

Archive Processing

July 2006

625 EMD 010, Rev. 02 Updated 07/20/06



Overview of Lesson

- Introduction
- Archive Processing Topics
 - Archive Hardware and Software
 - Start and Shut Down AMASS
 - Archive Resources and Management
 - Insert and Retrieve Data
 - Delete Granules
 - Load Archive Media
 - Backup and Restore Archive Data
 - AMASS Graphical User Interface
 - Monitor and Troubleshoot Archive
 - Data Pool Management and Maintenance



Overview of Lesson

- Archive Processing Topics (Cont.)
 - Open Geospatial Consortium (OGC) Web Services (OWS) Support
 - Using the Spatial Subscription Server (NBSRV) GUI
- Practical Exercise







Objectives



- Overall: Proficiency in Archive Processing
 - Describe Archive Manager roles and responsibilities
 - Identify and describe Archive storage resources
 - Start and shut down AMASS
 - Log in to system hosts
 - Describe archive storage element relationships and archive resource management
 - Use Granule Deletion tool to delete granules
 - Load and unload cartridges
 - Insert/retrieve data
 - Delete files from the archive
 - Backup archive data
 - Restore archive data
 - Use the AMASS Graphical User Interface

Objectives (Cont.)



- Overall: Proficiency in Archive Processing (Cont.)
 - Monitor archive system and perform troubleshooting
 - Use GUIs, utilities, and scripts for Data Pool maintenance
- STANDARDS:
 - Lesson content (procedures in the lesson)
 - Mission Operation Procedures for the EMD Project (611-EMD-001)



DAAC Archive Manager Interfaces





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STK Powderhorn Data Storage





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STK 9940 Tape System





9940 Tape Drives



- 10-sec load time
- 50-sec search/access

End View with Barcode

9840 Tape System for Browse Data



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AMASS Control Path





Automated Cartridge System Library Software (ACSLS)



Command	Function				
audit	Creates or updates the database inventory of the volumes in a library component.				
cancel	Cancels a current or pending request.				
clear lock	Removes all active and pending locks on transports or volumes.				
define pool	Creates or modifies scratch pools.				
delete pool	Deletes empty scratch pools.				
dismount	Dismounts a volume.				
eject	Ejects one or more volumes from the Automated Cartridge System (ACS).				
enter	Sets a Cartridge Access Port (CAP) to enter mode.				
idle	Stops ACSLS from processing new requests.				
lock	Locks (dedicates) a volume or transport to a user.				
logoff	Exits the command processor.				
mount	Mounts a data or scratch volume.				
query	Displays the status of a library component.				
set	Sets various attributes of different library components.				
show	Displays your lock ID or user ID.				
start	Starts ACSLS request processing.				
unlock	Removes active locks on volumes or transports.				
vary	Changes the state of an ACS, LSM, CAP, transport, or port.				
venter	Enters one or more volumes with missing or unreadable labels into the ACS.				

ACSLS Command Reference

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Automated Cartridge System Library Software (ACSLS) (Cont.)

- General Command Syntax:
 - command type_identifier state [options]
- Frequently used commands:
 - query, vary, enter, eject
- Utilities:
 - bdb.acsss -- back up the ACSLS database
 - kill.acsss -- terminate ACSLS
 - rc.acsss -- start and recover ACSLS
 - rdb.acsss -- restore the ACSLS database
 - volrpt -- create a volume report
 - db_command -- start/stop ACSLS database
- User Ids:
 - acssa -- enter commands
 - acsss -- run utilities from UNIX



Sources and Uses of Archive Data





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STK Controls/Displays: LCU





STK Controls/Displays: LMU





STK Controls/Displays: LSM







Logging in to System Hosts



- Logging in to system hosts is accomplished from a UNIX command line prompt
 - It is an initial set of steps that is performed when accomplishing many other Data Distribution tasks
- Procedure
 - Access the command shell
 - Set the DISPLAY environmental variable
 - Log in to the specified host using secure shell and the specified user ID



Storage Element Relationships

- Each physical archive (Library Storage Module) is mapped to an Archive Server application (e.g., DRP1 is served by the application EcDsStArchiveServerDRP1)
- Library may include multiple Logical Volume Groups (LVGs), each with a specified path, mapped to a volume group in the physical archive



Physical

Archive



Storage Management: Storage Config. Tab



- Storage Management Control
<u>File Options Backup Delete</u>
Thursday January 11, 2001 10:57:31 AM Mode: TS
Vol Grp Config. Image: Config. Image: Confi
Configuration Parameter Reporting
Server # of Type # of Servers # of Re-routes # 8MM 0 8MM Stacker Server 1 ARCHIVE 3 Archive Server 1 CACHE MANAGER 4 Cache Management Server 1 D3 0 D3 Device Server 1 DLT 0 DLT Stacker Server 1 FTP 4 FTP Server 8 REDUEST MANAGER Benuest Manager Server 8
Times to Re-route Apply to Server Type Server Server Name Status EcDsStArchiveServerACM4 Up EcDsStArchiveServerDRP3 Up EcDsStArchiveServerWKS1 Up
Add Server Modify Server Delete Server
Operator Messages
01/11/01 10:56:58 Error purging old database entries.



Storage Management: Vol. Grp. Config. Tab



	Storage Management (Control	•	
<u>F</u> ile <u>O</u> ptions Backup Dele	te		<u>H</u> elp	Volume Group History
Thursday January 11, 2001 1	1:26:21 AM		Mode: TS3	
Storage Config.	Resource Mngiint.	Request Status		Volume Group: (ESDT Data Type.Version) MOD01.001
Volume Group Information				Hardware CT Path Start End
Volume Group Information Data Type Current Name Hardware C MISLOBF.001 DRP3 MISLOCA.001 DRP3 MISLOCA.001 DRP3 MISLODF.001 DRP3 MISLODF.001 DRP3 MISLODF.001 DRP3 MISLOST.001 DRP3 MOD002.001 DRP3 MOD02.001 DRP3 MOD02.001 DRP3 MOD02.001 DRP3 MOD022.001 DRP3 MOD02.001 DRP3 MOD022.001 DRP3 MOD02.001 DRP3 M	Current Volume UNIX Compression I Group Path Compression /dss_stk3/TS3/nisrl0 0 /dss_stk3/TS3/exp 0 /dss_stk3/TS3/nisrl0 0 /dss_stk3/TS3/nisrl0 0 /dss_stk3/TS3/nisrl0 0 /dss_stk3/TS3/nisrl0 0 /dss_stk3/TS3/nisrl0 0 /dss_stk3/TS3/nol10 0 /dss_stk3/TS3/nod10 0 <	Ession Factor Compression Fact 0 0 0 0 0 0 0 0 0 0 0 0 0	tor	Hardware C1 Path Start End Date Date DRP3 /dss_stk3/TS3/mod10 11/21/00



Archive-Related Applications

- Servers (must be running)
 - Science Data Server (SDSRV)
 - Storage Management (STMGT) Servers
 - Request Manager Server
 - Staging Disk Server
 - Cache Manager Server
 - Archive Server
 - FTP Server
 - 9940 Tape Server
 - 8mm Tape Stacker Server
 - Data Distribution (DDIST) Server
- DSS Graphical User Interfaces (GUIs)
 - DDIST, STMGT, SDSRV



DSS Science Data Server GUI: Data Types Tab, with Add/Update Dialogs





Archive Resource Management



- For Science Software Integration and Test (SSI&T)
 - At the time an Earth Science Data Type (ESDT) is loaded, its characteristics are specified in Science Data Server (SDSRV) through a descriptor file identified on the SDSRV Graphical User Interface
 - ESDTs may be uniquely assigned to logical volume groups
 - Adherence to convention facilitates support of local archives by centralized resources
 - Cooperation through Operations Working Groups can facilitate consistency
 - Note: The logical volume group is specified as the ESDT short name with the version ID as an extension (e.g., MOD01.001)

Storage Management: Resource Mngmnt. Tab



- Storage Management Control 🛛 🖓					
<u>File Options Backup Delete</u>					
Thursday January 11, 2001 11:23:32 AM Mode: TS3					
Storage Config. Vol Grp Config. Vol Grp Config. Vol Grp Config. Vol Grp Config. Vol Grp Config. Vol Grp Config. Cache Stats. Storage Events Status					
Storage Management - Resource and Drive Management					
Media Type					
تر مراجع					
Manage Manage Hardware Media Sets					
Request ID Location State					
Find Media:					
Operator Messages					
01/11/01 11:21:20 Error purging old database entries.					



Storage Management: Cache Stats. Tab



- Storage M	anagen	nent Contro	ol			
<u>F</u> ile <u>O</u> ptions Backup Delete					<u>H</u> e	:1
riday February 09, 2001 08:56:08 AM	I				Mode:	т
Storage Config.	Ca St.	iche ats.	Storage Events	e Request Status		
Cache: PULL RO Cache Manager-4.000	000 🔻	Text				
Cache Statis	tics					
Current 0.000482	Reside	Number of nt Files:	Ĭ 12 6			
Used Space (Blocks): 964242	Max Size	imum File (Blocks):	<u></u> 244046	5		
Free Space [1999035758 (Blocks):	Min Size	imum File (Blocks):]1			
Total Space 200000000	Ave	rage File	7857			
	3120	(BIOCKS).				
Cache Information						
Filename	Size	Accessed	Flag	State		ĺ
:BR:Browse.001:13800:1.BINARY	18	01/25/01	N N	Expired		ľ
:SC: ACR3L20M.001:13584:1.HDF	1	01/29/01	N			
:SC:ACR3L2OM.001:14170:1.HDF		01/26/01				
:SC:AM1ATTF.001:17013:1.CCSDS	15	01/29/01				
:SC:AMSR_L1A.001:17076:1.HDF	426	01/30/01	N			
SC:AMSR_LIA.001:17077:1.HDF	426	01/30/01	N			l
:SC:AST_09T.001:9546:1.HDF-E0S	20	01/25/01	N			
:SC:DFLAXCLD.001:16980:1_HDF-EOS	14413	01/26/01				
:SC:L7CPF.002:13835:1.ASCII	76	01/25/01				
SC: MTSCALPA 001:17015:1-CCSPS	76	01/31/01	N			
:SC:MISCALBA.001:17015:2.CCSDS	1	01/29/01	N			
	211040	02100101				l
kei						1
Mark Delete			Unsar Delet	ek .e		
						1
Operator Messages						
02/09/01 08:55:41 Error purging ol	d datak	ase entri	es.			
						J.

