

## Quest Software

### FAST FACTS

#### Company

Quest Software, Inc. delivers innovative products that help organizations get more performance and productivity from their applications, databases and Windows infrastructure

#### Industry

Technology

#### Geography

US

#### Challenges

- Improve software delivery processes
- Reduce collaboration inefficiencies and costs
- Improve communication

#### Solution

- Borland® CaliberRM™
- Borland® StarTeam®

#### Results

- Up to 20% increase in developer productivity with more strategic resource allocation
- Reuse of up to 25% of code
- Up to 20% reduction in network utilization

### EXECUTIVE SUMMARY

Quest Software, Inc. delivers innovative products that help organizations get more performance and productivity from their applications, databases and Windows infrastructure. To reduce inefficiencies, improve communication, and improve software delivery processes across its development teams responsible for creating the company's 130 products, Quest relies on the Borland Application Lifecycle Management (ALM) solution, including Borland® StarTeam®, enterprise-wide for software change and configuration management and Borland® CaliberRM™ within certain teams for requirements definition and management. Since deploying Borland products, Quest is experiencing reuse of up to 25% of their code, up to a 20% increase in developer productivity with more strategic resource allocation, and a 20% reduction in network utilization in affected locations.

### COMPANY

Quest Software, Inc. delivers innovative products that help organizations get more performance and productivity from their applications, databases and Windows infrastructure. Through a deep expertise in IT operations and a continued focus on what works best, Quest helps more than 18,000 customers worldwide meet higher expectations for enterprise IT. Quest Software, headquartered in Aliso Viejo, Calif., can be found in offices around the globe.

### CHALLENGES

Effective management and control of the software development process can greatly increase the visibility and predictability of software delivery. By deploying an automated solution for software configuration and change management, as well as requirements definition and management, organizations can accelerate software development and gain greater efficiencies through real-time project coordination, communication and collaboration across distributed development teams. The Quest Enterprise Services team believed that an enterprise-class Application Lifecycle Management (ALM) solution would help its company to:

#### Improve software delivery processes

Quest has grown through acquisition. In three and a half years, the company has expanded from 750 to more than 2,500 employees. Throughout the world, the acquired development teams used a variety of diverse software configuration management solutions, including freeware and Microsoft Visual Source Safe, which meant that consistent usage was a problem. Teams using Microsoft Visual Source Safe were having difficulty daily with archive corruption, build creation and collaboration across the company's 23 worldwide R&D labs. Reliability issues associated with the existing configuration management approach led some teams to archive their source code onto DVDs, which cost time and caused version control challenges. The Quest Engineering Services team sought to standardize on an enterprise-wide version control solution that would help it create a more reliable environment within the development organization, which in turn would drive greater consistency and software delivery predictability.

#### Reduce collaboration inefficiencies and costs

Quest markets more than 130 products. Some products are packaged together into a solution to deliver enhanced value to customers. Solution development efforts require significant cross-team and cross-product collaboration, which often results in builds as large as 60MBs. Build files of this size moving across the network attracted the attention of the company's MIS team because of the network utilization, and discussions began about acquiring hardware to handle the load of this ineffective process—a costly fix to the problem. Instead the Quest Engineering Services team sought an alternative solution that would enable the transfer of these large files utilizing less bandwidth, as well as allow the process to be scheduled rather than manually initiated each time.

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In addition, the existing process for how change requests were handled, which was taking place within the company’s Clarify system, was no longer scaling to meet the needs of the organization. It was not well architected for remote, long-distances and therefore, required a significant amount of bandwidth. The solution was to buy more bandwidth across Asia Pacific, which would have cost the organization approximately \$10,000 per month. Again, the Quest Engineering Services team looked for an alternative solution that would deliver the required capabilities, plus increase application speed and performance and deliver real-time metrics.

### IMPROVE COMMUNICATION

Quest lacked a standard solution for software requirements. Understanding that good requirements practices can reduce rework, certain teams within the organization sought to automate their requirements processes. By leveraging a central repository for requirements, the Quest Engineering Services team believed specific development teams could eliminate requirements tracking and discussions in email and Microsoft Word documents, and as a result, improve communication between development managers, development leads and project managers.

### SOLUTION

Quest deployed the Borland Application Lifecycle Management (ALM) solution, consisting of Borland StarTeam® for software change management and configuration management across its enterprise and Borland® CaliberRM™ for requirements definition and management processes within certain teams, to help the company optimize its software delivery.

Borland StarTeam gave us a solidly architected version control and change management solution that we would never have to worry about again,” said Scott Green, manager of Engineering Services at Quest Software.

Nearly all of the database management, and many of the applications management and Windows management product development teams today rely on Borland StarTeam as their primary software configuration management solution, which is backed up and readily available 99.99% of the time.

