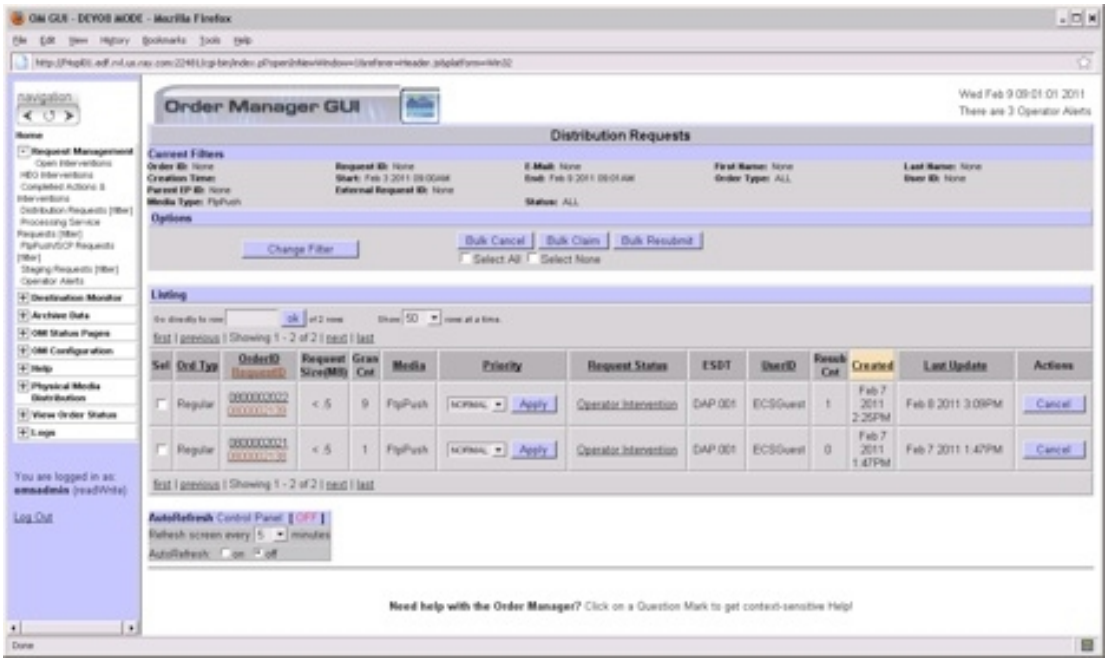


Figure 4.7.7-12b. Distribution Requests List Page

Processing Services Requests

The Processing Services Requests page includes HEG and all external subsetter requests and "Processor" column is going to indicate the processor name. It does not have a filter for media type and order type. It will have processing service filter instead. All the external processing requests do not have any actions (cancel or suspend) while they are under the control of the external system.

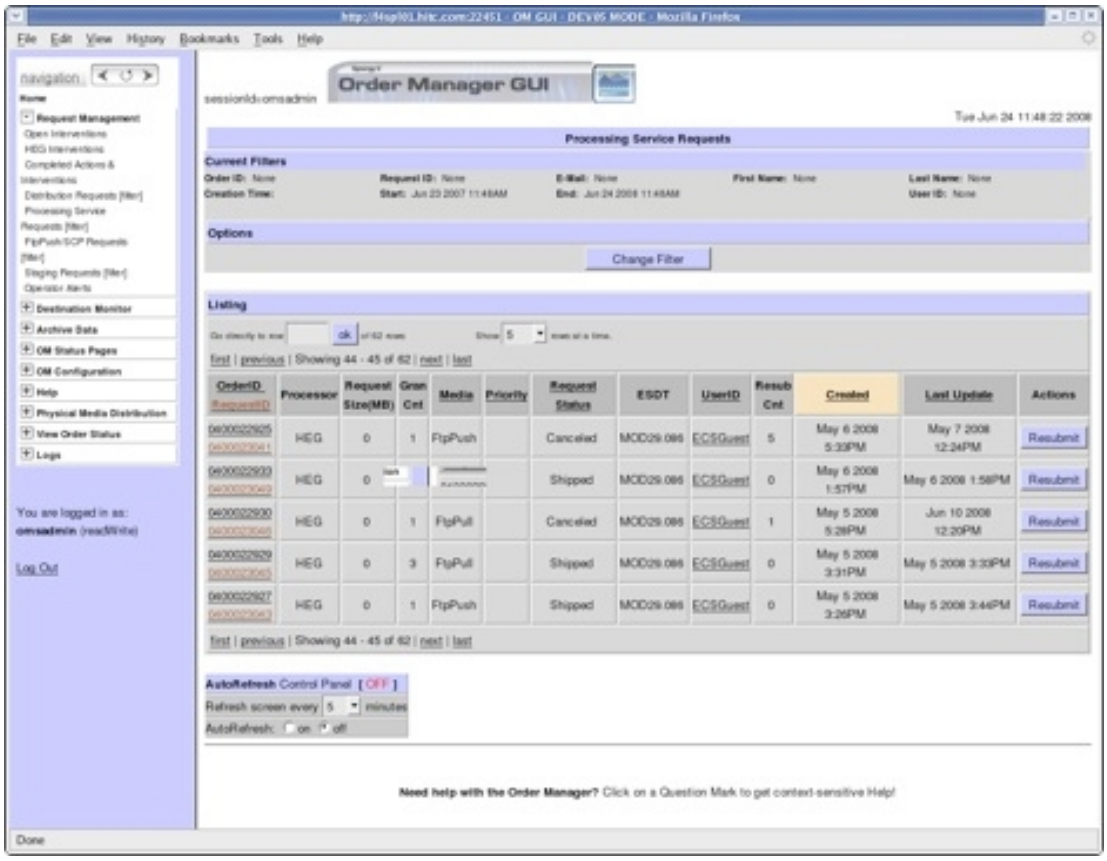


Figure 4.7.7-13a. Processing Services Requests Page

Figure 4.7.7-13a displays the similar filter and sort capabilities for the external processing requests as for the general list of distribution requests except for the "Inactive" action button.

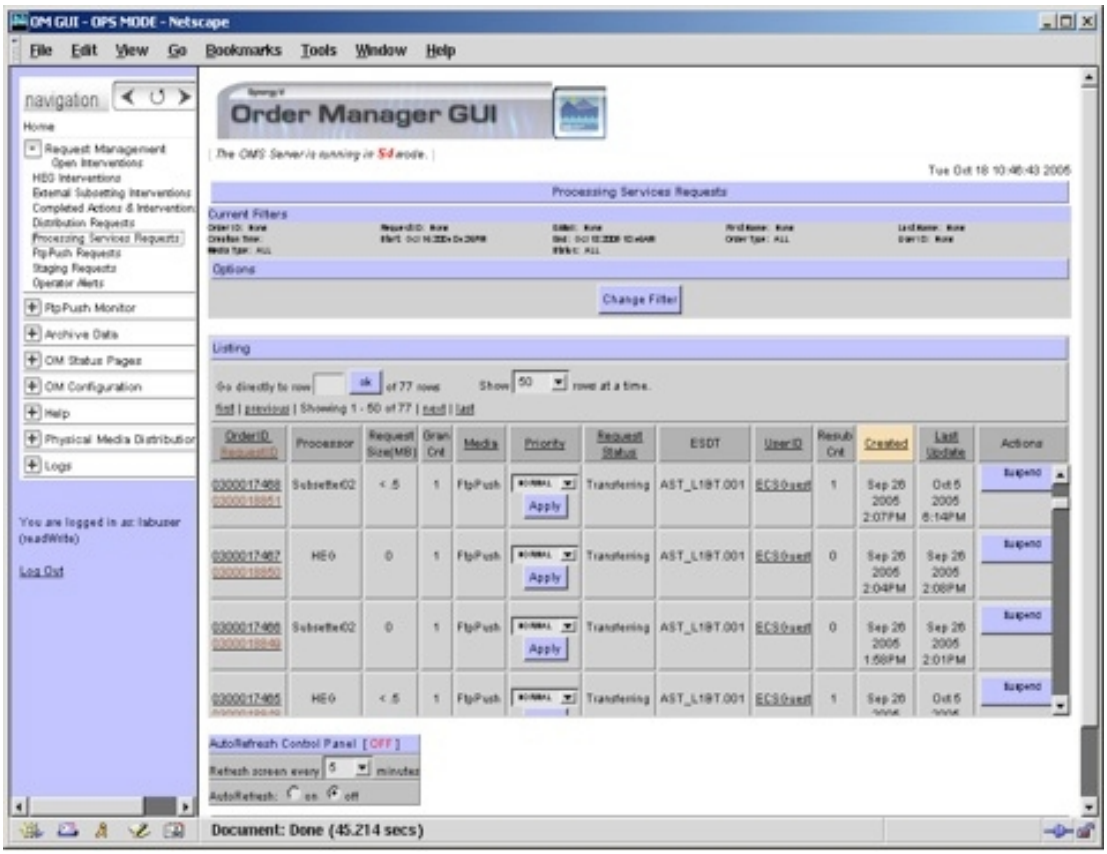


Figure 4.7.7-13b. Processing Services Requests Page

Figure 4.7.7-13b shows OMS GUI allows operator to cancel or suspend the external processing requests while those requests are under OMS control.

Processing Services Requests Filters

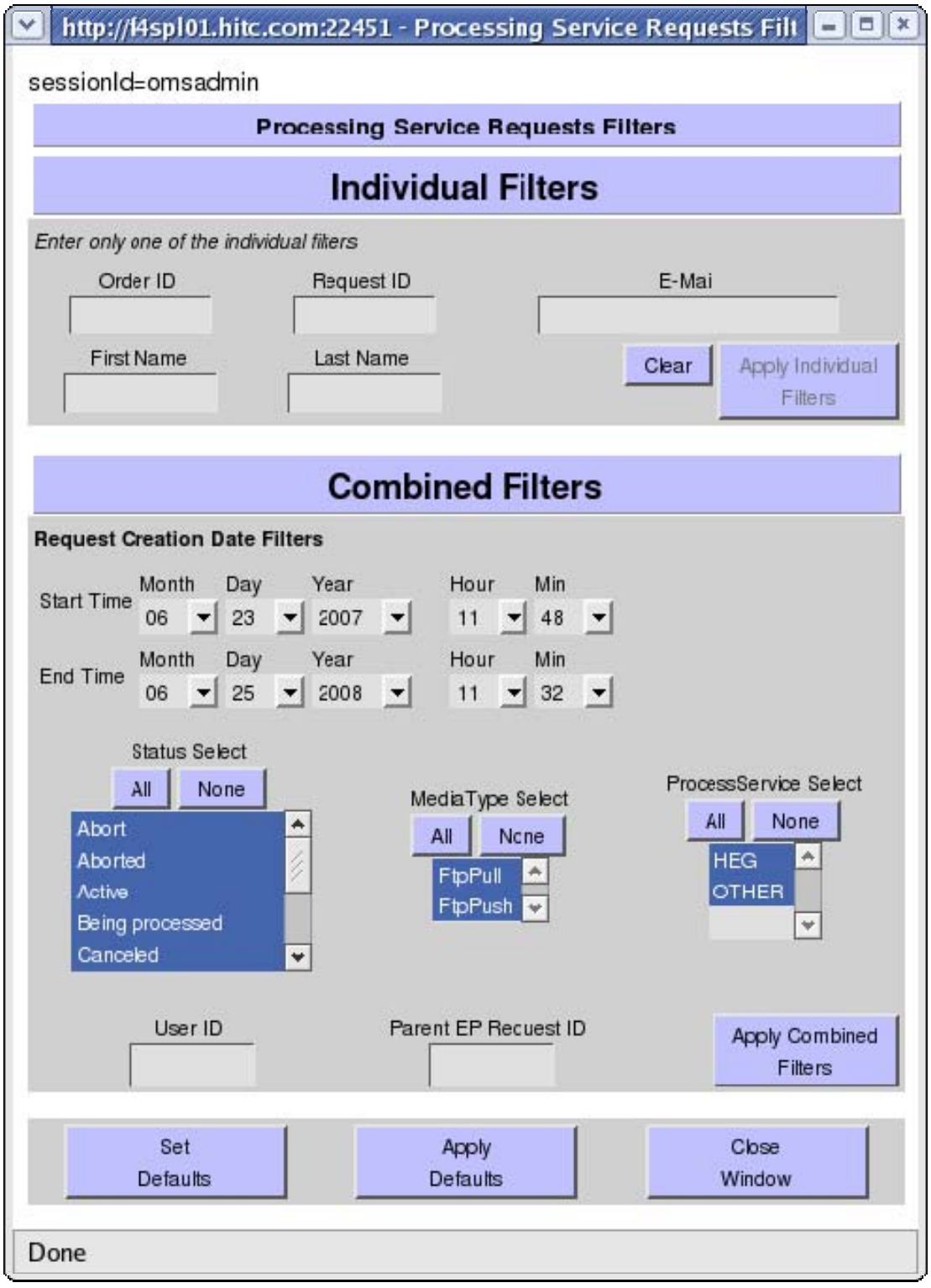


Figure 4.7.7-14. Processing Services Requests Filters Popup

Figure 4.7.7-14 shows the operator can filter any selected external processing service or HEG.

FtpPush/SCP Requests

For each request in the list, values for destination, completion status and resource class are shown. The operator can sort the list by completion status, media and resource class by clicking on the corresponding column headings as shown in Figure 4.7.7-15.

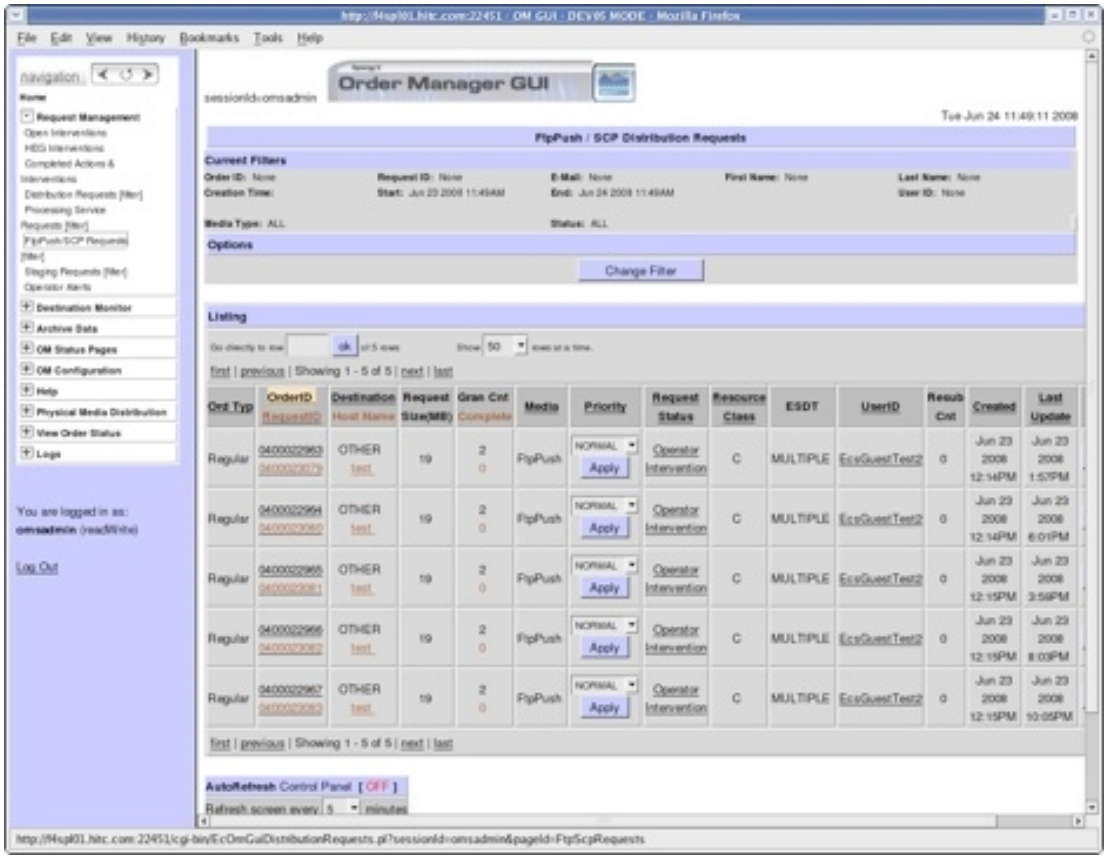


Figure 4.7.7-15. FtpPush/SCP Distribution Requests Page

Staging Requests

The Staging Requests page, shown in Figure 4.7.7-16, displays the completion status and resource class for each request in the list. The operator can sort the list by completion status or resource class by clicking on the corresponding column headings.

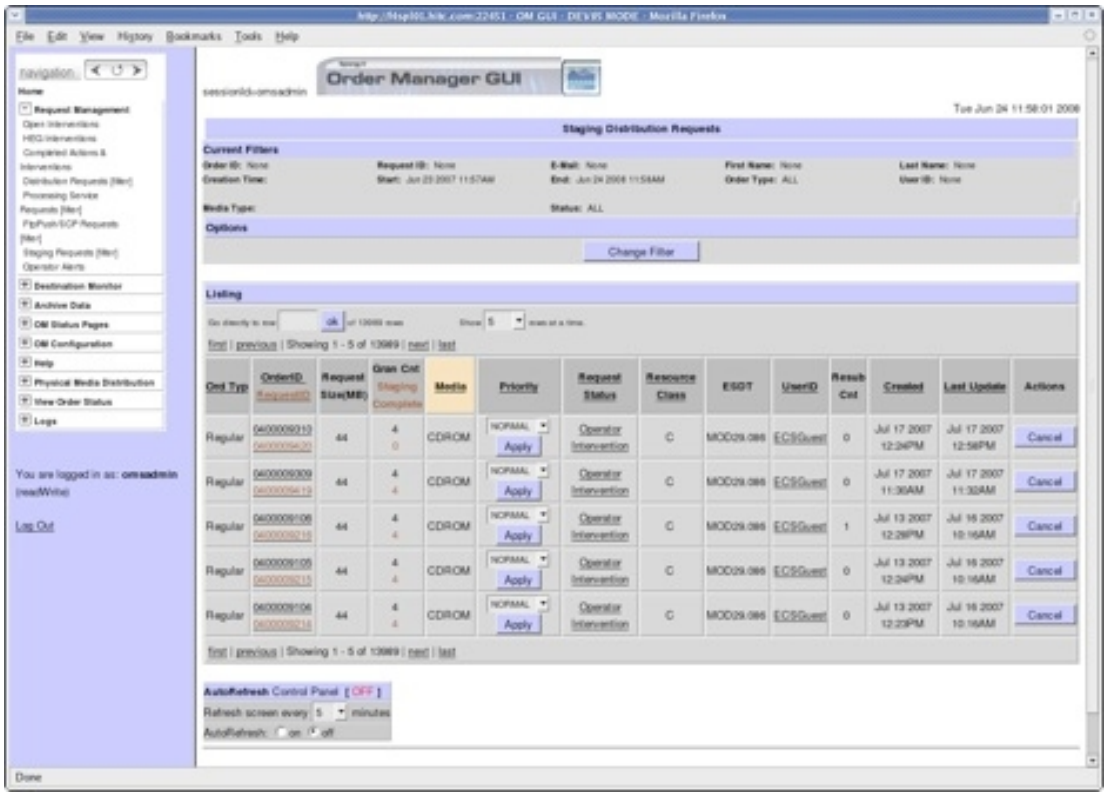


Figure 4.7.7-16. Staging Requests List Page

Historical Requests

The Historical Requests page, shown in Figure 4.7.7-17, does not allow any operator actions. Therefore, the Priority and Actions columns are not displayed.

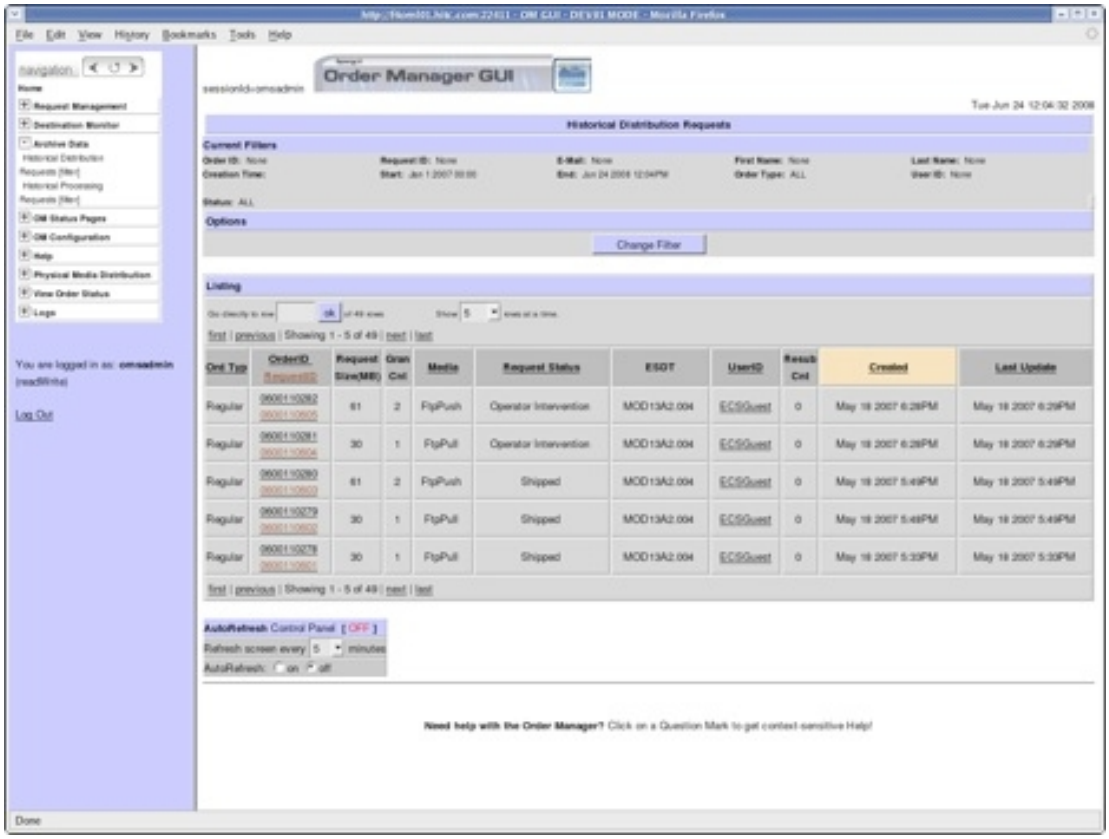


Figure 4.7.7-17. Historical Requests List Page

Historical Processing Requests

The Historical Processing Requests page, shown in Figure 4.7.7-18, allows the operator to search for and display archived external processing requests.

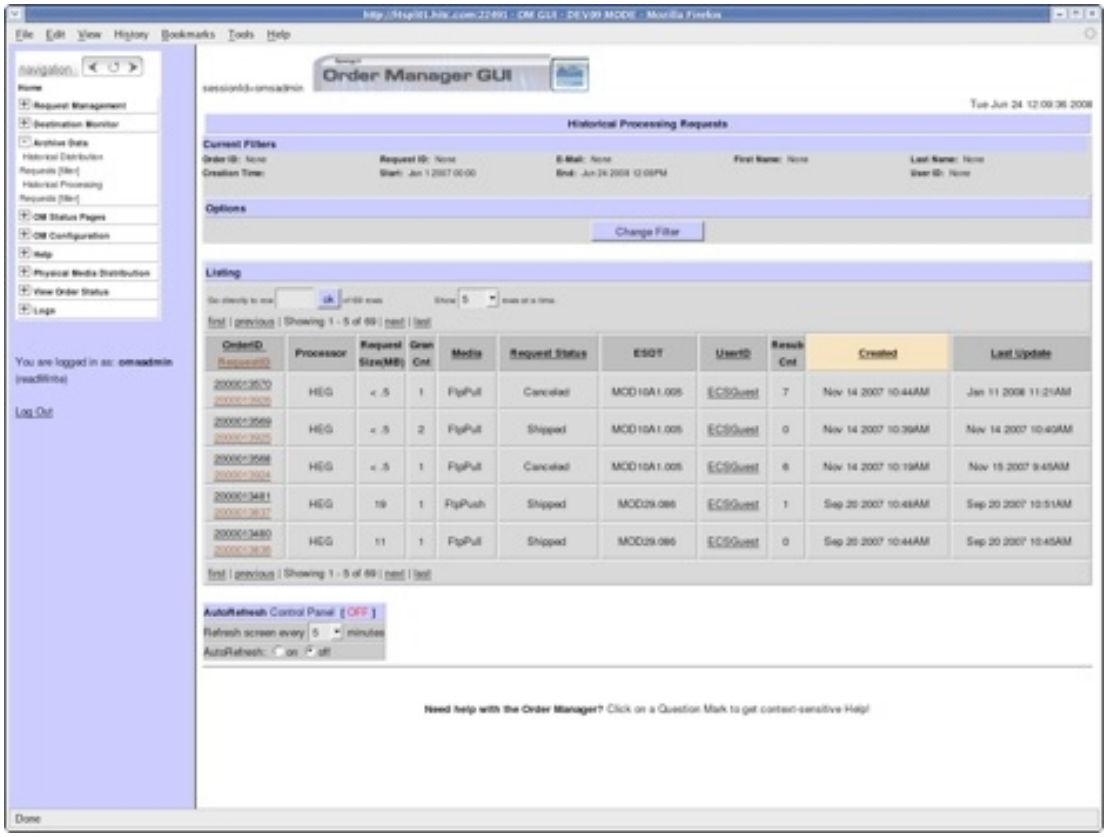


Figure 4.7.7-18. Historical Processing Requests Page

Historical Processing Requests Filter

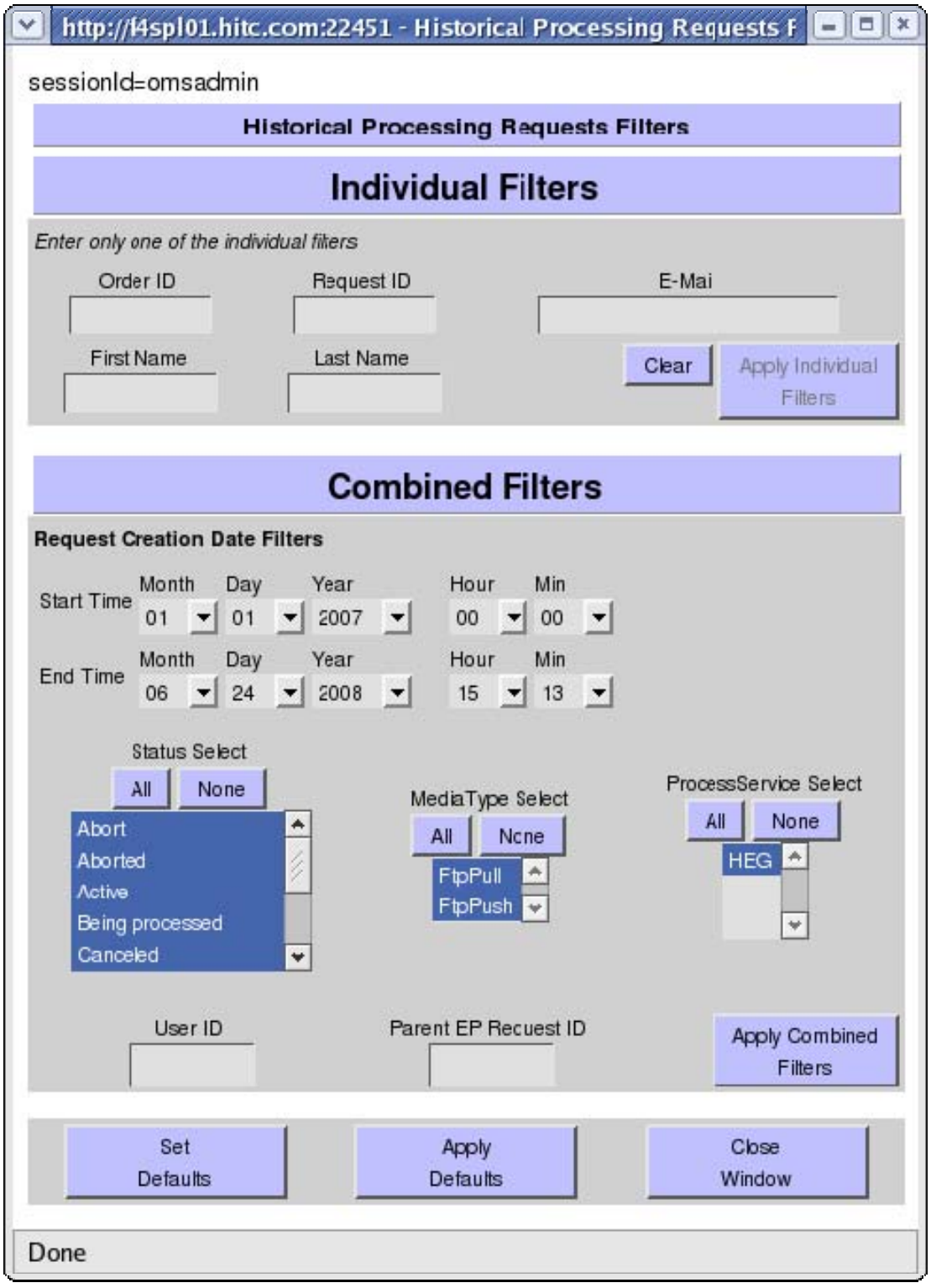


Figure 4.7.7-19. Historical Processing Requests Filter Popup

Figure 4.7.7-19 shows the historical requests filter popup window, which the operator can use to filter the list of historical external processing services and HEG requests, based on various criteria.

4.7.7.2.4.4 Distribution Request Details Page

The operator can click the request ID in any **Distribution Requests, Open Intervention, Order, or Completed Operator Actions and Interventions** page to display the detailed information for a request. Figures 4.7.7-20a and 4.7.7-20b display distribution request details screens for non-physical media requests.

For all requests, the operator can perform the following functions:

- Click on the **OrderId** link to view the ECS order page.
- Change the priority of certain requests. **For a complete description of this feature see Section** 4.7.7.2.4.2 **Distribution Requests Lists – Common Features. Note:** Limited Capability operators cannot change the priority of a request.
- For Ftp Push requests, Edit FtpPush Parameters by clicking on the corresponding button. This causes the Edit FtpPush Parameters page to be displayed. Table 4.7.7-13 provides field descriptions for the entry of these values. **Note:** This feature is disabled for Limited Capability *operators.* The operator can also click Destination/Host Name to view the Destination Detail page.
- Perform actions for which the request is eligible. See Section 4.7.7.2.4.2 **Distribution Requests Lists – Common Features** for a description of actions and the types of requests they apply to.
- Scan through the granule list by clicking on navigation links. These links permit jumping to the **first**, **next, previous** or **last** block. The number of granules displayed in the table can be changed by selecting a value from the "Show *n* rows at a time" drop-down list. If the Distribution Request information at the top of the page indicates that the request is associated with a bundling order, the Granule List at the bottom reflects the contents of the current bundle.
- Annotate the request.
- Change any mailing, shipping address, or billing address field.

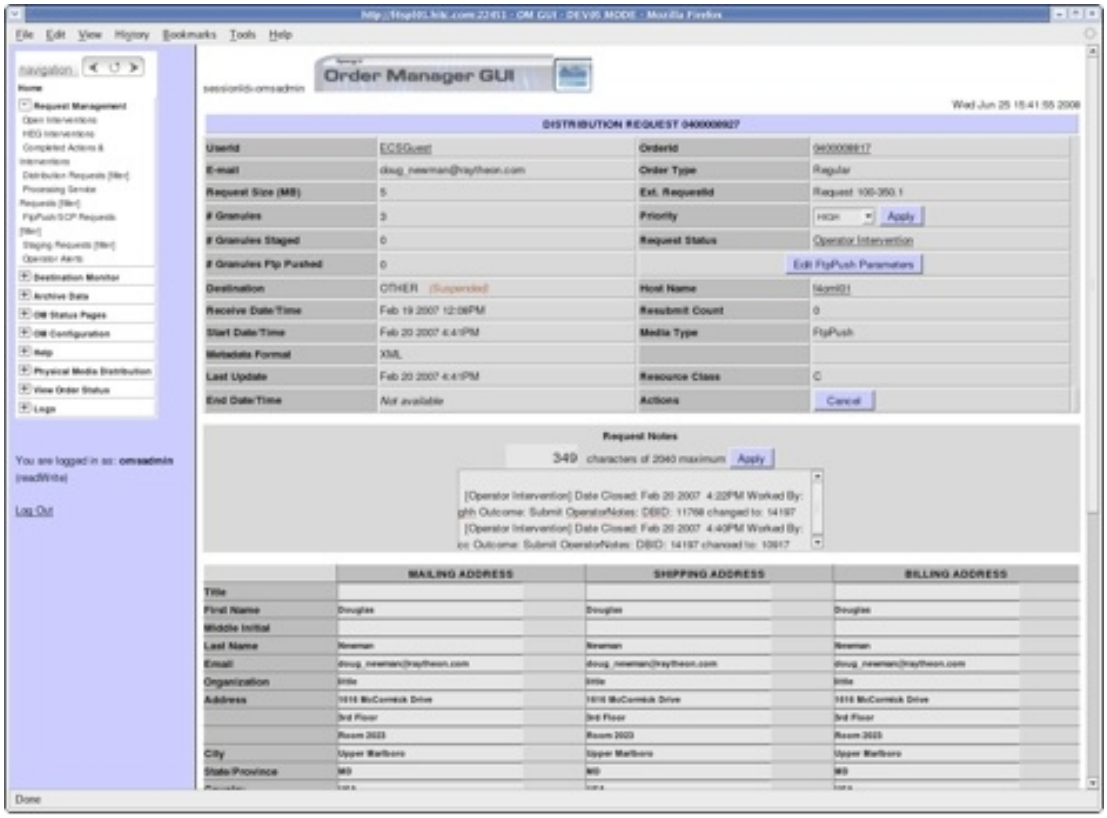


Figure 4.7.7-20a. Distribution Request Details Page for Non-Physical Media Request (1 of 2)

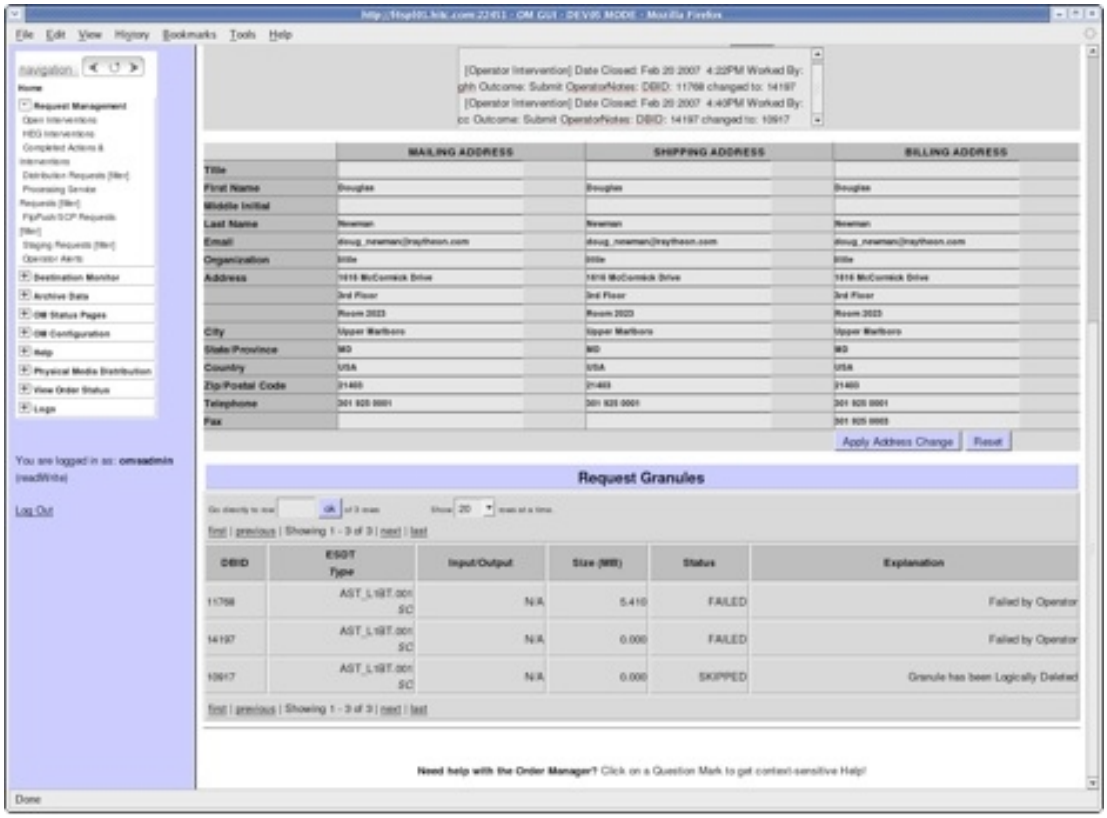


Figure 4.7.7-20b. Distribution Request Details Page for Non-Physical Media Request (2 of 2)

4.7.7.2.4.5 Edit FtpPush Parameters Page

Note: This page is not accessible to Limited Capability operators.

The Edit FtpPush Parameters Page displays a list of FTP Push parameters which can be edited by the operator. The operator can enter or change the value of any of the parameters displayed. The operator then clicks on one of the buttons at the bottom of the page. Button actions are:

- Change This Request – changes the FtpPush Parameters for the request listed and returns to the Request Detail Page.
- Change All Active Requests - changes the FtpPush Parameters for all requests for the destination listed that are not in a terminal state and returns to the Request Detail Page.
- Cancel – cancels all changes to FtpPush Parameters and returns to the Request Detail FtpPush Page.

Figure 4.7.7-21 shows the Edit FtpPush Parameters Page. Table 4.7.7-12 provides the descriptions of the fields on the Edit FtpPush Parameters Page.

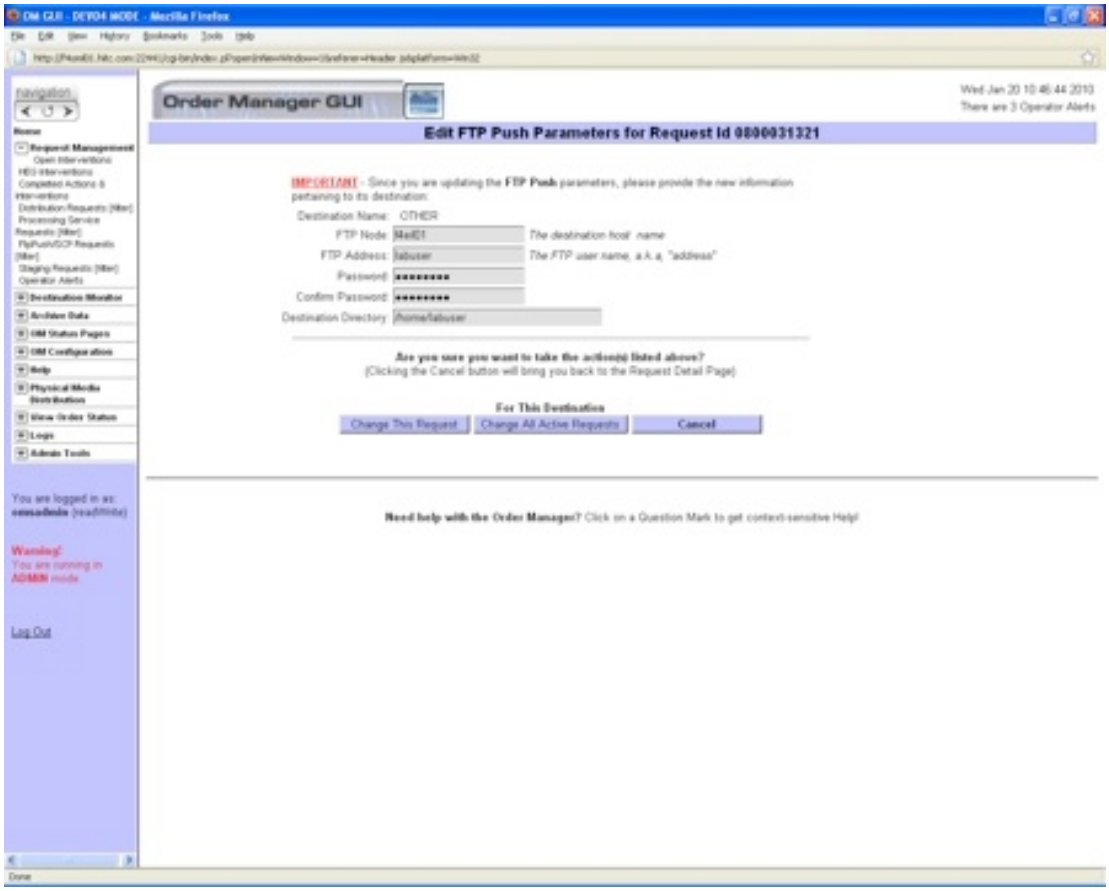


Figure 4.7.7-21. Edit FtpPush Parameters Page

Table 4.7.7-12. Field Descriptions for Edit FtpPush Parameters Page

Field Name	Data Type	Size	Entry	Description
FTP Node	Varchar	20	Required	The Unix hostname of the FTP recipient
FTP Address	Varchar	14	Required	The Unix login ID of the FTP recipient
Password	Varchar	15	Required	The Unix password for the FTP recipient
Confirm Password	Varchar	15	Required	The Unix password verification for the FTP recipient
User String	Varchar	255	Optional	String to be inserted into the FTP parameters
Destination Directory	Varchar	255	Required	The pathname of the Unix directory where the acquired files are to be stored

4.7.7.2.4.6 Edit SCP Parameters Page

Note: This page is not accessible to Limited Capability operators.

- The Edit SCP Parameters Page displays a list of SCP parameters which can be edited by the operator. The operator can enter or change the value of any of the parameters displayed.

Figure 4.7.7-22 shows the Edit SCP Parameters Page. Table 4.7.7-13 provides the descriptions of the fields on the Edit SCP Parameters Page.

