

Rational ClearCase MultiSite Maximizes Resources, Speeds Development at Siemens

Siemens ICN depends on Rational® ClearCase Multisite to manage large development projects spanning multiple nations and time zones. ClearCase MultiSite® provides the replication, synchronization and platform interoperability Siemens requires for effective non-stop parallel development, worldwide. The result is more efficient use of resources, faster project completion time, and a strengthened competitive position.

Based in Boca Raton, FL., Siemens Information and Communication Networks (ICN) provides highly integrated voice, data, and video communications to carrier and enterprise customers. Last year, the company's 7,500 U.S. employees helped generate sales of close to \$2 billion. Its parent firm is Siemens, the pioneering electronics firm with more than 400,000 employees worldwide and global sales that exceeded \$66 billion in fiscal 1998. ICN products range from Internet Protocol (IP) and broadband/data and voice networks to call centers, transport, and wireless networks.

The Problem to Solve

Through a series of acquisitions, mergers, and partnerships, Siemens ICN acquired development capabilities on a global scale. ICN manages major development sites in Santa Clara, CA, Boca Raton, FL, and Munich, Germany, along with satellite development sites in Canada, South America, and more than a dozen European cities. The company wanted a way to exploit global development by sharing projects and resources among sites.

Effective shared development would enable ICN to:

1) shift programmers from completed projects to ongoing projects, regardless of location; 2) tap pockets of specialized skills; 3) use contractors located in areas where

labor costs are lower; and 4) hasten time to market through faster, around-the-clock development.

"Large companies employ a lot of full-time developers, but the projects they work on can be quite fluid," explains Charlotte Payne, senior engineer in Siemens ICN's tools division in Santa Clara. "Projects end, and reorganizations in large companies often transfer projects between sites. When this happens, you're not going to layoff the idle programmers involved — not when you have other development groups somewhere in the world needing help. Rational ClearCase® helps us to make the most of our engineering talent by sharing resources across all development sites."

According to Payne, ICN's configuration management systems — mainframe-based in Munich and SCCS-based in Santa Clara — were not up to the task. Both lacked the reliability and efficiency required to create a testable code base across geographically distributed development sites.

"With our previous configuration management system, distributed development was possible only by having users remotely log in either to Munich, Boca Raton, or Santa Clara, depending on where their satellite site was, and work over a really slow data connection," recalls Payne. "That was extremely unproductive. What's more, we

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couldn't be sure the network to Munich was going to be up at any one point in time. This could mean having engineers sitting around doing nothing because the link to Munich was down. Replication of project databases was our only viable option.”

A solution that would provide interoperability across multiple UNIX platforms and Windows NT was also required. Although the company is increasing development on Windows NT, development continues to take place on a diverse mix of Sun, HP and SCO UNIX platforms.

Rational ClearCase MultiSite's replication, interoperability, and transparency made it the obvious choice for Siemens ICN's diverse, global development environment.

Around-the-Clock, Global Development

Siemens started out with modest expectations in 1994: replicating its three primary development sites in Santa Clara, CA, Boca Raton, FL, and Munich, Germany. It quickly became apparent, however that Rational ClearCase MultiSite could solve problems in satellite sites as well. Today, well over 1000 developers distributed across 15 sites rely on MultiSite to concurrently manage more than 60 development projects.

Rational ClearCase MultiSite extends ClearCase's familiar branch-and-merge model of parallel development by providing automated, error-free replication of project databases across geographically distributed sites. Seamless integration with ClearCase makes working in a replicated repository just like working in a non-replicated repository – a team's existing tools and policies work without modifications.

Siemens ICN typically has 14 or more sites using Rational ClearCase MultiSite for parallel development across nations and time zones. Projects often involve sites

in both the US and Europe, enabling development to continue uninterrupted around the clock. Synchronization is scheduled to take place at the end of each day in Europe and nine hours later in the US. By transmitting only the changes to each replica, ClearCase Mutisite eliminates the inefficiency and expense of “whole-copy” replication models.

Projects using Rational ClearCase MultiSite at Siemens ICN vary in size from as few as two or three developers in two sites to 100 developers in several sites. “Our largest project, so far, was a load-ware, firm-ware development project spanning one US site, two sites in Germany, and one site in Austria,” notes Payne. “ClearCase MultiSite was invaluable in managing the complexity of that year-long project.”

Payne reports that Rational ClearCase MultiSite has also been invaluable in shifting programmers from projects where they are no longer needed to projects where they are. For example, when the merger of public and private telecommunications divisions resulted in a Santa Clara project being transferred to a Boca Raton organization, the Santa Clara group joined a development group in Europe and one of ICN's partner companies in Canada to complete an ongoing project. “ClearCase MultiSite made that three-way development interaction feasible,” recalls Payne.

Seamless Interoperability and Transparency

Rational ClearCase MultiSite also provided the UNIX/NT interoperability Siemens ICN was seeking. The Rational solution protects the company's UNIX investment by enabling developers to access large UNIX servers from the NT environment.

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Rational ClearCase’s transparent file system was another important feature. Windows developers can use ClearCase commands without leaving their Microsoft Integrated Development Environment; UNIX programmers can work with UNIX commands the same way they always have. “The Rational ClearCase file system appears to be part of the UNIX operating system,” observes Payne. “That was a major advantage for us.”

On Windows NT, the Rational ClearCase file system typically appears as the “M” drive with active views appearing as subdirectories of the “M” root. ClearCase further assigns a “virtual drive” for each active view. “This is a model users can easily understand,” Payne explains. “They go to this network drive and that’s where the VOB – their data is. ClearCase simplifies configuration management, so our developers don’t have to think about it on a day-to-day basis.”

Snappier Builds with Snapshot Views

Siemens ICN’s recent deployment of Rational ClearCase 3.2 gives developers an additional, snapshot view option. snapshot views let developers download ClearCase version data to their PC hard drive or removable JAZ drive. This insulates users from network problems, and makes working from home a viable employee option. “One

project here has users working at least two days per week from home,” reports Payne. “There are other options out there, but SnapShot views are the best solution for casual, at-home users.”

Efficient Resource Management

Payne explains that although the company has not quantified actual time and cost savings of the Rational solution, development time for synchronizing changes between many sites has been greatly reduced.

“The main advantage,” notes Payne, “is that we are able to do transnational development that we were absolutely unable to do before. We can make use of skilled programmers wherever we find them, and avoid layoffs and rehire cycles. In today’s marketplace where skilled programmers are in great demand, that’s an even bigger benefit than having a project schedule shortened by a week or two.”

“In the past, developers whose projects had ended could go days or weeks with nothing to do,” continues Payne. “Now, they can move on to projects that are being managed in Munich, Santa Clara, or Boca Raton and continue working. MultiSite also lets us take advantage of contractors wherever we can find them. The Rational solution truly lets us use resources in a way we never could before.”

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