Previously, development teams, mistrusting of the source code control system in place, were shifting valuable development resources into other roles, including build managers and version control experts. As a result, teams were carrying overhead that negatively impacted their productivity. With Borland StarTeam, Quest was able to reduce the team of build managers and version control experts to two people, and redeploy development resources within each team to more productive roles.

“Borland StarTeam allowed us to replace inconsistent processes and a system that had teams worrying every day about whether they could get a build out the door. We now have a reliable solution that supports our processes and services our teams 24 hours a day,” explained Green.

To-date, the solution’s performance has been outstanding. For example, one development team is located on the Eastern U.S. coast, thousands of miles away from the company’s west coast headquarters, and previously its VSS system was locally in Raleigh. When Quest moved that team’s code to the California headquarters, its build times went from approximately six hours to 35-40 minutes, an 80% reduction in build time—now accomplished remotely.

Since then, the company has installed Borland StarTeam MPX Server to further accelerate remote connection speeds. The result has been faster connection speed than anyone anticipated. According to Green, “With Borland StarTeam MPX Server, we are seeing a 1000% performance improvement on daily builds located at far remote offices.”

The Borland StarTeam implementation has also enabled Quest to more easily evolve to a common components architecture, which facilitates code reuse. This is particularly useful because many products share requirements for components such as security, encryption and other protocols.

“Prior to the common components project, we were going through what I consider a triple waste of effort,” explained Green. “Today, we have eliminated that duplicative effort and increased our code reuse.”

Unlike the previous solution for managing change requests, Borland StarTeam provides development management with the ability to easily gather real-time metrics and produce those

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metrics in a timely, automated and ad hoc manner for meetings. In the past, reporting had been on a customized basis, team by team. This feedback is bringing more predictability to Quest’s development processes.

According to Green, “With our old change management system, very little work was being reported on consistently by teams. Now, anyone, anytime can produce real-time metrics for their use. Whether it be a vice president, a development manager, or a QA manager, now we can conduct analysis on everything happening from all points of view.”

Sarbanes-Oxley Act (SOX) compliance is now the number two reason Quest’s Engineering Services team promotes Borland StarTeam among teams not already using it. Number one is change management. Borland StarTeam helps Quest comply with SOX through its traceability and audit features. Escrow requirements for teams using Borland StarTeam are now automated and transparent to the teams.

In conjunction with Borland StarTeam, some Quest early adopter teams have begun deploying Borland CaliberRM for requirements management and definition. Prior to using Borland CaliberRM, these product teams were leveraging Microsoft Word documents and email. Today, requirements are entered into Borland CaliberRM and using the Discussion Tab feature, discussion threads now happen inside of the product, so communications are captured and documented. “Discussion threads are attached to a specific requirement instead of lost in someone’s inbox,” added Green.

To ensure that Borland CaliberRM does not divide the technical team from others involved in bringing products to market, the Engineering Services team configured the Document Factory feature in Borland CaliberRM to publish requirements into the Quest market requirements document (MRD) template. This allows the team to share requirements information with a much broader audience, not just those with access to Borland CaliberRM.

## RESULTS

Using Borland StarTeam throughout the enterprise, Quest has automated its configuration and change management processes to provide greater predictability and visibility into its development teams’ projects. In addition, Quest has rolled out Borland CaliberRM within specific product teams to improve their requirements management and definition processes.

### Up to 20% increase in developer productivity with more strategic resource allocation

Today 85 Quest teams (approximately 500 employees on more than 100 projects) located around the world leverage Borland StarTeam for software change management and configuration management. Instead of requiring individual developers on every team to focus the majority of their time on builds and version control, Borland StarTeam has enabled these same developers to focus on their core competencies. “Borland StarTeam has gotten our individual teams out of the business of application lifecycle management and focused entirely on delivering products,” explained Green. “Teams no longer have to carry build managers and version control experts, which we estimate has increased some team’s productivity by approximately 20%,”

### Reuse of up to 25% of code

Since deploying Borland StarTeam, Quest has been able to establish a common components architecture. This has greatly enhanced developers’ access to previously written code in a timely manner and in the right release structure. “Today, 100% of our products use some common components, so we are seeing a huge amount of code reuse—in the 15-25% range,” said Green.

### Up to 20% reduction in network utilization

Leveraging Borland StarTeam has enabled Quest to eliminate many of the quality of service issues its teams were having with its previous solution, without deploying expensive alternatives. “By moving to Borland StarTeam, we were able to avoid costly investments and gain a 20% reduction in network utilization in remote offices.”

Borland is the leading vendor of Open Application Lifecycle Management (ALM) solutions - open to customers’ processes, tools and platforms - providing the flexibility to manage, measure and improve the software delivery process.