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## SANs Support High Availability

Storage area networks provide school districts' peace of mind that they can access reams of data at a moment's notice.

*Karen D. Schwartz*

To Jamie Barr's way of thinking, a day without access to data would be little different than a snow day for Gibson County School District in Tennessee.

"If something goes down, the whole district is down, and we can't afford to be down," the district's network administrator says. "So much of teaching today is technology-driven, and teachers would have to redo their lesson plans if we were down for more than a day."

Last year, the district took some major steps to upgrade its technology infrastructure and provide better service to its nine schools. The IT department consolidated nine servers — one at each school — on one server farm outfitted with an [IBM BladeCenter](#) housing three blades, two clustered [HP LeftHand](#) storage area networks with an [HP ProCurve](#) 3500 gigabit switch, and an [Overland Storage ARCvault](#) 12-tape LTO autoloader for server backup.

Chief among the reasons for the upgrade was the need for more consistent uptime for the district's servers and applications, Barr says.



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Steve Jones

### Centralized Data View

Gibson County Schools is moving in the same direction as many school districts: implementing modern, feature-rich SANs. For IT departments, that means making high availability a top priority and managing data in a way that keeps it constantly available.

"Instead of having individual servers, you centralize the data and data protection with SANs," says Andrew Reichman, a senior analyst at Forrester Research. "By pooling resources, you get a better economy of scale — one software tool used to ship data from one site to another and common equipment at both sites. All of that creates high availability."

Clustered SANs have made all the difference for Gibson County School District. The IT group uses one of its three blades as the main controller and has virtualized the others, creating five virtual servers.

"With the SAN technology, I can create a virtual server with the host machine and have it stored on one partition on the SAN. So if the host machine dies, I just get another machine and point it to the partition on the SAN and pick up where we left off," Barr says. "It works the same way if a virtual machine should become corrupted for some reason. The data can still be accessed by rebuilding the virtual machine and pointing it to the partition on the SAN."

### Hub-and-Spoke Approach

Alvarado (Texas) Independent School District has gone even further in incorporating SANs into the fabric of its infrastructure. The district moved to a [Compellent Technologies](#) Storage Center 4 SAN about four years ago. The SAN, which houses e-mail, library systems, finance and human resource systems, educational tools, student portfolios and other critical applications for students, teachers and administrators, is critical to the school district's heavy emphasis on technology.

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“We issue notebooks for fourth-grade students and up, and we’re committed to creating student portfolios that start in kindergarten and go through high school,” says Kyle Berger, the school district’s executive director of technology. “On the instructor side, we have curriculum-based software and other systems. Classrooms would come to a standstill without them.”

To learn more about high availability, check out the [latest EdTech e-newsletter](#).

Berger cites high availability as key to everything his organization oversees, and the SAN, which currently stands at 14 terabytes, is the hub. “We think of ourselves as a business, and we run like a business,” he says. “With all of the capabilities of our SAN, we can tier our storage and make sure that everything is running all the time.”

## SANs and High Availability: A Good Match

SANs can:

- Centralize capacity — allowing for better utilization because capacity is shared
- Provide data protection — meeting a must-have high availability demand
- Offer a mature and robust technology — creating stability for IT
- Are highly scalable — allowing growth in tandem with an organization’s needs
- Connect to servers directly — meaning no interference with local network traffic
- Offer advanced features — bolstering availability through snapshots, thin provisioning and deduplication

