



SGI® Technology and the Weather

SGI is unique in its commitment to producing technological solutions for customers involved in all aspects of meteorology and climatology, including research, forecasting, and broadcasting to the public. SGI maintains a staff of highly skilled experts in weather modeling applications who work with national weather centers around the world to ensure forecasting performance 24 hours a day, 7 days a week, 365 days a year.

SGI: A Leader in the Weather Industry

- There are over 100 sites worldwide that specialize in major meteorological research and forecasting. SGI has a presence in approximately 50 of them.
- Weather sites have arguably the most demanding technological performance and system availability needs in the supercomputing world. SGI systems are present in most of the leading North American and European weather institutions and a significant share of all forecasting centers.
- Satellite, radar, weather, air quality, and most weather broadcast software are visualized on SGI systems.

SGI Systems: Working to Predict and Forecast the Weather

- **U.S. Navy Fleet Numerical Meteorological and Oceanographic Center (FNMOC)**
The FNMOC provides weather and oceanographic products, data, and services to the forces of the Department of Defense. The center requires continuous, real-time data 24 hours a day, 7 days a week. In order to accomplish such a task, the FNMOC signed a contract with SGI to utilize the next generation of SGI systems for its work. SGI computers will be used by the FNMOC to transmit meteorological and oceanographic data to the U.S. Coast Guard, the Allied Forces, and almost every branch of the NOAA, among others.

- **The Weather Channel**

The Weather Channel uses SGI computers to process, store, and distribute weather imagery to cable systems throughout the United States. Because of SGI technology, the Weather Channel is able to bring viewers the newest graphics and most accurate, up-to-the-minute forecasts. SGI systems enable the Weather Channel to broadcast local weather forecasts to over 10,000 different locations.

- **NOAA Geophysical Fluid Dynamics Laboratory (GFDL)**

NOAA's GFDL lab is home to one of the largest SGI® Origin® 3000 series systems in existence: a cluster of eight 128-processor systems supported by a very large mass storage installation. Using this powerful tool, GFDL is improving the models used to forecast hurricanes, predict climate change, and provide more accurate local and regional forecasts.

- **Polish Meteorological Service (IMGW)**

SGI is expanding its outreach in weather applications to include developing countries in Eastern Europe and elsewhere that require access to technology that other nations have had for years. SGI installed several systems for IMGW in the spring of 2001. This hardware enables the IMGW to run a 48-hour forecast in one hour.

- **U.S. Federal Aviation Administration**

The FAA has purchased more than 100 SGI servers as part of a modernization program to provide the timely detection of hazardous wind shear with Doppler Weather Radar systems, contributing to increased airline safety.

- **University of Manchester, U.K.**

Weather researchers at the University of Manchester are taking advantage of SGI® Reality Center™ technology to interactively explore meteorological phenomena through virtual reality.

NASA Ames Research Center and NASA Goddard Space Flight Center

From portraying the current climate more quantitatively to simulating future global-warming scenarios, NASA will provide a firmer basis for policy decisions using two new SGI supercomputers that are among the most powerful of their kind. Up to a 10-fold improvement running earth science applications has been realized by both NASA Ames and NASA Goddard with this new architecture using optimization techniques and multi-level parallelism software developed by NASA Ames.



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