2014 AWIPS2 for CWB

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Guideline

1.awips2 packages installation

1.1 awips2 EDEX data server installation

1.1.1 preceding operation

make sure stopping awips2 server and removing previous version awips2.
removing previous version awips2 instructions

(1)sudo su - root
(2)yum groupremove AWIPS*
(3)execute “rpm -qa|grep awips” to check if awips2 packages exist.
if they exist,execute “yum remove [package1] [package2] [package3]....” to remove them.

if the machine is new one,please setup as:

(1)sudo su - root
(2)append the text "export PATH=/sbin:/usr/sbin:$PATH" to /root/.bashrc
(3)execute ". /root/.bashrc"
(4)useradd awips
(5) useradd -d /usr/local/ldm ldm
(6) groupadd fxalpha
(7) usermod -a -G fxalpha awips
(8) usermod -a -G fxalpha ldm
(9) remember modify /etc/passwd.
let the gid of users awips and ldm equal to the group id fxalpha.
(10) In the configuration /etc/security/limits.d/90-nproc.conf as:

```
*       soft    nproc    1024
root    soft    nproc    unlimited
awips   soft    nproc    50000
```

(11)make sure installed wxGTK-2.8.12-1.el6.rf.x86_64 into the machine.
wxGTK-2.8.12-1.el6.rf.x86_64 installing information please reference to pkgs.org website.
(12)make sure installed wgrib-1.8.1.2b-1.el6.x86_64 into the machine.
wgrib-1.8.1.2b-1.el6.x86_64 installing information please reference to pkgs.org website.
(13) make sure installed **libgfortran-4.4.7-11.el6.i686.rpm** and **libgfortran-4.4.7-11.el6.x86_64.rpm** into the machine. **libgfortran-4.4.7-11.el6.i686.rpm** and **libgfortran-4.4.7-11.el6.x86_64.rpm installing information please reference to pkgs.org website.**
(14)make sure installed grads-2.0-0.a9.1.el6.x86_64.rpm into the machine. please execute “rpm --nodeps grads-2.0-0.a9.1.el6.x86_64.rpm” to ignore the depended package.

make sure running CentOS/RHEL is 64 bits architecture and make sure OpenGL version greater than 2.0

```
$> uname -m
  x86_64
$>glxinfo |grep OpenGL
OpenGL vendor string: NVIDIA Corporation
OpenGL renderer string: NVS 4200M/PCIe/SSE2
OpenGL version string: 4.4.0 NVIDIA 321.49
OpenGL shading language version string: 4.40 NVIDIA via Cg compiler
OpenGL extensions:
```

Edit /etc/yum.repos.d/awips2.repo as:

```
[awips2repo]
 name=AWIPS II Repository
 baseurl=file:///misc/linux/awips2-14.2.2-NBL/awips2/x86_64
 enabled=1
 protect=0
 gpgcheck=0
[awips2noarch]
name=AWIPS II Repository
baseurl=file:///misc/linux/awips2-14.2.2-NBL/awips2/noarch
enabled=1
protect=0
gpgcheck=0
```

Create the awips2 operating directories.

```
$> mkdir /scratch/machine_hostname/14.2.2-NBL
$> mkdir /scratch/machine_hostname/14.2.2-NBL/awips2
$> mkdir /scratch/machine_hostname/14.2.2-NBL/data_store
$> chown -R awips:fxalpha /scratch/machine_hostname/14.2.2-NBL
$> chmod -R 775 /scratch/machine_hostname/14.2.2-NBL
$>ln -s /scratch/machine_hostname/14.2.2-NBL/data_store /data_store
$> ln -s /scratch/machine_hostname/14.2.2-NBL/awips2 /awips2
```

1.1.2 awips2 package installation

Check awips2 yum repositories

```
$>yum clean all
$>yum repolist
$>yum grouplist
  Available Groups:
  AWIPS II Backup Database Server
  AWIPS II DPA Server
  AWIPS II Database Server
  AWIPS II LDM Server
  AWIPS II Message Broker Server
  AWIPS II Processing Server
  AWIPS II Registry Server
  AWIPS II Rehost Server
  AWIPS II Standalone
  AWIPS II Visualize
```

Install awips2 package

```
$>yum groupinstall "AWIPS II Message Broker Server" "AWIPS II Database Server" "AWIPS II
Processing Server" -y

$>rpm -ivh /misc/linux/awips2-14.2.2-NBL/awips2/noarch/awips2-localization-OAX-14.1.1-
4.noarch.rpm

$>chown -R awips:fxalpha /scratch/machine_hostname/14.2.2-NBL/awips2
$>chmod -R 775 /scratch/machine_hostname/14.2.2-NBL/awips2
$>chmod -R 700 /scratch/machine_hostname/14.2.2-NBL/awips2/data
```

setup the configurations /awips2/data/pg_hba.conf

```
$> host machine_hostname
   machine_hostname has address xxx.yyy.zzz.aaa

$> su - awips
$> cd /awips2/data
$> cp pg_hba.conf pg_hda.conf.copy
$> vi  pg_hba.conf
       add some items into pg_hba.conf as list:
       ====================
       host      fxatext          all       xxx.yyy.zzz.0/24        trust
       host      hd_ob92oax    all       xxx.yyy.zzz.0/24        trust
```

```
host      dc_ob7oax     all      xxx.yyy.zzz.0/24        trust
host      hmdb          all      xxx.yyy.zzz.0/24        trust
host      metadata      all      xxx.yyy.zzz.0/24        md5
host      maps          all      xxx.yyy.zzz.0/24        md5
host      postgres      all      xxx.yyy.zzz.0/24        md5
host      ncep          all      xxx.yyy.zzz.0/24        md5
host      ebxml         all      xxx.yyy.zzz.0/24        trust
=======================
```

setup the configuration /awips2/httpd_pypies/etc/httpd/conf/httpd.conf

```
$> cd /awips2/httpd_pypies/etc/httpd/conf
  $> vi httpd.conf
     change the group as list:
    ========================
     Group fxalpha
    ========================
```

1.1.3 awips2 EDEX Data Server operation

create init.d directory and put some service scripts in this directory.

```
$>su – awips
$>cd /scratch/machine_hostname/14.2.2-NBL
$>mkdir init.d
$>cd init.d
$>scp chungyi.huang@machine_hostname:/scratch/machine_hostname/14.2.1-NBL/init.d/* .
```

to start edex Service:

```
$> su – awips
$> cd /scratch/machine_hostname/14.2.2-NBL/init.d
$> ./edexServices start
```

to stop edex Service:

```
 $> su – awips
 $> cd /scratch/machine_hostname/14.2.2-NBL/init.d
 $> ./edexServices stop
```

to check edex status:

```
$> cd /awips2/edex/logs
 $> grep operational *
    edex-ingest-20140303.log:* EDEX ESB is now operational              *
    edex-ingestDat-20140303.log:* EDEX ESB is now operational           *
    edex-ingestGrib-20140303.log:* EDEX ESB is now operational          *
```

```
edex-request-20140303.log:* EDEX ESB is now operational                *
```

1.1.4 awips2 ADE(AWIPS Development Environment) Installation

install awips2 ade relative package

```
$> su – root
$> cd /misc/linux/awips2-14.2.2-NBL/awips2-ade-14.2.2-33ade
$>./ade_quick_install.sh
```

install awips2 ade source code package

```
$> cd /awips2/eclipse
$> chown –R awips:fxalpha /awips2/eclipse
$> chmod –R 775 /awips2/eclipse
$> cd /scratch/machine_hostname/14.2.2-NBL
$> mkdir ade
$> chown –R awips:fxalpha ade
$> chmod –R 775 ade
$>su – chungyi.huang
$> cd /scratch/machine_hostname/14.2.2-NBL/ade
$>/awips2/java/bin/jar –xvf /misc/linux/awips2-14.2.2-NBL/awips2-ade-14.2.2-33ade/awips2-ade-baseline-SOURCES.jar
```

Adjust some directories' permission and config eclipse environment.

```
$> su – awips
$> cd /awips2
$> chmod –R g+w edex GFESuite
$> chmod –R 775 edex GFESuite
$> cd eclipse
$> ln –s /scratch/hardy/14.1.1-NBL/ade/awips/build/static/common/cave/etc .
$> vi eclipse.sh
   add "#!/bin/sh" in header of file
```

1.2 Setup awips2 Development Environment

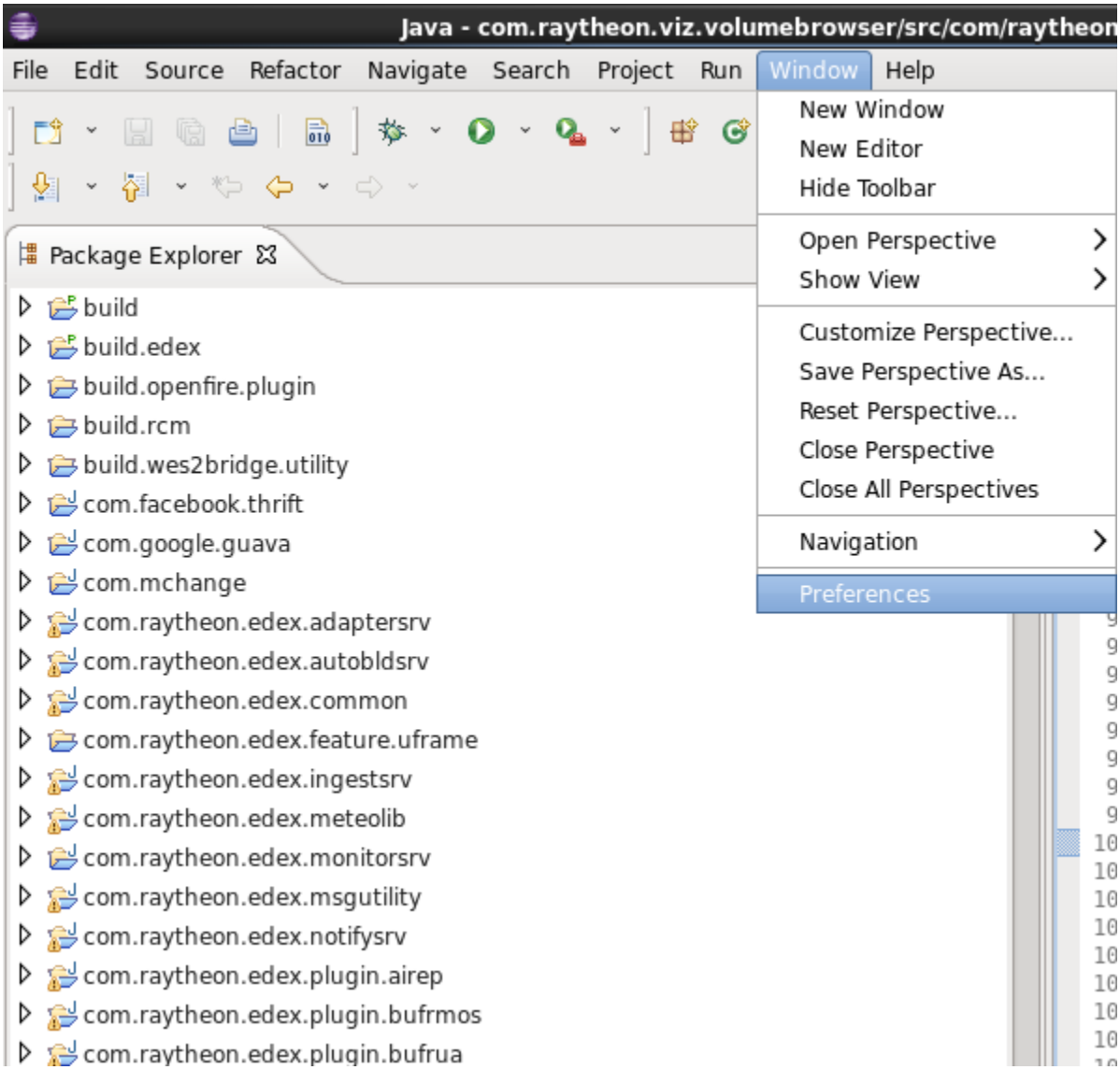
1.2.1 Set up Eclipse

- **Open Eclipse**

  $> su – chungyi.huang

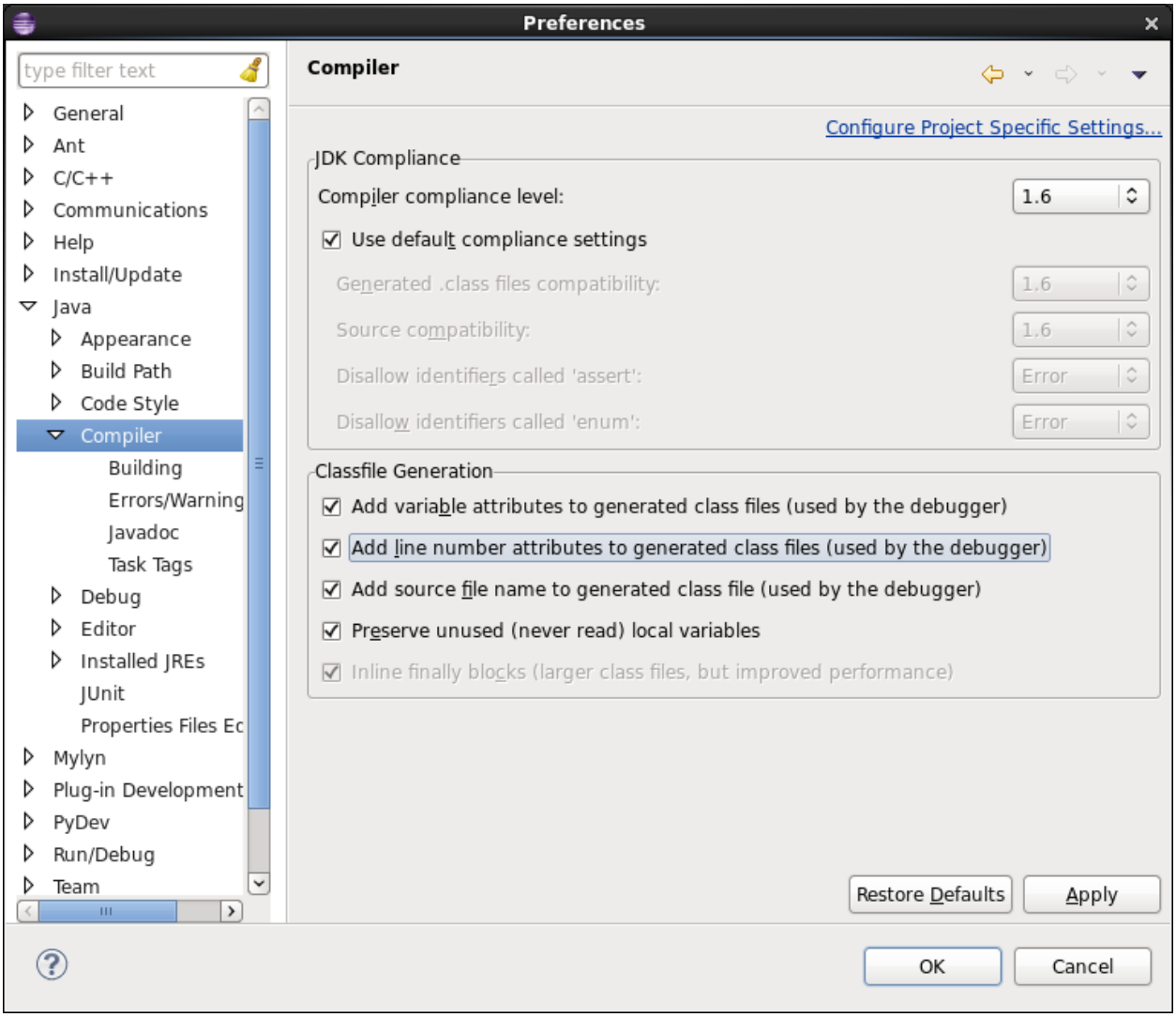
  $> /awips2/eclipse/eclipse.sh

- **Set /scratch/juiter/14.1.1-NBL/ade/awips as the Workspace.**
- **Go to the Workbench.**



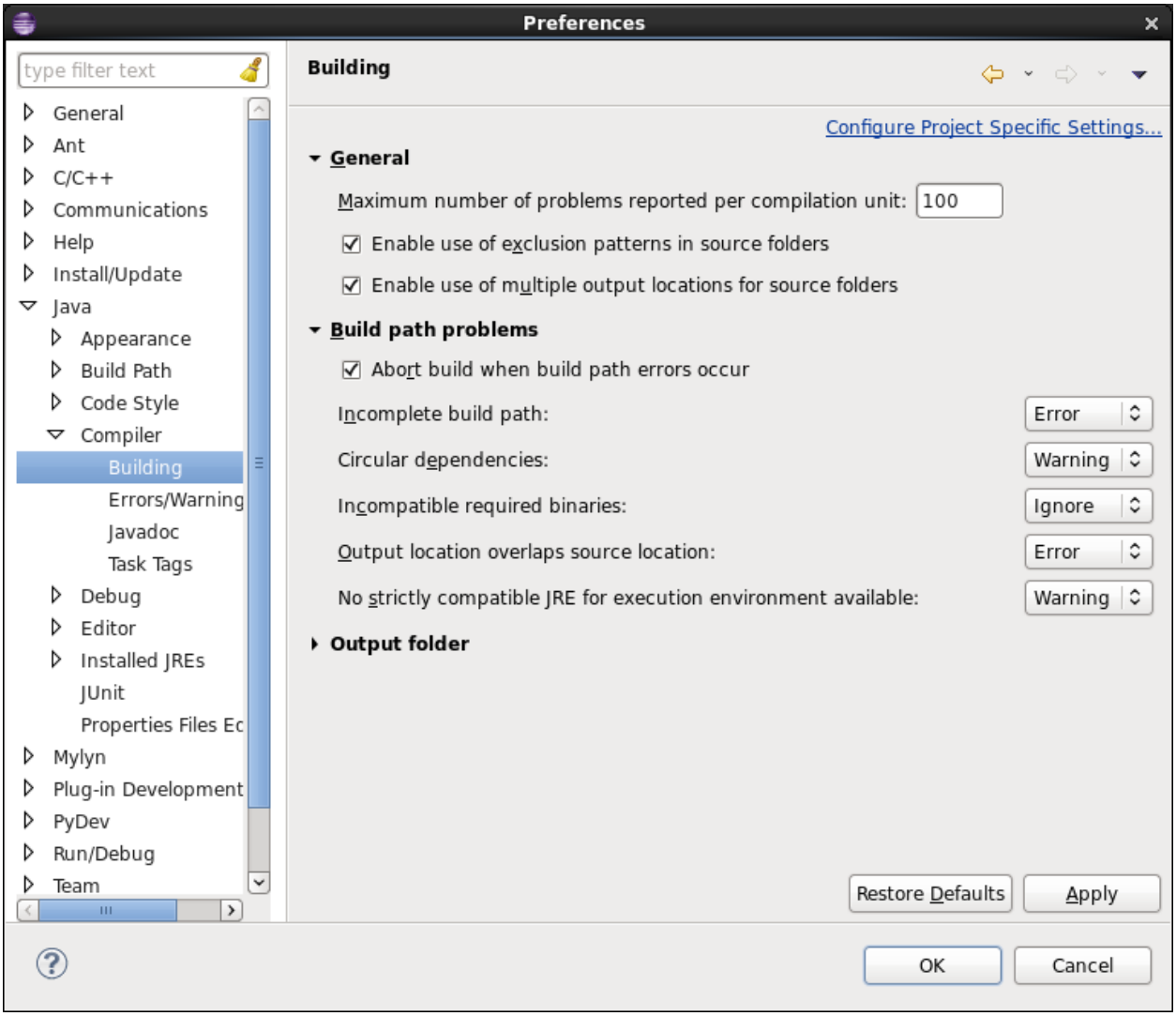
1.2.2 Verify the Java Compliance Level

- **With Window->Preferences->Java expanded, select Compiler.**
- **In the JDK Compliance box at the top,verify that 1.6 is selected in the Compiler compliance level dropdown.**
- **checked In the Add line number attributes to generated class files (used by the debugger) checkbox.**



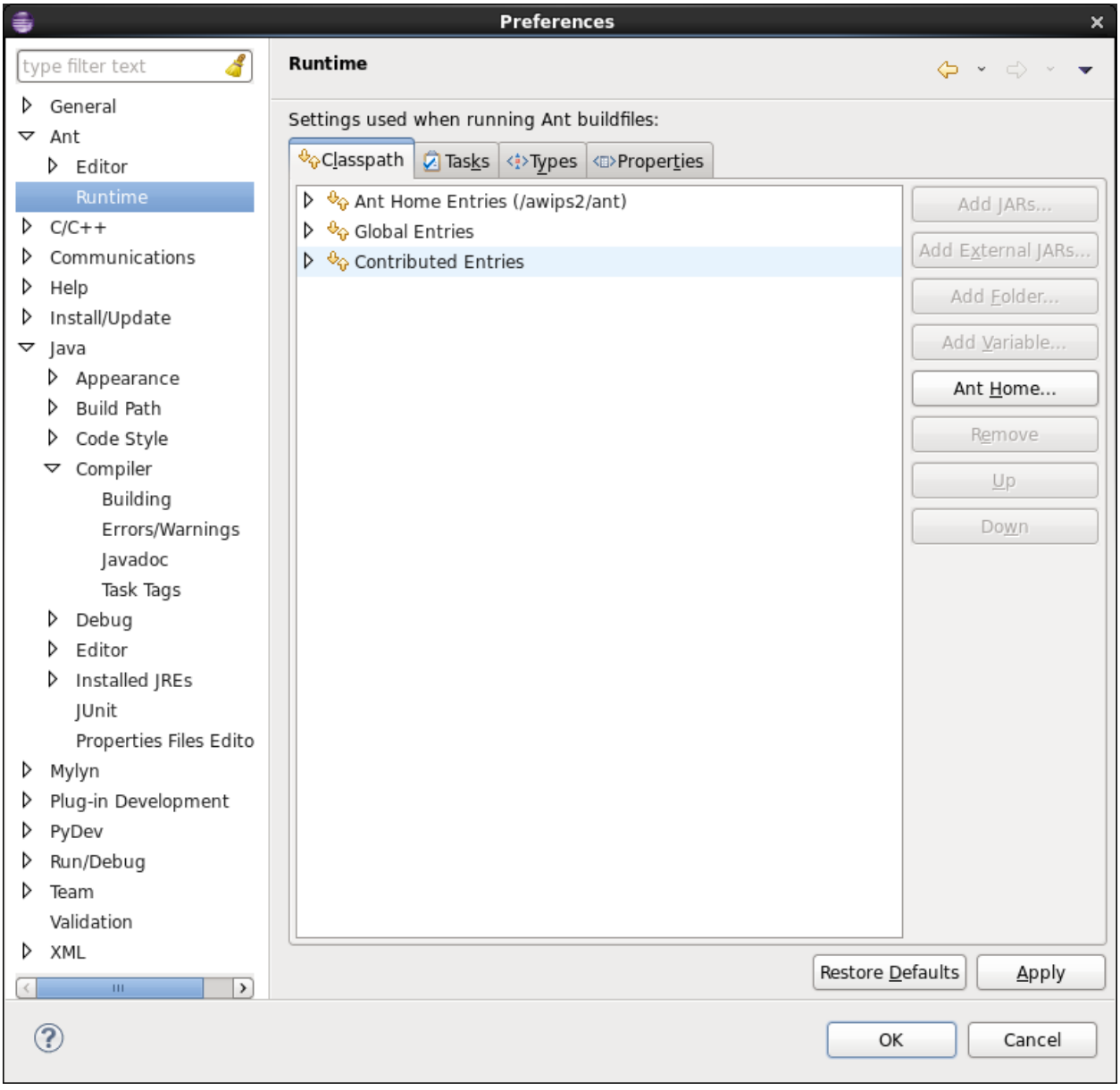
1.2.3 Verify the Java Circular dependencies

- **With Window->Preferences->Java->Compiler->Building expanded,select Build path problem.**
- **In the Circular dependencies item verify that “Error” to “Warning” is selected in the Circular dependencies dropdown.**



