



Ensuring flexible learning models

Spring Branch ISD supports 30% growth in 3 months on infrastructure that's 83% smaller with Dell EMC Solutions for Microsoft Azure Stack HCI.



K-12 education

United States

Organization needs

To ensure optimum learning from homes and 47 schools, Spring Branch ISD must give students, teachers and staff fast, continuous access to educational and enterprise applications. When Spring Branch's infrastructure neared end of life, it sought a hybrid-cloud solution that could support rapid growth and change, and boost performance and savings.

Solutions at a glance

- [Dell EMC Solutions for Azure Stack HCI](#)

Organization results

- 30% growth supported in 3 months without additional nodes.
- Thousands of additional concurrent VPN users accommodated.
- 50% fewer help-desk tickets plus 99.999% uptime.
- Reduces power, cooling and maintenance costs.

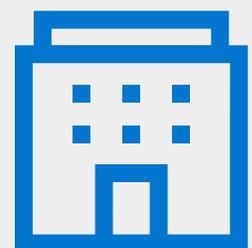
87%

faster reporting performance.



83%

decrease in data center footprint.



Spring Branch is a rapidly growing independent school district in Houston, Texas, that happens to be where Michael Dell went to school as a child. Then, and now, the district has always strived to ensure all students have the best possible learning outcomes. To do this, administrators, teachers and 35,000 students at 47 schools need fast, continuous access to data, digital education tools and enterprise applications. Teachers must continually evolve digital learning models to support dynamic requirements such as remote and hybrid learning. And Spring Branch must accomplish all this with a modest, tax payer-funded budget.

Before COVID-19 erupted, the district's existing infrastructure began nearing end of life, and users were experiencing some application-performance slowdowns. Dell EMC PowerEdge servers, which resided in three M1000e blade enclosures, ran educational apps, the Skyward student information system, the Munis enterprise resource planning (ERP) system, and Exchange Server for email and shared calendaring. The infrastructure also hosted 7 TB of Microsoft SQL Server databases, which provide the data foundation for all applications, along with 70 TB of additional enterprise information.