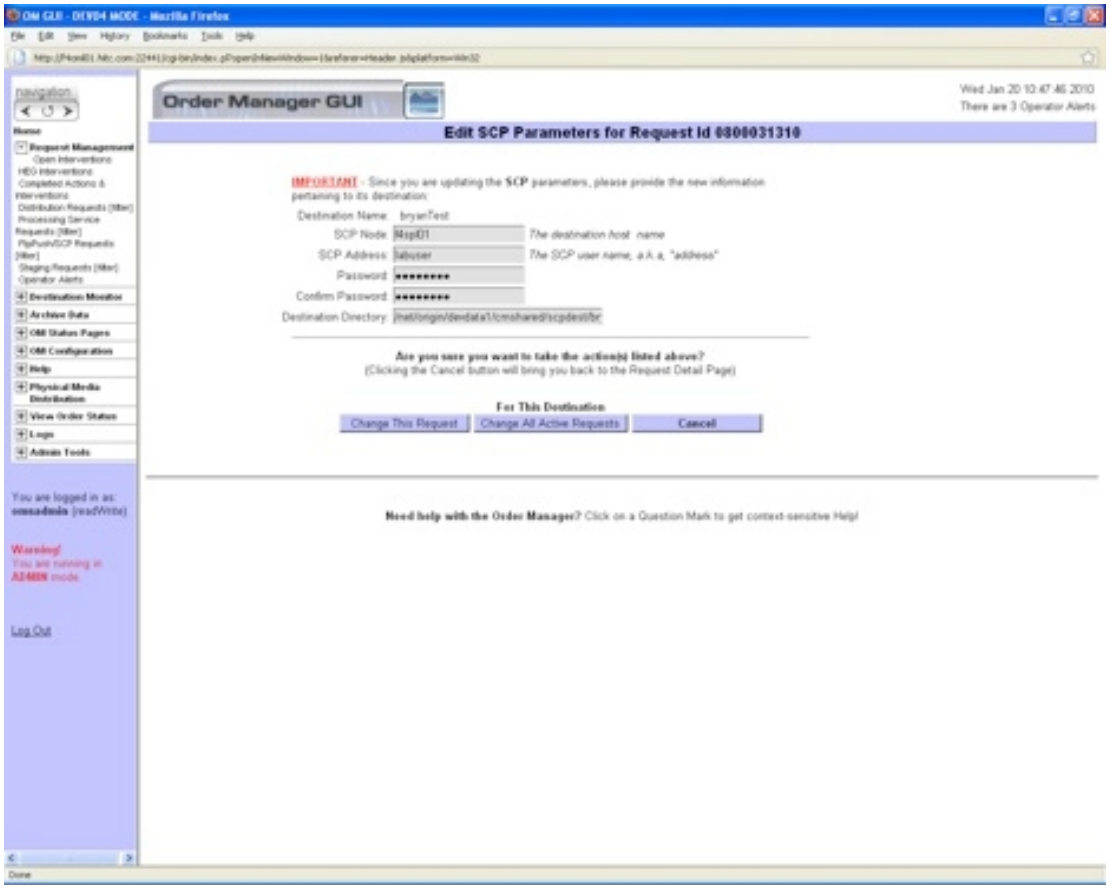


Figure 4.7.7-22. Edit SCP Parameters Page

Table 4.7.7-13. Field Descriptions for Edit SCP Parameters Page

Field Name	Data Type	Size	Entry	Description
Host Address	Varchar	20	Required	The Unix hostname of the SCP recipient.
SCP user	Varchar	14	Required	The Unix login ID of the SCP recipient.
Password	Varchar	15	Required	The Unix password for the SCP recipient.
Confirm Password	Varchar	15	Required	The Unix password verification for the SCP recipient.
Destination Directory	Varchar	255	Required	The pathname of the Unix directory where the acquired files are to be stored.

4.7.7.2.4.7 ECS Order Page

Note: Limited Capability operators are limited to viewing the details of an ECS Order. They cannot change the priority of or take actions for Requests.

The operator can click on the **Order ID** link in the Distribution Requests list page or the Distribution Request details page to open the **ECS Order** detailed information page, as illustrated in Figure 4.7.7-23. If the order is a bundling order, the operator can click the **Spatial Subscription Server** link to go to the Spatial Subscription Server Web page to view and update the Bundling Order as illustrated in Figure 4.7.7-24. The operator can click a **Request ID** to go to **Distribution Request** details page for that request (see Figure 4.7.7-25).

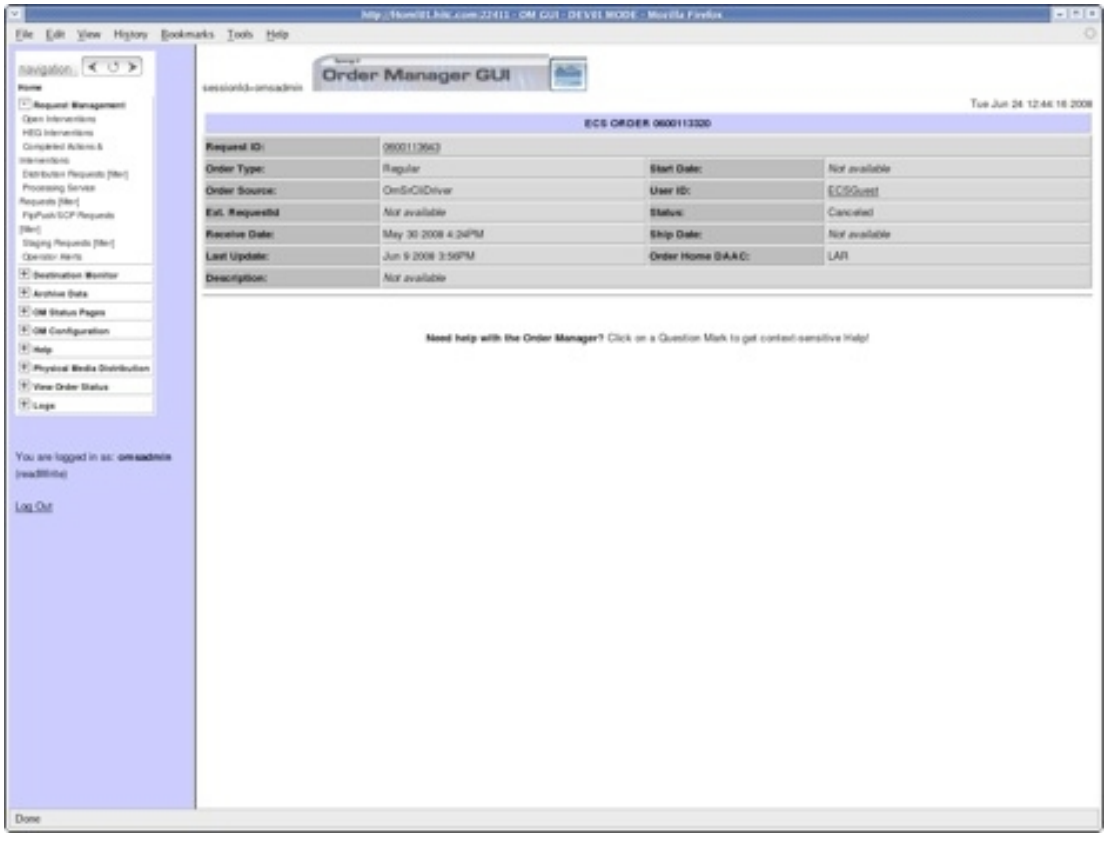


Figure 4.7.7-23. ECS Order Information Page

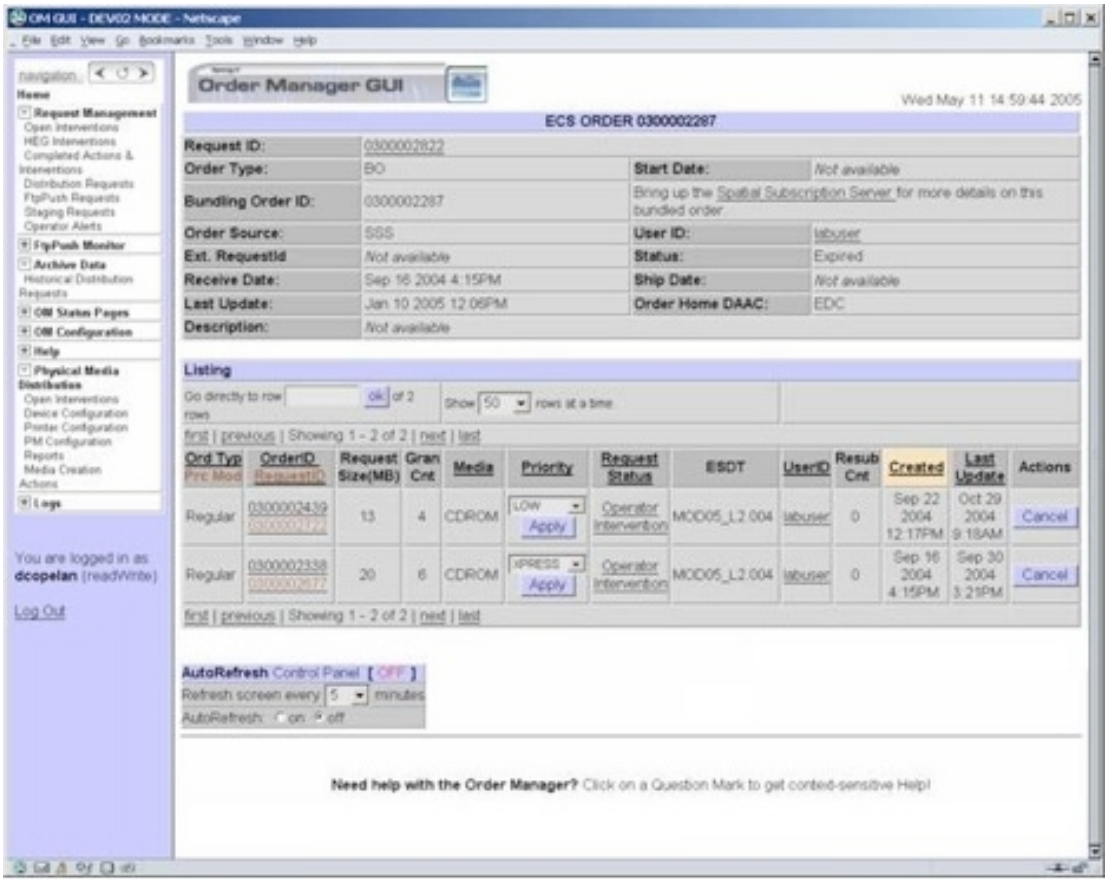


Figure 4.7.7-24. ECS Order Information Page for Bundling Order

4.7.7.3 Destination Monitor

4.7.7.3.1 Suspended Distribution Destinations Page

Note: Limited Capability operators cannot take any actions on this page.

The Distribution Destinations Displays a list of suspended FTP Push / SCP Destinations as shown in Figure 4.7.7-25. The operator can see details for a destination by clicking the name of the destination (for a configured destination) or the hostname (for a non-configured destination) to be viewed. This displays the Ftp Push / SCP Monitor – Destination Details page described in Section 4.7.7.3.2 FTP Push / SCP Destinations Detail Page.

The operator can resume dispatching to a destination by clicking its **Resume** button.

The Active Destinations section allows the operator to enter either a Destination Name or Host Name and either suspend / resume the destination or see the Destination Monitor by clicking the Destination Name – Destination Details page for the destination.

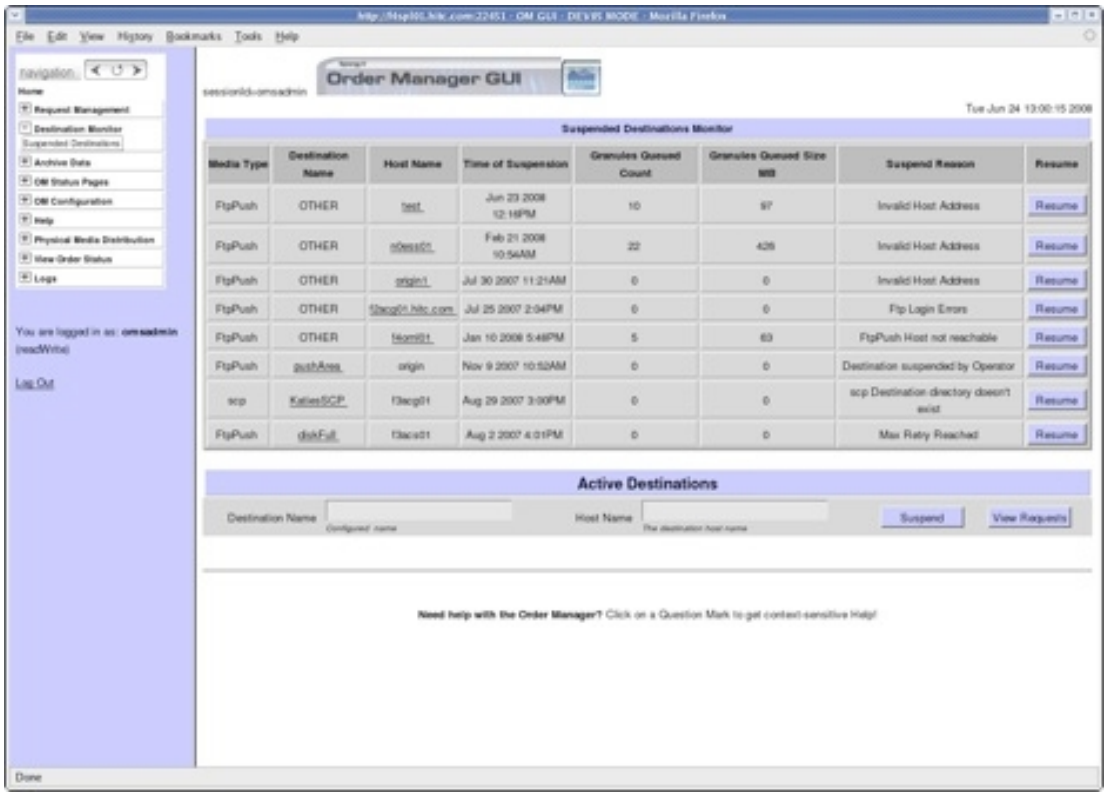


Figure 4.7.7-25. Suspended Destinations Monitor Page

Note: *Limited Capability operators cannot take any actions on this page*

The FTP Push / SCP Distribution Destination Detail Page displays a **Suspend**/**Resume** button, a list of FTP Push / SCP Operations that Caused the Suspension of the destination and a list of FTP Push Requests That Are Not In A Terminal State for the destination.

The Suspend/Resume button is labeled **Resume** if the destination is suspended and **Suspend** if the destination is active. Clicking this button will suspend or resume the destination.

For a description of the list of FTP Push Requests, see Section 4.7.7.2.4.1. View Distribution Requests.

4.7.7.3.2 FTP Push/ SCP Distribution Destinations Detail Page

Note: Limited Capability operators cannot take any actions on this page.

The FTP Push / SCP Distribution Destinations Detail Page displays a list of FTP Push / SCP Operations that Caused the Suspension of the destination selected and a list of FTP Push Requests That Are Not In A Terminal State for the destination selected. This is displayed in Figures 4.7.7-26 and 4.7.7-27.

For a description of the list of FTP Push / SCP Requests see Section 4.7.7.2.4.2.

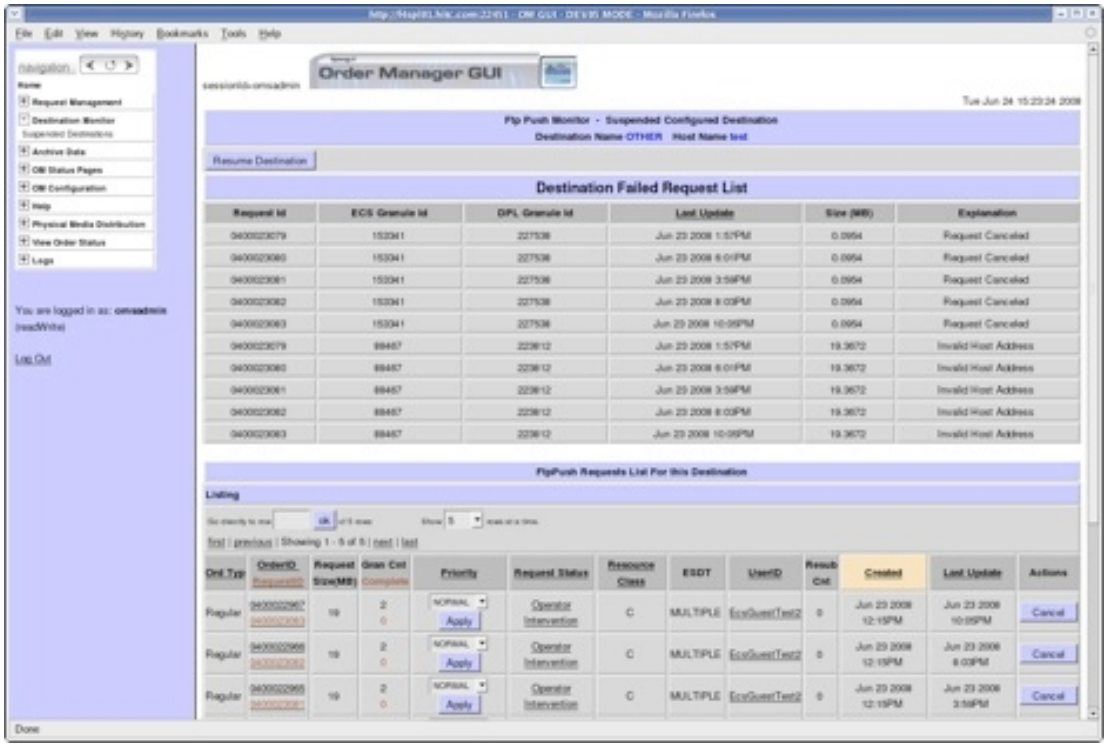


Figure 4.7.7-26. FTP Push Distribution Destinations Detail Page

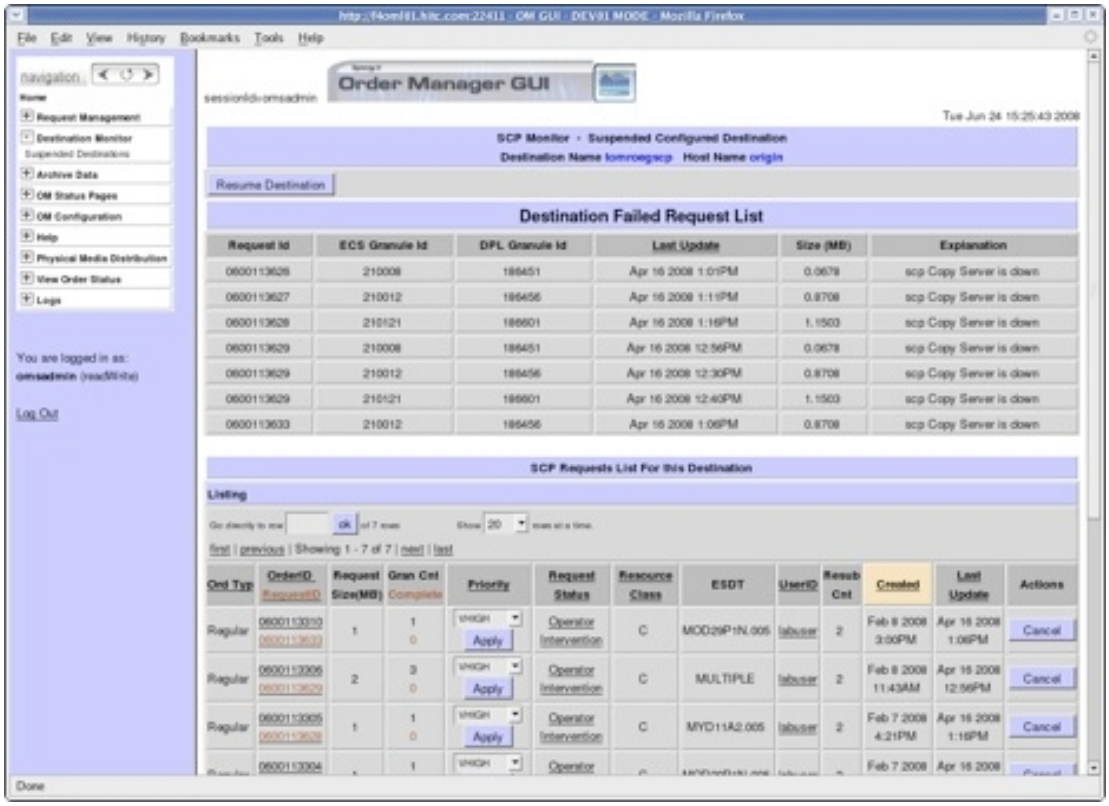


Figure 4.7.7-27. SCP Distribution Destinations Detail Page

4.7.7.3.3 Staging Status Pages

The Staging Status pages show a summary of the volume and number of granules that are currently in Staging. The Staging information is broken down into four categories:

- Granules waiting for Staging
- Granules in Staging
- Granules that have been Staged but not yet shipped
- Granules that have been staged and shipped

The Staging Status information is categorized by media type – one page for FtpPush, and another for all other media types (physical media and FtpPull).

Staging Status by Media Type

Click on "Media Type" under the **Staging Status Pages** subsection of **OM Status Pages**. This will show a detailed summary of number and volume of granules in their various Staging states, as shown in Figure 4.7.7-28. Next to each media type is also the target low and high Watermarks, see Table 4.7.7-16 for more details on Watermarks. These Watermarks are configurable by full-capability operators in the Media Configuration page.

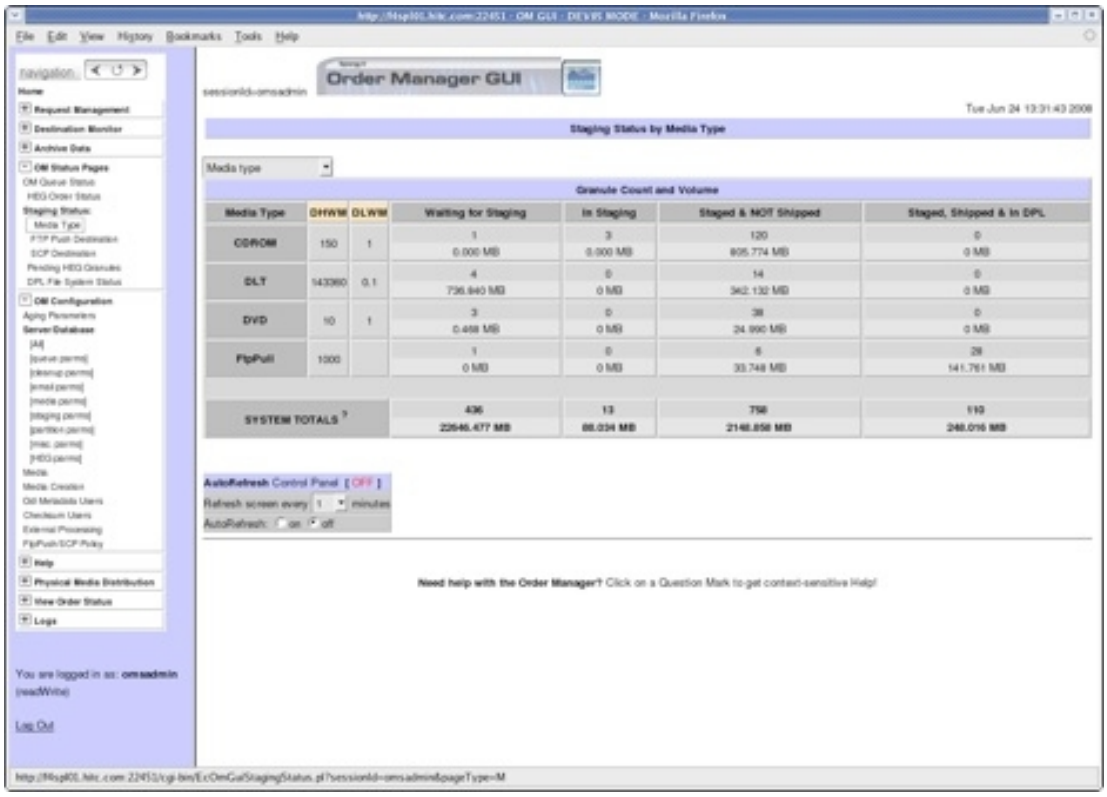


Figure 4.7.7-28. Staging Status by Media Type

Staging Status by FTP Push Destination

Click on "Ftp Push Destination" under Staging Status Pages in the OM Status Pages menu. This page will display a list of the currently configured FTP Push destination names, along with the IP address and destination directory (see Figure 4.7.7-29). Each of these destinations has individualDHWM and DLWM settings, as well their own Staging Status numbers. This screen shows the number and volume (in MB) of granules that are:

- Waiting for Staging
- In Staging
- Staged & NOT Shipped
- Staged, Shipped & In DPL

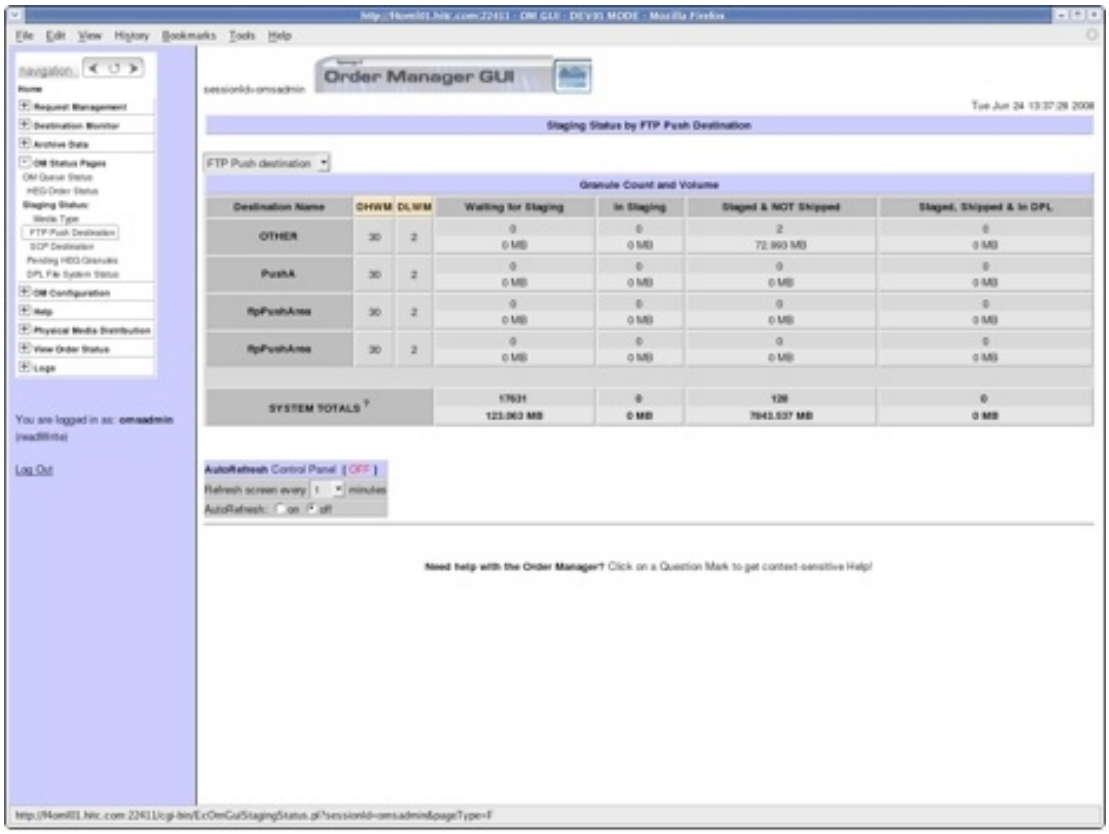


Figure 4.7.7-29. Ftp Push Destination Listing For Staging Status

Staging Status by SCP Destination

Click on "SCP Destination" under Staging Status Pages in the OM Status Pages menu. This page will display a list of the currently configured SCP destination names. Each of these destinations has individual DHWM and DLWM settings, as well their own Staging Status numbers. This screen, as shown in Figure 4.7.7-30, shows the number and volume (in MB) of granules that are:

- Waiting for Staging
- In Staging
- Staged & NOT Shipped
- Staged, Shipped & In DPL

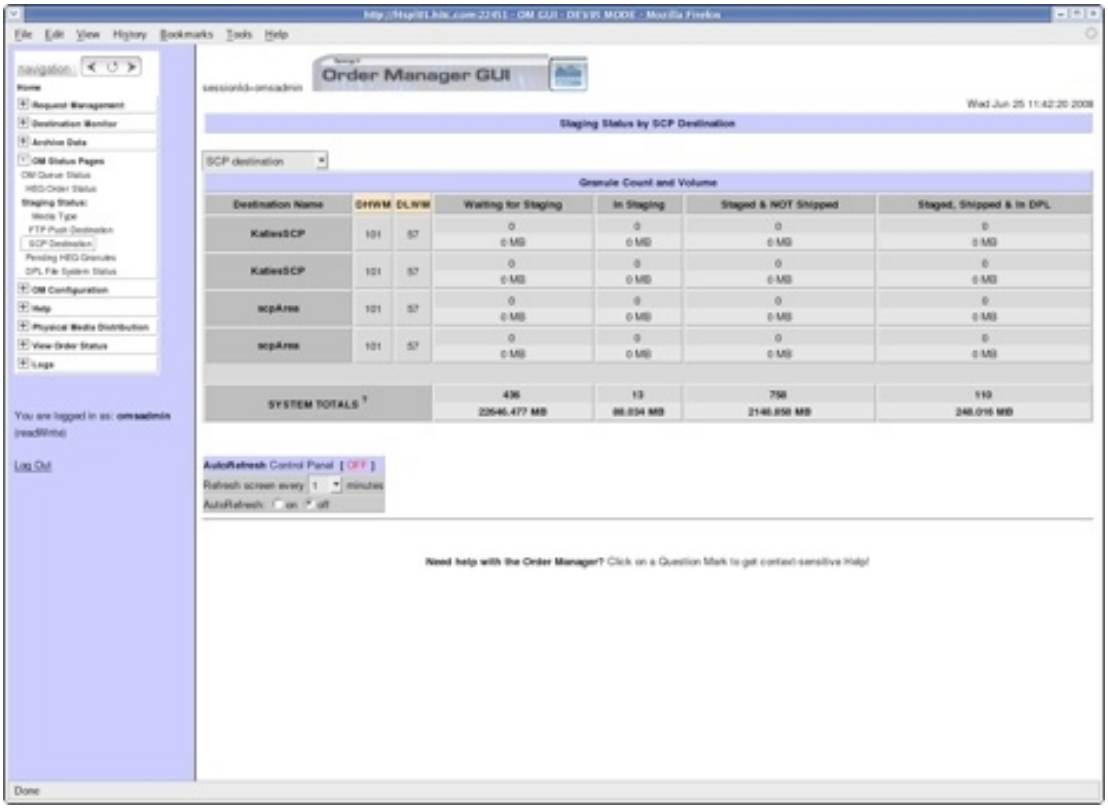


Figure 4.7.7-30. SCP Destination Listing For Staging Status

4.7.7.4 OM Configuration Pages

Note: For all types of configuration pages, Limited Capability operators can only view configuration parameters. The ability to update parameters will be disabled.

Aging Parameters

To access this page, click "Aging Parameters" under the **OM Configuration** menu. This page displays parameters that affect how Distribution Requests are aged over time (see Figure4.7.7-40). The aging parameters are configurable for each ECS Priority Level (XPRESS, VHIGH, HIGH, NORMAL, and LOW). Below is a description of each parameter.

Age Step: The aging rate by which the effective priority of a request increases for every hour it has been waiting. The range is 0-100, including decimal fractions. If this parameter is set to 0, waiting requests will never increase in 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, then the request will increase 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

Maximum Priority The maximum priority a request can attain through this aging process. For example, if Maximum Priority were set to 130, then in the example above, once the request had reached a priority of 130, it would not go any higher (i.e., at Hour 10 it would still be 130).

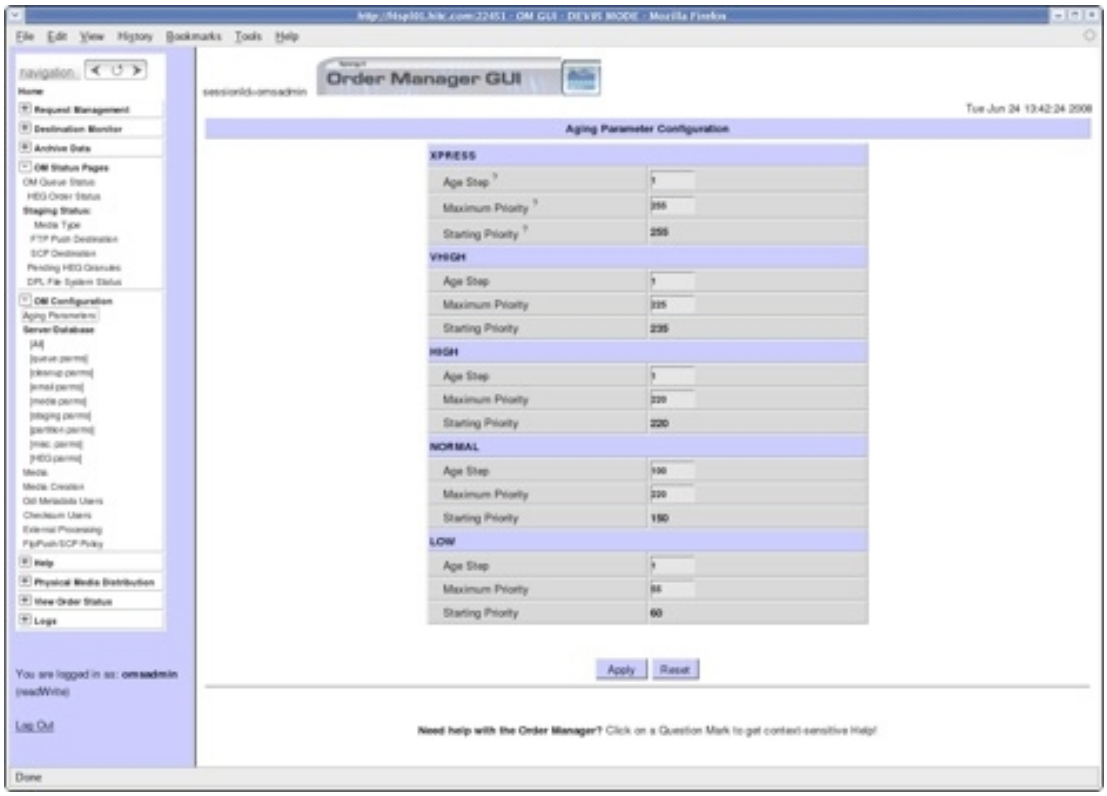


Figure 4.7.7-31. Aging Parameter Configuration

Server/Database Configuration

These are values that affect how the OM Server and Database run (see Figure 4.7.7-32 and Figure 4.7.7-33). The page displays the current value of the configuration parameters and provides a text input box to change them. To the far right is a description of each parameter.

These parameters are dynamically loaded into the page, meaning that the parameters displayed are those that the operator can modify. If a configuration parameter is added in the Database, it will also be displayed on the screen. See Table 4.7.7-18 for a description of these parameters.

Drop-Down Lists

Some parameters are not editable text fields, but drop-down lists containing the possible values for that field. This is to protect the OMS Server from acting in an undesirable way as a result of using an unexpected value. For example Global Staging Status is one such field – it *must* be "S" or "A" for the OMS Server to function properly.

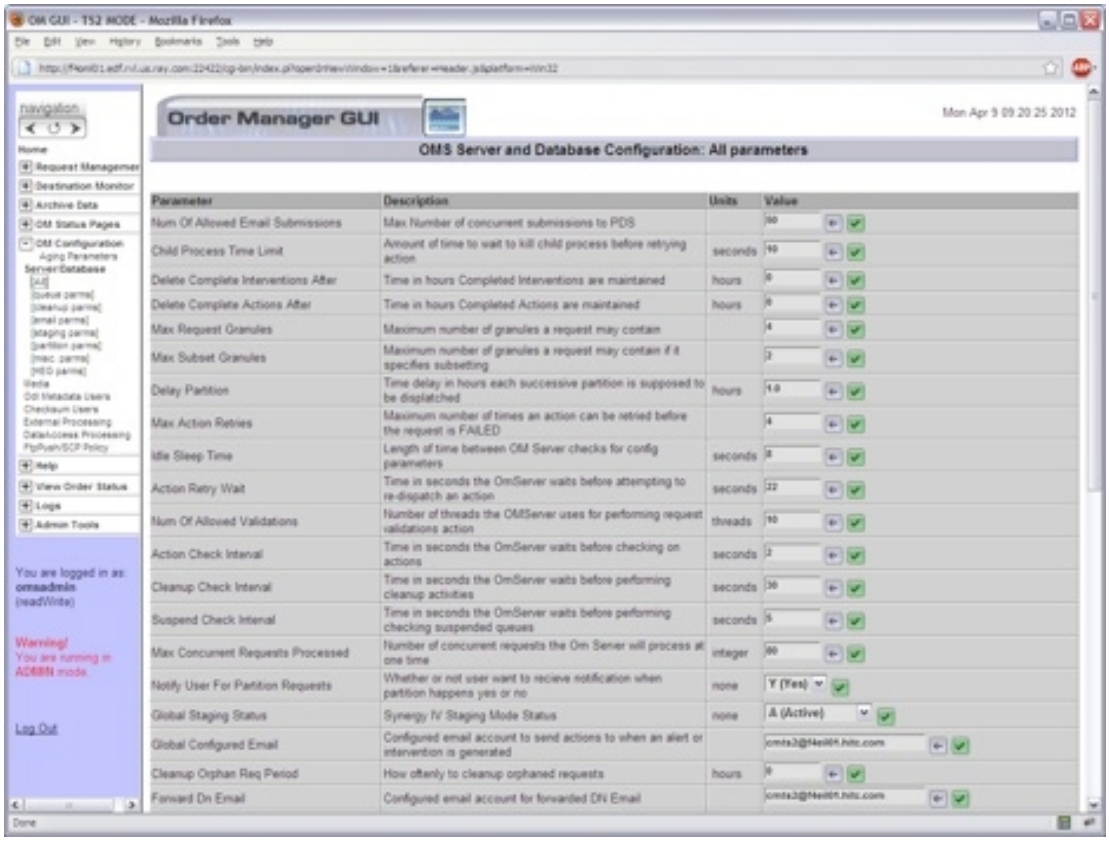


Figure 4.7.7-32. Server/Database Configuration - Part 1

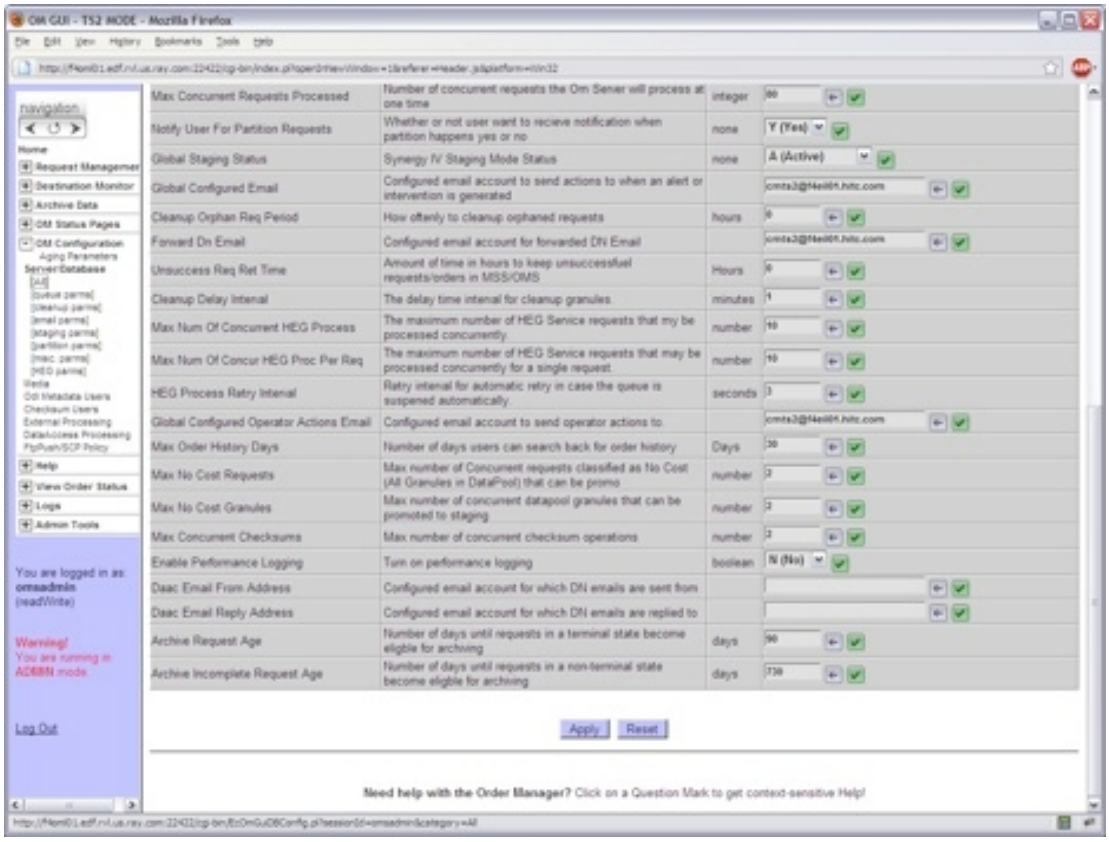


Figure 4.7.7-33. Server/Database Configuration - Part 2

Media Configuration

To access this page, click on "Media" under the **OM Configuration** menu. These configuration parameters are specific to each media type, and are dynamically loaded just as the Server/Database Configuration parameters. The page displays the current value of the parameter and provides a text box input to change it. Figure 4.7.7-34 shows an example of some of the Media Configuration Parameters. See Table 4.7.7-14 for a description of these parameters.