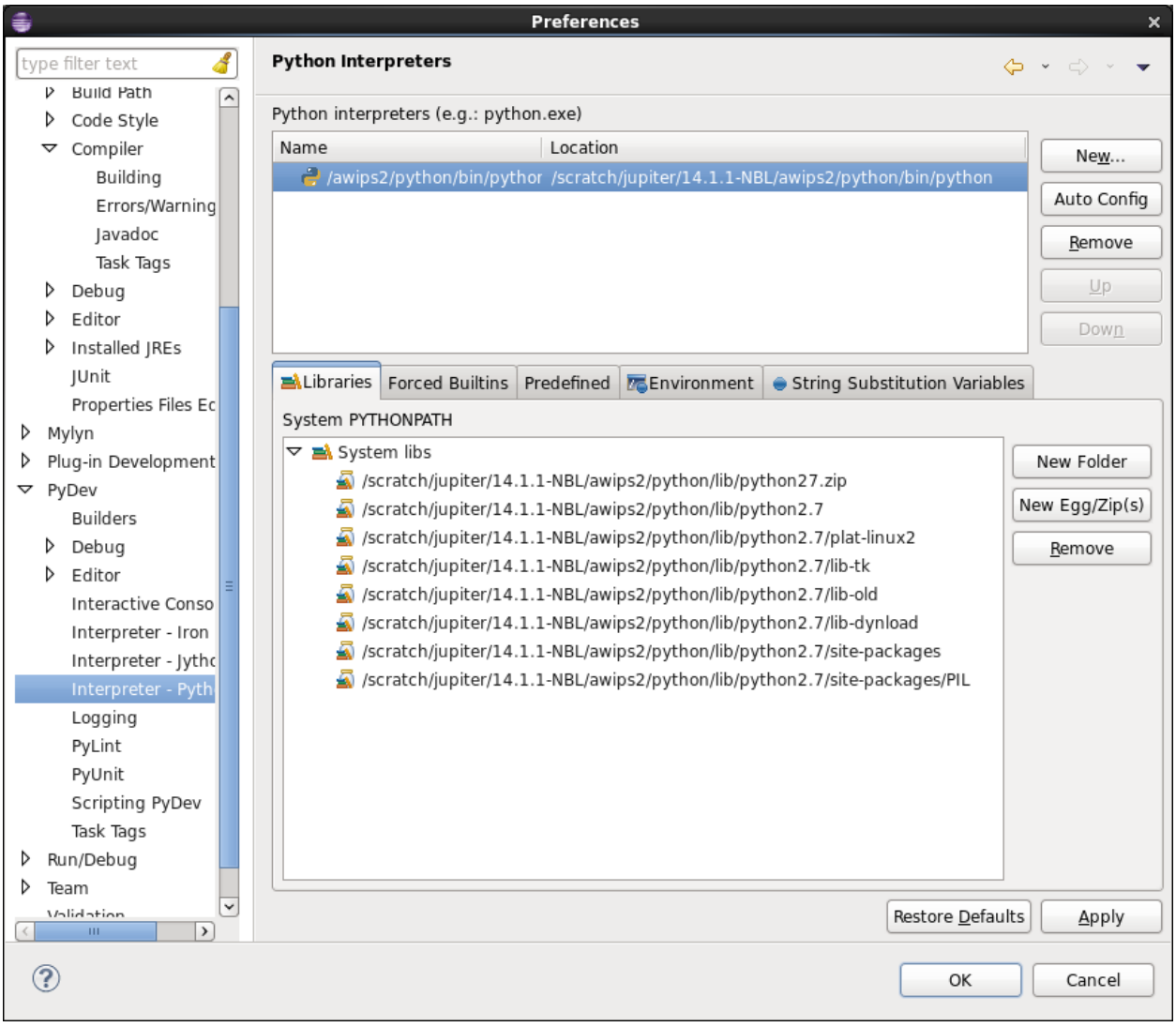
1.2.4 Set Ant environment

- **In the Preferences dialog, expand Ant and select Runtime**
- **Click the Ant Home… button**
- **Select /awips2/ant**
- **Click OK**



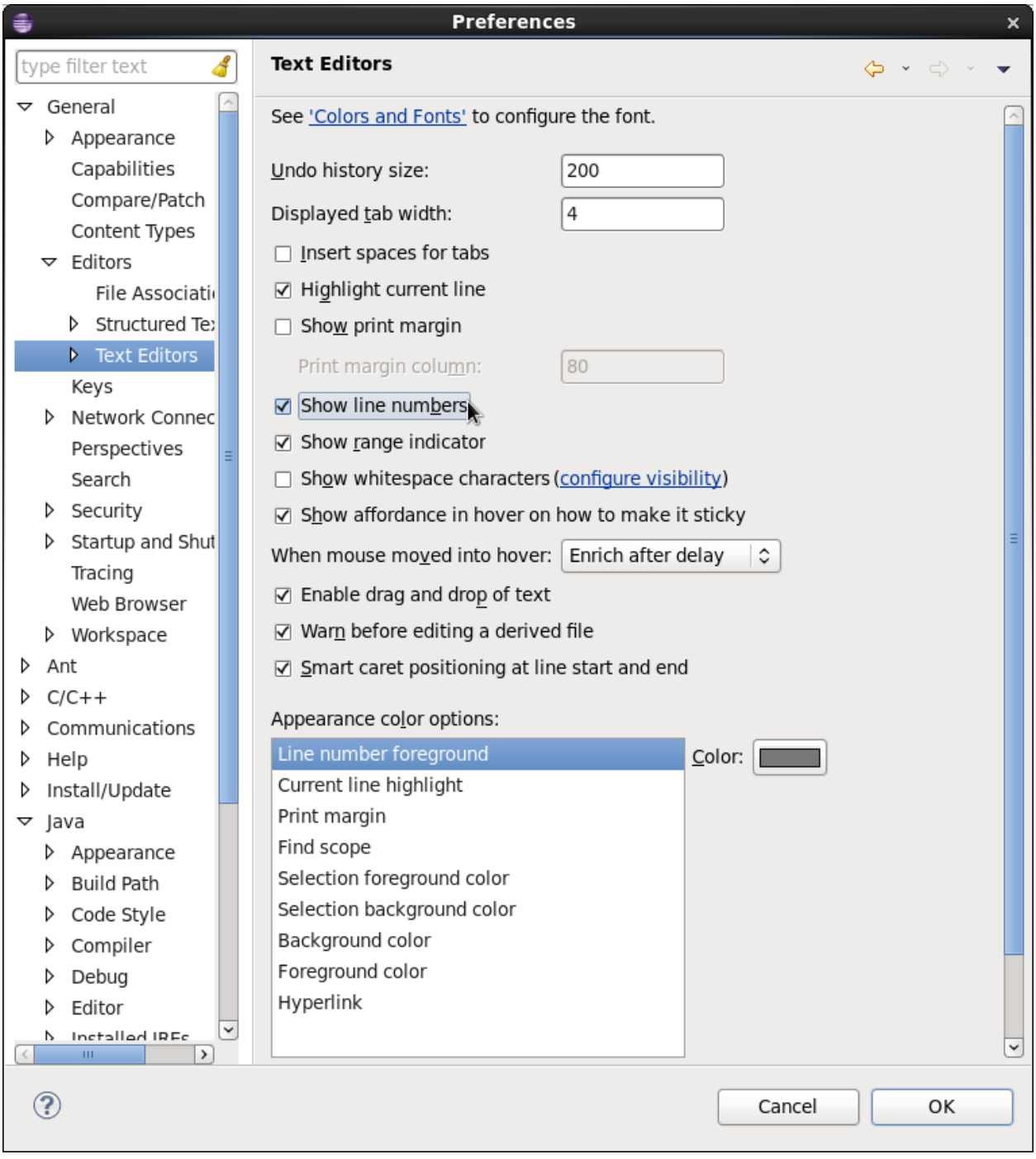
1.2.5 Set Pydev Interpreter

- **In the Preferences dialog, expand Pydev and select Interpreter-Python**
- **Click the New… button in the Python interpreters section.**
- **Browse to and select /awips2/python/bin/python and click OK.**
- **On the selection Needed popup, keep the default selections and click OK**
- **Click OK(save and close Preferences)**



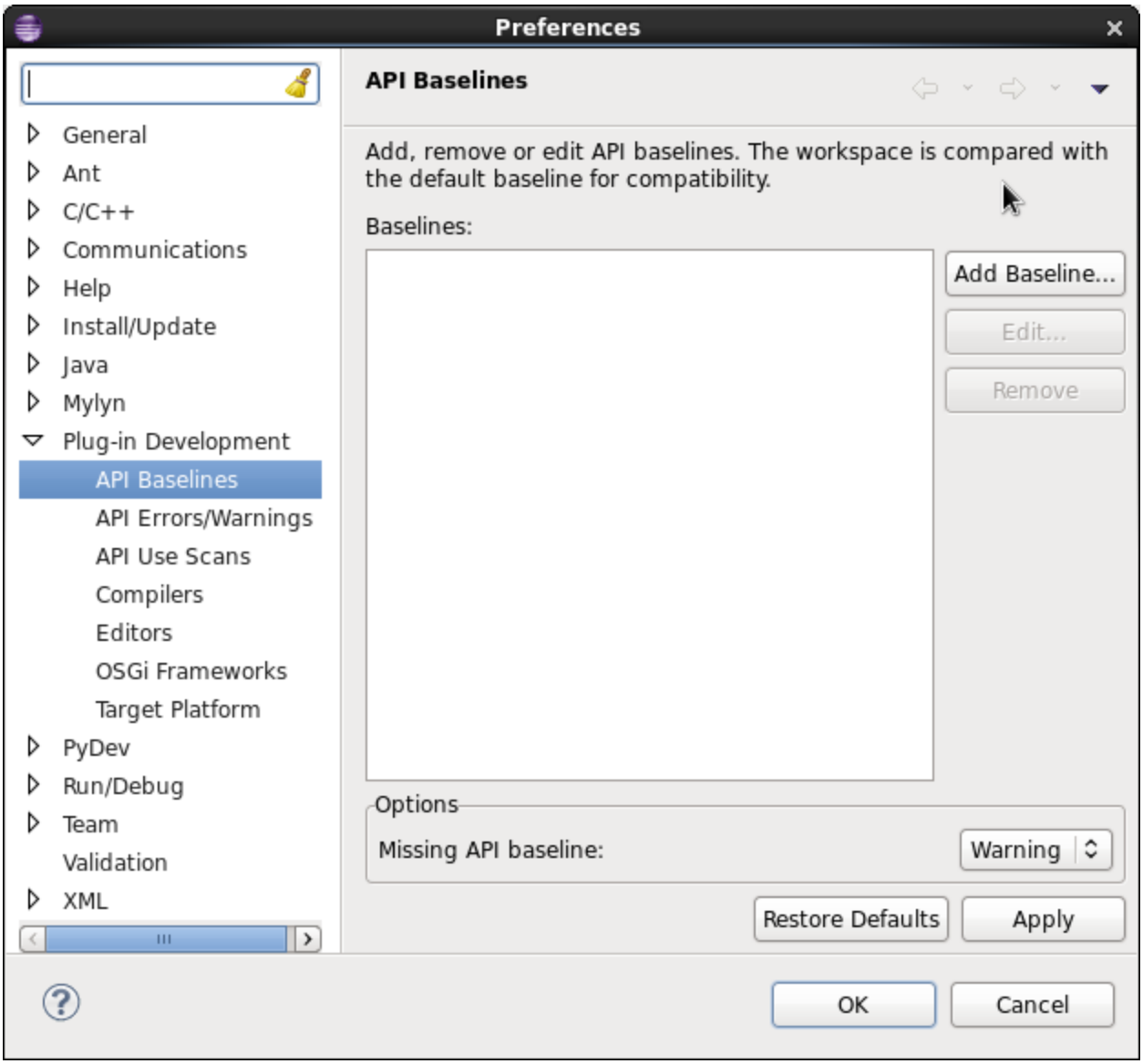
1.2.5 Show line numbers in Eclise editor

- **In the Preference dialog,expend General->Editors->Text Editors item.**
- **Checked the Show line numbers item.**



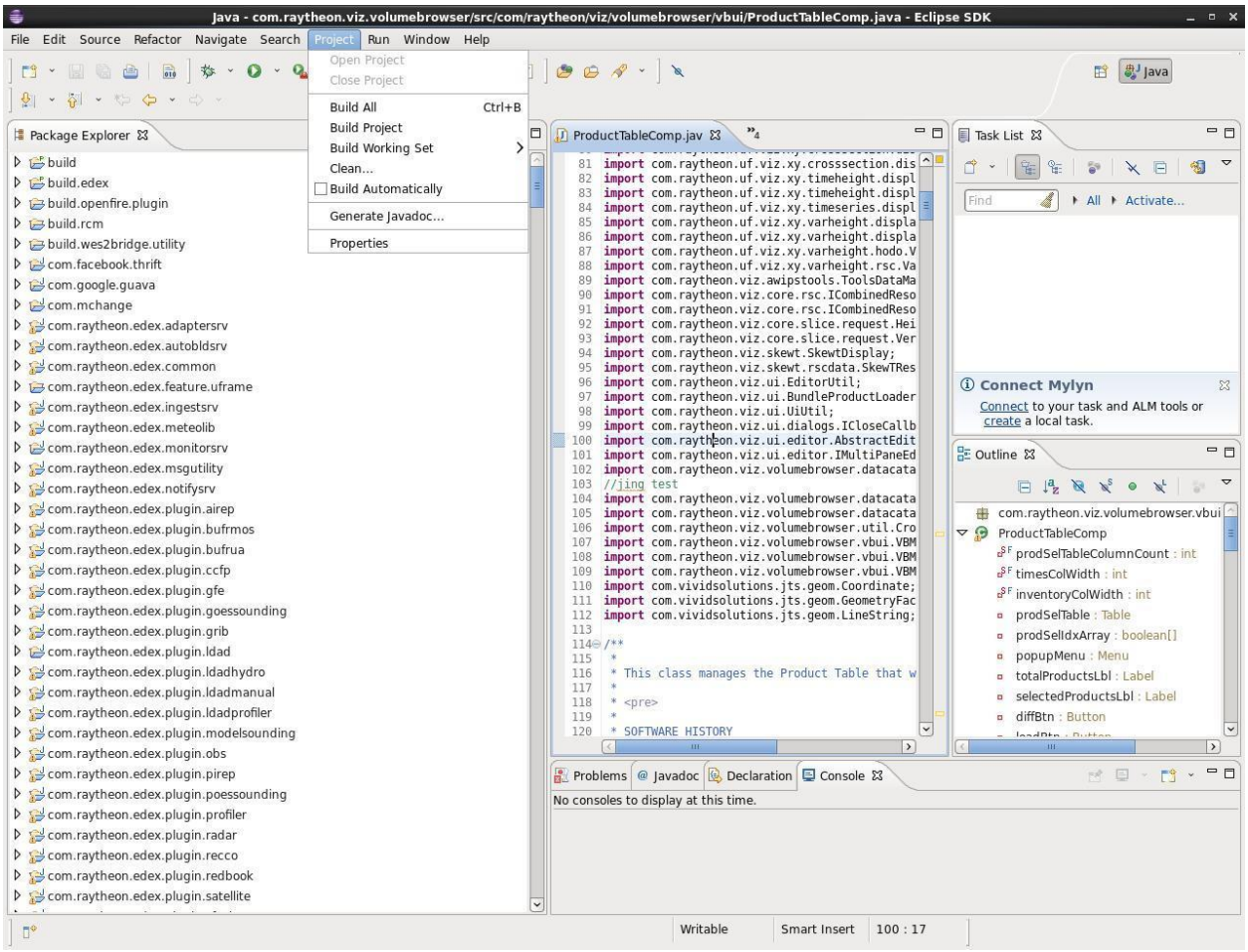
1.2.6 Verify the Missing API baseline

- **With Window->Preferences->Plug-in Development->API BaselinesOptions -> Missing API baseline.**
- **In the Missing API baseline item verify that “Error” to “Warning” is selected in the Missing API baseline dropdown.**



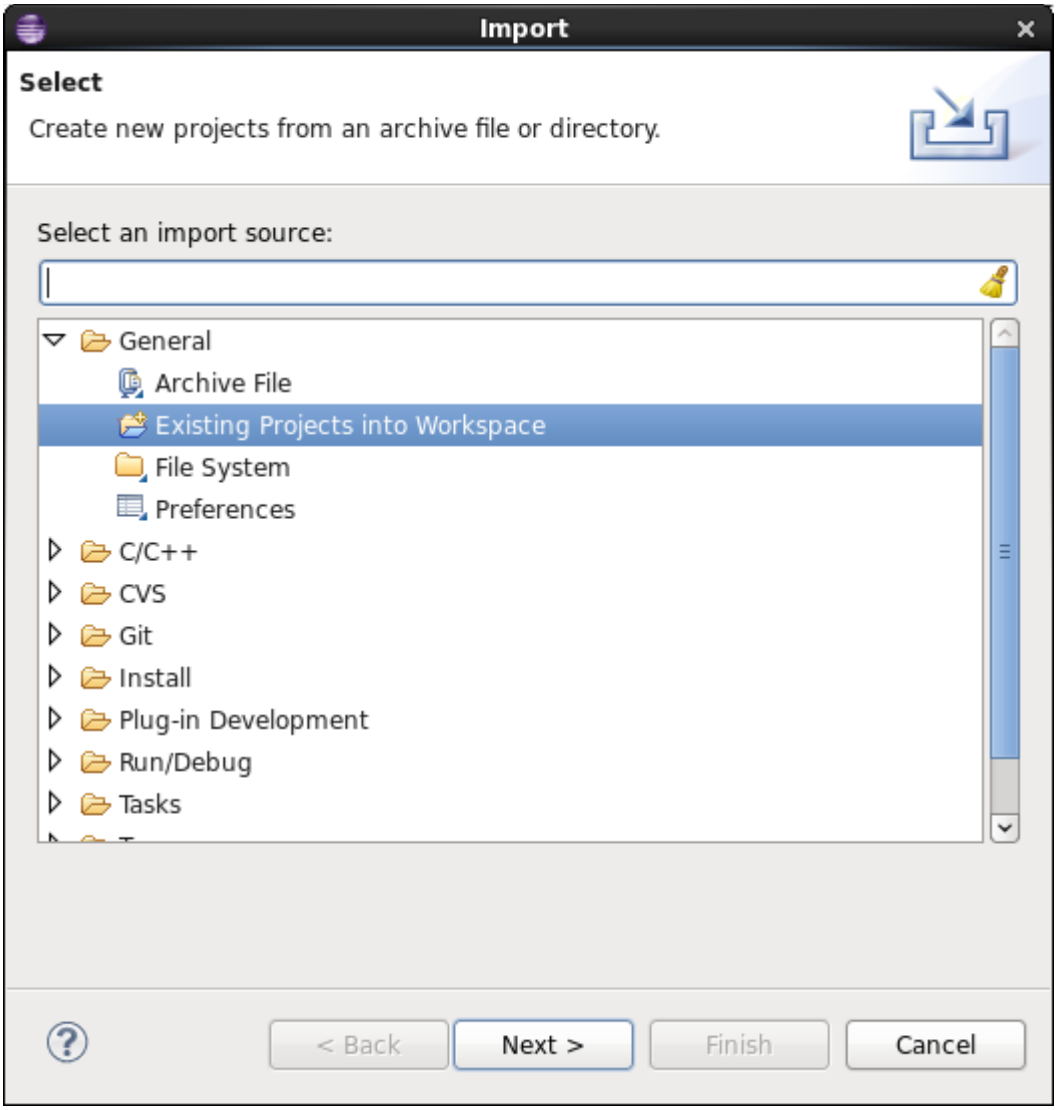
1.2.7 Disable Build Automatically.

- **Select Project,and then deselect Build Automatically.**



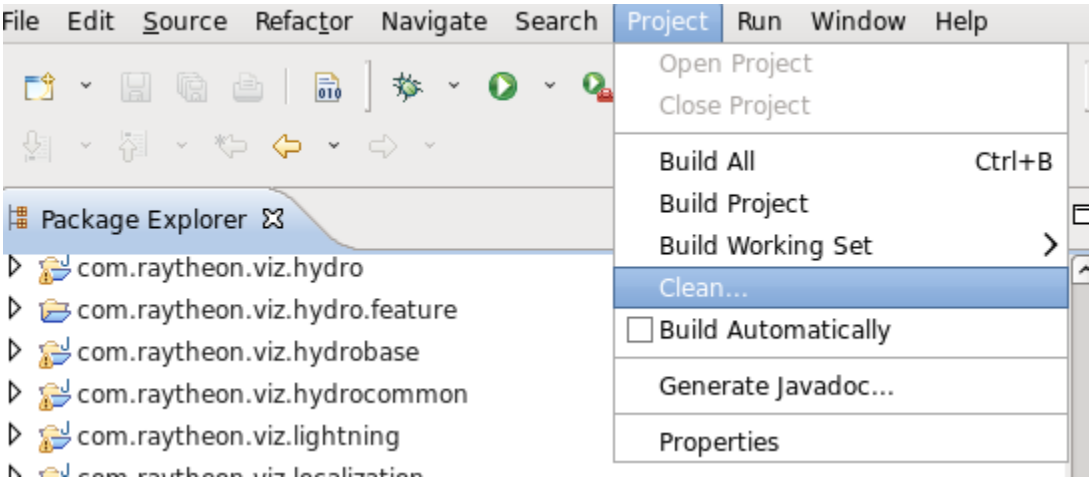
1.2.8 Set up Eclipse Projects

- **Select File->Import.**
- **In the Import dialog,select General-> Existing Projects into Workspace.**
- **Click Next**
- **Click the Browse button next to Select root 17upiter17y edit box.**
- **Select /scratch/17upiter/14.1.1-NBL/ade/awips and click OK.**
- **Click Finish.**

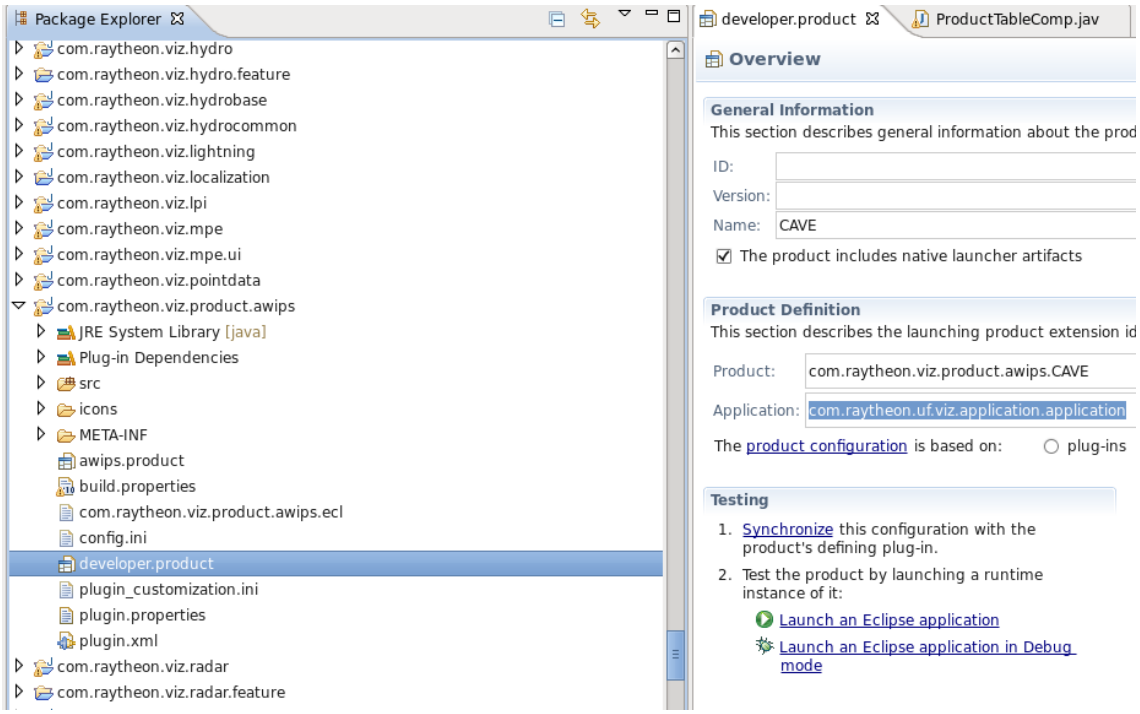


1.2.9 Compile awips2

- **Open Eclipse if not already open.**
- **Select Project->Clean**
- **Make sure the Clean all projects radio buttons, the Start a build immediately checkbox, and the Build the entire workspace radio button are selected, and click OK.**

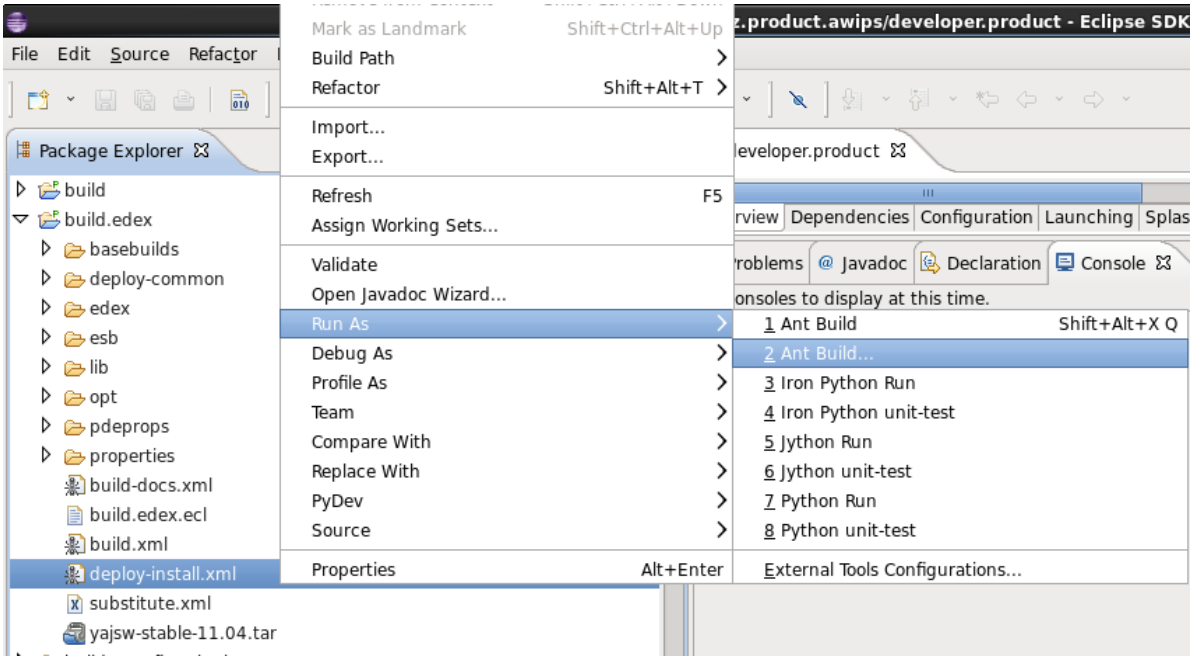


- **With Package Explorer-> com.raytheon.viz.product.awips-> developer.product expanded,select “Synchronize” and “Launch an Eclipse application in Debug mode” to test alterviz and CAVE.**

