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Service Change Notice 26-25
National Weather Service Headquarters Silver Spring MD
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From: David Michaud, Director
NCEP Central Operations
National Centers for Environmental Prediction

Subject: Upgrade to HYSPLIT 9.0 to implement a Transfer Coefficient Matrix (TCM) methodology for faster simulation of radiological and volcanic ash events. Effective April 16, 2026

On April 16, 2026, the HYbrid Single Particle Lagrangian Integrated Trajectory(HYSPLIT) transport and dispersion model version 8.0 will be upgraded to version 9.0. In case of Critical Weather Day or declaration of Enhanced Caution status, this upgrade may be delayed to the next business day. This version includes the following upgrades and bug fixes:

- Update to the latest version of NOAA Air Resources Laboratory (ARL) HYSPLIT model codes.
The highlights of HYSPLIT upgrades

  - increased the number of vertical levels to 99 (from 75).
  - enhanced compatibility with Google Earth (updates to xml generation for kml xsd compliance)

- The implementation of a Transfer Coefficient Matrix (TCM) methodology for faster simulation of radiological and volcanic ash events. The TCM allows rapid updates of emissions from radiological and volcanic sources without the need to rerun transport and dispersion simulations. - Ten volcanoes are included in the TCM for rapid ash prediction capabilities.

- HYSPLIT global prediction capability will be extended to 15 days.
- HYSPLIT global prediction capabilities have been extended to higher altitudes. Altitude now extends to 0.01 mb for Global Forecast System (GFS) 1 degree (from 100 mb) and to 2 mb for GFS 0.25 degree (from 13 mb).

This upgrade will increase the data volume for input, output, post-process fields and products due to the proposed higher vertical extent and longer forecast length.

Specifically, ARL-Packed format meteorological input files will be extended as follows:

Global Forecast System (GFS) files at 1-degree resolution, all cycles:
- The number of vertical levels will increase to 41 (up to 0.01 mb) from 21 (up to 100 mb)
- The forecast length will increase to 15 days
- Individual file size will increase to 1.68 GB per cycle

Global Forecast System (GFS) files, 0.25-degree resolution, all ycles:
- The number of vertical levels will increase to 64 (up to 2 mb) from 56 (up to 13 mb)
- The forecast length will increase to 15 days
- Individual file size will increase to 3.1 GB per cycle
- The timing of the GFS files will be 70 minutes later due to the increased vertical levels and additional forecast length
- New files will be produced and named as follows:
- hysplit.t{CC}z.gfs0p25f{NNN}

where CC = 00, 06, 12, 18 Coordinated Universal Time (UTC) cycle
and NNN = 096, 120, 144, 168, 192, 216, 240, 264, 288, 312, 336 forecast hour

Current model data is available here:
https://nomads.ncep.noaa.gov/pub/data/nccf/com/hysplit/prod/

An event driven parallel feed of the HYSPLITv9.0 data will be available March 17, 2026 on the NCEP sites at the following URLs:
https://nomads.ncep.noaa.gov/pub/data/nccf/com/hysplit/para/

Send any comments on the science aspects of this upgrade to:

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For questions on the dataflow aspects, please contact:

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National Service Change Notices are online at:

https://www.weather.gov/notification

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