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Storage Management: Request Status



		Storage Management Control		• [[
ile <u>O</u> ptions Bac	kup Delete			Help
Jrsday January 1	, 2001 11:03:08 AM			Mode: TS
Storage Vol Config. Vol Eiltering Request Status I Operation ArRetrieveFile	Grp Resource Cache Sto ig. Mngmnt. Stats. Eve iformation equest ID	rage nts Request Status Progress Status RetrieveFailed DstStARPathSearchExhauste	Priority When Submitted d NORMAL 11/30/00	Last Update
CMRenoveLink CMRenoveLink CMRenoveLink CMRenoveLink CMRenoveLink CMRenoveLink CMRenoveLink CMRenoveLink CMRenoveLink CMRenoveLink CMRenoveLink	00PGE01#s07200200TS3LM:PGEEXE.001:395 00PGE02#s20020500TS3496SC:MOD02LUT.00 00PGE02#s2002500TS35C:MOD02LUT.001 00PGE01#s07200200TS3LUTSC:MOD03LUT.001 00PGE01#s07200200TS3ADsSC:MOD03LUT.001 00PGE01#s07200200TS3ADsSC:MOD03LUT.00	Checkpointed DsEStRemoveManDirEntry Checkpointed DsEStRemoveManDirEntry Checkpointed DsEStRemoveManDirEntry Checkpointed DsEStRemoveManDirEntry Checkpointed DsEStRemoveManDirEntry 9 Checkpointed DsEStRemoveManDirEntry 1: Checkpointed DsEStRemoveManDirEntry 27 Checkpointed DsEStRemoveManDirEntry 1: Checkpointed DsEStRemoveManDirEntry 1: Checkpointed DsEStRemoveManDirEntry 1: Checkpointed DsEStRemoveManDirEntry 1: Checkpointed DsEStRemoveManDirEntry 1: Checkpointed DsEStRemoveManDirEntry	HVANAL 11/30/00 XPRESS 12/06/00 XPRESS 12/12/00 XPRESS 12/12/00 XPRESS 12/13/00 XPRESS 12/13/00	11/30/00 11/30/00 11/30/00 11/22/00 12/06/00 12/06/00 12/12/00 12/12/00 12/12/00 12/13/00
perator Messages				
)1/11/01 10:56:5	Error purging old database entries.			



Storage Management: Request Filtering





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ArStoreBkFile

CopyingBackupFile

DsEStArchiveLocation

Data Server: Distrib'n Requests Window



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	4016225	53100522	cmts1	MOD00.001	FtpPush	Low	Cancelled	DsEStRequestCancelled	02/10/2000 16:	
	4019362	29774881	cmts1	MOD00.001	FtpPush	Low	Cancelled	DsEStRequestCancelled	02/10/2000 19:	
	4019363	30937904	cmts1	MOD00.001	FtpPush	Low	Cancelled	DsEStRequestCancelled	02/10/2000 19:	
	4019363	3627040	cmts1	MOD00.001	FtpPush	Low	Cancelled	DsEStRequestCancelled	02/10/2000 19:	
	4019363	38911613	cmts1	MOD00.001	FtpPush	Low	Cancelled	DsEStRequestCancelled	02/10/2000 19:	
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Distribution Filter Requests Window



Distribution Filter Requests
□ Request ID □ Requester ☑ All Requests
Media Type:8MMA11CDROMD3DLTFtpPul1FtpPul1NoneFtpPushImage: Colspan="2">None
State: Pending Suspended Active Suspended with Errors Staging Waiting for Shipment Transferring Shipped Cancelled Failed All None
OK Apply Cancel Help

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Retrieval of Data from the Archive



- Largely automated process in response to data distribution requests
 - data orders from scientists or other end users
 - one-time orders
 - standing orders placed as subscriptions for acquiring data
 - data requests from other DAAC sites
 - cross-DAAC orders for end users
 - data needed as input for processing at other sites (subscriptions placed for ingest by those sites)
 - internal requests for data needed for processing
- DSS Distrib'n Requests window to monitor

Granule Deletion



- Phases of Granule Deletion
 - Logical deletion [marking granules (in the SDSRV database) for deletion]
 - Physical deletion (removing from the SDSRV database data concerning granules marked for deletion and putting in the STMGT database data concerning granules to be deleted from the archive)
 - Deletion from the archive (removing from the archive the files identified for deletion in the STMGT database)

Granule Deletion (Cont.)



- Phase 1, Logical Deletion
 - For the first phase, a command-line Bulk Delete utility (EcDsBulkDelete.pl) responds to operator-specified criteria for the deletion of granules by "logically" deleting from the inventory (SDSRV database) those granules that meet the criteria
- Phase 2, Physical Deletion
 - Physical deletion occurs when the operations staff runs the Science Data Server Deletion Cleanup utility (EcDsDeletionCleanup.pl), which removes all inventory rows (in the SDSRV database) for granules that were flagged as "deleted," including rows referencing related information (e.g., BR, PH, and QA); the script creates entries in the DsStPendingDelete table (in the STMGT database) for granules to be deleted
- Phase 3, Deletion from the Archive
 - The operator uses the Archive Batch Delete utility to initiate the removal from the archive of the files listed in the DsStPendingDelete table (populated by SDSRV in Phase 2); the operator must run the utility separately on each appropriate Archive host (FSMS Server or APC Server host)

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Loading/Removing Archive Media



- STK Powderhorn: Cartridge Access Port (CAP)
 21 Tapes
- Automatic loading (recommended for most loading)
- Manual loading (available for initial loading or other bulk loading)



Archive Backups



- Programmatic backups are part of design requirements
 - Active archive copy (use Archive ID -- ShortName and VersionID)
 - e.g., AST_L1B.001
 - Local backup storage copy (use Backup ID)
 - Append "B" -- e.g., AST_L1B.001B
 - Off-site backup storage copy (use Offsite ID)
 - Append "O" -- e.g., AST_L1B.001O
- Archive manager needs to create volume group for offsite backups, using STMGT GUI
- Selection of data for backup dependent on factors such as feasibility of recovery by other means (e.g., re-ingest, reprocess)
- Each site is responsible for arranging its own secure offsite storage

Storage Management: Vol. Grp. Config. Tab *Add* Dialog



Storage Management Control		
<u>F</u> ile <u>O</u> ptions Backup Delete	Help	
Thursday January 11, 2001 11:26:21 AM	Mode: TS3	Add Volume Group
Storage Config. Vol Grp Vol Grp Config. Image: Cache Page Cache Magent. Image Cache Cache Stats. Image Cache Storage Events Image Cache Storage Events Image Cache Status Volume Group Information Image Caurent Volume Compression Eactor VIX Compression Eactor Compression Eactor Compression Eactor		Data Type.Version: I HWCI: I Volume Group Path: I
MISLOBF.001 DRP3 /dss_stk3/TS3/misr10 0 0	UNIX Con	npression Factor (%): 🗵
MISLOCA.001 DRP3 /dss_stk3/TS3/misrl0 0 0 MISLOCAL.001 DRP3 /dss_stk3/TS3/misrl0 0 0		
MISLOCF.001 DRP3 /dss_stk3/TS3/misr10 0 0 MISLODA.001 DRP2 /dcs_stk3/TS3/misr10 0 0	GZIP Com	pression Factor (%): 0
MISLODF.001 DRP3 /dss_stk3/TS3/misr10 0 0		
MISLODFX.001 DRP3 /dss_stk3/TS3/exp 0 0 MISLOS1X.001 DRP3 /dss_stk3/TS3/exp 0 0		
MISLOS2X.001 DRP3 /dss_stk3/TS3/exp 0 0 MTSLOS3X 001 DRP3 /dss_stk3/TS3/exp 0 0	Volume (Group Type:
MISLOSY1.001 DRP3 /dss_stk3/TS3/misrl0 0 0		
MISLOSY2.001 DRP3 /dss_stk3/IS3/misr10 0 0 MISLOSY3.001 DRP3 /dss_stk3/TS3/misr10 0 0	(• PRIMA	ARY OBACKUP OFFSITE
MISLOTST.001 DRP3 /dss_stk3/TS3/misr10 0		
MISQA.001 DRP3 /dss_stk3/TS3/ancb 0 J MOD000_001_DRP3 /dss_stk3/TS3/mod10_00		
MOD000X.001 DRP3 /dss_stk3/TS3/exp 0 0		
MOD001.001 DRP3 /dss_stk3/TS3/mod10 0		
MOD003.001 DRP3 /dss_stk3/TS2 0 0 0		OK Cancel
MOD01.001 DRP3 /dss_stk3 mod10 0 0		
MOD02.001 DRP3 /dss_s*		
MOD022.001 DRP3 /stk3/TS3/mod10 0 0		
MOD02HKM.001 DRP3		
MOD02QKM.001 DRP3 /dss_stk3/TS3/modhi 0 0		
MOD03.001 DP 13 //dss_stk3/TS3/modhi 0 0		
Add Modify Display Display Rese		
HISTORY STATISTICS		
Operator essages		
01/11/01 11:21:20 Error purging old database entries.		
<u>Finance</u>		


Some AMASS Commands



- vollist
 - Lists all volumes and current status
- dirfilelist
 - lists files under a specified directory
- volfilelist
 - lists all files on a specified volume
- Others: See AMASS System Administrator's Guide