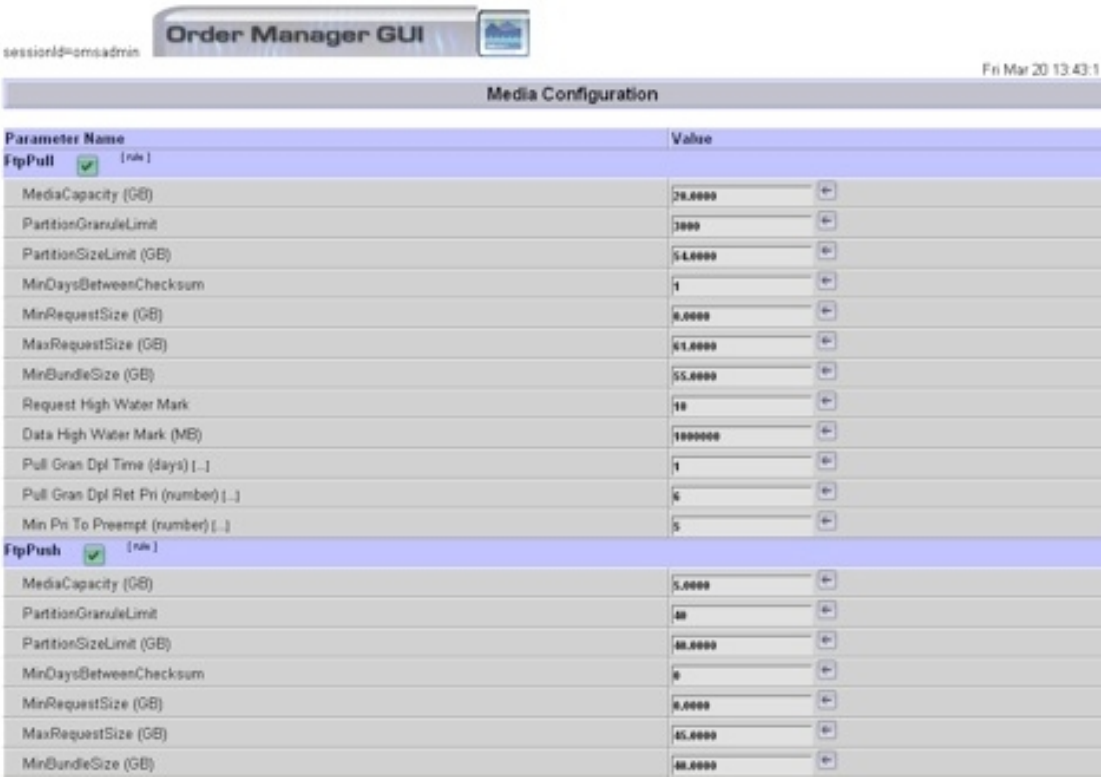


Figure 4.7.7-34. Media Configuration Page

Table 4.7.7-14. OM GUI Configuration Parameters Descriptions (1 of 3)

Field Name	Data Type	Description
Num Of Allowed Email Submissions		Max Number of concurrent submissions to Email.
Child Process Time Limit	seconds	Amount of time to wait to kill child process before retrying action.
Delete Complete Interventions After	hours	Time in hours Completed Interventions are maintained.
Delete Complete Actions After	hours	Time in hours Completed Actions are maintained.
Max Request Granules		Maximum number of granules a request may contain.
Max Subset Granules		Maximum number of granules a request may contain if it specifies subsetting.
Delay Partition	hours	Time delay in hours each successive partition is supposed to be dispatched.
Max Action Retries		Maximum number of times an action can be retried before the request is FAILED.
Idle Sleep Time	seconds	Length of time between OM Server checks for config parameters.

Table 4.7.7-14. OM GUI Configuration Parameters Descriptions (2 of 3)

Field Name	Data Type	Description
Action Retry Wait	seconds	Time in seconds the OmServer waits before attempting to re-dispatch an action.
Num Of Allowed Validations	threads	Number of threads the OMServer uses for performing request validations action.
Action Check Interval	seconds	Time in seconds the OmServer waits before checking on actions.
Cleanup Check Interval	seconds	Time in seconds the OmServer waits before performing cleanup activities.
Suspend Check Interval	seconds	Time in seconds the OmServer waits before performing checking suspended queues.
Max Concurrent Requests Processed		Number of concurrent requests the OmServer will process at one time.
Notify User For Partition Requests		Whether or not user want to receive notification when partition happens yes or no.
Global Staging Status		Staging Mode Status.
MinDaysBetweeenChecksum		Checksum files that haven't been checksummed for this many days.
Max Failure Archive		Allowable number of failures prior to suspending Archive.
Global Configured Email		Configured email account to send actions to when an alert or intervention is generated.
Max Orphan Req Age	hours	How long to keep an orphaned request in system before it is qualified for removal.
Cleanup Orphan Req Period	hours	How often to cleanup orphaned requests.
Forward Dn Email		Configured email account for forwarded DN Email.
Unsuccess Req Ret Time	hours	Amount of time in hours to keep unsuccessful requests/orders in OMS.
Cleanup Delay Interval	minutes	The delay time interval for cleanup granules.
Max Num Of Concurrent HEG Process		The maximum number of HEG Service requests that my be processed concurrently.
Max Num Of Concur HEG Proc Per Req		The maximum number of HEG Service requests that may be processed concurrently for a single request.
HEG Process Retry Interval	seconds	Retry interval for automatic retry in case the queue is suspended automatically.
Due Date For Media Request	hours	Number of hours from the time the request finished staging that request is due for distribution.
Global Configured Operator Actions Email		Configured email account to send operator actions to.
MediaCapacity (GB)	Float	Size in GB that will fit on 1 volume.
MinRequestSize (GB)	Float	Size in GB for the smallest order to be processed.
MaxRequestSize (GB)	Float	Size in GB for the largest order to be processed.

Table 4.7.7-14. OM GUI Configuration Parameters Descriptions (3 of 3)

Field Name	Data Type	Description
PartitionSizeLimit (GB)	Float	Size in GB for orders to be partitioned.
MinBundleSize (GB)	Float	Size in GB for smallest bundle.
PartitionGranuleLimit	Int	Number of granules per partition.
Pull Gran Dpl Time (days)	Int	For FtpPull only. Number of days to keep granule in Data Pool.
Pull Gran Dpl Ret Pri (number)	Int	For FtpPull only. Retention Priority.
Min Pri To Preempt (number)	Int	For FtpPull only. Minimum priority to preempt.

ODL Metadata Users Configuration

Note: Limited Capability operators are limited to viewing Metadata File Users configuration only. They cannot add, or delete email addresses.

This page can be accessed by clicking "Metadata File Users" under the **OM Configuration** menu as displayed in Figure 4.7.7-35. This page allows the full-capability operators to configure a list of Email addresses that signifies users that need to receive metadata in ODL .met file format: Whenever the Email address for a Distribution Notice contains one of these addresses, the metadata will be distributed in ODL .met file format. Note that 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.

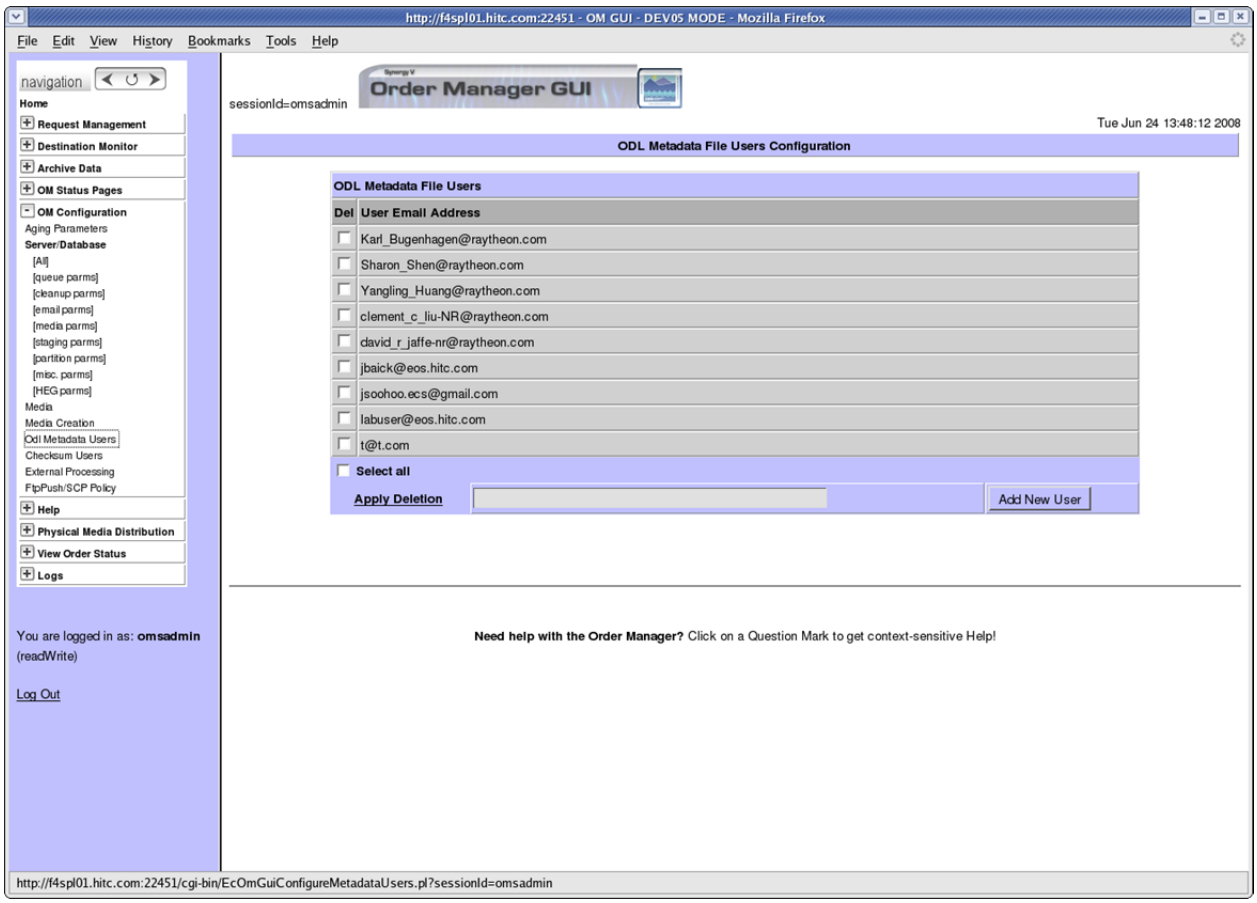


Figure 4.7.7-35. ODL Metadata File Users Configuration Page

Adding a User Email Address

Enter the email address of the user and Click on the "Add New User" button to submit changes to the database. A popup window will ask you to confirm the addition, click on "OK' button to do so as displayed in Figure 4.7.7-36.

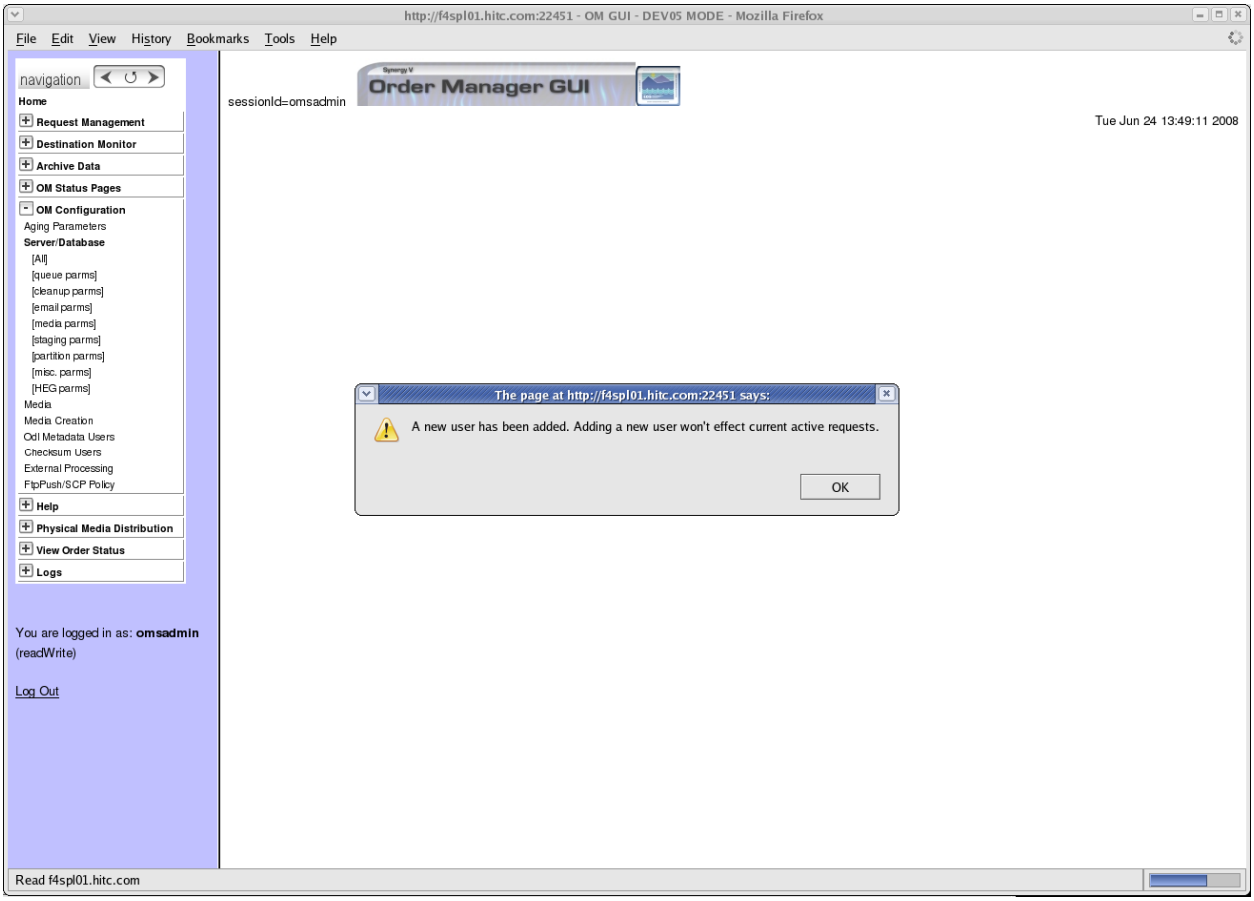


Figure 4.7.7-36. Adding a Metadata User

Deleting User Email Address(es)

Click "Select All" to check User email addresses. In addition, specific users can be selected by clicking their checkboxes individually. Then, click the "Apply Deletion" button to submit changes to the database. A popup window will ask you to confirm the deletion, click on "OK' button to do so. Otherwise, click "Cancel" button. This is shown in Figure 4.7.7-37.

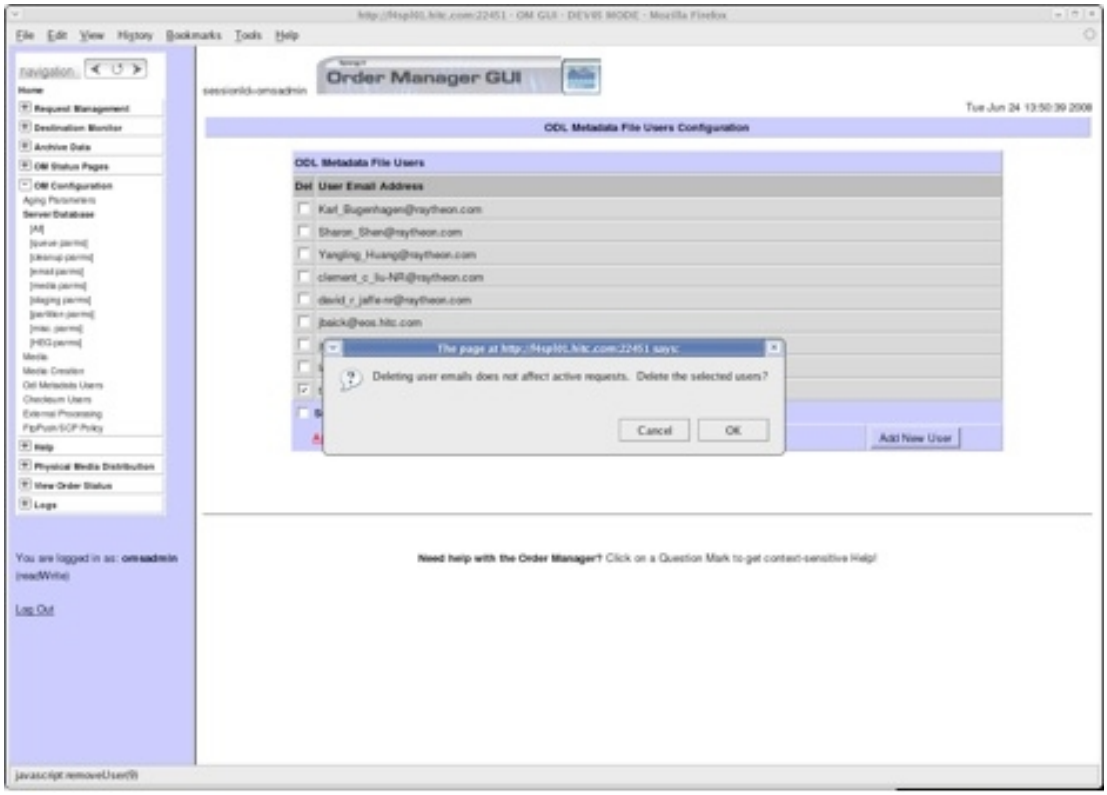


Figure 4.7.7-37. Deleting a Metadata User

External Subsetting Configuration

Note: Limited Capability operators are limited to viewing External Subsetting configuration only. They cannot edit, add, or delete destinations.

This page can be accessed by clicking "External Subsetting" under the **OM Configuration** menu. This page allows the full-capability operators to define and configure the parameters of an external subsetter.

Special configuration parameters that control external subsetting requests are displayed in the **External Subsetting Configuration** page (see Figure 4.7.7-38). Table 4.7.7-15 explains these options in detail.

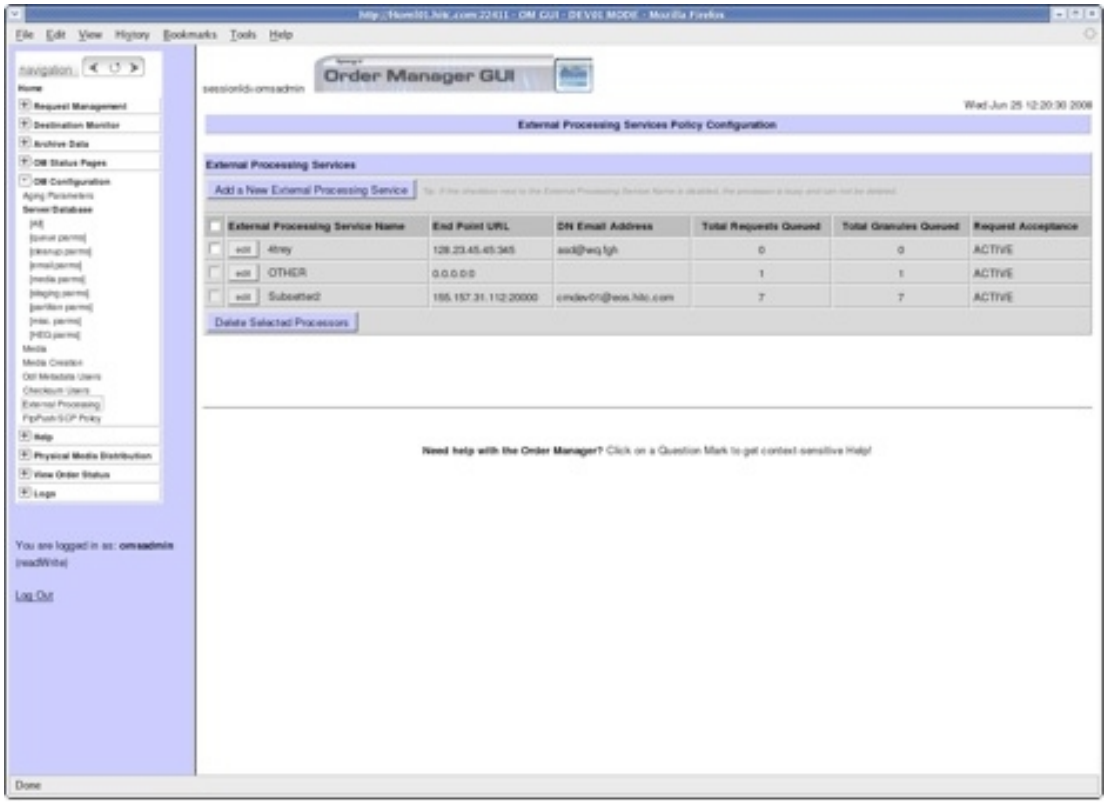


Figure 4.7.7-38. External Subsetting Configuration Page

Figure 4.7.7-38 allows an authorized operator to do the following actions:

1. View a list of external processing services: Processor Name, IP Address, Port Number, DN Email Address, Total Requests Queued, Total Granules Queued, Request Acceptance Status
2. Delete an external processing service if there is no pending request for this external processing service.
3. Add a new processing service by clicking the button
4. Edit existing processing service configuration.

Add External Subsetting Configuration

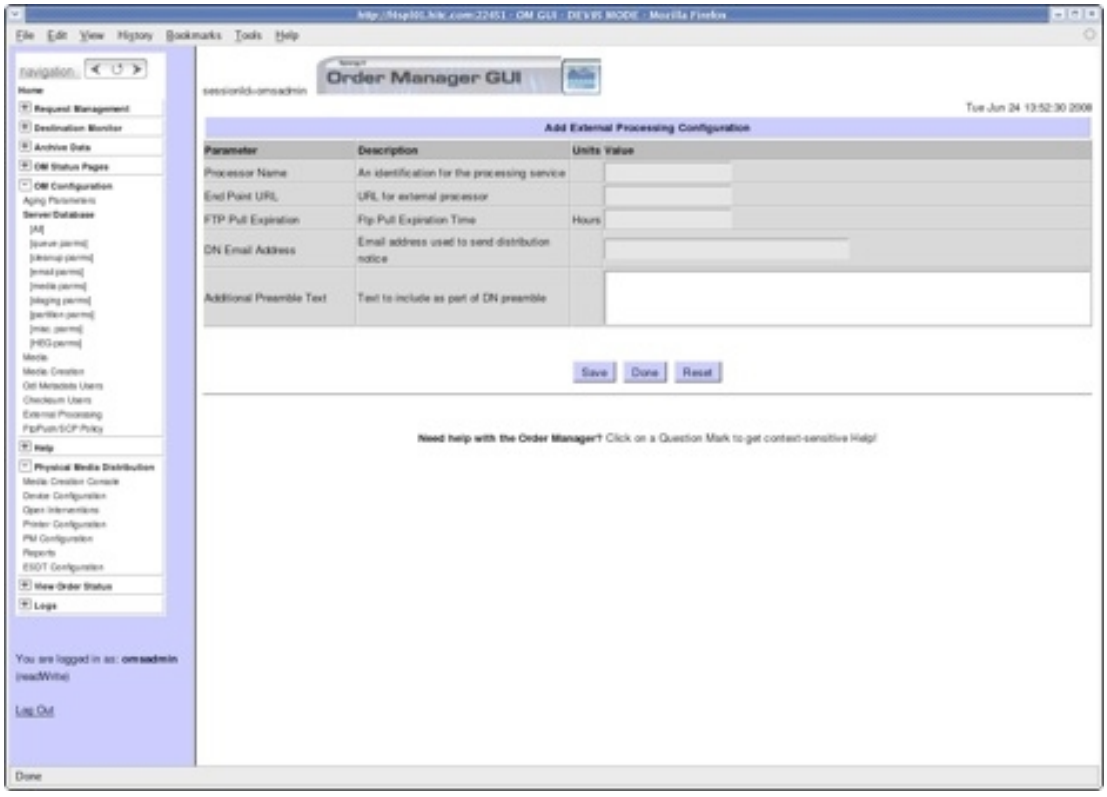


Figure 4.7.7-39. Add External Subsetting Configuration

Figure 4.7.7-39 allows an authorized operator to add a new external processing service using the parameters in Table 4.7.7-15.

Table 4.7.7-15. External Subsetting Configuration Parameters Descriptions

Parameter	Description
Processor name	A unique name for the external processing service.
IP Address	Host IP address for external processing service as configured in the ECS registry.
Port number	Port number for external processing service as configured in the ECS registry.
DN email address	DN Email address used by the external processing service.
Ftp pull expiration	Ftp pull expiration time (Not to exceed the normal FTP Pull order expiration time). The unit is hours.
Additional preamble file	Operator types the text directly in the text box which will be included as part of the preamble in any distribution notices sent to users after completing the distribution of the request for this subsetter.

View/ Edit External Subsetting Configuration

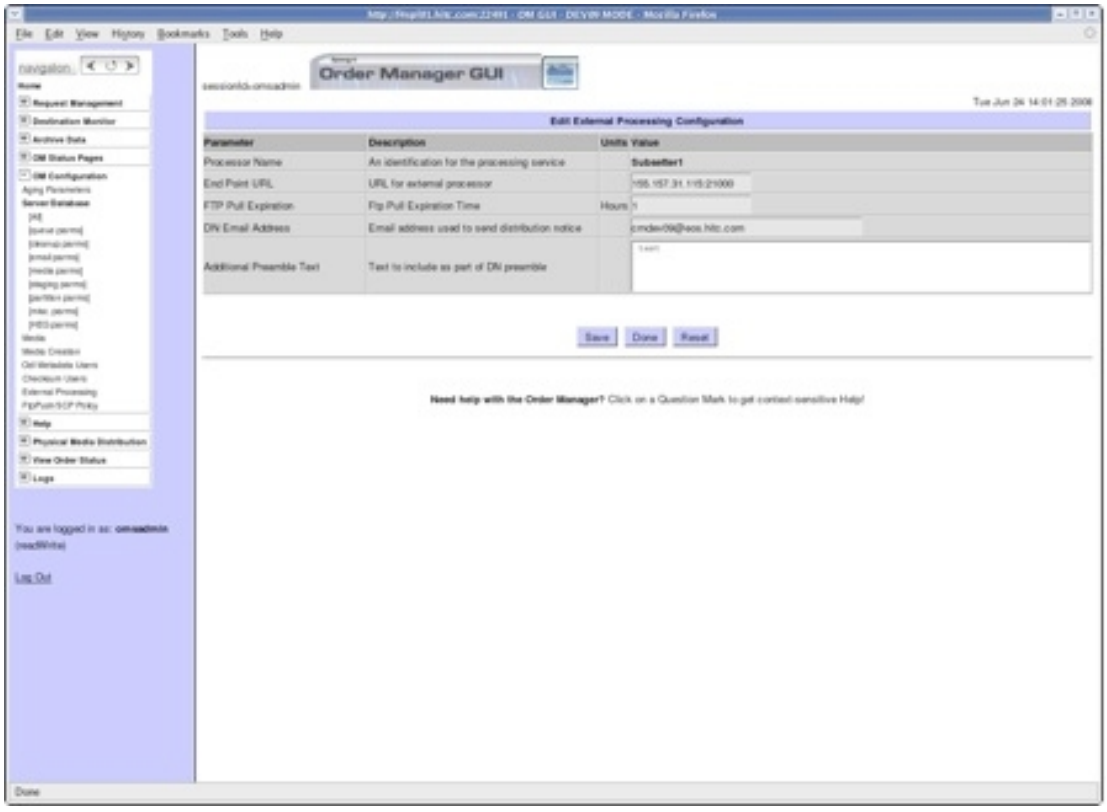


Figure 4.7.7-40. View/ Edit External Subsetting Configuration

Figure 4.7.7-40 allows the authorized operator either view or edit the existing external processing service configuration. Processor Name does not allow to be edited.

4.7.7.4.1 DataAccess Processing

Configuration parameters on the **Data Access Services Configuration** page are grouped by service (Figure 4.7.7-41).

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.

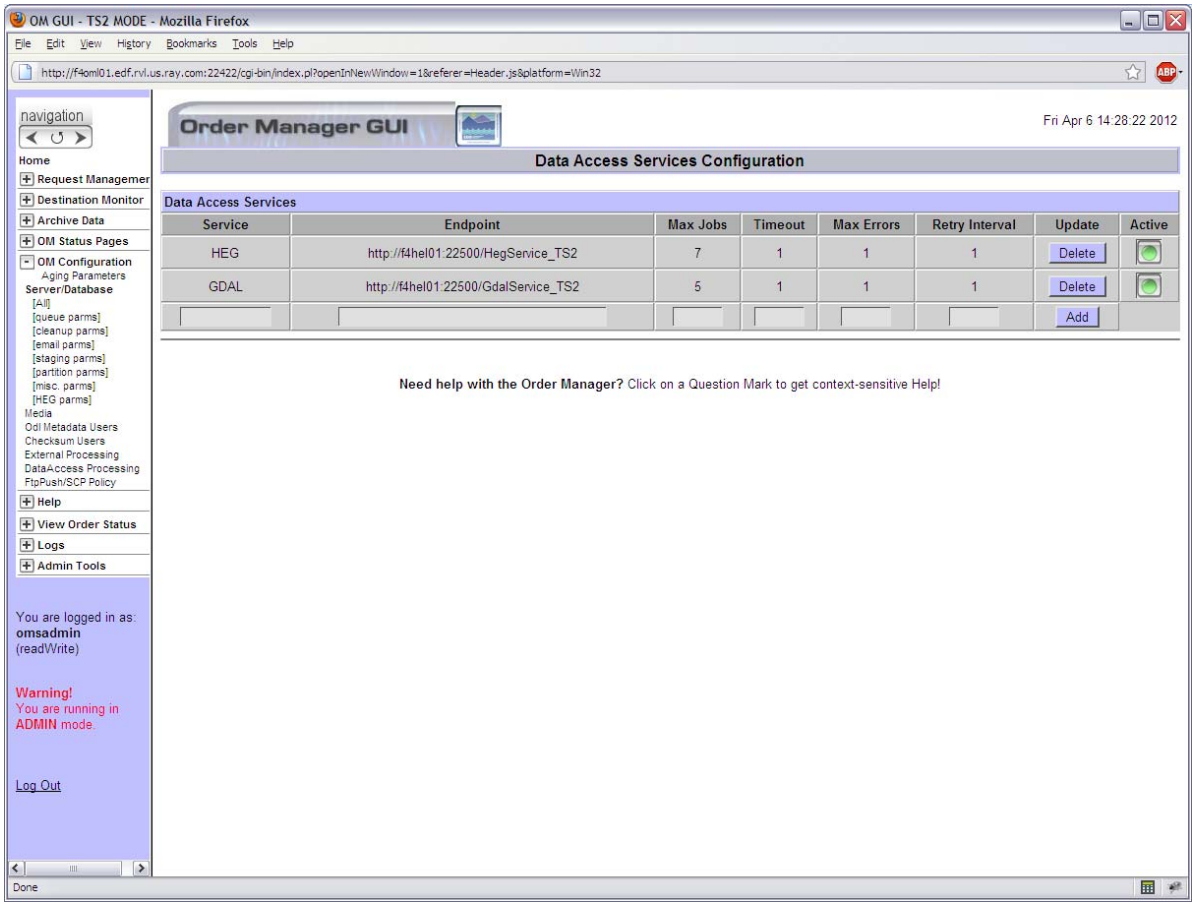


Figure 4.7.7-41. DataAccess Processing Configuration

4.7.7.4.2 FTP Push / SCP Policy Configuration

Note: Limited Capability operators are limited to viewing FTP Push / SCP Policy configuration only. They cannot edit, add, or delete destinations.

This page can be accessed by clicking "FTP Push / SCP Policy" under the **OM Configuration** menu. This page allows the full-capability operators to define and configure the fine-tuning parameters of an FTP Push / SCP destination.

Frequently Used vs. Non-configured Destinations

All FTP Push destinations belong to either the Frequently Used group, or the general non-configured group and all SCP destinations belong to the Frequently used group. All FTP Push destinations not specifically defined as a Frequently Used destination are configured on the front page (see Figure 4.7.7-42) under "Settings for Non-Configured Destinations". These settings also serve as default values for new destinations.

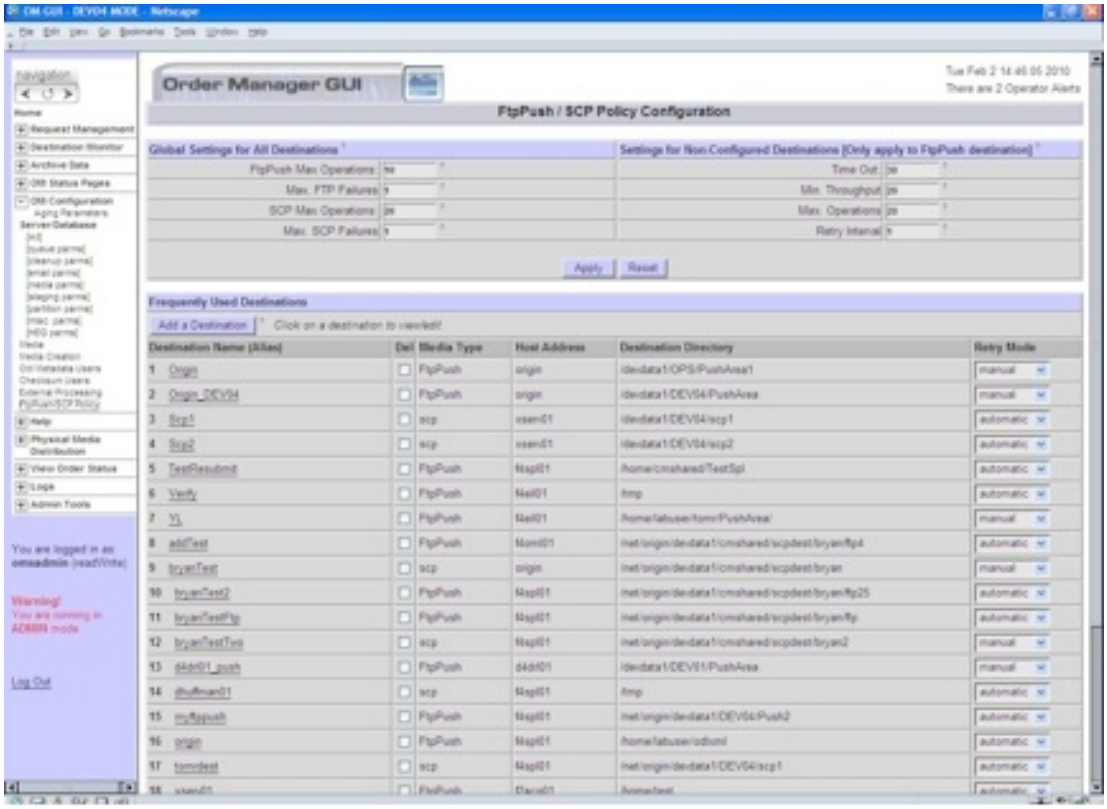


Figure 4.7.7-42. FtpPush/SCP Policy Configuration (Main Page)

Global Settings for All Ftp Push / SCP Destinations

These are two parameters that apply to all destinations regardless of their individual settings: Max Operations and Max Failures for FtpPush and SCP, respectively. Non-configured destination settings only apply to FtpPush destinations.

Adding a Destination

Click on the "Add a Destination" button under the Frequently Used Destinations section of the main page. This will open up a page, shown in Figure 4.7.7-53, which will allow the operator to define and configure a destination for either FtpPush or SCP. A destination must already exist (i.e., it must be a destination that is currently in use by one or more Orders).

The definition of a destination is:

1. Name (Alias): A descriptive name or handle by which the destination can be easily identified. Aliases must be unique.
2. Target Directory: The directory on the remote host to which files will be pushed.
3. Host/IP Address: The remote machine name or IP address.
4. Media Type: FtpPush or SCP

The combination of these attributes constitutes a Frequently Used Destination. All destinations *must* have exclusive attributes and an exclusive Alias.

The configuration parameters for the destination are already preloaded with default values from the non-configured destinations (only apply to FtpPush). The configuration parameters are described in Table 4.7.7-16.

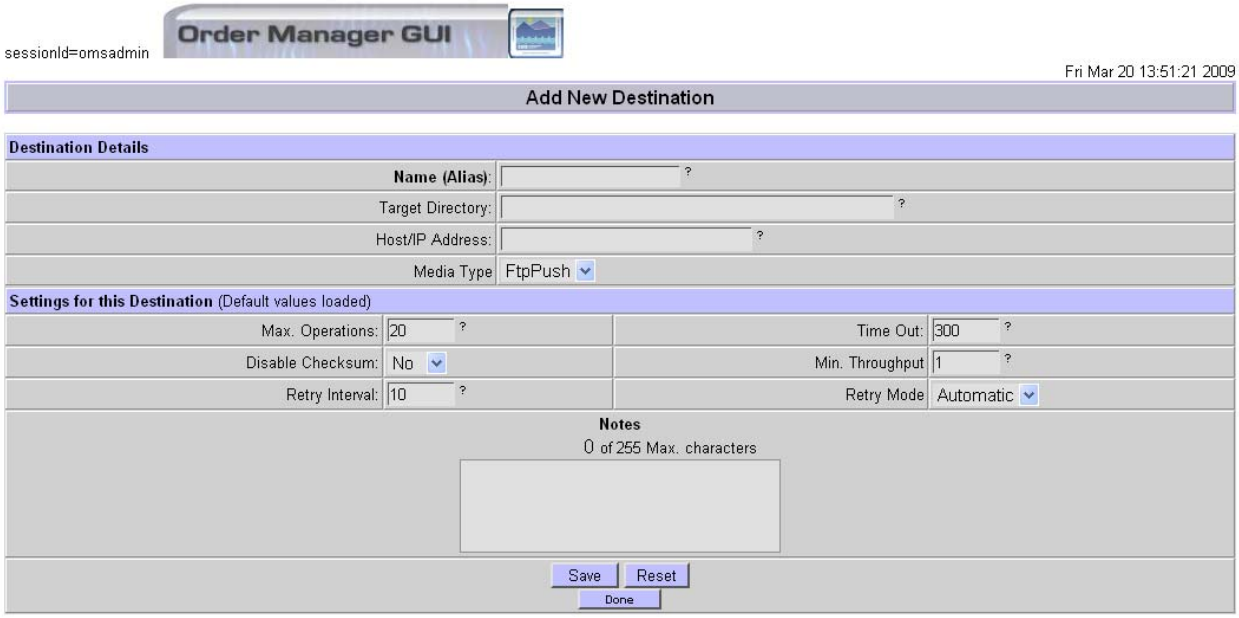


Figure 4.7.7-43. FtpPush/SCP Policy Configuration: Add New Destination

Configuring a Destination

To configure a defined Frequently Used Destination, click on the Destination Name on the main FtpPush/SCP Policy Configuration Page. This will display the details of the configuration for that destination, as shown in Figure 4.7.7-44. From there, you can modify the destination attributes (Target Directory, Host/IP Address) and the configuration parameters for that destination. The (Name (Alias) field cannot be modified. Once you are finished, click "Save" at the bottom of the screen. Click "Done" to move back to the main FtpPush/SCP Policy Configuration page. **Note:** The "Done" button will *not* save any changes made to the destination – always click "Save".

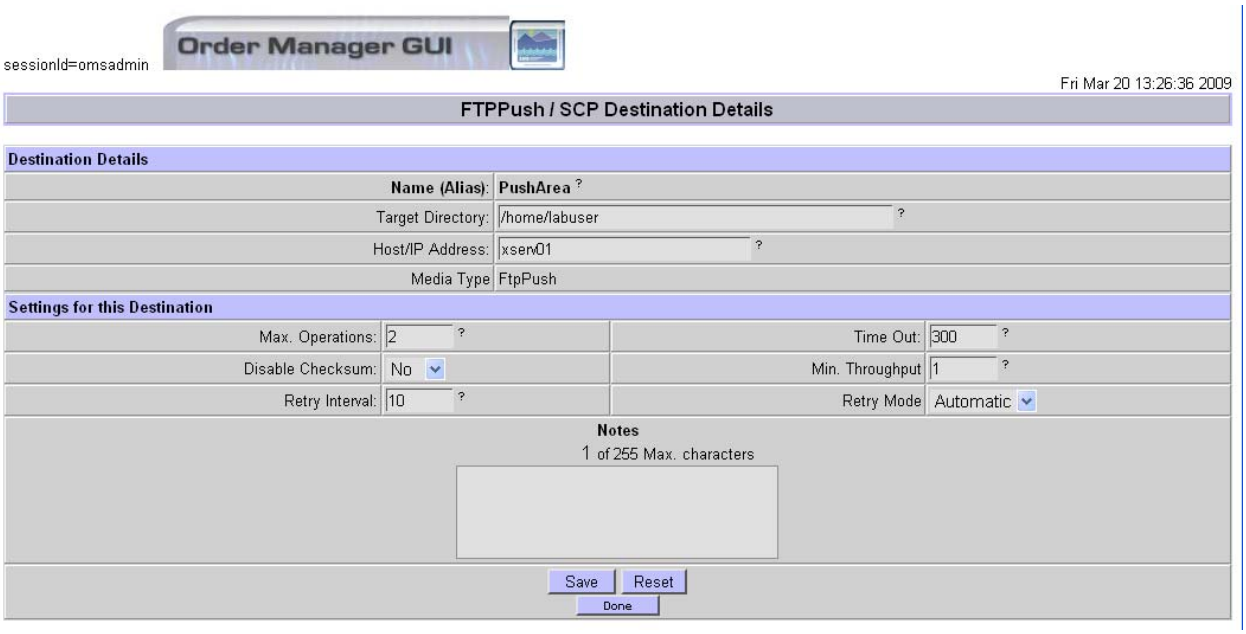


Figure 4.7.7-44. FtpPush Policy Configuration: FtpPush Destination Detail

Removing a Destination

To remove a destination from the Frequently Used Destination group, go to the main FtpPush/SCP Policy Configuration page and select the destination you wish to delete by checking the box next to the destination name in the Del column. Once you have selected the destinations you wish to remove, click on "Delete Selected Destinations" at the bottom of the screen. You will be prompted for confirmation.