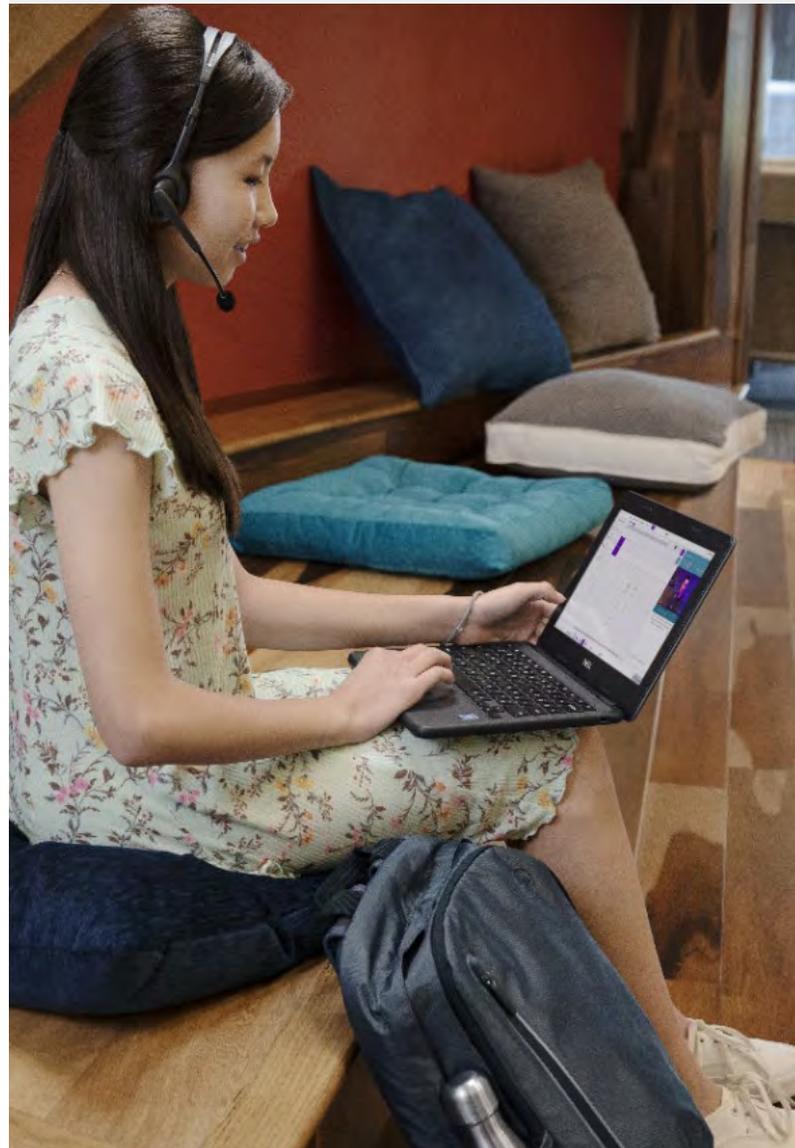
Getting agile with cloud-ready HCI

Spring Branch must keep some applications on-site, but it also plans to adopt Azure services, so the district decided to build a hybrid cloud on Dell EMC Solutions for Azure Stack HCI (hyperconverged infrastructure). The turnkey hybrid-cloud platform provides software-defined compute, networking and storage supported by Windows Server 2019, Hyper-V virtualization, plus Dell Technologies hardware, deployment services and support services.

Ben Allen, senior system engineer at Spring Branch, says, "HCI is where the industry is going. We talked about available solutions including Nutanix, but choosing the Dell EMC Solutions for Azure Stack HCI was really a no-brainer. With it, we get the greatest return on investment. The licensing from other vendors is ridiculously expensive, but Microsoft and Dell Technologies provide education discounts. We've also always been a Dell Technologies and Hyper-V shop, and with all the integrations we're looking at with Azure cloud, the solution just makes sense."

"We need cutting-edge solutions to provide technology resources to more than 40,000 users. ... Azure Stack HCI fits that need perfectly."

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Midday migration with zero downtime

Working with Dell Technologies Services consultants, Spring Branch’s IT staff deployed 12 AX-740xd nodes—11 production and one backup. To manage the solution, engineers configured Windows Admin Center, the console the district has used for years. And they wrote scripts to automate key IT workflows, including the migration of 162 virtual machines (VMs) from the previous infrastructure. “Once everything was set up, we live-migrated all our VMs midday,” explains Allen. “It was no big deal, and we had zero down time. We couldn’t have done it without Dell Technologies support.” Today, the VMs host the district’s enterprise applications and educational apps, such as Sammy’s Science House.

Reports created 87% faster

Today, it takes 87 percent less time to create reports. “All our applications are faster on the Dell EMC Solutions for Microsoft Azure Stack HCI,” Allen says. “Our nightly Skyward report used to take 15 minutes to run. Today, it takes 2 minutes or less. Even the VMs that we didn’t change run quicker because they’re on newer processors and use direct-attached storage with all-flash drives.”

Shrinking IT by 83% cuts yearly costs

By migrating to an HCI, Spring Branch cut its data center footprint from 144U to 24U. “We’re saving a lot of money with our Azure Stack HCI,” says Allen. “We went from three racks down to half a rack, and power, cooling and maintenance all cost less today.” The district also cut capital expenses. “We spent less money on our 12-node Dell EMC Solutions for Microsoft Azure Stack HCI than we would have spent on just storage for a traditional cluster.”

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30% more data in 3 months? No problem

Even though the IT footprint is smaller today, it recently accommodated a 30 percent growth in data and a massive spike in concurrent VPN users. “We were able to quickly add VMs to our load-balanced pool because we have additional compute in our Azure Stack HCI cluster,” explains Allen. “Being able to scale and support a new K–12 operating model that no one predicted in just three months is a big value. Our HCI gave us the flexibility to make that all happen.”

Today, the district can easily add services and scale to the cloud as needed. Spring Branch will soon replace Microsoft Exchange with Microsoft Office 365. And the school district is working on a new disaster recovery (DR) solution that uses Dell EMC Data Domain and Azure Site Recovery. “We maintain 99.999 percent uptime, but we’re in a hurricane zone, and our last one, Harvey, got close,” says Allen. “With Azure Stack HCI replicating our VMs to Azure, we can spin up our DR environment if something happens to our data center—so learning can go on.”

Faster efficiency and half the tickets

More than ever, IT staff need to work with teachers and administrators to support new remote and hybrid-learning requirements. Today, IT staff have the time to do just that. “Performance-related help-desk tickets have dropped by 75 percent, and for hosted applications, they’re half of what they were before we put in Azure Stack HCI,” says Allen. If any architecture issues occur, the solution automatically alerts Dell ProSupport, and consultants proactively manage them.

Allen continues, “There’s often a perception that K–12 is behind the curve on technology. At Spring Branch, that couldn’t be further from the truth. We have tight budgets and a lean team. We need cutting-edge solutions to provide technology resources to more than 40,000 users in the most cost-effective and efficient way possible. Azure Stack HCI fits that need perfectly. So, instead of spending time on issues with tools, we’re able to keep our focus on educating students.”



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