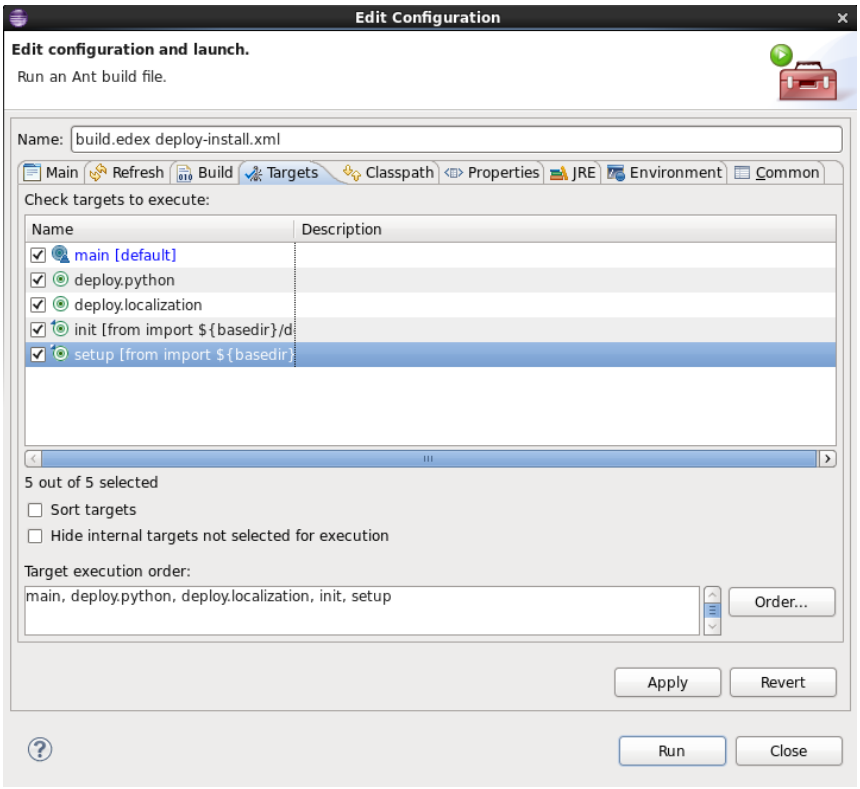


1.3 EDEX deploy

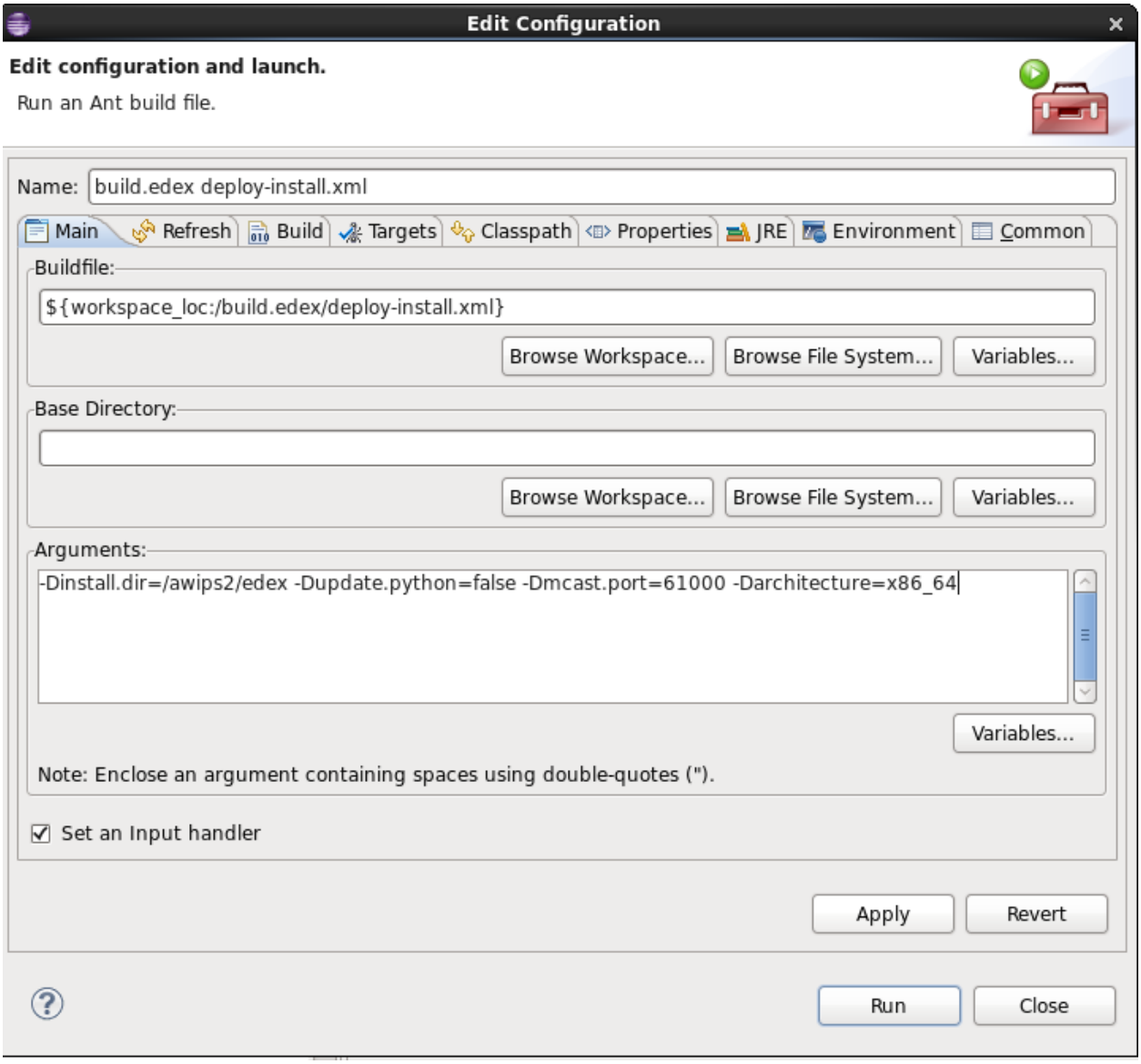
Before EDEX deploy instruction we should select deploy-install.xml properties of build.edex package in eclipse package Explorer. Use “2. Ant Build…” method to run deploy-install.xml.



2.Then select all targets.



3.Fill ”-Dinstall.dir=/awips2/edex -Dupdate.python=false -Dmcast.port=61000 -Darchitecture=x86_64” in the arguments. Then apply those setting and run it.



2. awips2 D2D localization

2.1 PostGIS and AWIPS II maps database maintain

PostGIS is an open source software program that adds support for geographic objects to the PostgreSQLobject-relational database. PostGIS follows the Simple Features for SQL specification from the Open Geospatial Consortium (OGC).

- AWIPS II maps database maintain

If sites need to restore the maps database, or shapefiles in the maps database, they can reinstall the awips2-maps-database to initialize the database, and use config_awips2.sh shp LLL to import the latest base and local shapefiles into the maps database.

- How to import new shapefiles into AWIPS2 maps database

if you want to import new shapefiles into awips2 maps database. First we checked the language of those new shapefiles to modify the awips2 ADE importShapeFile.sh script (path: $ADE/awips//build.edex/opt/db/ddl/maps/importShapeFile.sh)

```
${PGBINDIR}shp2pgsql -W LATIN1 -s 4326 -g the_geom -I ${SHAPEFILEPATH}
${SCHEMA}.${TABLE} | ${PSQLBINDIR}psql -d maps -U ${PGUSER} -q -p ${PGPORT} -f -
${PSQLBINDIR}psql -d maps -U ${PGUSER} -q -p ${PGPORT}  -c "
        INSERT INTO ${SCHEMA}.map_version (table_name, filename) values
('${TABLE}','${SHAPEFILENAME}');
        SELECT AddGeometryColumn('${SCHEMA}','${TABLE}','the_geom_0','4326',(SELECT type
FROM public.geometry_columns WHERE f_table_schema='${SCHEMA}' and
f_table_name='${TABLE}' and f_geometry_column='the_geom'),2);
        UPDATE ${SCHEMA}.${TABLE} SET the_geom_0=ST_Segmentize(the_geom,0.1);
        CREATE INDEX ${TABLE}_the_geom_0_gist ON ${SCHEMA}.${TABLE} USING
gist(the_geom_0);
"
```

where **LATIN1** is the default language in the imported shapefiles.

Many free shape files are sharing in the internet. For examples, Natural Earth is a public domain map dataset available at 1:10m, 1:50m, and 1:110 million scales. Natural Earthmap dataset uses UTF8 language, so we should modify importShapeFile.sh script and gave it a new filename importShapeFile_utf8.sh .

```
${PGBINDIR}shp2pgsql -W UTF8 -s 4326 -g the_geom -I ${SHAPEFILEPATH}
${SCHEMA}.${TABLE} | ${PSQLBINDIR}psql -d maps -U ${PGUSER} -q -p ${PGPORT} -f -
${PSQLBINDIR}psql -d maps -U ${PGUSER} -q -p ${PGPORT} -c "
        INSERT INTO ${SCHEMA}.map_version (table_name, filename) values
('${TABLE}','${SHAPEFILENAME}');
        SELECT AddGeometryColumn('${SCHEMA}','${TABLE}','the_geom_0','4326',(SELECT type
FROM public.geometry_columns WHERE f_table_schema='${SCHEMA}' and
f_table_name='${TABLE}' and f_geometry_column='the_geom'),2);
        UPDATE ${SCHEMA}.${TABLE} SET the_geom_0=ST_Segmentize(the_geom,0.1);
        CREATE INDEX ${TABLE}_the_geom_0_gist ON ${SCHEMA}.${TABLE} USING
gist(the_geom_0);
"
```

where **UTF8** is the language in the Nutural Earth shpaefiles.

Get the Nautral Earth world land shapefiles from Natural earth data website(URL: http://www.naturalearthdata.com/downloads/10m-physical-vectors/). We tried to import them and add a new map bundle into AWIPS2. The command of importing data would be as:

```
importShapeFile_utf8.sh  $filePath/ne_10m_land/ne_10m_land.shp
mapdata ne_10m_land 0.008,0.004,0.002,0.001 awips
```

The new map bundle (ne_10m_land.xml) would be as:

```
<bundle>
        <displayList>
        <displays xsi:type="mapRenderableDisplay"
                xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
        <descriptor xsi:type="mapDescriptor">
                <resource>
                <loadProperties>
                        <capabilities>
```

```
                    <capability xsi:type="outlineCapability"
                            lineStyle="SOLID" outlineOn="true"
                            outlineWidth="1" />
                    <capability xsi:type="colorableCapability"
                                colorAsString="#9b9b9b" />
                    </capabilities>
                    <resourceType>PLAN_VIEW</resourceType>
                </loadProperties>
                <properties isSystemResource="false" isBlinking="false"
                    isMapLayer="true" isHoverOn="false"
                    isVisible="true">
                    <pdProps maxDisplayWidth="100000000"
                            minDisplayWidth="0" />
                </properties>
                <resourceData  xsi:type="dbMapResourceData">
                    <table>mapdata.ne_10m_land</table>
                    <mapName>World Land</mapName>
                </resourceData>
                </resource>
        </descriptor>
        </displays>
        </displayList>
</bundle>
```

2.2 Create new CAVE D2D scale in AWIPS II

First we should analysis the scale projections of CAVE D2D. For CWB we fetched the ALPS background map information from those configurations scaleInfo.txt,makeDataSups.patch,and etc. So we can get the CAVE D2D background projection map information as below:

CAVE D2D scale name	CAVE D2D bundle scale file name	Projection Name	central meridian	latitude_of_origin	satandard_paralle_1	Scale factor	Corner Lower Left (Lat,Lon)	Corner Upper Right (Lat,Lon)
N.H	nh.xml	Stereographic	120.0	90.0			-15.521516 79.474899	-6.021492 -110.300926
Asia	asia.xml	Lambert Conformal Conic 2SP	120.0	10.0	40.0	1.0	-10.0 90.0	60.0 -160.0
Meso	meso.xml	Lambert Conformal Conic 2SP	120.0	10.0	40.0	1.0	5.119949 104.1190	44.09481 153.3814
Taiwan_E	taiwan_e.xml	Cylindrical Equidistant	121.0	23.7			17.5 114.5	29.5 127.5
Taiwan	taiwan.xml	Cylindrical Equidistant	121.0	23.7			21.4 118.5	26.0 123.5
N.H-Surface	nh_surface.xml	Stereographic	120.0	90.0			-24.7136 74.99992	-24.7136 -104.99992

WorldMAP	**worldmap.xml**	**Cylindrical Equidistant**	**180.0**	**0.0**			**-90.0 0.0**	**90.0 -0.001**
CWB-LAPS	**cwb-laps.xml**	**Lambert Conformal Conic 2SP**	**120.0**	**40.0**	**10.0**	**1.0**	**17.81641 116.065**	**29.18094 126.2259**
NFS-KB	**nfs-kb.xml**	**Cylindrical Equidistant**	**120.0**	**0.0**			**18.0 116.0**	**29.0 126.0**
FY2DASA	**fy2dasa.xml**	**Lambert Conformal Conic 2SP**	**86.5**	**40.0**	**10.0**	**1.0**	**-10.13897 49.49832**	**64.70746 -179.1840**
LCC	**lcc.xml**	**Lambert Conformal Conic 2SP**	**128.5**	**60.0**	**30.0**	**1.0**	**-1.44267 102.1517**	**48.59611 155.3098**
TW_MID	**tw_mid.xml**	**Cylindrical Equidistant**	**121.29613**	**23.91345**			**23.4208 120.0096**	**24.4061 121.5361**
TAIPEI	**taipei.xml**	**Cylindrical Equidistant**	**121.561514926**	**25.0877**			**24.9529**	**121.3423**

Start a map projection from the CAVE menu (CAVE --> New --> Map Projection).

When it launches note the "Create Projection" at the top of the window. Fill in the appropriate information as collected above; then select Validate button. If successfully validated, hit the OK button. Save the desired map from the CAVE menu (CAVE --> Load/Save Displays → Save Editor Display...); then CAVE bundle save the file into a temporary location (e.g., /tmp) with a unique file name. (Reference Fig 1.1,Fig 1.2,Fig 1.3,and Fig 1.4)

Fig 1.1 Start a map projection from the CAVE menu (CAVE --> New --> Map Projection)

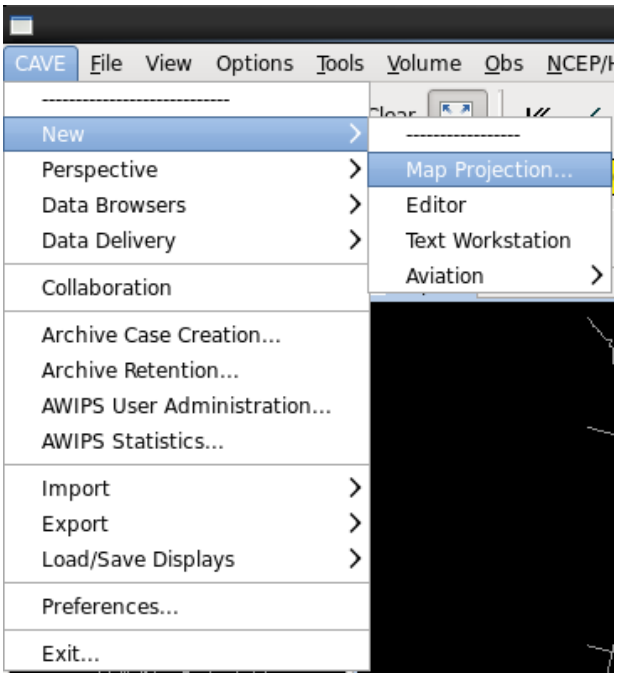


Fig 1.2 Map Projection

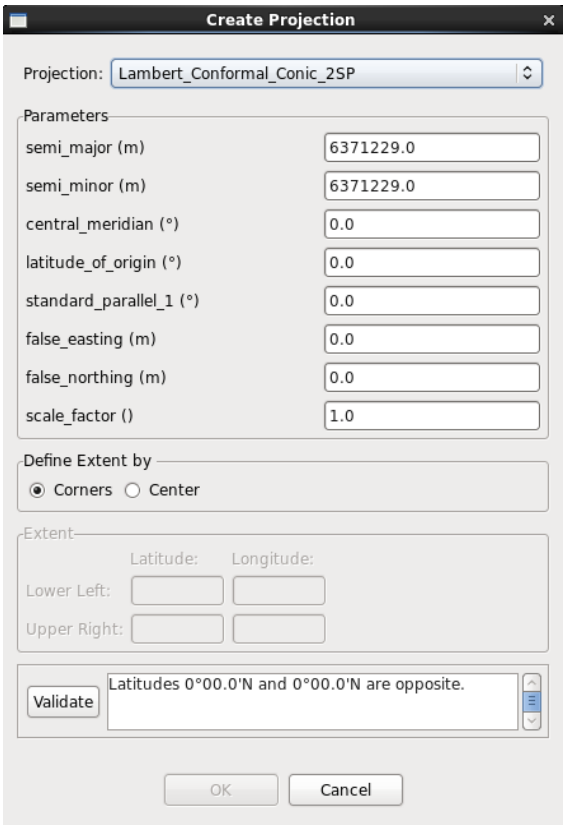


Fig 1.3 Save the desired map from the CAVE menu (CAVE --> Load/Save Displays --> Save Editor Display...)

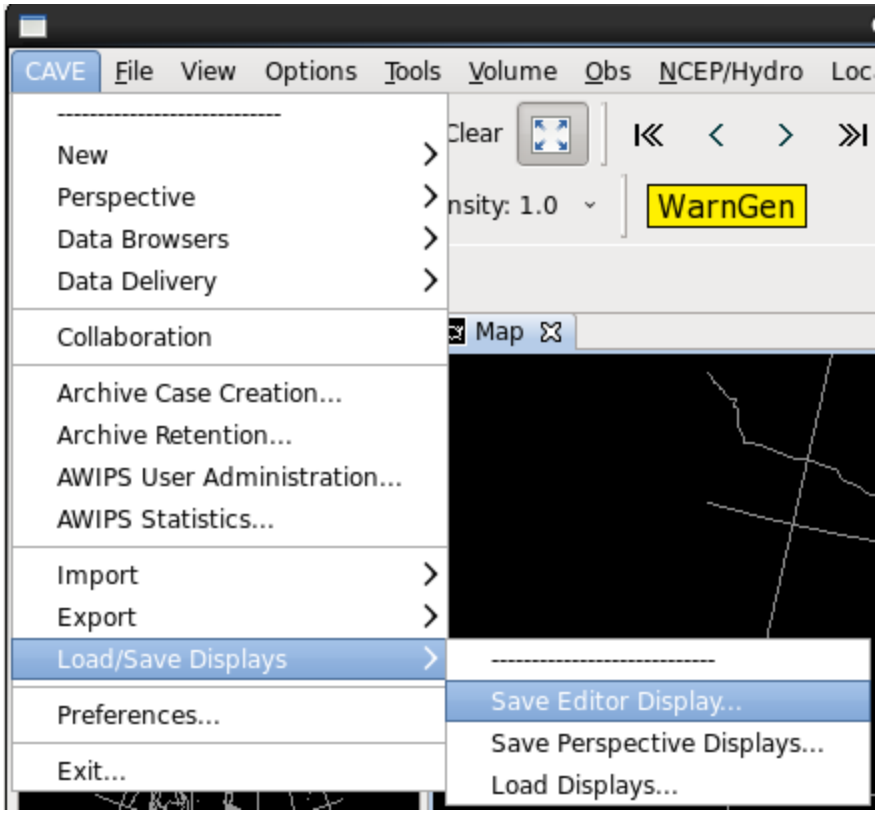
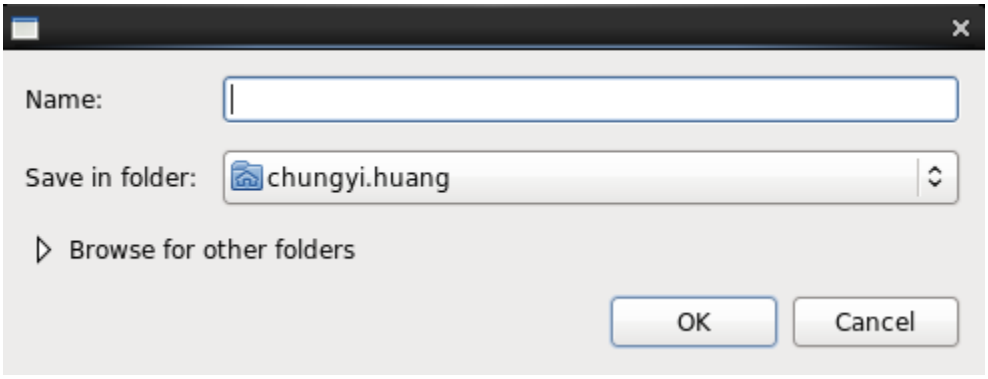


Fig 1.4 Save Map Dialog



There awip2 map information files and scaleInfo.xml are put in the directory
$EDEXSERVER/data/utility/cave_static/site/CWB/bundles/scales

asia.xml	**nfs-kb.xml**	**lcc.xml**	**taiwan.xml**
cwb-laps.xml	**nh_surface.xml**	**taipei.xml**	**worldmap.xml**
meso.xml	**tw_mid.xml**	**fy2dasa.xml**	**nh.xml**
taiwan_e.xml			

Warning: The scale name in every awips2 map information file is always CONUS. It should be modified for scale name manually.
For example: the filename of scale N.H. is nhp.xml,
we can execute “sed s/CONUS/N.H./g /tmp/nhp.xml > ~/nhp.xml “
to modify the scale name.

Create a new file **scalesInfo.xml** and save it into the directory
$EDEXSERVER/data/utility/cave_static/site/CWB/bundles/scales

```
<mapScales>
        <mapScale displayName="N.H." fileName="nh.xml">
                <partId
                id="com.raytheon.uf.viz.d2d.ui.map.SideView:sideView1"/>
        </mapScale>
        <mapScale displayName="Asia" fileName="asia.xml">
                <partId
                id="com.raytheon.uf.viz.d2d.ui.map.SideView:sideView2"/>
        </mapScale>
        <mapScale displayName="Meso" fileName="meso.xml">
                <partId view="false"
                id="com.raytheon.viz.ui.glmap.GLMapEditor"/>
        </mapScale>
        <mapScale displayName="Taiwan_E" fileName="taiwan_e.xml">
                <partId
                id="com.raytheon.uf.viz.d2d.ui.map.SideView:sideView3"/>
        </mapScale>
        <mapScale displayName="Taiwan" fileName="taiwan.xml">
```

```
            <partId
            id="com.raytheon.uf.viz.d2d.ui.map.SideView:sideView4"/>
        </mapScale>
        <mapScale displayName="N.H. Surface"
            fileName="nh_surface.xml">
        </mapScale>
        <mapScale displayName="WorldMAP"
             fileName="worldmap.xml">
        </mapScale>
        <mapScale displayName="CWB-LAPS"
              fileName="cwb-laps.xml">
        </mapScale>
        <mapScale displayName="NFS-KB" fileName="nfs-kb.xml">
        </mapScale>
        <mapScale displayName="FY2DASA" fileName="fy2dasa.xml">
        </mapScale>
        <mapScale displayName="LCC" fileName="lcc.xml">
        </mapScale>
        <mapScale displayName="TW_MID" fileName="tw_mid.xml">
        </mapScale>
        <mapScale displayName="TAIPEI" fileName="taipei.xml">
        </mapScale>
</mapScales>
```

Restart edex server and CAVE. Then Start a Preferences dialog from the CAVE menu (CAVE --> Preferences). Change the site ID from OAX to CWB and press Apply button. After closing the Preferences dialog we restart the CAVE.

