



### Atmospheric Infrared Sounder (AIRS) Project

# AIRS TLSCF Data System (TDS) Data Access Service

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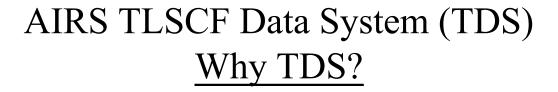


# AIRS TLSCF Data System (TDS) <u>Outline</u>



- Why TDS?
- Access Authorization
- Internal Data Organization
- Data Access Methods:
  - Directory Access
  - Catalog Access
- Catalog Access Examples







- Daily Data volume is one of the main drivers
- Estimations are based on worst case 1x processing analysis for the first year of Mission Operations

Daily	Receive from GDAAC	Produce at TLSCF	(Total) Archive at TLSCF
Number of Files	2,450	3,610	6,060
File Size (Gbyte)	18	57	75







- TDS Data Access is provided only to members of the AIRS Science Validation Team
- Each authorized user must acquire a login account for one of the TDS client computers (e.g., alpha.jpl.nasa.gov)
- Once log on, data users have full access to all science data products stored in the TDS







- Data are organized into six logical groups called collections in TDS:
  - The *level0* collection
  - The *tlscf* collection
  - The *gdaac* collection
  - The *test* collection
  - The *sim* collection
  - The *correl* collection
- Collection type is one of the major metadata keywords used by the TDS catalog.

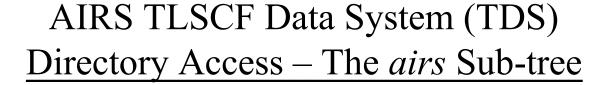






- The root of the TDS directory tree is always /dom/files/airs/ops, regardless of which TDS client machine you log on.
- Below the root node, there are four subdirectory trees:
  - airs (i.e., /dom/files/airs/ops/airs)
  - test (i.e., /dom/files/airs/ops/test)
  - sim (i.e., /dom/files/airs/ops/sim)
  - correl (i.e., /dom/files/airs/ops/correl)







- The *airs* sub-tree contains three (3) branches identified by the level0, tlscf and gdacc collection names.
- Below each branch, data files are organized by year, month, day (day for granule file only) and Earth Science Data Type (ESDT), respectively.

#### • For examples:

- /dom/files/airs/ops/airs/level0/2001/06/air10sci/filename
- /dom/files/airs/ops/airs/level0/2001/06/airb0cap/filename
- /dom/files/airs/ops/airs/tlscf/2001/06/01/airx2ret/filename
- /dom/files/airs/ops/airs/tlscf/2001/06/01/airx2sup/filename
- /dom/files/airs/ops/airs/gdaac/2001/06/15/airx2ret/filename



# AIRS TLSCF Data System (TDS) <u>Directory Access – The *correl* Sub-tree</u>



- The *correl* sub-tree currently contains two (2) branches, namely, ncep and arm; additional branches will be configured as more correlative data become available.
- Below these branches, data files are organized by *year*, *month* and *ESDT*, respectively.

### • For examples:

- /dom/files/airs/ops/correl/ncep/2001/06/avi3\_anh/filename
- /dom/files/airs/ops/correl/ncep/2001/06/avi6\_anh/filename
- /dom/files/airs/ops/correl/ncep/2001/06/avi9\_anh/filename
- /dom/files/airs/ops/correl/arm/2001/05/airx2cac/filename
- /dom/files/airs/ops/correl/arm/2001/04/airx2lac/filename







- The *sim* and *test* sub-trees contains sub-directories that are created in real-time, as needed.
- These subdirectory names must <u>uniquely</u> identify the simulation or test activity.
- Below the dynamically created directory, data files are organized by *year*, *month*, *day* (day for granule file only) and *ESDT*, respectively.
- For examples:
  - /dom/files/airs/ops/test/XXX/2001/06/01/airx2ret/filename
  - /dom/files/airs/ops/sim/YYY/2001/06/01/airx2ret/filename

Where XXX and YYY could be PGE2-1-5-CloudClear.



