Weathernews Inc., a leading weather information service, wanted to speed application and service development to meet an increase in demand for weather information across industries and markets. The company sought to integrate various internal and external systems using standardized, centrally managed application programming interfaces (APIs). By building its API management platform with Red Hat 3scale API Management, Weathernews has not only expanded internal use of APIs for more efficient development and faster service delivery to its customers but also gained new, robust provisioning security capabilities.

“It was a great benefit of Red Hat 3scale API Management that we could readily start on a small scale. The license provisioning, which had been the biggest challenge, is now done quickly and safely with access control. We feel that the solution demonstrates the level of effectiveness that we needed.”

MASAKI FUKUDA
GROUP LEADER, SERVICE MENU DEVELOPMENT GROUP, WEATHERNEWS INC.
STREAMLINING API MANAGEMENT TO MEET WEATHER SERVICE DEMAND

The uses of weather information are becoming more diverse worldwide, from product demand forecasting in the logistics and retail industries to disaster prevention, energy conservation, and health management. Across Asia, demand for weather information is particularly growing in aviation, construction, and energy industries.

Founded in 1986, Weathernews Inc. is one of the world’s largest private weather information service companies, operating in 32 locations across 21 countries. To help the world respond to weather-related risks, the company collects, analyzes, and processes data, then provides content to local governments, businesses, and individuals through various media.

To meet increasing demand for weather information, Weathernews needed to enhance its development of content delivery applications and services. Previously, the company had separate development platforms for each customer and market.

“Excellent weather content is often applicable in various fields regardless of industry, but handing over data and programs is difficult with a separate system for each customer or market,” said Masaki Fukuda, service menu development group leader at Weathernews. “As a result, content was not reused unless significant business outcomes were expected—even if it could have been useful internally across teams.”

Together with its partner Mitsubishi Research Institute DCS, the company recently began building a unified development platform, the WNI Rich Application Platform (WRAP), as a centralized development platform for the creation of customized systems with customer-friendly content for distribution by businesses and local governments. Although WRAP included a server-client interface for sharing data and programs, a lack of unified management prevented effective two-way data use. In parallel with the WRAP project, the company rushed to adapt its existing applications to use application programming interfaces (APIs).

“If we can roll out effective content across industries and markets, we can accelerate our business,” said Masaki. “But to do that, we needed to create an easy-to-use mechanism to help our developers and applications immediately take advantage of APIs. APIs were indispensable to our goal of standardizing our development platform.”

Weathernews also needed to ensure its API environment was secure and reliable, as weather information and services are increasingly used by its customers for critical business decisions. The company sought to develop a provisioning environment that provided access control, authentication, and license management capabilities.

“We previously made a simple mechanism for license management on our own, but its functionality was insufficient,” said Masaki. “As we had no knowledge of API management requirements and little time to research, we decided that the best method was to find an enterprise API management solution.”

ADOPTING OPEN SOURCE PLATFORM TO SIMPLIFY API MANAGEMENT

After considering several solutions, including open source and cloud computing options, Weathernews decided to use Red Hat 3scale API Management as the API management solution for WRAP.

“Now, in the new environment, simple and fast API provisioning lets developers start working immediately, accelerating business value.”

MAKOTO TAKAHIRA
SYSTEM OPERATIONS GROUP,
WEATHERNEWS INC.
“Since our fundamental policy is to develop and operate IT in-house, we are aware that, while we receive vendor support, we are the ones who ultimately have to make the technology work,” said Masaki. “In open source, software source code is public, and communities have abundant information and knowledge. This unrestricted access to information was a top reason for choosing enterprise technology from Red Hat, a leader in open source.” 3scale API Management provides Weathernews with centralized API gateway management that supports publishing APIs to the cloud using a management server. API gateways can be containerized for scheduled distribution and communication with the management server, offering high performance and scalability. In addition, 3scale API Management adds critical capabilities to WRAP, including data flow restriction access control, authentication and license management, security and policy controls, and a development portal.

From product research to production use, deployment of Red Hat 3scale API Management for WRAP was completed by Weathernews in just one year.

Weathernews also uses OKD (formerly OpenShift® Origin), an open source software solution, to containerize applications on the WRAP development platform.

**IMPROVING DATA AND API USE WITH CENTRALIZED CONTROL**

**STANDARDIZED I.T. CAPABILITIES**

Gradually standardizing IT functions—such as access, security, and policy control, as well as operation of its development portal—has helped Weathernews increase the use of APIs in various departments, leading to more consistent work across project teams and eliminating platform bottlenecks.

“It was a great benefit of Red Hat 3scale API Management that we could readily start on a small scale,” said Masaki. “The license provisioning, which had been the biggest challenge, is now done quickly and safely with access control. We feel that the solution demonstrates the level of effectiveness that we needed.”

**FASTER API PROVISIONING**

Centralizing and standardizing API management has helped Weathernews provision resources and develop new systems and services faster. 3scale API Management supports the use of container technology for critical integration between WRAP containers and the company’s API gateway.
One example is the development of a weather content display system for customers. Previously, development of this system was performed separately for each customer or market, requiring 1-2 months to display a piece of weather data, such as prediction information or satellite images. Now, information can be easily imported and copied, doubling developers’ productivity and reducing staffing costs.

“Development changed dramatically when we unified our development platform with WRAP and standardized our API management,” said Makoto Takahira of the system operations group at Weathernews. “To integrate systems in the previous environment, we needed to make various adjustments, such as data format. Often, only knowledgeable engineers could work on the weather display system. Now, in the new environment, simple and fast API provisioning lets developers start working immediately, accelerating business value.”

GREATER SECURITY AND ACCESS CONTROL

With Red Hat 3scale API Management, Weathernews can provide robust security capabilities for its API functions, such as user authentication and license issuance, to protect sensitive company data.

“In the past, we had to rely on manual license management. After introducing 3scale API Management, we can provide licenses immediately to new users,” said Makoto.

In addition, the company can better adapt to platform access demands with more robust access control through flow restriction, a method that limits the number of times an API can be accessed to ensure provisioning is safer and prevent platform performance degradation.

EXPANDING THE USE OF APIs FOR WIDER WEATHER BUSINESS

After its successful creation of an API platform for WRAP, Weathernews plans to expand its use of APIs to new markets and businesses. The company has set a goal of deploying all of its major APIs on WRAP by 2020 and also plans to improve the flexibility of its weather content through external API provisioning for customers and businesses.

Weathernews also plans to study the role of weather-related APIs, including how meteorological APIs can be defined to make the content easier to understand for a broad range of audiences.

“Current weather content contains a lot of information that only experts can evaluate,” said Masaki. “As weather information use expands, it is absolutely necessary to define and provide APIs that allow people without meteorological expertise to easily use that content. As a leading company in weather information services, we will continue to make weather information more usable.”

Weathernews continues to evolve WRAP, with a focus on enhancing the platform’s stability and efficiency, using Red Hat and other open technology.

“We are now using the community version of Ansible® to automate installation of OKD, but we realize the importance of automation in the operation and management of containerized environments as well,” said Masaki. “In anticipation of full-scale automation, we are considering adopting Red Hat Ansible Tower.”