

Revolutionary Real-Time Solution for CVS Allows Leading e-Learning Company's Globally Distributed Development Teams to Work Together in Real-time

PLATO Learning is a leading provider of computer-based and e-learning instruction for kindergarten through adult learners, offering curricula in reading, writing, mathematics, science, social studies, and life and job skills. The company also offers innovative online assessment and accountability solutions and standards-based professional development services. With over 6,000 hours of objective-based, problem-solving courseware, plus assessment, alignment, and curriculum management tools, we create standards-based curricula that facilitate learning and school improvement.

PLATO Learning's educational software, delivered via CD-ROM, the Internet, and private intranets, is primarily marketed to K-12 schools and colleges. The company also sells to job training programs, correctional institutions, military education programs, corporations, and individuals.

PLATO Learning is headquartered in Bloomington, Minnesota. The company has offices throughout the United States, Canada, and the United Kingdom. PLATO Learning works with an outsourcing partner in India to assist with software and courseware development.

PLATO Learning's Challenge and Opportunity

PLATO Learning uses CVS to act as a repository and versioning system for all of the work done by its software and courseware developers, including design documents and source code.

Before implementing WANdisco, PLATO Learning maintained a central CVS server at their US headquarters in Bloomington, Minnesota and a second repository at their outsourcing partner's development site in India. PLATO Learning had considered allowing their Indian outsourcing partner to access the CVS repository in Bloomington directly over the WAN, but access for the developers in India proved to be extremely slow and painful. As a result, working copies of source files were FTP'd between sites as needed. Collaboration between the US and India was limited, and work ended up being distributed on the basis of time zone constraints, rather than on the basis of where talent was located.

That's when they decided to look for a multi-site solution that could meet their needs in terms of network performance, fault-tolerance and immediate replication.

When PLATO Learning investigated other multi-site solutions they typically found that these solutions relied on asynchronous master-slave approaches wherein source code files are checked out from local "slave" CVS repositories by developers at the remote sites and checked in to a master repository. Changes to the master are then replicated back to the remote slaves by the CVS administrator. However, because the replication processes employed by many of these master/slave multi-site solutions tend to create tremendous loads on the server as well as the network, most administrators do infrequent updates, usually once per day. As a result, the remote slave CVS repositories are always out of sync with the master, and checkin failures are common. To avoid these issues, organizations that implement these solutions are often forced to partition their work based on time zone and location, so collaboration is effectively limited. This was exactly what PLATO Learning wanted to avoid going forward. They felt that it was critical to deploy a solution that provided real-time replication so that all of their CVS repositories were in sync, and all of their developers would effectively be working from the same copy of CVS, regardless of time zone or location.

The other problem PLATO Learning found was that a master server can easily become a single point of failure. This can become a significant issue for remote sites that are separated by large time zone differences, since it might take the administrator at the master server site until the next day (from the remote site's perspective) to get CVS back up and running. Even if the master server is up, any loss of network connectivity will mean that the remote locations will be unable to commit changes, resulting in project delays that could impact PLATO Learning's ability to deliver e-Learning solutions to customers on time. Because of this, PLATO Learning felt that it was critical to have a fault-tolerant solution that would provide failover capabilities, and ideally, some automated recovery capabilities.

After looking at other multi-site solutions, and not seeing any that offered what they were looking for, PLATO Learning was ready to continue with their current approach. Then they learned about WANdisco.

The WANdisco Solution

WANdisco's Replicator for CVS provided PLATO Learning with a cost-effective, fault-tolerant software configuration management (SCM) solution that synchronizes work from their globally distributed development teams in real-time. With WANdisco, CVS repository replicas from distributed development sites connected over a wide area network (WAN) are functionally identical to a single CVS repository. This means that procedures don't have to change when software development moves offshore, as is often the case with competing multi-site development solutions. With WANdisco, all of the cost-savings and productivity improvements that should be achieved from going offshore are actually realized.

Profile

Plato Learning provides e-learning solutions to schools, corporations and government agencies.

Locations

Corporate headquarters are located in Bloomington, Minnesota with offices throughout the US, Canada, and the UK. Plato's outsourcing partner is located in India.

CVS Users

100

Objectives

- Deploy a multi-site solution that offers real-time replication, so that work doesn't have to be partitioned based on location, and collaboration between globally distributed teams is enhanced.
- Minimize or eliminate the impact of network or server failures on remote development sites to prevent delays and minimize risk.
- Eliminate network performance problems and avoid additional bandwidth costs to support development teams in India.
- Leverage existing CVS skills, so that staff doesn't have to be retrained.

