

At a Glance

The Problem:

- Aging data center
- Slow network speeds
- Unfit data center space

The Solution:

- Complete data center refresh
- Cisco SmartStack
- Zerto replication and disaster recovery

The Results:

- Reduced data center footprint
- Improved data center performance
- Greater flexibility and agility
- Reduced risk

No data center lasts forever. At a certain point, the hardware will grow old, the business demands will increase, and the infrastructure won't be able to keep up. To address this reality, organizations can choose one of two options. They can upgrade their data center technology piece by piece over a long period of time, or they can refresh their entire infrastructure all at once like removing a band-aid.

When a Chicago-area school district constructed a new administrative building, they saw an opportunity to develop a cutting-edge data center that would support their progressive and technology-driven education strategy. They contacted Mindsight to design and deploy the new data center and drive their institution into this new era.

Aging Data Center Infrastructure

Our client was faced with an aging data center assembled over a long period of time. Network speeds were slow, and the infrastructure was unreliable, resulting in system downtime and impacting students and staff alike. To enhance the learning experience of their students, the school district provided iMac and Lenovo tablets, but these devices were of little use on the old wireless network. The laptops and tablets would often be dropped from the network and lose connectivity. The teacher would then need to call in the IT team to troubleshoot the issue. More than once, this would bring class to a halt.

Beyond just the tablet and laptop connection issues, other advanced applications faced performance issues that impacted the students' education. The zSpace virtual reality computers, with the right network supporting them, can create 3D images for an immersive learning experience in both art and science classes. With the existing infrastructure, this significant technology investment was not performing to its potential.

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Case Study

New Data Center Enhances Learning Experience for Chicago-Area School District

Moreover, the existing data center facility left much to be desired. The two 24 unit racks stretched from floor to ceiling in a limited space that lacked the appropriate cooling and ventilation, driving up costs significantly.

Part of a Larger Vision

Like all Mindsight consulting opportunities, we begin our engagements with a roadmap and strategy session. During these meetings, our consultants discuss the long-term goals of the client, how their organization functions, and their unique challenges. With this information at hand, we map out the necessary projects and deployments in a technology roadmap. This helps everyone involved stay organized, on task, and focused on the overall vision for the client.

For our client, we charted a two-year roadmap to transition the organization from their old infrastructure to a new design. That began with a new data center, but planned deployments of switch upgrades, security assessments, and more were scheduled for the future.

An Infrastructure Solution Designed To Enrich Student Education

Our client prides itself on using cutting-edge teaching techniques and applications to enrich their students' education. To achieve this mission, a modern data center infrastructure was needed to support these applications. The construction of a new administrative building presented the perfect opportunity to do away with the old and usher in a new data center design.

Working to match our client's precise needs, the Mindsight solution architects designed the new data center. It leveraged a converged infrastructure solution known as the SmartStack, a Cisco Validated Design. The SmartStack combines Cisco Unified Computing System (UCS) servers, Nexus switching, a VMware hypervisor, and Nimble hybrid flash storage. From there, we recommended Zerto for replication and designed a disaster recovery solution.

Why They Chose Mindsight

At Mindsight, we seek to establish a long-term relationship with all our clients that begins with understanding their needs and crafting the right solution that drives their success. We aren't looking for a job. We believe in developing a relationship.

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With the disaster recovery solution designed by Mindsight, our client is able to feel more secure in the event of an unexpected incident. Furthermore, the solution does not require any special skills to manage and maintain. Any IT generalist on staff could assume these duties without difficulty.

Along with the data center, the new administrative building was designed with wireless access points for the staff as well as educational tools used by the teachers and students. We deployed the cloud-hosted Meraki wireless access points throughout the building.

The Results

- **Reduced Footprint, Reduced Costs:** Two old 24 unit racks stretching from floor to ceiling were condensed into a mere half stack rack. Hundreds of twisted, tangled cables were replaced by only twelve. Plus, this data center now lived in a room suited to house it. Between the reduction in physical infrastructure and a room more conducive to the equipment, the client can expect significant cost savings for cooling and maintenance.
- **Improved Performance Across the Board:** Beyond the look of the data center, performance was greatly improved. The client was upgraded from a 1gb network fiber to a 10gb network fiber. The Meraki wireless network proved far faster than the old system, and the students no longer experienced connection issues on their tablets and laptops. With this new data center, the learning experience could continue without interruption or delay.
- **Greater Flexibility and Agility:** Between VMware VMotion and Zerto, the IT staff has much more flexibility and agility. They can move VMs from site to site with ease and replicate VMs in moments.
- **Reduced Risk:** Their dual Nimble storage devices can also be used to snapshot storage volumes and then replicate the snapshots over to the other Nimble. The devices are snapped every hour. Those snaps are kept for a week, and every weekly snap is kept for a month. Every monthly snap is kept for a year, and so on. This provides tremendous redundancy for the organization. Should one of these storage devices malfunction, the other can quickly failover with minimal interruption.

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The Cutting Edge Cuts Deep

We take it for granted that the latest and greatest technology is better than older models, but we assume the upgrade is an incremental improvement. This isn't the case for data center infrastructure. Cutting-edge technology like the converged infrastructure solution used by our client is a huge leap forward in every metric that matters—performance, maintenance costs, and ease of management.

By taking decisive action to address the technology challenges of their school district, our client was able to achieve a solution superior to their old deployment in every way. Now, they can look forward to the exceptional performance of their new data center to match their new administrative building and deliver exceptional learning opportunities to their students.

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