Creating a Backup for AMASS



- AMASS tape format is proprietary, designed for speed of access
- vgexport -q command creates an ASCII file that can be used with the tapes and vgimport command to recover the stored data



Replace Backup Volume (Volume 1)



- AMASS database backup is stored in the archive on Volume 1
- AMASS issues warning when Backup Volume is nearly full (95%)
- When warning message is received, install new Backup Volume and perform a full backup
- If Backup Volume gets full during attempted backup, backup will fail, necessitating replacement and full backup

Manual Backup of Archive Data



- Necessary when a backup data tape is used and must be replaced
- Data restoration using a backup data tape is achieved by inserting the tape into the archive
- To replace the tape requires manual creation of a copy



Restoring Archive Data



- Copy from backup to primary (using UNIX)
- Reprocess lower-level data to obtain lost higher-level product
 - Recovered granule has a new UR and a new production date and time
- Request replacement from data provider
 - Some data providers do not offer replacement
 - EDOS provides L0 backup for ECS; replacement data on DTF-2 tape
- Restoring AMASS/ACSLS database
 - For AMASS: amassrestore
 - For ACSLS: rdb.acsss

End-to-End Data Tracking System to Access EOS Data Reorder Tool



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EOS Data Reorder Tool



EOS Terra Data Reorder Request	Bookmerks & Loo	ton: [ntp://jup	iter02.gsfc.nas	a gov 591/reard EOS 7 Ac	Ferra Rerra Re dd Ne	Dotoreq tp58-le Data quest w Rec	ay-Detailed& formet- Reorder quest	new.htm8-view		€s™ wh		
Search Terra Data Reorder Database					Data Reord	ler Tapes						
Data Reorder Summary Report Distribution Matrix (Onen Requests), limited access (EDOS Only, EOT	Requestor's Name*				Requestor's Organization*		- No Selection -					
S EDOS Tape Status	Requested data (UTC)*	Year 2003 -	DOY	Start time	Stop time	1	Request Reason	Dataset: O Missing O Partial	Priorit (See belo	y* w) 3		
Co to Data Production wase		FDS	Carry-	out & APID	1	C Attitu	de	T Re	placement Ep	hemer		
Go to Top 5 page		Low	D 1	□ 2	□ 3	□ 4	C 5 0	□ 6				
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May 3, 2002 Vaming	Data type(s)*	ASTER	□ 289/29	1 - 293/29	5 - 297/29	99 🗆 305-3	07 🗆 309-311	313-315				
alemant.	(Select all that apply)	CERES	□ 131	□ 132	□ 133	□ 167	L 168	169				
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	* Required field Submit Reset this form											
				De	ata Reord	ler Priorit	ties					
	Priority 1: Critical Data needed within 24-48 hours. This includes expedited data, calibration data, and any other data identified by the instrument team as critical path data. Priority 2: Important Data observation or activity (e.g., targets of opportunity)								any			
	Priority 3: All other data needs											



AMASS GUI





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AMASS GUI: Modify A VG Screen







Disabled

0001

Fetch

Help

-100

-1000

+100

+1000

Accept Cancel

AMASS GUI: Modify A Volume Screen



aawii	n – Modify A Volume
Volume65VolumeGroup75Online•Active•EormatRequestNoBlockSize16384VolumeLabelDF0059	Slot: NETLibrary: 1Format Type: YesError count: 0R/W status: R/WVolume in use: TrueMedia type: TAPELast PBN: 0x00000001Block size: 16384Total blocks: 1220672Blocks Used: 1Dead space: 0%
Accept Cancel Help	

Monitoring and Troubleshooting



Some Common Archive Problem Resolutions

Symptom/Problem	Response
Unable to log in to the FSMS host (e.g., <i>x</i> 0drg01)	Check with the Operations Controller/System Administrator to ensure that the host is "up."
AMASS is not running	Have the System Administrator restart AMASS.
A volume is inactivated by AMASS	Check for AMASS errors and, unless there are many errors, use the command /usr/amass/bin/volstat -a <vol_number> to re- activate the volume. [For detailed instructions, refer to the procedure Use the amass_log script to Display AMASS Errors (subsequent section of this lesson).]</vol_number>
A storage system robot gets out of synchrony with AMASS concerning the location of media.	Re-establish synchrony. [For detailed instructions, follow the procedure Use <i>mediamove</i> to Establish Synchrony Between <i>quedisplay</i> and <i>medialist</i> (subsequent section of this lesson).]
An Ingest or Data Processing action cannot complete because of failure to store data (reflected as failure on Ingest or Processing GUIs).	Check to ensure AMASS is on line; check for file copy errors, network problems, mount point problems. [For detailed instructions, refer to the procedure for Recovery from Failure to Store Data (subsequent section of this lesson).]



Storage Management: Storage Events Tab







AMASS Monitoring Commands, Utilities, and Scripts



- healthcheck is a command providing status on basic AMASS functions and capabilities
- *sysperf* is a command to display AMASS I/O activity
- amass_log is a script permitting display of AMASS messages from the system log
- quedisplay is a library utility used to view the AMASS queue and diagnose problems
- medialist shows robot's view of media and their slot locations
- mediamove can establish synchrony between quedisplay and medialist
- There are other utilities and scripts described in AMASS System Administrator's Guide

Sample Output from *quedisplay*



	Re	ecord ID			
A read re	quest		Record is	loca	ted on volume 3
REA	ADQ rid	=52696, fptr=0xf022	7c5c, vol	=3, 1	fnode_flags=0x110
WRI	ITEQ ri	d=79, fptr=0xc00eff	54, vol=5	, fno	ode_flags=0x8048844
ADM	/INQ:cm	d=1, flags=0x6,vol=	32, juke=	1, p;	d=1047, ftype=0, err=0
JUK	KEBOX 1	DRIVE 1, vid=32, v	flag=0x10	0, st	atus=0
JUK	KEBOX 1	DRIVE 2, no volume	in drive	1	
A v was	olforma s issued	at command (cmd=1) d on volume 32		Pro	cess ID
The driv	e last tw ves, and	o entries are a list of corresponding volu	libraries, me IDs		

625-EMD-010, Rev. 02 Updated 07/20/06

Recovery from Failure to Store or Retrieve Data



- Successful storage depends on many functions
 - Archiving of granules (can be compromised by network problems, mount point problems, AMASS being off line)
 - Entry of metadata in SDSRV inventory database
 - Successful staging disk creation and cache management
- Troubleshooting
 - Check server logs (including Request Manager server debug log)
 - Check tac log for interaction of AMASS and ACSLS
 - Use amass_log script to display errors
 - Corrective action from AMASS System Administrator's Guide
 - Resume action

Checking Server Log Files



- *.ALOG
- *Debug.log
 - Get parameters from Registry
 - Load resource catalogs
 - Pre-cache database connectivity errors
 - Get server configuration parameters
 - Spawn receptionist thread and register server in database
 - Spawn service threads
 - Process Restart Notification for server restart
 - Check queue for requests ("Waiting for an event")
 - Communication between calling and called server

Checking Request Manager Server Debug Log



- Request Manager handles requests from outside of Storage Management
 - Requests for STMGT processing are checkpointed (registered in the database)
 - "Trivial" requests (serviceable through SQL) are not checkpointed
- Manages concurrent activities through threads
 - Manager thread (assigns requests to service threads)
 - Service thread (services requests, logs progress)
 - Receptionist thread (registers server as "up," monitors socket for connections from other servers)
 - Others (Inbound RPC thread, Housekeeper thread)
- Transactions among threads recorded in Debug Log

Checking tac Log



- tac log records interactions between AMASS and ACSLS
- New log each day
 - Current log: tac_00
 - Prior logs: tac_00:date:time
- Log identifies AMASS commands to ACSLS concerning tape operations; can provide useful information concerning failures related to problems in these transactions
- Communication failure may signal a need to check for synchrony between AMASS and ACSLS (quedisplay vs. medialist)



Handling Data Insertion Failure

- Check Logs (and run EcCsldPingServers)
 - EcDsScienceDataServerDebug.log
 - EcDsStArchiveServerDebug.log
 - EcDsStStagingDiskServerDebug.log
 - EcDsStCacheManagerServerDebug.log
 - EcDsStRequestManagerServerDebug.log
 - EcSbSubServerDebug.log
- Check Archive Script
- Look in directory dss_stk<#>/<MODE>/datatype for file
- Check Mount Points
- Check Staging Disk
- Check Archive Volume Group Set-up



Handling Data Acquire Failure



- Check for Request on Science Data Server GUI
- Check Logs (and run EcCsldPingServers)
 - EcDsScienceDataServer.ALOG
 - EcDsScienceDataServerDebug.log
 - EcDsStArchiveServerDebug.log
 - EcDsStRequestManagerServerDebug.log
- Check arrival in DDIST cache on Distribution Server
 - /usr/ecs/<MODE>/CUSTOM/drp/<archivehost>/data/staging/cache
- Check More Logs
 - EcDsStStagingDiskServerDebug.log
 - EcDsStCacheManagerServerDebug.log
- Check Space in Staging Area on Distribution Server with command *df -k*.
 - /usr/ecs/<MODE>/CUSTOM/drp/<archivehost>/data

Raytheon

Checksum Verification



- The checksum verification utility (CVU) verifies that the data on a tape is not corrupted
 - It operates off a database that contains a list of tape volumes requiring verification
 - The database is populated by a script that is run once a day to identify tape volumes that were closed out that day
 - Each entry in the database contains the following types of data:
 - Silo ID
 - Tape volume ID
 - Date/time the volume was closed out
 - Status
 - Date/time tape volume verification was started
 - Date/time tape volume verification was completed

Checksum Verification (Cont.)