Removing a destination does not actually delete the destination. Rather, it moves that destination to the non-configured group and erases its individual configuration parameters.

Table 4.7.7-16. FtpPush/SCP Policy Configuration Parameters (1 of 2)

Parameter	Scope	Data Type	Description
Max Operations	Global	Int	The maximum number of concurrent FTP Push Operations for *all* destinations added together.
Max. FTP Failures	Global	Int	The maximum number of consecutive FTP transfer failures for any destination, which, when exceeded, causes the suspension of that destination.
Max. SCP Operations	Global	Int	The maximum number of concurrent SCP Operations for all destinations added together.

Table 4.7.7-16. FtpPush/SCP Policy Configuration Parameters (2 of 2)

Parameter	Scope	Data Type	Description
Max. SCP Failures	Global	Int	The maximum number of consecutive SCP transfer failures for any destination, which, when exceeded, causes the suspension of that destination.
Disable Checksum	Destination	Yes/No	Allows user to disable checksumming of file distributed to this destination.
Time Out	Destination	Int	An extra time allotment that is applied to the expected throughput, such that: expected throughput = min. throughput + timeout.
Min. Throughput	Destination	Float	The minimum data throughput in MB/sec for a particular destination.
Max. Operations	Destination	Int	The maximum number of concurrent FTP Push Operations for a particular destination (exclusive of but subject to the global Max Operations).
Retry Interval	Destination	Int	The waiting period, in minutes, before FTP Push operations for a suspended destination are automatically retried.
Retry Mode	Destination	n/a	Specifies whether this destination should retry automatically or manually. For Non-Configured Destinations, this is always Automatic.

4.7.7.5 Help Page

The operator can view the help information on a particular page by clicking on the **Need help with the Order Manager?** link at the bottom of the page which will display a small pop-up window for help on that page. The operator may also click on the **Help** tab at the top of the page. The help information is indexed and also contains links to help on related topics. The index to available topics includes:

- About The Order Manager GUI
- Recently Added Features
- Request Management
    - Open Interventions
        - Viewing Intervention Details
        - Working an Intervention
    - Operator Alerts
    - Completed Interventions
    - Distribution Requests
- FtpPush Monitor
    - FtpPush Distributions Requests

    - FtpPush Operations
    - FtpPush Destinations
    - Staging Requests
- OM Status Pages
    - OM Queue Status
    - Staging Operations
    - Staging Status by Media Type
    - Staging by FtpPush Destination
- OM Queue Status
- OM Configuration
    - Aging Parameters
    - Server/Database Configuration
    - Media Configuration
    - FtpPush Policy Configuration
    - Archive Resources
- OM Server Statistics
- OM Log Viewer

Figure 4.7.7-54 displays a sample Help Page.

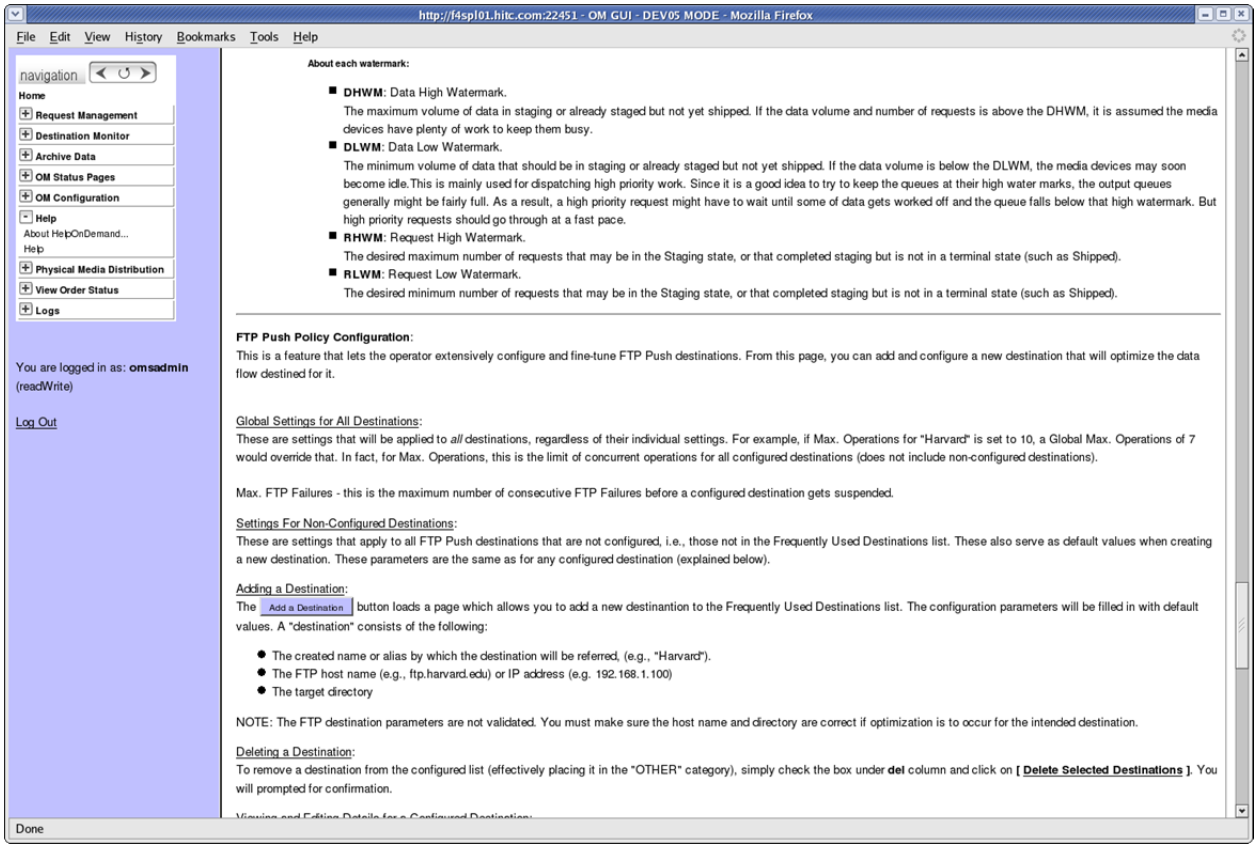


Figure 4.7.7-45. Sample Help Page

HelpOnDemand

This is a feature that gives the operator context-sensitive help for each page, but more specifically for particular controls or parameters that may not be entirely self-descriptive. Anywhere there is little question mark next to a button or text field, click on it and a dialog box describing that item will appear. Figure 4.7.7-46 shows an example of HelpOnDemand for the Time Out parameter on the FtpPush Policy Configuration page.

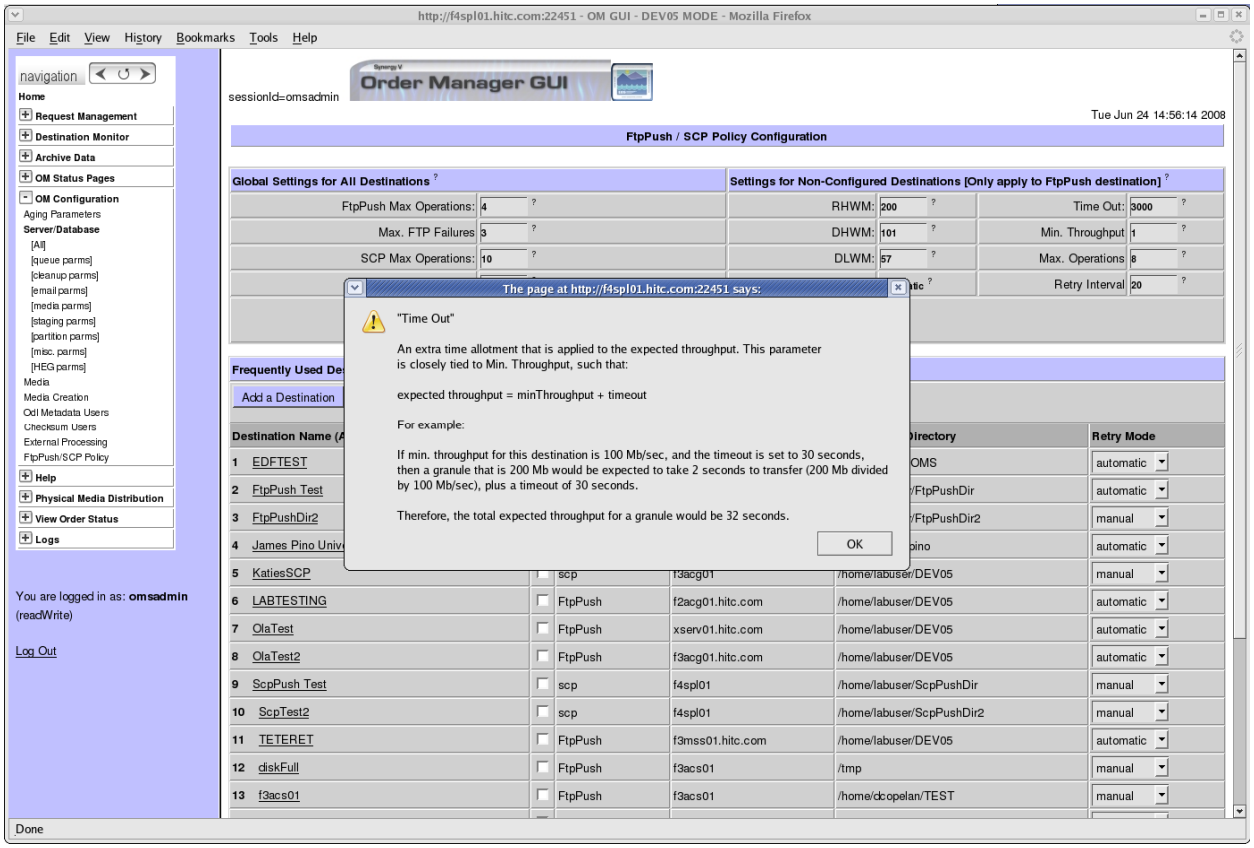


Figure 4.7.7-46. HelpOnDemand Example

4.7.7.6 OM GUI Log Viewer

The Log viewer, shown in Figure 4.7.7-47, is a simple diagnostics tool to aid the operator when an error occurs. It lets you view part or the entire Order Manager Page log file, which is a file specifically generated for the OM GUI by the OM GUI. It is usually sufficient to view the last 200-500 lines for recent activity. Simply enter the last number of lines of the log file you wish to view and click "OK". The entire log may be viewed by leaving the text box empty (or entering 0, or a number greater than or equal to the total number of lines in the file) and clicking on "OK".

Since the log file can grow to a very large size after continued use of the Order Manager Page, it is not recommended to load the entire log file all at once.

A helpful feature is included that shows or hides the line numbers, so that the log text can be easily cut and pasted to other places. This is especially useful for SQL:

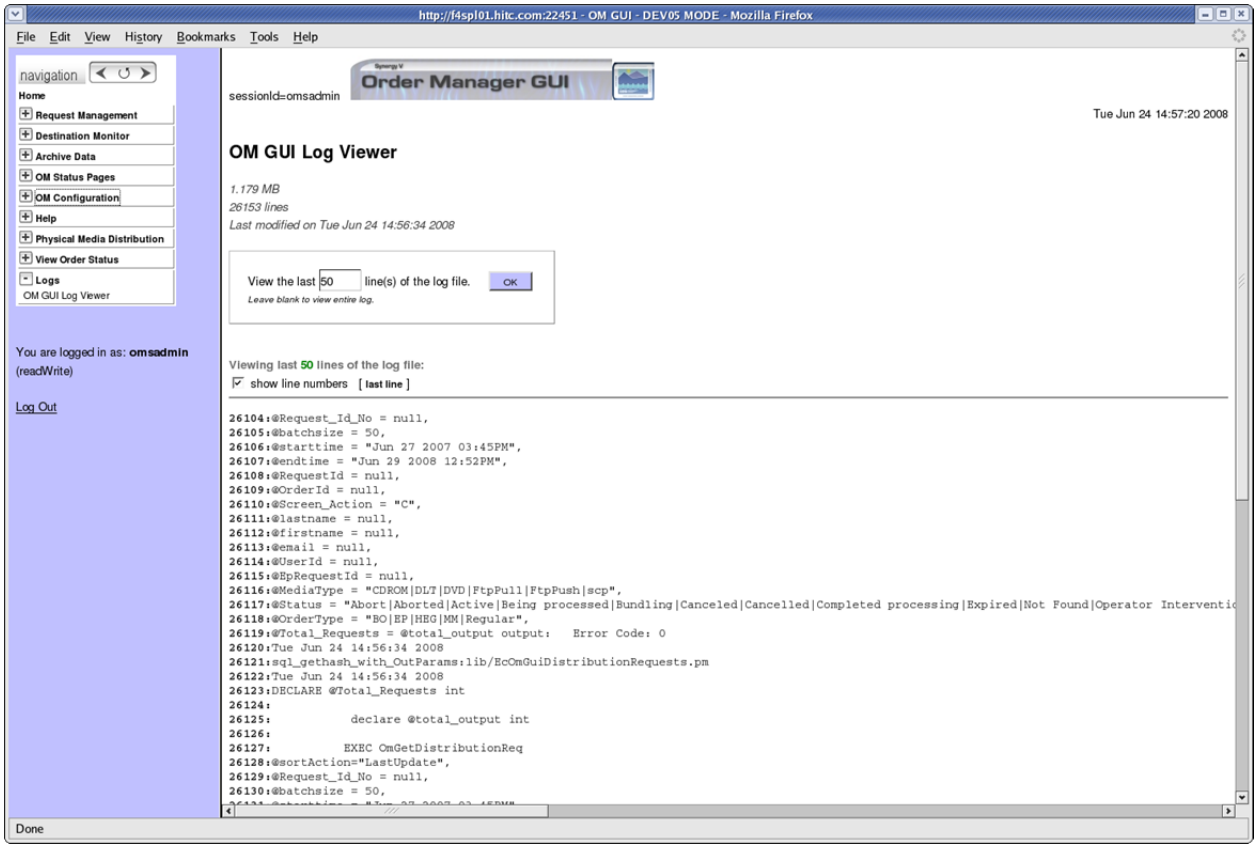


Figure 4.7.7-47. OM GUI Log Viewer Example

4.7.7.7 Required Operating Environment

The following environment is required for the OM GUI to work properly.

The O/S requirements are Linux.

The OM GUI requires the installation of Netscape 7.0 or higher.

4.7.7.8 Interfaces and Data types

The OM GUI exchanges data between the Web Browser and database, using Perl CGI and DBI Modules for the interface.

4.7.7.9 Databases

The OM GUI accesses the OMS database.

4.7.7.10 Special Constraints

There are no special constraints to running the OM GUI.

4.7.7.11 Outputs

There are no outputs from the OM GUI except for status and error messages.

4.7.7.12 Events and Messages

The OM GUI writes status and error messages to the EcOmGui.log file in the directory /usr/ecs/<MODE>/CUSTOM/WWW/OMS/cgi-bin/logs.

4.7.7.13 Reports

The OM GUI does not generate reports.

This page intentionally left blank.

4.7.8 Science Command Line Interface (OmSCLI) in OMS

The Science Command Line Interface (OmSCLI) allows the operator to acquire ECS products by sending orders directly to the Order Manager Server using an operator-provided file of granule identifiers and a parameter file of distribution options. The operator can request distribution of the ordered products by FtpPush, FtpPull, or secure copy (scp). The OmSCLI will not generate Metadata Control Files (MCFs) since that functionality is now performed by the ESDT Maintenance GUI.

The OmSCLI is installed on the same host as the Order Manager Server. It includes an acquire wrapper script, EcCoEnvPerl, 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.

4.7.8.1 Quick Start Using the OmSCLI

To invoke the OmSCLI, enter the following on the command line:

acquire <mode> -p <parameterfile> -f <file> -t <tag> [-decrypt]

Table 4.7.8-1 describes the OmSCLI command line parameters.

Table 4.7.8-1. Command Line Parameters of the SCLI Tool

Parameter Name	Description
<mode>	Required. The mode in which the tool runs (i.e. OPS, TS1).
-p <parameterfile>	Required. <parameterfile> is the full path name of a file containing all parameters needed to control distribution of the acquired granules. The parameters are listed one per line in the parameter file, in PARAMETERNAME = VALUE format.
-f <file>	Required. <file> is the full path name of a file that contains identifiers for up to MAXURSPERACQUIRE granules to be acquired. Granule identifiers are listed one per line in the file, and may be in UR, GeoID format, or LocalGranuleID format. The file many contain a mixture of URs, GeoIDs and LocalGranuleIds.
-t <tag>	Required. <tag> is a unique alphanumeric request identification, used to track the distribution request internally.
-decrypt	Optional; Used only for FTPPush distribution requests. If present, indicates that the FTPPush and SCP password passed in is encrypted and needs to be decrypted by the OmSCLI. This option does not work. It will be fixed in NCR 8048998

4.7.8.2 OmSCLI Command Line Parameter Formats

-p <parameterfile>

The parameter file must contain the following distribution parameters and their values. Parameters are listed one per line in the parameter file, in PARAMETERNAME = VALUE format, and may be listed in any order.

DDISTMEDIATYPE = <FtpPush>|<FtpPull>|<scp> (required)

DDISTMEDIAFMT = FILEFORMAT (required)

FTPUSER = <FTP user id> (required for FtpPush, SCP distributions)

FTPPASSWORD = <FTP Password> (required for FtpPush, SCP distributions)

FTPHOST = <FTP host name> (required for FtpPush, SCP distributions)

FTPPUSHDEST = <full path name of push directory on FTPHOST> (required for FtpPush, SCP distributions)

ECSUSERPROFILE = <user id associated with the request> (required)

PRIORITY = HIGH | VHIGH | NORMAL | LOW | XPRESS. (required)

DDISTNOTIFYTYPE = MAIL (required)

NOTIFY=<email address> (required)

USERSTRING=<text which describes the request; this string will be displayed on the Operator Intervention Detail page on the OMS GUI for FtpPush and FtpPull orders>.

Example of parameter file:

1. FTP Pull:

   ECSUSERPROFILE = ECSGuest
   PRIORITY = NORMAL
   DDISTMEDIATYPE = FtpPull
   DDISTMEDIAFMT = FILEFORMAT
   USERSTRING = Test_For_Pull
   DDISTNOTIFYTYPE = MAIL
   NOTIFY = testforpull@eos.hitc.com

2. Ftp Push

   ECSUSERPROFILE = labuser
   FTPUSER = labuser
   FTPPASSWORD = mypasswd
   FTPHOST = f4eil01
   FTPPUSHDEST = /home/labuser/PushArea/
   PRIORITY = HIGH
   DDISTMEDIATYPE = FtpPush
   DDISTMEDIAFMT = FILEFORMAT
   USERSTRING = Test_For_Push
   DDISTNOTIFYTYPE = MAIL
   NOTIFY = testforpush@eos.hitc.com

3. SCP

PRIORITY=VHIGH
DDISTMEDIATYPE=scp
DDISTNOTIFYTYPE=MAIL
DDISTMEDIAFMT=FILEFORMAT
ECSUSERPROFILE=labuser
FTPUSER=labuser
FTPHOST=f4spl01
USERSTRING=Test_For_Scp
FTPPUSHDEST=/home/labuser/ScpPushDir
FTPPASSWORD=testpasswd
NOTIFY=testforscp@raytheon.com

-t <tag>

The user populates the OmSCLI tag parameter with a unique alphanumeric request identification.

-f <file>

The <file> contains a list of up to MAXURSPERACQUIRE granule identifiers, one for each granule to be acquired.

Granule identifiers are listed one per line in the file, in UR, GeoID or LocalGranuleId format. The file may contain a mixture of URs, GeoIDs and LocalGranuleIds.

Example granule identifiers:

UR:10:DsShESDTUR:UR:15:DsShSciServerUR:10:[:DSSDSRV]:18:SC:MOD14.086:62196
MOD14.A2006159.0030.086.2006159125821.hdf

SC:MOD14.086:62197

For each LocalGranuleId listed in the file, the OmSCLI will invoke a search for that LocalGranuleId in the AIM inventory database (via an EcOmDb stored procedure) and will convert the LocalGranuleId to GeoID format. If more than one granule is found in the AIM inventory database for a given LocalGranuleId, all granules found will be included in the request.

For each UR listed in the file, OmSCLI will extract the GeoId from that UR.

4.7.8.3 SCLI Command Line Utility Configuration File

The Command Line Utility has an associated configuration file with values stored in a basic PARAMETER = VALUE format. The configuration file is called EcOmSCLI.CFG, and is stored in the /usr/ecs/<mode>/CUSTOM/cfg directory for the mode. Table 4.7.8-2 describes its contents:

Table 4.7.8-2. OmSCLI Configuration File Parameters

Parameter Name	Value Description
Site	DAAC Name
MODE	The mode that OmSCLI is run in
SubSysName	OMS
Name	EcOmSCLI
ApplicationID	1300000
ProgramID	1300008
AppLogSize	The maximum ALOG size
AppLogLevel	ALOG level
DebugLevel	Debug log level
MajorVersion	1
MinorVersion	0
SCLISeniorTransactionID	Unique ID for the request to the OrderManager
SCLI_MODE	The mode in which the SCLI is run
MAXURSPERACQUIRE	Maximum allowed URs per order
DBSERVER	Name of Postgres SQL Server
DBSERVERPORT	Port to connect to Database Server
DBMAXRESULTS	Maximum database return rows
DBNAME	OMS database name
DBPASSWDSEED	1300008 (the seed used to get Command Line utility database login password)
DBUSERNAME	EcOmSCLI (the database login name of Command Line utility)
MAX_DB_CONNECTIONS	The maximum database connections Command Line utility uses to connect to the OMS Database
SDSRV__DB_MAX_JOINS	Maximum number of database join operations
DSSSrEnv_DB	DBUSERNAME DBPASSWDSEED DBNAME DBMAXRESULTS SYBINTERFACES SYBASE_SERVER DB_MAX_JOINS MAXURSPERACQUIRE SCLI_MODE
DSSSrEnv	$DSSSrEnv_DB $DSSSrUNIXEnv
num_retries	Number of retries when DB can't connect to the DB
sleep_sec	Number of seconds between retries

4.7.8.4 Required Operating Environment

This command line utility runs on the Linux 2.x platforms.

4.7.8.5 Interfaces and Data

Table 4.7.8-3 lists the supporting products this tool depends upon to function properly.

Table 4.7.8-3. Interface Protocols

Product Dependency	Protocols Used	Comments
OMS Database	SQL	Via SQL server machine
Perl	Perl scripts	

4.7.8.6 Databases

Table 4.7.8-4 lists the databases stored procedures and tables used by the command line utility.

Table 4.7.8-4. SCLI Interaction with OrderManager Database

Database	Stored Procedure	Tables
EcOmDB_<MODE>	OmGetGranulesByLGID	EcInDb_<MODE>..AmGranule EcInDb_<MODE>..AmCollection

Because the OmSCLI passes its database environment to the Order Manager client, the user EcOmSCLI must have access to the EcOmDb_<MODE>, EcInDb_<MODE>, and DataPool_<MODE> schemas. In addition, the name EcOmSCLI must be added as a login.

4.7.8.7 Special Constraints

The acquire wrapper script and EcCoEnvPerl must be located in the /usr/ecs/<mode>/CUSTOM/utilities directory of the mode.

The OmSCLI and Perl scripts must be installed on the same host as the OrderManagerServer.

4.7.8.8 Outputs

The OmSCLI writes processing status messages to a single application log (SCLI.log) in the logs directory of the mode with the tag identifier and final submittal status

If OmSCLI fails, the OmSCLI writes to temporary log files with error information.

Example of sample output from OmSCLI:

Running /usr/ecs/OPS/CUSTOM/bin/OMS/EcOmSCLI ConfigFile /usr/ecs/OPS/CUSTOM/cfg/EcOmSCLI.CFG ecs_mode OPS /home/dzamora/acquire/parameterfile.acquire.ftppull /home/dzamora/acquire/granules_to_order tag11122332Successfully open file /home/dzamora/acquire/parameterfile.acquire.ftppull

Successfully open file /home/dzamora/acquire/granules_to_order

The tag is: tag11122332

OmSCLI: The new rpcId Id is : SCLI:tag11122332

OmSCLI: before create nonbundling order

```
sql:select * from OmCreateNonBundlingOrder ('ECSGuest', 'SCLI', null, null, 'FtpPull',
'dz93012@gmail.com', 'VHIGH', 'acquire_test', null, null, null, null, null, null, null, null, null,
null, null, null, null, null, null, null, null, null, null, null, null, null, null, null, null, null, null,
null, null, null, null, null, null, null, null, null, null, null, null, null, null, null, null, null, null,
null, null, null, null, 'SCLI:tag11122332', null, 2, null)

after executeOK

OmCreateNonBundlingOrder completed successfully

OmSCLI:  after create nonbundling order

currGranType=SC

currEsdtType=AST_L1B.003

currGranuleId=398438

regCount=0

a398438

granid=398438

granid=398438

currGranType=SC

currEsdtType=MIL2ASAE.002

currGranuleId=398437

regCount=1

a398437

granid=398437

granid=398437

After GetResultSet  OK

The granules are all valid

Order Submitted to OMS Successfully.
```

OrderId is: 0300095001

RequestId is: 0300093259

2014/08/22 13:05:23.219: 1013: Successfully run ./acquire with exit 0"

4.7.8.9 Event and Error Messages

The SCLI.log contains the final success or failure status of submitting the request to OMS. During processing, information messages and error messages (IO error messages, database connection, and database processing messages) are written to the screen and the temporary logs.

4.7.8.10 Reports

None

This page intentionally left blank.

4.7.9 Overview of the ESDT Maintenance GUI

The ESDT Maintenance GUI is a Web-based interface that allows operators to manage earth science data types (ESDTs) in the Archive Information Management (AIM) system. Using this GUI, an operator can add new ESDTs into the system, as well as view, update, and delete existing ESDTs. The operator can also generate metadata configuration files (MCFs) and ESDT−specific schemas.

Since the ESDT Maintenance GUI is a Web-based interface, it can be accessed from virtually anywhere on the internal network. No custom software installation is required – all that is needed is a Web browser (see **Section 4.6.1.28** Browser Requirements).

This document shows and explains in detail all of the available features and functionality of the ESDT Maintenance GUI, from the first login to complex operator actions.

4.7.9.1 Login Page

This page first appears when the application is loaded. The operator will be required to enter a pre-assigned password, as shown in Figure 4.7.9-1. Once the operator is logged in, the Install ESDT Page will be displayed and the application will be enabled.

Access to the ESDT Maintenance GUI is restricted to a single database username. This username is configured in the ESDT Maintenance GUI configuration file. The operator will log in by providing the password for this user.

The ESDT Maintenance GUI will only allow for one authenticated session at a time. This is to prevent situations where multiple operators may perform conflicting actions. The session time−out value is configured in the web application settings and is configurable via ECS Assist.

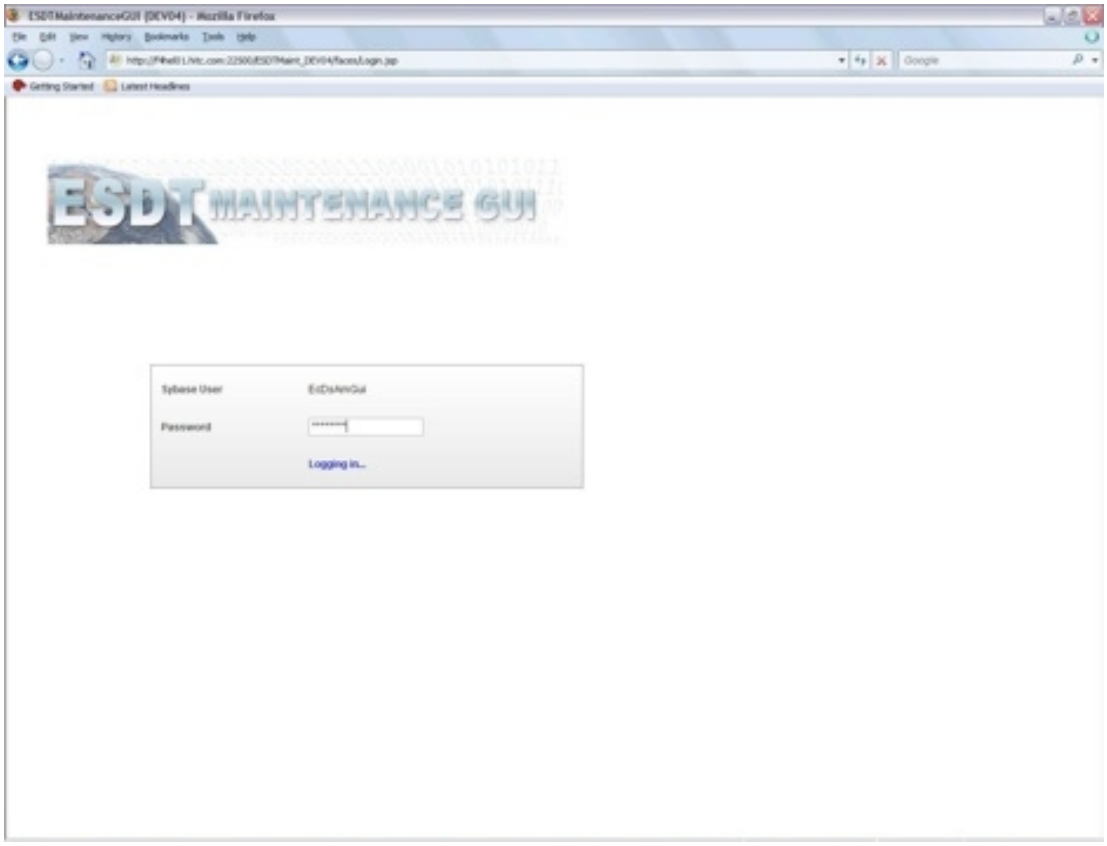


Figure 4.7.9-1. Login Page

4.7.9.2 List ESDT Page

This page first appears when the operator is logged in. The page lists the currently installed ESDTs, as shown in Figure 4.7.9-2.

From this page, the operator can perform the following actions:

- Search for an ESDT by using the browser's built-in search function
- Apply a filter to certain ESDTs
- View descriptor information for a specific ESDTDelete one or more ESDTs
- Generate MCFs for one or more ESDTs
- Generate ESDT-specific schemas for one or more ESDTs
- Navigate to the ESDT installation/update page

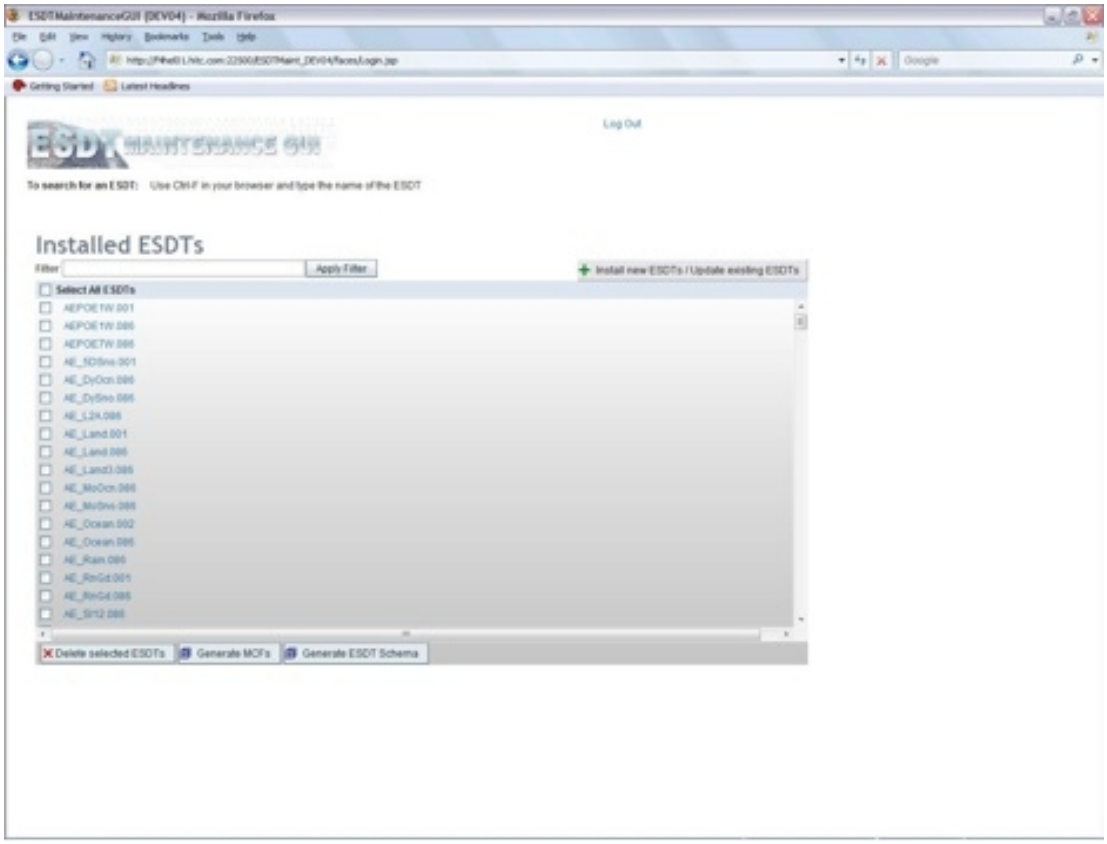


Figure 4.7.9-2. List ESDT Page

4.7.9.2.1 Search for an ESDT by using the browser's built-in search

To search for an ESDT, use Ctrl-F in your browser, type in the name of the ESDT, and click on "Find".

4.7.9.2.2 Filtering the Install ESDT Page

The List ESDT Page includes a filter that can be applied to the list of installed ESDTs. This is useful for selecting particular types of ESDTs for bulk action (i.e., deletion, MCF or schema generation). This is a simple text search and will search based upon the ESDT short name. As shown in Figure 4.7.9-3, "GLA" would return any ESDT with the "GLA" anywhere in the short name. The search is also case-sensitive.

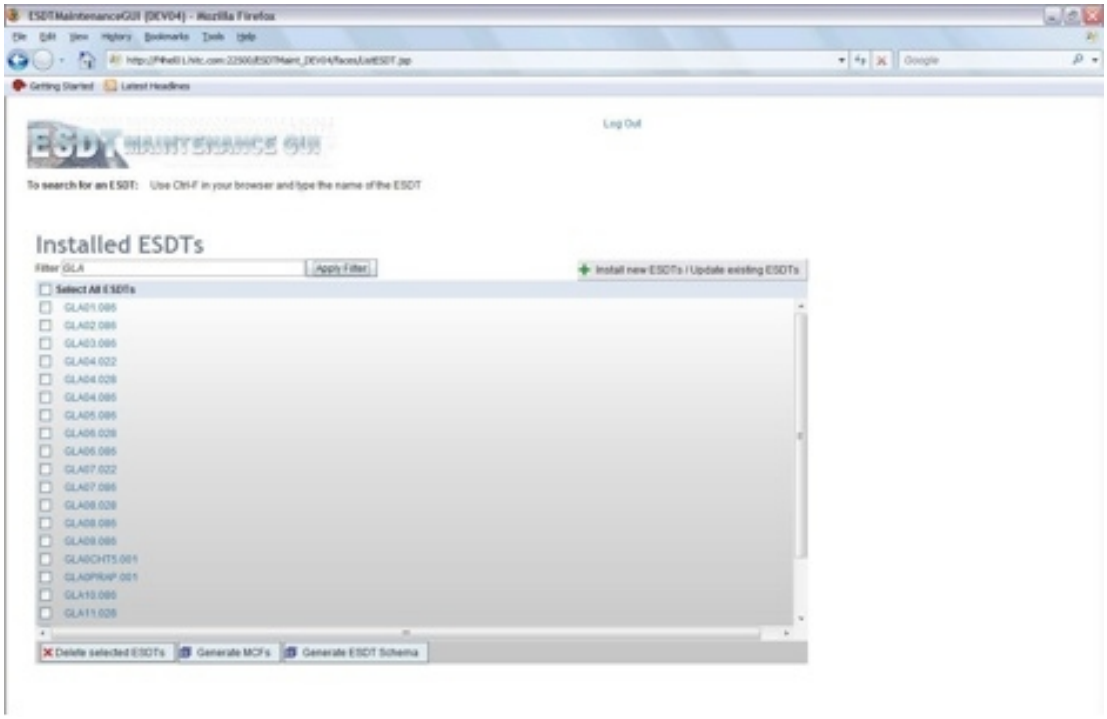


Figure 4.7.9-3. Filtering the List ESDT Page

4.7.9.2.3 View Descriptor Information for a Specific ESDT

From the List ESDT Page, click an ESDT link as shown in Figure 4.7.9-4 to view the ODL and XML descriptor information for a specific ESDT, and this will direct you to the ESDT Detail Page (see section 4.7.9.3 for more details).

4.7.9.2.4 Delete Selected ESDT Action

From the List ESDT Page, the operator can select a list of ESDTs and delete them by clicking on the "Delete selected ESDTs" button as shown in Figure 4.7.9-5.

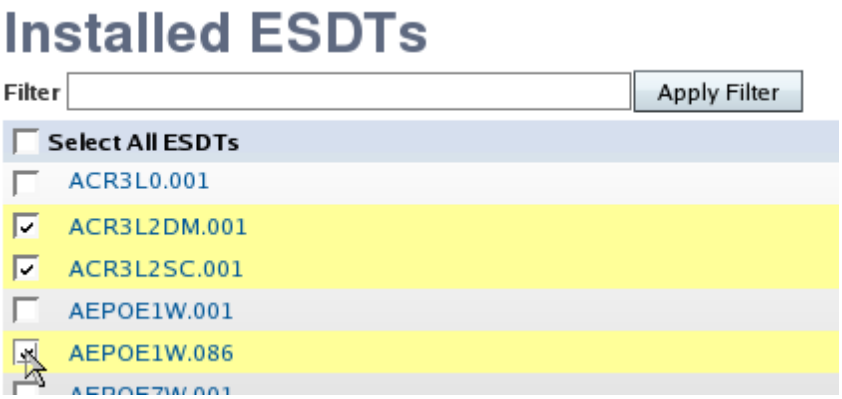


Figure 4.7.9-4. S electing a list of ESDTs

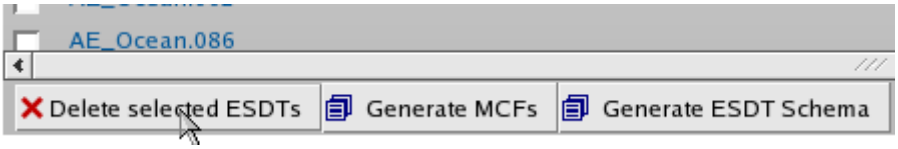


Figure 4.7.9-5. Delete selected ESDTs button

The operator will then be prompted for confirmation to perform the delete action on the selected ESDTs. Confirm the action to continue the delete process.

Once the delete action finishes, the result will be displayed at the top of the page as shown in Figure 4.7.9-6. Depending on the result, one to three possible result tables will be displayed as listed in Table 4.7.9-1.

Table 4.7.9-1. ESDT Delete Action Results

Table	Description
Failed ESDTs	The color of this table is red. This table displays any ESDTs that have failed processing previously and are in an intermediate state (installing, deleting, or updating). This table provides a "Clean Up" button allowing the operator to rollback/remove failed ESDTs. If the ESDTs are in the installing or deleting state, the cleanup action will remove the ESDTs from the database and remove all files (For non-ISO 19115 collections: descriptor, ESDT-specific schema, and MCF. For ISO 19115 collections: descriptor, ISO 19115 collection metadata XML, collection XPath, and granule XPath.) from the physical directory. If the ESDTs are in the updating state, the cleanup action will rollback the ESDT to its previous installed state.
ESDTs with Errors	The color of this table is red. This table displays any ESDTs that have processing errors from the most recent action submitted.
Successful ESDTs	The color of this table is green. This table displays a list of ESDTs that have completed successfully from the most recent action submitted.

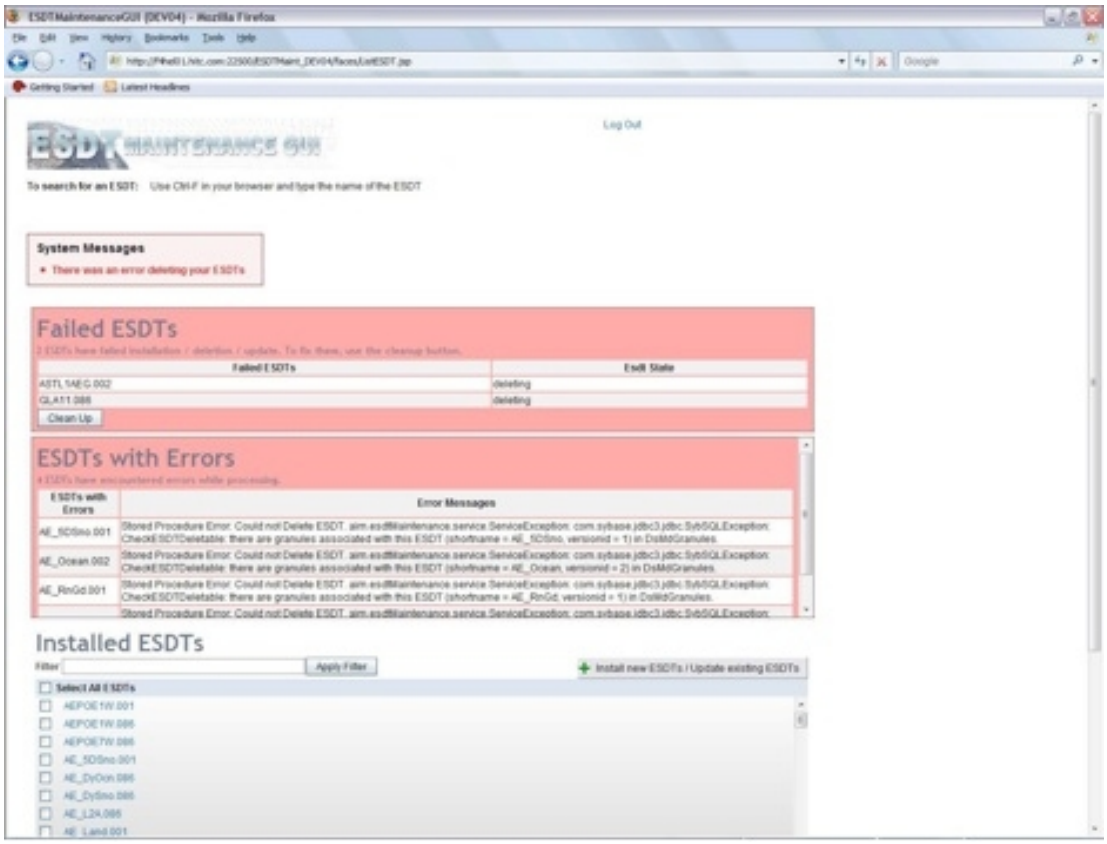


Figure 4.7.9-6. Delete ESDT Result Page

4.7.9.2.5 Generate MCFs for selected ESDTs

From the List ESDT Page, the operator can select a list of ESDTs and generate MCFs for them by clicking on the "Generate MCFs" button as shown in Figure 4.7.9-7. This option has no function for ESDTs that have ISO 19115 metadata.

