Rational software

Ericsson CDMA Systems Turns to Rational to Ensure High Developer Productivity

The Opportunity

Ericsson, a 125-year-old telecommunications leader, operates in 140 countries. Forty percent of all mobile calls worldwide are handled over Ericsson equipment. Worldwide, the company operates 23 research and development centers staffed by over 23,000 engineers.

Ericsson is shaping the future of Mobile and Broadband Internet communications through its continuous technology leadership. Ericsson's CDMA Systems Business Unit, based in San Diego, CA, creates Code-Division Multiple Access (CDMA) wireless infrastructure. CDMA technology is the World's fastest growing wireless technology with over 90 million users.

Ericsson's CDMA Systems product development group consists of approximately 3,000 developers spread across numerous development sites in Colorado, Texas, Virginia, Sweden, India, Canada, and South America as well as at the San Diego headquarters.

Software configuration management is central to the way Ericsson works. Ericsson's software development environment involves many business units, work groups, projects, and subsystems. With two distinct product lines and multiple code baselines, data integrity is a top priority at Ericsson CDMA Systems. To ensure the integrity of its development code base, they made extensive use of software configuration management tools.

At one point, Ericsson's CDMA Systems relied upon a low-end version control tool, but it wasn't sufficient for the organization's growing needs. Ericsson needed to support and deploy multiple projects that consisted of complex, geographically dispersed applications. The low-end tool simply wasn't working. It needed a tool that could support parallel development on a global scale. The low-end configuration management tool put the data integrity of the team's code at risk, a key concern voiced by the engineering team.

A strategic decision was made to adopt Rational® ClearCase® and Rational ClearCase MultiSite® to remedy the shortcomings of the previous software configuration management tool. Rational ClearCase and Rational ClearCase MultiSite delivered enterprise-scale, distributed configuration management. The choice of Rational ClearCase proved to be an immediate success and Ericsson's developers quickly came to depend on Rational ClearCase.

Rational ClearCase and Rational ClearCase MultiSite are now a de facto standard throughout Ericsson. Developers can simply take their VOBs (versioned object base — the repository of configuration management data) and plug right into the Ericsson R&D centers.

Now as part of this larger global enterprise, Rational ClearCase and Rational ClearCase MultiSite have become even more important. Ericsson CDMA Systems use them to share code with Sweden, Finland, Canada, India — with development groups all over the world. The CDMA Systems' Rational ClearCase environment supports over 2,000 configurations, which define different component organization structure for different teams, and synchronizes copies of the code every 30 minutes to ensure developers are always working with the latest code.

The Rational Advantage

At Ericsson, product development is a global affair. Ericsson's CDMA Systems coordinates teams of developers around the world. Rational ClearCase MultiSite allows developers in any location to see the latest code developed at any other location. Developers can be confident that the code they see is never more than a couple of hours old. Often, it is just minutes old.

For Ericsson's CDMA Systems, the ability to quickly share code globally amounts to around-the-clock development, which results in high developer productivity. When developers in San Diego stop for the day, their counterparts in

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Sweden or India, time zones away, are arriving to pick up where the others left off. In this kind of environment, fast, accurate distributed software configuration management is critical. Ericsson's developers need the very latest code changes and with Rational ClearCase MultiSite, they can accomplish that objective.

The value of Rational ClearCase and Rational ClearCase MultiSite is now recognized at the highest levels of management. Top management is concerned about saving money and increasing productivity and appreciates the role of Rational in achieving those objectives.

The Importance of Rational ClearCase

Rational ClearCase has been a fact of life at Ericsson. Its ability to support large groups of developers, very large and complex code bases, multiple teams, and parallel development made it the natural choice for the company.

From a technical standpoint, Rational ClearCase and Rational ClearCase MultiSite proved ideal for managing the sprawling Ericsson development environment. For example, at its primary development centers alone, Ericsson CDMA Systems manages two Rational ClearCase MultiSite hubs supporting 16 ClearCase regions. The two hubs handle approximately 200 VOBs and anywhere from 4-30 replications of VOB in different sites.

To ensure ready access to the VOBs around the clock, Ericsson maintains VOB storage backups online and always keeps them current. It does so by configuring the Rational ClearCase VOB storage as the master, and a backup disk as the shadow. At no less than a 24-hour interval, the shadow is updated from the master. After updating the shadow, Ericsson runs the Rational ClearCase command dbcheck to verify that the backup on the shadow disk is good. The VOB storage on the shadow is then copied to tape.

Ericsson also leverages Rational ClearCase MultiSite as a key part of its VOB recovery strategy. At approximately 30-minute intervals, it generates synchronization packets. These synchronization packets then can be used to update the recovery of the VOB storage backup to a point no older than 30 minutes.

The VOB backup process itself locks up the VOB server for less than 2 minutes. With Rational ClearCase and Rational ClearCase MultiSite, no developer is ever working with data more than one-half hour old or is locked out of a VOB for more than a minute or two. This enhances high developer productivity.

The scalability of Rational ClearCase also has proven to be an asset. The number of VOBs maintained within Ericsson has tripled. But Rational ClearCase is able to scale to support the increase without even a hiccup.

Ericsson's Rational/Sun Platform

To ensure the top performance and availability of its critical Rational ClearCase and Rational ClearCase MultiSite environments, Ericsson CDMA Systems developed a standard hardware platform and a cookie-cutter configuration for deploying the platform worldwide. The platform consists of clusters of Sun Enterprises' 220R and 420R servers and Sun StorEdge T3 Fiber Channel disk arrays for storage. The new platform makes for much easier administration and results in better reliability and greater uptime.

Ericsson also discovered that the new platform enables the company to save money on the developer's workstation. Because the new platform creates a highly reliable computing facility — a compute farm — the company no longer needs to equip developers with costly high-end workstations. Instead the developers can use lower cost Sun Ray network appliances and tie into the highly reliable, centralized compute farm, which saves money as well as increases developer productivity.

When Hours and Minutes Matter

Hours and minutes matter at Ericsson. With Rational ClearCase and Rational ClearCase MultiSite, Ericsson is able to ensure that developers have the latest code and can share code quickly and easily across projects and locations. Few precious minutes are ever lost waiting for code. The bottom line: increased developer productivity and faster application development — a winning combination.