- The checksum verification utility (CVU) operates off a database that contains a list of tape volumes requiring verification
 - The status is one of the following values:
 - Requires Verification
 - Verification in Progress
 - Verification Successful
 - Verification Failed
 - Multiple CVUs can operate concurrently against the database (normal range is one to five)

Checksum Verification (Cont.)



- The CVU is comprised of two executable components
 - When started, the first CVU component searches the database for the matching silo ID, then finds the tape volume with the earliest closeout time that is in the Requires Verification state
 - Then it passes the silo ID and tape ID to the second executable CVU component
 - The second CVU component accepts the silo ID and tape volume ID as input and verifies the checksum of every file on the tape
 - It uses AMASS file system commands and the AMASS API to perform its functions
 - The CVU currently supports the following three types of checksumming:
 - CKSUM
 - ECS
 - MD5



Checksum Verification (Cont.)



- Invoke the Checksum Verification Utility (CVU): Procedure
 - Log in at the machine where the Checksum Verification Utility (CVU) is installed (e.g., e0drg11, g0drg01, l0drg01, or n0drg01)
 - Change to the directory for starting the CVU (e.g., /usr/ecs/<MODE>/CUSTOM/utilities
 - Run the CVU (EcDsStCheckVolumeFiles < MODE> < Silo ID> < Volume ID>)

Checksum De-activation (Default)

- System design incorporates calculation of checksum on granule insertion
 - Supports detection of data corruption
 - Comparison of original checksum with checksum calculated on data retrieval from the archive
 - Default configuration deactivates calculation to improve system throughput; set by highlighting Archive Server on Storage Config. tab of Storage Management GUI and clicking "Modify Server" button
 - Compromises detection of data corruption
 - Partial alleviation by comparison of checksums calculated on sequential data retrievals

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Data Pool Management



- Features of the Data Pool Maintenance GUI
 - Most Archive or support personnel tasks for monitoring and maintaining the Data Pool require the use of the Data Pool Maintenance (DPM) GUI
 - The DPM GUI permits an operator to perform tasks in the following general areas:
 - Monitoring Data Pool Active Insert Processes and Insert Actions
 - Managing Data Pool File Systems
 - Enabling/Disabling Data Compression
 - Managing Compression Algorithms
 - Managing Cloud Cover Information
 - Checking the Status of Batch Inserts
 - Checking the Data Pool Insert Queue



- Features of the Data Pool Maintenance GUI (Cont.)
 - The DPM GUI permits an operator to perform tasks in the following general areas (Cont.):
 - Managing Data Pool Configuration Parameters and Data Pool Tuning
 - Managing Data Pool Collection Groups
 - Managing Data Pool Collections within Collection Groups
 - Managing Themes





- Features of the Data Pool Maintenance GUI (Cont.)
 - Both the DPM GUI and the Spatial Subscription Server GUI are web applications, accessed through the Netscape web browser
 - For Synergy IV, the DPM GUI and the Spatial Subscription Server GUI are certified for use with Netscape 7 (and higher) browsers
 - It is strongly recommended that Netscape 7-compatible browsers only be used when accessing the GUIs
 - The GUIs do not work properly with Netscape 4.78 or earlier versions





- Features of the Data Pool Maintenance GUI (Cont.)
 - New operator GUI security standards require the following two levels of permissions for the DPM GUI and the Spatial Subscription Server GUI:
 - Full Capability
 - Limited Capability
 - An operator's level of permission is determined when the operator logs in to the GUI using the security login prompt

DPM GUI: Security Login Prompt



	Prompt
?	Enter username and password for "DPL Realm" at p2dps01.pvc.ecs.nasa.gov:22121 User Name:
	Password:
	Use Password Manager to remember these values.
	OK Cancel





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



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



DPM GUI: Home Page



-	Data F	ool Maintena	ince GUI –– TS	2 MODE – N	etscape			
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	FS2	State : Y Last changed:	State : Y Last changed:		1	100		
	FS3	State : Y Last changed:	State : Y Last changed:		1	100		
		Sun	nmary of Active Pr	ocesses				
	Maximum allowed	processes				50		
	Maximum allowed	processes from A	MASS cache			1(
	Maximum allowed	processes from A	MASS tape			20	2	
	Total number of ac	tive insert process	ses running			0		
	Number of active in	isert processes usi	ing AMASS cache			0	_	
l	Number of active in	isert processes usi	ing AMASS tape			0		
		List of A	ctive Insert Process	es (Rows 0)				
Unix ProcessId	ecsID Collect	tion Version	Start Time	Status Time	Status	AMAS	S Cache	Retries
	Document: Done (3.0	83 sens)						



DPM GUI: File System Information Page





DPM GUI: Add New File System Page




DPM GUI: Modify File System Information Page



Home Page	Data Batch Summary	Pool Mainten	Collection Group	s <u>Themes</u> <u>Dat</u>	TS2
ompression Alg	orithms <u>Cloud Cover</u>	Configuration Parameters	Aging Parameter	<u>s Help</u>	
File System	Absolute Path	Modify File System Inform	ation Availability	Min Freed Space	Click on box
Label DEFAULT	/datapool/TS2/user	€ ON C OFF	¢YES €NO	(in Megabytes)	to modify
FS1	/datapool/TS2/user /FS1/	CON COFF	¢YES €NO	100	Г
FS2	/datapool/TS2/user /FS2/	ኖ ON ଦ OFF	€YES €NO	100	Г
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DPM GUI: Compression Algorithms Page



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comp2	.gz	/tools/bin/gzip -1 %infile /bin/gunzip %infile							
comp4	.gz	/tools/bin/gzip –1 %infile			/bin/gunzip %infile				
gzip2	.gz	/tools/bin/gzij	–1 %infile		/bin/gunzip %infile				
idey1	idey	/usr/bin/gzip	-1 %infile		/usr/bin/gzip -1 %infile				
idey2	.idey2	/usr/bin/gzip	-1 %infile						
mytest	.gz	/bin/tar - cvf /tm	p/file1 %infile						
qzipquick	.gz	/tools/bin/gzij	-1 %infile						
testing	.gz	/usr/bin/gzip	-1 %infile						
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DPM GUI: Modify Compression Algorithm Page



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			Data Pool Maint	enance	T	52		
Corr	Home Page pression Algorithms	Batch Summary <u>Cloud Cover</u>	<u>List Insert Queue</u> <u>Configuration Parameters</u>	<u>Collection Groups</u> <u>Aging Parameters</u>	<u>Themes</u> <u>Data Pool F</u> <u>Help</u>	<u>ile Systems</u>		
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comp4	.gz	/tools/bin/gzip -1 %infile		/bin/gunzip %infile		. Г		
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idey2	idey2	/usr/bin/gzip –1 %infile				· Γ		
mytest	.gz	/bin/tar - cvf /tmp/file1 %infile				· Γ		
qzipquick	.gz	/tools/bin/gzip -1 %infile						
testing	.gz	/usr/bin/gzip –1 %infile						
Return to pro	evious page					Apply Change		
		WARNING: Modifying	z a compression algorithm may prevent th	e future decompression of a compress	ed granule.			
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DPM GUI: Add Compression Algorithm Page



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DPM GUI: Deactivate Compression Algorithm Page



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Home Page Compression Algorithms	ne Page Batch Summary List Insert Queue Collection Groups Themes D ion Algorithms Cloud Cover Configuration Parameters Aging Parameters Help			
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comp2	.gz	/tools/bin/gzip -1 %infile	/bin/gunzip %infile	Г
comp4	.gz	/tools/bin/gzip -1 %infile	/bin/gunzip %infile	Г
gzip2	.gz	/tools/bin/gzip -1 %infile	/bin/gunzip %infile	Г
idey1	idey	/usr/bin/gzip -1 %infile	/usr/bin/gzip -1 %infile	Г
idey2	.idey2	/usr/bin/gzip -1 %infile		Г
mytest	.gz	/bin/tar - cvf /tmp/file1 %infile		Г
qzipquick	.gz	/tools/bin/gzip -1 %infile		Г
testing	.gz	/usr/bin/gzip -1 %infile		Г
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DPM GUI: Cloud Cover Information Page





DPM GUI: Add New Cloud Cover Information Page



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DPM GUI: Modify Source Description Page



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Data Pool Maintenance 152	
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Modify Source Description	
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PSA QAPERCENTNOTPRODUCEDCLOUD wei's test for cloudcover PSA	
Return to previous page Apply Change	
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DPM GUI: Batch Summary Page



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	Data Pool Maintenance TS2							
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	Batch Summary							
	Screen Refresh Rate 1 (in Minutes) ApplyRefreshRate Last Screen Refresh on: Sat Apr 9 16:24:54 EDT 2005							
	Batch Label	New	Completed	Failed	Retry	Canceled		
	shen	0	0	1	0	0		
	ast_07_dbid_ts2	0	0	47	0	0		
	MOD09A1TS2.out79	0	0	45	0	0		
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DPM GUI: List Insert Queue Page



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<u></u>		E	ile System AL	L 🔽	Batch La	bel ignore	•	Status NEW/RETRY	Apply Filter	<u>.</u>			
	0 Detailed list of Data Pool Inserts using Current Filter (Number in List = 0)												
	Detailed list of Data Pool Inserts using Current Filter (Number in List = 0)												
Click on the	NONECS link ir	the Data So	urce column to	view the	XML file a	associated with	this insert						
DataSource	BatchLabel	Dispatch Priority	RequestID	SubID	ECSID	Collection	Version	Science Granules and/or Metadata	Enqueue Time	Retries	Status	Click on to Cance	Box el
Continue								,				Apply	Change
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DPM GUI: .XML File Path and Content



Netscape: Data Pool Maintenance GUI in mode TS1									
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Back Forward Reload Home Search Netscape Print Security Shop Stop									
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DPM GUI: List of Configuration Parameters Page







DPM GUI: Aging Parameters Page



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List of Aging Parameters								
ECS Priority	Starting Priority	Aging Step	Max Priority	Click on Box to Modify				
LOW	60	0	60	Г				
NORMAL	150	0	150	Г				
HIGH	220	0	220	Г				
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DPM GUI: Collection Groups Page