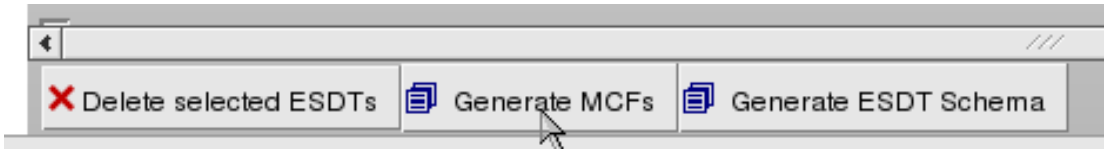


Figure 4.7.9-7. Generate MCF for Selected ESDT Button

The directory the MCFs will be generated to can be found in the EcDsAmESDTMaint.properties file. The result page for the generate MCF action is similar to the delete ESDT action as shown in Figure 4.7.9-8.

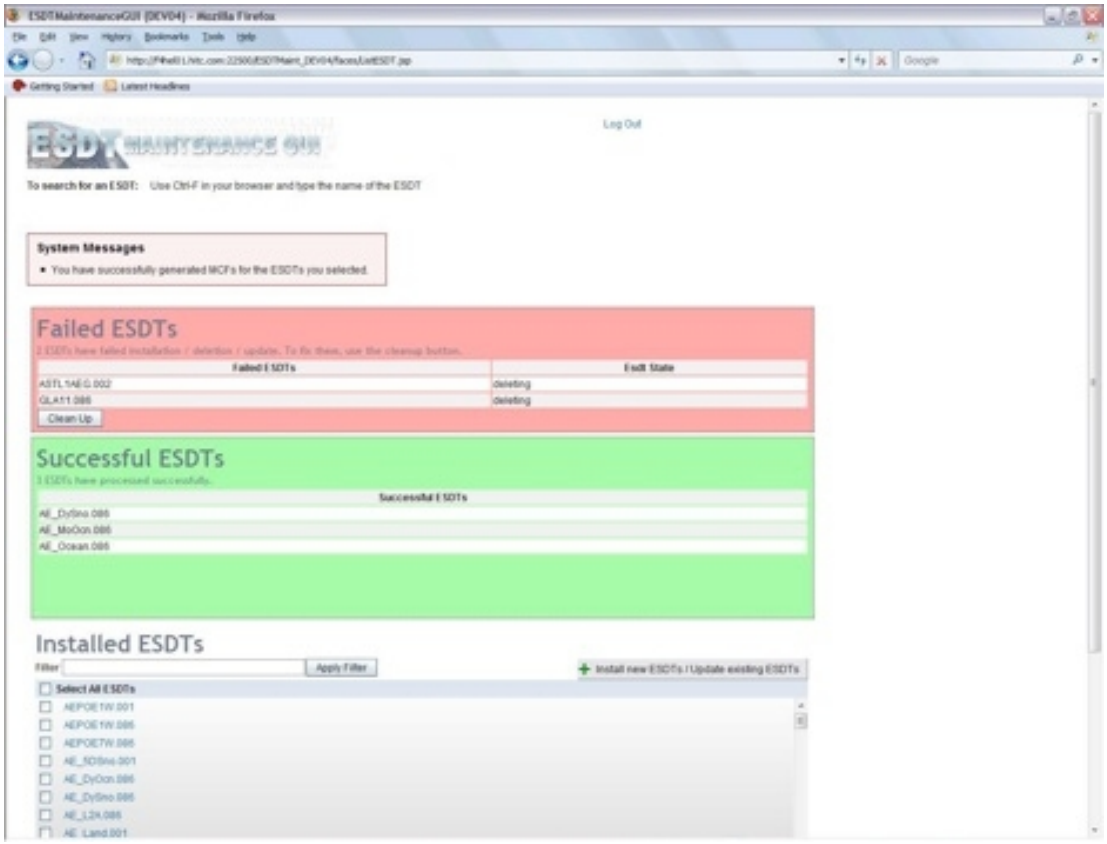


Figure 4.7.9-8. Generate MCF Result Page

4.7.9.2.6 Generate Schema for selected ESDTs

From the List ESDT Page, the operator can select a list of ESDTs and generate schema for them by clicking on the "Generate ESDT Schema" button as shown in Figure 4.7.9-9. This option has no function for ESDTs that have ISO 19115 metadata.

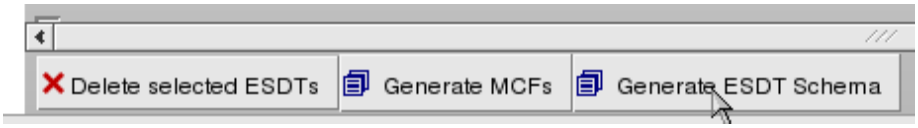


Figure 4.7.9-9. Generate Schema for Selected ESDT Button

The directory the schemas will be generated to can be found in the EcDsAmESDTMaint.properties file. The result page for the generate schema action is similar to the delete ESDT action as shown in Figure 4.7.9-10.

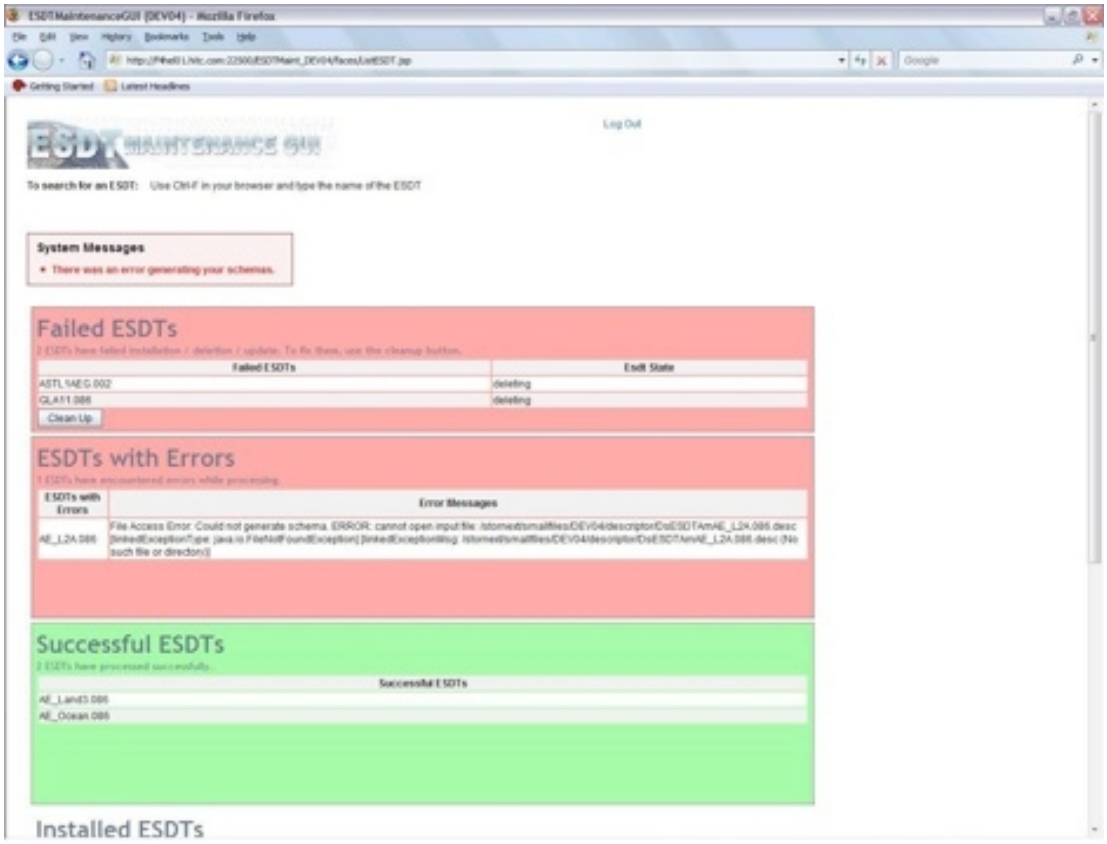


Figure 4.7.9-10. Generate Schema Result Page

4.7.9.3 ESDT Detail Page

From the List ESDT Page, the operator can click on the link for a particular ESDT to get more information about the installed ESDT. Once the link is clicked, the operator will be directed to the ESDT Detail Page as shown in Figures 4.7.9-11, 4.7.9-12, and 4.7.9-13. This page allows the operator to view the ODL descriptor file or to view the XML representation of the descriptor file. To view the ODL file, click on the "ODL" tab and to view the XML file, click on the "XML" tab.

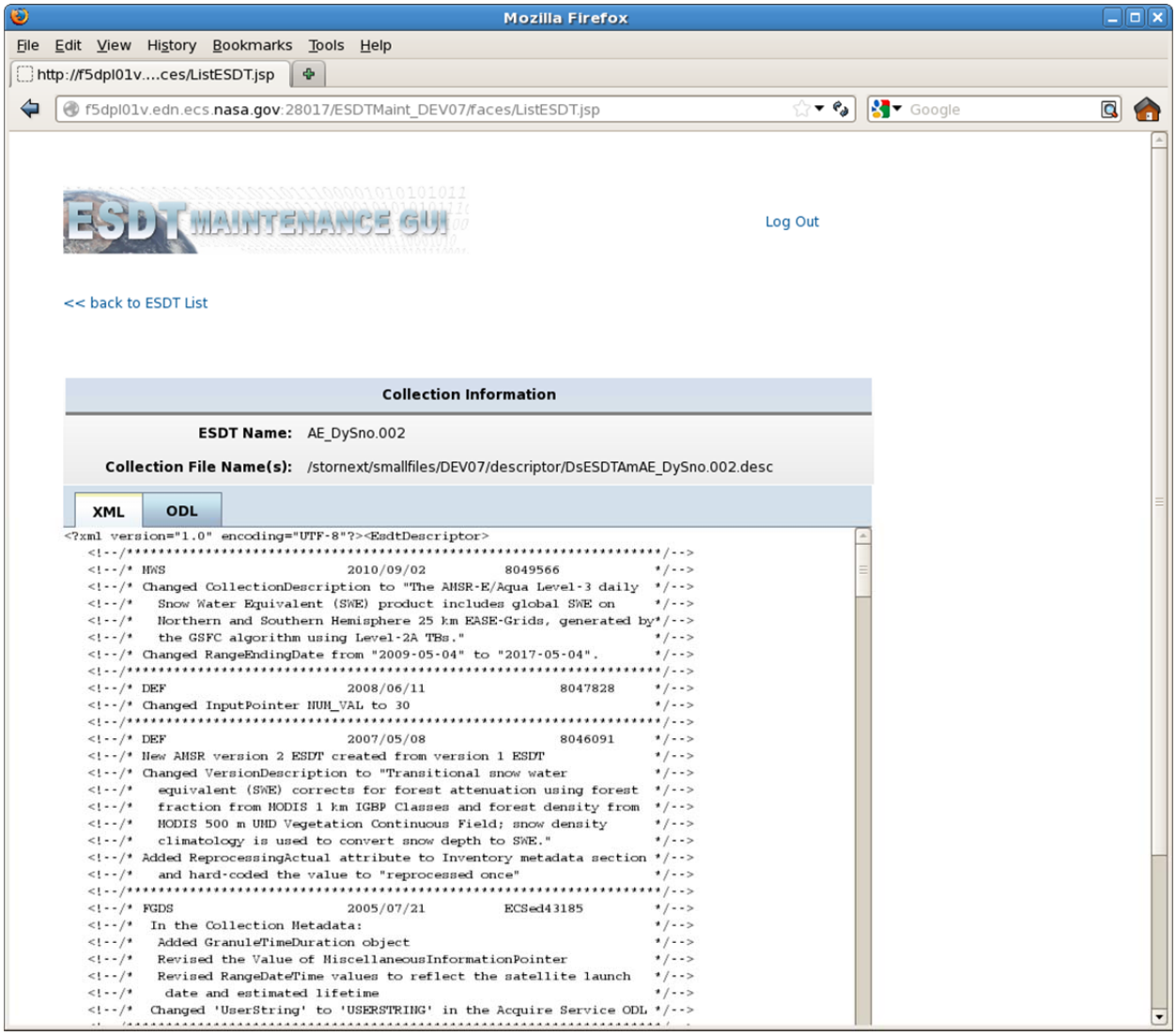


Figure 4.7.9-11. ESDT Detail Page (view XML)

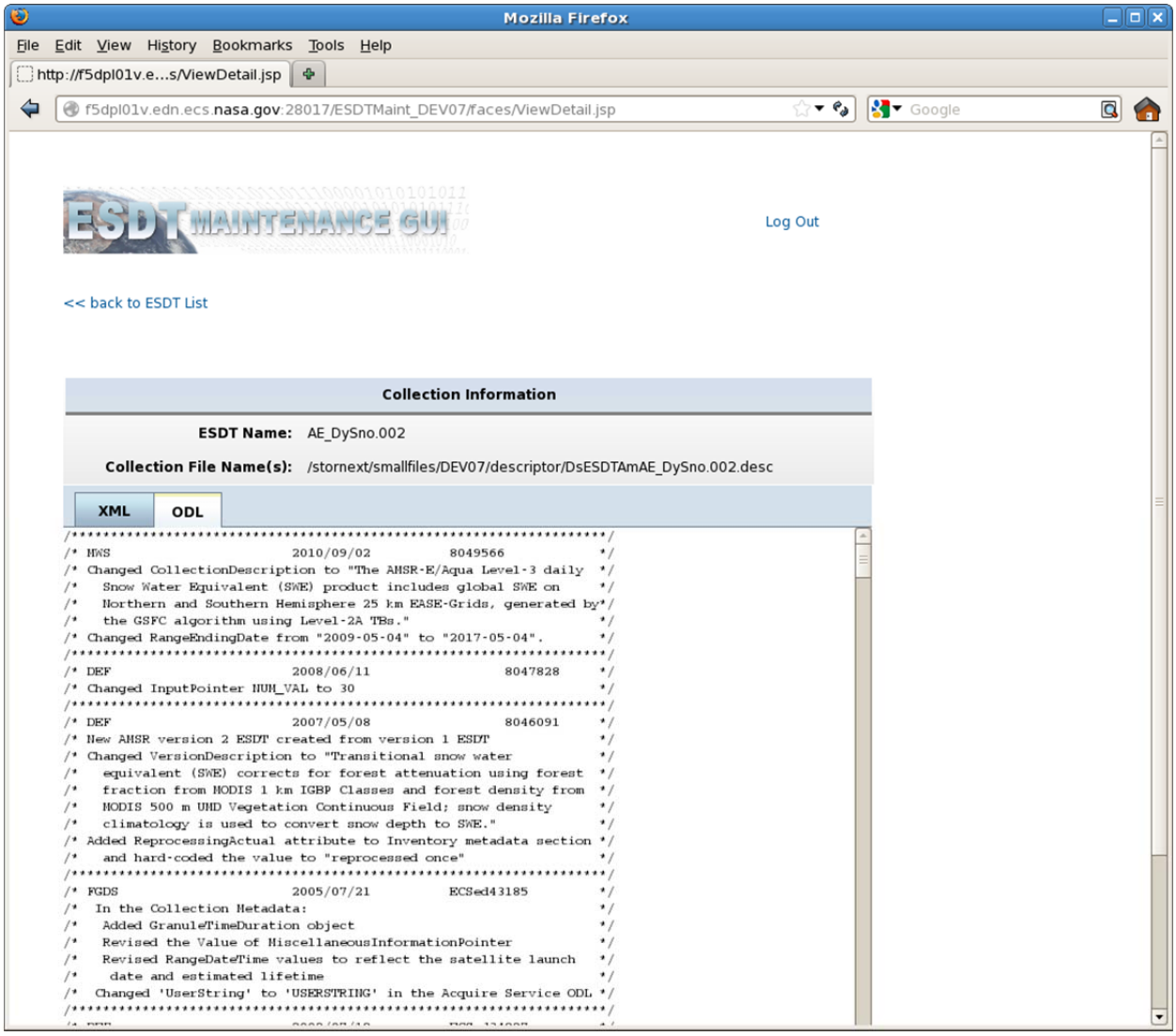


Figure 4.7.9-12. ESDT Detail Page (view ODL)

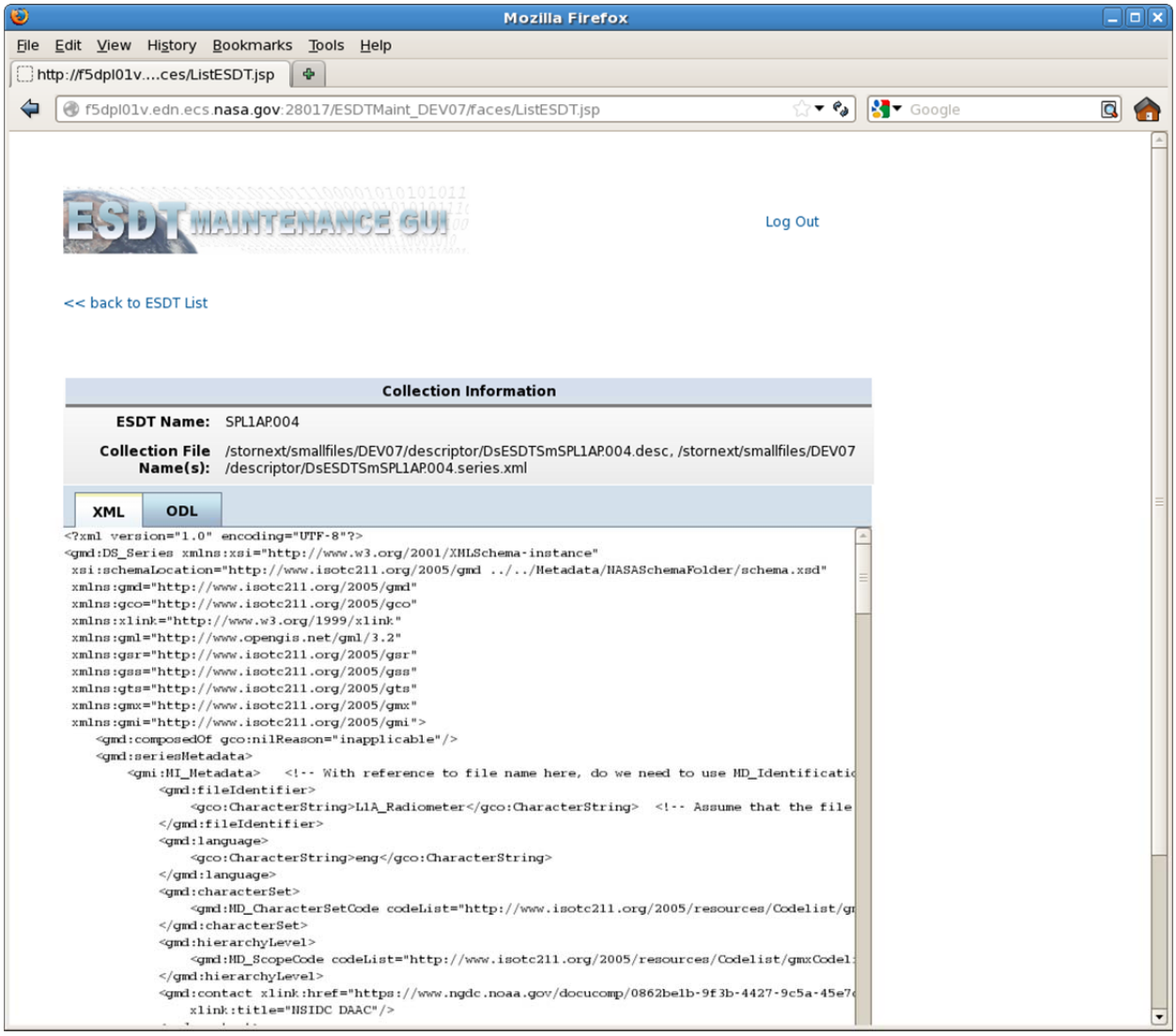


Figure 4.7.9-13. ESDT Detail Page (view XML (ISO 19115))

4.7.9.4 Install ESDT Page

This Install ESDT Page, as shown in Figure 4.7.9-14, appears when the operator clicks on the "Install new ESDTs / Update existing ESDTs" button from the List ESDT Page. From this page, the operator can install new or update existing ESDTs as well as cleanup failed ESDTs.

This page lists all of the ESDTs available for install, update, or cleanup. This list is populated from a pre-configured directory. In the far right column of each ESDT, the state of the ESDT can be viewed. The state indicates if the ESDT is already installed, failed, or not yet installed. Using this information, the operator can choose the appropriate ESDT to install, update, or cleanup.

The page provides shortcuts in selecting ESDTs. There is a button to select all the ESDTs listed, a button to unselect all the ESDTs selected, a button to select all the uninstalled ESDTs, a button to select all the failed ESDTs, and a button to select all the installed ESDTs.

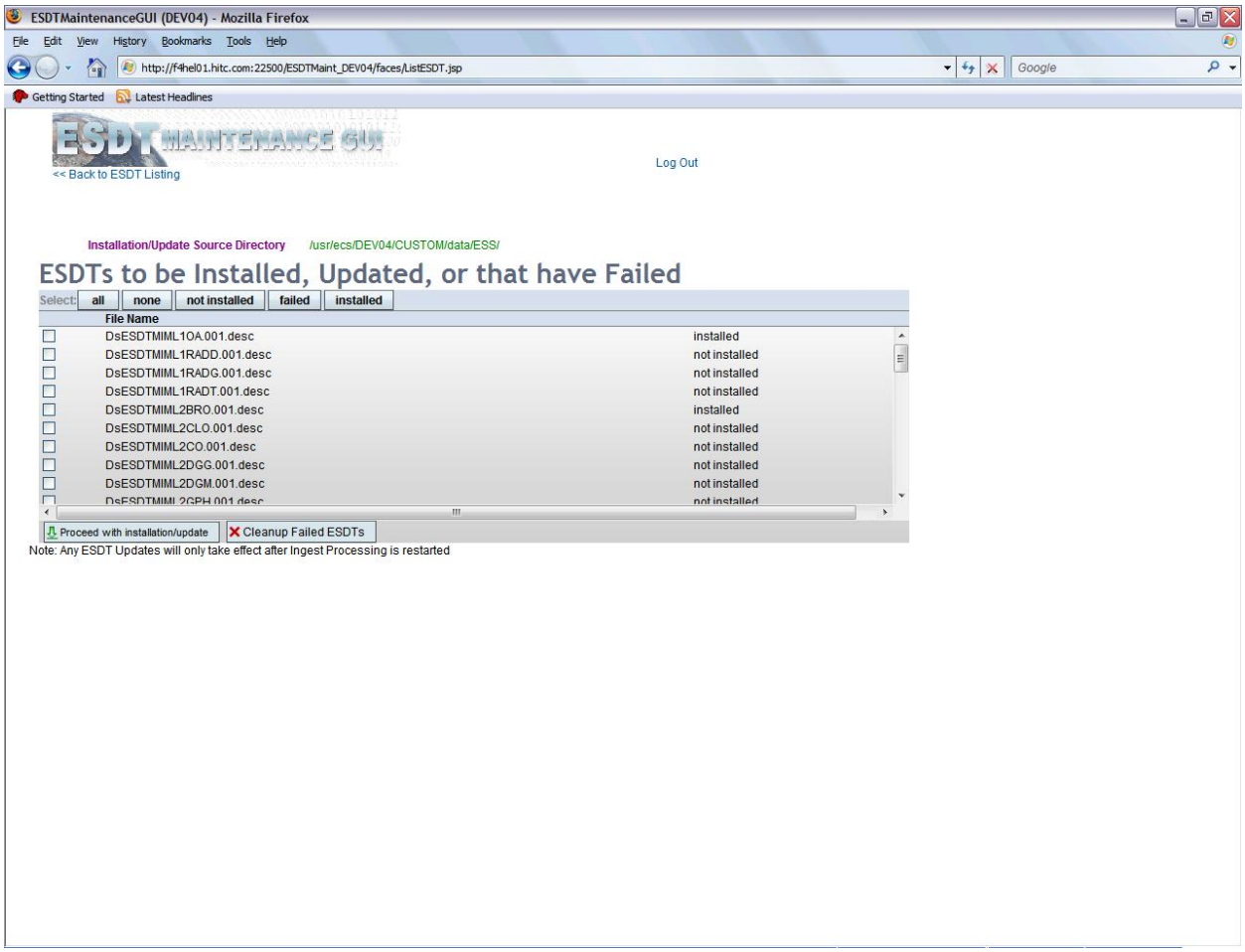


Figure 4.7.9-14. Install ESDT Page

4.7.9.4.1 Install/Update ESDTs

An operator performs installation or update on ESDTs by first selecting one or more ESDTs from the list as shown in Figure 4.7.9-15. The ESDT selected must be in the installed or not installed state.

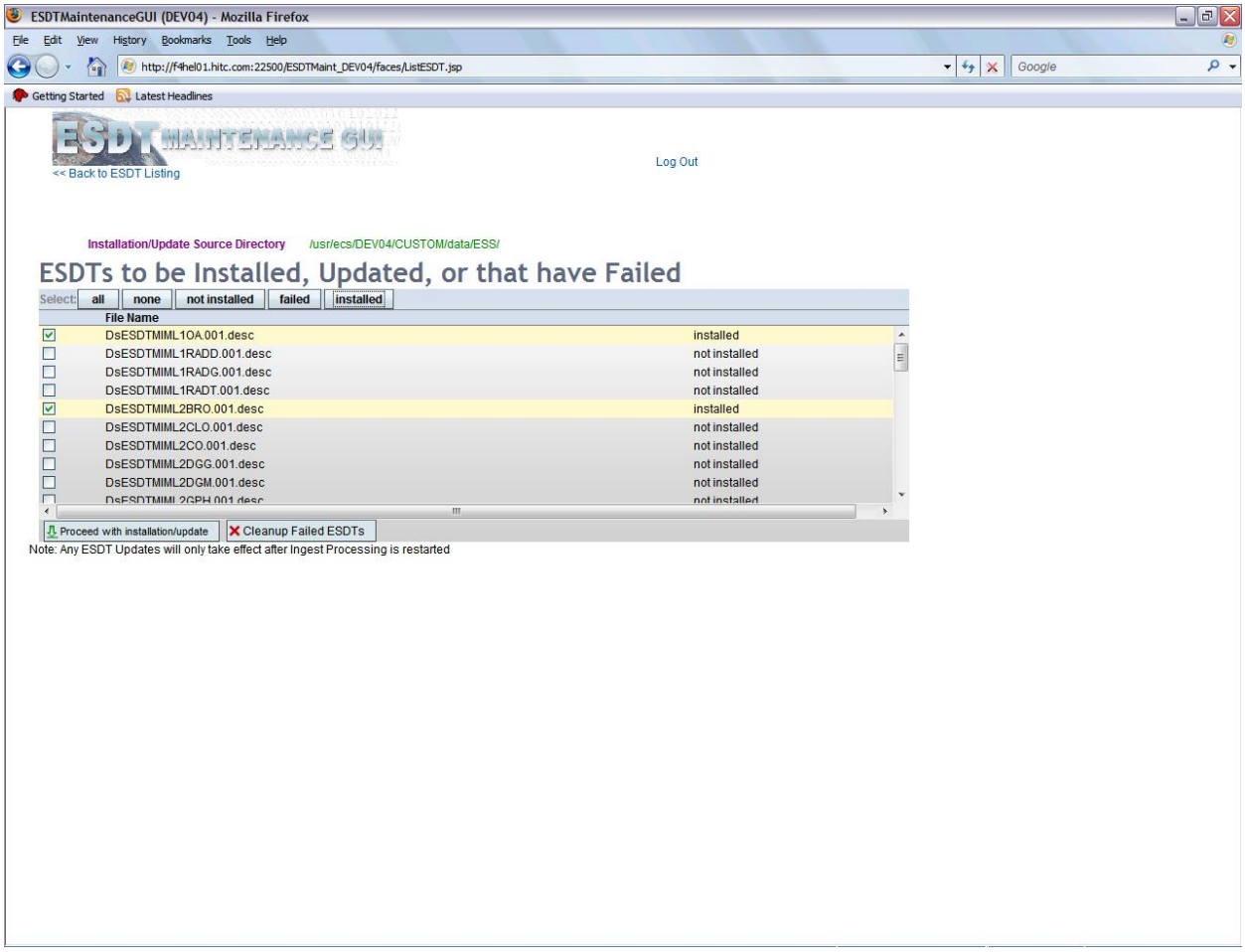


Figure 4.7.9-15. Install/Update ESDTs

Click on the "Proceed with installation/update" button to perform the installation or update action on the selected ESDTs as shown in Figure 4.7.9-16.

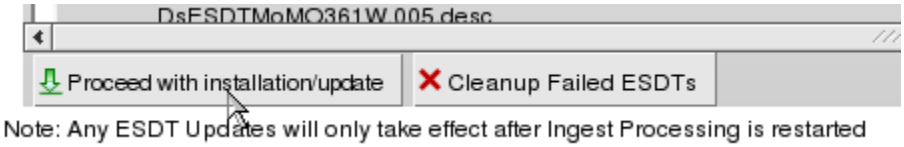


Figure 4.7.9-16. Install/Update ESDT button

An example of the result of the installation and update action is displayed in Figure 4.7.9‑17.

If the installation or update completes successfully for all ESDTs, the installation files will be removed from this list, and a message will be displayed at the top of the screen indicating the success.

If the installation or update did not succeed for one or more ESDTs, a general error message will be displayed at the top of the screen. The "ESDTs with Errors" table at the top will display the detailed error information next to the failed ESDTs.

If an error is encountered during installation or update for any reason (i.e. validation error), the installation for that particular ESDT will fail, but other ESDTs will continue processing. As ESDTs are successfully installed or updated, the descriptor files are removed from the pre-configured (installation source) directory. Any files that remain in the list are those that failed installation/update or those that were not selected for processing.

The operator can choose to fix the problems and try the installation/update by selecting any of the remaining files from the list and click on the "Proceed with Installation/Update" button.

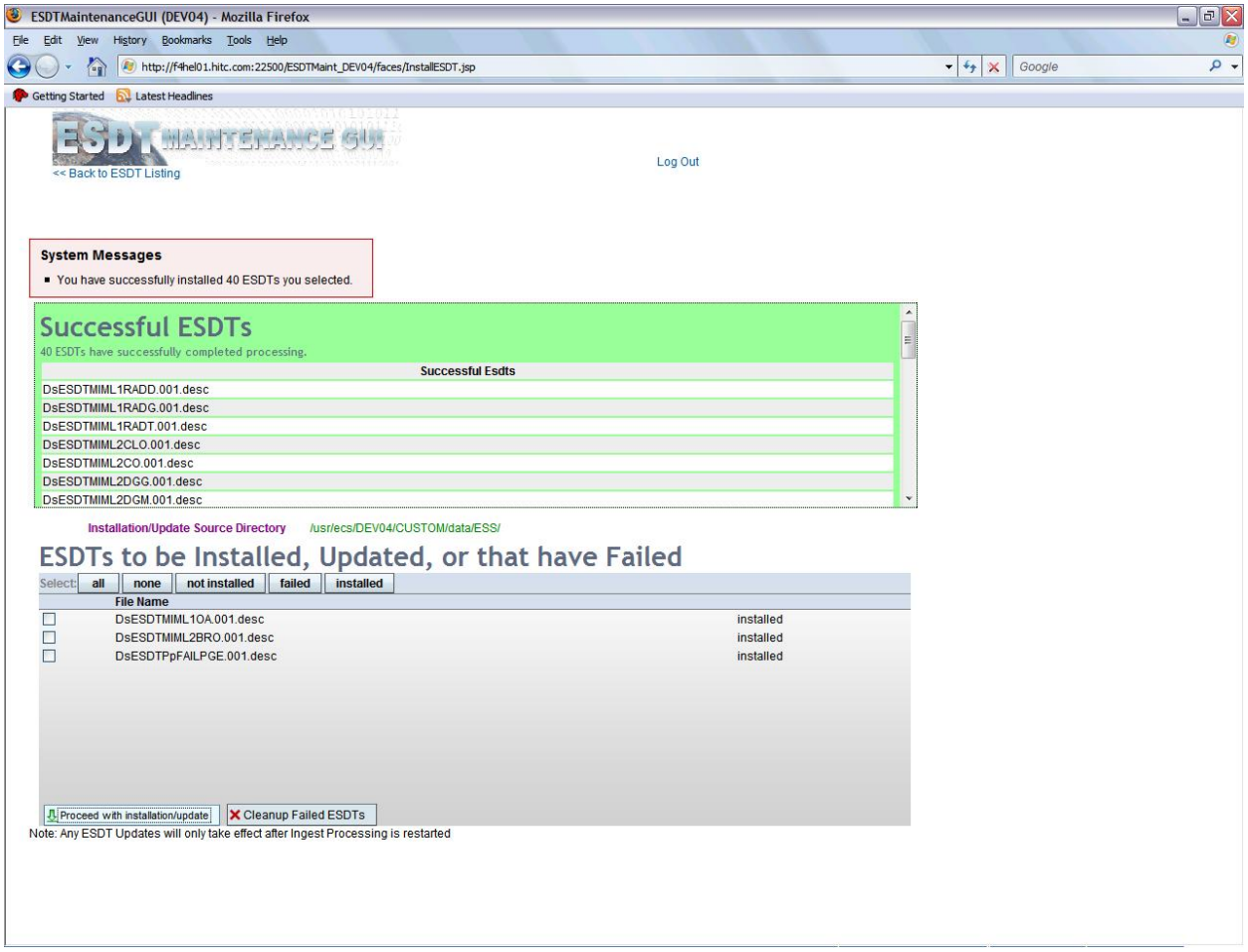


Figure 4.7.9-17. Install/Update ESDTs Result Page

4.7.9.4.2 Cleanup Failed ESDTs

An operator performs cleanup of failed ESDTs by first selecting one or more ESDTs from the list that are in the "failed" state. Then click on the "Cleanup Failed ESDTs" button to perform the cleanup action on the selected ESDTs as shown in Figure 4.7.9-18.

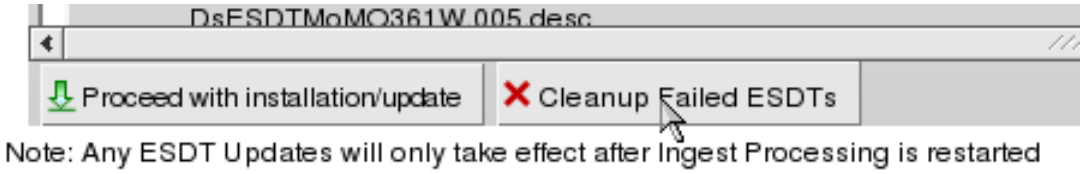


Figure 4.7.9-18. Cleanup Failed ESDTs button

An example of the result of the cleanup failed ESDTs action displayed inFigure 4.7.9-19.

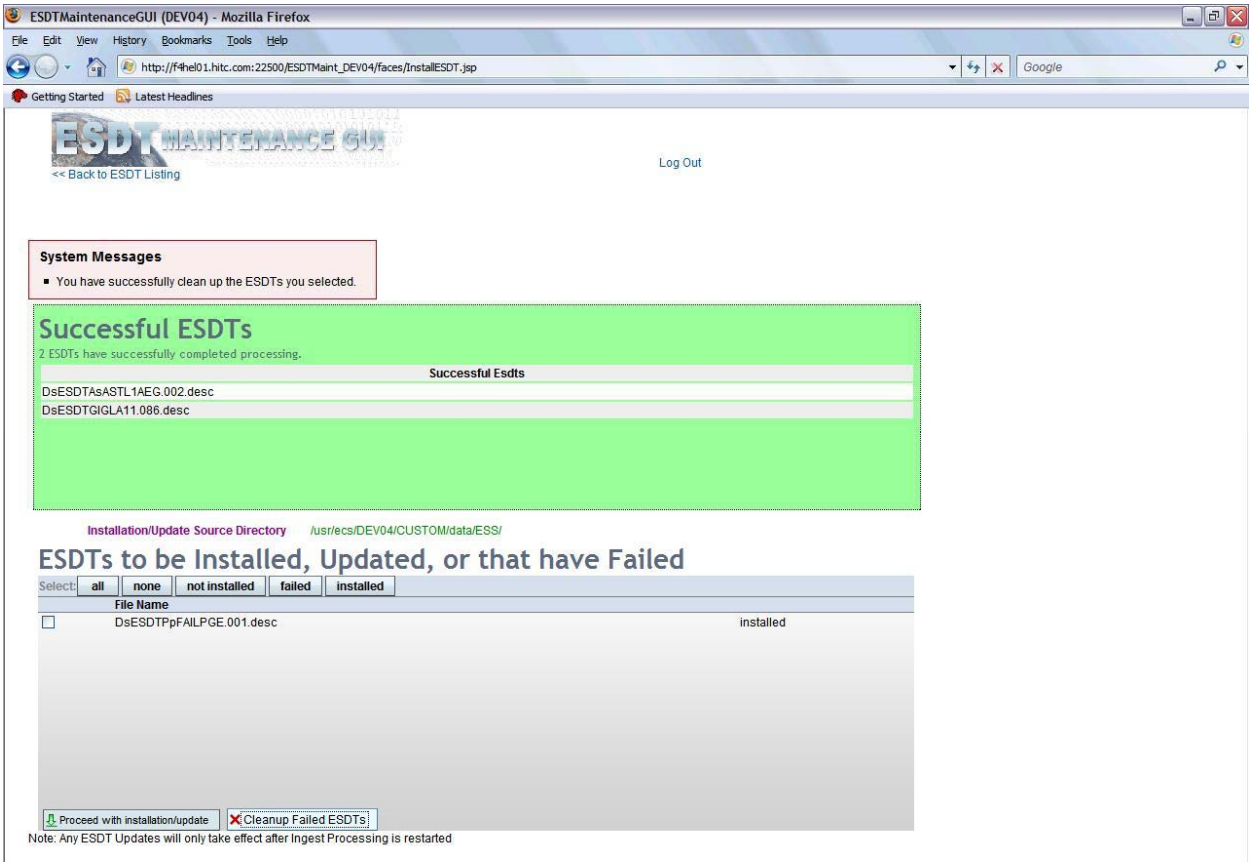


Figure 4.7.9-19. Cleanup Failed ESDTs Result Page

4.7.9.5 Browser Requirements

The specific browser requirements are stated elsewhere in this document. The recommended browsers are the only ones that should be used, as other browsers may not handle rendering and JavaScript correctly (for example, IE handles some JavaScript differently than Firefox).

JavaScript must also be enabled to run the application. In most cases, the cache size is automatically set and should be sufficient. Java is not required and need not be enabled in the browser to run the ESDT Maintenance GUI.

4.7.10 AIM Granule Deletion Utilities

The Granule Deletion Utilities are a set of command line utilities, including EcDsBulkSearch, EcDsBulkDelete, EcDsBulkUndelete and EcDsDeletionCleanup, which provides the EMD Operations Staff with the ability to search granules for deletion, mark granules for deletion, restore (undelete) granules marked for deletion, and physically remove (clean up) granules which have been marked for deletion.

Granule deletion involves two phases:

- Phase I: Marking granules for deletion. Granules may be marked in one of two ways: 1) by using the –physical option of the EcDsBulkDelete utility, which sets the DeleteEffectiveDate in AmGranule in the AIM RDBMS schema; or 2) by using the –dfa option of the EcDsBulkDelete utility, which sets the DeleteFromArchive flag in AmGranule in the AIM RDBMS schema. Once granules have been marked for deletion in either of these two ways, they are no longer accessible and are eligible for physical deletion in Phase II.
- Phase II: Physical deletion of marked/flagged granules. Please note, Granule Deletion Phase II will skip granules that 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 AIM database.

  If a granule has been marked for deletion with the –physical option of the EcDsBulkDelete utility, physical deletion will remove: a) all entries for the granule from the AIM schema; b) the xml metadata files for the granule from the online and xml archives; and c) the science file(s) for the granule from the online and AIM/tape archive.

  If a granule has been marked for deletion with the –dfa option of the EcDsBulkDelete utility, physical deletion will remove the science file(s) for the granule from the AIM/tape archive, but will NOT remove the AIM schema entries for the granule, nor will it remove the xml metadata file for the granule.

To delete granules from the archive, Operations Staff must perform the following sequence of activities: Generate a GeoID file listing all granules to be deleted, mark granules for deletion (Phase I), unpublish granules marked for deletion (Unpublish Utility with –aim option), and physically delete granules (Phase II). Operations staff may also choose to restore (Undelete) granules marked for deletion, instead of proceeding with physical deletion of these granules. Once granules have been physically deleted (Phase II), restoration of the granules is not possible.

By default, when a science granule is marked for deletion with the –physical option, the EcDsBulkDelete utility will also mark all Browse, PH, QA and MP granules associated with the science granule for deletion, unless the associated granules are also referenced by other non-deleted science granules. The operator may chose to override this default behavior and suppress deletion of associated Browse, PH, QA and MP granules altogether.

