CASE STUDY

SOLUTIONS THAT PASS THE TEST

THE CUSTOMER
Questar Assessment Inc.

INDUSTRY
Educational Testing Services

THE SOLUTIONS
Custom Atomic Cloud® Architecture, Disaster Recovery, & 24x7 NOC Monitoring

BENEFITS
• Scalable infrastructure built for the future
• Minimized downtime through redundant disaster recovery
• 24x7x365 eyes & expertise
• An honest and transparent IT partner

THE SITUATION

Thirty students sit quietly in front of 30 small laptop computers. Their teacher reviews instructions for a test at the front of the class. Three students nervously raise their hands to report that the Wi-Fi connection is not working. The teacher calls the school technology specialist, and the young woman strolls into the room and quickly resolves the issue.

The clock strikes nine o’clock and the teacher says, “You may begin.” The students all click “Start Test” on the web browser in front of them. Then a student’s hand shoots up and the teacher calmly but quickly walks over. The child says that the test webpage is not working. It’s trying to go to the next question but the browser wheel is just spinning. Then it times out. A call to the principal confirms that no one in the school can access the testing platform.

Students today have the ability to do much of their learning, collaborating, and testing in online environments that track their answers and give feedback in real time. When these environments work, they allow children to learn at their own pace, playfully engage with their assigned subjects, and easily share their scores with their teachers. When they don’t work, it can mean hours or even weeks wasted on systems and technology that are slow or unresponsive.

Many companies provide online testing and assessment environments to schools statewide. It’s critical that these companies have robust networks in place to handle online access that might jump from zero to as many as 300,000 students within as few as 15 minutes. This kind of quickly escalating network traffic creates enormous stress on networks, software platforms, and servers. Companies that can’t deliver that level of service at critical times will develop a bad reputation for letting down schools and students when they are needed most, and might even be at risk of losing their state contracts.
Questar Assessment Inc., a K–12 assessment solutions provider focused on building a bridge between learning and accountability, understands that pressure well. While Questar’s fresh approach to meaningful assessment, its technical innovations that set the standard for scalability and reliable online testing performance, and the way it is reimagining how assessments can empower educators with insights that improve instruction are raising expectations about what it means to be an assessment partner—with those great expectations come even greater responsibilities.

One day during the Spring 2016 testing season, the unthinkable happened. Questar’s relatively new CTO, Nate Ober, remembers that day all too well.

“Students in standardized testing environments only access our website between the hours of 7:30 a.m. and 4:30 p.m., so our test delivery website can go from literally no traffic to, say, 30, 60, or even 100,000 students logging onto our website at the very same time. And literally, the flow of traffic into our network just turns on like that, like a faucet.” Ober said, snapping his fingers. “Our network is designed to absorb that level of traffic—and more—with no difficulty. But one day we were testing in a state and we had a hiccup that lasted for seven minutes. Seven minutes of students in seats trying to take a test, with our network down and not responding.”

It was a disaster that could have nullified Questar’s contracts with the state in question during its very first year of testing with the company and ruined their reputation among other clients and prospects.

While the Questar network team watched in disbelief as the students on their testing platform seemingly plunged off a cliff, Ober called the hosting provider on the East Coast to get the situation resolved.

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The provider’s explanation was far from satisfactory. Because it had not previously seen that level of traffic, its intrusion prevention system interpreted the traffic surge as a potential distributed denial of service attack (DDoS). The provider made the unilateral decision to circumvent or reroute the traffic, shutting down testing without consulting Questar.

This lapse in communication made it clear that while transparency was key for Questar, it was not enough of a priority for their hosting provider.

“That same day I gave Larry Patterson of Atomic Data a call and told him what was going on,” said Ober. “He came in the next day. At first, I was looking for some consulting services. But Atomic Data offered much more than that.”

THE SOLUTION

After Ober’s consultations with Patterson and Atomic Data CEO Jim Wolford, he convinced his own team that they had the right solution to move forward, and made the decision to migrate services to Atomic Data.

Ober knew that another failure was likely if they continued to work with their former provider. He also knew that racing to move their production network over a 72-hour period and then flipping the switch on Monday morning—right before testing was to begin again—carried its own risks. But thanks to the heroic efforts of his internal IT team, in collaboration with Atomic Data’s high level architects, the gamble paid off. This successful high-wire act kicked off the partnership between Questar and Atomic Data.

THE DETAILS

To prevent issues like the one that Questar experienced with their previous provider, Atomic Data used F5® enterprise load balancing and local traffic manager (LTM). This design shares the processing load across the entire chassis, not just one blade, to maximize performance and efficiency. Traffic flows through the LTM before reaching the servers, encrypts everything from the client to the server, and protects against DDoS attacks.

After the original assessment and server deployment, Questar and Atomic Data worked together to implement new safeguards to the system, such as a geographically redundant disaster recovery build and new virtual environments.

“Before Atomic Data, we never had geographic redundancy… Because of the limitations of the previous provider, our old architectural design, only allowed for a fail-over event that could take five or 10 minutes to come back online. We never had to rely on that, so I don’t know how well it would have worked,” stated Ober.

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SAFE. SIMPLE. SMART.
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Atomic Data’s customized network solutions, white glove service, and partnership make creating and scaling high-volume testing environments efficient and repeatable. While there were bumps along the way, Atomic Data remained in communication—clear, transparent, and eager to support—24x7. It’s that commitment to service that creates lasting, successful relationships between Atomic Data and clients like Questar.

“The fact is, I’ve come to trust the people at Atomic Data to be brilliant, which has really made my job easier,” said Nate Ober. “Atomic Data has become exactly the service provider we need.”

THE BENEFITS

Through Atomic Data’s expertise, Questar now has a reliable infrastructure with scalable architecture unlike any it had experienced before. Behind that structure is a proactive, responsive, always-on monitoring and support network of technicians and engineers. But Atomic Data’s white glove service goes beyond 24x7x365 support. White glove service means honesty, transparency, and direct communication. Atomic Data prides itself on their dedication to doing what’s best for the client, not just telling them what they want to hear.

“I feel a measurable anxiety from Atomic Data when they see a problem coming down the pike that we are not being proactive enough to solve,” said Ober. “The Atomic Data team reaches out well in advance of the particular problem. Sometimes the problems materialize and sometimes they don’t. Either way, they’re not afraid to speak up when they see something that leads them to believe that we might not acting in our own best interests.”

Now, Ober meets regularly with Patterson and the Atomic Data staff. Behind the scenes, Atomic Data’s Questar-dedicated team meet regularly as well to discuss how things are going, where improvements can be made, and how to strengthen the relationship between Questar and Atomic Data.

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“I get together with Larry to discuss his vision, my vision, and what we can do to plan for the future,” reflected Ober. “Larry likes to talk about the assessment season as a war. You can’t just show up for a war and start fighting it. You have to get the troops ready and figure out the logistics. The fact that Atomic Data is as concerned about it as I am says a lot.”

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