	Data	a Pool Maintenance	e GUI TS2 MODE - Netscape				
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You can manage the coll	lections of a group by clicking on the groupid						
Data Source	ource (Click for managing collections) Display Name		Description				
ECS	ACRM	ACRM	All collections/granules from the ACRIM mission				
ECS	AIRA	AIRA	AIRS/AMSU/MHS collections/granules from the Aqua mission				
ECS	AMSA	AMSA	AMSR-E collections/granules from the Aqua mission				
ECS	AMSR_L1A	AMSR_L1A	AMSR/ADEOS-II L1A Raw Observation Counts				
ECS	ASTT	ASTT	ASTER collections/granules from the Terra mission				
ECS	ASTTER	ASTTER	testing for remsping you can remove it				
ECS	BRWS	BRWS	Browse collections/granules				
ECS	Cⅅ	Cⅅ	dddd				
ECS	DASP	DASP	Data Assimilation System Products				
ECS	GLAS	GLAS	GLAS/ICES at L1B Global Waveform-based Range Corrections Data				
ECS	LSR7	LSR7	All collections/granules from the Landsat 7 mission				
ECS	MAPPINGASTER	AST_L1BT	testing for regesstion GroupId up to 12 characters				
ECS	MAPPINGGLA05	MAPPINGGLA05	GLAS/ICES at L1B Global Waveform-based Range Corrections Data				
ECS	MAPPING_AMSR	MAPPING_AMSR	Testing for Mapping AMSR-L1A				
ECS	MAPPI_AST_08	MAPPI_AST_08	ASTER Level 2 Surface Temperature Product				
ECS	MAP_MISCALBA	MAP_MISCALBA	MISR Level 0 CCD Calibration BA Camera				
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DPM GUI: Collection Group Detail Page



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										List Of	Collection	s						
				Coll (Cli D Infor	ection ck for etail mation)	Version	Compression Command Label	Science Granules and/or Metadata	Data Pool Insertion	HEG Processing	Export Urls to ECHO	Quality Summary Url	Spatial Search Type	Global Coverage	Day/Night Coverage	24 Hour Coverage	Cloud Coverage	
l				MOE	07_L2	001	NONE	science and metadata	valid for Data Pool	Enabled	No		Rectangle	No	Yes	No	No	
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DPM GUI: ECS Collection Detail Page



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Back Forward Stop http://p2dps01.pvc.ecs.nasa.gov:22121/cgi-bin/EcDIDpmManageCollections.pl?collAction=3&VersionId=1&Collection=MO Image: Collection Stop Image: Compression Algorithms Image: Configuration Parameters Collection Groups Themes Image: Configuration Parameters Image: Configuration P	💰 Search 🛛 🗳 🖌 🔊
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Home Page Compression Algorithms Batch Summary Cloud Cover List Insert Queue Configuration Parameters Collection Groups Aging Parameters Themes Help I Data Source:ECS Group ID:MOOT: Display Name:MOOT Description:MODIS Oceans collections/granules from the Terra mission Detail Information Collection MODIOT: L2	TS2
Compression Algorithms Cloud Cover Computation Parameters Aging Parameters Help Data Source:ECS Group ID:MOOT: Display Name:MOOT Description:MODIS Oceans collections/granules from the Terra mission Detail Information	Data Pool File Systems
Data Source:ECS Group ID:MOOT: Display Name:MOOT Description:MODIS Oceans collections/granules from the Terra mission Detail Information Collection	
Detail Information Collection MOD07.12	
Collection MOD07 I 2	
Version 1	
Description Level 2 Daily global Total Ozone Burden, Atmospheric Stability, Temperature and Moisture Profiles at 20 vertical levels for temperature and 15 levels for moisture, and Atmospheric Water Vapor at 5x5 1-km resolution when at least 9 FOVs are cloud free.	
File System FS1	
Compression Command Label NONE	
Science Granules and/or Metadata Science and Metadata	
Data Pool Insertion Valid for Data Pool Inserts	
HEG Processing Enabled	
Export Urls to ECHO No	
Quality Summary Url	
Spatial Search Type Restangle	
Global Coverage No	
Day/Night Coverage Yes	
24How Coverage No	
Cloud Cover Type	
Cloud Cover Source	
Cloud Cover Description	
Modify Collection Return to previous page	
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DPM GUI: Modify Collection Page



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	:	Data Pool Maintenance	152			
<u>Home Page</u> <u>Compression Algorithms</u>	Batch Summary Cloud Cover	List Insert Queue Collection Groups Themes Configuration Parameters Aging Parameters Help	Data Pool File Systems			
	Data Source:ECS Group ID:MOOT: mission	Display Name:MOOT Description:MODIS Oceans collections/granules from the Terra				
	Modify Collection					
	Collection	MOD07_L2				
	Version	1				
	Description	Level 2 Daily global Total Ozone Burden, Atmospheric Stability, Temperature and Moisture Profiles at 20 vertical levels for temperature and 15 levels for moisture, and Atmospheric Water Vapor at 5x5 1 - km resolution when at least 9 FOVs are cloud free.				
	File System	FS1				
	Compression Command Label	NONE				
	Science Granules and/or Metadata	Science and Metadata 💌				
	Data Pool Insertion	Valid for Data Pool Insert				
	HEG Processing	Enabled				
	Export Urls to ECHO	No				
	Quality Summary Url					
	Spatial Search Type	Rectangle				
	Global Coveraçe	No I				
	Day/Night Coverage	Yes 💌				
	24 Hour Coverage	No 💌				
	Cloud Cover Type & Source	NONE View Details				
		Apply Change				
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DPM GUI: Collections Not in Data Pool Page







DPM GUI: Add New [ECS] Collection Page



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Data Pool Maintenar	nce GUI DEV		×				
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Compression Algorit	thms <u>Cloud Cover</u> Con	figuration Parameters Aging Parameters Help					
	Data Source:ECS Group ID:MOLT collections/granules from the Terra n	: Display Name:MOLT Description:MODIS L and nission					
	Add New Collection						
	Collection						
	Version 1						
	Description	AIRS/Aqua calibration conversion data numbers ranges. The starting and ending data numbers values for each applicable polynomial conversion range, as well as a number identifying the corresponding entries in the polynomial conversion constants table.					
	File System						
	Compression Command Label	NONE					
	Science Granules and/or Metadata	Science and Metadata 💌					
	Data Pool Insertion	Invalid for data pool 💌					
	Export Urls to ECHO	No 💌					
	Quality Summary Url						
	Spatial Search Type	NotSupported					
	Global Coverage	Yes					
	Day/Night Coverage	Yes 💌					
	24 Hour Coverage						
	Cloud Cover Type & Source	NONE View Details					
		Apply Change					
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DPM GUI: Add New [NON-ECS] Collection Page



		Data Pool Mainter	nance		TS2	
<u>Home Page</u> Compression Algorithms	Batch Summary Cloud Cover	<u>List Insert Queue</u> <u>Configuration Parameters</u>	Collection Groups Aging Parameters	<u>Themes</u> <u>Help</u>	Data Pool File Sy	<u>rstems</u>
	Data Source:NON-ECS Group ID:U	JARS: Display Name:UARS Descript	ion:Test of insertion of Non-ECS data			
		Add New Collection	n			
	Collection					
	Version					
	Description					
	File System	SELECT				
	Compression Command Label					
	Science Granules and/or Metadata	Science and Metadata 💌				
	Data Pool Insertion	Invalid for data pool 💌				
	Quality Summary Url					
	Spatial Search Type	Not supported				
	Global Coverage	Yes 💌				
	Day/Night Coverage	Yes 💌				
	24 Hour Coverage	No 🔳				
	Cloud Cover Type & Source	NONE <u>Vie</u>	w Details			
			A	pply Change		
	Return to previous page					



DPM GUI: Add Collection Group Page



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		Data Pool Mainter	nance		152
<u>Home Page</u> Compression Algorithms	Batch Summary Cloud Cover	<u>List Insert Queue</u> <u>Configuration Parameters</u>	<u>Collection Groups</u> Aging Parameters	<u>Themes</u> <u>Help</u>	<u>Data Pool File Systems</u>
		Add Collection Grow	φ		
Data Source Group ID	Display Name (Optional)		Description		
ECS I					
Return to previous page					Apply Change
NOTE: The Display Name will default to the G	roupID unless specifically se	t to something else.			
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DPM GUI: Modify Collection Group Page



Data Pool Maintenance GUI TS2 MODE - Netscape Elle Edit <u>V</u> iew <u>Go B</u> ookmarks <u>T</u> ools <u>W</u> indow <u>H</u> elp								
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Data Pool Maintenance TS2 Home Page Batch Summary List Insert Queue Collection Groups Inemes Data Pool File System								
Comp	Compression Algorithms Cloud Cover Configuration Parameters Aging Parameters Help							
Modify Collection Group								
Data Source	Group ID (Click to manage collection)	Display Name	Description	Check Box to Modify				
ECS	ACRM	ACRM	All collections/granules from the ACRIM mission					
ECS	AIRA	AIRA	AIRA AIRS/AMSU/MHS collections/granules from the Aqua mission					
ECS	AMSA	AMSA	AMSA AMSR-E collections/granules from the Aqua mission					
ECS	AMSR_L1A	AMSR_L1A	AMSR/ADEOS-II L1A Raw Observation Counts	Г				
ECS	ASTT	ASTT	ASTER collections/granules from the Terra mission	Г				
ECS	ASTTER	ASTTER	testing for remaping you can remove it	Г				
ECS	BRWS	BRWS	Browse collections/granules	Г				
ECS	Cⅅ	Cⅅ	daqq	Г				
ECS	DASP	DASP	Data Assimilation System Products	Г				
ECS	GLAS	GLAS	GLAS/ICESat L1B Global Waveform-based Range Corrections Data	Г				
ECS	LSR7	LSR7	All collections/granules from the Landsat 7 mission	Г				
ECS	MAPPINGASTER	AST_L1BT	testing for regesstion GroupId up to 12 characters	Г				
ECS	MAPPINGGLA05	MAPPINGGLA05	GLAS/ICESat L1B Global Waveform-based Range Corrections Data					
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DPM GUI: Detailed List of Data Pool Themes Page



