

## *Revolutionary Real-Time Multi-Site Development Solution for CVS Allows World Leader in Digital Media To Enable Teams in Taiwan and US to Work as One*

Crystal Media Technology, Inc. is a wholly-owned subsidiary of MediaTek, a leading fabless IC design company, and the world's largest supplier of chipsets for CD-ROM, DVD-ROM, CD-RW, and DVD players. Founded in 1997, MediaTek has over \$1 billion in annual sales.

### **Crystal Media's Challenge and Opportunity**

Crystal Media was using a home-grown solution to periodically synchronize source code repositories in the US and Taiwan. Since the two repositories were frequently out of sync, Crystal Media relied on extensive source code branching to prevent developers at one site from clobbering work done by developers at the other site. This meant that the two development teams were frequently working in isolation from each other. Errors resulting from miscommunication between the two teams often weren't discovered until the time came to integrate development work from the two sites. When network or server failures occurred, development stopped and recovery was nearly impossible. As a result, development cycles were frequently longer than planned, new product introductions were delayed, and ultimately the company was losing money. All of these factors led Crystal Media to look for an alternative.



Other multi-site development solutions that Crystal Media evaluated before selecting WANdisco were based on asynchronous master-slave approaches to replication, in which a master repository is replicated back to read-only slave repositories on a periodic basis, leaving the master and slave repositories out of sync most of the time. Crystal Media would have had to continue with their current approach of including an excessive number of branches in their source code tree to prevent developers at one site from clobbering the same modules developers at the other site were working on. It would have also meant a continuation of the error-prone manual file merging headache that they were already dealing with. In addition, none of the multi-site development solutions that they evaluated did anything to address disaster recovery and high availability.

After months of looking at various multi-site solutions Crystal Media was ready to continue with the status quo. Then they learned about WANdisco.

### **The WANdisco Solution**

WANdisco for CVS provided Crystal Media with a cost-effective, fault-tolerant software configuration management (SCM) solution that could synchronize 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**

Crystal Media is a wholly owned subsidiary of MediaTek, a leading fabless IC design company, with over \$1 billion in annual sales.

### **Locations**

Hsin-Chu City, Taiwan and Sunnyvale, California

### **CVS Users**

50

### **Objectives**

- Eliminate errors and delays caused by source code repositories in Taiwan and the US being out of sync.
- Minimize or eliminate the impact of network and server failures at development sites.
- Minimize bandwidth usage and improve network performance
- Leverage existing skills, so that retraining isn't required.

### **Solution**

- WANdisco replicates changes made at one site to all of the other development sites in real-time. The effect is the same as if all of the developers worked together at the same site against the same repository, at LAN speed over a WAN.
- WANdisco's real-time capabilities have meant that development procedures such as excessive source code branching and manual file merging are no longer required.
- WANdisco minimizes WAN traffic, and eliminates the normal "chattiness" associated with CVS. Network performance has improved dramatically.
- WANdisco's self-healing and high availability features automate disaster recovery and reduce downtime to zero.
- WANdisco leverages existing CVS skills, so no retraining was required.

*"With WANdisco's real-time active-active replication capabilities, it really is as if our developers in the US and Taiwan are working together at the same site against the same CVS repository, over a LAN instead of a WAN. The isolation between our developers in the US and Taiwan has effectively been eliminated. Problems are detected earlier, development and QA cycles are shorter, and there's much less rework.*

*Since implementing WANdisco, even when network outages have occurred, our developers have been able to keep on working as normal. When the network was restored, recovery was automatic. We couldn't believe how seamless it was."*

*—Felix Freimann, Software Engineering Manager  
CrystalMedia Technology, Inc.*

## **WANdisco 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 together at the same site against the same CVS repository, at LAN speed over a WAN.
- Doesn't rely on the excessive error-prone source code branching and manual file merging required by competing multi-site solutions that don't provide WANdisco's real-time active-active replication capabilities.
- Eliminates time lost waiting for large builds to complete when work is integrated from multiple sites to meet project milestones.
- Reduces disaster recovery time and downtime 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.
- Allows staff trained in CVS to leverage those skills without any learning curve.

## **The Results**

With WANdisco for CVS, and the real-time active-active replication capabilities that it provides, Crystal Media has been able to avoid the excessive source code branching and manual file merging that had been the source of so many errors and delays in their development cycle in the past. The isolation between Crystal Media's development teams has effectively been eliminated. Errors are discovered more quickly, QA cycles are shorter, and there's much less rework than in the past. In addition, when the inevitable network or server failures have occurred, WANdisco's self-healing capabilities have ensured that recovery has taken place automatically without any intervention from a CVS administrator. Developers have even been able to continue working during network outages. This means zero loss of data and no lost development time, while eliminating Crystal Media's exposure to risk from human error in a disaster recovery scenario. WANdisco

has also allowed Crystal Media to reduce their network bandwidth costs and improve network performance significantly.

Finally, because WANdisco offers a solution that complements CVS, it has allowed Crystal Media's CVS administrators and development staff to leverage the CVS skills that they already had. Crystal Media hasn't lost time retraining existing staff to use a new multi-site solution based on something other than CVS.

## **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 result of these efforts is new technology that 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 has applied this technology to the development of its suite of multi-site SCM solutions for CVS, CVSNT, and Subversion. For the first time a development team can truly be spread-out across the world and work as one unit, in real-time.

Global 2000 companies rely on WANdisco's suite of SCM solutions for CVS, CVSNT and Subversion to enable them to distribute work based on where their talent is located, rather than time-zone constraints. This results in dramatically reduced costs and significantly improved utilization of scarce resources.

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