Fig 1.5 to start Preferences dialog from the CAVE menu(CAVE->Preferences)

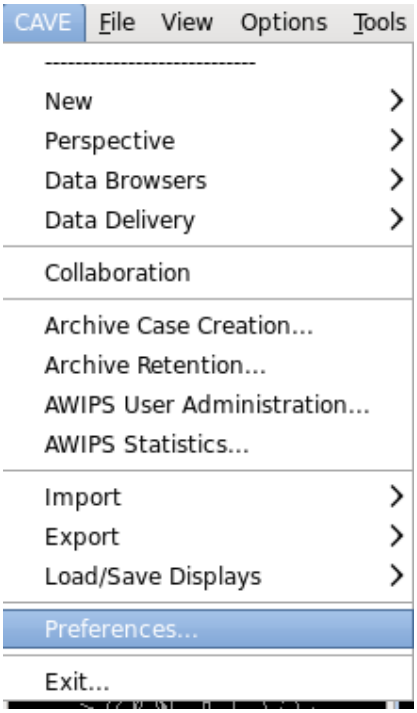


Fig 1.6 Change site ID from OAX to CWB

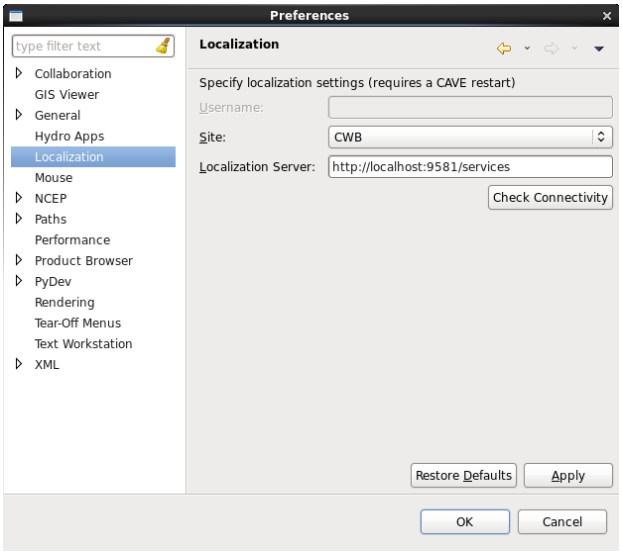
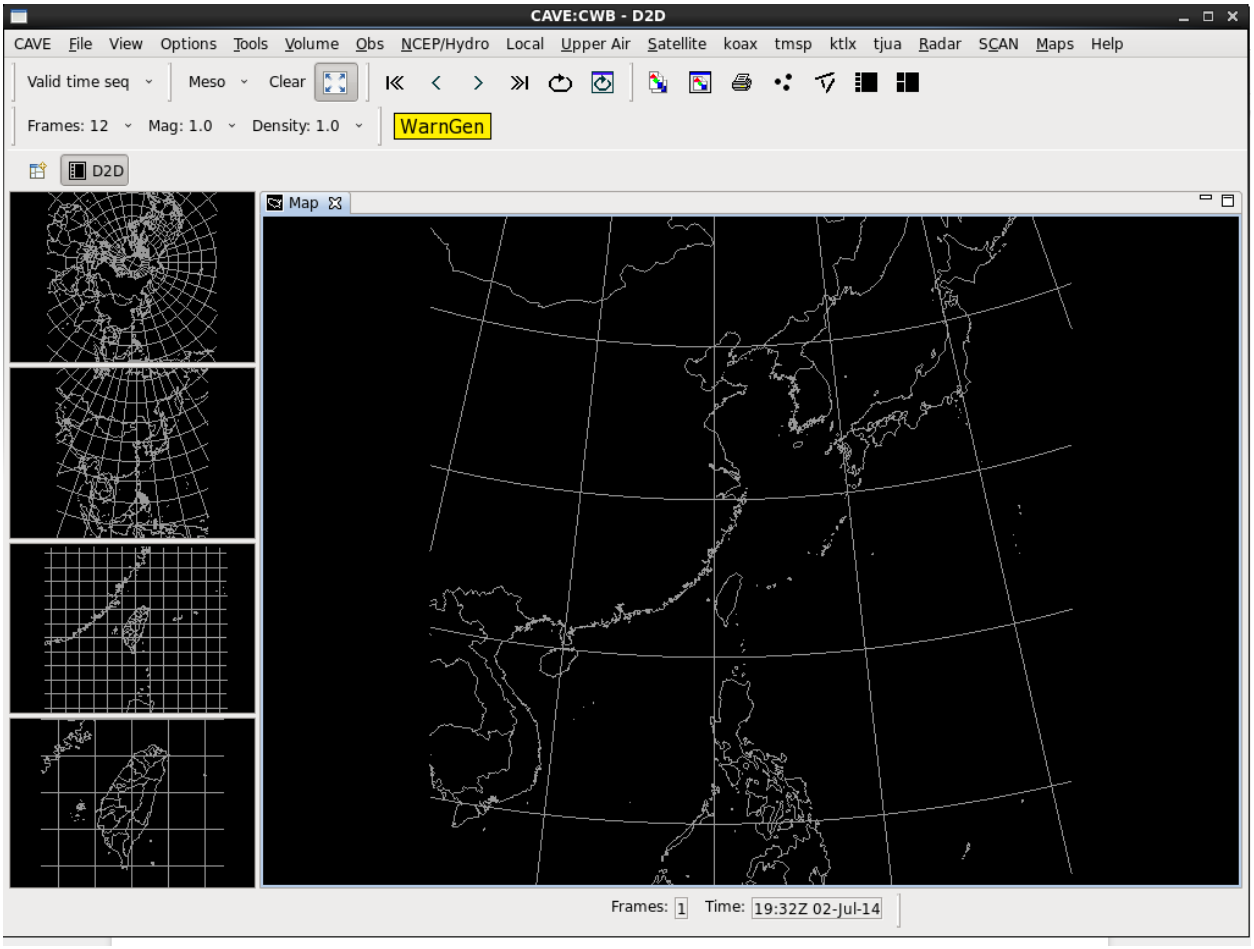


Fig 1.7 CAVE for CWB



2.3 D2D Weather Element properties

- (com.raytheon.uf.viz.derivparam/localization/derivedParameters/definitions) Weather Element Definition files
- Example1: Wind.xml

```
<DerivedParameter unit="m/s" name="Wind"
abbreviation="Wind">
  <Method models="SREF212" name="Alias">
     <Field abbreviation="Windmean"/>
  </Method>
  <Method name="Vector">
     <Field abbreviation="uW"/>
     <Field abbreviation="vW"/>
  </Method>
  <Method name="Vector">
      <Field abbreviation="wSp"/>
      <Field abbreviation="WD" unit="deg"/>
  <ConstantField value="1.0"/>
  </Method>
  <!-- TODO this should be an auto-generated
average however
          auto-generated averages are currently
pulling in kftAgl levels -->
  <Method name="Average" levels="0-6kmAgl">
     <Field abbreviation="Wind" level="0kmAgl"/>
     <Field abbreviation="Wind" level="0.5kmAgl"/>
     <Field abbreviation="Wind" level="1kmAgl"/>
     <Field abbreviation="Wind" level="1.5kmAgl"/>
     <Field abbreviation="Wind" level="2kmAgl"/>
     <Field abbreviation="Wind" level="2.5kmAgl"/>
     <Field abbreviation="Wind" level="3kmAgl"/>
     <Field abbreviation="Wind" level="3.5kmAgl"/>
     <Field abbreviation="Wind" level="4kmAgl"/>
     <Field abbreviation="Wind" level="4.5kmAgl"/>
     <Field abbreviation="Wind" level="5kmAgl"/>
     <Field abbreviation="Wind" level="5.5kmAgl"/>
     <Field abbreviation="Wind" level="6kmAgl"/>
```

```
    </Method>
</DerivedParameter>
```

- Example2: T.xml

```
<DerivedParameter unit="K" name="Temperature"
abbreviation="T" xmlns:ns2="group">
    <Method name="Temperature">
        <Field abbreviation="P"/>
        <Field abbreviation="PoT"/>
    </Method>
    <Method name="Temperature">
        <Field abbreviation="P"/>
        <Field abbreviation="VPT"/>
         <Field abbreviation="SHx"/>
    </Method>
        <Method levels="925MB" name="Average">
        <Field level="950MB" abbreviation="T"/>
        <Field level="900MB" abbreviation="T"/>
    </Method>
    <Method levels="Surface" name="Alias">
        <Field level="Station"
abbreviation="temperature"/>
    </Method>
    <Method levels="Surface" name="Alias">
        <Field level="2FHAG" abbreviation="T"/>
    </Method>
```

- (com.raytheon.uf.viz.derivparam/localization/derivedParameters/functions) Weather Element Operating Method:
    - Example1: Vector.py

```
from numpy import arctan2
from numpy import hypot
from numpy import cos
from numpy import sin
from numpy import degrees
from numpy import radians
```

```
from numpy import abs
from numpy import isscalar, empty, float32

def execute(u, v, legacyOption=None):
    """ Make a vector from u,v or mag, dir.

    @param legacyOption
           controls how the function operates on the
given u and v values.
           When the legacyOption is specified and is a
constant scalar value
           the u and v input values are assumed to be
speed and direction.

           positive :: assume meteorological direction
           negative :: assume mathematical direction

           abs(legacyOption) == 1 :: assume degrees
           abs(legacyOption) != 1 :: assume radians

           abs(legacyOption) == 1 || 2 :: assume first
two args are speed and
           direction

           Otherwise if the legacy option is not a
constant, the first two
           inputs are components that determine the
direction, and the third
           is the speed to use.
    @return: tuple of (magnitude,direction,u,v)

    """
    # If either u or v is a single number, expand it to
match an entire Grid
    if isscalar(u) and not(isscalar(v)):
    tmp = empty(v.shape, float32)
    tmp.fill(u)
    u = tmp

    if isscalar(v) and not(isscalar(u)):
```

```
    tmp = empty(u.shape, float32)
    tmp.fill(v)
    v = tmp

    # These will be parsed by legacy opts
    polar=False
    mathematicalDirection=False
    useRadians=False
    speed = None

    # Handle the crazy legacy options
    if legacyOption != None:
    if type(legacyOption) == float:
            mathematicalDirection = legacyOption < 0
            useRadians = abs(legacyOption) != 1
            polar = abs(legacyOption) == 1 or
abs(legacyOption) == 2
    elif type(legacyOption) == bool:
            polar = legacyOption
    else:
            speed = legacyOption

    completeRevolution = 360 if not useRadians else
radians(360.0)

    if (polar):
    mag = u
    dir = v

    # replace all negative angles with their
corresponding positive values
    negDirMask = dir < 0
    dir[negDirMask] = (- dir[negDirMask]) %
completeRevolution
    dir[negDirMask] = completeRevolution -
dir[negDirMask]

    dir[dir > completeRevolution] %=
completeRevolution
    theta = radians(dir) if not useRadians else dir
```

```
    u = mag * sin(theta)
    v = mag * cos(theta)
    else:
    u = - u if not mathematicalDirection else u
    v = - v if not mathematicalDirection else v
    mag = 0 if speed != None else hypot(u, v)
    theta = arctan2(u, v)
    dir = degrees(theta) if not useRadians else theta
    dir[dir < 0] += completeRevolution

    u = - u if not mathematicalDirection else u
    v = - v if not mathematicalDirection else v

    dir[dir == completeRevolution] = 0

    if speed == None:
    return (mag, dir, u, v)
    else:
    return execute(speed,dir,polar=True)
```

- Example2: Temperature.py

```
from numpy import power
from numpy import where

def execute(*args):
    ##
    # Calculate temperature from pressure and theta.
    # or from pressure, virtual theta, and specific
humidity
    # This function accepts numpy arrays
    #
    # @param P: Pressure in millibars
    # @param PoT: theta in degrees Kelvin
    # @return: Potential temperature in degrees
Kelvin
    #  "Calculate temperature from pressure and
theta(PoT)."
```

```
    # use numpy masked arrays to prevent operating
on
        #sentinel values
    P = args[0]
    PoT = args[1]

    pComponent = P/1000.0
    pComponent = power(pComponent, 0.286)
    T = PoT * pComponent

    if len(args) == 3:
    "Calculated VT from pressure and virtual theta,
also
                need to process specific humidity"
    SHx = args[2]
    T = T / (1 + 0.000608 * SHx)

    return T
```

2.4 Volume bundle,Volume menu,and Volume Browser

- **Volume bundle definition file**
    - Define Volume bundle information
    - configuration path:

  /awips2/cave/data/utility/cave_static/configured/CWB/bundles/volume
- **Volume menu definition file**
    - Define Volume menu information
    - configuration path:

  /awips2/edex/data/utility/cave_static/configured/CWB/menus/volume
- Volume Browser
    - Define Volume Browser properties Source,Fields,and Levels.
    - relative ADE configuration path:

  (com.raytheon.viz.volumebrowser/localization) VolumeBrowser Configurations

2.5 Style Rules

- **d2dGraphStyleRules.xml**
    - how to display standard graphs of a parameter versus time or versus height
    - configuration path:

  /awips2/edex/data/utility/cave_static/site/CWB/styleRules/d2dGraphStyleRules.xml
- **d2dContourStyleRules.xml**
    - how to dipslay contour renderings of scalar fields of gridded data.
    - configuration path:

  /awips2/edex/data/utility/cave_static/site/CWB/styleRules/d2dContourStyleRules.xml
- **gridImageryStyleRules.xml**
    - how to display image renderings of scalar fields of gridded data.
- configuration path:

  /awips2/edex/data/utility/cave_static/site/CWB/styleRules/gridImagery

StyleRules.xml

- **d2dArrowStyleRules.xml**
  - how to display vector gridded data as either conventional or bidirectional arrows.
  - configuration path: /awips2/edex/data/utility/cave_static/site/CWB/styleRules/d2dArrowStyleRules.xml

2.6 UnitConverter

- (com.raytheon.viz.grid.units) GridUnits.java

```
package com.raytheon.viz.grid.units;

import com.raytheon.viz.core.units.IUnitRegistrar;

public class GridUnits implements IUnitRegistrar {

        /*
        * (non-Javadoc)
        *
        * @see com.raytheon.viz.core.units.IUnitRegistrar#register()
        */
        @Override
        public void register() {
   com.raytheon.uf.common.dataplugin.grid.units.GridUnits.register();
        }

}
```

- (com.raytheon.uf.common.dataplugin.grid.units) GridUnits.java

```
package com.raytheon.uf.common.dataplugin.grid.units;

import javax.measure.unit.NonSI;
```

```
import javax.measure.unit.SI;
import javax.measure.unit.UnitFormat;

public class GridUnits {

	public static boolean register() {
	UnitFormat.getInstance().alias(SI.METER, "gpm");
	UnitFormat.getUCUMInstance().alias(SI.METER, "gpm");
	UnitFormat.getInstance().alias(SI.MILLI(NonSI.BAR), "mb");
	UnitFormat.getUCUMInstance().alias(SI.MILLI(NonSI.BAR), "mb");
	UnitFormat.getInstance().alias(SI.CELSIUS, "C");
	UnitFormat.getUCUMInstance().alias(SI.CELSIUS, "C");
	UnitFormat.getInstance().alias(NonSI.FAHRENHEIT, "F");
	UnitFormat.getUCUMInstance().alias(NonSI.FAHRENHEIT, "F");
	UnitFormat.getInstance().alias(NonSI.DEGREE_ANGLE, "deg");
	UnitFormat.getUCUMInstance().alias(NonSI.DEGREE_ANGLE,
"deg");
	UnitFormat.getInstance().alias(NonSI.DEGREE_ANGLE,
"Degree");
	UnitFormat.getUCUMInstance().alias(NonSI.DEGREE_ANGLE,
"Degree");
	UnitFormat.getInstance().alias(NonSI.KNOT, "kt");
	UnitFormat.getUCUMInstance().alias(NonSI.KNOT, "kt");
	UnitFormat.getInstance().alias(SI.SECOND, "sec");
	UnitFormat.getUCUMInstance().alias(SI.SECOND, "sec");
	UnitFormat.getInstance().alias(SI.METER, "meters");
	UnitFormat.getUCUMInstance().alias(SI.METER, "meters");
	return true;
	}

}
```

- (com.raytheon.viz.grid.rsc.general) GeneralGridData.java

```
import javax.measure.converter.UnitConverter;
import javax.measure.unit.Unit;

	/**
```

```
        * Attempt to convert this data to the new unit. If this is successful
then
        * the dataUnit and data will be changed.
        *
        * @param unit
        * @return true if units are compatible, false if data is unchanged.
        */
        public boolean convert(Unit<?> unit) {
        if (dataUnit == null && unit == null) {
        return true;
        } else if (dataUnit == null || unit == null) {
        return false;
        }
        if (!dataUnit.isCompatible(unit)) {
        return false;
        }
        UnitConverter converter = dataUnit.getConverterTo(unit);
        if (converter.equals(UnitConverter.IDENTITY)) {
        // no need to actually convert if they are the same.
        return true;
        }
        if (scalarData != null) {
        scalarData.rewind();
        FloatBuffer newData = FloatBuffer.allocate(scalarData.capacity());
        while (scalarData.hasRemaining()) {
                newData.put((float) converter.convert(scalarData.get()));
        }
        newData.rewind();
        scalarData = newData;
        }
        if (uComponent != null) {
        uComponent.rewind();
        FloatBuffer newData =
FloatBuffer.allocate(uComponent.capacity());
        while (uComponent.hasRemaining()) {
                newData.put((float) converter.convert(uComponent.get()));
        }
        newData.rewind();
        uComponent = newData;
```

```
        }
        if (vComponent != null) {
        vComponent.rewind();
        FloatBuffer newData =
FloatBuffer.allocate(vComponent.capacity());
        while (vComponent.hasRemaining()) {
                newData.put((float) converter.convert(vComponent.get()));
        }
        newData.rewind();
        vComponent = newData;
        }
        dataUnit = unit;
        return true;
        }
```

2.7 Grided data Display Control Example

- ECMWF-LowRes
  - **Check ECMWF relative menu configuration**

/awips2/edex/data/utility/cave_static/configured/CWB/menus/volume/baseFamiles.xml

```
<contribute xsi:type="bundleItem"
file="bundles/volume/ECMWFLowRes.xml"
            menuText="ECMWF-LowRes"
id="ecmwfLowRes" useReferenceTime="true">
            <substitute key="TP" value="TP"/>
            <substitute key="frameCount" value="8"/>
</contribute>
```

  - **Try to add 800mb Temperature into awips2 volume bundles.**

/awips2/cave/data/utility/cave_static/configured/CWB/bundles/volume/ECMWFLowRes.xml

```
<resource>
    <loadProperties xsi:type="gridLoadProperties"
                                displayType="CONTOUR">
    <capabilities>
      <capability xsi:type="colorableCapability"
                                colorAsString="#ffff54" />
      </capabilities>
    </loadProperties>
    <properties isSystemResource="false"
isBlinking="false"
            isMapLayer="false" isHoverOn="false"
                                isVisible="false" />
    <resourceData xsi:type="gridResourceData"
             isUpdatingOnMetadataOnly="false"
             isRequeryNecessaryOnTimeMatch="true">
     <metadataMap>
        <mapping key="info.parameter.abbreviation">
```

```
            <constraint constraintValue="T"
constraintType="EQUALS" />
          </mapping>
          <mapping key="info.datasetId">
            <constraint constraintValue="ECMF-
NorthernHemisphere"
                  constraintType="EQUALS" />
          </mapping>
          <mapping key="pluginName">
             <constraint constraintValue="grid"
                  constraintType="EQUALS" />
           </mapping>
           <mapping key="info.level.masterLevel.name">
              <constraint constraintValue="MB"
                  constraintType="EQUALS" />
           </mapping>
           <mapping key="info.level.levelonevalue">
              <constraint constraintValue="850"
                  constraintType="EQUALS" />
           </mapping>
           <mapping key="info.level.leveltwovalue">
              <constraint constraintValue="-999999"
constraintType="EQUALS" />
          </mapping>
      </metadataMap>
      </resourceData>
</resource>
```

- **modify Temperature unit in d2dContourStyleRules**

  /awips2/edex/data/utility/cave_static/site/CWB/styleRules/d2dContourStyleRules.xml

```
<!--  * T, TxSM, DpT, TW, TV, Tmean, DpTmean
C  | 1 |-273.15| 4 |        |   |..|8000F0FF| | 0 | 2
-->
<styleRule>
 <paramLevelMatches>
       <parameter>T</parameter>
```

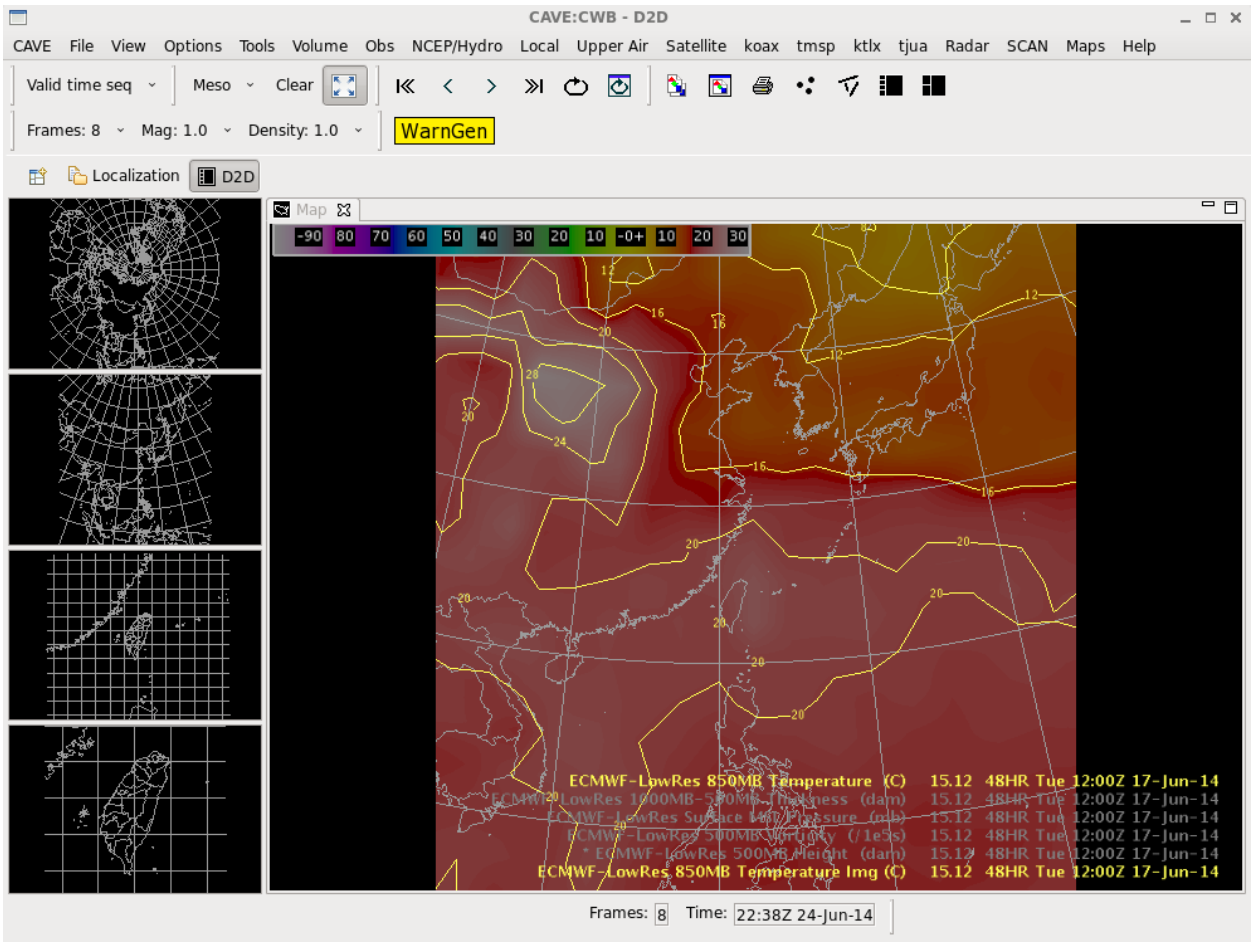
```
        <parameter>TxSM</parameter>
        <parameter>DpT</parameter>
        <parameter>TW</parameter>
        <parameter>TV</parameter>
        <parameter>Tmean</parameter>
        <parameter>DpTmean</parameter>
    </paramLevelMatches>
    <contourStyle>
        <displayUnits>C</displayUnits>
        <contourLabeling labelSpacing="4">
        <increment>2</increment>
        </contourLabeling>
    </contourStyle>
</styleRule>
```

- **modify Temperature unit in gridImageryStyleRules.xml**
  /awips2/edex/data/utility/cave_static/site/CWB/styleRules/gridImageryStyleRules.xml

```
        <!--
            Base (fallback) temperature rule, specifies no level information or
            scaling information, but specifies unit conversion
            * T, TxSM, DpT, TW, TV
            C | 1.0 |-273.15| 0  | 1  | | | 29 | -1 | 10
        -->
        <styleRule>
            <paramLevelMatches>
                <parameter>T</parameter>
                <parameter>TxSM</parameter>
                <parameter>DpT</parameter>
                <parameter>TW</parameter>
                <parameter>TV</parameter>
            </paramLevelMatches>
            <imageStyle>
                <displayUnits>C</displayUnits>
                <defaultColormap>Grid/gridded
```

```
        data</defaultColormap>
                </imageStyle>
            </styleRule>
```

- ECMWF-LowRes Temperature Screenshot



3. Grid Data Ingest

3.1 Grid Data Ingest relative awips2 plugin

(1) ncgrib

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml
- thinnedModel definition files path:
  /awips2/edex/data/utility/edex_static/base/ncgrib/thinnedModels
- datasets definition:
  /awips2/edex/data/utility/common_static/base/grid/datasetsInfo
- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml
- modelname definition files path:
  /awips2/edex/data/utility/edex_static/base/grib/models
- model projection definition files path:
  /awips2/edex/data/utility/edex_static/base/grib/grids
- relative postgresql database:
    - Schemas:
        - database metadata-> schema awips
            - table grid
            - table grid_info
            - table gridcoverage
- Matintain method:
    - if you want to clean all model data in edex server,
      please use SQL statemnet to delete all records of
      grid,grid_info,and gridcoverage tables.
      Then restart edex server.