The sections below describe in detail the use of the EcDsBulkSearch, EcDsBulkDelete, EcDsBulkUndelete, and EcDsDeletionCleanup utilities. NOTE: as part of Release 8.2 all the utilities use a common configuration file called EcDsAmGranuleDeletion.CFG containing

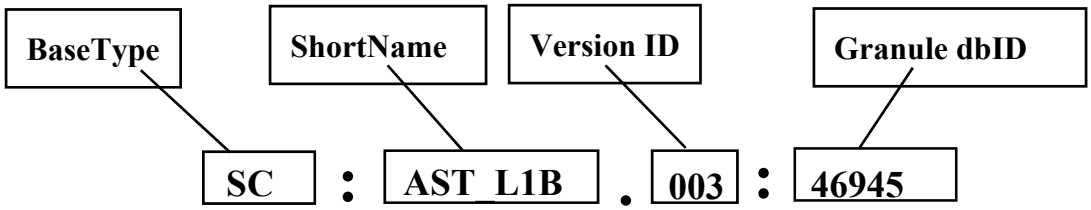
parameters needed to connect to the RDBMS, the operator will still be prompted for the RDBMS password for the EcDsAmGranuleDeletion user.

Conventions of the command line used in the following sections

Convention	Description	Example
[ ]	Optional command parameter	[**-localgranulefile** <path/filename>]
|	Only one of the parameters can be specified	**[-physical | -dfa]** means either **[-physical]** or **[-dfa]**
<>	Require user to specify a value for a command line parameter	</home/labuser/myGEOid_file>

4.7.10.1 Generate a GeOID file

A GeOID, formally called an Internal Granule Identifier, is a formatted string consisting of four segments. The following figure shows its structure:



BaseType is symbolized by two capital letters. Valid basetypes are:

SC – Science granule

BR – Browse granule

PH – Processing history granule

QA – Quality Assurance granule

DP – DAP granule

LM – Limited Granule

MP – HDF 4 File Content Map granule

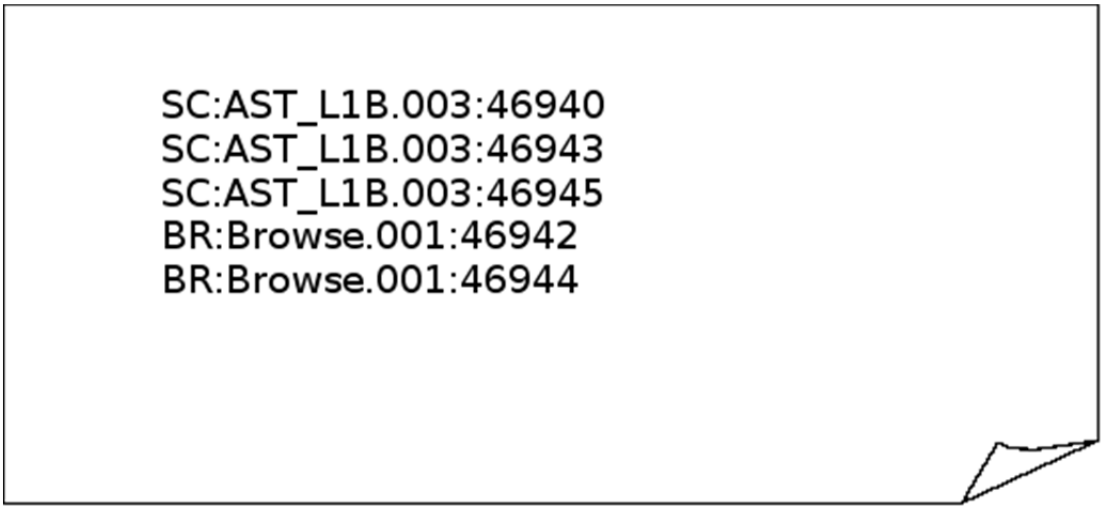
ShortName represents the data type of the granule such as "AST_L1B".

Version represents the version id for the granule. It is always a 3 digit string, such as "003".

Granule dbID is a unique inventory database ID for the granule.

The GeOID file consists of a list of granules represented by their GeOIDs, one GeOID per line, as represented in the figure below:

GeOID File structure



A prerequisite to marking granules for deletion is having a file of GeOIDs, which is used as input to the EcDsBulkDelete Utility. Although it is possible to manually create this file, an easier way is to use the EcDsBulkSearch Utility to generate a file containing a list of GeoIDs based on criteria specified when running the EcDsBulkSearch Utility.

4.7.10.1.1 Using the Bulk Search Utility

The generic format for invoking the Bulk Search Utility (EcDsBulkSearch) is the following:

- **EcDsBulkSearch.pl** [**-begindate** <DATETIME>]

  [**-enddate** <DATETIME>]
  [**-acquirebegin** <mm/dd/yyyy> [<hh:mm:ss>]]
  [**-acquireend** <mm/dd/yyyy> [<hh:mm:ss>]]
  [**-insertbegin** <DATETIME>]
  [**-insertend** <DATETIME>]
  [**-localgranulefile** <path/filename>]
  [**-physical** | **-dfa**]
  [**-name** <ShortName>]
  [**-version** <VersionID>]
  [**-limit** <n>] [**-password** <passwd>]
  -geoidfile <path/filename>
  –**mode** <MODE>Table 4.7.10-1 provides a description of the command line parameters for the EcDsBulkSearch utility.

Table 4.7.10-1. 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 with a BeginningDateTime greater than or equal to the specified date and time.
enddat	No	<mm/dd/yyyy> [<hh:mm:ss>] Search only for granules with an EndingDateTime less than or equal to the specified date and time.
acquirebegin	No	<mm/dd/yyyy> [<hh:mm:ss>] Search only for granules with a BeginningDateTime 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 with a BeginningDateTime 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 with an insertTime greater than or equal to the specified date and time.
insertend	No	<mm/dd/yyyy> [<hh:mm:ss>] Search only for granules with an insertTime 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	Full path name of output file containing geoids.
physical	No	Search only for granules marked for deletion using the –physical option of the EcDsBulkDelete utility.
dfa	No	Search only for granules marked for deletion using the –dfa option of the EcDsBulkDelete utility.
mode	Yes	The ECS mode in which the utility is to operate; this parameter can be omitted if the environment variable MODE is set.
limit	No	Search will return up to <n> granules specified by limit (see below for sort order).
password	No	The inventory database login password. The utility will prompt the user to enter the password if it is not specified on the command line (for security reasons, it is not recommended to specify the password on the command line).

The output of the Bulk Search utility is the GeOID File, a plain text file containing a list of internal granule identifiers (also called GeOIDs). The user must specify the path and geoidfile name. The user running the EcDsBulkSearch.pl utility script must have write privileges for the specified "geoidfile" directory.

The Bulk Search utility also outputs a search report file under the same directory as the GEOID file, having the same filename as the "geoidfile" but terminated with a **.rpt** extension.

The GeOIDs in the geoidfile and the report file are ordered or sorted in a way that depends on the options specified on the command line:

If "-limit" is specified:

1. The granules will be ordered by **BeginningDateTime** if **–begindate** or **-acquirebegin** are specified;
2. The granules will be ordered by **insertTime** if **-insertbegin** is specified;
3. The granules will be ordered by dbID for all other situations.

No "-limit" option specified:

The granules will be always ordered by dbID.

The following sections describe twelve typical search scenarios. In order to simplify the command line, we assume that the user set and exported the following environment variables before running the search utility:

setenv MODE <MODE>

No **-password** is specified in any of the following commands. The utility will prompt the user to enter the password during runtime.

NOTE: The following search scenarios are those commonly used; they do not exhaust all possible combinations.

4.7.10.1.2 Search Granules by ShortName, VersionID and Inclusive Temporal Range

One common scenario is to search for a set of granules by specifying a ShortName, a VersionID, and an inclusive temporal range **[acquirebegin , acquireend]** such that the BeginningDateTime of the desired granules is greater than or equal to the date time specified by **acquirebegin,** and less than or equal to the date time specified by **acquireend** (**acquirebegin** ≤ BeginningDateTime ≤ **acquireend**). The following command generates a GeOID file containing granules which meet the above search criteria, sorted in ascending order of dbID:

- **EcDsBulkSearch.pl -geoidfile** <path/geoidfile_name>

  -name <ShortName>

  -version <VersionID>

  -acquirebegin <mm/dd/yyyy> [<hh:mm:ss>]

  -acquireend <mm/dd/yyyy> [<hh:mm:ss>]

4.7.10.1.3 Search a Limited Number of Granules

The search in 4.7.10.1.2 may return a large number of granules. A limited number of granules can be output by specifying option **–limit <n>** where **n** is an integer. The Bulk Search Utility sorts the granules according to the rules in 4.7.10.1.1 and returns the first n granules. The

following search is the same as 4.7.10.1.2 except for the –limit option. The –limit option may also be used with other search scenarios:

- **EcDsBulkSearch.pl-geoidfile** <path/geoidfile_name>

  -name <ShortName>
  -version <VersionID>
  -acquirebegin <mm/dd/yyyy> [<hh:mm:ss>]
  -acquireend <mm/dd/yyyy> [<hh:mm:ss>] **-limit** <n>

4.7.10.1.4 Search a Set of Granules for Which the Acquisition Date is between a Specified BeginningDateTime and EndingDateTime

With the EcDsBulkSearch utility, Operations staff can search for a set of granules by specifying a ShortName, a VersionID, and an inclusive date time range **[begindate, enddate]** such that the BeginningDateTime of the desired granules is greater than or equal to **begindate**, and the EndingDateTime of the desired granules is less than or equal to **enddate** (BeginningDateTime ≥ **begindate** AND EndingDateTime ≤ **enddate**). The following command generates a GeOID file containing granules which meet the above search criteria, sorted in ascending order of dbID:

- **EcDsBulkSearch.pl -geoidfile** <path/geoidfile_name>

  -name <ShortName>
  -version <VersionID>
  -begindate <mm/dd/yyyy> [<hh:mm:ss>]
  -enddate <mm/dd/yyyy> [<hh:mm:ss>]

4.7.10.1.5 Search a Set of Granules for Which the BeginningDateTime is Greater Than or Equal to a Specified Date Time

With the EcDsBulkSearch utility, Operations staff can search for a set of granules by specifying a ShortName, a VersionID, and an open-ended time range **[begindate,** ∞**[** such that the BeginningDateTime of the desired granules is greater than or equal to **begindate** (BeginningDateTime ≥ **begindate**). The following command generates a GeOID file containing granules which meet the above search criteria, sorted in ascending order of dbID:

- **EcDsBulkSearch.pl -geoidfile** <path/geoidfile_name>

  -name <ShortName>
  -version <VersionID>
  -begindate <mm/dd/yyyy> [<hh:mm:ss>]

4.7.10.1.6 Search a Set of Granules for Which the BeginningDateTime is Less Than or Equal to a Specified Date Time

With the EcDsBulkSearch utility, Operations staff can search for a set of granules by specifying a ShortName, a VersionID, and a maximum value (**acquireend**) such that the BeginningDateTime of the desired granules is less than or equal to the specified

acquireend. (BeginningDateTime <= **acquireend**). The following command generates a GeOID file containing granules which meet the above search criteria, sorted in ascending order of dbID:

- **EcDsBulkSearch.pl -geoidfile** <path/geoidfile_name>

  -**name** <ShortName>
  -**version** <VersionID>
  -**acquireend** <mm/dd/yyyy> [<hh:mm:ss>]
  -**user** <db_userid>

4.7.10.1.7 Search a Set of Granules for Which the EndingDateTime is Less Than or Equal to a Specified Date Time

With the EcDsBulkSearch utility, Operations Staff search for a set of granules by specifying a ShortName, a VersionID, and a maximum value (**enddate**) such that the EndingDateTime of the desired granules is less than or equal to the specified **enddate** (EndingDateTime ≤ **enddate**). The following command generates a GeoID file containing granules which meet the above search criteria, sorted in ascending order of dbID:

- **EcDsBulkSearch.pl -geoidfile** <path/geoidfile_name>

  -**name** <ShortName>
  -**version** <VersionID>
  -**enddate** <mm/dd/yyyy> [<hh:mm:ss>]

4.7.10.1.8 Search a Set of Granules for Which the insertTime is Within the Specified Date Time Range

With the EcDsBulkSearch utility, Operations staff can search for a set of granules by specifying a ShortName, a VersionID, and inclusive date time range **[insertbegin, insertend]** such that the insertTime of the desired granules is bounded by specified values of **insertbegin and insertend** (**insertbegin** ≤ insertTime ≤ **insertend**). The following command generates a GeOID file containing granules which meet the above search criteria, sorted in ascending order of dbID:

- **EcDsBulkSearch.pl -geoidfile** <path/geoidfile_name>

  -**name** <ShortName>
  -**version** <VersionID>
  -**insertbegin** <mm/dd/yyyy> [<hh:mm:ss>]
  -**insertend** <mm/dd/yyyy> [<hh:mm:ss>]

4.7.10.1.9 Search a Set of Granules for which the insertTime is Greater than or Equal to the Specified Date Time

With the EcDsBulkSearch utility, Operations staff can search for a set of granules by specifying a ShortName, a VersionID, and a minimum date time (**insertbegin**) such that the insertTime of the desired granules is greater than or equal to the date time specified by **insertbegin** (insertTime

≥ **insertbegin**). The following command generates a GeOID file containing granules which meet the above search criteria, ordered by granule dbID, sorted in ascending order of dbID:

- **EcDsBulkSearch.pl -geoidfile** <path/geoidfile_name>

  -name <ShortName>

  -version <VersionID>

  -insertbegin <mm/dd/yyyy> [<hh:mm:ss>]

4.7.10.1.10 Search a Set of Granules for Which the insertTime is Less than or Equal to the Specified Date Time

With the EcDsBulkSearch utility, Operations staff can search for a set of granules by specifying a ShortName, a VersionID, and a maximum date time (**insertend**) such that the insertTime of the desired granules is less than or equal to the date time specified by **insertend** (insertTime ≤ **insertend**). The following command generates a GeOID file containing granules which meet the above search criteria, sorted in ascending order of dbID:

- **EcDsBulkSearch.pl -geoidfile** <path/geoidfile_name>

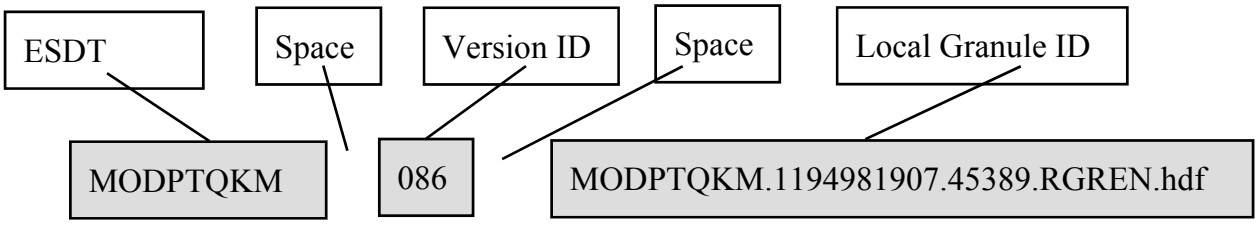
  -name <ShortName>

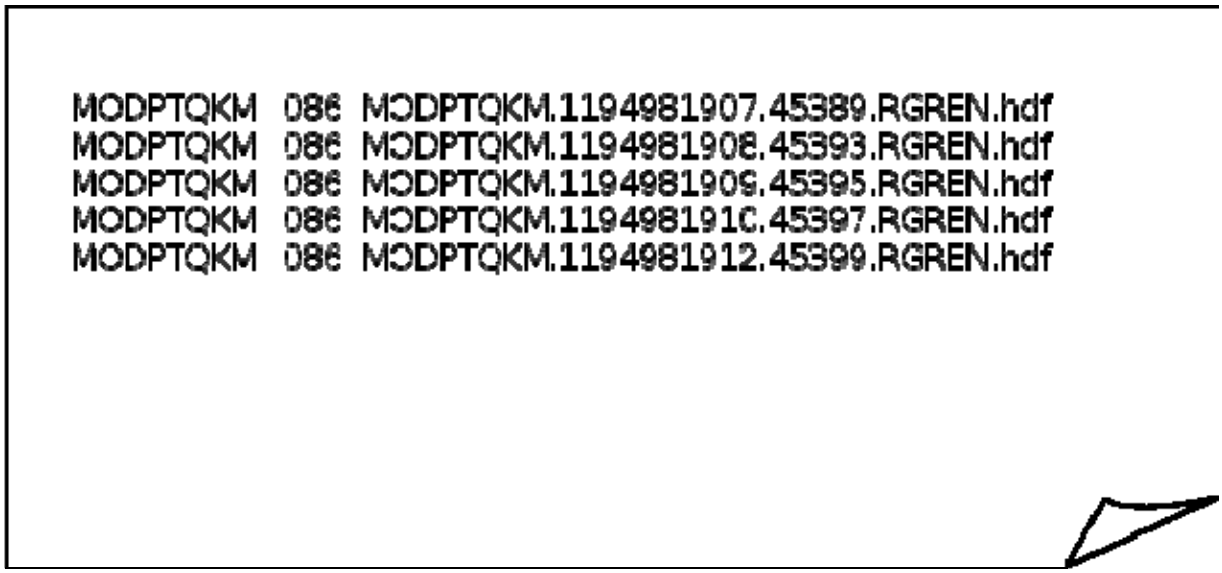
  -version <VersionID>

  -insertend <mm/dd/yyyy> [<hh:mm:ss>]

4.7.10.1.11 Convert Local Granule ID(s) to GeOID(s)

There may be a situation in which Operations staff already know the shortname, version and science filename (Local Granule ID) for list of granules to be deleted. Operations staff can convert this list of local granule IDs into a set of GeOIDs, which can be used by the EcDsBulkDelete utility to mark the granules for deletion. One way to achieve such a conversion is through the use of the EcDsBulkSearch utility and a **localgranulefile**. A localgranulefile is simply a text file containing a list of granules, formatted as "ShortName VersionID LocalGranuleId", one such granule per line. The following figure shows the structure and format of a **localgranulefile**:





The following command transforms the localgranulefile into an equivalent GeOID file. The resulting GeOIDs match the local granule IDs specified in the localgranulefile:

- **EcDsBulkSearch.pl -geoidfile** <path/geoidfile_name>

  -localgranulefile <path/local_granule_file_name>

4.7.10.1.12 Search for Granules Marked for Deletion with –physical option

The EcDsBulkSearch utility also allows Operations staff to search for granules that have already been marked for deletion. In this example, the EcDsBulkSearch utility returns a GeOID file of granules that have been marked for deletion using the –physical option of the EcDsBulkDelete utility (see 4.7.10.2.1), i.e., granules where the DeleteEffectiveDate is set in the AmGranule table in the inventory database:

- **EcDsBulkSearch.pl -physical** **-geoidfile** <path/geoidfile_name>

4.7.10.1.13 Search for Granules Marked for Deletion with –dfa option

In this example, the EcDsBulkSearch utility returns a GeOID file of granules that have been marked for deletion using the –dfa option of the EcDsBulkDelete utility (see 4.7.10.2.2), i.e., granules where the DeleteFromArchive flag is set in the AmGranule table in the inventory database:

- **EcDsBulkSearch.pl -dfa** **-geoidfile** <path/geoidfile_name>

4.7.10.2 Granule Deletion, Phase I: Marking Granules for Deletion

In the first phase of the granule deletion process, the EcDsBulkDelete.pl utility marks the specified granules for deletion. The marked granules can no longer be accessed but their associated files and metadata have not yet been physically removed.

The generic command line format for the EcDsBulkDelete utility is the following:

- **EcDsBulkDelete.pl -physical** | **-dfa**

  [**-delref**]
  [**-noassoc**] [**-password** <passwd>]
  -geoidfile <path/filename>
  –**mode** <MODE> [**-log** <log_file_name>]

Table 4.7.10-2 provides a description of the parameters used in executing the EcDsBulkDelete.pl script.

Table 4.7.10-2. Command Line Parameters for EcDsBulkDelete.pl

Parameter Name	Mandatory	Description
geoidfile	Yes	Name of input file containing geoids of the granules to be marked for deletion.
physical	Yes if not **dfa**	Specifying this parameter will mark granules in the geoidfile for deletion of science files as well as deletion of inventory database entries and xml metadata.
dfa	Yes if not **physical**	Specifying this parameter (can not combine with physical) will mark the granules in the geoidfile for deletion of science files only. (Inventory database entries and xml metadata files associated with the granules will not be deleted).
delref	No	Optional. When given, indicates that non SC/LM granules should be deleted even if they are associated with undeleted SC/LM granules. Only used with –physical option; ignored with –dfa option. Note: This option has no effect on deleting SC/LM granules. They are always deleted regardless of whether they are referenced or not.
noassoc	No	Optional. When given, indicates that associated granules (Browse, PH, QA, MP) will not be marked for deletion. Only used with physical option; ignored with –dfa option.
mode	Yes	The ECS mode in which the utility is to operate. This parameter may be omitted if the environment variable MODE is set.
log	No	The name of the file to which utility messages will be logged. If this is not provided, the log file name will default to EcDsBulkDelete.log. The log file will be stored in the /usr/ecs/<MODE>/CUSTOM/logs directory.

In order to simplify the command line, the user may set the following environment variables before running the Bulk Delete utility:

setenv MODE <MODE>

The EcDsBulkDelete utility may be used either to mark granules for physical deletion of both data files and metadata (via the –physical command line option), or to mark granules for physical

deletion of the data files only (via the –dfa command line option). Examples of these use cases are shown below.

4.7.10.2.1 Mark Granules for physical deletion of science files and metadata

TheEcDsBulkDelete utility may be used to mark granules for physical deletion of all science file(s) associated with the granules, as well as all metadata associated with the granules, including the xml metadata file in the xml archive and all entries for the granule in the inventory database.

Executing the following command will mark all granules in the specified geoid file for physical deletion of the granule's science files as well as its metadata:

- **EcDsBulkDelete.pl -physical**

  -geoidfile <path/geoidfile_name>

  [**-log** <log_file_name.log>]

In this example, since the **–noassoc** parameter is not used, all associated granules, such as Browse, QA, PH and MP granules, are marked for deletion as well.

4.7.10.2.2 Mark Granules for deletion of science files only (Delete From Archive)

Executing the following command will mark all granules in the specified geoid file for "DFA" deletion, i.e., deletion of the science files only (the xml metadata file in the xml archive and all entries for the granule in the inventory database will remain):

- **EcDsBulkDelete.pl -dfa**

  -geoidfile <path/geoidfile_name>

  [**-log** <log_file_name.log>]

Marking granules for "DFA" deletion will not impact any associated granules, such as Browse, QA, PH and MP granules. Although the utility doesn't prevent the user from specifying **-delref** and –**noassoc** with the –dfa option, these two optional parameters are ignored when used with the –dfa option.

4.7.10.3 Undeleting Granules

Granules marked for deletion by the EcDsBulkDelete utility can be restored (undeleted) by the EcDsBulkUndelete utility. Granules which have been undeleted are once again accessible and are no longer eligible for physical deletion by the EcDsDeletionCleanup utility.

The EcDsBulkUndelete utility takes as input a geoid file, in which all granules intended to be undeleted are listed. Either the -physical or –dfa option must be specified. The –noassoc option may be used with the –physical option to indicate that associated granules (Browse, PH, QA, MP) marked for deletion should not be restored/undeleted.

The generic command line format for the EcDsBulkUndelete utility is the following:

- **EcDsBulkUndelete.pl -physical** | **-dfa**

  [**-noassoc**]
  [**-password** <passwd>]
  -geoidfile <path/filename>
  –**mode** <MODE>
  [**-log** <log_file_name>]

Table 4.7.10-3 provides a description of the parameters used in executing the EcDsBulkUndelete.pl script.

Table 4.7.10-3. Command Line Parameters for EcDsBulkUndelete.pl

Parameter Name	Mandatory	Description
geoidfile	Yes	Name of input file containing geoids of the granules to be restored/undeleted.
physical	Yes	Specifying this parameter will restore ("undelete") granules specified in the geoid file which have been previously marked for deletion using the –physical option of the EcDsBulkDelete utility.
Dfa	Yes	Specifying this parameter (can not combine with physical) will restore ("undelete") granules specified in the geoid file which have been previously marked for deletion using the –dfa option of the EcDsBulkDelete utility.
noassoc	No	Optional. When given, indicates that associated granules (Browse, PH, QA, MP) will not be restored ("undeleted"). Only valid with the –physical option; ignored with –dfa option.
Mode	Yes	The ECS mode in which the utility is to operate; this parameter may be omitted if the environment variable MODE is set.
password	No	The inventory database login password. The utility will prompt the user to enter the password if it is not specified on the command line (for security reasons, it is not recommended to specify the password on the command line).
Log	No	The name of the file to which utility messages will be logged. If this is not provided, the log file name will default to EcDsBulkUndelete.log. The log file will be stored in the /usr/ecs/<MODE>/CUSTOM/logs directory.

In order to simplify the command line, the user can set the following environment variables before running the EcDsBulkUndelete utility:

setenv MODE <MODE>

The EcDsBulkUndelete utility may be run with either the -physical or –dfa option. Examples of each of these options are given in the next two sections below.

4.7.10.3.1 Running the EcDsBulkUndelete utility with the –physical option

Prior to running the EcDsBulkUndelete utility, a geoid file which lists granules marked for deletion with the –physical option should be prepared manually or by running EcDsBulkSearch with the –**physical** option.

Executing the following command will "undelete" granules listed in the specified geoid file (i.e., will reset the DeleteEffectiveDate for these granules in the AmGranule table in the inventory database):

- **EcDsBulkUndelete.pl -physical**

  [**-noassoc**]
  -geoidfile <path/geoidfile_name>
  [**-log** <log_file_name.log>]

4.7.10.3.2 Running the EcDsBulkUndelete utility with the –dfa option

Prior to running the EcDsBulkUndelete utility, a geoid file which lists granules marked for deletion with the –dfa option should be prepared manually or by running EcDsBulkSearch with the –**dfa** option.

Executing the following command will "undelete" granules listed in the specified geoid file (i.e., will reset the DeleteFromArchive flag for these granules in the AmGranule:

- **EcDsBulkUndelete.pl -dfa**

  -geoidfile <path/geoidfile_name>
  [**-log** <log_file_name.log>]

4.7.10.4 Granule Deletion, Phase II: Physical Deletion or Cleanup

In phase II of the granule deletion process, the user runs the EcDsDeletionCleanup utility against granules that have been marked for deletion in Phase I. The EcDsDeletionCleanup utility permanently removes science files and optionally metadata for granules which are marked for deletion from both the Online Archive and the backup/tape Archive.

For granules marked for deletion with either the –physical or –dfa option of the EcDsBulkDelete utility, the EcDsDeletionCleanup utility will remove all science files for the granule from the archives. If the granules were marked for deletion with the –physical option, and the –noassoc option was not specified, all files for associated Browse, PH, QA and MP granules will also be removed from the archives.

If granules were marked for deletion using the –physical option of the EcDsBulkDelete utility, the EcDsDeletionCleanup utility will also clean up all metadata for the marked granules. This includes removing all inventory database entries for the marked granules, and removing corresponding metadata XML files from the archives, as well.

When the EcDsDeletionCleanup utility is executed, it will check if there is any unfinished work from the previous run(s). If so, the utility will prompt the user with a selection menu. The operator may choose to rerun the unfinished run(s) only, which will be resumed from the

interrupted point and continue physical cleanup for granules identified for deletion in the previous interrupted run(s). Alternately, the operator may choose to complete unfinished run(s) and start a new run, which will complete cleanup from the previous interrupted run(s), but also clean up granules identified for deletion by the new run.

Unlike the Bulk Search, Bulk Delete and Undelete utilities, EcDsDeletionCleanup requires user interactions during execution.

The generic format for the command line of the EcDsDeletionCleanup utility is the following:

- **EcDsDeletionCleanup.pl**

  –**mode** <MODE>
  [-**batch** <number>]
  [-**grbatch** <number>]
  [-**phbatch** <number>]
  [-**log** <log_file_name>]
  [-xmlbatch <number>]
  [-databatch <number>]
  [-logbatch <number>]

Table 4.7.10-4 provides a description of the parameters used in executing the EcDsDeletionCleanup.pl script.

Table 4.7.10-4. Command Line Parameters for EcDsDeletionCleanup.pl (1 of 3)

Parameter Name	Mandatory	Description
Mode	Yes	The ECS mode in which the utility is to operate. This parameter may be omitted if the environment variable MODE is set.
Log	No	The name of the file to which utility messages will be logged. If this is not provided, the utility will prompt the user at runtime to either supply a log file name, or to accept the default log file name, EcDsDeletionCleanup.log. The log file will be stored in the /usr/ecs/<MODE>/CUSTOM/logs directory.

Table 4.7.10-4. Command Line Parameters for EcDsDeletionCleanup.pl (2 of 3)

Parameter Name	Mandatory	Description
batch	No	This is a tuning parameter. It represents the batch size for populating the DsStPendingDelete table. This parameter may be omitted if the environment variable BATCH_SIZE_GRANULE is set. If the environment variable BATCH_SIZE_GRANULE is set, and -**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 at runtime to enter a value (a value of 10000 is suggested by the prompt text).
grbatch	No	This is a tuning parameter. It represents the batch size used for physical granule file cleanup. This parameter may be omitted if the environment variable BATCH_SIZE_GRANULE is set. (Note: the environment variable BATCH_SIZE_GRANULE applies to both –batch and –grbatch). If the environment variable BATCH_SIZE_GRANULE is set, and -**grbatch** <number> is also specified, the value from command line parameter –**grbatch** will be used. If neither the environment variable BATCH_SIZE_GRANULE is set nor –**grbatch** is specified, the user will be prompted at runtime to enter a value (a value of 10000 is suggested by the prompt text).
phbatch	No	This is a tuning parameter. It represents the **phbatch** size for PH granule deletion. Because PH granule deletion could be time consuming, setting a high batch size for PH granule deletion could lock the database for a long period of time; therefore, a low value of phbatch is recommended. This parameter may be omitted if the environment variable BATCH_SIZE_PH is set. If the environment variable BATCH_SIZE_PH is set and -**phbatch** <number> is also specified, the value from command line parameter –**phbatch** will be used. If neither the environment variable BATCH_SIZE_PH is set nor –**phbatch** is specified, the user will be prompted at runtime to enter a value (a value of 5 is suggested by the prompt text).
xmlbatch	No	This is a tuning parameter. It represents the batch size for processing the deletion of XML files from the XML Archive. The utility will iterate through the deletion of XML files retrieving and deleting "xmlbatch" files per iteration. This controls memory growth of the utility when processing a large number of granules. If this parameter is not specified, the utility will prompt for a value (suggesting a size of 1000).

Table 4.7.10-4. Command Line Parameters for EcDsDeletionCleanup.pl (3 of 3)

Parameter Name	Mandatory	Description
databatch	No	This is a tuning parameter. It represents the batch size for processing the deletion of data files from the "offline/backup" Archive (note: this archive is typically on tape). The utility will iterate through the deletion of data files retrieving and deleting "databatch" files per iteration. This controls memory growth of the utility when processing a large number of granules. If this parameter is not specified, the utility will prompt for a value (suggesting a size of 10000).
logbatch	No	The "logbatch" parameter controls the frequency of progress messages in the log. If this parameter is not specified, the utility will prompt for a value (suggesting a size of 100).

The following sections describe two typical physical cleanup scenarios. In order to simplify the command line, we assume that the user has set the following environment variables before running the EcDsDeletionCleanup utility:

setenv MODE <MODE>

The utility will prompt the user to enter the database password during runtime.

4.7.10.4.1 Run a New Physical Cleanup

Command for starting a new run:

- **EcDsDeletionCleanup.pl** [**-batch** <number>]
  [**-grbatch** <number>]
  [**-phbatch** <number>]
  [**-log** <log_file_name>]

If no log file name is specified on the command line, the utility will prompt the user to enter one. The user also may select to use the default log file name, which will be EcDsDeletionCleanup.log. The log file will be created under the directory /usr/ecs/<MODE>/CUSTOM/logs/.

The physical cleanup utility EcDsDeletionCleanup will prompt for the database password, and then prompt for any required parameter(s) which have not been set via corresponding environment variables and were not specified on the command line.

The utility will first check if there are any granule(s) that have been marked for deletion (with either the –physical or –dfa option); if there are none, the utility will terminate.

If there are granules marked for deletion, the following menu 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: _

The user needs to enter 1, 2 or 3 for:

1. Only cleanup granules whose deletion date falls into a single day specified by the lag time;
2. Cleanup all granules whose effective deletion date is older than the date specified by the lag time;
3. Nothing to cleanup, exit.

If the user chooses menu selection 1 or 2, the user will next be prompted to enter either a lag time in units of days OR a date (in <mm/dd/yyyy> format, such as 04/18/2003). An entry of zero is equivalent to today's date. (See below for a more detailed description of how lag time is used.) Once a lag time or a date is entered, the user will be requested to confirm the entry. If the user answers "N", the utility will prompt the user to re-enter the lag time or date.

A lag time is used to exclude or include a set of granules marked for deletion from the current cleanup run.

For menu selection 1, if an integer <n> is entered for lag time, only granules which were marked for deletion at any time on the date <n> days ago (with respect to the current system date) will be eligible for clean up in the current run. For example, if the utility is run on 03/04/2008 and a lag time of 3 is specified, only granules which were marked for deletion at any time on 03/01/2008 will be eligible for clean up.

If a date such as 05/11/2008 is entered, only granules which were marked for deletion at any time on 05/11/2008 will be eligible for clean up in the current run.

For menu selection 2, if an integer <n> is entered for lag time, only granules which were marked for deletion more than <n> days ago (with respect to the current system date) will be eligible for clean up in the current run. For example, if the utility is run on 03/04/2008 and a lag time of 3 is specified, only granules which were marked for deletion on or before midnight on 03/01/2008 will be eligible for clean up in the current run. If a date such as 05/11/2008 is entered, only granules which were marked for deletion on or before midnight on 05/11/2008 will be eligible for clean up in the current run.

After a lag time is confirmed, the utility will display another 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: _

The user needs to enter 1, 2 or 3 for:

1. Cleanup granules marked for deletion which have an ESDT shortname and versionid in the input file. The input file lists one ESDT per line, in <shortname.versionid> format. A wildcard * may be used as part of the ESDT shortname;
2. Cleanup all granules marked for deletion, regardless of their ESDT.version;
3. Nothing to cleanup, exit.

Selecting 1 or 2 will start physical cleanup. The utility will present a list of ESDTs and granule counts to be deleted. The operator is prompted to continue or not. If "y" is selected the operator is then prompted to determine whether the utility should run interactively or not. If the operator selects to run interactively, the utility will delete a set of granules from the archive based upon the value of "databatch." When the utility completes the "databatch" number of granule deletions, it presents an updated list of the remaining granules to be deleted and prompts the operator to continue again. This process is repeated until all files are deleted. If the operator specifies "n" to the prompt for running interactively, the utility will process all selected granules without any prompting. This is useful when the operator wants to run the utility unattended and is confident about what is going to be deleted. In all cases the utility progress and error information will be written in the log file.

4.7.10.4.2 Rerun unfinished Physical Cleanup

The EcDsDeletionCleanup utility always checks if there were any unprocessed granule(s) left over from a previous unfinished run(s). If so, when the EcDsDeletionCleanup utility is invoked normally (see 4.7.10.4.1), leftover information will be displayed and logged, and 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 complete the unfinished run(s) only. Cleanup will resume from the interrupted point in the previous run(s). (For example,, start to cleanup leftover XML files which had not been cleaned up in previous run(s).)

Select 2 to complete the unfinished run(s) and start a new run. The new run will clean up granules which have been marked for deletion since the unfinished previous run(s) and which meet the lag time and data type criteria for the new run.

4.7.11 DataPool Checksum Verification Utility

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 on one host as a background process that would verify the checksum of all files for a given collection that have not had their checksum verified recently. This is accomplished by specifying a checksum verification option based on time elapsed since the last time checksum was verified. On a separate ECS host, another process could be set up to run in the background, checking files from different collection every 10 seconds based on the configuration parameter SECONDS_BETWEEN_CHECKSUMS. It is important for the DAACs to set up these background processes in a way that will balance the load between hosts and adequately keep the last checksum verification time up to date for distributed collections. This will reduce the load on OMS and cause distribution of data to occur in a more timely and accurate fashion. If necessary, the utility can 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 Inventory 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 is designed such that the checksum verification can be throttled so it does not impact on-going daily operations.
- The primary use case of this utility is to perform checksum verification for DataPool as a background job. It performs all the checksum operations on the local host and does not distribute the workload to other hosts. The utility will be installed on all the EMD service hosts and can be started on multiple hosts if load balancing is desired.
- Since multiple instances of the utility can be started on the same host, operator should be aware of the number of instances that has been started to avoid overloading the system. All DPCV runs are logged in DlDpcvHistory table in the Inventory database.

4.7.11.1 Using the DataPool Checksum Verification Utility

The DataPool Checksum Verification utility should be started by the user cmshared (or similar). The DataPool Checksum Verification utility is started by entering the following command:

EcDlDpcvStart <mode> <command line parameters>

There are nine command line parameters that may be used. Table 4.7.11-1 provides a description of those parameters.

Table 4.7.11-1. 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 can not be combined with the file option.
insertBeginTime	No	Optional parameter to specify lower limit of insertTime used to qualify granules to be verified. It can not be combined with the file option.
insertEndTime	No	Optional parameter to specify upper limit of insertTime used to qualify granules to be verified. It can not 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 can not 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.

When running EcDlDPCVStart without any parameter on the command line, it will print out its usage. See below:

Usage: 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]

4.7.11.1.1 DataPool Checksum Verification Utility Command Line Examples

1. 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.

2. 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.

3. 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.