# AIRS TLSCF Data System (TDS) <u>Catalog Access</u>

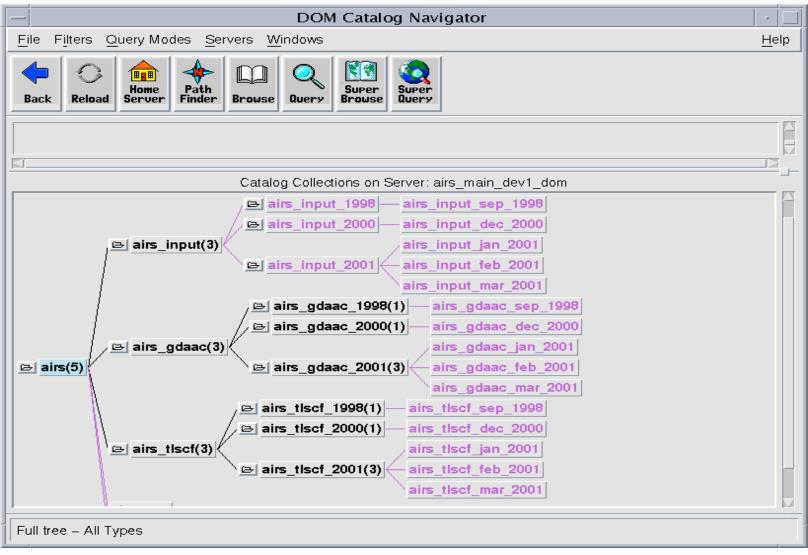


- Set up UNIX environments upon log in:
  - setenv PATH \${PATH}:/opt/packages/dom/bin
  - setenv LD\_LIBRARY\_PATH \
    \${LD\_LIBRARY\_PATH}:/opt/packages/dom/lib
  - setenv CATALOG\_SERVER airs-tlscf
- Interfaces to access the catalog:
  - GUI-based catalog navigator:
    - catnav
  - Command line interfaces:
    - cat\_getfile
    - dom\_getfile















- dom\_getfile is a wrapper program that wraps around the cat\_getfile command.
- Similarity:
  - Same command line options

### • Difference:

- dom\_getfile returns both data and metadata files in search result
- cat\_getfile returns only data file in search result







### cat\_getfile -r airs -t FileType -x MaxResultEntries [-cl-l] -W'MetadataKeyword = "value"

- -r airs: specifies the root of a subtree where the search will start
- -t FileType: FileType specifies name of a TDS internal data file type that the user is interested in searching for in the query. For example: L1A\_AMSU\_T, L1A\_HSB\_T, Any\_L1A\_T, etc.

**NOTE**: All TDS-supported file types are documented in the working document entitled *TDS Data Hierarchy*.

- -x MaxResultEntries: MaxResultEntries is an integer that specifies the maximum number of files to be returned in the result file set. It provides a safety net for queries that may accidentally produce an excessive result set.
- [-cl-l]: These options are optional. If none is specified, the default is that a file list will be returned as the search result. Such file list that contains one file entry per line could then be used as input for other application program.



#### AIRS TLSCF Data System (TDS)

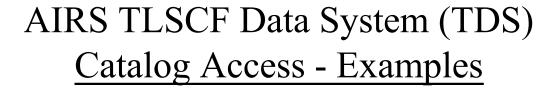
### Catalog Access - The Command Line Options (cont.)

### cat\_getfile -r airs -t FileType -x MaxResultEntries [-cl-l] -W'MetadataKeyword = "value"

- When the —c option is specified, the search result will contain files that are physically copied over to the data user's current (local) working directory.
- When the —l option is specified, the search result will contain a set of symbolic links created in the data user's current (local) working directory.
- -W'MetadataKeyword = "value": the -W option allows data user to enter additional search criteria by specifying value for a predefined metadata keyword. In addition, multiple -W options can be specified in a query. In that case, all the metadata keywords will be joined with the logical "AND" operator.

**NOTE**: All supported metadata keywords/parameters are documented in the working document entitled *TDS Data Hierarchy*.







- cat\_getfile -r airs -t L1A\_AIRS\_T -x50 -l \
  -W'CollectionType="tlscf"' -W'DOMContainerDate="1998-09-13"'
- cat\_getfile -r airs -t Any\_L2\_T\
   -W 'CollectionType = "tlscf" AND DOMContainerDate >= 2001-01-01-01 AND DOMContainerDate <= 2001-01-31 AND NumClearMW >= 10'
- cat\_getfile -r airs\_tlscf\_jan\_2001 -t Any\_L2\_T\
   -W 'NumClearMW >= 10'
- cat\_getfile -r airs -t L1B\_AIRS\_Rad\_T -l \
   -W 'CollectionType = "gdaac" AND LatGranuleCen <= 5 AND AutomaticQualityFlag = "Suspect"'</li>