Success Story

SGI at DTN/Kavouras:

Pioneering GIS-Based Weather Services

Weather watching is big business. Thousands of clients, from television stations to corporations, government agencies, and institutions, rely on weather services from DTN/Kavouras, Inc., delivered by satellite and the Internet to proprietary desktop systems, to alert the public to danger or make far-reaching decisions. Lives and livelihoods may hang in the balance.

Picture this scenario: a violent thunderstorm, complete with tornado possibilities, is moving across a Mississippi Valley state. News teams and emergency agencies watch its progress minute by minute on screens that show all the detail of the landscape, including roads, bridges, schools, trailer parks, shopping centers, and airports. Using wind, movement, and precipitation data, they can predict and plan, publish warnings, and alert emergency staff. A new DTN/Kavouras solution involving Internet server technology from SGI and GIS technology from ESRI, and integrated by value-added resellers (VARs) such as GEOWAREHOUSE, allows its users to bring weather down to the ground in a uniquely practical way.

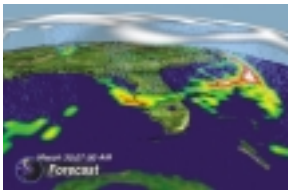
"We've been very happy with the 1400 system's performance and reliability. It has never gone down on us, and it's handled everything we've been able to throw at it."

—Dr. Clive Reece
Manager of GIS Weather Solutions
DTN/Kavouras

DTN/Kavouras: Industry Leader in Weather Information Services

In the early 1970s, in a garage-to-riches scenario, Steve Kavouras developed a technology that revolutionized weather reporting. "We were the first company to encode National Weather Service radar data so it could be transferred over telephone lines and reconstructed into a colorized image," says Dr. Clive Reece, manager of GIS weather solutions at DTN/Kavouras. Today, DTN/Kavouras uses a robust infrastructure to collect, process, quality-control, and distribute high-quality weather data from around the world. The DTN/Kavouras high-end solution for broadcast media uses Silicon Graphics® O2® workstations to render weather and terrain imagery over 3D topography from global to neighborhood scale.

At its operations center in Minneapolis, DTN/Kavouras collects real-time and forecast weather data from many sources, applies quality control, and produces value-added products. The products are distributed via multiple communications satellites to customers worldwide. On the client side, customers use a proprietary DTN/Kavouras hardware/software product called Metwork™ FileServer to manage the constant stream of weather data.



Weather Information in GIS Format

In June 2000, DTN/Kavouras introduced a breakthrough addition to its Metwork FileServer—the ability to convert up-to-the-minute weather information directly into ESRI GIS formats on the fly. The weather data is converted into ESRI point shapefiles, polygon shapefiles, and grids. Many GIS-ready geo-referenced bitmap images of weather information are also available. "GIS users now have real-time, in-depth weather information at their fingertips to integrate with existing GIS applications," says Jack Dangermond, president of ESRI.

Value-added resellers can now offer integrated GIS-weather solutions. Systems integrator GEOWAREHOUSE combines the Kavouras weather system, ESRI software, and SGI™ hardware into a single solution with a single point of contact for customers. "Real-time weather systems have been offered in the past, but they've all been 'black boxes' that existed in a proprietary world," says Devon Humphrey, president of GEOWAREHOUSE. "Now we have weather data in GIS format, so it can be used in conjunction with other GIS base-map layers such as roads, streams, flood plains, and other features important to those using GIS."

Other significant developments have combined to add a new DTN/Kavouras business model: the increasing sophistication of GIS software products from ESRI (such as ArcIMS), and the arrival of the Geography Network, a global network of geographic information users and providers.

The SGI™ 1200 Internet Server: Delivering a Breakthrough Service

At the same June 2000 product launch, DTN/Kavouras made another major first-to-market announcement: the company would use SGI server technology to distribute GIS-based products in a nonproprietary, industry-standard ESRI format through the DTN/Kavouras (*www.dtnweather.com/GIS*) and Geography Network (*www.geographynetwork.com*) Web sites. "We had started early on by looking for Internet delivery solutions," says Reece. "We needed an ESRI-compatible server that could handle SQL. SGI offered to lend us a four-processor SGI 1400 Internet server with 2GB of RAM for evaluation purposes. The technology was a superb fit.

"We've been very happy with the 1400 system's performance and reliability," says Reece. "It has never gone down on us, and it's handled everything we've been able to throw at it." DTN/Kavouras has since purchased two SGI 1200 servers to replace the 1400 system. One of the servers will run ESRI ArcSDE software; the other will run ESRI ArcIMS (Internet Map Server) software. Reece cites hardware quality, choice of chipsets, competitive price, and a good relationship with SGI among the reasons for choosing SGI Internet servers. But there were at least two other reasons.

"The 1200 systems we purchased run Windows NT or Linux, which allows us to take advantage of the latest operating system technology," says Reece. "Another reason is that no one else has ever put GIS-formatted weather data out on the Internet, and the Geography Network itself is new. We don't know what demand is out there, although we think it's going to be large. We wanted something that would handle the load for at least 6 to 12 months, then expand very quickly if necessary. The SGI 1200 servers are very scalable."

"This type of first-to-market offering can redefine an industry," says Ron Sznaider, vice president of R&D at DTN/Kavouras. DTN/Kavouras is already offering scores of GIS weather solutions. More are on the way—and they will be delivered over the Internet by reliable, high-performance SGI Internet server technology.

sgi™

Corporate Office
1600 Amphitheatre Pkwy.
Mountain View, CA 94043
(650) 960-1980
www.sgi.com

North America 1(800) 800-7441
Latin America (52) 5267-1387
Europe (44) 118.925.75.00
Japan (81) 3.5488.1811
Asia Pacific (65) 771.0290

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