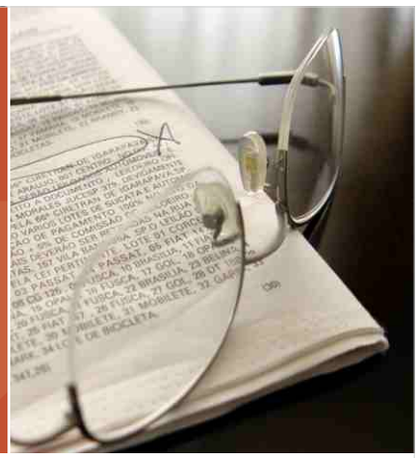
Case Study

Independent Verification and Validation of an aftermarket-support product built on the J2EE platform



THE CUSTOMER

A one-of-its-kind software company delivering a product suite that improves the profitability of installing, operating and maintaining complex equipment. Their products integrate with PLM, SCM, ERP and other enterprise applications providing their customers with improved workforce productivity, parts logistics and equipment uptime.

THEIR NEED

To test the functionality of their aftermarket-support product, which was built on an open, standards based, and extensible software platform. The product framework needed to be tested across various platforms with different application servers and databases.

OUR DEED

Aspire's testing team configured the product in different environments and performed version testing that involved the execution of test cases for complete functional as well as regression testing. The customer's framework was tested across Windows, Solaris and Linux Suse with Websphere, Weblogic and Jboss servers across MSSQL, Oracle, DB2 and HSQL databases. Rational Clear Quest was used to log and track defects.

TOOLS USED

Platforms - Win2K (SP 4.0) Win XP (SP 1.0), Solaris 8 & Linux Suse 8
Application Servers - Weblogic 8.1/9.0/9.1, Websphere 5.0.2.8/5.1.1.1/5.1.1.8/6.0.2.5 and Jboss 3.2.7
Databases - Oracle 8i/9i (UTF), DB2 8.1, SQL Server 2000, HSQL
Configuration Management – MS Visual Source Safe
Project Management Tool - PRISM (www.whizible.com)
Supporting tools/utilities - Reflection X, Db Visualizer, ISO View, Servant Salamander

Success

Due to the complex nature of the testing involved in this project across various OS, app servers and databases, the customer wanted to evaluate our product testing team for a trial period of 3 months. Our product test engineers set up a dedicated testing server machine with the required configuration (like Sun Solaris 8 and Linux) in our test lab, configured the product in the servers and tested all the product builds. Satisfied with the quality, performance, and timely deliverables of the offshore team, the customer made our testing team their extended QA team and outsourced all their product testing activities to Aspire.

FUNCTIONAL TESTING OF PROPRIETARY 3C PLATFORM

The customer's aftermarket support product was built on a proprietary platform to meet the needs of the people who maintain and support capital equipment and complex products, such as jet engines, construction machinery, automobiles and telecommunications equipment - from initial installation through operation and product lifecycle maintenance.

By creating an as-maintained encyclopedia of product information, that both the OEM and end-user could dynamically update, the 3C platform (content, collaboration,

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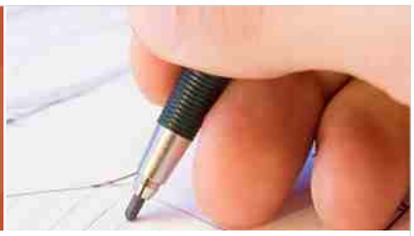

commerce) allowed operators and service providers to access all the information they needed, when and where they needed it, for the exact configuration of equipment that they serviced.

The customer approached Aspire for testing this proprietary framework that was built on open, standards-based technologies, tools and protocols. This included the J2EE set of standards, Java, XML and related technologies, and Internet and web protocols.

While the customer provided Aspire functional specifications, technical documentation and test cases, our testing team located at Chennai performed independent testing, verification and validation of the platform that addressed the full range of QA issues including:

- Configuring the product on different OS, application servers and databases for all the builds during version & release testing
- Root cause analysis for all functionality issues
- Logging the defects into the defect tracker tool (Rational Clear Quest)

As this engagement with the customer was on a pure offshore model, Aspire's Project Lead worked in tandem with the customer's coordinator onsite for all communication related to the project. Initial training on the customer's product suite and proprietary platform involved the entire offshore testing team and happened through teleconferences and Webex sessions. All confidential information was communicated by email in an encrypted form using PGP (Pretty Good Privacy).

The testing process

Aspire's testing team followed effective project management methodologies, and used project and configuration management tools appropriately, for planning and delivering fast-paced and on-time releases to the customer. Our offshore team also prioritized testing activities based on the customer's requirements to ensure high quality product releases.

