McIDAS–X 2016.2 Programmer Notes

This file lists some of the software and structural changes included in McIDAS-X version 2016.2 that are most likely to affect your locally-developed McIDAS code.
(See *http://www.ssec.wisc.edu/mcidas/software/x/fastrack2016.2_changes.txt* for the complete list of code changes included in McIDAS-X 2016.2.)

SSEC recommends that you always compile and link all local code after installing each new version of McIDAS-X. Use the information below to determine if you should make additional changes or accommodations to your local code.

- This release includes servers, calibration and navigation modules for GOES-R netCDF formatted product data. There were updates to the performance of the servers for both imagery and product netCDF files. The servers are compatible with data from the Advance Baseline Imager (ABI) using the mission-standard naming convention or the CSPP Geo naming convention. New modules include:

  abincalb.inc   **abinparm.h**

  Existing modules requiring updates include:

  kbxabin.dlm   **abinadir.cp**   **abinaget.cp**   **SATBAND**
  SATANNOT   **isir.for**

- The navigation routines, **navapi.c, ssrange.c,** and **nvxabin.dlm,** were updated to calculate sun/satellite angles for GOES-R ABI data with the NAVCALC command.

- The McIDAS-XRD OMTP server routine, **omtpaget2.for**, was updated to correct a navigation shift when IMGCOPY was used.

- This release includes updates to the older Meteosat server (MSAT) to correctly report the start time of data for Meteosat satellite data stored in PDUS AREA format. Previously, the time reported was the end of the image rather than the image start time. Existing modules requiring updates include:

  msataget.cp   **MSAT.c**   **SDIUtil.c**   **SDIUtil.h**

- Meteosat-1 calibration (kbxmet.dlm) and navigation (nvxmet.dlm) modules were added, along with an update to SATBAND.

- The Himawari servers, **wariadir.cp** and **wariaget.cp**, were updated to report the correct image time for JAPAN and TARGET sector files.

- Navigation information was added so that the swath width of the Feng-Yun (FY) polar and Metop satellites can be displayed with NAVDISP. Existing modules updated:

  CORE.SAT   **navapi.c**   **SATANNOT**   **SATBAND**

- This release includes an update to the GINI servers to read the Unidata NEXRAD Level III national composite imagery data. This required the addition of the PNG libraries to be able to process the data. The new module included:

  ispnghed_.c

Existing modules requiring updates include:

```
giniadir.cp      giniaget.cp      giniutil.c      giniutil.h
makefile
```

- GRIB server enhancements were made to capture setrlimit errors and give an informational error message when it cannot process large grids due to limits in stack size on the server machine. Also, the **gribgget** binary for Windows 7 installations was post-processed with editbin.exe to set the stack size to 20000000. Existing modules updated:

```
addegribgdir.c   addegribgget.c   grib2func.c      gribfunc.c
mcgdir.for       mcgget.for
```

- GRIB server updates were made for the Model Output Statistics (MOS) and Storm Prediction Center (SPC) GRIB2 data. Other GRIB2 tables were updated for following models: RAP, NWPS, WPC, MOS, NAEF, and NGBR. Existing modules updated:

```
grib2func.c            gribfunc.c            grib2NavLookup.txt
grib2NCEPModels.txt
```

- The RAOBCON, RAOBPLOT, SFCCON, and SFCPLOT commands were updated to be compatible when DATASET= is used with an archive server that requires a day value. Existing modules updated:

```
raobcon.pgm      raobplot.pgm     sfccon.pgm       sfcplot.pgm
```

- The limit on the maximum number of points in a MD file was increased so PTCON will work with larger files. Existing modules updated:

```
mcfbarn.for      ptcon.pgm
```

- Changes were made to the upper air commands for compatibility with the new XCD servers. The commands had the MAXLVL variable changed from 250 to 400. Also, the **m0dslook.for** subroutine was regressed to a previous version because a check was not needed for the new XCD. Existing modules updated:

```
lanfit.for       m0dslook.for     mcsound.for      sdsort.for
sndaltim.pgm     sndhodo.pgm      sndlist.pgm      sndplot.pgm
sndskewt.pgm     uacross.pgm      uaedit.pgm       vrtfit.for
```

- The station database file was updated for a number of GFS MOS stations. With this change, the number of columns defined in the MOS schema files was increased to 2500. Existing modules updated:

```
DCGFSMOS         DCNAMMOS         STNDB.CORE
```

- Blizzard watches were added as a valid type in the WWDISP and WWLIST commands. Existing modules updated:

```
m0wwmisc.h       wwdisp.c         wwlist.c         wwmisc.c
```

- A new placeholder was defined for the FRMLABEL and ZA commands. The DESC placeholder now lists the band description of an image. Existing modules updated:

```
frmlabel.pgm     mcexptxt.for     za.pgm
```

- Subroutine changes were needed to handle long AREA file names when DIRFILE= is used. A fix was also made for 256-level radar files. Existing modules updated:

```
areaadirsub.for    m0auxi.for        m0auxl.for
```

- The McIDAS-X installation process was updated for compiling the GUI in Red Hat 7. "Linux 3" was added as a known kernel version in **tclcomp.sh** so rpath is set correctly.

- The **newplt.for** subroutine was updated to initialize the IDUM variable correctly.