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Det Theme Name Description BE_S5_01 NONE MOD13Q1v004 BE_S5_01 NONE MOD13Q1v004 BE_S5_01 NONE MYD13A2v004 BE_S5_01 NONE MYD13A2v004	ailed list of I Web No No	Data Pool 1 Insert Yes Yes	Themes WCS No	wms No	PreConvert No No	Click on Box to Delete
Det Theme Name Description BE_S5_01 NONE MOD13Q1v004 BE_S5_01 NONE MOD13Q1v004 BE_S5_01 NONE MYD13A2v004 BE_S5_01 NONE MYD13A2v004 BE_S5_01 NONE MYD13Q1v004 BE_S5_01 NONE MYD13Q1v004	ailed list of I Web No No No	Data Pool 1 Insert Yes Yes Yes	Themes WCS No No No	WMS No No No	PreConvert No No No	Click on Box to Delete
Det Theme Name Description BE_S5_01 NONE MOD13Q1v004 BE_S5_01 NONE MOD13Q1v004 BE_S5_01 NONE MYD13A2v004 BE_S5_01 NONE MYD13A2v004 BE_S5_01 NONE MYD13Q1v004	ailed list of I Web No No No No	Data Pool 1 Insert Yes Yes Yes Yes	Themes Themes No No No No	WMS No No No	PreConvert No No No	Click on Box to Delete
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DPM GUI: Add New Theme Page



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DPM GUI: Modify Theme Page



Forward Reload Stop http://p2dps01.pvc.ecs.nasa.gov.22121/cgi-bin/EcDiDpmThemesFrame.pl Mail & AlM Home Badio Metscape Search Bookmarks PVC Meterics GNU Emacs Referenc esdis-proto.gsfc.nas #Members #WebMa Data Pool Maintenance GUI in mode Collection Groups Home Page Batch Summary List Insert Queue Collection Groups Aging Parameters Compression Algorithms Cloud Cover Configuration Parameters Aging Parameters Web Visible ALL Insert Enabled ALL WKS No PreConvert No Beginning Letters	Mail & Conn	ections <u>Th</u> iliter	∦BizJoo hemes Help	urmal 🥒 S	▼	Search Print Mktplace
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DPM GUI: Help Page







Number of Drivers to Run

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

DPM GUI User Messages



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



DPM GUI User Messages (Cont.)



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

Data Pool Scripts

- Update Granule Utility
 - Updates granule retention period
 - Updates retention priority (optional)
- Data Pool Cleanup Utility
 - Removes expired granules from the Data Pool disks and inventory
- Data Pool Access Statistics Accumulation Utility
 - Derives statistics from event logs produced by the Data Pool FTP server and the Data Pool Web Access application
 - Statistics are written to a data base that can be used to produce tabular reports for loading/manipulation by a spreadsheet application program



Data Pool Scripts (Cont.)



- Data Pool Archive Access Statistics Data Utility
 - Archives the granule access data from the Data Pool database into a tab-delimited ASCII file
- Data Pool Delete Access Statistics Data Utility
 - Deletes granule access data in a specified time range from the Data Pool database
- Data Pool Restore Access Statistics Data Utility
 - Restores granule access data for a specific time range from an ASCII archive file to the Data Pool database
- Batch Insert Utility
 - Inserts non-ECS data and ECS data that are already in the archive into the Data Pool

Data Pool Scripts (Cont.)



- Most Recent Data Pool Inserts Utility
 - Lists the most recent additions to the Data Pool
- Data Pool Collection-to-Group Remapping Utility
 - Reassigns a Data Pool collection to a collection group other than the one to which it was originally assigned
- Data Pool QA Update Utility
 - Updates the QA data for granules in the Data Pool inventory; both the inventory and the corresponding XML files on disk are updated
- Data Pool Move Collections Utility
 - Moves collections from one file system to another
- Data Pool Hidden Scrambler Utility
 - Makes the transition to or renames (with encrypted names) hidden directories for order-only granules in the Data Pool

Update Granule Utility



- Extend retention of data already in Data Pool
- Options
 - -noprompt: Suppress prompts and detailed information
 - theme: Specifies a valid theme name (i.e., a character string that matches an existing theme name in the Data Pool inventory)
- Run for a single granule with command-line input
 - grnid input parameter specifies granule information
- Run for multiple granules listed in input file
 - file input parameter specifies the file use to provide granule data to the utility
- Run as background process, suppressing all warnings, error messages, prompts
- Connects to data base and uses Sybase stored procedures

Data Pool Cleanup Utility



Removal of granules that qualify for deletion



Data Pool Cleanup Utility (Cont.)



- Cleanup Utility acts on non-ECS data in the same way as on ECS data
- Cleanup Utility can remove granule cross references associated with a given theme, and also the granules if specified
 - themexref specifies a theme for which all cross references are to be removed from the Data Pool
 - theme specifies a theme for which associated granules are to be removed (a granule is not removed if it is associated with other themes)

Data Pool Cleanup Utility (Cont.)



- Cleanup Utility reports deletion candidates to ECHO
 - echomode parameter specifies the method by which deletion candidates are reported to ECHO
 - -echomode takes one of three values
 - predelete Cleanup Utility builds the list of items to clean up from the Data Pool and reports them to ECHO through the EcBmBulkURL utility; no data is actually cleaned up from the disks or database inventory
 - finishdelete Cleanup Utility deletes all of the data that was last found during a run with the predelete parameter; EcBmBulkURL utility is not invoked because this run performs the actual cleanup of the database inventory and disks of what was previously reported to ECHO
 - deleteall Cleanup Utility builds its list of items to clean up, actually cleans them up, and notifies ECHO via the EcBmBulkURL utility
Data Pool Cleanup Utility (Cont.)



- Normal sequence for cleanup is to run the Cleanup Utility twice
 - Specify predelete for the first run and finishdelete for the second run
 - If a predelete run is performed, the subsequent run must specify finishdelete in order to perform the actual deletions
 - Cleanup Utility enforces the requirement to avoid operator error
- Cleanup utility permits "validation"
 - Cleans up "phantoms" (inventory entries without Data Pool data) and "orphans" (Data Pool data without inventory entries)
 - Operator may specify logging discrepancies only, without removals

Data Pool Cleanup Utility (Cont.)



- Three types of runs can be performed with the Cleanup Utility:
 - Cleanup only
 - Validation only
 - Cleanup followed by validation
- In normal operations, the Cleanup Utility is run once a day as a cron job as a "cleanup only" run executing in echo mode of predelete
- On a subsequent run within the same 24-hour period, the cleanup utility is run in finishdelete mode to perform the actual cleanup processing that was reported to ECHO in the predelete mode

Data Pool Access Statistics Utility



- Processes logs of web access and FTP access and stores results in tables in the Data Pool database
- Two versions, each with configuration file
 - EcDIRollupWebLogs.pl (EcDIRollupWebLogs.CFG) processes web access logs
 - EcDIRollupFtpLogs.pl (EcDIRollupFtpLogs.CFG) processes SYSLOG for FTP entries
- Captured data are written to a flat file and exported to Sybase
- Associated shell scripts
 - DIDbArchiveAccessStat
 - DIDbDeleteAccessStat
 - DIDbRestoreAccessStat

Data Pool Batch Insert Utility



- Command-line utility allows insert of granules from the ECS archive or from outside ECS
 - Queues granules for Data Pool Action Dispatcher (DPAD) and insert by Data Pool Insert Utility (DPIU)
 - Batch label specified by -label option
 - Theme association specified by -theme option
 - Note: If -theme option is used to link granules resident in Data Pool to a theme, and the granules were originally inserted using the Batch Insert Utility, must use a different batch label from that used for original insert into Data Pool
 - EcDIBatchInsert.pl <*MODE*> -ecs | nonecs [-file pathname]
 - [-theme "theme-name"][-label label]
 - [-rpriority priority][-rperiod period]
 - [-dpriority priority][-mdonly]
 - [-verbose]

Bulk Metadata Generation Tool (BMGT)



- Several ECS data collections are created maintained at each site to store the bulk metadata and bulk browse data
- Bulk Metadata Generator and Bulk Browse Generator Tools are run daily at each site to populate the data collections
 - One metadata product is created per ESDT group per day
 - Each product contains an external representation of the metadata for each new, updated, or deleted granule that is a member of the ESDT group
 - Format used for the external representation of the metadata is XML
 - One bulk browse product is produced per day that contains references to all new, updated, or deleted browse granules
 - Value-added providers may use any of the standard ECS search, order, and subscription capabilities to find and order these bulk metadata and browse products

Bulk Metadata Generation Tool (BMGT) (Cont.)



- ECS data collections for storing the bulk metadata and bulk browse data
 - The ECSMETC and ECSMETG data collections store products that contain metadata for multiple collections and multiple granules
 - ECSBBR collection stores products that contain browse product references
 - Has a custom acquire service that converts the browse product references into actual browse products during distribution
 - ECSMETV collection stores products that contain the entire set of valids contained within the SDSRV database for a particular instance in time
 - BMGT places XML products, .met and PDR files in a polling directory for Ingest pick up via the Science Investigator-Led Processing System (SIPS) interface
 - After successful archiving, the products are pushed to ECHO via SIPS interface

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Bulk Metadata Generation Tool (BMGT) (Cont.)



