Testing Mobile Application (mHR)

For

Adrenalin e Systems, Chennai, India

Client Overview

Adrenalin eSystems Ltd, Chennai, India is a product organization that provides complete HR solution for enterprise as well as small business. Adrenalin is a subsidiary of Polaris Software Labs (one of top 25 IT companies of India). Adrenalin's HR product has been running at many clients' places including Hero Honda, Dr. Reddy's Lab and many others.

Application Under Test

AdrenaliNet is the HR product that provides end to end HR solution. The feature list includes employee information maintenance, leave management, travel (domestic as well as international) management, performance appraisal mechanism, training management, timesheet entry, policy management, eRecruitment etc. A base product is available with specific configurable features and there are custom developed modules, for individual clients. The product has a browser based client.

The senior management aimed at providing all levels of approvals from SmartPhones and PDAs, that use Adrenalin backend. The choice of the device has been BlackBerry, as one of the leading mobile service providers in India, promotes BlackBerry in a big scale. The mobile application has been developed in 2 different platforms – one using J2ME rich client and one using Microsoft ASP.Net mobile controls. These rich and thin clients interface with the business layer servers of AdrenaliNet product.

Engagement Model and Process

Softsmith Infotech executed the testing project using total offsite model. The testing team consisting of test lead and testers carried out the activities from Softsmith's offsite test lab from Chennai, India. The team coordinated with Adrenalin's development manager who operates from Adrenalin facility that is located 10 kilometers from Softsmith's test lab. The AdrenaliNet server has been hosted at the site of the leading internet hosting providers of Chennai, India. Daily status tele-cons and technical tele-cons were conducted.

Softsmith team initially prepared Master Test Plan (Test Strategy) for the whole application. Then the team prepared test scenarios and test cases that are reviewed and approved by Adrenalin team. Softsmith established test bed at offsite and the server is hosted centrally in internet. Defects were regularly reviewed in the triage meetings and taken to closure. AdrenaliNet development team provided daily builds to Softsmith team and daily regression was performed.

Key Test Areas

The following list describes the key test areas, under which a set of tests were conducted.

- Functionality of the following approvals have been completely tested: Leave approval, travel approval, budget approval, project proposal and cost sheet approval, timesheet approval, and document approval; also the alerts on specific events are tested
- Interface Compatibility of the AdrenaliNet server with J2ME and .Net mobile clients. The APIs are totally XMLized.
- Testing of the transactions using same device, but using different Internet Service Providers
- Testing the transaction using different bandwidth schemes provided by ISPs
- Data transfer between client and server, in intranet and internet
- Device going out of range tests from server while data transfer is in progress
- Data transfer tests under various signal strengths
- Data transfer resume tests
- Packet loss tests and resumption tests
- Data encryption tests (custom encryption is used by   the application)
- Data volume tests when huge amount of approval data is transferred from client to server
- Simultaneous data transfers from multiple clients to the server
- Data corruption tests (bad XMLs)
- Resource usage tests on devices
- Crash tests when device, server, routers going down during process in progress

Key Benefits

1. Product had been tested in a realistic environment, i.e the ISP and device being the most popularly used ones in India
2. Test bed and independent testing team itself has been presented as showcase to Adrenalin customers for the mobile enablement of the application
3. Tests were conducted using BlackBerry device (J2ME version) and HP iPaq (MS .Net Mobile control version) to ensure the interface compatibility

Challenges Faced

One of the service providers do not allow any clients (viz. J2ME client) other than a custom browser supplied with their mobile device, to interact with the servers hosted in the internet. The work around is to use the browser based application that uses MS .Net mobile controls.