Solution

- WANdisco synchronizes work from multiple sites in real-time. Developers effectively work from the same copy of CVS, regardless of location. There's no need to partition work to avoid checkin failures and other problems. Developers can now collaborate in real-time.
- WANdisco's self-healing capabilities meant that development work was never lost. Developers at a site experiencing network or server problems can keep on working.
- WANdisco minimizes WAN traffic, and eliminates the normal "chattiness" associated with CVS. Bandwidth use is greatly reduced and network performance improves dramatically.
- WANdisco complements CVS, so very little training was required for implementation.

We needed a multi-site solution that would provide real-time replication capabilities, so that we could get our developers in India collaborating more closely with our US team. We were also looking for a solution that would provide fault-tolerance, and ideally some automated recovery capabilities.

Nothing we looked at provided any of these things. They all relied on what were essentially asynchronous master/slave approaches to replication that would have required adding more CVS admin staff, and didn't deliver the failover and recovery capabilities we were looking for.

Then we learned about WANdisco's real-time active/active replication for CVS, along with its self-healing and failover capabilities. After doing an evaluation, we were sold. We'd definitely recommend WANdisco.

*—Corey Thompson, Software Development Manager
PLATO Learning, Inc.*

WANdisco's Replicator for CVS:

- Immediately replicates changes made at one site to all of the other development sites on a network. It's functionally equivalent to having everyone working from the same CVS repository, regardless of where they're located.
- Doesn't rely on excessive error-prone source code branching and merging required by competing multi-site solutions that don't provide WANdisco's real-time CVS repository synchronization capability.
- Eliminates time lost waiting for large builds to complete
- Reduces disaster recovery time to zero with self-healing capabilities that prevent developers' work from ever being lost.
- Dramatically reduces network traffic and bandwidth costs
- Costs much less to implement and administer than any competing multi-site solution.
- WANdisco is even much less expensive than sticking with a Central CVS Server approach and having remote users come in over the WAN, as PLATO Learning had done in the past.
- Allows staff trained in CVS to leverage those skills without any learning curve.

The Results

With WANdisco's Replicator for CVS, and the real-time CVS repository synchronization that it provides, PLATO Learning has been able to avoid source code synchronization issues. In addition, when the inevitable network or server failures occur, WANdisco's self-healing capabilities ensure that recovery happens automatically without any intervention from a CVS administrator. Developers can even continue working until connectivity is restored. This means zero loss of data and zero loss of development time, while at the same time eliminating PLATO Learning's exposure to risk from human error in a disaster recovery scenario.

The other multi-site solutions PLATO Learning looked at were much more expensive than WANdisco. They didn't really solve PLATO Learning's problem because they lacked the real-time synchronization capabilities that WANdisco's active/active replication provides.

Finally, because WANdisco offers a solution that complements CVS, it allowed PLATO Learning's CVS administrators and development staff to leverage the CVS skills that they already had. PLATO Learning hasn't lost time retraining

existing staff to use a new multi-site solution based on something other than CVS.

About PLATO Learning

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With trailing 12-month revenues of approximately \$131 million, PLATO Learning is a publicly held company traded as TUTR on the NASDAQ. PLATO Learning educational software, delivered via networks, CD-ROM, the Internet, and private intranets, is primarily marketed to K-12 schools and colleges. The Company also sells to job training programs, correctional institutions, military education programs, corporations, and individuals.

PLATO Learning is headquartered in Bloomington, Minnesota. The Company has offices throughout the United States, Canada, and the United Kingdom, as well as international distributors in Puerto Rico, South Africa, and the United Arab Emirates. For more information, please visit <http://www.PLATO.com>.

About WANdisco

Since 2001 WANdisco has set out to push the limits of what can be achieved with distributed systems deployed on a Wide Area Network (WAN). The underlying technology fundamentally changes the way distributed nodes, or servers, interact to provide unprecedented levels of reliability, availability and scalability (RAS) enabling the internet to realize its full potential.

WANdisco for CVS is unique in Software Configuration Management (SCM). For the first time a development team can truly be spread-out across the world and still work as one unit, in real-time. With WANdisco's unique active/active replication technology there is no necessity for error-prone source code branching and manual file merging. In addition, the self-healing capabilities offered by WANdisco for CVS ensure high availability and automate disaster recovery without the need for any third party products.

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