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Parasoft WebKing
Parasoft SOAtest
Parasoft Jtest
Parasoft C++test
Parasoft Insure++
Parasoft GRS
Parasoft .TEST
Parasoft BPEL Maestro

Company: MedicAlert   www.medicalert.com
Topic: Increasing productivity through automation

MedicAlert increases its agility and extends its service offerings by capitalizing on Parasoft's automated testing infrastructure.

MedicAlert, which serves four million people worldwide, is recognized as the leader in providing emergency medical information. Historically, this service was represented by the medical jewelry worn by its members. In an emergency situation, the bracelets alert doctors and other healthcare professionals if there is a medical condition to be considered. However, MedicAlert is expanding its role as an innovative provider of healthcare information services and is leveraging Web services to support its growth.

To accelerate its ability to roll out new services in a secure and effective fashion, MedicAlert has relied on automated testing software from Parasoft. Through the use of Parasoft SOAtest, the organization has been able to rapidly manage the functional, regression and load testing challenges associated with its new capabilities and offerings.

Parasoft SOAtest has enabled MedicAlert to automate the testing and validating of new Web services – enabling it to become an increasingly agile and valued provider of new healthcare information services. In addition to that, the SOA framework has boosted MedicAlert's confidence in its ability to rapidly respond to business opportunities with new and extended services.

Challenge: agility and scalability on demand

MedicAlert is focused on enabling members to manage their personal health records (PHR) online while maintaining security, privacy and confidentiality. Its repository of personal health information also facilitates the delivery of critical medical information between patients, providers, payers, and emergency responders. These foundations have enabled the organization to grow by constantly introducing new product offerings such as an RFID-based medical card and a USB-enabled portable information device called E-HealthKEY.

Given the high demands associated with such endeavors, MedicAlert recognized the need three years ago to develop a service-oriented architecture (SOA) to support its dynamic market plans and objectives. The organization now relies on Web service interfaces to support its members' PHR, which include information about medical conditions as well as drug prescriptions and other relevant health data.

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Considering the sensitive nature and life-saving potential of such information, MedicAlert's IT organization is under severe pressure to ensure its systems are secure, streamlined and effective. Web services represent an opportunity to roll out new service and product offerings rapidly, capitalize on the reusability of services, and ensure the systems can scale up to meet the growing demands of members and partners. "SOA is not, at heart, about the architecture," says Jorge Mercado, Principal Architect for MedicAlert's Product Development Group. "It's about making your business more agile – being able to rapidly seize new business opportunities."

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To be sure, software quality is an essential factor in meeting these objectives – and this fast-moving organization needed a way to address its demanding quality requirements quickly and effectively.

"We needed tools to automate our testing processes," says Natalie Doan, the team's QA Engineer. "When I joined the group, we had a very manual approach for testing."

Action: capitalizing on SOAtest

After exploring some of the potential Web services automated testing solutions, MedicAlert chose Parasoft's SOAtest (then known as SOAPtest). "We found SOAtest and we ran with it," says Doan. "Parasoft support trained us for one week and we were able to take it from there. We quickly saw that the product had a lot of powerful features that would help us automate our testing activities and processes."

Parasoft SOAtest was able to support all the latest standards (ex. security and schema validations standards); we were able to test all areas of our SOA infrastructure.

Through the use of Parasoft SOAtest, the team is able to efficiently test different endpoints and ensure broad test coverage within this environment. When new updates or modifications are made to a Web service, Parasoft SOAtest's regression testing can be employed to ensure that no defects have been introduced and that previously verified code continues to meet its specifications. "I can quickly ensure that features from the previous version are in place to support the new version," adds Doan.

Parasoft SOAtest also brought powerful capabilities in terms of functionality and load testing. It enables the team to test the

MedicAlert's E-HealthKey carries specific health reports or an entire medical record, including images. Data encryption and password protection lets users decide which information to share.

performance differences on the system between, say, 10 or 100 users simultaneously, updating their personal health record through the Web services under various scenarios. For instance, Parasoft SOAtest can test the impact on a particular Web service of a user sending a long, data-intensive message. It also helps the group test SAML assertions to ensure authentication and authorization of data and users are managed properly. However, the key to Parasoft SOAtest's value is the range of capabilities it delivers and coverage it enables. "We load test the system from beginning to end," says Doan. "I couldn't do that with other testing tools we were using previously."

Results: enhanced security, quality and performance

In recent years, MedicAlert has realized important benefits from Parasoft SOAtest along three key dimensions: security; quality; and performance.

Parasoft SOAtest's support for security is critical to an organization that manages personal health records for its four million members. It relies on Parasoft SOAtest to ensure authentication and authorization capabilities are performing as expected – whether this requires the team to test SAML assertions or HTTP authentication procedures. With different levels of security support, MedicAlert benefits from Parasoft SOAtest's expansive testing capabilities.

In terms of quality, Parasoft SOAtest's regression testing

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capabilities are particularly valued. Doan notes that she can use the same test suites she built two years ago to test new versions of products such as E-HealthKEY, ensuring that all members are continually supported. "When we upgrade to new versions of a service, I can rerun tests and make sure the new service actually supports the previous functionality," she says. "It's reliable. It assures me that the functionality is there and working as expected."

Without such testing capabilities, MedicAlert would run the risk of upsetting its members. Web services might not perform and member data might not be saved or updated properly. "We have to ensure members have an effective experience and that data is there when you need it in an emergency," Doan adds. "The data must be valid and correct. It must be rapidly and correctly updated. Parasoft SOAtest helps us ensure these objectives are consistently met."

Finally, Parasoft SOAtest supports MedicAlert's progressive efforts to enhance online performance for its members and partners. Doan explains that the performance of the organization's Web services were "quite slow" when they initially launched their effort. Updating one's health record could take as much as a minute to complete. However, through continual testing, iterations and improvement, the team has been able to reduce the time associated with such transactions to less than four seconds.

"We don't want our members or partners to wait at all," says Doan. "So we are continually upgrading our services and enhancing the performance of our system to ensure the members have an effective experience."

Ultimately, automated testing has enhanced the user's experience online, strengthened relationships with members and partners, and contributed to the agility of MedicAlert. Parasoft's SOAtest delivers a "strong return on investment," says Doan. "We use it on a daily basis for reliability and support throughout our Web services infrastructure."

Such capabilities have clearly strengthened the linkages between IT and the business. "Business leaders at MedicAlert want to be able to react quicker and make our service more valuable," says Mercado. "They want to bring on more members at a faster rate. Being able to more rapidly respond to different business opportunities addresses their objectives – and now they realize that a SOA framework can help the organization meet those goals."

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