IT Leadership

Private clouds help schools weather data concerns

Districts are using private clouds to save money and retain control over data. Is it right for yours?

By Dennis Pierce

With student data privacy commanding so much attention these days, some K-12 districts are building private clouds to distribute curriculum and IT resources to students and staff over their own networks.

A private cloud is an environment in which software or data are stored on a central server and delivered to users online—but instead of being hosted by a third-party provider and delivered to users over the public internet, these resources are hosted by the school district itself, under the control of the district's IT department.

Because a private cloud setup is implemented safely behind a district's own firewalls, it gives the district more control over its own data. The tradeoff is that the district becomes responsible for managing IT resources, instead of passing that responsibility on to a third-party cloud provider.

For a small but growing number of K-12 districts, this extra hassle is worth it to ensure the security and reliability of sensitive information.

Cloud control

The Cypress-Fairbanks Independent School District in Texas is developing a private cloud as part of a major network refresh, funded by more than $200 million in bond money.

"We wanted to give students 24-7 access to all of their services, and we wanted these to be secured," said Frankie Jackson, chief technology officer for the district.

Cypress-Fairbanks is the third largest school district in Texas, with about 113,000 students. Everything in the district is centralized, including the delivery of IT services—and moving to a private cloud "will lend some advantages to us," Jackson said.

To create a private cloud, school districts will need a robust data center. Cypress-Fairbanks has upgraded its main data center to a Tier 3 facility and is moving its mission-critical systems to a Tier 4 facility on its own separate grid. Fiber connections run from all six of the district's hub sites to both data centers and the internet backbone.

"We are working with Microsoft to design federated Active Directory [service], so that students can log on from home and use their same network credentials they would use to authenticate as if they were at school," Jackson said.

A project like this requires a significant investment and is not for every district, she noted.

"You need a strong, committed staff" with the expertise needed to manage a data center, she said, and "you have to have a cheerleader" who can advocate for the necessary support.

Cheaper storage

The Raytown Quality Schools in Missouri have nearly a decade of experience with managing a private cloud. The district operates a fully virtualized server environment using VMWare and is upgrading its storage capacity to more than 500 terabytes this summer.

"We look at each individual system to see if it's best for us to host it or have the provider host it," said Melissa Tebbenkamp, director of instructional technology for the district. "But when it comes to data that needs to be stored—my security video, my file storage—I'm going to host it internally in a private cloud instead of paying someone to host it, because I can buy storage cheaper, I can manage and secure it and know that I have control over what's happening with it."

Tebbenkamp said it makes financial sense for Raytown to host the majority of its data in a private cloud, because the district has made the up-front investment to make this possible. "For us, it's significantly cheaper just because we have that volume of scale internally," she said.

One exception is email: Raytown stopped hosting its own Microsoft Exchange system last year and adopted Gmail, hosted by Google in the public cloud. "Exchange is a beast to manage," Tebbenkamp explained, adding that it made more sense for the district to use Google's free program than to spend time and money on email storage, backup, and retention.

When K-12 leaders are considering whether to trust a public cloud provider, they should do their homework, Tebbenkamp said: How much room does a given cloud provider allow for negotiating within contracts to ensure data security? What processes are in place to protect data?

If you're going to create a private cloud, "your data center switching is critical," she said. "Do you have the switching to keep up with the speeds you're going to need internally?"

You also have to evaluate what kind of data you're working with and then find the right storage solution for your needs. And, "you've got to have the staff on site to be able to manage your storage and servers." *eSN*

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