Release Notes: MAG v3.20.0
WC OSS2 - transition.

This release pertains to the transition of MAG to WCOSS2 (Cactus). There are no updates for products/areas with this release.

Noted Environment Issues

CartoPy Warning Messages
As the MAG development team worked on code transition, we experienced “warning” messages when leveraging Python module CartoPy on the supercomputer instance Cactus. The issue was reported to the WCOSS2 help-desk. The warning did not impact the product generation when tested with the canned data available on Cactus.

Storm-track jobs on WCOSS2
While testing storm-track jobs on Cactus, the MAG team encountered some issues with the GEFS/GEFS-prob/SREF and SREF-prob storm-track products. The jobs as initially built and running on WCOSS1 would not complete all the tasks to generate images for all forecast hours. The jobs would remain in a hung state and eventually fail because they exceeded their specified wall-clock time. This issue has been reported to the GDIT team, but no efficient solution has been provided yet. As a work-around on this problem, the storm-track jobs have been split into multiple jobs. Depending on the domains, each job will only run to generate a few forecast hours (tasks per job). This work-around calls for changes in MAG.xml and adding corresponding scripts and ecf files, which have been updated.

Please note: The GFS/NAM/GFS-NAM storm-tracks do not have any issues.

HRRR
Available GEMPAK data on Cactus for the HRRR model for the Alaska domain is for a different date from that for the CONUS domain. Please note that while testing, the HRRR job has to be run separately for Alaska and CONUS domains. Appropriate changes are also needed in MAG.xml.
RTMA
Canned GEMPAK data for RTMA for the Guam domain is for a different date. Please note that while testing, the RTMA job has to be run separately for Guam. Appropriate changes are also needed in MAG.xml.

HREF
HREF is tested with canned data for href.20210824.

NAEFS
GEMPAK data for NAEFS is located in /lfs/h1/ops/canned/com/nawips. WCOSS2 transition notes mention that all data should be moved from nawips. Please let us know if there is any change in data location.

Script changes
Details of the changes in scripts for the release are as follows:

wcoss/scripts
1. exmag_processor.pl - Change pertaining to mpiexec
2. exmag_processor_hurr.pl - Change pertaining to mpiexec
3. scripts/exsendmag2web.sh - Change pertaining to differences in rsync
4. scripts/exsendmag2web.sh.ecf - Renamed to exsendmag2web.sh

wcoss/jobs
1. JMAG_PROCESSOR
   comin and comin3 are defined in the script.
2. JSNDMAG2WEB - Change due to renaming of exsendmag2web.sh.ecf

wcoss/fix
1. MAG.xml - The storm-track jobs for gefs/sref/gefs-prob and sref-probability had to be split into different jobs per task. This change is accounted for in MAG.xml

wcoss/ecf
1. /dev/include
a. Include files for ecFlow

2. /defs
   a. Definition files for ecFlow mag_test.def and mag_prod.def.

3. /scripts/processor
   Changes pertaining to job submission

   ./gfs/mag_gfs_processor.ecf
   ./gfs/mag_gfs_snd_processor.ecf
   ./href/mag_href_processor.ecf
   ./hwrf/mag_hwrf_full_processor.ecf
   ./hwrf/mag_hwrf_nested_processor.ecf
   ./uair/mag_uair_processor.ecf
   ./firewx/mag_firewx_processor.ecf
   ./naefs/mag_naefs_processor.ecf
   ./gefs/mag_gefs_mnsprd_processor.ecf
   ./gefs/mag_gefs_spag_processor.ecf
   ./wave/mag_wave_processor.ecf
   ./rtma/mag_rtma_processor.ecf
   ./rap/mag_rap_processor.ecf
   ./estofs/mag_estofs_processor.ecf
   ./nbm/mag_nbm_processor.ecf
   ./hiresw/mag_hiresw_fv3_processor.ecf
   ./hiresw/mag_hiresw_arw_processor.ecf
   ./hiresw/mag_hiresw_arw2_processor.ecf
   ./sref/mag_sref_cluster_processor.ecf
   ./sref/mag_sref_processor.ecf
   ./ice_drift/mag_ice_drift_processor.ecf
   ./skewt/mag_skewt_processor.ecf
   ./nam/mag_nam_snd_processor.ecf
   ./nam/mag_nam_hires_processor.ecf
   ./nam/mag_nam_processor.ecf
   ./hmon/mag_hmon_full_processor.ecf
   ./hmon/mag_hmon_nested_processor.ecf
   ./hrrr/mag_hrrr_subh_processor.ecf
   ./hrrr/mag_hrrr_processor.ecf