The following process was adhered to, by Aspire and the customer, to make the testing process smooth and thorough:

***Aspire's testing team followed effective project management methodologies**, and used project and configuration management tools appropriately, for planning and delivering fast-paced and on-time releases to the customer.*

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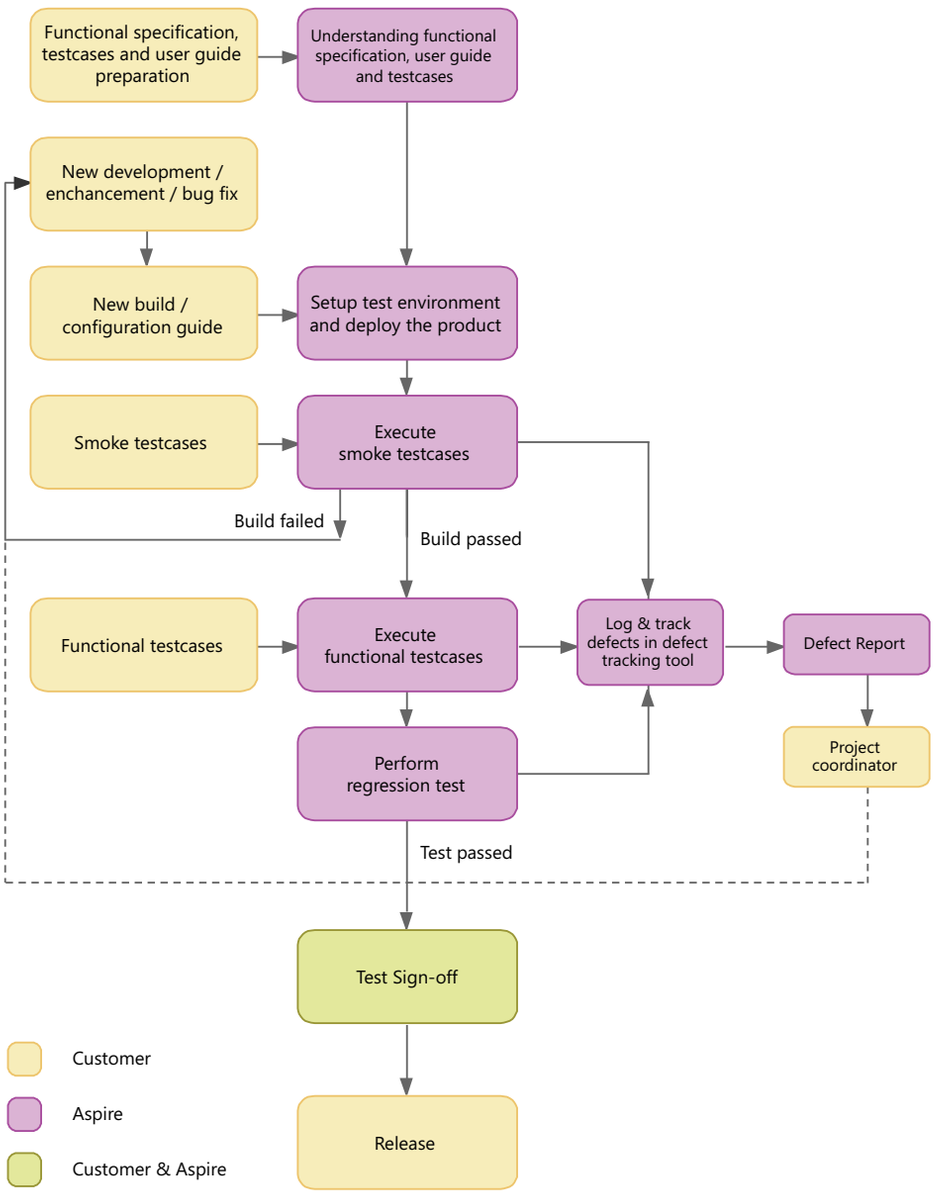

Aspire's competent QA team ***successfully*** *tested the functionality across the product.*

Challenge

The major challenge was in testing the customer's framework in cross platforms with different application servers. However, Aspire's competent QA team successfully tested the functionality of the product across the following combinations

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Sl. No.	Operating System	Application Server	Database
1.	Win XP & Win 2000	Jboss 3.2.7	HSQL, DB2 8.1, MSSQL 2000, & Oracle 8i/9i
2.	Win XP & Win 2000	Websphere 5.0.2.8/5.1.1.1/5.1.1.8/ 6.0.2.5	Oracle 8i/9i & DB2 8.1
3.	Win XP & Win 2000	Weblogic 8.1/9.0/9.1	Oracle 8i/9i
4.	Sun Solaris	Jboss 3.2.7	HSQL, DB2 8.1, MSSQL 2000, & Oracle 8i/9i
5.	Sun Solaris	Websphere 5.0.2.8/5.1.1.1/5.1.1.8/ 6.0.2.5	Oracle 8i/9i & DB2 8.1
6.	Sun Solaris	Weblogic 8.1/9.0/9.1	Oracle 8i/9i
7.	Linux Suse	Jboss 3.2.7	HSQL, DB2 8.1, MSSQL 2000, & Oracle 8i/9i
8.	Linux Suse	Websphere 5.0.2.8/5.1.1.1/5.1.1.8/ 6.0.2.5	Oracle 8i/9i & DB2 8.1
9.	Linux Suse	Weblogic 8.1/9.0/9.1	Oracle 8i/9i

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ABOUT ASPIRE SYSTEMS

Aspire Systems is an Outsourced Product Development firm committed to helping our customers build software products better and faster. We work with some of the world's most innovative Independent Software Vendors and software-enabled businesses, ranging from start-ups to established industry leaders, transforming the way software is built.

Aspire provides complete product lifecycle services, ranging from new product development and product advancement to product migration, re-engineering, sustenance and support. Our product development teams are spread between our Global Innovation Center in Chennai, India and offices in the United States.

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