FIORANO ESB SPARKS WEB SERVICES-BASED ENERGY SCHEDULING SOLUTION FOR NORTHERN CALIFORNIA POWER AGENCY

"What we like about Fiorano ESB, in addition to its terrific feature set, is its open standards support for both .NET and Java. Since our plan was to use .NET wherever possible, but also employ J2EE where appropriate, Fiorano ESB was an obvious choice."

Mark Myers
Application Architect
NCPA

CUSTOMER PROFILE

Established in 1968, the NCPA is a California Joint Action Agency. For nearly three decades, NCPA has successfully provided scale and skill economies devoted to purchase, generation, transmission, pooling and conservation of electrical energy and capacity for its members. With the onset of electric utility restructuring, the Agency has become a primary supplier of power scheduling and interchange management services to power marketers and public agencies. NCPA is comprised of 18 cities, rural electric cooperatives, special districts, and other public entities from Redding in the north to Lompoc in the south.

BUSINESS PROBLEM

Earlier the electric power industry was a predictable field with little business and legal dynamics. Not anymore. Constantly changing government mandates, industry deregulation, limited production capacity, an aging infrastructure, and shifting populations are all placing huge demands on utilities and power companies.

NCPA helps its' members purchase, generate, transmit, and conserve electric power. According to Mark Myers, NCPA's electric power application architect, these jobs have become increasingly difficult. "Regulations here in California change almost daily. What's more, timelines for energy scheduling can be just a few hours in length," Myers says. "To keep costs low for our members, we're adopting new applications that can coordinate power scheduling within these collapsed timelines."

NCPA's primary business partners have been moving to XML-based web services as the preferred method for data exchange. However, NCPA had historically used a data-centric client/server model to facilitate data flows with members and outside partners. The agency also wrote many of its own applications using a monolithic approach which did not allow the development and reuse of common libraries.

"Total cost of ownership for our legacy applications was rising," Myers noted. "It became clear that to leverage the benefits of our partners' web services approach, we needed to move to layered web application architecture."

For intra application communication, since NCPA used Java Messaging Service, business objects had to be serialized and compressed to a base 64 string encoding. The receiver then decompressed and deserialized the object.

While the agency's new focus on web-based applications was clearly the right one, the IT management team also knew it needed a business integration platform that could leverage NCPA's well conceived database structure with legacy applications and new applications and services. So the main pain points that the company needed to address were

- Managing communication with several partner applications in a very small time window at near real time

- Empower the exiting .Net applications to absorb the growing data transfer between applications.
- Integrating with external XML based application (web services in particular).
- Pegging the rising cost of Legacy management.

SOLUTION

The ideal solution that NCPA was looking for was a middleware that would allow them to

- Seamlessly communicate with the partner applications at very high rate of message transfer at near real time
- Allow easy intra application data transfer with minimum manual work
- Integrate applications with XML web services on a fly
- Help retain the existing data kept in legacy

Within weeks of its choice, the NCPA development team began installing Fiorano ESB between its Oracle databases and its mix of in-house and off-the-shelf software. The agency started small, employing one or two developers to connect with a few NCPA-built applications, and then adding staff and additional applications as it learned. "Fiorano was very good about resolving any issue we encountered," Myers recalled. "Unlike many software vendors, Fiorano's technical staff is comprised of former product developers, so we could easily talk about deep technical issues with them."

With the new, ESB-enabled web services environment taking shape, NCPA begun to realize the benefits of near-real time data exchange; scheduling decisions based on a demand forecast could be coordinated across NCPA network; market dispatch instructions could be received and validated prior to their issuance to generating plants; and data could be sent back in near real-time to NCPA members to help assess their position in the market.

"We were even able to create a remote application capability using serialized .NET classes," Myers mentioned. "The process is similar to .NET Remoting, but since we use Java Messaging Service, we instead serialize and compress business objects to a base 64 string, using the string as the JMS payload. The receiver then decompresses and deserializes the object. This capability was an unexpected plus that has really added to the productivity of our system."

