Edmonton Catholic Schools makes user uptime and cost efficiency top priority

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Having load-balanced its Internet traffic routing and built two connected but autonomous data centers, the [Edmonton Catholic School District](#) (ECSD) now offers its users near-zero downtime – a much improved experience overall. And as it is using – and thriving on – the same equipment five years from when it was first purchased, the school district is saving province of Alberta taxpayers money.

Challenge

The school district had multiple concerns around system downtime, traffic, and security. Despite having a strong desire to move forward, it was struggling to arrive at a clear consensus on its way forward. "We were finding it difficult to hammer out a solid understanding of our needs, let alone our overall vision," said Mel Farhat, Manager, Network Services.

One thing the ECSD was sure of, however, was that it needed a more robust, efficient system – what Mel said meant getting to "a true enterprise level." Above all else, it needed high availability – to have the confidence that users would experience downtime much less frequently, and if they did, it would be minimal.

96
SCHOOLS

4,300
STAFF

43,000+
STUDENTS

Solution

Beginning in 2017, Compugen worked with the ECSD to come up with a 360-degree solution, stretching from design to execution:

- **Design and Vision:** "Compugen helped ECSD with overall solution design, and provided experience-based support on architectural decisions," said Mel."

- **Data Center Redundancy:** "All our traffic goes through our two data centers," said Mel. "If our main data center fails, all traffic is re-routed to our secondary data center, and vice versa."

- **ISP Redundancy:** "All our inbound traffic now goes to our main ISP provider in our main data center," said Mel. "If that ISP link fails, all inbound traffic goes to our secondary ISP provider in our secondary data center. Compugen and Cisco helped us configure this scenario, including a firewall and layer 2/3 backbone between the two data centers."

- **Load-balancing School's Internet Traffic**: "We used tunnels to load-balance our Internet traffic," said Mel. "So, 50 per cent of our Internet traffic routes to our main data center without tunnels and the remaining 50 per cent routes to our secondary data center using tunnels."

The goal of the entire project, said Mel, was on making the ECSD system highly reliable. "We wanted a strong hedge against service and data loss for us and our users. We wanted to be able to guarantee that users have 24/7 connectivity, no matter what happens. With ISP and data center redundancy, we have minimized the potential consequences of a cyber attack or power outage. We also built some infrastructure to bridge these data centers."

Mel understands that zero downtime is an ideal and cannot be applied to or expected in the real world. "But fortunately we're now able to operate with confidence even in these situations. When one of our data centers loses power,

the other one is available very quickly – in five minutes or less. Our users don't have to suffer any real downtime. This was part of our original vision in 2017, in which we set a goal of increasing school internet availability by 50 per cent. We're very happy with how things have turned out."

Additionally, with Compugen's assistance, the ECSD was able to design and implement a load-balancing solution between the two data centers. "The secondary data center is not only sitting idle for failover but also managing Internet traffic for 50 schools," said Mel. "This was complex, to say the least, but fortunately, Compugen was able to help us find a solution that has been working perfectly for us since implementation."

Results

Mel considers the ECSD's work with Compugen to be a great example of the power of forging a *true relationship* with a top-tier partner and innovator.

"Compugen demonstrates that having a partner is – or can be – about having more than an order-taker or work-doer at your disposal," said Mel. "It can be about having an actual relationship – a true partner who doesn't vanish as soon as the work is done."

" They brought in a lot of expertise and skill — plenty of brainpower to help us sort through everything we wanted to achieve.

— **Mel Farhat, Manager, Network Services**

Said Ray Kebbi, Educational Team Leader - Alberta, Compugen, "Getting service right, from the start is all-important. Positive experiences form a strong foundation with a client, and in time this becomes a longer-term partnership – a relationship of trust."

Compugen, said Mel, helped the ECSD settle on its need and goals.

"They brought in a lot of expertise and skill – plenty of brainpower to help us sort through everything we wanted to achieve."

It has been over five years since Compugen began working with ECSD, and the school district has yet to look into replacing its equipment.

"This speaks to the high quality of the product," said Mel. "Cisco has a great reputation in this regard. Actually, almost all our Cisco hardware reaches end-of-life and end-of-support. In fact, we have only had to replace one device from our data center since 2014. That's great value for us – and, of course, for Alberta taxpayers."

The ECSD-Compugen partnership has been a fruitful one, and it continues. "We're grateful for all Compugen has done," said Mel. "We have a smooth flow of traffic, high availability, and as we're still on the same equipment years later. We're very happy."

About Compugen Inc.

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