

parasoft case study

Company: Siemens AG, IT-Operations www.siemens.de/ito
Topic: Increase the quality of Web services implementation

Parasoft WebKing

Parasoft SOAtest

Parasoft Jtest

Parasoft C++test

Parasoft Insure++

Parasoft GRS

Parasoft .TEST

Parasoft BPEL Maestro



Parasoft's SOAtest helps Siemens meet the growing demand for Web software quality management.

Siemens is one of the world's largest electrical engineering and electronics companies and holds leading market positions in all its business areas. Founded in 1847, Siemens has a strong international presence, with operations in over 190 countries and manufacturing facilities at about 290 locations worldwide. The company's business portfolio is focused on six key areas: Information and Communications, Automation and Control, Power, Transportation, Medical, and Lighting.

Siemens must be an agile firm to meet expectations for top quality — a fact that has encouraged the Siemens business unit IT Operations (ITO) to embrace service oriented architecture and Web services.

Whether ITO is serving internal or external customers, there's a growing demand for high-value Web services that must be matched with leading approaches to software quality management. With that in mind, ITO's enterprise application integration (EAI) team, which is responsible for integrating and maintaining critical IT applications, has deployed Parasoft's SOAtest.

Through automated testing infrastructure, the team has been able to significantly increase the quality of its Web services and ensure errors are eliminated at every level of software development.

Challenge: Confronting the quality of Web services implementations

As a global company, Siemens must support customers and employees throughout the world with an increasingly demanding set of IT services. As the expectations on Siemens' ITO have grown, so have the demands on the teams responsible for ensuring IT systems and services perform at extremely high levels.

With the constant introduction of new services, ITO must ensure that its applications are smartly integrated with back-end infrastructure and are diligently maintained to avoid software errors or system shutdowns.

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"We needed to increase the quality of our Web services implementations," explains Stefan Potzel, manager of the IT services organization's EAI group based in Erlangen, Germany. "We needed an automated testing solution. Otherwise, you have to do everything manually to test Web services."

The team, which generates code in .Net, Perl and Java, recognized that an automated testing solution would facilitate the rollout, integration and maintenance of new applications. "It's much easier for the developer to concentrate on the program than on the language structure. It makes it easier for the developer."

The EAI team employs Microsoft's BizTalk server as its process

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execution engine and relies on a portal as the channel for initiating business processes.

Among other duties, Potzel’s shop is responsible for automating processes related to secure account creation for ITO’s customers worldwide. Leveraging its business process engine, the team oversees what it calls “operational services” (such as account management and email services) and “common services” (including global databases).

“My shop is administrating the BizTalk systems,” says Potzel. “We are keeping them operating full time and running maintenance routines. Our focus is on increasing the implementation quality of operational and common services. We looked to new testing solutions to help us enhance the quality of our Web services implementations.”

Action:

Deploying Parasoft’s SOAtest for automated testing

Having conducted a thorough search of possible testing solutions that met its objectives, Siemens’ EAI team chose Parasoft’s SOAtest. “SOAtest is very flexible,” says Potzel. “It’s a framework, not a simple application. There are so many possibilities and ways to apply it that create value for us.”

“We searched the market and SOAtest was the only tool that fit our requirements,” he adds. “The flexibility of the solution was unique. So was the support we received from Parasoft in the background – some of the best I ever saw.”

The testing solution has been applied to the Web services managed and maintained by the EAI team. The solution “automates testing processes previously performed manually, getting Web services to a higher quality with fewer errors,” he adds.

Such efforts have led to significant productivity gains. For example, ITO customers can now go to the Web services portal, fill out a form, and create an account. They receive an assignment or order immediately. In the past, one would get an order, a ticket would be generated and then it would be sent to the account management team (to create an account in Active Directory). By the time a ticket was closed and a new email address assigned, a full business day would have passed. “Now, we can do it in several minutes with our system,” Potzel explains.

Results:

Increased productivity, responsiveness and agility

By enhancing and accelerating business and IT processes, Web services have had an important impact on Siemens ITO. The IT services organization is more responsive than ever – demonstrating the power and value of service oriented architecture.

SOAtest, for its part, has enhanced the rollout and development of Web services. By increasing the quality of these services, the automated solution has helped ITO better serve its internal and external customers.

Through continuous functional testing, multiple developers can work on isolated Web services and there is confidence that they will perform in production.

“Developers are only human. They make mistakes. That’s normal,” says Potzel. “We use SOAtest to ensure the results we get are what we expected. It allows us to produce test suites that we can reuse in other projects without writing again and again. We gain significant productivity benefits from being able to reuse the test assets.”

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The introduction of SOAtest also has enhanced the effectiveness of the development team. “When I create test suites with SOAtest, I check to see that the results are accurate,” adds Potzel. “If it’s not OK, I contact the developer of the Web service and discuss what’s wrong. We talk about the errors and how they can be addressed. We work together to get the right results. If there is an implementation failure when the developer made the change, the developer can quickly isolate the error.”

As Potzel explains further, “In the past, it was very difficult to identify or isolate errors. It was very difficult to test every different combination. Now, you can test before going into production.”

That said, Siemens is able to productively run tests within all three of its key systems: development, staging and production. “With the building of a testing suite, we are able to test Web services in every system,” he adds. “We only have to change one parameter. That’s a very valuable aspect of SOAtest.”

Potzel acknowledges that there will always be trade-offs between “testing effort and advantage,” costs and value. However, he believes that SOAtest has “shifted the balance” toward more testing coverage and greater software quality.

“SOAtest gives us the possibility to rapidly implement Web services with a higher quality,” he concludes. “This makes the IT services organization more agile and able to respond to the business demands that Siemens faces.”

Customer Profile

Siemens IT Solutions and Services with its business unit IT Operations is a successful IT service provider. IT Operations provides solutions and services in the following areas: IT Outsourcing, IT Infrastructure, IT Security and Business Process

Management. These solutions cover the entire IT life cycle from consulting and planning through implementation to operation. Our extensive IT and process know-how enable us to provide measurable added value for our customers. IT Operations is certified to DIN EN ISO 9000, Quality Management Systems and ISO/IEC 20000, Service Management Processes.

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