4. For a cron rn:

```
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.

4.7.11.2 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 4.7.11-2 describes the configuration parameters.

Table 4.7.11-2. Configuration Parameters

Parameter Name	Description
PGM_ID	Program ID used for connecting to the Inventory 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
DEBUG_MESSAGES	Default to 'Y', used to log debug messages.
VALIDATION_OUTPUT_DIR	The directory where the validation output files will be saved.

4.7.11.3 DataPool Checksum Verification Utility Main Screen

The DataPool Checksum Verification utility does not have a main screen. It has a command line interface only.

4.7.11.4 Required Operating Environment

The DataPool Checksum Verification utility will run on a Linux platform.

4.7.11.5 Databases

Table 4.7.11-3 lists the supporting products that this tool depends upon in order to function properly.

Table 4.7.11-3. Product Dependencies

Product Dependency	Protocols Used	Comments
Inventory Database	SQL	Via SQL server machines

4.7.11.6 Special Constraints

The DataPool Checksum Verification utility runs only if the Inventory database server is running and if the database is available. It also assumes the stored procedures are present, EcDlDpcv is a registered user in the databases and have proper permission to execute the database functions.

4.7.11.7 Outputs

DPCV generates a log file for each run (See Section 4.7.11.10 for details). Besides the log file generated for each run, DPCV will also produce a phantom report and a checksum mismatch report if necessary under directory that is configured as VALIDATION_OUTPUT_DIR in the configuration file. The phantom report lists the DPL granule ids of the phantom granules found. The checksum mismatch lists the DPL granule ids of the granules that have checksum mismatch failures. The naming convention for the phantom report is: Phantom_dplids_RepairByRestoreOlaFromTape.<pid>.<timestamp>. The naming convention for the checksum mismatch report is: ChecksumMismatch_dplids_RepairByRestoreOlaFromTape.<pid>.<timestamp>.

The generated reports can be used as input to the EcDlRestoreOlaFromTape utility to restore the granules that are identified. The syntax to invoke the EcDlRestoreOlaFromTape utility is: EcDlRestoreOlaFromTapeStart <MODE> -file <absolute_DPCV_report_file_name> -contents dplids. Please refer to the EcDlRestoreOlaFromTape utility 609 document for details.

If DPCV runs successfully and no errors or mismatches are identified, it will exit with an exit code of 0; If DPCV run encountered an internal error, the exit code will be set to 1; If DPCV run completes successfully and identified some files with mismatch errors, the exit code will be set to 2; If DPCV run completes successfully and identified no file mismatch errors but some phantom files, the exit code will be set to 3.

4.7.11.8 Event and Error Messages

Usage errors will be displayed to the terminal screen. Processing error messages are written to the log file.

4.7.11.9 Reports

See outputs above.

4.7.11.10 Logs

Since multiple instances of DPCV can run at the same time, the utility produces a log file called EcDlDpcv.log.<pid> for each DPCV run. The log file name will be displayed on the terminal after the run is started. The log file will reside in the /usr/ecs/<mode>/CUSTOM/logs directory. This way, each DPCV run will have its own log file which makes it easy to trace and debug.

Besides the log file, a record is logged in the DlDpcvHistory table in the database for each DPCV run. It has the pid of the DPCV process, the parameters of the run, the hostname on which the DPCV is running, the start and end time of the run, the status and the statistics of the current progress.

4.7.11.11 Recovery

The DataPool Checksum Verification utility does not provide recovery for previous abnormally terminated runs, but starting the DPCV with identical parameters as the previous run will in fact perform the recovery. The recovery will be most efficient if the utility is run with the daysSinceLastChecksum parameter specified.

4.7.11.12 Database Error Handling

If a database error occurs, the actual database error string will most likely be logged in the log. Possible errors include that the database server is unavailable, that the connection to the database was dropped, or that there was an error executing a stored procedure. In the event of a database-sourced error, the utility will not be able to process any granules.

In the event that a connection to the Inventory database cannot be established, the utility may repeatedly attempt to connect to the database, depending on how the configuration file was set. If, for example, NUM_RETRIES was set to 3 and RETRY_INTERVAL was set to 10, the utility will try to connect to the database 3 times, and will wait 10 seconds between each attempt – a total of 30 seconds if all attempts are unsuccessful.

4.7.12 Inventory Validation Tool

The Inventory Validation Tool provides the EED Operations Staff with a command-line interface to verify the consistency of the ECS archive..

4.7.12.1 Using the Inventory Validation Tool

The Inventory Validation Tool is started by entering the following command from the /usr/ecs/<mode>/CUSTOM/utilities directory:

> **EcDlInventoryValidationTool.pl <command line parameters>**

There are various command line parameters that are used in combination with each other. Table 4.7.12-1 provides a description of these parameters.

Table 4.7.12-1. Command Line Parameters of the Inventory Validation Tool

Parameter Name	Description
<mode>	Mandatory. Specifies the mode of operation. This must be the first parameter passed, and it must be a valid, existing Inventory mode with a format of OPS or TS[1-4] or DEV0[1-9].
-outputDir	Optional. Specifies the relative path under the base directory defined under parameter VALIDATION_OUTPUT_DIR in the configuration file EcDlInventoryValidationTool.CFG. Note: the base directory has to exist; The relative directory (only one level down) will be 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 longer used, will be ignored if provided.
-suppressDFAed	No longer used, will be ignored if provided.

The <mode> must be the first parameter. A command line input error results in a 'usage' display. The reason why the input was incorrect is also displayed.

4.7.12.2 Inventory Validation Tool Commands

Below is an example for invoking this tool:

1. **EcDlInventoryValidationTool.pl DEV04 -outputDir inventory**

Output files will be written to an 'inventory' subdirectory under the VALIDATION_OUTPUT_DIR directory.

4.7.12.3 Required Operating Environment

The Inventory Validation Tool will run on the same server as EcDlCleanupFilesOnDisk.pl. Because both utilities use a significant amount of resources in the database it is best to not run both utilities at the same time.

4.7.12.4 Interfaces and Data Types

Table 4.7.12-2 lists the supporting products that this tool depends upon in order to function properly.

Table 4.7.12-2. Interface Protocols

Product Dependency	Protocols Used	Comments
aim schema	SQL	Via RDBMS

4.7.12.5 Configuration File Format – EcDlInventoryValidationTool.CFG

The configuration file contains details about how to connect to the RDBMS server. Without this file, the tool can not run. Table 4.7.12-3 shows a sample configuration file.

Table 4.7.12-3. Sample Configuration File

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	A unique Program ID for the utility.
NUM_RETRIES	The number of times that the utility attempts to connect to the database before exiting.
SLEEP_SEC	The number of seconds the utility waits between database connection attempts.
ROWCOUNT	No longer used, but still present in the configuration file.
SKIP_MISSINGDPL	No longer used, but still present in the configuration file.
VALIDATION_OUTPUT_DIR	The base directory where output files from the utility are written. The recommended value is /workingdata/emd/<mode>/Ivu

4.7.12.6 Special Constraints

The Inventory Validation tool runs only if the "ecs" database is available.

4.7.12.7 Outputs

Output files are created in VALIDATION_OUTPUT_DIR (defined in the configuration file) if the -outputDir parameter is not provided on the command line. Otherwise, the output files will be created in the -outputDir directory under VALIDATION_OUTPUT_DIR.

There are 8 output files generated by the Inventory Validation utility.

The names are:

- InventoryDiscrp_registered_but_not_archived_granuleids_RepairManually.<pid>.<yyyymmddhhmmss>: This reports granules that are listed in the database as having files in the

Online Archive but for some reason don't have files in the Tape Archive. This implies a failure during Ingest.

- InventoryDiscrp_should_be_public_granuleids_RepairByPublish.<pid>.<yyyymmddhhmmss>: granules that are in the hidden Data Pool but are in public collections and are eligible to be public.
- InventoryDiscrp_should_be_hidden_granuleids_RepairByUnpublish.<pid>.<yyyymmddhhmmss>: granules that are in the public Data Pool but should be in the hidden Data Pool
- InventoryDiscrp_should_be_public_browseids_RepairByPublish.<pid>.<yyyymmddhhmmss>: Browse granules that are associated with public science granules but for some reason don't have image files in the public Data Pool and recorded in the database. This should be rare since the "Publish all Browse" capability was implemented.
- InventoryDiscrp_should_be_hidden_browseids_RepairByUnPublish.<pid>.<yyyymmddhhmmss>: Browse granules that were replaced and thus should no longer be in the public Data Pool. If these granules are not marked as "deleted" then they probably should be deleted.
- InventoryDiscrp_public_granule_hidden_path_granuleids_RepairManually.<pid>.<yyyymmddhhmmss>: public granules that are under a hidden file path
- InventoryDiscrp_hidden_granule_public_path_granuleids_RepairManually.<pid>.<yyyymmddhhmmss>: hidden granules that are under a public file path
- InventoryDiscrp_versionnumber_filename_inconsistency_granuleids_RepairManually.<pid>.<yyyymmddhhmmss>: inconsistent granule version identifier with granule file or link names

Note for replacement granules: IVT was modified to take granule replacement/collision into account when identifying granules in the hidden Data Pool that need to be published. Now the candidate granule can only make it to the InventoryDiscrp_should_be_public_granuleids_RepairByPublish file if there doesn't exist any granule in the public Data Pool **with which the granule would collide or for which the currently public granule is a more recent replacement**. This is intended to **prevent predictable publishing failures**.

However, publishing failures **can still occur** when there are several granule versions in the Data Pool of which none is public. **This can occur, for example,** if the public **version** somehow gets unpublished,. In these cases, **all** versions of the hidden granules are **considered** eligible to be published, however since they're replacements to each other some might fail (depending on the sequence of the publishing **operations**). Once the latest version is published, the remaining hidden versions will no longer **be considered candidates for publishing and subsequent runs will not include them** in their output file.

4.7.12.8 Event and Error Messages

Errors will be displayed to the screen as well as logged in the log file.

4.7.12.9 Logs

The tool logs messages in the /usr/ecs/<mode>/CUSTOM/logs/EcDlInventoryValidationTool.log file.

4.7.12.10 Recovery

If the Inventory Validation Tool is interrupted by a fault, when the utility is restarted, it will just rerun everything and produce a new set of output files.

4.7.13 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.

4.7.13.1 Using the Data Pool Publish Utility

The Data Pool Publish Utility is started via the following script, from the /usr/ecs/<mode>/CUSTOM/utilities directory:

EcDlPublishUtilityStart <MODE> -ecs [-file <file_name_path> | -collection <ShortName.VersionId> | -g <ecsId1>[ ][,]<ecsId2>] [-theme <themeName>] [-batchlabel <batchLabel>] [-maxnumconactions <num>] [-register] [-publish]

or

EcDlPublishUtilityStart <MODE> -nonecs -file <file_name_path> [-theme <themeName>] [-batchlabel <batchLabel>] [-maxnumconactions <num>]

Table 4.7.13-1 Provides a description of these parameters.

Table 4.7.13-1. Data Pool Publish Utility Command Line Parameters (1 of 2)

Parameter Name	Description
-ecs	Specifies all the granules to be published are ECS granules.
-file <*file_name_path*>	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. Or if nonecs option is specified, it contains a list of xml files which specify the nonecs data to be published.
-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.
-theme <themeName>	Specifies the theme name associated with the granules to be published.
-batchlabel <batchLabel>	Specifies the batch label associated with the granules to be published.
-nonecs	Specifies all the granules to be published are NonECS granules.
–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.

Table 4.7.13-1. Data Pool Publish Utility Command Line Parameters (2 of 2)

Parameter Name	Description
-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 (GranPublicFlag='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.

Note that if neither –register, not –publish is provided, the default behavior is to register, then publish.

4.7.13.2 Data Pool Publish Utility usage examples

1. 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.

2. EcDlPublishStart OPS –ecs –g 12345, 23456 –publish

Publish the two hidden granules whose ECS ids are given.

3. 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.

4. EcDlPublishStart OPS –ecs –g 12345 –theme "test"

Publish 1 ECS granule and associate the theme "test" to the granule.

5. 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".

4.7.13.3 Required Operating Environment

The Publish Utility will run on a LINUX platform. It shall be installed on the DPL platform as part of the New Data Pool Insert Utility installation.

4.7.13.4 Interfaces and Data Types

Table 4.7.13-2 lists the supporting products that this tool depends upon in order to function properly.

Table 4.7.13-2. Interface Protocols

Product Dependency	Protocols Used	Comments
Data Pool and AIM databases	SQL	Via SQL server machines
Postgres JDBC driver	JDBC	Requires proper install of jConnect .
StoreNext client	Proprietary	Exposes the DPL file system on the DPL platform.

4.7.13.5 Input File Format

One granuleId per line for ECS data, one xml file name per line for NonECS data.

4.7.13.6 Configuration File

No special configuration file is needed to run the utility. It uses the same configuration file as the Data Pool Insert Utility (DPIU) and the New Data Pool Insert Utility (NDPIU), namely EcDlInsertUtility.properties.

4.7.13.7 Special Constraints

The mode specific database needs to be up and running and the installation platform need to have access to the Data Pool Storage Area Network.

4.7.13.8 Outputs

The output of pertinent events is recorded in the /usr/ecs/<mode>logs/EcDlPublish.log.PID log file.

4.7.13.9 Event and Error Messages

Usage errors will be displayed to the screen. Processing error messages are written to the log files.

4.7.13.10 Reports

None

4.7.13.11 Logs

The utility produces log files in the standard log file location. The log file name is EcDlPublish.log.PID. The verbosity of the log file is controlled by the DEBUG_MESSAGES entry in the EcDlInsertUtility configuration file.

4.7.13.12 Recovery

No recovery mechanism is required for this utility. In the event of an interrupted run, the run may be invoked again with the same command-line parameters. Any granules already processed will be detected and not processed again.

4.7.13.13 Database Error Handling

If a database error occurs, the specific error details will be logged. Some database errors are retried internally (i.e. deadlocks), others will cause processing of the current granule to fail and the utility to start work on the next granule in the list.

4.7.14 Unpublish Utility

The DPL Unpublish Utility is a command line tool that unpublishes specified granules from the Online Archive. 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 and associated QA/PH/MP granule links if there are any
- unpublish QA/PH/MP/BR granules and remove links associated to the corresponding science granules if there are any

The Unpublish utility can also be used to unpublish granules which are marked for deletion in the AIM database (deleteEffectiveDate is set, or DFA flag is set to "Y" or "H") for example, as would occur after a run of the Granule Deletion Utility (EcDlBulkDelete.pl). Additionally, it can unpublish granules that were "restricted" in AIM by adding entries to the DsMdGranuleRestriction table.

4.7.14.1 Using the Data Pool Unpublish Utility

The Data Pool Unpublish Utility is started via the following script, from the /usr/ecs/<mode>/CUSTOM/utilities directory:

EcDlUnpublishStart.pl –mode <mode> [-f|-file <inputfile>]

| [-g|-granules <id1>,<id2>...]

| [-a|-aim -offset <offset # of hours> [-lagtime <lagtime # of hours]]

EcDlUnpublishStart.pl –help for instructions.

Table 4.7.14-1 provides a description of these parameters.

Table 4.7.14-1. Data Pool Unpublish Utility Command Line Parameters (1 of 2)

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. This option is useful when running from a cron; it allows the utility to not "overlap" the AIM events it processes. It can be thought of as a "start time" for retrieving events from AIM.

Table 4.7.14-1. Data Pool Unpublish Utility Command Line Parameters (2 of 2)

Parameter Name	Description
-lagtime <#hours>	Indicates that only granules marked for deletion in the Inventory DB prior to the specified number of hours should be unpublished. This option is only valid in conjunction with the –aim option. This option was added as part of Release 8.1 and is useful for manually delaying the unpublish action in the Online Archive until after ECHO has processed the "deletion" event from AIM. It can be thought of as the "end time" for retrieving events from AIM. This option replaces the "-exportonly" option previously provided in EcDlCleanupGranules.pl. The option should be used carefully so that it doesn't skip AIM events; it should NOT be used in a cron to process daily AIM events because the repeating –offset (start time) will cause the events to be skipped. For cron processing it is more reliable to simply run the EcDsBulkDelete.pl utility several hours earlier than the scheduled cron for this utility.
-help	Display instructions to run the utility.

An incorrect command line results in a 'usage' syntax display message. The log file for the utility is /usr/ecs/<mode>/CUSTOM/logs/EcDlUnpublish.log.PID.

4.7.14.2 Data Pool Unpublish Utility usage examples

1. EcDlUnpublishStart.pl –mode OPS –file /home/cmshared/granuleIds.txt

Unpublish public granules for the granuleIds contained in the specified file. The file contains one AIM granuleId per line.

2. EcDlUnpublishStart.pl –mode OPS –granules 12345, 23456

Unpublish public granules for the granuleIds specified in the command line, separated by ",".

3. EcDlUnpublishStart.pl –mode OPS –aim –offset 2 –lagtime 24

Unpublish granules deleted from the AIM database since the current time minus 2 days exclude the granules deleted for the last 24 hours.

4.7.14.3 Required Operating Environment

The Unpublish Utility will run on a LINUX platform. It shall be installed on the DPL platform as part of the New Data Pool Insert Utility installation.

4.7.14.4 Interfaces and Data Types

Table 4.7.14-2 lists the supporting products that this tool depends upon in order to function properly.

Table 4.7.14-2. Interface Protocols

Product Dependency	Protocols Used	Comments
Data Pool database	SQL	Java JDBC invocation of Stored Procedures.
StoreNext client	Proprietary	Exposes the DPL file system on the DPL platform.

4.7.14.5 Input File Format

One granuleId per line.

4.7.14.6 Configuration File

No special configuration file is needed to run the utility. It uses the same configuration file as the Data Pool Insert Utility (DPIU) and the New Data Pool Insert Utility (NDPIU), namely EcDlInsertUtility.properties.

4.7.14.7 Special Constraints

The mode specific database needs to be up and running and the installation platform need to have access to the Data Pool Storage Area Network.

4.7.14.8 Outputs

The output of pertinent events is recorded in the /usr/ecs/<mode>logs/EcDlUnpublish.log.PID log file.

4.7.14.9 Event and Error Messages

Usage errors will be displayed to the screen. Processing error messages are written to the log files.

4.7.14.10 Reports

None

4.7.14.11 Logs

The utility produces log files in the standard log file location. The log file name is EcDlUnpublish.log.PID. The verbosity of the log file is controlled by the DEBUG_MESSAGES entry in the EcDlInsertUtility configuration file.

4.7.14.12 Recovery

No recovery mechanism is required for this utility. In the event of an interrupted run, the run may be invoked again with the same command-line parameters. Any granules already processed will be detected and not processed again.

4.7.14.13 Database Error Handling

If a database error occurs, the specific error details will be logged. Some database errors are retried internally (i.e. deadlocks), others will cause processing of the current granule to fail and the utility to start work on the next granule in the list.

This page intentionally left blank.

4.7.15 Archive Checksum Validation 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 schema within the RDBMS. 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 schema 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.

4.7.15.1 Using the Archive Checksum Validation Utility

The Archive Checksum Validation utility should be started by the user cmshared (or similar). The Archive Checksum Validation utility is started by entering the following command:

EcDsAmAcvu.pl <mode> <command line parameters>

There are eight command line parameters that may be used. Table 4.7.15-1 provides a description of those parameters.

```
EcDsAmAcvu.pl <MODE> [-calculate]
                [-days <NUMBER OF DAYS>]
                [-percent <PERCENT 1-100>]
                [-norecovery]
                (-volumegroup <VOLUME GROUPS> |
                -mediaid <MEDIAIDS> |
                -granuleid <GRANULEIDS> |
                -file <FILENAME>
```

-modifytype <FILENAME>)

[-outputDir <DIRECTORY>]

Table 4.7.15-1. Command Line Parameter

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, modifytype, 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, modifytype 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, modifytype 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).
file	Yes, if volumegroup, mediaid, modifytype 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.
modifytype	Yes, if volumegroup, mediaid, granuleid, or file parameters are not present	Parameter to specify the name of an input file containing granuleids of granules, checksum origins, and checksum types whose files will have their checksum verified and modified with the new checksum origin and checksum type. Granuleid, origin, and type should be listed in the input file separated by commas. Additional Granuleids, origins, and types should be separated by newlines. Ex: <granuleid>,<origin>,<type> <granuleid>,<origin>,<type> Etc...
outputDir	No	Parameter to specify directory for error files under /workingdata/emd/<MODE>/Acvu

4.7.15.1.1 Archive Checksum Validation Utility Command Line Examples

1. 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.

2. 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.

3. 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.

4. 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.

5. For a "modifytype" run:

`EcDsAmAcvu.pl OPS –modifytype granules.txt`

The Archive Checksum Validation Utility will perform checksumming for the files related to granules specified in granules.txt and update the Checksum origins and Checksum types.

4.7.15.2 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 4.7.15-2 describes the configuration parameters.

Table 4.7.15-2. Configuration Parameters

Parameter Name	Value 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
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/writeable by cmshared. The suggested directory is /workingdata/emd/<MODE>/Acvu

4.7.15.3 Archive Checksum Validation Utility Main Screen

The Archive Checksum Validation Utility does not have a main screen. It has a command line interface only.

4.7.15.4 Required Operating Environment

The Archive Checksum Validation Utility will run on a Linux platform.

4.7.15.5 Databases

Table 4.7.15-3 lists the supporting products that this tool depends upon in order to function properly.

Table 4.7.15-3. Product Dependencies

Product Dependency	Protocols Used	Comments
aim schema	SQL	Via RDBMS

4.7.15.6 Special Constraints

The Archive Checksum Validation runs only if the RDBMS is running and if the database is available.

4.7.15.7 Outputs

Output of update events and errors will be always appended to a single log file. The Acvu will also produce a failed file (AIMChecksumMismatch_ecsids_RepairByRestoreTapeFromOla.<pid>.<date>). It will be placed in /workingdata/emd/<MODE>/Acvu. This directory may be further extended using the –outputDir command line option.

4.7.15.8 Event and Error Messages

Usage errors will be displayed to the terminal screen. Processing error messages are written to the log files.

4.7.15.9 Reports

None

4.7.15.10 Logs

The utility produces a log file called EcDsAmAcvu.log in the /usr/ecs/<mode>/CUSTOM/logs directory. If this log file already exists, the new information will automatically be appended. If there is no existing log file by this name, a new log file with this name will automatically be created.

Since the log file may grow to a considerable size after constant use, it is recommended that it be saved off into a separate file from time to time for maintainability.

4.7.15.11 Recovery

The Archive Checksum Validation Utility provides a capability to recover from interruptions caused by situations such as system faults or database errors leaving all or some of the files not checksummed. The utility will detect such failure upon the next run and continue processing the directories and files that were left unprocessed in the previous run. The operator can ignore

recovery by using the –norecovery option. Recovery will only be needed if the utility was interrupted after it started checksumming files.

4.7.15.12 RDBMS Error Handling

If a RDBMS error occurs, the actual RDBMS error string will most likely be displayed on the screen and in the log. Possible errors include that the database server is unavailable, that the connection to the database was dropped, or that there was an error executing a RDBMS function. In the event of a RDBMS-sourced error, the utility will immediately stop running.

In the event that a connection to the database cannot be established, the utility may repeatedly attempt to connect to the database, depending on how the configuration file was set. If, for example, NUM_RETRIES was set to 3 and RETRY_INTERVAL was set to 10, the utility will try to connect to the database 3 times, and will wait 10 seconds between each attempt – a total of 30 seconds if all attempts are unsuccessful.

4.7.16 XML Archive Corruption Check Utility (EcDsAmXcu.pl)

The XML Archive Corruption Check Utility (EcDsAmXcu.pl) 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.

4.7.16.1 Using the XML Archive Corruption Check Utility (EcDsAmXcu.pl)

The XML Archive Corruption Check Utility (EcDsAmXcu.pl) should be started by the user cmshared (or similar). The XML Archive Corruption Check Utility (EcDsAmXcu.pl) is started by entering the following command:

EcDsAmXcu.pl <mode> <command line parameters>

There are seven command line parameters that may be used. Table 4.7.16-1 provides a description of those parameters.

Table 4.7.16-1. 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

4.7.16.1.1 XML Archive Corruption Check Utility (EcDsAmXcu.pl) Command Line Examples

1. For an "ESDT" run:

`EcDsAmXcu.pl OPS –ESDT ALL`

The XML Archive Corruption 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 Archive Corruption 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 Archive Corruption Check Utility will perform checking for 50% of AST_L1B.003 granules which have not been checked in the last 10 days.

2. For a "granuleid" run:

`EcDsAmXcu.pl OPS –granuleid 22083,22085,22087`

The XML Archive Corruption Check Utility will perform checking for the xml files related to granules 22083, 22085, and 22087in OPS mode

3. For a "file" run:

`EcDsAmXcu.pl OPS –file granuleids.txt`

The XML Archive Corruption Check Utility will perform checking for the xml files related to granules specified in granuleids.txt

4.7.16.2 XML Check Configuration File

The XML Archive Corruption 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 4.7.16-2 describes the configuration parameters.

Table 4.7.16-2. Configuration Parameters (1 of 2)

Parameter Name	Value 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.

Table 4.7.16-2. Configuration Parameters (2 of 2)

Parameter Name	Value Description
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.
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

4.7.16.3 XML Archive Corruption Check Utility Main Screen

The XML Archive Corruption Check Utility does not have a main screen. It has a command line interface only.

4.7.16.4 Required Operating Environment

The XML Archive Corruption Check Utility will run on a Linux platform.

4.7.16.5 Databases

Table 4.7.16-3 lists the supporting products that this tool depends upon in order to function properly.

Table 4.7.16-3. Product Dependencies

Product Dependency	Protocols Used	Comments
aim schema	SQL	Via RDBMS

4.7.16.6 Special Constraints

The XML Archive Corruption Check Utility runs only if the RDBMS is running and if the database is available.

4.7.16.7 Outputs

Output of update events and errors will be always appended to a single log file. The Xcu will also produce a phantom file(AIMPhantomXMLs_ecsids.<pid>.<date>) and two failed files(AIMFailedXMLCheck_ecsids.<pid>.<date> and AIMFailedXMLCheck_files.<pid>.<date>). They will be placed in /workingdata/emd/<MODE>/Xcu. This directory may be further extended using the –outputDir command line option.

4.7.16.8 Event and Error Messages

Usage errors will be displayed to the terminal screen. Processing error messages are written to the log files.

4.7.16.9 Reports

None

4.7.16.10 Logs

The utility produces a log file called EcDsAmXcu.log in the /usr/ecs/<mode>/CUSTOM/logs directory. If this log file already exists, the new information will automatically be appended. If there is no existing log file by this name, a new log file with this name will automatically be created.

Since the log file may grow to a considerable size after constant use, it is recommended that it be saved off into a separate file from time to time for maintainability.

4.7.16.11 Recovery

The XML Archive Corruption Check Utility can recover from interruptions caused by situations such as the system faults or database errors leaving all or some of the xml files unchecked. To recover, the operator would need to specify the –days parameter and enter the number of days since the last time the utility was run. This will ensure xml files which have already been checked are not rechecked.

4.7.16.12 RDBMS Error Handling

If a RDBMS error occurs, the actual RDBMS error string will most likely be displayed on the screen and in the log. Possible errors include that the database server is unavailable, that the connection to the database was dropped, or that there was an error executing a stored procedure. In the event of a RDBMS-sourced error, the utility will immediately stop running.

In the event that a connection to the Inventory database cannot be established, the utility may repeatedly attempt to connect to the database, depending on how the configuration file was set. If, for example, NUM_RETRIES was set to 3 and RETRY_INTERVAL was set to 10, the utility will try to connect to the database 3 times, and will wait 10 seconds between each attempt – a total of 30 seconds if all attempts are unsuccessful.

4.7.17 RestoreOlaFromTape

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 inventory (aim)schema entries. In all other cases, granules maybe restored using the Publish utility (e.g., if file entries or browse JPEG references are incorrect).

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, QA and PH symbolic links for the science granule that are restored.
- Restore browse granules or files from the browse file archive, which is a disk archive. 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.
- 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.

4.7.17.1 Running the RestoreOlaFromTape Utility

The following command line syntax must be used to start the RestoreOlaFromTape Utility:

- **EcDlRestoreOlaFromTapeStart <MODE> -file** <file name and path with contents specified by –contents parameter> **-contents <granuleids | dplfiles> [-restoremisbr] [-restorelinks | -restorelinksonly] [-restorexmlonly] [-norecovery] [-email <usertoreceivestatusemail>]**

Table 4.7.17-1 provides a description of the above command line parameters.

Table 4.7.17-1. RestoreOlaFromTape Utility 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: granuleids: the input file contains the ECS granule IDs (GranuleIds) or browse IDs (BrowseIds) 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 browse/QA/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 '-restorelinksonly' is specified in command line, only browse/QA/PH symbolic links are restored. Note: A list of science granule ECS GranuleIds 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.
[-norecovery]	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.

4.7.17.2 Sample Invocations of the RestoreOlaFromTape Utility

Below are some examples for invoking this utility:

1. **EcDlRestoreOlaFromTapeStart OPS -file** </home/john/granuleids.txt> **-contents granuleids –norecovery –email cmshared@ecs.nasa.gov**

Restores to the on-line archive from tape the DPL granules with the ECS GranuleIds present in the granuleids.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 AIM 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.

2. **EcDlRestoreOlaFromTapeStart OPS -file** </home/john/dplfiles.txt> **-contents dplfiles –norecovery**

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.

3. **EcDlRestoreOlaFromTapeStart OPS -file** </home/john/granuleids.txt> **-contents granuleids**

Reruns the previous unsuccessful restore from tape request based on the information saved in the AIM 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.

4.7.17.3 RestoreOlaFromTape Utility Main Screen

The RestoreOlaFromTape Utility does not have a main screen. It has a command line interface only.

4.7.17.4 Required Operating Environment

The RestoreOlaFromTape Utility runs on Linux platforms. It will be deployed on the Data Pool machine.

4.7.17.5 Databases

Table 4.7.17-2 lists the supporting products this tool depends upon to function properly.

Table 4.7.17-2. Interface Protocols

Product Dependency	Protocols Used	Comments
AIM schema	SQL	Located within the ecs database.
Postgres JDBC driver	JDBC	Requires proper install of Database JDBC driver.

If a PostgreSQL error occurs, you are most likely to see the actual PostgreSQL error string displayed on the screen and in the log. Some errors can be that the database server is unavailable, the connection to the database was dropped, or there was an error executing a RDBMS function. In the event of a PostgreSQL-sourced error, the utility immediately stops running.

In the event that a connection to the RDBMS cannot be established, the utility will exit immediately.

4.7.17.6 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 as shown in Table 4.7.17-3:

Table 4.7.17-3. Individual Configuration Parameters (1 of 2)

Parameter Name	Description
PGM_ID	Sybase 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_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
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>, ...

Table 4.7.17-3. Individual Configuration Parameters (2 of 2)

Parameter Name	Description
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
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.
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
MISR_SPECIAL_PROCESSING	controls if MISR Browse special processing module is ON (Y) or OFF (N)

4.7.17.7 Special Constraints

The RestoreOlaFromTape Utility runs only if the ECS RDBMS server is running and the "ecs" database is online and if at least one checksum service host is available.

4.7.17.8 Outputs

Output of events and errors is always appended to a single log file.

4.7.17.9 Event and Error Messages

Events and error messages are written to the log file /usr/ecs/<mode>/CUSTOM/logs/EcDlRestoreOlaFromTape.log. If this log file already exists, the new information is automatically appended. If there is no existing log file by this name, a new log file with this name is automatically created.

Since the log file may grow to a considerable size after constant use, it is recommended that it be saved off into a separate file from time to time for maintainability.

4.7.17.10 Reports

None

4.7.18 RestoreTapeFromOla

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 inventory entries of the corresponding granules must be completely intact. This is because the utility does not have capability to repair inventory 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.

4.7.18.1 Running the RestoreTapeFromOla Utility

The following command line syntax must be used to start the RestoreOlaFromTape Utility:

- **EcDlRestoreTapeFromOlaStart <mode> -file** <file name and path of input file whose contents type is specified by the –contents parameter> **-contents mediaids | granuleids | tapefiles [-volumegrouptype primary|backup] [-originalvolumegroup] [-removereadonlyfile] [-norecovery] [-email <usertoreceivestatusemail>]**

Table 4.7.18-1 provides a description of the above command line parameters.

Table 4.7.18-1. RestoreTapeFromOla Utility Parameters (1 of 3)

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. granuleids: the input file contains the ECS granule IDs (GranuleIds) of the tape granules that must be repaired

Table 4.7.18-1. RestoreTapeFromOla Utility Parameters (2 of 3)

Parameter Name	Description
[-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.
[-volumegrouptype <volumegroup type>]	The type of volume group the utility will restore files to. By default, the utility will restore tape files to both primary and backup volume groups. Any of the following options are allowed: ➢ primary: the utility will restore files to primary volume groups. ➢ backup: the utility will restore files to backup volume groups.
[-originalvolumegroup]	Indicates that the utility will restore files to original volume groups, the files are not renamed. No need to pass in -removereadonly file option if -originalvolumegroup is in the command line. By default, the utility will restore to currently open volume group.
[-norecovery]	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.

Table 4.7.18-1. RestoreTapeFromOla Utility Parameters (3 of 3)

Parameter Name	Description
[-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.

4.7.18.2 Sample Invocations of the RestoreOlaFromTape Utility

Below are some examples for invoking this utility:

1. **EcDlRestoreTapeFromOlaStart 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 AIM database. An Email with the request status will be sent to the cmshared@ecs.nasa.gov once the utility finishes the current request.

2. **EcDlRestoreTapeFromOlaStart 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 AIM database.

3. **EcDlRestoreTapeFromOlaStart OPS -file** </home/john/granuleids.txt> **-contents granuleids**

Restores the granules with the ECS IDs specified in the granuleids.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 AIM 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.

4.7.18.3 RestoreTapeFromOla Utility Main Screen

The RestoreTapeFromOla Utility does not have a main screen. It has a command line interface only.

4.7.18.4 Required Operating Environment

The RestoreTapeFromOla Utility runs on Linux platforms. It will be deployed on the Data Pool machine.

4.7.18.5 Databases

Table 4.7.18-2 lists the supporting products this tool depends upon to function properly.

Table 4.7.18-2. Interface Protocols

Product Dependency	Protocols Used	Comments
AIM schema	SQL	Located within the ecs database.
JDBC driver	JDBC	Requires proper install of JDBC driver

If a database error occurs, you are most likely to see the actual database error string displayed on the screen and in the log. Some errors can be that the database server is unavailable, the connection to the database was dropped, or there was an error executing a stored procedure. In the event of a database-sourced error, the utility immediately stops running.

In the event that a connection to the AIM database cannot be established, the utility will exit immediately.

4.7.18.6 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 as shown in Table 4.7.18-3.

Table 4.7.18-3. Individual 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	Database connectivity, the host name for the database server.
DBSERVERPORT	Database connectivity, the port number for the database server on the specified host.
DBUSER	Database connectivity, the user name (EcDlRestoreTapeFromOla) used to login to the database server. AIM databases.
DBNAME	Database connectivity, the name of the RDBMS database (ecs)
DBSUBSYSTEM	Database connectivity, database schema (aim)
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.

Table 4.7.18-3. Individual Configuration Parameters (2 of 2)

Parameter Name	Description
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.
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.

4.7.18.7 Special Constraints

The RestoreTapeFromOla Utility runs only if the ECS RDBMS server is running and the "ecs" database is online and if at least one checksum service host is available.

4.7.18.8 Outputs

Output of events and errors is always appended to a single log file.

4.7.18.9 Event and Error Messages

Events and error messages are written to the log file /usr/ecs/<mode>/CUSTOM/logs/EcDlRestoreTapeFromOla.log. If this log file already exists, the new information is automatically appended. If there is no existing log file by this name, a new log file with this name is automatically created.

Since the log file may grow to a considerable size after constant use, it is recommended that it be saved off into a separate file from time to time for maintainability.

4.7.18.10 Reports

None

4.7.19 EMS Dataset Extract Utility

The Earth Science Data and Information System (ESDIS) Metrics System (EMS) Dataset Extract utility provides DAAC Operations Staff an operational support tool that automatically extracts data and information from DAAC databases and transmits the data to the EMS reporting tool.

The EMS Dataset Extract utility extracts data from DAAC operational database tables and outputs the data into ASCII text flat files. The utility is designed to run as a CRON on a daily basis. The flat files prepared for EMS are formatted so that one line in the file represents one record of information. The output files have field information delimited by "|&|". The flat files are transferred via 'SCP' to a centralized location where they are ingested into EMS.

The EMS Dataset Extract utility is run with a set of optional and required DAAC defined command line parameters. The utility can also be run manually from the Linux command prompt with the optional and required parameters specified. The utility will behave differently depending on the combination of parameters entered. Daily checks by EMS operations personnel will ensure that the data exported by the EMS Dataset Extract utility was received at the central EMS location. Updated flat files are to be sent to EMS whenever data processing failures are encountered or data corruption is detected.

The utility is designed to extract data in periods of 24-hours or one day. If the data transfer fails for a few days, the utility is designed to perform data recovery automatically for the period of time missed as soon as communication is restored.

4.7.19.1 Running the EMS Dataset Extract Utility

The EMS Dataset Extract utility is run from a CRON (see Section 4.7.19.2) or started by entering the following command from the /usr/ecs/<mode>/CUSTOM/utilities directory Linux command line:

>EcDbEMSdataExtractor.pl-m <mode> -s <start date> -e <end date> -x <extract type> -v –o –i

Table 4.7.19-1 shows the parameters for the EMS Dataset Extract utility.

Table 4.7.19-1. Command Line Parameters of the EMS Dataset Extract Utility (1 of 2)

Parameter Name	Description
-(m)ode	Mandatory. Specifies the mode in which the extraction is to occur. It must be a valid, existing mode with a format of OPS or TS[1-4] or DEV0[1-9].
-(s)tartdate	Optional. The startDate time for ExtractType processing with a format of "mm dd, yyyy" or "mm/dd/yyyy".
-(e)nddate	Optional. The endDate time for ExtractType processing with a format of "mm dd, yyyy" or "mm/dd/yyyy".
-e(x)tracttype	Optional. Identifies the type of data being extracted. The following values are valid extracttypes: Meta, searchExp, Ing, Arch, DistFTP, DistHTTP, DistMedia.

Table 4.7.19-1. Command Line Parameters of the EMS Dataset Extract Utility (2 of 2)

Parameter Name	Description
-(o)verride	Optional. Identifies whether a period of time longer than the default 24-hour period will be used for the date range for the extracttype. If the override command line parameter is specified, entries are required for the startdate, enddate, and extracttype.
-(v)erbose	Optional. Prints messages to screen as well as log.
-(i)nitial	Optional. Will enter 'default' into the ExecutionMode field in EcEMSextractRecord table for the indicated dataset. This option is required on the first run when setting up the EMS extract process.

The -mode parameter is mandatory. For each command line parameter, a dash "-" followed by the letter in parenthesis indicated in the above table can be used instead of the full parameter name.

Table 4.7.19-2 describes datasets that are extracted and exported using the extraction utility:

Table 4.7.19-2. Datasets of the EMS Dataset Extract Utility

Dataset Name	Description
Meta	Product attribute metadata
searchExp	Product attribute search
Ing	This report provides processing metrics from the ECS Ingest subsystem such as the length of time required to transfer and archive each granule.
Arch	This report provides a list of granules added during the period.
DistFTP (DataPool, FtpPush, FtpPull DistHTTP (DataPool)	This report provides a list of files that were distributed during the period by the various distribution methods.
DistMedia (Cdrom, Dlt, Dvd)	Electronic media distribution orders

NOTE: Initially the EMS system needed to know about the DAAC users and Product attributes. This data must be extracted and sent to EMS in the Meta and searchExp flat files which report information maintained in the AIM database. Metadata and Product Attribute Flat file information maintained in the AIM database was sent. User information was also sent. Also, prior to running the EMS Dataset Extract utility in the default execution mode a baseline for the default execution was established. The baseline was the date from which the default execution should start processing. A record of this baseline is recorded in the MSS database EcEMSextractRecord table. Each time the EMS Dataset Extract utility is executed in default mode this table is checked to determine the last time a dataset was processed and to determine the date range to use for the current run of the dataset.

4.7.19.2 EMS Dataset Extract Utility Examples

Below are examples for invoking this tool:

1. **EcDbEMSdataExtractor.pl -m <mode>**

Running the EMS Dataset Extract utility with only the –m option is the default way to run the utility, and this should be the only parameter used when running the utility as a CRON. To set up the CRON, access the Linux server as the Postgres user. Set up the CRON by running the CRONTAB –e command. The command will be something like: 51 16 * * 2 (export LD_LIBRARY_PATH=/tools/sybOCv12.5.1/lib:/home/cmops/lib;/bin/csh -c "cd /usr/ecs/TS1/CUSTOM/utilities; EcDbEMSdataExtractor.pl -m TS1"). This command may be different based on the configuration for the server.

Since the "start date" and "end date" parameters are not provided, the EMS Dataset Extract utility will access the EcEMSextractRecord table for each report type and retrieve the most current record for the report that has been marked "Default" in the ExecutionMode field. The beginning "start date" and "end date" for the Dataset run will be calculated based on the retrieved value for the last run of the report.

2. **EcDbEMSdataExtractor.pl -m <mode> -s "start date" –e "end date" –x DistFTP**

Running the EMS Data Extract with these options will create output files for DistFTP data or the specified report for each day greater than or equal to the start date and less than the end date. A record for each day of the run will be inserted into the EcEMSextractRecord table. The date range specified by the start date and end date must be at least 24 hours. The dates should be entered without hour or minutes specified. A record of the run will also be logged in the log file. If the –x parameter is omitted, then output files for all report types will be created.

3. **EcDbEMSdataExtractor.pl -m <mode> -s "start date" –e "end date"**

Running the EMS Data Extract with these options will create output files for all datasets for each day greater than or equal to the start date and less than the end date. A record for each day of the run will be inserted into the EcEMSextractRecord table. The date range specified by the start date and end date must be at least 24 hours. The dates should be entered without hour or minutes specified. A record of the run will also be logged in the log file.

4. **EcDbEMSdataExtractor.pl -m <mode> -s "start date" -e "end date(start date + one day)" -i**

The preceding command should be run from the Linux prompt to initialize the datasets for default execution: If the –x option is used then only the specified report type will be initialized. The start date should be a date prior to the ingest of any granules in the mode, the end date can be set to the date of the first ingested granule in the mode or any date up to the current day. For the given report type a value of "Default" will be placed in the ExecutionMode field for the record of the run. Subsequent runs of the EMS Data Extract utility without the date range specified will access the EcEMSextractRecord table for the report type and retrieve the most current record that has been marked "Default" in the ExecutionMode field. The beginning

"start date" and "end date" for the report run will be calculated based on the retrieved value for the last run of the report.

4.7.19.3 Required Operating Environment

The EMS Dataset Extract utility runs on the Linux platform.

4.7.19.4 Interfaces and Data Types

Table 4.7.19-3 lists the supporting products that this tool depends upon in order to function properly.

Table 4.7.19-3. Interface Protocols

Product Dependency	Protocols Used	Comments
Postgres	SQL	Via SQL server machine.
Perl module	Perl	Module to connect to the database and print out the nicely formatted help page.

4.7.19.5 Configuration File Format – EcDbEMSdataExtractor.CFG properties

The EcDbEMSdataExtractor.pl utility requires a configuration file. This configuration file, "EcDbEMSdataExtractor.CFG", is located in the /usr/ecs/<mode>/CUSTOM/cfg directory on the x4spl01 server. All edits of the EcDbEMSdataExtractor.CFG" file will be implemented using a Linux editor, such as "vi". The configuration file contains vital details about how to connect to the Postgres server and EMS host machine. Without this file, the tool cannot run. Table 4.7.19-4 describes the configuration parameters:

Table 4.7.19-4. Configuration Parameters (1 of 2)

Parameter Name	Recommended Value	Description
SERVER	<x4dbl01_srvr>	Enter Postgres server name e.g. x4dblnn_srvr.
PROVIDER	<DAAC NAME>	Enter provider name e.g. DAAC identifier.
EMSEXTRACTDIR	/usr/ecs/<mode>/CUSTOM/data/DSS	Enter EMS extraction directory location. This is the directory path specifying where data is extracted to when bcp'd out of database e.g. /usr/ecs/<mode>/CUSTOM/data/DSS.
EMSUSER	cmshared OR allmode	Enter user name to gain access to host represented by IPADDRESS - provided by EMS team.
PGMID	7000900	Static value. Same for all DAACs and Modes.

Table 4.7.19-4. Configuration Parameters (2 of 2)

Parameter Name	Recommended Value	Description
DBUSER	EcDbEMSdataExtractor	Static value. Same for all DAACs and Modes.
IPADDRESS	The following is an example <123.456.789.1>	Enter IP Address or host name e.g. ws1.ems.eosdis.nasa.gov - provided by EMS team. The IP Address identifying EMS host to SCP the data files produced by the utility.
STORNEXT	<Descriptor Directory Path>	Location of ESDT descriptor files.
LAG	<-1>	The default LAG time set in configuration file is -1, meaning if the EMS extract script is run today for default configuration, data will be provided up to the day before yesterday. Setting the value to 0 will provide data up to yesterday. Setting the value to 1 will provide data up to current time.
DESTINATIONDIR	<blank>	The default DESTINATIONDIR is blank, meaning that the data extracted by the EMS extract script will be sent to the home directory on the server specified by IPADDRESS. This allows for sending data to a subdirectory. The full path for the subdirectory should be specified.

4.7.19.6 Flat Files Naming Convention

The name of the flat file consists of three parts: timestamp, root file name, and extension.

1. **Timestamp**

Timestamp designates the year, month and day the content of the data file was created. If a revised file is being sent (see below) the timestamp represents the date on which the original file was created with the .rev<1-n> file extension used to identify the file as a revision.

2. **Root File Name**

Root File Name consists of the Provider, File Type, and Data Source components of a file name. It must be unique for each provider.

3. **Extension**

Extension designates the type of file and the revision status by appending a number 1-n to the end of the file name.

The name of the data files is in the following format for all the Data Providers**:**

<YYYYMMDD>_<Provider>_<FileType>_<DataSource>.flt.rev<1-n>
Where: YYYY designates the 4 digit year for the time the Data Ingest Flat File was created

MM designates the 2 digit month, 01 through 12

DD_ designates the 2 digit day, 01 through 31, followed by an underscore

Provider_ designates the provider of the data, mutually agreed upon acronym defined in the Operations Agreements (OA), followed by an underscore.

FileType_ designates the type of flat file sent, followed by an underscore where type is one of the following values:

"Ing"	Data Ingest Flat Files
"Arch"	Data Archive Flat Files
"searchExp"	Product Attribute Search Files
"Meta"	Product Attribute Metadata Flat Files
"DistMedia"	Media distribution log Flat File
"DistFTP"	FTP distribution log Flat File (also used to report HTTP downloads)
"DistHTTP"	HTTP distribution log Flat File (used to report Data Access downloads)

DataSource designates the database table

.flt indicates the file is a flat file

.rev<1-n> indicates the file has been resent because of errors; the number is incremented for each update (e.g. rev1, rev2, rev3... revN)

4.7.19.7 Flat Files Updates

Updated flat files are to be sent to the EMS whenever data processing failures are encountered or data corruption is detected. The naming convention for the updated data flat file must follow the format described above with the appended ".rev<1-n>". The EMS extract utility run manually will facilitate this update process.

4.7.19.8 Flat File Format

A flat file contains the output data from DAAC operational database tables. Each line of the flat file represents one record information and each field of a record is ASCII text delimited by "|&|". The extracted flat files are located in the directory that is specified by the "EMSEXTRACTDIR" (Table 4.7.19-4) in configuration file.

1. **Data Ingest Flat File**

Table 4.7.19-5 describes the data ingest flat file layout information:

Table 4.7.19-5. Data Ingest Flat File Layout (1 of 2)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
ECSGranuleID	AIM UID for a granule	InHistoricGranule	ECSGranuleID	numeric (16)	No
DataType	This holds primary ESDT short-name of an ECS data type that is handled by a particular data server. (i.e.,AM-1 L0, SAGEIII L0, Radat ALT L0, Landsat7 L0R, SeaWinds, Ancillary, etc.)	InHistoricGranule	DataType	vchar (32)	No
DataGranuleVolume	Total data volume to be ingested for a data granule in an ingest request. The total data volume for the data granule is determined by summing the data volumes for the files comprising the data granule.	InHistoricGranule	DataGranuleVolume	float(8)	Yes
DataGranuleState	This is the state of a data granule.	InHistoricGranule	DataGranuleState	varchar(30)	Yes
ExternalDataProvider	This is the name of the External data provider.	InHistoricGranule	ExternalDataProvider	varchar(20)	No
ProcessingStartDateTime	This is the processing start date and time for ingest of a data granule.	InHistoricRequest	ProcessingStartDateTime	varchar(18)	Yes
ProcessingEndDateTime	This is the processing end date and time for ingest of a data granule.	InHistoricRequest	ProcessingEndDateTime	varchar(18)	Yes

Table 4.7.19-5. Data Ingest Flat File Layout (2 of 2)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
TimeToArchive	Time (in seconds) from submit of archive request to Data Server to receipt of completion status (success or fail).	InHistoricRequest	TimeToArchive	int	Yes
TimeToPreprocess	Time (in seconds) from start of preprocessing of granule to time of completion (success or fail) of preprocessing.	InHistoricRequest	TimeToPreprocess	int	Yes
TimeToXfer	Time (seconds) from start of transfer for 1st file in granule to time of receipt of status (success or fail) for last file in granule.	InHistoricRequest	TimeToXfer	int	Yes

2. **Data Archive Flat File**

Table 4.7.19-6 describes the data archive flat file layout information:

Table 4.7.19-6. Data Archive Flat File Layout (1 of 2)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
dbID	The unique ID which identifies granule.	EMSArchData	dbID	numeric (16)	Yes
ShortName	Short name associated with the collection or granule.	EMSArchData	ShortName	varchar(24)	Yes
sizeDataGranule	Size of granule in Bytes.	EMSArchData	sizeDataGranule	float	Yes
totalFiles	Total number of files.	EMSArchData	totalFiles	int	Yes
insertTime	The time of original insertion.	EMSArchData	insertTime	varchar(18)	Yes
BeginningDateTime	The attribute within AIM Inventory that allows both the SingleDateTime (TimeofDay) and RangeDateTime(RangeBeginningDate) to be efficiently indexed and searched.	EMSArchData	BeginningDateTime	varchar(18)	Yes

Table 4.7.19-6. Data Archive Flat File Layout (2 of 2)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
EndingDateTime	The attribute within AIM Inventory that allows both the SingleDateTime (TimeofDay) and RangeDateTime (RangeEndingDate) to be efficiently indexed and searched.	EMSArchData	EndingDateTime	varchar(18)	Yes
ProductionDateTime	The date and time a specific granule was produced by a PGE.	EMSArchData	ProductionDateTime	varchar(18)	Yes
LocalGranuleID	Data provider-supplied identifier for a granule that ECS ingests and is required to capture.	EMSArchData	LocalGranuleID	varchar(80)	Yes
VersionID	Version identifier of the data collection.	EMSArchData	VersionID	tinyint	Yes
DeleteFromArchive	Granules deleted from the archives. 'Y ' =Scheduled for deletion, 'N' = Not scheduled for deletion, 'H' = Hidden, 'G' = Never delete.	EMSArchData	DeleteFromArchive	char(1)	Yes
deleteEffectiveDate	Date on which the entry may be deleted.	EMSArchData	deleteEffectiveDate	varchar(18)	Yes
lastUpdate	The time of the last update.	EMSArchData	lastUpdate	varchar(18)	Yes

3. **Product Attribute Search Flat Files**

Table 4.7.19-7 describes the product attribute search flat file layout information:

Table 4.7.19-7. Product Attribute Search Flat File Layout

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
ShortName	Short name associated with the collection or granule.	DsMdCollections	ShortName	varchar(24)	No
subType	The internally created column used to hold the ShortName.	DsMdCollections	subType	varchar(30)	No
dataSource	The source that provides data.	EcEMSextractRecord	DataSource	varchar(50)	Yes

4. **Product Attribute Metadata Flat Files**

Table 4.7.19-8 describes the product attribute metadata flat file layout information:

Table 4.7.19-8. Product Attribute Metadata Flat File Layout (1 of 2)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
ShortName	Short name associated with the collection or granule.	DsMdCollections EMSShortNameTemp	ShortName	varchar(24)	No
LongName	The long name associated with the collection includes dataset name/product name. This is the reference name used in describing the scientific contents of the data collection.	EMSShortNameTemp	LongName	varchar(80)	No
ProcessingLevelID	This attribute reflects the classification of the science data processing level, which defines in general terms the characteristics of the output of the processing performed.	DsMdCollections	ProcessingLevelID	char(6)	Yes
TopicKeywords	Keyword that describes the ShortName science area.	EMSShortNameTemp	TopicKeywords	varchar(500)	Yes
ProcessingCenter	Center where collection was or is being processed. i.e. name of DAAC or SCF.	DsMdCollections	ProcessingCenter	varchar(20)	Yes
ArchiveCenter	Center where collection is archived.	DsMdCollections	ArchiveCenter	varchar(20)	No
Missions	Related missions, Aqua, Aura, etc.	EMSShortNameTemp	Missions	varchar(500)	Yes

Table 4.7.19-8. Product Attribute Metadata Flat File Layout (2 of 2)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
Instruments	An integrated collection of hardware containing one or more sensors and associated controls designed to produce data on an environment. For a multiinstrument product from one mission, list all instruments separated by a comma (,). If the product is a combined product from multi-missions involving multiple instruments, a group of the instruments from each mission should be separated by a semi-colon (;).	EMSShortNameTemp	Instruments	varchar(500)	Yes
eosFlag	Constant, set to 'E'				No
productFlag	Constant, set to '1'				No

5. **Electronic Media Distribution Flat Files**

Table 4.7.19-9 describes the electronic/physical media distribution flat file layout information:

Table 4.7.19-9. Electronic Media Distribution Flat File Layout (1 of 2)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
requestId	Identifier for a request	OmRequest	requestId	varchar(10)	No
orderId	Identifier for an order	OmRequest	orderId	varchar(10)	No
userId	Identification of user submitting a request for distribution; Ftp User corresponds to ftpAddress field in OmRequest.	OmOrder	userId	varchar(14)	No
orderSource	Origination of this order (MTMGW, SSS, DPLGUI, V0GW, etc).	OmOrder	orderSource	varchar(21)	Yes
orderType	The type of an order.	OmOrder	orderType	varchar(2)	Yes

Table 4.7.19-9. Electronic Media Distribution Flat File Layout (2 of 2)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
ShortName	This name will identify the short name associated with the collection or granule.	OmRequestGranule	EsdtType	varchar(24)	Yes
VersionID	Version identifier of the data collection.	OmRequestGranule	EsdtType	char(12)	Yes
finishDateTime	Date/Time this request was marked done in OmRequest.finishDateTime.	OmRequest	finishDateTime	datetime	Yes
tranDuration	Transfer time for request.	OmRequest	receiveDateTime finishDateTime	Datetime Datetime	Yes Yes
ECS_GranuleId	Unique identifier for granule from AIM. Internal GranId may be used.	OmRequestGranule OmFile	ECS_GranuleId GranId	numeric(16) numeric(16)	Yes Yes
StatusDesc	Description of the state of the granule.	OmRequest OmStatus	StatusDesc requestStatus	varchar(25) char(30)	No Yes
eMailAddr	Email Address associated with this request.	OmRequest	eMailAddr	varchar(255)	Yes
Billable	Contains billing related Information.	OmRequestGranule	BillingInfo	varchar(255)	Yes
FileType	S or M for Science File or MetaData File.	OmFile OmRequestGranule	FileType GranType	char(1) char(2)	Yes Yes
FileSize	Size of file	OmFile	FileSize	float(8)	Yes
fileNamePath	Location of file in datapool with the Shortname inserted after the DirectoryPath but before the FileName. . Or the Shortname if file name is empty.	OmRequestGranule OmFile	DirectoryPath FileName ShortName	varchar(255) varchar(255) varchar(24)	Yes Yes Yes
Domain	Contains Ftp Host specified in MSS. Or Email address.	OmRequest	eMailAddr destinationNode	varchar(255) varchar(100)	Yes Yes
shipAddrCity	City associated with shipping address.	OmRequest	shipAddrCity	varchar(35)	Yes
shipAddrState	State associated with shipping address.	OmRequest	shipAddrState	varchar(20)	Yes
shipAddrZip	Zip Code associated with shipping address.	OmRequest	shipAddrZip	varchar(15)	Yes
shipAddrCountry	Country associated with shipping address.	OmRequest	shipAddrCountry	varchar(30)	Yes
IntendedUsage	Intended usage of the request.	OmRequestGranule	IntendedUsage	varchar(100)	Yes

Both FTP, HTTP, and Media methods generate the same flat files. The layouts generated from MSS/OMS database are the same as the layouts in Table 4.7.19-9.

Table 4.7.19-10 describes the physical media distribution flat file layout information generated from DataPool database for DistFTP :

Table 4.7.19-10. Media Distribution Flat File Layout

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
dbID	The unique ID which identifies the granule.	DlGranuleAccess	dbId	ID	No
age	The difference between the time at which the file was accessed through FTP or Web and the time at which the file was inserted into Data Pool.	DlGranuleAccess	age	int	Yes
fileSize	The size of the browse file stored on the Data Pool disk. The size of the file in Data Pool.	DlGranuleAccess	fileSize	numeric(16,0)	No
fileType	The type of file.	DlGranuleAccess	fileType	varchar(10)	Yes
accessTime	The time at which the file was accessed through FTP or Web.	DlGranuleAccess	accessTime	datetime	No
ecsId	The ID that identifies the ECS browse granule. It matches the browse id in AIM database. The unique ID which identifies the granule.	DlGranuleAccess	ecsId	ID	No
transferTime	Total transfer time in seconds.	DlGranuleAccess	transferTime	int	Yes
ipAddress	IP Address of the user.	DlGranuleAccess	ipAddress	char(15)	No
fileName	Associates to file name with the Shortname inserted before the fileName. If the file name is null, use ShortName as fileName.	DlGranuleAccess DsMdGranules	filename ShortName	varchar(255) varchar(24)	No No
ShortName	This name will identify the short name associated with the collection or granule.	DsMdGranules	ShortName	varchar(24)	No
VersionId	Version identifier of the data collection.	DsMdGranules	VersionID	tinyint	No

Table 4.7.19-11 describes the ESI distribution flat file layout information generated from AIM database for DistHTTP Transfer:

Table 4.7.19-11.ESI Distribution Flat File Layout (1 of 5)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
RequestId	The Request identifier in the ECS ESI system.	AmDaRequest	RequestId	bigint	No
JobId	The ID of the request line item (AKA Job). If this transfer represents multiple line items, this field will be blank.	AmDaJob	JobId	bigint	No
GranuleCount	Number of granules associated with this transfer.	AmDaJob AmGranule	JobId GranuleId	bigint bigint	No
Product	The data product associated with the request. For an ESI request, this is the ShortName of the input ESDT with thw string '_ESI' appended to it.	AmGranule	Shortname	varchar(24)	No
VersionId	The VersionId of the ESDT of the input to this request.	AmGranule	VersionId	bigint	No
Username	User name of the requestor, if known. ESI will leave this field blank until a later release.	N/A	N/A	N/A	Always
Email	The email address of the requestor, if provided. This is the same as the value of EMAIL in the ESI request parameters.	AmDaRequest	EmailAddress	varchar(512)	Yes
IpHost	The IP address or domain name of the requestor.	AmDaTransfer	ClientIP	varchar(255)	Yes
OrderType	The internal tool (if any) which handled the request. This is equivalent to the 'SUBAGENT_ID' field in the ESI request.	AmDaService	Name	varchar(40)	No

Table 4.7.19-11.ESI Distribution Flat File Layout (2 of 5)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
RequestMode	'sync' if the request was synchronous. 'async' if it was asynchronous.	AmDaRequest	RequestMode	varchar(8)	No
JobURL	The URL for this request line item (AKA Job).	AmDaJob	ProcessingURL	varchar(4000)	No
RequestDateTime	The datetime of the file distribution. This is the time of the file transfer, not the time at which any processing was initially requested.	AmDaTransfer	TransferDateTime	timestamp without time zone	No
ProcessingDuration	The amount of time taken to perform processing on this request line item (or 0 if no processing was done).	AmDaJob	StartTime CompletionTime	timestamp without time zone timestamp without time zone	No
ReceiveDateTime	The date and time that the request was received, If processing was involved, then this will be prior to the REQUESTDATETIME	AmDaRequest	RecieveTime	timestamp without time zone	No
TransferStatus	The status of the file distribution (e.g. the HTTP status code).	AmDaTransfer	Status	smallint	No
TransferDuration	Duration of the file distribution, in dd:hh:mm:ss format	AmDaTransfer	Duration	bigint	No
Protocol	The transfer protocol for this distribution (e.g. http, ftp).	AmDaTransfer	Protocol	varchar(32)	No
FileType	The category of the distributed file (e.g. SCIENCE, METADATA, OTHER).	AmDaTransfer	MimeType	varchar(10)	No
FileSize	The filesize of the distributed file.	AmDaTransfer	FileSize	bigint	No
MimeType	The MIME type of the distributed file.	AmDaTransfer	MimeType	varchar)255)	No

Table 4.7.19-11.ESI Distribution Flat File Layout (3 of 5)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
RequestPath	The virtual path to the file (i.e. the end of the download URL) prepended with the product identifier (for use in joining to product metadata in EMS).	AmGranule AmDaTransfer	Shortname RequestPath	varchar(24) varchar(512)	No
Useragent	The user-agent string provided by the client request.	AmDaTransfer	UserAgent	varchar(512)	No
JobVolumeBytes	Total volume of all SCIENCE files in the output (e.g, not including any METADATA, zip files, etc) for the request line item (AKA Job).	AmDaOutputFile	FileSize	bigint	Yes
JobVolumeRatio	Ratio of JOBVOLUMEBYTES over the total input filesize for the request line item (AKA Job).	AmDaOutputFile	FileSize	bigint	Yes
OrderSource	Where the requst originated from, if it is known. Otherwise, simply 'ESI'.	AmDaRequest	RequestMode	varchar(8)	No
ServiceType	The type(s) of processing performed (e.g. subset, reproject). If multiple types are performed, then they should be separated by ';'s.	AmDaJobDetail	Format Projection SubsetDataLayers BBox	varchar(256) varchar(256) varchar(2000) varchar(256)	No
Billable	'Y' if the request contains data which requires payment. 'N' or blank otherwise.	N/A	N/A	N/A	Always
primaryStudyArea	Primary use of the requested data, if provided by the requestor. Will be left blank in the current release of ESI.	N/A	N/A	N/A	Always

Table 4.7.19-11.ESI Distribution Flat File Layout (4 of 5)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
Format	The desired output format, if reformatting is requested.	AmDaJobDetail	Format	varchar(256)	Yes
SubsetDataLayers	Requested data layers (e.g. objects, bands, fields, dimensions) if band subsetting is requested. Each data layer will be separated by comma. Each layer is notated in the format object:field:band:4thdimension	AmDaJobDetail	SubsetDataLayers	varchar(2000)	Yes
Projection	The desired output projection, if reprojection was requested.	AmDaJobDetail	Projection	varchar(256)	Yes
ProjectionParams	Parameters, if any, to the projection, if one is specified.	AmDaJobDetail	ProjectionParams	varchar(256)	Yes
BBox	The bounding box for spatial subsetting, if spatial subsetting is requested. Given by sequence of values in decimal degrees, separated by commas, in the order west,south,east,north	AmDaJobDetail	BBox	varchar(256)	Yes
Resample	The axis and value of resampling (e.g. PERCENT:75, METERS:10) if resampling is requested.	AmDaJobDetail	Resample	varchar(256)	Yes
Interpolation	The interpolation method to use for resampling, reprojecting, etc, if one is specified.	AmDaJobDetail	Interpolation	varchar(256)	Yes

Table 4.7.19-11.ESI Distribution Flat File Layout (5 of 5)

Field Name	Description	Table Name	Column Name	Column Datatype	Nulls
RangeBeginningDateTime	The beginning datetime for temporal subsetting, if temporal subsetting is requested.	AmDaJobDetail	RangeBeginningDateTime	varchar(64)	Yes
RangeEndingDateTime	The ending datetime for temporal subsetting, if temporal subsetting is requested.	AmDaJobDetail	RangeEndingDateTime	varchar(64)	Yes
IncludeMeta	'Y' if the client has requested metadata to be included in the delivered output. 'N' or empty otherwise.	AmDaJobDetail	IncludeMeta	varchar(1)	Yes
Resubmit	'Y' if the client has flagged the request as a resubmision (e.g. for the purposes of using a cached response). 'N' or empty otherwise.	AmDaJobDetail	IncludeMeta	varchar(1)	Yes
OutputGrid	The desired OutputGrid, if one is requested.	AmDaJobDetail	OutputGrid	varchar(256)	Yes
NativeProjection	The desired Native Projection, if one is requested.	AmDaJobDetail	NativeProjection	varchar(256)	Yes

4.7.19.9 Special Constraints

The EMS Dataset Extract utility runs only if the Postgres server is operational. EMS code must be installed in the mode. The EMS configuration file must be configured. SCP must be configured to run in the user environment from which the extract utility will be executed. EMS utility initial set-up should have been executed in the mode.

4.7.19.10 Outputs

Outputs will be printed to standard out if the –v flag is included with on the command line of the EMS Dataset Extract utility. Messages are also output to the EcDbEMSdataExtractor.log file (see Section 4.7.19.12). The DAAC Operations Staff should review the messages printed to the log file.

4.7.19.11 Event and Error Messages

Error messages will be displayed on standard out if the –v flag is included with the executed EMS command. Error messages will be logged in the EcDbEMSdataExtractor.log file (see

Section 4.7.19.12). EMS Dataset Extract utility events are recorded in the MSS database EcEMSextractRecord table. Field descriptions for the EcEMSextractRecord table are described in Table 4.7.19-12.

Table 4.7.19-12. EcEMSextractRecord Table

Name	Datatype	Null	Description
ExtractId	numeric(8,0)	No	Monotonic Key
ExtractType	varchar(255)	Yes	Dataset type, ie, Arch, DistFTP, DistHTTP, DistMedia, Ing, Meta, or searchExp.
RunStartTime	datetime	Yes	The time the dataset began processing.
RunCompletionTime	datetime	Yes	The time the dataset completed processing.
StartDate	datetime	Yes	The Start Date of the dataset run.
EndDate	datetime	Yes	The End Date of the dataset run.
ExtractFileName	varchar(500)	Yes	The name of the Extract File, including the directory path.
FTPcompletionTime	datetime	Yes	The date the dataset was SCP'd to IP address indicated in the configuration file.
ExecutionMode	varchar(8)	Yes	Execution Mode of the dataset run; either Default or override.
MediaType	varchar(20)	Yes	MediaType of dataset run; either NULL, DLT, DVD, Scp, CDROM, FtpPull, or FtpPush.
DataSource	varchar(50)	Yes	Mode and Media type combined – used in constructing the ExtractFileName.
Provider	varchar(50)	Yes	DAAC identifier.

4.7.19.12 Logs

The tool logs messages in the /usr/ecs/<mode>/CUSTOM/logs/EcDbEMSdataExtractor.log file.

4.7.19.13 Recovery

The EMS Dataset Extract utility supports automatic recovery from an interrupted run. If the utility has not been run for a period of time, then the utility can start running from the time it was previously run and files will be generated for the missing days. Also, if a dataset file was extracted to the extract directory, but not SCP'd to EMS, a subsequent run of the utility will SCP this file and mark the file as SCP'd in the EcEMSextractRecord table by updating the FTPcompletionTime for the file record. Also, if a dataset file has been removed from the extract directory, but not SCP'd, a subsequent run of the utility will mark the record as SCP'd, in the EcEMSextractRecord table by updating the FTPcompletionTime with the date "Jan 1, 1900" and a note documenting this will be written to the log.

The page intentionally left blank.

4.7.20 DPL Checksum Server Utility

The Datapool Checksum Server Utility (DCSU) provides a mechanism by which the ECS Operations Staff can perform checksum modifications of server checksum types in the datapool. The utility allows the operator to specify which

4.7.20.1 Using the Datapool Checksum Server Utility

The Datapool Checksum Server utility should be started by the user cmshared (or similar). The Datapool Checksum Server utility is started by entering the following command:

EcDsXXXxxx.pl <mode> <command line parameters>

There are eight command line parameters that may be used. Table 4.7.20-1 provides a description of those parameters.