(2)CAVE VolumeBrowser

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

3.2 Model grid data Ingest Parmaters

model name	format	scale	awips2 plugin
UKMET-NorthernHemisphere	grib	Global	ncgrib
UKMET-Gbl2p5	grib2	Global	ncgrib
ECMWF-LowResNH	grib	Global	ncgrib
ECMWF-Tropical	grib	Global	ncgrib
ECMWF-Gbl0p5	grib	Global	ncgrib
ECMWF-Tropical0p5	grib	Global	ncgrib
ECMWF-Reg0p125	grib	Region	ncgrib
ECMWF-Reg0p25	grib	Region	ncgrib
ECMWF-Reg0p5	grib	Region	ncgrib
ECMWF-Reg1p5	grib	Region	ncgrib
NCEP-Gbl0p5	grib2	Global	ncgrib
NCEP-Gbl2p5	grib2	Global	ncgrib
SeaIce235	grib2	Global	ncgrib
RTG-SST-Analysis	grib2	Global	ncgrib
RTS-SST-HR-Analysis	grib2	Global	ncgrib
nww3	grib2	Global	ncgrib
JMA-Gbl0p5	grib	Global	ncgrib
JMA-Gbl1deg	grib	Global	ncgrib
JMA-Wave	grib	Global	ncgrib
JMA-SST	grib	Global	ncgrib
JMA-RSM	grib	Region	ncgrib
JMA-MSM1	grid	Region	ncgrib
JMA-MSM2	grid	Region	ncgrib
NAVGEM-Gbl0p5	grib	Global	ncgrib

NAVGEM-Gbl1deg	grib	Global	ncgrib
NCEP-GFSEns1deg	grib2	Global	ncgrib
FIFOW-SATC	grib2	Global	ncgrib
FIFOW-OKKR	grib2	Region	ncgrib
FIFOW-UCKR	grib2	Region	ncgrib
FIFOW-UKKR	grib2	Region	ncgrib
FIFOW-STMS	grib2	Region	ncgrib

(1) UKMET-NorthernHemisphere

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

```
<regex>^H.[I-L]... EGRR.*</regex>
```

- thinnedModel definition:
  - UKMET.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/ncgrib/thinnedModels/UKMET.xml
    - projectId:371 (model projection definition: UKMET-Grid1.xml)
    - componentModels:UKMET37:UKMET38:UKMET39:UKMET40

- datasets definition:
  - gribDatasets_UKMET-74.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_UKMET-74.xml
    - datasets:
      - UKMET (UKMET-NorthernHemisphere)
      - UKMET(UKMET37)
      - UKMET(UKMET38)
      - UKMET(UKMET39)
      - UKMET(UKMET40)
      - UKMET(UKMET41)
      - UKMET(UKMET42)
      - UKMET(UKMET43)
      - UKMET(UKMET44)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/dataset/alias/d2d-title.xml

```
        <alias base="UKMET37">UKMET</alias>
            <alias base="UKMET38">UKMET</alias>
            <alias base="UKMET39">UKMET</alias>
            <alias base="UKMET40">UKMET</alias>
            <alias base="UKMET41">UKMET</alias>
            <alias base="UKMET42">UKMET</alias>
            <alias base="UKMET43">UKMET</alias>
            <alias base="UKMET44">UKMET</alias>
            <alias base="UKMET-
    NorthernHemisphere">UKMET</alias>
```

- modelname definition:
    - gribModels_UKMET-74.xml
        - localization: /awips2/edex/data/utility/edex_static/base/grib/models/grib_Models_UKMET-74.xml
        - models:
            - UKMET-NorthernHemiphere:
                - center=74
                - subcenter=0
                - grid=371
                - process=45

- UKMET37
    - center=74
    - subcenter=0
    - grid=37
    - process=45

- UKMET38
    - center=74
    - subcenter=0
    - grid=38
    - process=45

- UKMET39

    - center=74
    - subcenter=0
    - grid=39
    - process=45

- UKMET40
    - center=74
    - subcenter=0
    - grid=40
    - process=45

- UKMET41
    - center=74
    - subcenter=0
    - grid=41
    - process=45
- UKMET42
    - center=74
    - subcenter=0
    - grid=42
    - process=45

- UKMET43
    - center=74
    - subcenter=0
    - grid=43
    - process=45

- UKMET44
    - center=74
    - subcenter=0
    - grid=44
    - process=45

- model projection definition:
    - localization:

/awips2/edex/data/utility/edex_static/base/grib/grids

- projectid definition file:
  - UKMET-Grid1.xml
    - gridid=371
    - nx,ny= 288,73
    - dx,dy=1.25,1.25
    - (la1,lo1)=(0,-30)
    - firstGridPointCorner=LowerLeft
  - grid37.xml
    - gridid=37
- nx,ny=73,73
- dx,dy=1.25,1.25
- corners(la1,lo1)(la2,lo2)=(0,-30)(90,60)

- grid38.xml
  - gridid=38
  - nx,ny=73,73
  - dx,dy=1.25,1.25
  - corners(la1,lo1)(la2,lo2)=(0,60)(90,150)
- grid39.xml
  - gridid=39
  - nx,ny=73,73
  - dx,dy=1.25,1.25
  - corners(la1,lo1)(la2,lo2)=(0,150)(90,-120)
- grid40.xml
  - gridid=40
  - nx,ny=73,73
  - dx,dy=1.25,1.25
  - corners(la1,lo1)(la2,lo2)=(0,-120)(90,-30)
- grid41.xml
  - gridid=41
  - nx,ny=73,73
  - dx,dy=1.25,1.25
  - corners(la1,lo1)(la2,lo2)=(-90,-30)(0,60)
- grid42.xml
  - gridid=42
  - nx,ny=73,73
  - dx,dy=1.25,1.25

- corners(la1,lo1)(la2,lo2)=(-90,60)(0,150)

- grid43.xml
  - gridid=43
  - nx,ny=73,73
  - dx,dy=1.25,1.25
  - corners(la1,lo1)(la2,lo2)=(-90,150)(0,-120)

- grid44.xml
  - gridid=44
  - nx,ny=73,73
  - dx,dy=1.25,1.25
  - corners(la1,lo1)(la2,lo2)=(-90,-120)(0,-30)

- Rawdata location in GSD

Model name	centre	subcentre	process	grid **projectId**	GRIB edition	GSD data localization
UKMET37	74	0	45	37 37	1	/data/public/data/grib/noaaport/74/0/45/37
UKMET38	74	0	45	38 38	1	/data/public/data/grib/noaaport/74/0/45/38
UKMET39	74	0	45	39 39	1	/data/public/data/grib/noaaport/74/0/45/39
UKMET40	74	0	45	40 40	1	/data/public/data/grib/noaaport/74/0/45/40
UKMET41	74	0	45	41 41	1	/data/public/data/grib/noaaport/74/0/45/41
UKMET42	74	0	45	42 42	1	/data/public/data/grib/noaaport/74/0/45/42
UKMET43	74	0	45	43 43	1	/data/public/data/grib/noaaport/74/0/

						45/43
UKMET44	74	0	45	44 44	1	/data/public/data/grib/noaaport/74/0/45/44

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="UKMET-NorthernHemisphere" category="Volume" />
```

(2) UKMET-Gbl2p5

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_UKMET-74.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_UKMET-74.xml
    - datasets:
      - UKMET-Gbl2p5(UKMET-Gbl2p5)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/dataset/alias/d2d-title.xml

```
<alias base="UKMET-Gbl2p5">UKMET-Gbl2p5</alias>
```

- modelname definition:
  - gribModels_UKMET-74.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_UKMET-74.xml
    - models:
      - UKMET-Gbl2p5:
        - center=74
        - subcenter=0
        - grid=2
        - process=15,44,45

- model projection definition:
  - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
  - projectid definition file:
    - grid2.xml
      - gridid=2
      - nx,ny= 144,73
      - dx,dy=2.5,2.5
      - corners(la1,lo1)(la2,lo2)=(90,0)(-90,357.5)

- Rawdata location in NCEP Website
  - **United Kingdom Meteorology (UKMET) Products** website: http://www.nco.ncep.noaa.gov/pmb/products/ukmet/
  - Description:
    - **2.5 degree resolution nrukmet.tccz.ukm25.grib2**

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="UKMET-Gbl2p5" category="Volume" />
```

(3) ECMWF-LowResNH

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

```
<regex>^H.[A-H]... ECMF.*</regex>
```

- thinnedModel definition:
  - ECMWF-LoResNH.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/ncgrib/thinnedModels/ECMWF-LoResNH.xml
    - projectId:372 (model projection definition: ECMWF-composite.xml)
    - componentModels:ECMF2:ECMF1;ECMF4:ECMF3

- datasets definition:
  - gribDatasets_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_ECMWF-98.xml
    - datasets:
      - ECMWF-LowRes (ECMF-NorthernHemisphere)
      - ECMWF-LowRes(ECMF1)
      - ECMWF-LowRes(ECMF2)
      - ECMWF-LowRes(ECMF3)
      - ECMWF-LowRes(ECMF4)
      - ECMWF-LowRes(ECMF9)
      - ECMWF-LowRes(ECMF10)
      - ECMWF-LowRes(ECMF11)
      - ECMWF-LowRes(ECMF12)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="ECMF10">ECMWF-LowRes</alias>
<alias base="ECMF11">ECMWF-LowRes</alias>
<alias base="ECMF12">ECMWF-LowRes</alias>
<alias base="ECMF1">ECMWF-LowRes</alias>
<alias base="ECMF2">ECMWF-LowRes</alias>
<alias base="ECMF3">ECMWF-LowRes</alias>
<alias base="ECMF4">ECMWF-LowRes</alias>
<alias base="ECMF9">ECMWF-LowRes</alias>
<alias base="ECMF-NorthernHemisphere">ECMWF-
LowRes</alias>
```

- modelname definition:
  - gribModels_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/grib
      Models_ECMWF-98.xml
    - models:
      - ECMF-NorthernHemisphere:
        - center=98
        - subcenter=0
        - grid=372
        - process=144

- ECMF1
  - center=98
  - subcenter=0
  - grid=255101
  - process=144

- ECMF2
    - center=98
    - subcenter=0
    - grid=255102
    - process=144

- ECMF3
    - center=98
    - subcenter=0
    - grid=255103
    - process=144

- ECMF4
    - center=98
    - subcenter=0
    - grid=255104
    - process=144

- ECMF9
    - center=98
    - subcenter=0
    - grid=255109
    - process=144

- ECMF10
    - center=98
    - subcenter=0
    - grid=255110
    - process=144

- ECMF11
    - center=98
    - subcenter=0
    - grid=255111
    - process=144

- ECMF12
    - center=98
    - subcenter=0
    - grid=255112
    - process=144

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - ECMWF-composite.xml
            - gridid=252
            - nx,ny= 148,37
            - dx,dy=2.5,2.5
            - corners(la1,lo1)=(0,-180)
            - firestGridPointCorner=LowerLeft

        - ECMWF-Grid1.xml
            - gridid=255101
- nx,ny=37,37
- dx,dy=2.5,2.5
- corners(la1,lo1)(la2,lo2)=(0,-90)(90,0)

- ECMWF-Grid2.xml
    - gridid=255102
    - nx,ny=37,37
    - dx,dy=2.5,2.5
    - corners(la1,lo1)(la2,lo2)=(0,180)(90,-90)

- ECMWF-Grid3.xml
    - gridid=255103
    - nx,ny=37,37
    - dx,dy=2.5,2.5
    - corners(la1,lo1)(la2,lo2)=(0,90)(90,180)

- ECMWF-Grid4.xml
  - gridid=255104
  - nx,ny=37,37
  - dx,dy=2.5,2.5
  - corners(la1,lo1)(la2,lo2)=(0,0)(90,90)

- ECMWF-Grid9.xml
  - gridid=255109
  - nx,ny=37,37
  - dx,dy=2.5,2.5
  - corners(la1,lo1)(la2,lo2)=(0,-90)(-90,0)

- ECMWF-Grid10.xml
  - gridid=255110
  - nx,ny=37,37
  - dx,dy=2.5,2.5
  - corners(la1,lo1)(la2,lo2)=(0,-180)(-90,-90)

- ECMWF-Grid11.xml
  - gridid=255111
  - nx,ny=37,37
  - dx,dy=2.5,2.5
  - corners(la1,lo1)(la2,lo2)=(0,90)(-90,180)

- ECMWF-Grid12.xml
  - gridid=255112
  - nx,ny=37,37
  - dx,dy=2.5,2.5
  - corners(la1,lo1)(la2,lo2)=(0,0)(-90,90)

- Rawdata location in GSD

Model name	centre	subcentre	process	grid **projectId**	GRIB edition	GSD data localization
ECMF1	98	0	144	1 **255101**	1	/data/public/data/grib/noaaport/98/0/144/1
ECMF2	98	0	144	2 **255102**	1	/data/public/data/grib/noaaport/98/0/144/2
ECMF3	98	0	144	3 **255103**	1	/data/public/data/grib/noaaport/98/0/144/3
ECMF4	98	0	144	4 **255104**	1	/data/public/data/grib/noaaport/98/0/144/4
ECMF9	98	0	144	9 **255109**	1	/data/public/data/grib/noaaport/98/0/144/9
ECMF10	98	0	144	10 **255110**	1	/data/public/data/grib/noaaport/98/0/144/10
ECMF11	98	0	144	11 **255111**	1	/data/public/data/grib/noaaport/98/0/144/11
ECMF12	98	0	144	12 **255112**	1	/data/public/data/grib/noaaport/98/0/144/12

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="ECMF-NorthernHemisphere" category="Volume" />
```

(4) ECMWF-Tropical

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

```
<regex>^H.[A-H]... ECMF.*</regex>
```

- thinnedModel definition:
  - ECMWF-LoResTropicalBelt.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/ncgrib/thinnedModels/ECMWF-LoResTropicalBelt.xml
    - projectId:373 (model projection definition: ECMWF-composite2.xml)
    - componentModels:ECMF6:ECMF5;ECMF8:ECMF7

- datasets definition:
  - gribDatasets_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_ECMWF-98.xml
    - datasets:
      - ECMWF-LowRes(ECMF5)
      - ECMWF-LowRes(ECMF6)
      - ECMWF-LowRes(ECMF7)
      - ECMWF-LowRes(ECMF8)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/dataset/alias/d2d-title.xml

```
<alias base="ECMF5">ECMWF-LowRes</alias>
<alias base="ECMF6">ECMWF-LowRes</alias>
<alias base="ECMF7">ECMWF-LowRes</alias>
<alias base="ECMF8">ECMWF-LowRes</alias>
<alias base="ECMF-Tropical">ECMWF-Tropical</alias>
```

- modelname definition:
    - gribModels_ECMWF-98.xml
        - localization: /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_ECMWF-98.xml
        - models:
            - ECMF-Tropical:
                - center=98
                - subcenter=0
                - grid=373
                - process=144

- ECMF5
    - center=98
    - subcenter=0
    - grid=255105
    - process=144

- ECMF6
    - center=98
    - subcenter=0
    - grid=255106
    - process=144

- ECMF7
    - center=98
    - subcenter=0
    - grid=255107
    - process=144

- ECMF8
    - center=98
    - subcenter=0
    - grid=255108
    - process=144

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - ECMWF-composite2.xml
            - gridid=373
            - nx,ny= 148,37
            - dx,dy=2.5,2.5
            - corners(la1,lo1)(la2,lo2)=(35,-179.9999)(-35,179.9999)
        - ECMWF-Grid5.xml
            - gridid=255105
- nx,ny=37,29
- dx,dy=2.5,2.5
- corners(la1,lo1)(la2,lo2)=(35,-90)(-35,0)

- ECMWF-Grid6.xml
    - gridid=255106
    - nx,ny=37,29
    - dx,dy=2.5,2.5
    - corners(la1,lo1)(la2,lo2)=(35,180)(-35,-90)

- ECMWF-Grid7.xml
    - gridid=255107
    - nx,ny=37,29
    - dx,dy=2.5,2.5
    - corners(la1,lo1)(la2,lo2)=(35,90)(-35,180)

- ECMWF-Grid8.xml
    - gridid=255108
    - nx,ny=37,29
    - dx,dy=2.5,2.5
    - corners(la1,lo1)(la2,lo2)=(35,0)(-35,90)

- Rawdata location In GSD

Model name	centre	subcentre	process	grid projectId	GRIB edition	directories
ECMF5	98	0	144	5 **255105**	1	/data/public/data/grib/noaaport/98/0/144/5
ECMF6	98	0	144	6 **255106**	1	/data/public/data/grib/noaaport/98/0/144/6
ECMF7	98	0	144	7 **255107**	1	/data/public/data/grib/noaaport/98/0/144/7
ECMF8	98	0	144	8 **255108**	1	/data/public/data/grib/noaaport/98/0/144/8

- Cave VolumeBrowser Config file:

  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="ECMF-Tropical" category="Volume" />
```

(5) ECMWF-Gbl0p5

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_ECMWF-98.xml
    - datasets:
      - ECMWF-Gbl0p5(ECWMF-Gbl0p5)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="ECMWF-Gbl0p5">ECMWF-Gbl0p5</alias>
```

- modelname definition:
  - gribModels_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models
      /gribModels_ECMWF-98.xml
    - models:
      - ECMWF-Gbl0p5:
        - center=98
        - subcenter=0
        - grid=230
        - process=120-255

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - grid230.xml
            - gridid=230
            - nx,ny= 720,361
            - dx,dy=0.5,0.5
            - corners(la1,lo1)(la2,lo2)=(90,-180)(-90,179.5)

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="ECMWF-Gbl0p5" category="Volume" />
```

(6) ECMWF-Tropical0p5

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_ECMWF-98.xml
    - datasets:
      - ECMWF-Tropical0p5(ECWMF-Tropical0p5)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="ECMWF-Tropical0p5">ECMWF-
Tropical0p5</alias>
```

- modelname definition:
  - gribModels_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models
      /gribModels_ECMWF-98.xml
    - models:
      - ECMWF-Tropical0p5:
        - center=98
        - subcenter=0
        - grid=255117
        - process=144

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - ECMWF-Tropical0p5.xml
            - gridid=255117
            - nx,ny= 720,141
            - dx,dy=0.5,0.5
            - corners(la1,lo1)(la2,lo2)=(35,0)(-35,359.5)

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="ECMWF-Tropical0p5" category="Volume" />
```

(7) ECMWF-Reg0p125

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_ECMWF-98.xml
    - datasets:
      - ECMWF-Reg0p125(ECWMF-Reg0p125)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="ECMWF-Reg0p125">ECMWF-
Reg0p125</alias>
```

- modelname definition:
  - gribModels_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models
      /gribModels_ECMWF-98.xml
    - models:
      - ECMWF-Reg0p125:
        - center=98
        - subcenter=0
        - grid=255115
        - process=144

- model projection definition:
  - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
  - projectid definition file:
    - ECMWF-Reg0p125.xml
      - gridid=255115
      - nx,ny= 89,89
      - dx,dy=0.125,0.125
      - corners(la1,lo1)(la2,lo2)=(29,116)(18,127)

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="ECMWF-Reg0p125" category="Volume" />
```

(8) ECMWF-Reg0p25

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_ECMWF-98.xml
    - datasets:
      - ECMWF-Reg0p25(ECWMF-Reg0p25)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="ECMWF-Reg0p25">ECMWF-Reg0p25</alias>
```

- modelname definition:
  - gribModels_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models
      /gribModels_ECMWF-98.xml
    - models:
      - ECMWF-Reg0p25:
        - center=98
        - subcenter=0
        - grid=255116
        - process=110

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - ECMWF-Reg0p25.xml
            - gridid=255116
            - nx,ny= 89,113
            - dx,dy=0.25,0.25
            - corners(la1,lo1)(la2,lo2)=(37,108)(9,130)

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="ECMWF-Reg0p25" category="Volume" />
```

(9) ECMWF-Reg0p5

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_ECMWF-98.xml
    - datasets:
      - ECMWF-Reg0p5(ECWMF-Reg0p5)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/dataset/alias/d2d-title.xml

```
<alias base="ECMWF-Reg0p5">ECMWF-Reg0p5</alias>
```

- modelname definition:
  - gribModels_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_ECMWF-98.xml
    - models:
      - ECMWF-Reg0p5:
        - center=98
        - subcenter=0
        - grid=255114
        - process=144

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - ECMWF-Reg0p5.xml
            - gridid=255114
            - nx,ny= 45,57
            - dx,dy=0.5,0.5
            - corners(la1,lo1)(la2,lo2)=(37,108)(9,130)

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="ECMWF-Reg0p5" category="Volume" />
```

(10) ECMWF-Reg1p5

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_ECMWF-98.xml
    - datasets:
      - ECMWF-Reg1p5(ECWMF-Reg1p5)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="ECMWF-Reg1p5">ECMWF-Reg1p5</alias>
```

- modelname definition:
  - gribModels_ECMWF-98.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models
      /gribModels_ECMWF-98.xml
    - models:
      - ECMWF-Reg1p5:
        - center=98
        - subcenter=0
        - grid=255118
        - process=144

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - ECMWF-Reg1p5.xml
            - gridid=255118
            - nx,ny= 81,60
            - dx,dy=1.5,1.5
            - corners(la1,lo1)(la2,lo2)=(90,120)(1.5,-120)

- Rawdata location In GSD

Model name	centre	subcentre	process	grid projectId	GRIB edition	directories
ECMWF-Reg1p5	98	0	144	255 **255118**	1	/data/public/data/grib/noaaport/98/0/144/255

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="ECMWF-Reg1p5" category="Volume" />
```

(11) NCEP-Gbl0p5

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_NCEP-7.xml
    - datasets:
      - NCEP-Gbl0p5(NCEP-Gbl0p5)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="NCEP-Gbl0p5">NCEP-Gbl0p5</alias>
```

- modelname definition:
  - gribModels_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_NCEP-7.xml
    - models:
      - NCEP-Gbl0p5:
        - center=7
        - subcenter=0
        - grid=230
        - process=96,77,81

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - grid230.xml
            - gridid=230
            - nx,ny= 720,361
            - dx,dy=0.5,0.5
            - corners(la1,lo1)(la2,lo2)=(90,-180)(-90,179.5)

- Rawdata location in NCEP Website
    - **Global Products** website: http://www.nco.ncep.noaa.gov/pmb/products/gfs/
    - Description:
        - **Global 0.5 degree resolution gfs.tCCz.pgrb2fxxx + gfs.tCCz.pgrb2bfxxx**

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="NCEP-Gbl0p5" category="Volume" />
```

(12) NCEP-Gbl2p5

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_NCEP-7.xml
    - datasets:
      - NCEP-Gbl2p5(NCEP-Gbl2p5)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/dataset/alias/d2d-title.xml

```
<alias base="NCEP-Gbl2p5">NCEP-Gbl2p5</alias>
```

- modelname definition:
  - gribModels_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_NCEP-7.xml
    - models:
      - NCEP-Gbl2p5:
        - center=7
        - subcenter=0
        - grid=228
        - process=96,77,81

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - grid228.xml
            - gridid=228
            - nx,ny= 144,73
            - dx,dy=2.5,2.5
            - corners(la1,lo1)(la2,lo2)=(90,0.0)(-90,357.5)

- Rawdata location in NCEP Website
    - **Global Products** website: http://www.nco.ncep.noaa.gov/pmb/products/gfs/
    - Description:
        - **Global 2.5 degree resolution gfs.tccz.pgrb2fxxx.2p5deg**

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="NCEP-Gbl2p5" category="Volume" />
```

(13) SeaIce235

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetsInfo/gribDatasets_NCEP-7.xml
    - datasets:
      - SeaIce235(SeaIce235)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/dataset/alias/d2d-title.xml

```
<alias base="SeaIce235">SeaIce235</alias>
```

- modelname definition:
  - gribModels_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_NCEP-7.xml
    - models:
      - SeaIce235:
        - center=7
        - subcenter=0
        - grid=235
        - process=120

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - grid235.xml
            - gridid=235
            - nx,ny= 720,360
            - dx,dy=0.5,0.5
            - corners(la1,lo1)(la2,lo2)=(89.75,0.25)(-89.75,-0.25)

- Rawdata location in NCEP Website
    - **Grid 235 - Sea Ice** website: http://www.nco.ncep.noaa.gov/pmb/products/omb/
    - Description:
        - **Global 1/2 degree resolution seaice.tCCz.grb.grib2**

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="SeaIce235" category="SfcGrid" views="PLANVIEW TIMESERIES" />
```

(14) RTG-SST-Analysis

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_NCEP-7.xml
    - datasets:
      - RTG-SST-Analysis(RTGSST)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/dataset/alias/d2d-title.xml

```
<alias base="RTGSST">RTG-SST-Analysis</alias>
```

- modelname definition:
  - gribModels_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_NCEP-7.xml
    - models:
      - RTGSST:
        - center=7
        - subcenter=4
        - grid=235
        - process=44

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - grid235.xml
            - gridid=235
            - nx,ny= 720,360
            - dx,dy=0.5,0.5
            - corners(la1,lo1)(la2,lo2)=(89.75,0.25)(-89.75,359.75)

- Rawdata location in NCEP Website
    - Sea Surface Temperature (SST) Models website: http://www.nco.ncep.noaa.gov/pmb/products/sst/
    - Description:
        - 0.5 degree resolution rtgssthr_grb_0.5.grib2

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="RTGSST" category="SfcGrid" views="PLANVIEW TIMESERIES" />
```

(15) RTG-SST-HR-Analysis

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_NCEP-7.xml
    - datasets:
      - RTG-SST-HR-Analysis(RTGSSTHR)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="RTGSSTHR">RTG-SST-HR-Analysis</alias>
```

- modelname definition:
  - gribModels_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_NCEP-7.xml
    - models:
      - RTGSSTHR:
        - center=7
        - subcenter=4
        - grid=173
        - process=44

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - grid173.xml
            - gridid=173
            - nx,ny= 4320,2160
            - dx,dy=0.083333,0.083333
            - corners(la1,lo1)=(89.958333,0.041667)
            - corners(la2,lo2)=(-89.958333,359.958333)

- Rawdata location in NCEP Website
    - Sea Surface Temperature (SST) Models website: http://www.nco.ncep.noaa.gov/pmb/products/sst/
    - Description:
        - 1/12 degree resolution rtgssthr_grb_0.083_awips.grib2

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="RTGSSTHR" category="SfcGrid" views="PLANVIEW TIMESERIES"
/>
```

(16) nww3

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_NCEP-7.xml
    - datasets:
      - nww3(nww3)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="nww3">nww3</alias>
```

