The Epiphany School

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ATLANTIS HYPERSCALE BOOSTS PREP SCHOOL'S VDI PERFORMANCE TO AN A+

The Epiphany School of Gobal Studies leverages Atlantis HyperScale to achieve **all-flash performance for every application while reducing the storage capacity needed by 80%**

The Epiphany School of Global Studies prepares its students for life in the 21st century, emphasizing a broad range of skills and experiences. Founded ten years ago by author and philanthropist Nicholas Sparks, this New Bern, North Carolina college-prep school prides itself on offering students a premium educational experience, boasting a 100% college acceptance rate for graduates.

Its curriculum centers on creativity, curiosity, adaptability and critical thinking, with a further emphasis on communication and deep exposure to the humanities. Students also receive broad exposure to science, technology and math; while a focus on global studies demands world travel, service and language fluency in addition to classroom work.

Needless to say, technology is at the center of the Epiphany educational experience, and when students' access to applications, data, or the Internet is slowed, it creates a major impact across the organization.

This past year, Epiphany's IT infrastructure was very obviously lagging, providing underwhelming performance for the school's 500 or so daily users. After a major performance failure in the school's media lab, Bobbi Jo Kelly, Director of Technology, knew that Epiphany needed a fresh strategy as innovative as the school's educational mission.

PERFORMANCE CHALLENGES ACROSS TWO CAMPUSES

It was bad enough for the sixty or so Epiphany faculty members to be inconvenienced, but 500 K–12 students? Unacceptable. According to Kelly, the problem began with the Citrix XenDesktop implementation's massive RAM consumption.

CHALLENGES
- Resolve daily performance issues that impede high-level educational outcomes
- Eliminate the need to continually provision new infrastructure to support increasing application and network demand

SOLUTION
- Atlantis HyperScale, Supermicro based all-flash, hyper-converged appliance
- 10-Gbit Supermicro switch

BENEFITS
- Drastically improves user experience, especially during peak demand
- Reduces storage consumption overall by 80% and VDI by 96%
- Uses just 30% of the power required by previous solutions
- Achieves greater scalability to accommodate growth in user numbers

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"Say the media lab of 27 kids is working on Microsoft PowerPoint presentations. That means I've got 27 sessions of PowerPoint running, and oftentimes the servers just could not handle that kind of load. When a system's getting hammered it leads to additional RAM consumption, which creates a logjam effect in the disk queuing."

It's not that the infrastructure was old — Epiphany ran a pair of recent-year HP servers that served Citrix sessions to two campuses via fiber, CAT6 cabling, and CISCO switches. This just wasn't enough to support the school's extensive use of VDI. The servers were not able to keep up, particularly their disk storage subsystems.

UPGRADES THAT WEREN'T
The school responded by purchasing a series of hardware upgrades. They added another server. They added more RAM, maxing out each server at 192GB. They added more drives to the new server and a QNAP storage device in an attempt to offload some of the resources. Yet they were still struggling with long response times and daily performance crunches, such as when the majority of staff members logged on at 7:30 each morning.

"The kids were aggravated," says Kelly. "They get a little panicky when they have a paper due for somebody and can't access it quickly. It's very crippling for them. Then students go home and complain to parents that our network doesn't work well, which makes them wonder for what their tuition's paying."

The hardware-upgrade cycle had to end. "I can't get money every time I want a new server," says Kelly. "We have to be very cost conscious about our purchases. Adding to that system was eating up our budget, and to what end? We needed a new strategy."

A FRESH APPROACH WITH ATLANTIS HYPERSCALE
That new strategy came by way of Atlantis HyperScale, an all-flash hyper-converged appliance which could offer relief from the disk-queue logjams endemic to their current VDI implementation. But first, Kelly had to sell it to the Leadership Team.

"I was nervous about having a conversation with the rest of the leadership team saying 'Hey, I think we should scrap the three servers and put in this whole new one.' I imagined everybody around the table saying, 'Are you crazy?'"

She explained that this one box could take on the load of the three (and more) because of HyperScale's in-memory technology and all-flash architecture allowing it to react to user input and serve its resources much faster and more efficiently.

According to Kelly, the school administration has always been very forward-thinking when it comes to IT, always eager to ensure that the kids get the chance to work with the best and latest technologies. They'd already spent $400,000 for the existing resources, though, so some convincing was needed.

VIRTUALISED IT ENVIRONMENT
- Citrix XenServer
- Atlantis HyperScale CX-12
- 12TB Storage Capacity
- Blackboard
- Microsoft Windows 7
- Microsoft Office 2013

"That's amazing, since we had three HP servers in there struggling under the same workloads; whereas the HyperScale solution isn't even batting an eye. That's in large part thanks to the Atlantis in-memory optimization technology in HyperScale that serves IO right out of RAM, almost completely eradicating wait times. "

Bobbi Jo Kelly
Director of Technology
The Epiphany School of Global Studies

PERFORMANCE INCREASES OVERNIGHT

Given the green light, an Atlantis HyperScale running on Supermicro servers, with 12TB capacity and 256GB RAM for each of the four nodes was deployed including a new 10-Gbit Supermicro switch for faster network performance. Installation occurred in May, affording Epiphany the summer for testing and possible rollback.

No rollback was necessary, however, as the results were immediate. The move from HP servers to the Atlantis HyperScale solution reduced overall storage consumption by around 80%, with the greatest reduction on the VDI side at around 96%.

"We're not even straining the HyperScale cluster yet" says Kelly. "That's amazing, since we had three HP servers in there struggling under the same workloads; whereas the HyperScale solution isn't even batting an eye. That's in large part thanks to the Atlantis in-memory optimization technology in HyperScale that serves IO right out of RAM, almost completely eradicating wait times."

A NICE SURPRISE: POWER SAVINGS

Power outages are a fact of life in Eastern North Carolina. Epiphany's previous trio of HP servers were notorious for burning through their industrial-strength UPS before Kelly could bring them all down gracefully, creating a big headache not just for IT, but for students who occasionally lost data.

Since the new HyperScale cluster uses just 30% of the power that the previous servers drew, Kelly is now able to bring it down smoothly before exhausting the UPS. According to Kelly, "The data center's lost power several times since the cluster was brought online and I've yet to have to bring up the server from a power failure — a totally unexpected benefit."

THE MOST IMPORTANT TEST

Thankfully, the entire school's end user population are appreciating the much-improved performance, right down to the kindergartners.

"Our fat client users alone see a massive speed increase," says Kelly. "We have two media labs of Xen clients, one on each campus, and the kids in there said, 'Did you do something different to the network?' Needless to say, the school is thrilled."

Now that school is back in session, Kelly continues to monitor the system, and remains completely satisfied with its performance.

"I really wanted to see how much strain we could put on the system and if it would slow down," says Kelly. "And, unlike last year, I haven't heard a single complaint. It's living up to its word. It was going to make things better and faster, and it did."

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