



Flash Flood Monitoring and Prediction (FFMP)



Note on Localization

Purpose and History:

The "scan" localization switch creates most of the radar-specific data files needed to run the SCAN and FFMP applications on AWIPS. It was created for AWIPS Build 5.1.2, in an effort to consolidate old SCAN/FFMP localization functions into a central location, and to have an appropriate place in which to add new functionality. Much of the functionality present in this switch was formerly placed in the "auxFiles" switch, for lack of a better location. The "auxFiles" switch, however, performs other tasks unrelated to SCAN/FFMP. This would often cause unintended side effects when a site wanted to update their SCAN/FFMP localizations. There is no longer any SCAN/FFMP presence in "auxFiles".

Switch Changes from 5.1.2 to 5.2.2:

The "scan" localization switch has not changed appreciably since AWIPS Build 5.1.2. We are, however, recommending that users only localize on the workstations and Linux boxes, and not on the application servers. There have been several instances in which the "scan" localization has failed on AS1 because it fills up the /awips/fxa/ partition. While the FFMPprocessor runs on AS1, the files it needs to work properly are also created in mounted directories by the main DS1 installation, and, if necessary, by localizations on the workstations and Linux boxes.

Switch Changes from 5.1.1 to 5.1.2:

In AWIPS Build 5.1.1, SCAN and FFMP localization tasks were present in three switches: "tables", "radar", and "auxFiles". As of 5.1.2, the tasks have been consolidated into two switches, "radar" and "scan".

Functionality:

From **mainScript.csh**, the **createSCANFiles.csh** script is called. This script performs the following steps for every dedicated radar:

1. In the /data/fxa/radar/xxxx/tstorm/ directory, calls the **create_radarLoc** and **sitfinder** executables to create the radarLoc.txt and sites.dat files.
2. Reads the /awips/fxa/data/localizationDataSets/XXX/radarsInUse.txt file to determine which radars are dedicated to the site.
3. Looks for a radar-specific, small-stream basin shapefile and a bins-to-basins shapefile in the /data/fxa/nationalData/ directory, with the naming conventions xxxx_aggr_basins and xxxx_bins, respectively. The rest of the steps are conditional upon finding the shapefiles.
4. Calls the **newGELTmaker** application to create Geo-Entity Lookup Tables (GELTs) from the shapefiles. The GELT files exist in /awips/fxa/data/localizationDataSets/XXX, and have the naming convention: xxxx_aggr_basins800wfo. The "800" refers to the grid size of the GELT, and the "wfo" to the display scale.
5. Calls the **localizeForFFMP** executable to create nine localization data files for FFMP. In the /data/fxa/radar/xxxx/ffmp/ directory are binToBasin.dat, gridToBasin.dat, basinList.dat, basinToCounty.dat, basinToGELTidx.dat, nearbyRFCs.dat, and radarHrapLoc.dat. In the /data/fxa/tstorm/ directory are binSizes.dat and dbzToInches.dat.
6. Calls the **shp2bcd** executable to create Binary Cartographic Data (BCD) files that allow the basins to be drawn as a map background. The BCD files exist in /awips/fxa/data/localizationDataSets/XXX/ and have the naming convention: xxxx_aggr_basins.bcd.
7. Calls the **bcdProc** executable to remove unnecessary vectors from the BCD files, thus making the files smaller and more manageable.

The **newerUtils.csh** script is used throughout these steps to compare the ages of the shapefiles and the output files. It is hoped that the user will be able to update one portion of the localization, if need be, without being forced to run everything.

Dependencies:

The **createSCANFiles.csh** script uses the radarsInUse.txt file, which is created during "radar" localization. The "scan" switch should thus be run after the "radar" switch. (As in previous builds, the radar localization also generates radar-specific data keys and menu selections for SCAN/FFMP) If a new shapefile is added to /data/fxa/nationalData/ then "radar" and "scan" should be run. If an output file is accidentally deleted, then only "scan" would be necessary.

Localization Lists:

The "scan" switch is present in the "WS", "AS", and "install" lists in the mainScript.csh localization script. The SCANprocessor and FFMPprocessor run on AS1, and we have

output displays for the workstations. Since many of our localization output files are under the non-mounted /awips/fxa/ directories, we need to have individual copies of those files on the workstations and Linux boxes. Unlike in previous builds, though, we no longer require that the "scan" switch be run on the application servers (see the "Switch Changes from 5.1.2 to 5.2.2" note above). Having the "scan" switch in the "install" list allows us to take advantage of the time-saving "push" mechanism that copies localization output files from the DS to the other machines (during a full installation).