- modelname definition:
  - gribModels_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models
      /gribModels_NCEP-7.xml
    - models:
      - nww3:
        - center=7
        - subcenter=0
        - grid=233
        - process=88

- model projection definition:
  - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
  - projectid definition file:
    - grid233.xml
      - gridid=233
      - nx,ny= 288,157
      - dx,dy=1.25,1
      - corners(la1,lo1)=(78,0)
      - corners(la2,lo2)=(-78,358.75)

- Rawdata location in NCEP Website
  - `nww3 data is available at:`
    `ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/wave/prod/wave.YYYYMMDD`
    `Where YYYYMMDD is the Year, Month, Day string.`
  - `The filename structure is nww3.tCCz.grib.grib2`
    `Where CC is the forecast hour.`
- `description website:`
  `http://www.nco.ncep.noaa.gov/pmb/products/wave/`

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="nww3" category="SfcGrid" views="PLANVIEW TIMESERIES" />
```

(17)JMA-Gbl0p5

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_JMA-34.xml
    - datasets:
      - JMA-Gbl0p5(JMA-Gbl0p5)
- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="JMA-Gbl0p5">JMA-Gbl0p5</alias>
```

- modelname definition:
  - gribModels_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_JMA-34.xml
    - models:
      - JMA-Gbl0p5:
        - center=34
        - subcenter=0
        - grid=230
        - process=255

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - grid230.xml
            - gridid=230
            - nx,ny= 720,361
            - dx,dy=0.5,0.5
            - corners(la1,lo1)(la2,lo2)=(90,-180)(-90,179.5)

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="JMA-Gbl0p5" category="Volume" />
```

(18)JMA-Gbl1deg

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_JMA-34.xml
    - datasets:
      - JMA-Gbl1deg(JMA-Gbl1deg)
- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="JMA-Gbl1deb">JMA-Gbl1deg</alias>
```

- modelname definition:
  - gribModels_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_JMA-34.xml
    - models:
      - JMA-Gbl1deg:
        - center=34
        - subcenter=0
        - grid=229
        - process=255

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - grid229.xml
            - gridid=229
            - nx,ny= 360,181
            - dx,dy=1.0,1.0
            - corners(la1,lo1)(la2,lo2)=(90,0)(-90,359)

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="JMA-Gbl1deg" category="Volume" />
```

(19)JMA-Wave

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="JMA-Wave">JMA-Wave</alias>
```

- datasets definition:
  - gribDatasets_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_JMA-34.xml
    - datasets:
      - JMA-Wave(JMA-Wave)

- modelname definition:
  - gribModels_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_JMA-34.xml
    - models:
      - JMA-Wave:
        - center=34
        - subcenter=0
        - grid=255132
        - process=255

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - JMA-Wave.xml
            - gridid=255132
            - nx,ny=601,601
            - dx,dy=0.05,0.05
            - corners(la1,lo1)(la2,lo2)=(50,120)(20,150)

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="JMA-Wave" category="Volume" />
```

(20)JMA-SST

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_JMA-34.xml
    - datasets:
      - JMA-SST(JMA-SST)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="JMA-SST">JMA-SST</alias>
```

- modelname definition:
  - gribModels_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_JMA-34.xml
    - models:
      - JMA-SST:
        - center=34
        - subcenter=0
        - grid=255133
        - process=255

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - JMA-SST.xml
            - gridid=255133
            - nx,ny=320,240
            - dx,dy=0.25,0.25
            - corners(la1,lo1)(la2,lo2)=(59.875,100.125)(0.125,179.875)

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="JMA-SST" category="Volume" />
```

(21)JMA-RSM

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_JMA-34.xml
    - datasets:
      - JMA-RSM(JMA-RSM)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="JMA-RSM">JMA-RSM</alias>
```

- modelname definition:
  - gribModels_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_JMA-34.xml
    - models:
      - JMA-RSM:
        - center=34
        - subcenter=0
        - grid=255134
        - process=255

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - JMA-RSM.xml
            - gridid=255134
            - nx,ny=121,151
            - dx,dy=0.2,0.25
            - corners(la1,lo1)(la2,lo2)=(50,120)(20,150)

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="JMA-RSM" category="Volume" />
```

(22)JMA-MSM1

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_JMA-34.xml
    - datasets:
      - JMA-MSM1(JMA-MSM1)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="JMA-MSM1">JMA-MSM1</alias>
```

- modelname definition:
  - gribModels_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_JMA-34.xml
    - models:
      - JMA-MSM1:
        - center=34
        - subcenter=0
        - grid=255135
        - process=255

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - JMA-MSM1.xml
            - gridid=255135
            - nx,ny=241,253
            - dx,dy=0.1,0.125
            - corners(la1,lo1)(la2,lo2)=(47.6,120)(22.4,150)

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="JMA-MSM1" category="Volume" />
```

(23)JMA-MSM2

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_JMA-34.xml
    - datasets:
      - JMA-MSM2(JMA-MSM2)
- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="JMA-MSM2">JMA-MSM2</alias>
```

- modelname definition:
  - gribModels_JMA-34.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_JMA-34.xml
    - models:
      - JMA-MSM2:
        - center=34
        - subcenter=0
        - grid=255136
        - process=255

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - JMA-MSM2.xml
            - gridid=255136
            - nx,ny=481,505
            - dx,dy=0.05,0.0625
            - corners(la1,lo1)(la2,lo2)=(47.6,120)(22.4,150)

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="JMA-MSM2" category="Volume" />
```

(24)NAVGEM-Gbl0p5

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_FNMO-58.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_FNMO-58.xml
    - datasets:
      - NAVGEM-Gbl0p5(NAVGEM-Gbl0p5)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/dataset/alias/d2d-title.xml

```
<alias base="NAVGEM-Gbl0p5">NAVGEM-Gbl0p5</alias>
```

- modelname definition:
  - gribModels_FNMO-58.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_FNMO-58.xml
    - models:
      - NAVGEM-Gbl0p5:
        - center=58
        - subcenter=0
        - grid=2301
        - process=18

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - grid230L.xml
            - gridid=2301
            - nx,ny=720,361
            - dx,dy=0.5,0.5
            - corners(la1,lo1)(la2,lo2)=(-90.0)(90,359.5)

- Parameters mapping

We need to figure out what the grib1 parameter's equivalent is in grib2 and add them to a site override of the /awips2/edex/data/utility/common_static/base/grid/grib1ParameterConvTable.xml.

```
<grib1Parameter>
        <center>58</center>
        <grib1TableVersion>3</grib1TableVersion>
        <grib1Value>1</grib1Value>
        <grib2discipline>0</grib2discipline>
        <grib2category>3</grib2category>
        <grib2Value>0</grib2Value>
        </grib1Parameter>

        <grib1Parameter>
        <center>58</center>
        <grib1TableVersion>3</grib1TableVersion>
        <grib1Value>11</grib1Value>
        <grib2discipline>0</grib2discipline>
        <grib2category>0</grib2category>
        <grib2Value>0</grib2Value>
        </grib1Parameter>

        <grib1Parameter>
        <center>58</center>
        <grib1TableVersion>3</grib1TableVersion>
        <grib1Value>7</grib1Value>
        <grib2discipline>0</grib2discipline>
        <grib2category>3</grib2category>
        <grib2Value>5</grib2Value>
        </grib1Parameter>

        <grib1Parameter>
        <center>58</center>
        <grib1TableVersion>3</grib1TableVersion>
        <grib1Value>33</grib1Value>
        <grib2discipline>0</grib2discipline>
        <grib2category>2</grib2category>
        <grib2Value>2</grib2Value>
```

```
</grib1Parameter>

<grib1Parameter>
<center>58</center>
<grib1TableVersion>3</grib1TableVersion>
<grib1Value>34</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>2</grib2category>
<grib2Value>3</grib2Value>
</grib1Parameter>

<grib1Parameter>
<center>58</center>
<grib1TableVersion>3</grib1TableVersion>
<grib1Value>39</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>2</grib2category>
<grib2Value>8</grib2Value>
</grib1Parameter>

<grib1Parameter>
<center>58</center>
<grib1TableVersion>3</grib1TableVersion>
<grib1Value>52</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>1</grib2category>
<grib2Value>1</grib2Value>
</grib1Parameter>

<grib1Parameter>
<center>58</center>
<grib1TableVersion>3</grib1TableVersion>
<grib1Value>41</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>2</grib2category>
<grib2Value>10</grib2Value>
</grib1Parameter>

<grib1Parameter>
<center>58</center>
<grib1TableVersion>3</grib1TableVersion>
<grib1Value>2</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>3</grib2category>
<grib2Value>1</grib2Value>
</grib1Parameter>

<grib1Parameter>
<center>58</center>
<grib1TableVersion>3</grib1TableVersion>
<grib1Value>32</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>2</grib2category>
```

```
        <grib2Value>1</grib2Value>
        </grib1Parameter>
```

- Cave VolumeBrowser Config file:

  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
        <vbSource key="NAVGEM-Gbl0p5" category="Volume" />
```

(25)NAVGEM-Gbl1deg

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_FNMO-58.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_FNMO-58.xml
    - datasets:
      - NAVGEM-Gbl1deg(NAVGEM-Gbl1deg)

- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/dataset/alias/d2d-title.xml

```
<alias base="NAVGEM-Gbl1deg">NAVGEM-Gbl1deg</alias>
```

- modelname definition:
  - gribModels_FNMO-58.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_FNMO-58.xml
    - models:
      - NAVGEM-Gbl1deg:
        - center=58
        - subcenter=0
        - grid=2291
        - process=18

- model projection definition:
  - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
  - projectid definition file:
    - grid229L.xml
      - gridid=2291
      - nx,ny=360,181
      - dx,dy=1.0,1.0
      - corners(la1,lo1)(la2,lo2)=(-90.0)(90,359)

- Rawdata location in NCEP Website
  - NAVGEM data is available at:
    ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/fnmoc/prod/navgem.YYYYMMDD
    Where YYYYMMDD is the Year, Month, Day string.
  - The filename structure is navgem_YYYYMMDDCCfHHH
    Where YYYYMMDDCC is the Year, Month, Day, Cycle string and HHH is the forecast hour.

- Parameters mapping

We need to figure out what the grib1 parameter's equivalent is in grib2 and add them to a site override of the /awips2/edex/data/utility/common_static/base/grid/grib1ParameterConvTable.xml.

```
<grib1Parameter>
        <center>58</center>
        <grib1TableVersion>2</grib1TableVersion>
        <grib1Value>1</grib1Value>
        <grib2discipline>0</grib2discipline>
        <grib2category>3</grib2category>
        <grib2Value>0</grib2Value>
        </grib1Parameter>

        <grib1Parameter>
        <center>58</center>
        <grib1TableVersion>2</grib1TableVersion>
        <grib1Value>11</grib1Value>
        <grib2discipline>0</grib2discipline>
        <grib2category>0</grib2category>
        <grib2Value>0</grib2Value>
        </grib1Parameter>

        <grib1Parameter>
        <center>58</center>
        <grib1TableVersion>2</grib1TableVersion>
```

```
<grib1Value>7</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>3</grib2category>
<grib2Value>5</grib2Value>
</grib1Parameter>

<grib1Parameter>
<center>58</center>
<grib1TableVersion>2</grib1TableVersion>
<grib1Value>33</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>2</grib2category>
<grib2Value>2</grib2Value>
</grib1Parameter>

<grib1Parameter>
<center>58</center>
<grib1TableVersion>2</grib1TableVersion>
<grib1Value>34</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>2</grib2category>
<grib2Value>3</grib2Value>
</grib1Parameter>

<grib1Parameter>
<center>58</center>
<grib1TableVersion>2</grib1TableVersion>
<grib1Value>39</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>2</grib2category>
<grib2Value>8</grib2Value>
</grib1Parameter>

<grib1Parameter>
<center>58</center>
<grib1TableVersion>2</grib1TableVersion>
<grib1Value>52</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>1</grib2category>
<grib2Value>1</grib2Value>
</grib1Parameter>

<grib1Parameter>
<center>58</center>
<grib1TableVersion>2</grib1TableVersion>
<grib1Value>41</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>2</grib2category>
<grib2Value>10</grib2Value>
</grib1Parameter>

<grib1Parameter>
<center>58</center>
```

```
<grib1TableVersion>2</grib1TableVersion>
<grib1Value>2</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>3</grib2category>
<grib2Value>1</grib2Value>
</grib1Parameter>

<grib1Parameter>
<center>58</center>
<grib1TableVersion>2</grib1TableVersion>
<grib1Value>32</grib1Value>
<grib2discipline>0</grib2discipline>
<grib2category>2</grib2category>
<grib2Value>1</grib2Value>
</grib1Parameter>
```

- Cave VolumeBrowser Config file:

/awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="NAVGEM-Gbl1deg" category="Volume" />
```

(26)NCEP-GFSEns1deg

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_NCEP-7.xml
    - datasets:
      - NCEP-GFSEns1deg(NCEP-GFSEns1deg)
- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="NCEP-GFSEns1deg">NCEP-GFSEns1deg</alias>
```

- modelname definition:
  - gribModels_NCEP-7.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_NCEP-7.xml
    - models:
      - NCEP-GFSEns1deg:
        - center=7
        - subcenter=2
        - grid=3
        - process=107

- model projection definition:
  - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
  - projectid definition file:
    - grid3.xml
      - gridid=3
      - nx,ny= 360,181
      - dx,dy=1.0,1.0
      - corners(la1,lo1)(la2,lo2)=(90,0)(-90,359)

- Rawdata location in NCEP Website
  - NCEP Ensemble website: http://www.nco.ncep.noaa.gov/pmb/products/gens/
  - Description:
    - Control gec00.tCCz.pgrb2afxxx
    - 20 Perturbed forecasts gepNN.tCCz.pgrb2afxxx
    - 1.0 deg Ensemble Mean geavg.tCCz.pgrb2afxxx
    - 1.0 deg Ensemble Spread gespr.tCCz.pgrb2afxxx

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="NCEP-GFSEns1deg" category="Volume" />
```

(27)FIFOW-SATC

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_FIFOW-138.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_FIFOW-138.xml
    - datasets:
      - FIFOW-SATC(FIFOW-SATC)
- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="FIFOW-SATC">FIFOW-SATC</alias>
```

- modelname definition:
  - gribModels_FIFOW-138.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_FIFOW-138.xml
    - models:
      - FIFOW-SATC:
        - center=138
        - subcenter=0
        - grid=255886
        - process=201

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - FIFOW.xml
            - gridid=255886
            - Lamber Conformal
            - nx,ny= 260,260
            - dx,dy=2.488(km),2.531(km)
            - lat1,lon1=(20.79,117.55)
            - loV=120.0
            - latD=23.5
            - Latin1=23.5
            - Latin2=23.5

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="FIFOW-SATC" category="Volume" />
```

(28)FIFOW-OKKR

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_FIFOW-138.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_FIFOW-138.xml
    - datasets:
      - FIFOW-OKKR(FIFOW-OKKR)
- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="FIFOW-OKKR">FIFOW-OKKR</alias>
```

- modelname definition:
  - gribModels_FIFOW-138.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_FIFOW-138.xml
    - models:
      - FIFOW-OKKR:
        - center=138
        - subcenter=0
        - grid=255886
        - process=202

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - FIFOW.xml
            - gridid=255886
            - Lamber Conformal
            - nx,ny= 260,260
            - dx,dy=2.488(km),2.531(km)
            - lat1,lon1=(20.79,117.55)
            - loV=120.0
            - latD=23.5
            - Latin1=23.5
            - Latin2=23.5

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="FIFOW-OKKR" category="Volume" />
```

(29)FIFOW-UCKR

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_FIFOW-138.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_FIFOW-138.xml
    - datasets:
      - FIFOW-UCKR(FIFOW-UCKR)
- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="FIFOW-UCKR">FIFOW-UCKR</alias>
```

- modelname definition:
  - gribModels_FIFOW-138.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_FIFOW-138.xml
    - models:
      - FIFOW-UCKR:
        - center=138
        - subcenter=0
        - grid=255886
        - process=203

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - FIFOW.xml
            - gridid=255886
            - Lamber Conformal
            - nx,ny= 260,260
            - dx,dy=2.488(km),2.531(km)
            - lat1,lon1=(20.79,117.55)
            - loV=120.0
            - latD=23.5
            - Latin1=23.5
            - Latin2=23.5

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="FIFOW-UCKR" category="Volume" />
```

(30)FIFOW-UKKR

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_FIFOW-138.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_FIFOW-138.xml
    - datasets:
      - FIFOW-UKKR(FIFOW-UKKR)
- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="FIFOW-UKKR">FIFOW-UKKR</alias>
```

- modelname definition:
  - gribModels_FIFOW-138.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_FIFOW-138.xml
    - models:
      - FIFOW-UKKR:
        - center=138
        - subcenter=0
        - grid=255886
        - process=204

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - FIFOW.xml
            - gridid=255886
            - Lamber Conformal
            - nx,ny= 260,260
            - dx,dy=2.488(km),2.531(km)
            - lat1,lon1=(20.79,117.55)
            - loV=120.0
            - latD=23.5
            - Latin1=23.5
            - Latin2=23.5

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="FIFOW-UKKR" category="Volume" />
```

(31)FIFOW-STMS

- inputdata filter rules definition file:
  /awips2/edex/data/utility/edex_static/base/distribution/ncgrib.xml

- datasets definition:
  - gribDatasets_FIFOW-138.xml
    - localization:
      /awips2/edex/data/utility/common_static/base/grid/datasetInfo/gribDatasets_FIFOW-138.xml
    - datasets:
      - FIFOW-STMS(FIFOW-STMS)
- d2d title definition file:
  /awips2/edex/data/utility/common_static/base/grid/
  dataset/alias/d2d-title.xml

```
<alias base="FIFOW-STMS">FIFOW-STMS</alias>
```

- modelname definition:
  - gribModels_FIFOW-138.xml
    - localization:
      /awips2/edex/data/utility/edex_static/base/grib/models/gribModels_FIFOW-138.xml
    - models:
      - FIFOW-STMS:
        - center=138
        - subcenter=0
        - grid=255886
        - process=205

- model projection definition:
    - localization: /awips2/edex/data/utility/edex_static/base/grib/grids
    - projectid definition file:
        - FIFOW.xml
            - gridid=255886
            - Lamber Conformal
            - nx,ny= 260,260
            - dx,dy=2.488(km),2.531(km)
            - lat1,lon1=(20.79,117.55)
            - loV=120.0
            - latD=23.5
            - Latin1=23.5
            - Latin2=23.5

- Cave VolumeBrowser Config file:
  /awips2/cave/plugins/com.raytheon.viz.volumebrowser/localization/volumebrowser/VbSources.xml

```
<vbSource key="FIFOW-STMS" category="Volume" />
```

4. Statellite Data Ingest

4.1. Satellite Data Ingest relative awips2 plugin

4.1.1 regionalsat

- **regionsat satellite data format**
  - ➢**refer to polar2grid opensource project.**
  - ➢**add awips2 global attributes into awips1 netcdf:**
    - **channel**
    - **source**
    - **statelliteName**
  - ➢**new netcdf format is compatible with awips1 and awips2.**
- **inputdata filter rules definition file:**

  /awips2/edex/data/utility/edex_static/base/distribution/ regionalsat.xml

- **satellite data supplies definition file**

  /awips2/edex/data/utility/edex_static/base/satellite/regionalsat/ source.xml

- **satellite entities definition file:**

  /awips2/edex/data/utility/edex_static/base/satellite/regionalsat/ creatingEntities.xml

  - ➢**satellite entities are consist of satellitenames.**
- **satellite elements definition file:**

  /awips2/edex/data/utility/edex_static/base/satellite/regionalsat/ physicalElements.xml

  - ➢**satellite elements are consist of satellitename and channels.**
  - ➢**If "units" has been assigned to "IRPixel" , CAVE will refer to satellite Imagery Style in displaying this image.**

○ **satellite Imagery Style definition file:**

/awips2/edex/data/utility/cave_static/configured/CWB/styleRules/regionalsatImageryStyleRules.xml

➢**define the imagery style of the combines which are consist of satellite elements and satellite entities.**

○ **satellite menu definition files path:**

/awips2/edex/data/utility/cave_static/configured/CWB/menus/satellite

➢**define the attributes of satellite elements in awips2 CAVE menu.**

4.2 Satelllite data Ingest Example

4.2.1 MTSAT.IR4.ASA

- **Add MTSAT.IR4.ASA netcdf filename filter rule into regionalsat.xml.**

  regionalsat.xml is put in the directory /awips2/edex/data/utility/edex_static/base/ distribution .

- **Add CWB satellite data supply source into source.xml**.

source.xml is put in the directory /awips2/edex/data/utility/edex_static/base/satellite/regionalsat .

```
<source>
  <map>

<entry><key>Source</key><value>MSC</value></entry>
  </map>
</source>
```

- **Add MTSAT satellitename into creatingEntities.xml.**

  creatingEntities.xml is put in the directory

/awips2/edex/data/utility/edex_static/base/satellite/regionalsat.

```
<creatingEntities>
<map>
<entry><key>DMSP</key><value>DMSP</value></entry>
<entry><key>MTSAT</key><value>MTSAT</value></entry>
<entry><key>FY2D</key><value>FY2D</value></entry>
<entry><key>FY2E</key><value>FY2E</value></entry>
```

```
<entry><key>FY2F</key><value>FY2F</value></entry
>
<entry><key>NOAA18</key><value>NOAA18</value><
/entry>
<entry><key>NOAA19</key><value>NOAA19</value><
/entry>
<entry><key>TERRA</key><value>TERRA</value></e
ntry>      <entry><key>TRMM-
TMI</key><value>TRMM-TMI</value></entry>
<entry><key>COMS</key><value>COMS</value></ent
ry>
<entry><key>AQUA</key><value>AQUA</value></entr
y>
</map>
</creatingEntities>
```

- **Add MTSAT.IR4.ASA element into** physicalElements.xml**.**
  physicalElements.xml is put in the directory /awips2/edex/data/utility/edex_static/base/satellite/regionalsat.

```
<entry><key channel=”VIS.ASA”
satName=”MTSAT”/><value
name=”MTSAT.VIS.ASA” /></entry>
<entry><key channel=”EVIS.ASA”
satName=”MTSAT”/><value
name=”MTSAT.EVIS.ASA” /></entry>
<entry><key channel=”IR1.ASA”
satName=”MTSAT”/><value
name=”MTSAT.IR1.ASA” units=”IRPixel”/></entry>
<entry><key channel=”IR2.ASA”
satName=”MTSAT”/><value
name=”MTSAT.IR2.ASA” units=”IRPixel”/></entry>
<entry><key channel=”IR4.ASA”
satName=”MTSAT”/><value
name=”MTSAT.IR4.ASA”
units=”IRPixel”/></entry>
<entry><key channel=”WV.ASA”
satName=”MTSAT”/><value
```

```
name=”MTSAT.WV.ASA” /></entry>
<entry><key channel=”Channel 4-5 IR”
satName=”MTSAT”/><value name=”Channel 4-5 IR”
/></entry>
```

- **Add MTSAT.IR4.ASA satellite Imagery style into regionalsatImageryStyleRules.xml.**

  regionalsatImageryStyleRules.xml is put in the directory

  /awips2/edex/data/utility/cave_static/configured/CWB/styleRules.

```
<styleRule>
 <paramLevelMatches>
   <parameter>MTSAT.IR1.ASA</parameter>
   <creatingEntity>MTSAT</creatingEntity>
 </paramLevelMatches>
 <imageStyle>
   <range scale=”LINEAR”>
   <minValue>1</minValue>
   <maxValue>254</maxValue>
   </range>
   <defaultColormap>Sat/IR/CIRA (IR
Default)</defaultColormap>
 </imageStyle>
</styleRule>
<styleRule>
 <paramLevelMatches>
   <parameter>MTSAT.IR2.ASA</parameter>
   <creatingEntity>MTSAT</creatingEntity>
 </paramLevelMatches>
 <imageStyle>
   <range scale=”LINEAR”>
   <minValue>1</minValue>
   <maxValue>254</maxValue>
   </range>
   <defaultColormap>Sat/IR/CIRA (IR
Default)</defaultColormap>
```

```
 </imageStyle>
</styleRule>
<styleRule>
 <paramLevelMatches>
   <parameter>MTSAT.IR4.ASA</parameter>
   <creatingEntity>MTSAT</creatingEntity>
 </paramLevelMatches>
 <imageStyle>
   <range scale=”LINEAR”>
   <minValue>1</minValue>
   <maxValue>254</maxValue>
   </range>
   <defaultColormap>Sat/IR/CIRA (IR
Default)</defaultColormap>
 </imageStyle>
</styleRule>
```

- Add MTSAT.IR4.ASA relative menu items into awips2 CAVE.

(4) **Add the attributes of MTSAT.IR4.ASA element into baseMTSATImagery.xml**

baseMTSATImagery.xml is put in the directory /awips2/edex/data/utility/cave_static/site/CWB/menus/satellite/regionalsat.

