

Blackboard Ensures E-Mail Availability with AppAssure's Replay Appliance

Background

Blackboard Inc. is a leading provider of enterprise learning software applications and campus commerce solutions. Founded in 1997, Blackboard enables educational innovations everywhere by connecting people and technology. Blackboard's online learning application, the Blackboard Learning System, is the most widely-adopted course management system among U.S. postsecondary institutions.

Reach: International (Washington, DC Headquarters)

End-Users: Blackboard's clients include primary and secondary schools, higher education, professional education markets as well as textbook publishers and student-focused merchants. Blackboard and its clients have pioneered the emergence of the e-Education industry around the world.

“[Replay Appliance] costs two-thirds of other available solutions.”

— **Ryan Dorman**
Network Engineer,
Blackboard Inc.

Blackboard's business is electronic. Educational content is delivered electronically, customer support is delivered electronically and business is transacted electronically.

Of course, email is the heart of all that electronic business communication. What happens to a business like Blackboard when email stops working? Orders aren't received. Support messages aren't sent. Communication stops. Like most companies, an email outage at Blackboard means lost business, frustrated customers, angry partners, and very anxious employees.

That's why Blackboard's IT team took steps to ensure that their mission-critical Microsoft Exchange environment was always online and running properly. Despite Blackboard's investment of millions of dollars in high-end technology, a data corruption issue brought its Exchange operations to a standstill, leaving employees and key stakeholders without a way to quickly communicate.

“We are running Exchange on two separate two node clusters,” explains Ryan Dorman, one of Blackboard's Network Engineers. “We have a real enterprise environment; a SAN [storage area network] running EMC equipment serving 1,500 mailboxes with a data store that exceeded 350GB. Our IT engineering group was devoting a significant portion of its resources to managing and monitoring Exchange tape backups. While we knew that there was a possibility that data corruption could impact our Exchange operations, but we really thought that the likelihood was quite small and that, using our backups, we'd be able to restore the system quickly without any significant loss of messages and other data.”



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In reality, according to research conducted by Microsoft, the probability of data corruption leading to an Exchange failure is quite high - about 20%.

Unfortunately, Blackboard’s engineers found themselves among the unlucky 20% when a data corruption event went undetected and brought Exchange operations to a halt. Blackboard had been running bi-weekly backups, each taking about 12 hours to run, on Sunday and Wednesdays. Dorman and his team turned to their extensive library of backups only to find that the latest Wednesday backup had failed to run.

After exhausting a great deal of his team’s resources on system and data restoration by moving backwards through the backup library to search for the last known good state, they were finally able to get Exchange and all the users that depend on it, back up and running. Unfortunately 3 days of mail were lost for a significant number of users.

The engineering team realized that their traditional combination of Exchange, clustering and backups weren’t enough. Dorman began researching solutions that streamlined the backup process, provided proactive corruption prevention, performed continuous data protection and focused on Exchange recovery.

An article in Windows IT Pro Magazine referencing Exchange data store corruption led him to AppAssure and Replay Applmage. “I’d spent about three months researching and evaluating other solutions including Symantec and EMC. “They were not a good fit for our organization due to cost, the reliance on vendor-specific hardware and the lack of an easy-to-use interface. AppAssure’s Replay Applmage offered continuous backup and could run on the industry-standard, commodity hardware we already had in-house. And, it costs two-thirds of other available solutions. So I visited AppAssure’s web site, quickly realizing their Replay Applmage product addressed my needs and then obtained a real-time price quote.”

“Like many of our customers, Blackboard still had fresh memories of their difficult Exchange moment – lengthy downtime and data loss. After hearing about their experience and understanding their environment, we offered Ryan an opportunity to try out a beta version of Replay Applmage,” reports Todd Frederick, AppAssure’s Executive Vice President of Sales and Marketing. “It had some features Ryan was looking for and his team was instrumental in sharing with us a real world look at how the project progressed.”

Now, with Replay Applmage fully implemented, Blackboard is only minutes away from complete Exchange recovery should they experience anything from a small glitch to a full-blown disaster. Preventing disasters is easy and automated; and there are no more 12-hour backup sessions to manage.

Worry that another episode of data corruption will lead to an Exchange outage is eased by Reply’s continuous validation of data as it enters the data store. Corrupt data is detected and barred from the data store, ensuring that it doesn’t lead to a failure or propagate to backups.

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Blackboard is also protected from Exchange outages that result from hardware failure (such as a failed optical disk). Microsoft asserts that 42% of Exchange outages actually caused not by Exchange, but by the underlying hardware (Exchange server) or software (operating system errors, power interruption, failed drives, etc.) These events lead to an abnormal Exchange state, and can corrupt Exchange’s data.

Blackboard also benefits from Replay’s efficiency-oriented functions that augment the Exchange environment. Backups are now conducted (data-store validation and backup-to-tape processing) via the Replay server devoting Exchange server capacity to processing more transactions on the server. The Replay server actually adds to overall Exchange capacity.

And, while disasters are by nature unpredictable, Blackboard knows that Replay Applmage will enable them to quickly recover if one occurs. “We implemented Replay to avoid disaster,” says Dorman. “But it’s very nice to know that if something unforeseen hits our Exchange servers or data, Replay Applmage has maintained the O/S, Exchange application, and data as Windows-mountable recovery points. That means that Exchange disaster recovery can be accomplished in minutes, not days.”

“If we’d implemented Replay Applmage a year ago, we never would have had an Exchange failure story to share,” says Dorman.

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