- The distribution of bulk browse products is not a function of BMGT; it is managed by OMS
 - With Release 7.11 bulk browse could be reconfigured in OMS to remove the Synergy III exception for ECSBBR. In this case the OMS submits an insert request for the ECSBBR granule to the DPL CI (rather than SDSRV)



Data Pool Hidden Scrambler Utility



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

Data Pool Hidden Scrambler Utility (Cont.)



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

Data Pool Hidden Scrambler Utility (Cont.)



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

WARNING

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



Data Pool Order Status & Control



- For orders place using the Data Pool Web Access tool or the single granule converter dialog for the HDF EOS -GeoTiff (HEG) Converter
- Allows operators to view the status of orders and order items
- Allows operators to control certain aspects of the order process
- Four functional areas:
 - Queue Control: Start and stop the HEG Converter Front End server
 - Orders: Reports the status of orders
 - Order Items: Reports the status of order items
 - Help: Provides information on the functions

DataPool Order Status & Control: Orders Page and Order Details



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DataPool Order Status & Control						Order ID: 10
8		Status: DONE				
"	Queue Control Order	Creation Date: 04/15/03				
		Last Update: 05/15/03				
		Email: sjsk@nsidc.org				
			Real Name: s khalsa			
						Upper Left Latitude: -
There are totally 23 orders, 1 order is currently being processed. There are also 9 failed orders which need operator attention. The filtering						Upper Left Longitude: -
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Order ID	<u>Status</u>	<u>E-Mail</u>	<u>User Name</u>	Creation Date	Last Update	projection selection.)
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<u>9</u>	DONE	sjsk@nsidc.org	s khalsa	04/15/03	05/15/03	format selection.)
<u>17</u> ۹	DONE	sjsk@nsidc.org	s khalsa	04/18/03	05/15/03	
<u>10</u> ۹	DONE	sjsk@nsidc.org	s khalsa	04/15/03	05/15/03	Current Order/Row is 2 of 23: First Previous Next Last
<u>19</u> ۹	DONE	sjsk@nsidc.org	s khalsa	04/21/03	05/15/03	2
<u>31</u> ૧	FAILOPERN Ϙ 🖻	btmclean@nsidc.org	-	05/14/03	05/15/03	
<u>30</u> ۹	DONE	btmclean@nsidc.org	-	05/14/03	05/14/03	
<u>29</u> ۹	DONE	marilynk@nsidc.org	-	05/12/03	05/12/03	
<u>27</u> ۹	FAILOPERN Ϙ 🖻	btmclean@nsidc.org	-	05/02/03	05/06/03	
<u>28</u> ૧	FAILOPERN 🖓 🖻	btmclean@nsidc.org	-	05/02/03	05/02/03	
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DataPool Order Status & Control: Order Items Page and Item Details



					🔤 DataPool: Request Details Viewer - Netscape 📃 🔍
	ool: Itom Ctr	tuo Notoonne			Order Item Details Viewer 🚔
<u>File E</u> d	it ⊻iew <u>G</u> o	<u>Communicato</u>	r <u>H</u> elp		Current Item/Row is 2 of 2: First Previous Next Last
[` ₿`B	ookmarks 🤳	Location: 1u.e	cs.nasa.gov:2200()/OPS/order.jsessionid=vj1hvotv31?page=item&doFilter=on&submitFilter=yes&orderId=28&sort=itemId 🔻 🕼* What's Related 🛛 🔤	
		Data	Pool (Details for Order Item 38 (#2 of 2) Item ID: 38	
	~~	Queue Cor	ntrol Orders	Order ID: 8	
Items There are totally <u>196</u> order items , <u>1</u> order item is currently being processed. There are also <u>72 failed order items</u> which need operator attention. The filtering status in this page is: Filter on order 28				Status: DONE Error Code: 0 Granule ID: 2013176744 Input File: MOLT/MODPT1KN.001/2000.08.25//labtest_2013308902 Output Projection: Output Format: hdfeos	
Filter © On C Off By Order ID: 28 V Do Filtering By Status: FAll ED V Do Filtering					Current Item /Pour is 2 of 2: First Preurious Next Last
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144 ۹	DONE	0	2594556	MOST/MOD10A1.004/2003.04.25//MOD10A1.A2003115.h13v09.004.2003122185038.hdf 28 a	
145 Q	FAILED	610 HEG: Opening Input Parameter File	2594544	MOST/MOD10A1.004/2003.04.25//MOD10A1.A2003115.h14v10.004.2003122183034.hdf 28 a	
146 a	FAILED	610 HEG: Opening Input Parameter File	2594560	MOST/MOD10A1.004/2003.04.25//MOD10A1.A2003115.h13v10.004.2003122185704.hdf 28 o	
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]	Filter: © O	n ○ Off By	Order ID: 28 🔽 Do Filtering By Status: FAILED 🔽 Do Filtering	
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DataPool Order Status & Control: Queue Control Page



DataPool: Request Status - Netscape
The Four Yesh Co Communication Tesh
Back Forward Reload Home Search Netscape Print Security Shop Stop
Data Do al Ondan Status & Control
DataPool Oraer Status & Control
Queue Control Orders Order Items Help
Processing and Queue Status
HEG Front End Server: UP Exit Gracefully Exit Immediately (No Cleanup)
HEG Front End Processing State: Process orders in the order queue
Maximum number of HEG Converter Processes: 10
Maximum Order Queue Size: 100
Apply Changes Reset
U.S. GOVERNMENT COMPUTER
YOU SHOULD HAVE NO EXPECTATION OF PRIVACY By continuing, you consent in your keystrokes and data content being monitored
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Open Geospatial Consortium (OGC) Web Services (OWS) Support



- Deployment of Open Geospatial Consortium (OGC) Web Services (DOWS)
 - For Synergy V DOWS allows OGC-compliant clients the ability to search, map, download, and subset (spatially and temporally) data residing in the EOS Data Pools
 - Consequently, a configurable subset of the EOS Data Pools' inventory can be accessed via the following OGC Web Services (OWS):
 - Web Coverage Service (WCS)
 - Web Mapping Service (WMS)
 - For Synergy V DOWS is implemented at the LP DAAC only





- The following activities support the access of WCS/WMS to data in the EOS Data Pools:
 - Data enabling
 - Definition and population of OWS-enabled inventory in the Data Pool
 - Data conversion
 - Pre-conversion of some OWS-enabled inventory from HDF-EOS format to GeoTIFF format (conversion upon Data Pool insert rather than when accessed by the end user)
 - Data exposure
 - Exposing the availability of OWS-enabled data to end users by replicating metadata pertaining to the OWS-enabled inventory from the Data Pool database to the WCS/WMS applications' database (via the IONIC Indexer API)
 - Data publishing
 - Exporting (via BMGT and OWS Binding Utility) to the ECHO system the metadata for all OWS-enabled data that has been successfully exposed so OGC clients can search for data offered by WMS/WCS



- Several DOWS scripts provide the operator with utilities or applications for managing DOWS maintenance
 - DOWS Synchronization Utility: propagates changes in the OWS-enabled inventory in the Data Pool to the IONIC Indexer on a regular (e.g., daily) basis to make the data visible as WCS and/or WMS services to any OGC compliant web client [especially the Earth Science Gateway (ESG) OGC client]
 - DOWS GeoTIFF Converter Utility: "pre-converts" HDF-EOS files to GeoTIFF format on a regular (e.g., daily) basis
 - OWS Binding Utility (OBU): exports to ECHO granule-level metadata concerning OWS-enabled data in the Data Pool, including which granules from the OWS-enabled collections have been successfully indexed for WCS or WMS (or both) web service(s) by the DOWS Synchronization Utility



- Manually Invoking the DOWS Synchronization Utility
 - DOWS Synchronization utility performs the following functions:
 - Scans the Data Pool inventory for new and deleted OWS-enabled inventory
 - When inventory that is marked for pre-conversion is detected, creates a GeoTIFF Converter to convert HDF-EOS to GeoTIFF files and register the GeoTIFF files in the Data Pool database
 - If running in "insert" or "both" (I.e., both "insert" and "delete") synchronization mode, the new inventory (including generated GeoTIFF inventory) is added to the IONIC indexing system
 - If running in "delete" or "both" synchronization mode, the expired inventory is removed from the IONIC indexing system



- Manually Invoking the DOWS Synchronization Utility (Cont.)
 - When specifying the temporal extent of the conversion session, the operator specifies one of two mutually exclusive temporal modes:
 - Previous mode, which specifies an amount of time before the time when the Synchronizer is executed (i.e., how long before the present time)
 - Range mode, which specifies a period of time from a particular date/time to some other date/time
 - In addition, the operator can specify a synchronization mode:
 - Insert mode specifies that new inventory only (not deleted inventory) should be synchronized
 - Delete mode specifies that deleted inventory only (not new inventory) should be synchronized
 - Both mode specifies that both new inventory and deleted inventory should be synchronized (default mode)



- Manually Invoking the DOWS Synchronization Utility (Cont.)
- Range Mode:
 - EcOwSynchronizer -mode <*MODE*> -start <*STARTDATE*> [-stop <*STOPDATE*>] [-insert | -delete]
- Previous Mode:
 - EcOwSynchronizer -mode <*MODE*> -duration <*period*> [-count <*integer*>] [-insert | -delete]





- Manually Invoking the DOWS GeoTIFF Converter Utility
 - DOWS GeoTIFF Converter utility performs the following functions:
 - Converts one or more HDF-EOS file(s) to GeoTIFF format
 - May register generated files in the Data Pool database (optional)
 - May use a temporal constraint to determine a list of HDF-EOS files to be converted (optional)
 - May use a supplied list of file names to determine which HDF-EOS files are to be converted (optional)
 - When specifying the temporal extent of the conversion session, the operator specifies one of two mutually exclusive temporal modes:
 - Previous mode, which specifies an amount of time before the time when the converter is executed (i.e., how long before the present time)
 - Range mode, which specifies a period of time from a particular date/time to some other date/time