```
<contribute xsi:type=”131ilenam” menuText=”MTSAT IR4 “>
        <contribute xsi:type=”placeholder”
                          menuText=”IR4.ASA”
                          id=”MTSATch4Line”/>
        <contribute xsi:type=”bundleItem”
                    file=”bundles/DefaultSatellite.xml”
                    menuText=”asa” id=”asaSector”>
              <substitute key=”element”
                    value=”MTSAT.IR4.ASA”/>
              <substitute key=”sector” value=”asa”/>
              <substitute key=”entity” value=”MTSAT”/>
              <substitute key=”colormap”
                    value=”Sat/IR/CIRA (IR Default)”/>
```

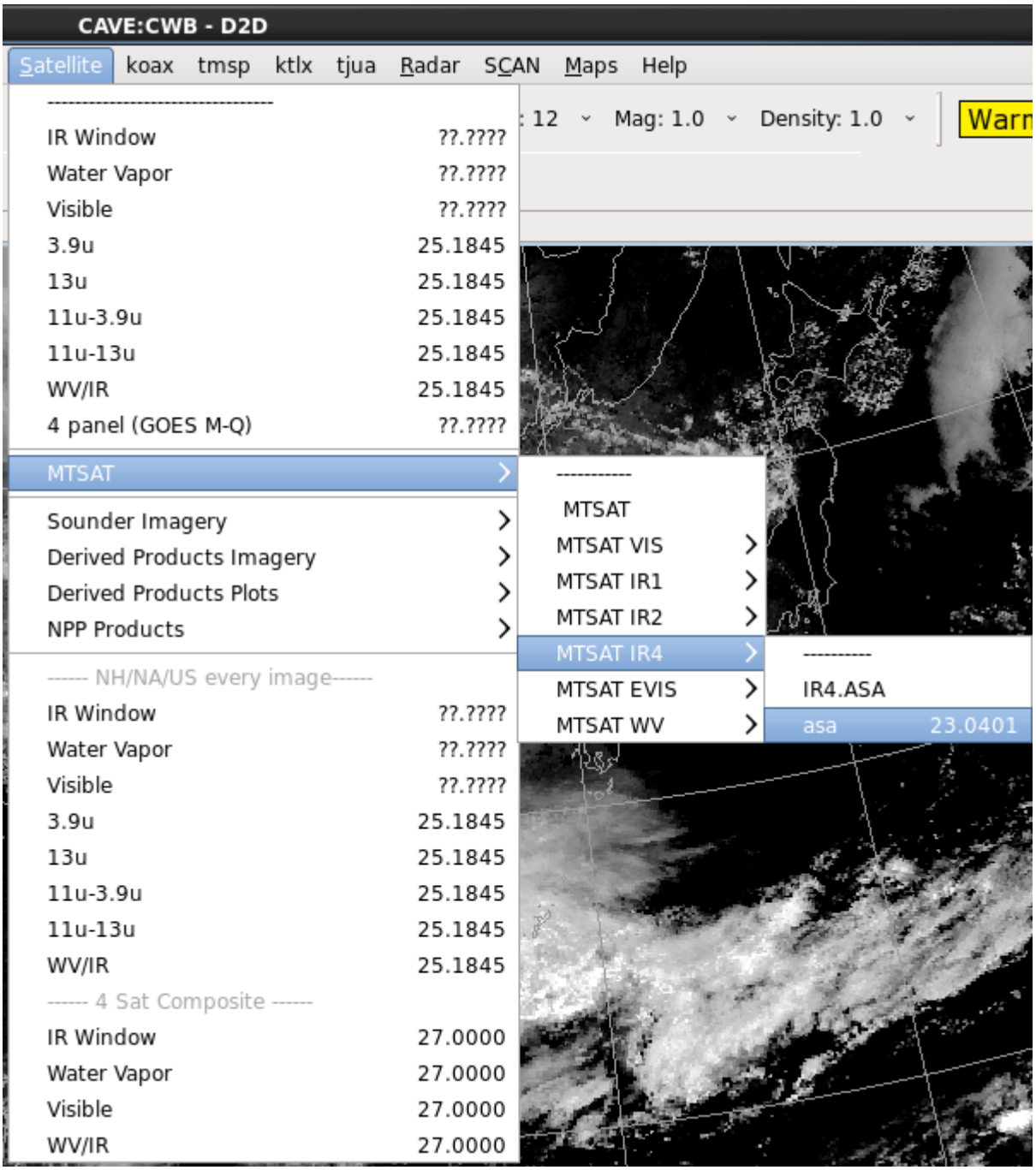
```
                    </contribute>
            </contribute>
```

(2) **Add the path of baseMTSATImagery.xml into baseComposite.xml.**

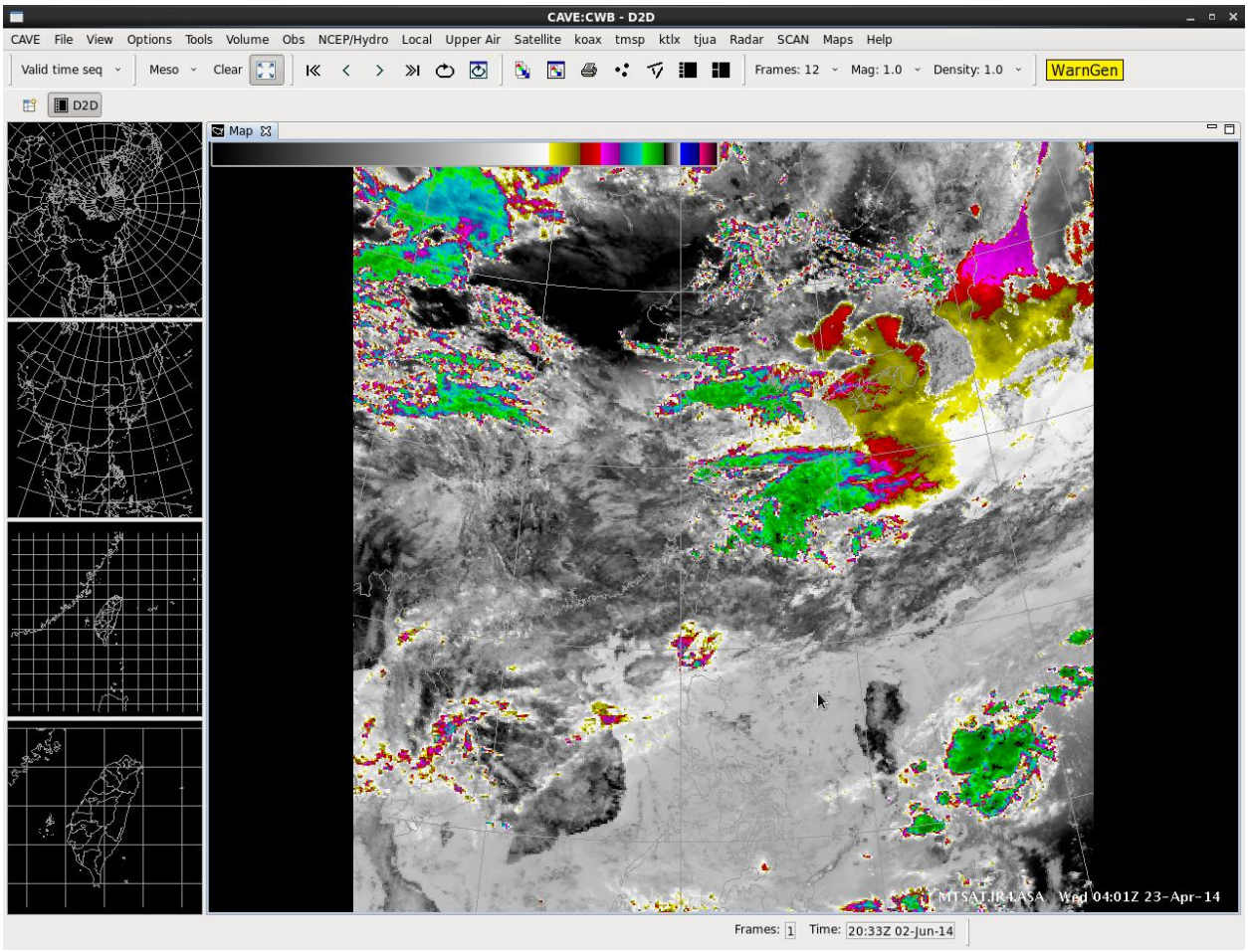
baseComposite.xml is put in the directory /awips2/edex/data/utility/cave_static/site/CWB/menus/satellite.

```
<contribute
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="subinclude"
132ilename="menus/satellite/regionalsat/baseMTSATImagery.xml"/>
```

- MTSAT.IR4.ASA product item in awips2 CAVE(screenshot)



- MTSAT.IR4.ASA product screenshot

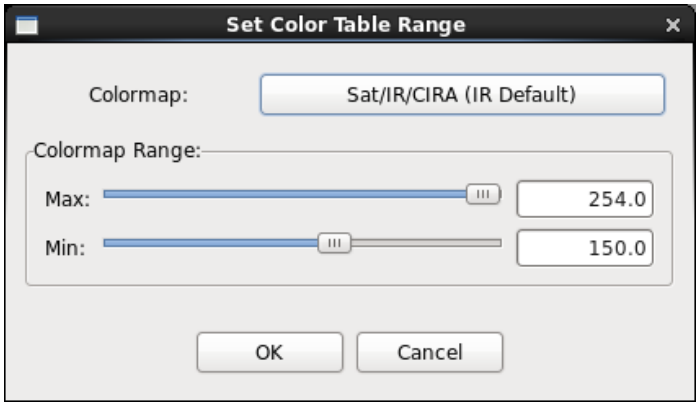


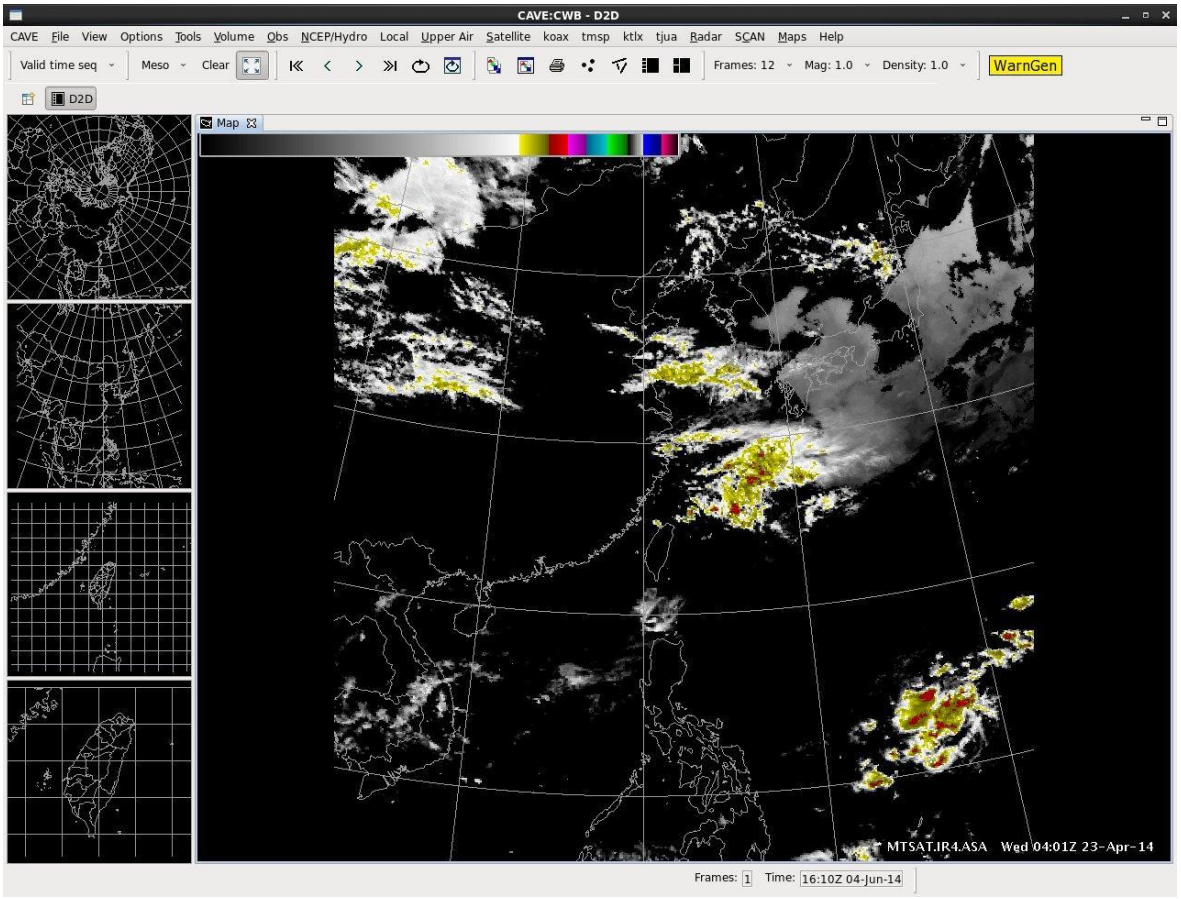
- **Try to modify MTSAT.IR4.ASA satellite Imagery style in regionalsatImageryStyleRules.xml.**

```
<styleRule>
 <paramLevelMatches>
  <parameter>MTSAT.IR4.ASA</parameter>
  <creatingEntity>MTSAT</creatingEntity>
 </paramLevelMatches>
 <imageStyle>
  <range scale=”LINEAR”>
        <minValue>150</minValue>
        <maxValue>254</maxValue>
  </range>
  <defaultColormap>Sat/IR/CIRA (IR
Default)</defaultColormap>
 </imageStyle>
```

```
</styleRule>
```

- **To get** MTSAT.IR4.ASA product screenshot again.





4.2.2 DMSP.f16.ssmis091GHzH

- **Add DMSP.f16.ssmis091GHzH netcdf filename filter rule into regionalsat.xml.**
  regionalsat.xml is put in the directory /awips2/edex/data/utility/edex_static/base/ distribution .

- **Add DMSP satellitename into creatingEntities.xml.**
  creatingEntities.xml is put in the directory

/awips2/edex/data/utility/edex_static/base/satellite/regionalsat.

```
<creatingEntities>
<map>
<entry><key>DMSP</key><value>DMSP</value></entry>
<entry><key>MTSAT</key><value>MTSAT</value></entry>
<entry><key>FY2D</key><value>FY2D</value></entry>
<entry><key>FY2E</key><value>FY2E</value></entry>
<entry><key>FY2F</key><value>FY2F</value></entry>
<entry><key>NOAA18</key><value>NOAA18</value></entry>
<entry><key>NOAA19</key><value>NOAA19</value></entry>
<entry><key>TERRA</key><value>TERRA</value></entry>
<entry><key>TRMM-TMI</key><value>TRMM-TMI</value></entry>
<entry><key>COMS</key><value>COMS</value></entry>
<entry><key>AQUA</key><value>AQUA</value></entry>
</map>
</creatingEntities>
```

- **Add DMSP.f16.ssmis091GHzH element into** physicalElements.xml**.**
  physicalElements.xml is put in the directory

  /awips2/edex/data/utility/edex_static/base/satellite/regionalsat.

```
<entry><key channel="F16.SSMIS.MW.89GHzH"
satName="DMSP"/><value
name="DMSP.f16.ssmis091GHzH" /></entry>
<entry><key channel="F16.SSMIS.MW.89GHzV"
satName="DMSP"/><value
name="DMSP.f16.ssmis091GHzV" /></entry>
```

- **Add DMSP.f16.ssmis091GHzH satellite Imagery style into regionalsatImageryStyleRules.xml.**
  regionalsatImageryStyleRules.xml is put in the directory /awips2/edex/data/utility/cave_static/site/CWB/styleRules.

```
<styleRule>
 <paramLevelMatches>
   <parameter>DMSP.f16.ssmis091GHzH
(K)</parameter>
 </paramLevelMatches>
 <imageStyle>
   <range scale="LINEAR">
   <minValue>0</minValue>
   <maxValue>255</maxValue>
   </range>
   <defaultColormap>Sat/Skin Temp/Skin Temp -
New CIMSS Table</defaultColormap>
   <dataMapping>
   <entry pixelValue="0" displayValue="180."
label="K"  operator="i" />
   <entry pixelValue="255" displayValue="320."
label="K" operator="i" />
   </dataMapping>
```

```
    <colorbarLabeling>
    <values>180. 195. 210. 225. 240. 255. 270. 285.
300. 315. 320.</values>
    </colorbarLabeling>
   </imageStyle>
</styleRule>
```

- Add **DMSP.f16.ssmis091GHzH** relative menu items into awips2 CAVE.

  (1) **Add the attributes of DMSP.f16.ssmis091GHzH element into baseDMSPImagery.xml**

  baseDMSPImagery.xml is put in the directory /awips2/edex/data/utility/cave_static/site/CWB/menus/satellite/regionalsat.

```
<contribute xsi:type="subMenu"
menuText="DMSP">
        <contribute xsi:type="placeholder"
                        menuText=" DMSP "
id="DMPSLine"/>
        <contribute xsi:type="bundleItem"
file="bundles/DefaultSatellite.xml"
                menuText="amsubch1"
id="amsubch1Sector">
                <substitute key="element"
value="DMSP.f16.ssmis091GHzH (K)"/>
                <substitute key="sector"
value="amsubch1"/>
                <substitute key="entity"
value="DMSP"/>
                <substitute key="colormap"
value="Sat/Skin Temp/Skin Temp - New CIMSS
Table"/>
        </contribute>
</contribute>
```

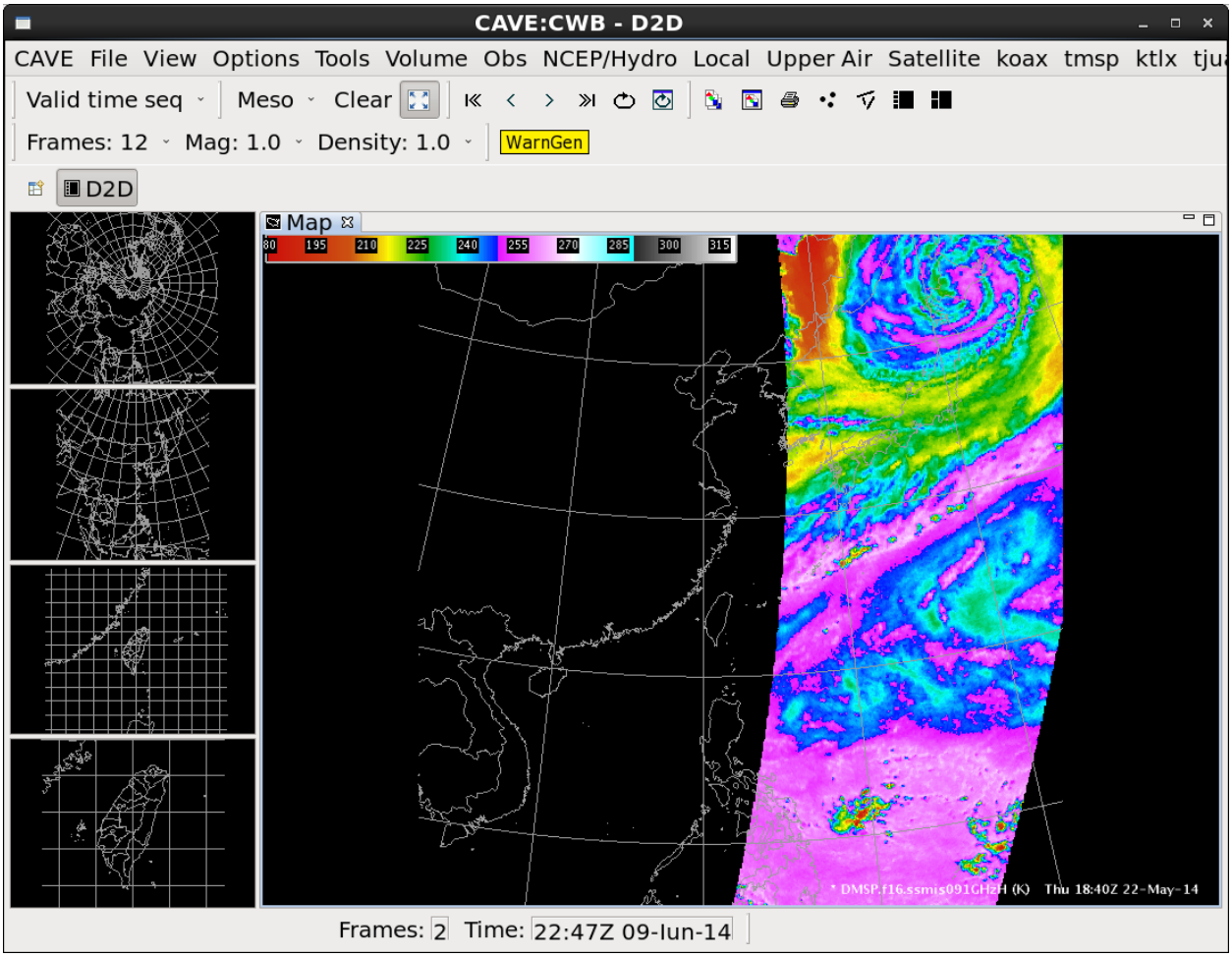
(2) **Add the path of baseDMSPImagery.xml into baseComposite.xml.**

baseComposite.xml is put in the directory /awips2/edex/data/utility/cave_static/site/CWB/menus/satellite.

```
<contribute xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="subinclude" fileName="menus/satellite/regionalsat/baseDMSPImagery.xml"/>
```

- **DMSP.f16.ssmis091GHzH** product item in awips2 CAVE(screenshot)

- **DMSP.f16.ssmis091GHzH** product screenshot



5. Point Data Relative Issue

5.1 Point Data Ingest Example:bufrua

5.1.1 bufrua input file feature

- **Format:**
  bufr
- **Utility of getting the information of input file:**
  bufrscan (in GrADS project)
- **Utility Install instructions :**

0. First copy the libnetcdf.so.6.0.0 into the directory /usr/lib64 . Then Use below command to create a symbolic link of netcdf library.

#ln –s /usr/lib64/libnetcdf.so.6.0.0 /usr/lib64//usr/lib64/libnetcdf.so.6

2. Install grads-2.0-0.a9.1.el6.x86_64.rpm rpm package.To get the grads rpm information through pkgs.org website.

rpm –ihv grads-2.0-0.a9.1.el6.x86_64.rpm –nodeps

- Utility of bufr tables
  The utility need some bufr tables to decode and get the information. The bufr tables can be downloaded from
  http://www.nco.ncep.noaa.gov/pmb/codes/nwprod/gempak/nawips2/gempak/tables/melbufr/
- Utility Usage:
  For example:

```
$> /usr/bin/bufrscan –h
~/Downloads/tables
~/IUSZ46_KWBC_181830_31584418.bufr.2014071818

>>> processing message 0
```

>>> start of message
3 01 001 (sequence)
0 01 001 (numeric) WMO block number
0 01 002 (numeric) WMO station number
0 02 011 (numeric) Radiosonde type
0 02 012 (numeric) Radiosonde computational method
3 01 011 (sequence)
0 04 001 (numeric) Year
0 04 002 (numeric) Month
0 04 003 (numeric) Day
3 01 012 (sequence)
0 04 004 (numeric) Hour
0 04 005 (numeric) Minute
3 01 024 (sequence)
0 05 002 (numeric) Latitude (coarse accuracy)
0 06 002 (numeric) Longitude (coarse accuracy)
0 07 001 (numeric) Height of station (see Note 1)
1 01 040 (replicate next 1, 40 times)
3 03 011 (sequence)
0 07 003 (numeric) Geopotential
0 08 001 (numeric) Vertical sounding significance
0 11 001 (numeric) Wind direction
0 11 002 (numeric) Wind speed
1 01 040 (replicate next 1, 40 times)
3 03 012 (sequence)
0 07 004 (numeric) Pressure

```
 0 08 001  (numeric)  Vertical
sounding significance
 0 11 001  (numeric)  Wind direction
 0 11 002  (numeric)  Wind speed


<<< end of message
```

- **input filename rules**

/awips2/edex/data/utility/edex_static/base/distribution/bufrua.xml

```
<requestPatterns xmlns:ns2=”group”>
        <regex>^IUSZ[0-9][123468].*</regex>
        <regex>^IUSY4[123468].*</regex>
</requestPatterns>
```

5.1.2 edex decoder and database access

- edex database name
  awips.bufrua
- data decoder and database access plugins
  (1) com.raytheon.edex.plugin.bufrua
  (2) com.raytheon.uf.common.dataplugin.bufrua

- **Correct the difference between the heights of observation and the significant wind heights.**
  - **Reason**

  Some UAObs are incorrectly encoded so the Significant
Wind heights are multiples of 300 meters when in fact the observations were really taken at multiples of 1000 feet. This list specifies all affected sites and the corresponding conversion factor.
  - Relative Program

(com.raytheon.edex.plugin.bufrua.util)

SigWindHeightConversionManager.java

- Relative Configuration

/awips2/edex/data/utility/edex_static/base/bufrua/
sigWindHeightConversion.xml

```
<sigWindHeightConversionList>
 <!--Omaha, NE (KOAX) -->
 <conversion stationId="72558" factor="1.016" />
</sigWindHeightConversionList>
```

- **purge data rules**

/awips2/edex/data/utility/common_static/base/purge/
bufruaPurgeRules.xml

```
<purgeRuleSet>
        <defaultRule>
                <versionsToKeep>21</versionsToKeep>
                <delta>=00-01:00:00</delta>
                <round>00-01:00:00</round>
        </defaultRule>
</purgeRuleSet>
```

5.2 Point data Display Control Example:bufrua

5.2.1 Check the upperair relative menu 144onfiguration

/awips2/edex/data/utility/cave_static/configured/OAX/menus/upperair/
baseUpperAir.xml

```
<contribute xsi:type=”bundleItem”
file=”bundles/UpperAirPlot.xml”
                menuText=”500 hPa” id=”500hPa”
                productInterval=”14400”
productOffset=”7200”>
                <dataURI>/bufrua/%/2020/%</dataURI>
                <substitute key=”levelKey” value=”500MB”/>
                <substitute key=”plotSource” value=”raob 500”/>
</contribute>
```

5.2.2 Check UpperAirPlot bundles

/awips2/cave/data/utility/cave_static/configured/OAX/bundles/UpperAirPlot.xml

