Software Update Framework

"Rhoynar team worked with Trimble to build a Software Update framework for our field devices. Trimble has many field devices and we want to have tight control on the Software versions run on them. We want to have timely security updates for all devices, and ensure that the update process is robust & stable. Rhoynar team provided excellent solution for our device updates and we highly recommend them.

Business Challenges:

In this case study, we will explore how Trimble's Software Update mechanism server was developed. The end result is an elegant implementation that provides users with new features and bug fixes, and supports both SaaS and one-time licensing models.

Trimble has several different devices in the field and they wanted to have a tight control on the Software versions which are running on these devices. The Software Update framework should allow for an easy way of installing updates to the application. Trimble wanted to be able to support both legacy and SaaS licensing models during the upgrade process. The upgrade process should be stable as it can be interrupted by user action or device communication issues or due to power failure.

Results:

Rhoynar Team was engaged for 6 months for the project, and they built a team dedicated to solving this problem. There was a team of 4 Engineers deployed and a part-time project manager to help manage the project. Our goal was to complete the project within 6 months before new product launch.

Rhoynar team built this solution using Micro-services architecture in the cloud. We had different micro-service routines which would be focused on doing a single job robustly. We downloaded the Software installers to the device and updated the device software using Azure IoTEdge DPS framework.

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Project Details:

- **Technology Stack**: NodeJS for backend web-services, Azure IoTEdge for communicating with the devices, Azure Blob Storage and CDN services for storing the update applications.
- **Team Structure:** Rhoynar Software had a dedicated team of 4 senior engineers to work on our solution. They worked with a program manager to ensure smooth progression of the project.
- **Agile Methodology:** Rhoynar team worked with client team on a bi-weekly Sprint basis and helped ensure that the project was progressing smoothly. There were daily stand up meetings, sprint planning meetings, Spring demo meetings according to Agile principles. Each Epic was defined by business Milestones and Rhoynar team was able to achieve those successfully.
- **Maintenance**: When the project was completed Rhoynar Software team continued to support for a few months. This helped with integration of new features, bug-fixes, reporting and building observability tools.
- **Execution**: The Rhoynar Software team was able to successfully implement Trimble's software update mechanism server. They were also able to handle the integration of new features, bug-fixes and support for both SaaS and one-time licensing models during the upgrade process.

Technologies Used:

Our Guarantee:

At Rhoynar, we believe in providing honest and exemplary customer service to our clients. We understand that the client may have hesitations in employing any consulting company for any internal project. *Will the solution meet all our needs? Do they really have the expertise and experience in delivering this solution? What if it is not extensible and requires constant upkeep? Will adequate training be provided to our staff after the project is over? What if the technologies they use become obsolete? Will they consultant have enough expertise in the said domains?*

We guarantee that we will meet your project requirements and deadlines. If for any reason we are unable to deliver, you don't pay us a penny.

We take pride in meeting all the customer expectations on time and this has made our customers very happy with our services. This is why over 90% of our new business comes from referrals by existing customers.

Call us now for a free discussion on how we can assist you with your automation needs.

Conclusions:

Rhoynar Software is a technology company built to solve specific problems. We have expertise in building cloud software frameworks that are durable, robust and supports extensibility to future technologies. Our deep expertise in making Edge devices work with the cloud has allowed us to deliver Software update frameworks like this one, where the project involved IoT + Cloud based solution. We have good Agile processes in place to ensure projects are successful and communication is plenty. We thrive on challenges and can work on complex projects to produce elegant results.

Contact Us:

Ph: (855) 574-6962   www.rhoynar.com   www.facebook.com/rhoynar
Cell: (303) 408-9848   contact@rhoynar.com   www.twitter.com/rhoynarsoft

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