- Manually Invoking the DOWS GeoTIFF Converter Utility (Cont.)
- Range Mode:
 - EcOwGeotiffConverter -mode <*MODE*> -start <*STARTDATE*> [-stop <*STOPDATE*>]
- Previous Mode:
 - EcOwGeotiffConverter -mode <MODE> -duration <period>
 [-count <integer>]



- Using the DOWS OWS Binding Utility (OBU)
 - OBU exports granule-level information for OWS-enabled data in the Data Pool
 - This information indicates which granules from the OWS-enabled collections have been successfully indexed for WCS or WMS (or both) web service(s) by the DOWS, and already exported to ECHO via the BMGT
- Syntax:
 - EcBmOwsBindingStart <MODE>



OWS Support: Standalone OGC (WCS/WMS) Archive (Prototype)



- Standalone OGC (WCS/WMS) Archive (Prototype)
 - Synergy V includes a prototype of a stand-alone OGC solution that offers the following benefits:
 - Serves as a low-cost alternative to the COTS products that implement OGC standards
 - Offers a path for integration and enabling of selected data holdings for OpenGIS Web Services (OWS) in order to promote interoperability
 - The initial deployment site is the GES DAAC



- One of the principal components of the Standalone OGC Archive is the Archive-to-OWS Gateway (AOG)
 - Allows easy registration of existing data-provider holdings (as WCS coverages, WMS maps, and their corresponding metadata) with the OGC engine
 - A data provider that wishes to expose some or all of its WMS/WCS-compatible data has to perform a sequence of well defined "OWS registration steps"
 - After successful completion of the registration steps, the provider is able to respond to WMS and WCS HTTP requests via the OWS engine
 - In the GES DAAC prototype deployment the DAAC is the data provider and the WMS/WCS-compatible data is in the Data Pool
- A DAAC OWS utility, the OWS Registration Utility, provides the interface between the DAAC Data Pool and the AOG

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- Using the OWS Registration Utility
 - Provides the ECS Operations Staff with a command-line interface to register or unregister Web Coverage Service (WCS) coverages and Web Mapping Service (WMS) layers for granules that reside in the Data Pool
 - Serves as an interface between the DAAC Data Pool and the Archive-to-OWS Gateway (AOG)
- For registration (indicated by the command line parameter -register), the OWS Registration Utility requires a commandline parameter (i.e., -granulefile) that specifies an input file containing a list of granule IDs and another parameter (-regtype) specifying the type of registration; i.e., either WCS or WMS
 - The input file can be generated with the DOWS Synchronization Utility



- Using the OWS Registration Utility (Cont.)
 - For each granule ID in the input file, the registration sequence is as follows:
 - OWS Registration Utility converts each granule data file from HDF-EOS to GeoTIFF(s) for WCS coverage registrations (unless the files were preconverted on DPL insert)
 - Utility extracts the metadata from the granule DPL metadata file and generates the AOG registration XML file, which includes the OWS-style metadata, type of registration being requested, and data file locations
 - Utility places the AOG registration XML file, OWS metadata files, and OWS data files in a configured area then notifies the AOG of the registration, passing the location of the registration file to the AOG (which handles the remainder of the OWS registration process)
 - A group name can be registered (-group parameter) then coverages and layers can be registered as part of the group



- Using the OWS Registration Utility (Cont.)
- Registration
 - EcDIOWSUtility -register -regtype <type> -granulefile <file name> [options]

OR

– EcDIOWSUtility -register -regtype <type> -geofile <file name>



- Using the OWS Registration Utility (Cont.)
- During unregistration (indicated by the command line parameter -unregister) OWS-enabled data are unregistered from the OWS inventory
 - An option (-deletedata) removes the associated data files (WCS coverages and WMS layers)
- Unregistration
 - EcDIOWSUtility -unregister -regtype <type> -granulefile <file name> [-deletedata]

OR

- EcDIOWSUtility -unregister -regtype <type> -resourcefile <file name> [-deletedata]
- The unregistration is provided via an AOG XML file that contains unregistration instructions

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Using the Spatial Subscription Server GUI



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



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





- The Spatial Subscription Server GUI permits an operator to perform the following kinds of activities (Cont.):
 - Extend the period of retention in a Data Pool insert subscription for new granules from a particular area
 - View the acquire and notification actions currently being processed by the Spatial Subscription Server
 - View statistics on the processing of events and actions by the Spatial Subscription Server



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





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





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





- Full-capability operators only may perform the actions:
 - Add, update, or delete (cancel) a subscription
 - Configure defaults for a bundling order
 - Add, update, or cancel a bundling order
- The Spatial Subscription Server GUI is a web application certified for use with Netscape 7 (and higher) browsers


Security Login Prompt



Prompt							
?	Enter username and password for "SSS Realm" at p2dps01.pvc.ecs.nasa.gov:22221 User Name:						
	Password:						
	Use Password Manager to remember these values.						
	OK Cancel						



Using the Spatial Subscription Server GUI (Cont.)



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

Spatial Subscription Server GUI Home Page



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• Managing subscripti	ions (list, view, cancel	, update, add, suspend, res	ume)		
• Managing bundling	orders				
• Monitoring runtime	queues and producti	on statistics			
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Spatial Subscription Server GUI List Events Page



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		Spatial	Subscripti	on Server	OPS		
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ACR3L2SC	001	INSERT					
ACR3L2SC	001	UPDATEMETADATA					
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AE_L2A	001	UPDATEMETADATA	1				
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Spatial Subscription Server GUI Manage Subscriptions Page



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Spatial Subscription Server GUI Add Subscriptions Page

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	Spatial Subscripti	on Server	OPS		
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Information	for FtpPush or Secure Copy Distribution (scp) Only)						
User							
Password							
Enter passwo	rd again for verification						
Host							
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	E-Mail Notification Information						
Action Ad	dress (minaeo@pziniozu.ecs.nas.gov						
User Strin							
Mecadata	1						
	Data Pool Information						
	Retention Period (in days)						
	Retention Priority (200) (valid range 1 thru 255)						
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	Add Subscription						

one or more actions | Acquire | E-Mail Notification | Data Pool

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Spatial Subscription Server GUI View Subscriptions Page







Spatial Subscription Server GUI Update Subscriptions Page



(After choosing a bundling order, skip to the bottom of the page.)

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User]
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Enter pass	word again for verification	
Host		1
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Spatial Subscription Server GUI List Themes Request Page



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Spatial Subscription Server OPS Image Subscriptions Manage Bundling Orders Monitor Queues Help	
Enter first few characters of theme name (or leave blank to view all):	



Spatial Subscription Server GUI Theme List Page







Spatial Subscription Server GUI List Subscriptions for Theme Page







Spatial Subscription Server GUI Manage Bundling Orders Page





Spatial Subscription Server GUI Add Bundling Order Page



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Home Page List Events	Manage Subscriptions Manage Bundling Orders	Monitor Queues Help
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Spatial Subscription Server GUI Add Bundling Order: Data Pages



Hard Media





Spatial Subscription Server GUI Add Bundling Order: Data Pages



SCP

Spatial Subscription Server GUI Update Bundling Order Page



Spatial Subscription Server ??? OPS – Netscape
Eile Edit <u>V</u> iew <u>G</u> o <u>B</u> ookmarks <u>T</u> ools <u>W</u> indow <u>H</u> elp
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🗿 🏹 Spatial Subscription Server OPS 📃 🖈
Spatial Subscription Server OPS
Home Page List Events Manage Subscriptions Manage Bundling Orders Monitor Queues Help
Update Bundling Order 0400079209 (Click <u>here</u> to bo back to the Bundling Order list.)
UserID cmshared Expiration Date (MM/DD/YYYY HH:MM) 10/21/2004 12:00 Physical Media Type scp T Update Bundling Order reset



Spatial Subscription Server GUI Update Bundling Order: Data Pages



Spatial Subscription Server DEV05 - Netscape	FTP Pull
Update Bundling Order 0400011767 UserID tabuser Expiration Date 8/3/2005 12:00 Media Type FUPush Email Address Journet Description User String Journet Description User String Peting Distribution Priority HiGH FIP Push FipPush Parameters: FIP Passwori FipPush Parameters: FIP Passwori FipPush Parameters: FIP Passwori FipPushArea Completion Criteria: Minimum Grandle Stre(68) Minimum Dundle Stre(68) Image: Streide Tredition Widte Bundling Order rest	Suptal Subscription Server DEVD5 - Netscape File Edit View So Bookmarks Tools Window Help Back Forest Relaad People Window Help Back Forest Relaad Window Help Back Forest Relaad Window Help Completion Server DEVD5 Spatial Subscription Server DEVD5 Nonther Devos Nonther Opeople Vielow Pages Download Netw & Cool Spatial Subscription Server DEVD5 Nonther Opeople Vielow Pages Download Netw & Cool Spatial Subscription Server DEVD5 Nonther Opeople Vielow Pages Download Netw & Cool Spatial Subscription Server DEVD5 Nonther Opeople Vielow Pages Download Netw & Cool Spatial Subscription Server DEVD5 Nonther Opeople Vielow Pages Download Netw & Cool Spatial Subscription Server DEVD5 Nonther Opeople Vielow Pages Download Netw & Cool Spatial Subscription Server DEVD5 Nonther Opeople Vielow Pages Download Netw & Cool Spatial Subscription Server DEVD5 Nonther Page Use Events Manage Subscriptions Manage Bundling Orders Nonther Opeople Vielow Page Vielow Page Nonther Opeople Vielow Page
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SSS GUI: Configure Bundling Order Completion Criteria Defaults



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Spatial Subscription Server GUI List Action Queue Page



625-EMD-010, Rev. 02 Updated 07/20/06



Spatial Subscription Server GUI List Statistics Page



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40	AIRBAQAP	77	INSERT	157463	73065	7750	3945
2	AST_L1B	1	INSERT	4643	4643	3783	3783
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Spatial Subscription Server GUI List Failed Action Page

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