

IBM's New Weather System

IBM Global High-Resolution Atmospheric Forecasting System (GRAF)
By the Numbers

IBM's new weather system will provide vastly improved forecasting globally. Here are some facts that illustrate its breakthrough capabilities, and the state-of-the-art POWER9-based supercomputer it runs on.



The number of rapidly updating weather models that will forecast individual thunderstorms (and not just regional disturbances) across the globe.

200x

improvement in forecasting resolution for much of the globe (from 12 km to 3 km resolution)

25 million

Populated regions around the world that will receive day-ahead weather predictions, updated every hour

12 trillion

pieces of forecast information issued per day

24



times per day forecasts are uploaded for users

9x



Increase in forecasted locations over what the best current model can deliver, bringing the rest of the world up to the high-resolution forecasting standards already seen in the U.S., Japan, and parts of Western Europe

25x



minimum increase in computing power required to run a forecasting model at the new 3-km resolution

5.6x



Max increase in memory bandwidth between IBM POWER9 CPUs and NVIDIA GPUs over competitive systems

84



Nodes of the IBM Power Systems AC922 server in the new supercomputer that will run the model, containing **272** NVIDIA Tesla V100 Tensor Core GPUs

3.5 petabytes

of IBM Spectrum Scale storage capacity within the supercomputer. (That's 3.5 quadrillion bytes if you're counting.)