```
<bundle>
    <displayList>
        <displays xsi:type="d2DMapRenderableDisplay"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
            <descriptor xsi:type="mapDescriptor">
            <resource>
            <loadProperties loadWithoutData="true"/>
                <properties isSystemResource="false"
                    isBlinking="false"
                    isMapLayer="false"
isHoverOn="false"
                    isVisible="true" />
                <resourceData
xsi:type="plotResourceData"
                    levelKey="${levelKey}"
                    plotSource="${plotSource}"

plotModelFile="${plotModelFile;raobUpperDesign}.svg"

    isUpdatingOnMetadataOnly="true"

isRequeryNecessaryOnTimeMatch="true">
                    <binOffset posOffset="3600"
                        negOffset="3600"
virtualOffset="0"/>
                    <metadataMap>
                        <mapping
key="reportType">
                            <constraint

constraintValue="2020"
```

```
constraintType=”EQUALS” />
                                        </mapping>
                                        <mapping
key=”pluginName”>
                                                <constraint

constraintValue=”bufrua”

constraintType=”EQUALS” />
                                        </mapping>
                                    </metadataMap>
                                </resourceData>
                            </resource>
                            </descriptor>
                        </displays>
                    </displayList>
</bundle>
```

PS: “reportType=2020” represents Mandatory,Troppause and MaxWind three features.

5.2.3 Check plotModels Files .

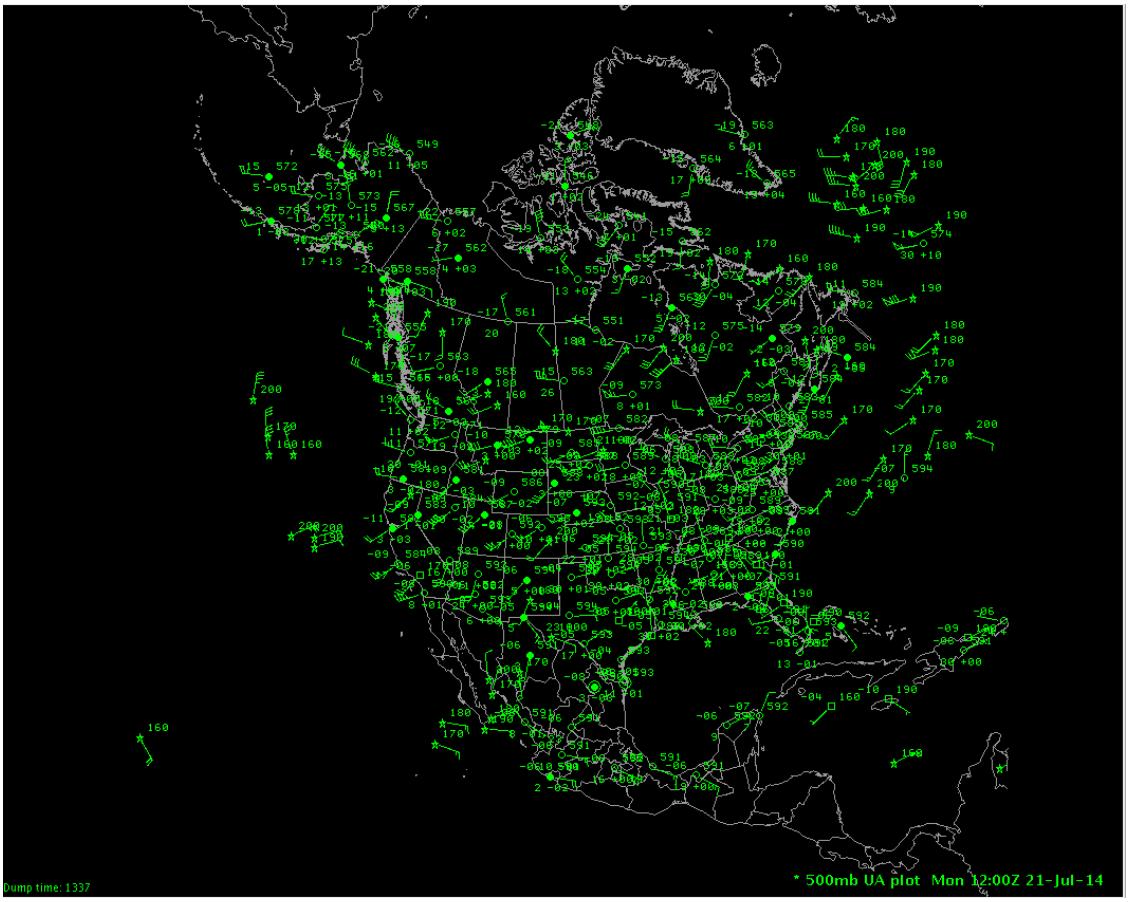
It control the display style of these products.

/awips2/cave/data/utility/cave_static/configured/OAX//plotModels/raobUpperDesign.svg

```
<svg width=”90” height=”90”
viewBox=”0 0 90 90”
overflow=”visible”
xmlns=”http://www.w3.org/2000/svg”
xmlns:xlink=”http://www.w3.org/1999/xlink” style=”stroke: rgb(255, 255, 255);”>
  <defs>
<style type=”text/css”>
<![CDATA[
          @font-face { font-family: “WindSymbolFont”;
          src: url(WindSymbols.svg#WindSymbols); }
          @font-face { font-family: “StandardFont”;
          src: url(Standard.svg#Standard); }
          @font-face { font-family: “WxSymbolFont”;
          src: url(WxSymbols.svg#WxSymbols); }
          @font-face { font-family: “SpecialSymbolFont”;
          src: url(SpecialSymbols.svg#SpecialSymbols); }
          text.barb
          {
          fill: none;
          font-size: 1em;
          font-size: 1em;
          font-family: WindSymbolFont;
          }
          text.arrow
          {
          fill: none;
          font-size: 1em;
          font-size: 1em;
          font-family: WindSymbolFont;
          }
          text.text
          {
          fill: none;
          font-size: 1em;
          stroke-width: 1px;
          font-family: StandardFont;
          font-size: 1em;
          }
          text.weather
          {
          fill: none;
          font-size: 1em;
          stroke-width: 1px;
          font-family: WxSymbolFont;


          }
```

```
        text.special
        {
        fill: none;
        font-size: 1em;
        stroke-width: 1px;
        font-size: 1em;
        font-family: SpecialSymbolFont;
        }
]]>
</style>
<symbol overflow=”visible” id=”plotData” class=”info”>
 <text id=”station” plotMode=”sample” class=”text” plotParam=”staName” x=”0” y=”0”>0</text>
 <text id=”temperature” plotMode=”text” class=”text” plotParam=”T” plotUnit=”°C” plotFormat=”%3.0f”
style=”text-anchor: end;” x=”-10” y=”-10”>0</text>
 <text id=”GH” plotMode=”text” class=”text” plotParam=”GH” plotFormat=”%4.0f” plotUnit=”dam”
plotTrim=”1” x=”10” y=”-10” style=”text-anchor: start;”>0</text>
 <text id=”dewpoint” plotMode=”text” class=”text” plotParam=”DpD” plotFormat=”%3.0f” style=”text-
anchor: end;” x=”-10” y=”10”>0</text>
 <text id=”dd” plotMode=”range” class=”special” plotLookupTable=”raob_dd_char.txt” plotParam=”DpD”
x=”0” y=”0”>0</text>
 <g id=”windVaneText” plotMode=”barb” plotParam=”wSp,WD” plotUnit=”kn” x=”0” y=”0”
transform=”rotate(0,0,0)”>
        <text id=”windVaneText” class=”arrow” x=”0” y=”0”>0</text>
        <text id=”windArrowText” class=”barb” x=”0” y=”0”>arrow</text>
 </g>
 <text id=”station” plotMode=”text” class=”text” plotParam=”GH12hour” plotUnit=”dam”
plotFormat=”%+03.0f” style=”text-anchor: start;” x=”10” y=”10”>0</text>
</symbol>
</defs>
<use id=”wind” x=”45” y=”45” width=”90” height=”90” visibility=”visible” xlink:href=”#plotData”/>
</svg>
```

5.2.4 the screenshot of product “500mb UA plot”



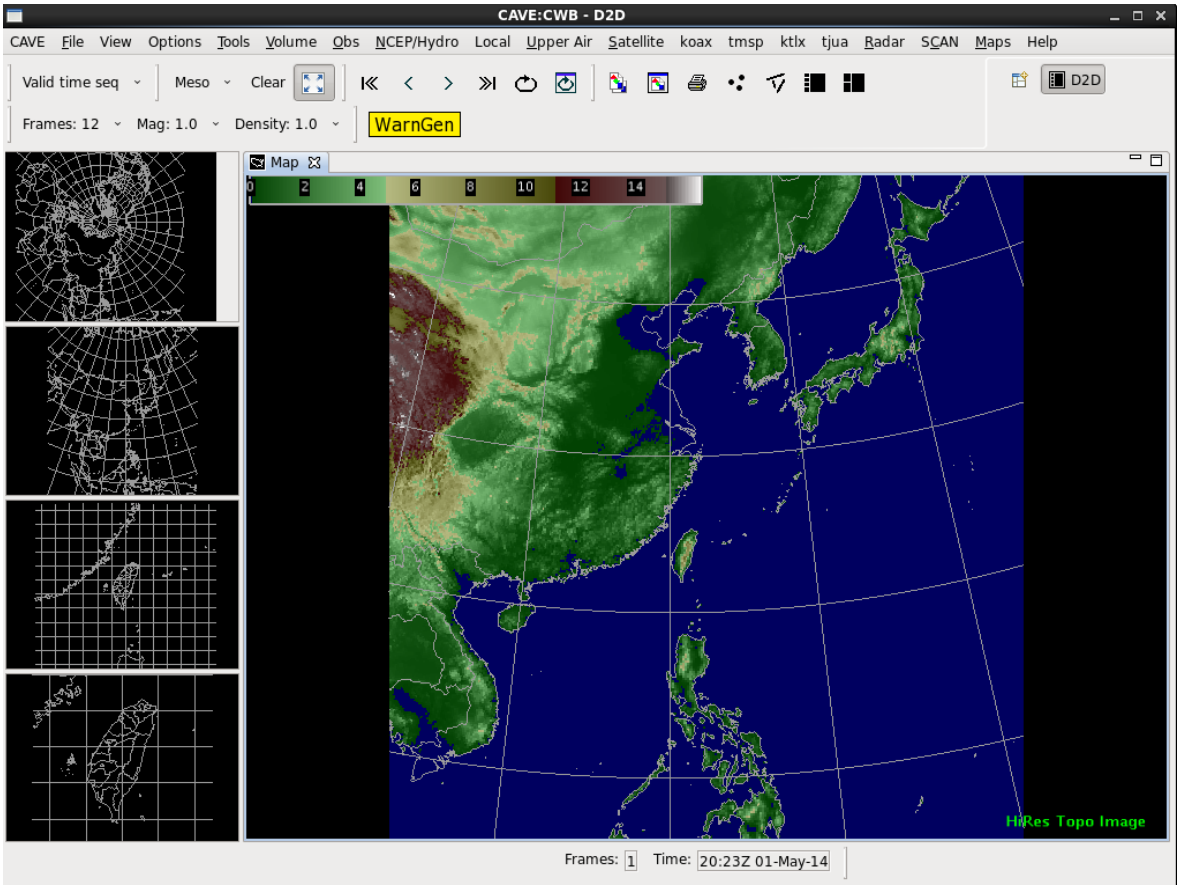
6.awips2 GFE for CWB

6.1 Config awips2 CAVE Topography for Global

- **copy the latest version of awips2 topographic pack(must include gtopo30.h5) to /awips2/edex/data/hdf5/topo**
- **make a symbolic link defaultTopo.h5 to worldTopo.dat.gz**

```
cd /awips2/edex/data/hdf5/topo
ln -s gtopo30.h5 defaultTopo.h5
```

- **restart awips2 edex server**
- **Display the HiRes Topo Image (Menu Item localization: Maps-> HiRes Topo Image) to test data.**



6.2.Config awips2 GFE scale projection for CWB

- **config siteConfig.py for CWB**

```
import os, socket


GFESUITE_HOME = os.environ['EDEX_HOME']+"/../GFESuite"
GFESUITE_SERVER = "localhost"
GFESUITE_PORT   = '98000000'
GFESUITE_SITEID = 'CWB'
GFESUITE_PRDDIR = GFESUITE_HOME+"/products"
GFESUITE_MHSID  = 'CWB'
GFESUITE_LOGDIR = GFESUITE_HOME+'/logs/'+GFESUITE_SITEID
```

- **Add two grid definitions into serverConfig for CWB**

```
MarineProj = ('MarineProj', LAMBERT_CONFORMAL, (110.0, 9.6),
        (126.65, 35.99), (120.0, 23.5), 23.5, 23.5, (1, 1), (161, 261),
        0.0,0.0, 0.0)


TWHRProj = ('TWHRProj', LAMBERT_CONFORMAL, (117.55,
20.79), (123.92, 26.66),
        (120.0, 23.5), 23.5, 23.5, (1, 1), (261, 261), 0.0, 0.0, 0.0)


# list of all projections
allProjections = [Grid201, Grid202, Grid203, Grid204, Grid205,
Grid206,
Grid207, Grid208, Grid209, Grid210, Grid211, Grid212, Grid213,
Grid214,
Grid214AK, Grid215, Grid216, Grid217, Grid218, Grid219, Grid221,
Grid222,
Grid225, Grid226, Grid227, Grid228, Grid229, Grid230, Grid231,
Grid232,
Grid233, Grid234, Grid235, HRAP, NDFD_Oceanic_10K,
MarineProj,TWHRProj]


#---------------------------------------------------------------------
#
#  Grid Domain configuration section
#
#---------------------------------------------------------------------
#
```

```
SITES={

        'CWBM' : ([160, 260], (1.00, 1.00), (160.0, 260.0),'Etc/GMT+8',
MarineProj,"wfo"),
        'CWB' : ([260, 260], (1.00, 1.00), (260.0, 260.0),'Etc/GMT+8',
TWHRProj,"wfo"),
}
```

- **Config localConfig.py for CWB**

```
# Copy to release/etc/SITE/localConfig.py

from serverConfig import *
import serverConfig

serverConfig.REQUEST_ISC = 0
serverConfig.REQUESTED_ISC_PARMS =
['T','Wind','Wx','Hazards']
serverConfig.REQUESTED_ISC_SITES =
['CWBM','CWB','BOU','GJT']
serverConfig.SEND_ISC_ON_SAVE = 0

SITES['CWB'] = ([260, 260], (1.00, 1.00), (260.0, 260.0), 'Etc/GMT+8',
TWHRProj)
SITES['CWBM'] = ([160, 260], (1.00, 1.00), (160.0, 260.0),
'Etc/GMT+8', MarineProj)
```

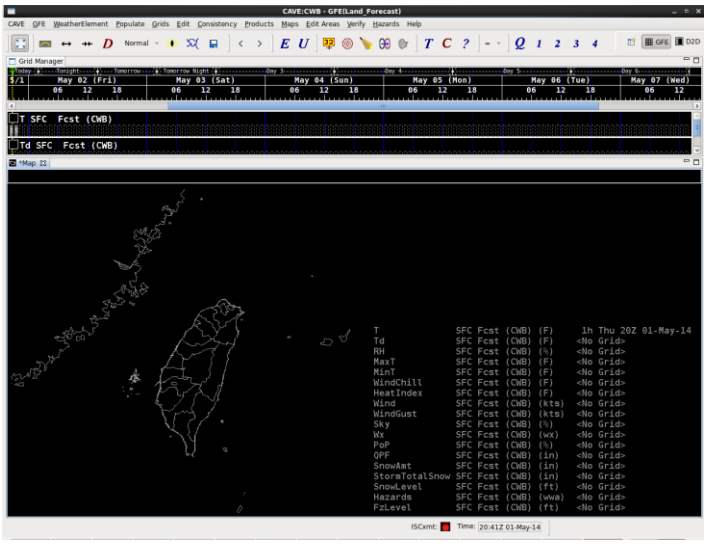
- **Restart edex server.**

6.3 Build awips2 GFE startup script Land_Forecast.py for CWB

- **Config Land_Forecast.py for CWB**

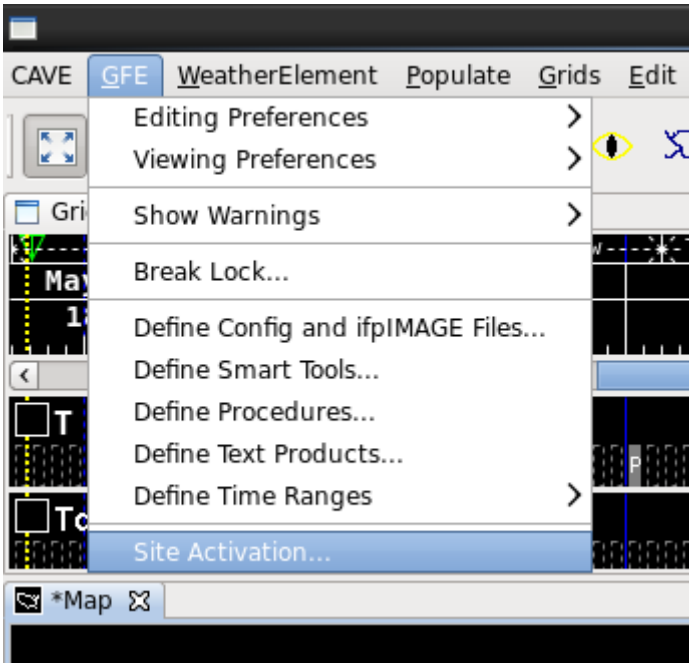
```
from gfeConfig import *


# Include override statements here. For example, to override the
# the DefaultGroup name ("Public") with "MyDefault", you would
include:
#DefaultGroup = "MyDefault"
MapBackgrounds_default =
['cwb_2010_5city_lonlat','cwb_countries']
```

- **Start up awips2 GFE to test.**

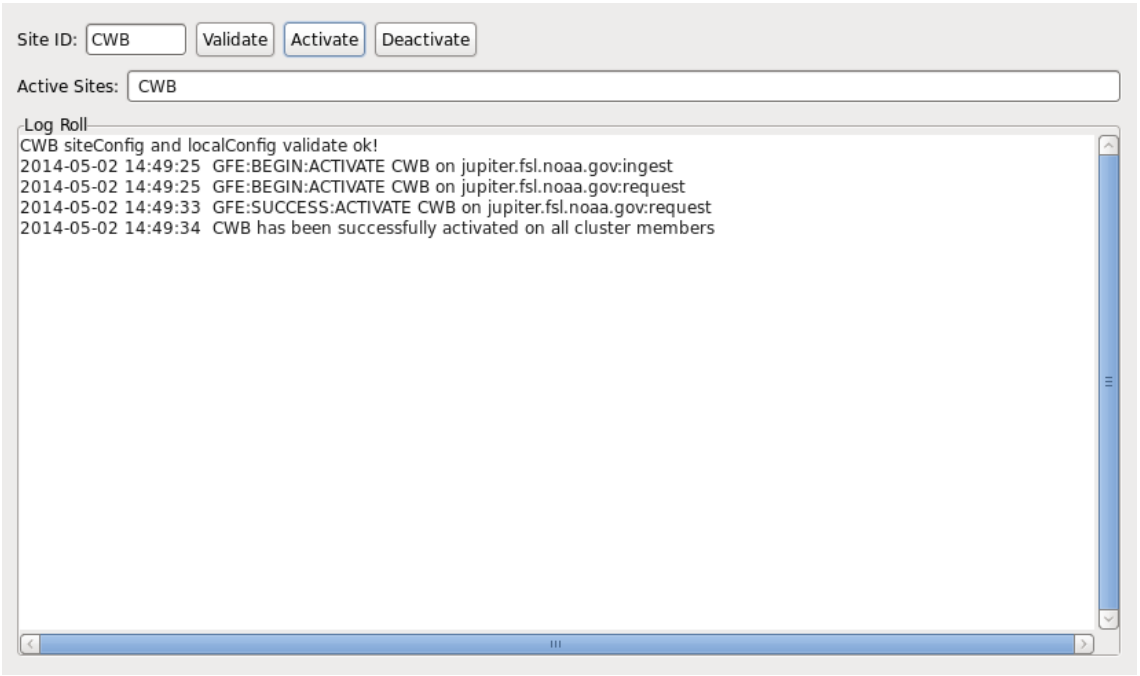


6.4 awips2 GFE site activation for CWB

- **Select GFE->Site Activation menu item on awips2 GFE.**



- **awips2 GFE Validate and Activate for CWB**



6.5 Add a new model data into awips2 GFE

- **Add the D2D model localition into the environment variable D2DMODELS in awips2 GFE serverConfig.py.**

```
TAIWAN_SITES = ['CWB', 'CWBM']
if SID in TAIWAN_SITES:
        D2DMODELS = [
                ('ECMF-NorthernHemisphere','ecmwf'),
                ]
```

- **Define the new model in awips2 GFE serverConfig.py**

```
ECMWF      = ('ECMWF',          GRID,   '', NO,  NO,  2, 0)
if not BASELINE and siteImport('localConfig'):
        TAIWANMODELS=['ECMWF']
        for modelName in TAIWANMODELS:
        exec "local" + modelName + "Parms = []"
        for modelName in INITMODULES.keys():
        exec "local" + modelName + "Parms = []"
        exec "local" + modelName + "Parms = getattr(localConfig,
'parms" + \
                modelName + "', local" + modelName + "Parms)"

ECMWFPARMS = [([Temp, RH, Wind], TC1)]

#---------------------------------------------------------------------------
# Databases for a site.
# list of (Database, [parms])
#---------------------------------------------------------------------------
DATABASES = [(Official, OFFICIALDBS + localParms),
        (Fcst, OFFICIALDBS + localParms),
        (Practice, OFFICIALDBS + localParms),
        (TestFcst, OFFICIALDBS + localParms),
        (LAPS, LAPSPARMS + localLAPSParms)
        (SAT, SATPARMS + localSATParms),
        (MSAS, MSASPARMS + localMSASParms),
        (ECMWF, ECMWFPARMS),
        (Test, OFFICIALDBS + localParms)] + localDBs
```

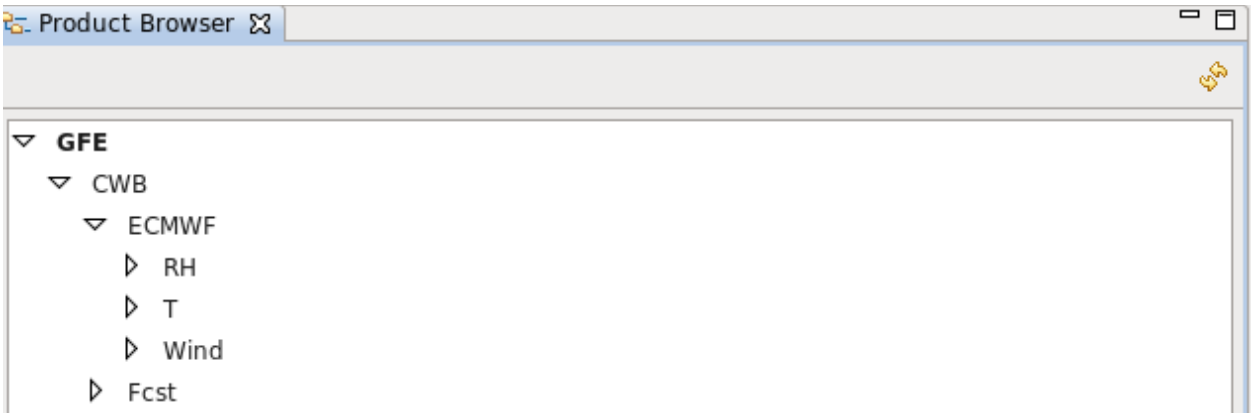
- **Config smartInit ECMWF.py**

```
from Init import *
##--------------------------------------------------------------------------
## Module that calculates surface weather elements from GFS80
model
## output.
##
##--------------------------------------------------------------------------
class ECMWFForecaster(Forecaster):
        def __init__(self):
        Forecaster.__init__(self, "ecmwf","ECMWF")
####-------------------------------------------------------------------------
#### These levels will be used to create vertical soundings.
These are
#### defined here since they are model dependent.
####-------------------------------------------------------------------------
        def levels(self):
        return ["MB850","MB700","MB500","MB200"]
####-------------------------------------------------------------------------
#### Calculates the temperature at the elevation indicated in the
topo
#### grid. This tool simply interpolates the temperature value
from
#### model's isobaric temperature cube.
####-------------------------------------------------------------------------
        def calcT(self, t_MB850):
        return t_MB850
####-------------------------------------------------------------------------
####  Calculates RH from the T and Td grids
####-------------------------------------------------------------------------
        def calcRH(self, rh_MB850):
        return rh_MB850
####-------------------------------------------------------------------------
####  Converts the lowest available wind level from m/s to knots
####-------------------------------------------------------------------------
        def calcWind(self, wind_MB850):
        mag = wind_MB850[0] * 1.94  # get the wind speed and
convert
        dir = wind_MB850[1]        # get wind dir
        return (mag, dir)     # assemble speed and dir into a tuple
def main():
        ECMWFForecaster().run()
```

- **Restart edex server**
- **Run ipfInit to init the new model**

```
/awips2/GFESuite/bin/ifpInit -s CWB -a ECMWF
```

- **Check the init data in CAVE product browser**



- **Check the model data in awips2 GFE**