Software architecture diagram

On Motu server instance running:

**TDS can be installed on a dedicated server   
or directly on Motu server**

Java



Web Browser

Apache Tomcat



CAS



WCS | DGF | SUBSETTER

Motu

LDAP Server

LDAP

HTTP

AJP

motu-client-python



DGF

[NFS] NetCDF data



XML-inventory

$INSTALL/hoa/publication/inventories/\*.xml



NetCDF gridded data

PDF, ATD

Apache HTTPd



[NFS] NetCDF data



NetCDF gridded data



PDF, ATD



**Optional web server used to serve graphic chart   
(By default, CLS graphic chart is embedded in Motu)**



**/Motu**



Apache HTTPd



NFS Server

[NFS] NetCDF data



NetCDF gridded data

PDF, ATD



OPENDAP | SUBSETTER

Thredds

Java



Apache Tomcat



TDS.conf



HTTP(s)

HTTP(s)

HTTPS

data/public



download



\*.nc



HTTPS

/config



Static files



Scalability, several Motu server instances running at the same time and sharing downloads:

i2

2

i1

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<RequestId ;Status>



Motu download temp folder



SCALABILITY

Apache HTTPd



Download Workflow diagram

**Input data:** NetCDF v3 files

CAPTION

Result Area   
[axisXMin] [[leftLon rightLon]] [axisXMax]

DOWNLOAD ACTION

CHECKS  
 - Check Number Of Running Request For User  
 - Check Max Size  
 - Check Free Space  
ADD REQUEST TO QUEUE

DOWNLOAD PRODUCT WITH  
 - is “ncss” enabled in MotuConfig ?

“NO”, default

“YES”

OPENDAP

NCSS

“Antimeridian” “Dataset bounds”  
// [axisXMin] rightLon]] [[leftLon [axisXMax]

1 point ?  
leftLon == rightLon?

leftLon < rightLon?

hasZAxis and request depth subset request ?

For each Depth

“YES”

**TDS Download**  
« 1 request »

TDS Download  
« 1 request »

TDS Download  
« 1 request »

**TDS Download**  
« 1 request »

renameDimension  
AndVariableName

“NO”

cdo.sh merge ...

hasZAxis AND  
∀ depths

! hasZAxis  
OR hasZAxis && 1 depth subset

Run RQT with cdo

TDS Download   
Fix with « 2 points »

(\*)

merge.sh ...

**Download Request**



34%

**TDS Download**



49%



18%



17%

(\*) Motu removes one point

[SUBSET] NetCDF v3 files

**ERROR**

Download Workflow diagram

**Input data:** NetCDF v4 files, To confirm

CAPTION

Result Area   
[axisXMin] [[leftLon rightLon]] [axisXMax]

DOWNLOAD ACTION

CHECKS  
 - Check Number Of Running Request For User  
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« 1 request »

TDS Download  
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49%



18%



17%

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[SUBSET] NetCDF v3 files

**ERROR**

Cache refresh management process

USL

CatalogAndProductCacheRefreshThread

CatalogAndProductCacheManager

CacheRefreshScheduler

CacheRefreshService

StopableDaemonThread

extends

Update

Update

UpdateAll

Update(ListOfConfigService)

Update(ConfigService)

extends

CacheRefreshService: This class is used to refresh the cache of a configService

CacheRefreshScheduler: This class schedule the refresh of the cache of configservice. This class avoid the execution of multiple cache refresh at the same time.

CatalogAndProductCacheManager: This class is used to centralize the possible action on the cache of the catalog and product of Motu

CatalogAndProductCacheRefreshThread: This class is is used to launch regularly an update of the cache.

Downloading 1 point

Motu v3.7.0-snapshot  
Motu?action=productdownload&service=HR\_OBS\_NCSS-TDS&product=HR\_OBS

**261.68**

**261.70**

**-10.74**

**-10.72**

Longitudes

Latitudes

**10**

**11**

**13**

**12**

261.69

-10.73

11

-10.735

11

-10.725

12

261.685

10

13

10

261.695

11

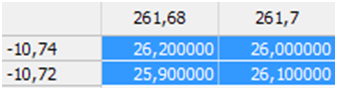
12

11

**Real value from a dataset variable**

**Requested location and  
associated result**

**Requested area matching a real value from a dataset variable**



**10**

11

**12**

**13**