With no letup of regulatory changes or energy market volatility in sight, Myers says the new Fiorano ESB-enabled web services architecture is invaluable. "We can now do things we simply couldn't before," he states. "Not only can we efficiently share data with our members, but we also have the flexibility to accommodate regulatory and market changes as they occur through better integration, failover protection, and system monitoring. Best of all, the customers of our NCPA members are the ones that really benefit, through lower electric bills."
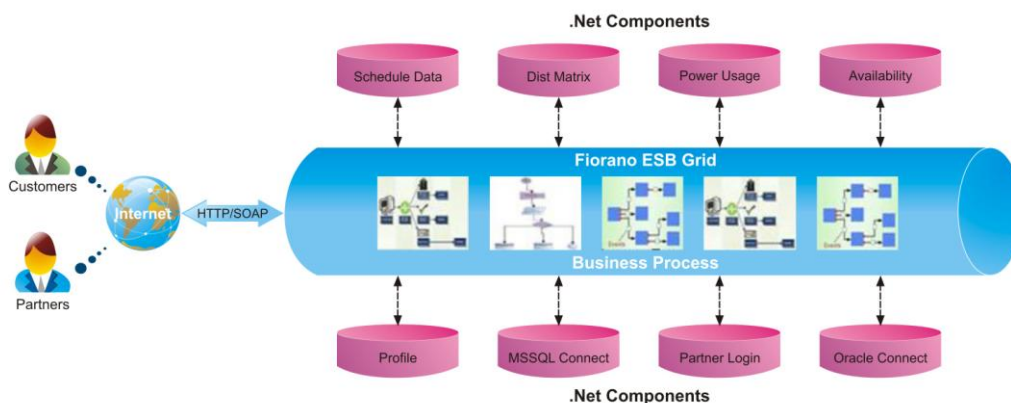

FIGURE 1: Application architecture for NCPA using Fiorano ESB

BENEFITS

- Rapid business process composition
- .Net Remoting using JMS messaging - Ability to transfer .Net classes among application without having to write serialize and de-serialize code. Traditional approaches require .Net objects be converted to base-64 strings for intra application communication.
- Wrap existing legacy (.Net) code as a service/component for reuse
- NCPA used Fiorano's C/C++/C# runtime to quickly wrap existing .Net code into a reusable service.
- Runtime changes to the process
- Connect Microsoft SQL database to ESB
- Connect Oracle database to ESB
- Business Partner integration using XML and Dot Net Web Services standard
- Remote Deployment and Monitoring (start, restart, stop etc) of .Net applications.
- Out of box security for .Net applications
- Partner data transformation and content enrichment using XSLT standard.
- Asynchronous binary data exchange among C# applications
- Out of box high availability of .Net services and the system.

WHY FIORANO

Fiorano ESB is the first Enterprise Service Bus (ESB) platform that uses standardized interfaces for a full range of data tasks, from communication and transformation to portability and security. Its standards-based Service Oriented Architecture (SOA) allows enterprises to draw on existing business logic residing anywhere within their application environments to quickly assemble efficient solutions for business problems. The world class usability features allows users to simply drag and drop pre-built components and create the business process on a fly. The proven middleware capabilities allow Fiorano ESB to handle large scale message transfer with highly competitive performance numbers.

ABOUT FIORANO SOFTWARE

Fiorano Software (www.fiorano.com) is a leading provider of enterprise class business process integration and messaging infrastructure technology. Fiorano's network-centric solutions set a new paradigm in ROI, performance, interoperability and scalability. Global leaders including Fortune 500 companies such as Boeing, British Telecom, Credit Agricole Titres, Lockheed Martin, NASA, POSCO, Qwest Communications, Schlumberger and Vodafone among others have used Fiorano technology to deploy their enterprise nervous systems.

To find out more about how Fiorano can help you meet your enterprise integration objectives, visit www.fiorano.com or e-mail sales@fiorano.com