

IBM Global High-Resolution Atmospheric Forecasting System (IBM GRAF)



The most accurate forecaster¹ announces a state-of-the-art global weather model

IBM GRAF helps democratize weather forecasts so people, businesses and governments virtually anywhere can make better decisions.

Not all forecasts were created equal - until now

Most locations around the world have not had access to timely and reliable weather information. This is due to a lack of specialized weather equipment and models that update infrequently (~every 6-12 hours) and at a resolution too wide to capture many weather phenomena (~10km).

IBM Global High-Resolution Atmospheric Forecasting

IBM GRAF is a high-precision, rapidly updating global weather model that updates hourly and at a 3km resolution to provide a clearer picture of weather activity around the globe.

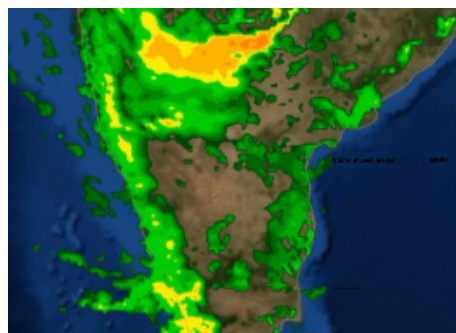
Three key differentiators set IBM GRAF apart:

- **Improved global mapping of the atmosphere:** We partnered with the National Center for Atmospheric Research (NCAR) to improve its latest-generation global weather model, which uses state-of-the-art science to forecast the atmosphere at a truly global scale.
- **Better data and observations:** IBM GRAF has the capability to incorporate previously untapped data sources to help overcome the lack of specialized weather equipment in many parts of the world.
- **First-ever operational global weather model to run on GPU-accelerated servers:** To handle the increased resolution and update frequency, the new IBM GRAF system runs on an IBM POWER9-based supercomputer optimized for Graphics Processing Units (GPUs).

Driving decisions globally

IBM GRAF can give a clearer sense of exactly when and where weather will hit around the globe, empowering:

- Utility companies to better position outage repair crews for a storm
- Airlines to more effectively route around turbulence
- Farmers to better anticipate and prepare for dramatic shifts in weather
- Broadcasters to keep their audiences more informed and engaged



Current best model



IBM GRAF

Six key features set IBM GRAF apart:

- **Fidelity:** Takes resolution down from 10km-12km to 3km-4km
- **Frequency:** Updates every hour instead of 6-12 hours
- **Fresh:** Assimilates weather data more rapidly into forecasts
- **Fine Grain:** Up to 5-minute outputs vs. 1 hour provides a clearer picture of weather occurrences
- **Fortified:** Exploring incorporation of untapped data sources
- **Forefront:** First operational global weather model to run on a GPU-accelerated supercomputer

To learn more visit:
ibm.biz/IBMGRAF

Improved predictions from the new system are enhancing IBM enterprise offerings and are available for free to consumers using IBM apps and websites (The Weather Channel & Weather Underground).

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1 ForecastWatch - Three Region Accuracy Overview; 2010 through 2017; 28 Sep 2018, https://www.forecastwatch.com/wp-content/uploads/Three_Region_Accuracy_Overview_2010-2017.pdf,