```
EcDsXXADcsu.pl <MODE> [-calculate]
                      [-days <NUMBER OF DAYS>]
                      [-percent <PERCENT 1-100>]
                      [-norecovery]
                      (-volumegroup <VOLUME GROUPS> |
                       -mediaid <MEDIAIDS> |
                       -granuleid <GRANULEIDS> |
                       -file <FILENAME>
                       -modifytype <FILENAME>)
                      [-outputDir <DIRECTORY>]
```

Table 4.7.20-1. 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, modifytype, 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, modifytype 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).

Table 4.7.20-1. Command Line Parameter (2 of 2)

Parameter Name	Required	Description
granuleid	Yes, if volumegroup, mediaid, modifytype 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).
file	Yes, if volumegroup, mediaid, modifytype 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.
modifytype	Yes, if volumegroup, mediaid, granuleid, or file parameters are not present	Parameter to specify the name of an input file containing granuleids of granules, checksum origins, and checksum types whose files will have their checksum verified and modified with the new checksum origin and checksum type. Granuleid, origin, and type should be listed in the input file separated by commas. Additional Granuleids, origins, and types should be separated by newlines. Ex: <granuleid>,<origin>,<type> <granuleid>,<origin>,<type> Etc...
outputDir	No	Parameter to specify directory for error files under /workingdata/emd/<MODE>/Acvu

4.7.20.1.1 Datapool Checksum Server Utility Command Line Examples

1. For a "volumegroup" run:

4.7.20.2 Datapool Checksum Server Utility Configuration File

The Datapool Checksum Server utility uses a configuration file, EcDs.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 4.7.20-2 describes the configuration parameters.

Table 4.7.20-2. Configuration Parameters (1 of 2)

Parameter Name	Value Description
SYB_USER	Sybase login name for the user of the Inventory database.
SYB_SQL_SERVER	Name of Sybase SQL Server hosting Inventory database.
SYB_DBNAME	Name of Inventory database.
PGM_ID	Program identifier used as seed to generate database password.
NUM_RETRIES	Number of times database operation will be attempted.

Table 4.7.20-2. Configuration Parameters (2 of 2)

Parameter Name	Value Description
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
NUM_CHECKSUM_RETRIES	Number of times a checksum will be attempted.
SERVER_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>/Acvu

4.7.20.3 Datapool Checksum Server Utility Main Screen

The Datapool Checksum Server Utility does not have a main screen. It has a command line interface only.

4.7.20.4 Required Operating Environment

The Datapool Checksum Server Utility will run on a Linux platform.

4.7.20.5 Databases

Table 4.7.20-3 lists the supporting products that this tool depends upon in order to function properly.

Table 4.7.20-3. Product Dependencies

Product Dependency	Protocols Used	Comments
Inventory Database	SQL	Via SQL server machines

4.7.20.6 Special Constraints

The Datapool Checksum Server runs only if the datapool database server is running and if the database is available. It also assumes the stored procedures are present and its temporary database table has been created.

4.7.20.7 Outputs

Output of update events and errors will be always appended to a single log file. The Dcsu will also produce a failed file

(DPLChecksumMismatch_ecsids_RepairByRestoreTapeFromOla.<pid>.<date>). It will be placed in /workingdata/emd/<MODE>/Dcsu. This directory may be further extended using the –outputDir command line option.

4.7.20.8 Event and Error Messages

Usage errors will be displayed to the terminal screen. Processing error messages are written to the log files.

4.7.20.9 Reports

None

4.7.20.10 Logs

The utility produces a log file called EcDsXXXxxx.log in the /usr/ecs/<mode>/CUSTOM/logs directory. If this log file already exists, the new information will automatically be appended. If there is no existing log file by this name, a new log file with this name will automatically be created.

Since the log file may grow to a considerable size after constant use, it is recommended that it be saved off into a separate file from time to time for maintainability.

4.7.20.11 Recovery

The Datapool Checksum Server Utility provides a capability to recover from interruptions caused by situations such as system faults or database errors leaving all or some of the files not checksummed. The utility will detect such failure upon the next run and continue processing the directories and files that were left unprocessed in the previous run. The operator can ignore recovery by using the –norecovery option. Recovery will only be needed if the utility was interrupted after it started checksumming files.

4.7.20.12 Sybase Error Handling

If a Sybase error occurs, the actual Sybase error string will most likely be displayed on the screen and in the log. Possible errors include that the database server is unavailable, that the connection to the database was dropped, or that there was an error executing a stored procedure. In the event of a Sybase-sourced error, the utility will immediately stop running.

In the event that a connection to the Data Pool database cannot be established, the utility may repeatedly attempt to connect to the database, depending on how the configuration file was set. If, for example, NUM_RETRIES was set to 3 and RETRY_INTERVAL was set to 10, the utility will try to connect to the database 3 times, and will wait 10 seconds between each attempt – a total of 30 seconds if all attempts are unsuccessful.

4.7.21 Duplicate Granule Reporting Tool

The Inventory Validation Tool provides the EED Operations Staff with a command-line interface to verify the consistency of the ECS archive.

4.7.21.1 Using the Inventory Validation Tool

The Inventory Validation Tool is started by entering the following command from the /usr/ecs/<mode>/CUSTOM/utilities directory:

> **EcDlInventoryValidationTool.pl <command line parameters>**

There are various command line parameters that are used in combination with each other. Table4.7.21-1 provides a description of these parameters.

Table 4.7.21-1. Command Line Parameters of the Inventory Validation Tool

Parameter Name	Description
<mode>	Mandatory. Specifies the mode of operation. This must be the first parameter passed, and it must be a valid, existing Inventory mode with a format of OPS or TS[1-4] or DEV0[1-9].
-outputDir	Optional. Specifies the relative path under the base directory defined by parameter VALIDATION_OUTPUT_DIR in the configuration file EcDlInventoryValidationTool.CFG. Note: the base directory has to exist; The relative directory (only one level down) will be 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 longer supported
-suppressDFAed	No longer supported

There is no required ordered sequence of the parameters except for the <mode> which must be the first parameter. A command line input error results in a 'usage' display. The reason why the input was incorrect is also displayed.

4.7.21.2 Inventory Validation Tool Commands

Below is an example for invoking this tool:

1. **EcDlInventoryValidationTool.pl DEV04 -outputDir IVT20140825**

   Output files will be written to an 'IVT20140825' subdirectory under the VALIDATION_OUTPUT_DIR directory.

4.7.21.3 Required Operating Environment

The Inventory Validation Tool will run on the same server as EcDlCleanupFilesOnDisk.pl. As both of these utilities put a significant load on the RDBMS, it is suggested that they are not run at the same time.

4.7.21.4 Interfaces and Data Types

Table 4.7.21-2 lists the supporting products that this tool depends upon in order to function properly.

Table 4.7.21-2. Interface Protocols

Product Dependency	Protocols Used	Comments
AIM Schema	SQL	The "ecs" database within the RDBMS

4.7.21.5 Configuration File Format – EcDlInventoryValidationTool.CFG

The configuration file contains details about how to connect to the Sybase server. Without this file, the tool can not run. Table 4.7.21-3 shows a sample configuration file.

Table 4.7.21-3. Sample Configuration File

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
DBUSERNAME	The user name for the RDBMS connection.
PGM_ID	Program ID used for connecting to the Sybase database.
NUM_RETRIES	The number of times that the utility attempts to connect to the database before exiting.
SLEEP_SEC	The number of seconds the utility waits between database connection attempts.
ROWCOUNT	Used to restrict the number of rows returned when running the Sybase query to retrieve discrepancies regarding granules which exist in the ECS Archive but not in the DataPool. This parameter may be used to prevent an out-of-memory error where there are large numbers of discrepancies between the AIM and DPL databases – e.g., before migration is complete. When set to 0, the rowcount is not restricted.
SKIP_MISSINGDPL	No longer relevant
VALIDATION_OUTPUT_DIR	The base directory where output files from the utility are written. The recommended value is /workingdata/emd/<mode>/Ivu

4.7.21.6 Special Constraints

The Inventory Validation tool runs only if the "aim" schema is available within the "ecs" database.

4.7.21.7 Outputs

Output files are created under the base directory defined in the configuration file under VALIDATION_OUTPUT_DIR if the -outputdir parameter is not provided on the command line. Otherwise, the output files will be created in the base directory.

There are 8 output files generated by the Inventory Validation utility.

The names are:

- InventoryDiscrp_registered_but_not_archived_granuleids_RepairManually.<pid>.<yyyymmddhhmmss>: granules that are registered but not archived.
- InventoryDiscrp_should_be_public_granuleids_RepairByPublish.<pid>.<yyyymmddhhmmss>: granules that are in the hidden Data Pool but are in public collections and are eligible to be public.
- InventoryDiscrp_should_be_hidden_granuleids_RepairByUnpublish.<pid>.<yyyymmddhhmmss>: granules that are in the public Data Pool but should be in the hidden Data Pool.
- InventoryDiscrp_should_be_public_browseids_RepairByPublish hidden browse granules associated with SC granules
- InventoryDiscrp_should_be_hidden_browseids_RepairByUnPublish<pid>.<yyyymmddhhmmss> public browse granules that are not associated with any SC granules.
- InventoryDiscrp_public_granule_hidden_path_granuleids_RepairManually public granule with hidden path
- InventoryDiscrp_hidden_granule_public_path_granuleids_RepairManually hidden granule with public path
- InventoryDiscrp_versionnumber_filename_inconsistency_granuleids_RepairManually.<pid>.<yyyymmddhhmmss>: Inconsistent granule version identifier with granule file or link names.

Note for replacement granules: IVT was modified to take granule replacement/collision into account when identifying granules in hidden Data Pool that need to be published. Now the candidate granule can only make it to the InventoryDiscrp_should_be_public_granuleids_RepairByPublish file if there doesn't exist any granule in the public Data Pool **with which the granule would collide (replacementOn = N) or for which the currently public granule is a more recent replacement (replacementON = Y)**. This is intended to **prevent predictable publishing failures**.

However, publishing failures **can still occur** when there are several granule versions in the Data Pool of which none is public. **This can occur, for example,** if the public **version** somehow got deleted, or if previously replacementOn was set to "N" and **recently changed** to "Y". In these cases, **all** versions of the hidden granules are **considered** eligible to be published. Since they're replacements to each other some might fail (depending on the sequence of the publishing **operations**). Once the latest version is published, the remaining hidden versions will no longer **be considered for publishing and subsequent runs will not include them** in their output file.

4.7.21.8 Event and Error Messages

Errors will be displayed to the screen as well as logged in the log file.

4.7.21.9 Logs

The tool logs messages in the /usr/ecs/<mode>/CUSTOM/logs/EcDlInventoryValidationTool.log file.

4.7.21.10 Recovery

If the Inventory Validation Tool is interrupted by a fault, when the utility is restarted, it will just rerun everything and produce a new set of output files.

4.7.22 Duplicate Granule Identification Utility

The Duplicate Granule Identification Utility provides the EED Operations staff with a command-line interface to recalculate and report duplicate granules.

There are three major activities involved: Rule changes, Recalculate, and Report. Only one instance of this utility can be run at any given time, so Recalculate and Report will never run concurrently. On the other hand, Rule changes can, and should, be able to happen anytime. Whenever the rule is changed for a given collection, all the existing duplicates become invalid, recalculation needs to be rerun, and the reporting needs to be rerun for the collection to include all the duplicates in the system for that collection. Therefore, the integrity of the duplicate granule data really depends on the operator's awareness of the timing of the three activities.

For instance, if a report is generated during or before the rule is changed, the operator needs to be aware of it and make decisions on what to do with the possible duplicates reported using the old rule. If the report is generated after the rule is changed, then no invalid duplicates will be reported. However, until the recalculation is rerun, the report will only include the duplicates related to the granules ingested after the rule is changed.

Here are some design decisions we've made:

1. We feel that locking mechanism doesn't apply in this situation, i.e. just because we implement locks and artificially delay the rule changes, doesn't make the existing old rules and the duplicate granules identified using the old rules valid.
2. The rule changing is an infrequent, well-orchestrated activity. Recalculating and reporting should also be planned activities. Therefore, there's no reason not to be able to run them in an orderly manner – Rule change, recalculate, report.
3. Regarding the request of prompting the operator that the rule is changed on a certain collection and the reporting on that collection will be skipped – First of all, reporting should be able to run as a cronjob, so no interaction is allowed. Secondly, it's not necessary to skip the whole collection because we only report duplicate granules identified by the most current rule, at the time of the reporting - all the invalid entries created during some border situation listed below will be excluded in the reporting.
4. It is important to clean up the invalid entries in the AmGranuleReplacement table before starting to recalculate. In theory, it's possible that the granules registered/recalculated right before the rule change time or rule logic change time could insert invalid duplicates both before and after the time reference point, using the old rule or old logic. But since there's always a delay between the time we run the recalculation and the time the rule changes (or the time the new logic is in place for the forced case), all the invalid entries will be removed using the following approach. After the recalculation, it's recommended to run the EcDlInventoryValidationTool.pl to identify the granules that are out of place (i.e. supposed to be in public but in hidden and vice versa) and publish/unpublish them accordingly, before running the reporting again to identify the duplicates and delete them.

a. In the case when the recalculation is needed due to the rule changes, at the start of the recalculation, we'll remove all the entries for a given collection, that are associated with the rules that are different from the rule indicated by DuplicateGranRuleNo in the AmCollection table, except for the entries associated with the file collision rule, and recalculate all the granules registered before the rule changing time in the AmDupGranRuleChangeEvent table.

b. In the case of a forced recalculation, which is not because of the rule changes, more likely because of logic changes in the stored proc used to identify the duplicates, we will need to remove all the entries in the AmGranuleReplacement table for the given collection, except for the entries associated with the file collision rule, and recalculate all the granules for that collection that are registered before the time when the actual recalculation happens.

4.7.22.1 Using the Duplicate Granule Identification Utility

The Duplicate Granule Identification Utility is started by entering the following command from the /usr/ecs/<mode>/CUSTOM/utilities directory:

> EcDsAmIdentifyDuplicateGranules.pl <command line parameters>

There are various command line parameters that are used in combination with each other. Table4.7.22-1 provides a description of these parameters.

Table 4.7.22-1. Command Line Parameters of the Duplicate Granule Identification Utility (1 of 3)

Parameter Name	Description
<mode>	Mandatory. Specifies the mode of operation. This must be the first parameter passed, and it must be a valid, existing Inventory mode with a format of OPS or TS[1-4] or DEV0[1-9].
report | recalculate	Mandatory. Either report or recalculate. report indicates that the utility will perform a report on all the duplicate granules recorded in AmGranuleReplacement table, for each collection involved, taking the state of the granule into consideration. recalculate indicates that the utility will recalculate, or identify all the replacement/duplicate granule pairs, based on the duplicate granule rule for each collection involved, and insert them in AmGranuleReplacement table.

Table 4.7.22-1. Command Line Parameters of the Duplicate Granule Identification Utility (2 of 3)

Parameter Name	Description
-c | -- collectionInfo <shortname.versionId | collection group | all >	Optional. Specifies which collection to operate on. Used with both report and recalculate shortname.versionId case: When used with report, it means to only report the duplicates in the AmGranuleReplacement table that belong to the specified collection. When used with recalculate, it means to only recalculate for the specified collection, if it exists in the AmDupGranRuleChangeEvent table. collection group case: When used with report, it means to only report the duplicates in the AmGranuleReplacement table that belong to the specified collectiongroup. When used with recalculate, it means to only recalculate for the collection within the specified collection group, if they exist in the AmDupGranRuleChangeEvent table all case: When used with report, It means to report all the duplicate information recorded in AmGranuleReplacements table. When used with recalculate, it means to recalculate for all the collections that exist in AmDupGranRuleChangeEvent table. It's also the default behavior for both report and recalculate if -c is not specified.

Table 4.7.22-1. Command Line Parameters of the Duplicate Granule Identification Utility (3 of 3)

Parameter Name	Description
-f | --force	Optional. Used only with recalculate. Could be paired with -c, -g, or -a, or none, which is the same as pairing with -a It means to force the recalculation on a specific collection, or a collection group, or all the collections in the system, regardless of whether the collection exists in the AmDupGranRuleChangeEvent table. If the collection does exist in AmDupGranRuleChangeEvent table, at the end of the recalculation, on that collection, the entry for that collection will be removed, if the NewRuleNo is the same as the rule number used for the recalculation. Exception: QA/PH/MAP/BR/DAP will not be included
-h | --includeDFAH	Optional. Used with report only. When specified, the geoid file will not exclude any duplicate granules with DFA set to "H".
-r |--includeRestricted	Optional. Used with report only When specified, the geoid file will not exclude any duplicate granules that exist in DsMdGranuleRestriction table.
-o |--outputDir <path>	Optional. Used with report only. It specifies the relative path under the base directory defined under parameter DUPLICATE_OUTPUT_DIR in the configuration file EcDsIdentifyDuplicateGranules.CFG. Note: the base directory has to exist; The relative directory (only one level down) will be 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.

There is no required ordered sequence of the parameters except for the <mode> which must be the first parameter. A command line input error results in a 'usage' display. The reason why the input was incorrect is also displayed.

4.7.22.2 Duplicate Granule Identification Utility Commands

Below is an example for invoking this utility:

1. **EcDsIdentifyDuplicateGranules.pl DEV03 report -g "AMSA"**

--outputLocation Duplicates --includeDFAH

The utility will report all the "AMSA" duplicates, based on the information stored in the AmGranuleReplacement table, for the "AMSA" data. The output geoid file will be written to the 'Duplicates' subdirectory under the DUPLICATE_OUTPUT_DIR directory. The output geoid file will not exclude any duplicate granules that have DeleteFromArchive set to "H".

2. **EcDsIdentifyDuplicateGranules.pl DEV03 recalculate**

The utility will recalculate on all the collections existing in the AmDupGranRuleChangeEvent table.

3. **EcDsIdentifyDuplicateGranules.pl DEV03 recalculate -f -c "AST_L1BT.001"**

The utility will recalculate on collection "AST_L1BT.001", regardless if the collection exists in the AmDupGranRuleChangeEvent table.

4.7.22.3 Required Operating Environment

The utility can run on any host that has access to the AIM database.

4.7.22.4 Interfaces and Data Types

Table 4.7.22-2 lists the products that this tool depends upon in order to function properly.

Table 4.7.22-2. Interface Protocols

Product Dependency	Protocols Used	Comments
AIM schema	SQL	Via database server

4.7.22.5 Configuration File Format – EcDsIdentifyDuplicateGranules.CFG

The configuration file contains details about how to connect to the database server. Without this file, the tool can not run. Table 4.7.22-3 shows a sample configuration file.

Table 4.7.22-3. Sample Configuration File

Parameter Name	Description
DBUSERNAME	The user name for the RDBMS connection.
DBSERVER	The name of 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.
NUM_RETRIES	The number of times that the utility attempts to connect to the database before exiting.
SLEEP_SEC	The number of seconds the utility waits between database connection attempts.
DUPLICATE_OUTPUT_DIR	The base directory where output files from the utility are written. The recommended value is /workingdata/emd/<mode>/Idg

4.7.22.6 Special Constraints

The Duplicate Granule Identification utility runs only if the AIM database is available.

4.7.22.7 Output

Output file containing the geoids of the duplicates is created under the base directory defined in the configuration file under DUPLICATE_OUTPUT_DIR, if the --outputLocation parameter is not provided on the command line. Otherwise, the output files will be created under the outputLocation, relative to the base directory.

4.7.22.8 Event and Error Messages

Errors will be displayed to the screen as well as logged in the log file.

4.7.22.9 Logs

The utility logs messages in the file

/usr/ecs/<mode>/CUSTOM/logs/EcDsIdentifyDuplicateGranules.log.

4.7.22.10 Recovery

If the Duplicate Granule Identification utility is interrupted by a fault, when the utility is restarted, it will just rerun everything and produce a new output file.