   Stom-track jobs are added:

   ./storm_tracks/mag_gefs_europe_two_storm_tracks_processor.ecf
   ./storm_tracks/mag_gefs_europe_six_storm_tracks_processor.ecf
   ./storm_tracks/mag_gefs_asia_seven_prob_storm_tracks_processor.ecf
   ./storm_tracks/mag_sref_alaska_one_storm_tracks_processor.ecf
4. /scripts/processor
   Changes pertaining to transfer jobs

   /gfs/mag_gfs_snd_sync.ecf
   /gfs/mag_gfs_sync.ecf
   /storm_tracks/mag_storm_tracks_sync.ecf
   /href/mag_href_sync.ecf
   /hwrf/mag_hwrf_nested_sync.ecf
   /hwrf/mag_hwrf_full_sync.ecf
   /uair/mag_uair_sync.ecf
   /firewx/mag_firewx_sync.ecf
   /naefs/mag_naefs_sync.ecf
   /gefs/mag_gefs_spag_sync.ecf
   /gefs/mag_gefs_mnsprd_sync.ecf
   /wave/mag_wave_sync.ecf
   /rtma/mag_rtma_sync.ecf
   /rap/mag_rap_sync.ecf
   /estofs/mag_estofs_sync.ecf
   /nbm/mag_nbm_sync.ecf
wcoss/ush

1. Magv3-xml-library.pl - On wcoss2 there needed to make a change to the perl script to read product names starting with a number e.g: 100_500_thick.

2. Storm-track scripts added:

   ./storm_track_gefs_northpac_three.ecf
   ./storm_track_gefs_northpac_two.ecf
   ./storm_track_gefs_northpac_one.ecf
   ./storm_track_gefs_alaska_three.ecf
   ./storm_track_gefs_northpac_five.ecf
   ./storm_track_gefs_alaska_two.ecf
   ./storm_track_sref_alaska_four.ecf
   ./storm_track_gefs_europe_eight.ecf
   ./storm_track_gefs_europe_four.ecf
   ./storm_track_gfs_atlantic.ecf
   ./storm_track_gefs_atlantic_one.ecf
   ./storm_track_gefs_atlantic_two.ecf
   ./storm_track_gefs_atlantic_three.ecf
   ./storm_track_gefs_alaska_four.ecf
   ./storm_track_gefs_conus_one.ecf
   ./storm_track_gefs_northpac_four.ecf
   ./storm_track_gefs_conus_three.ecf
   ./storm_track_gefs_conus_four.ecf
   ./storm_track_gefs_conus_two.ecf
   ./storm_track_gefs_northpac_seven.ecf
   ./storm_track_gefs_europe_one.ecf
   ./storm_track_gfs_northpac.ecf
   ./storm_track_gfs_ace.ecf
wcoss/parm
  1. MAG_sync_tbl - typo

WCOSS updates
A file listing differences between 3.19.2 (running on prod) and 3.20.0 for the current release named **diff_3.19.2_3.20.0_Cactus_20211115** is placed under /wcoss/docs.

Implementation instructions:

**Implementation Instructions for MAG 3.20.0**

1. Download mag.v3.20.0 from svn tag to target directory
   https://vlab.noaa.gov/svn/ncep-mag/mag/wcoss/tags/mag.v3.20.0_cactus_prod/

2. Remake the skewt binary
   $ cd sorc/skewtmapper
   $ make
   $ cp skewtmap ../../exec
3. Updates for ecflow:

a. Copy ecf/defs and ecf/scripts to ecflow server: ecf/scripts/mag/mag_processor/*

3. Update /nwprod/versions/mag.ver to 3.20.0