

New Cisco IP Data Network Helps KORE Telematics Support Customer Growth and Win New Business



In response to rapid growth and the desire to achieve five nines of service delivery reliability, machine-to-machine telemetry market leader KORE Telematics decided to rebuild its IP data network. Using Cisco technology, Compugen helped KORE architect, build and launch a high-availability, geo-redundant, Internet-based network that is delivering dramatic performance, reliability and scalability gains.

Case Study

KORE Telematics, a Mobile Virtual Network Operator, is the world's largest specialized provider of business-class, all-digital wireless services for the M2M (machine-to-machine) telematics and telemetry markets. KORE customers represent applications in virtually every industry, including vehicle tracking, telehealth, utility metering, security, industrial controls, debit/credit card payment processing, landfill monitoring, offender tracking, banking/ATM and more. KORE offices in Toronto (head office), Atlanta (sales) and Winnipeg (technical operations) serve customers around the world.

Challenges

The KORE service delivery model is critically dependent on two sets of networks – third-party cellular networks managed by the major telecom carriers over which telemetry data originating from hundreds of thousands of wirelessly connected customer devices is sent to KORE, and a wide-area IP network KORE owns and operates out of the firm's Winnipeg facility, over which the data is then transported to customers.

For wide-area network (IP WAN) connections to its customers, KORE was previously using secure VPN connections over the Internet; however, this approach was suboptimal for guaranteeing long-term service delivery and scalability. This first-generation KORE network had also evolved based on a variety of disparate network technologies as the business grew and thus was not

considered sufficiently robust to provide failover capabilities and there were some network latency issues. This was of particular concern for customers with mission-critical, real-time applications, such as retail operators trying to process debit or credit cards, or hospital staff with patients on heart monitors.

"As a result of a number of isolated service-related disruptions that eroded customer confidence, combined with the rapid growth KORE was experiencing, we realized the time had come to deploy a completely new, fault-tolerant network capable of scaling to support millions of end-customer devices," says Danny Thomas, VP Operations & Technology Services, KORE Telematics.

"Our business and our requirements were clearly going to outgrow the capabilities of our existing network," adds James Morris, Manager of Network Engineering & Operations at KORE, "So we decided to build a completely new core IP data network from the ground up that would be better for our customers and would scale to support significant customer growth."

Solution

After looking at several alternatives, KORE chose to build its new network infrastructure based on Cisco technology and, upon recommendation from Cisco, engaged the services of Compugen, a Cisco Gold Certified Partner.



KORE also decided to move its network operations from Winnipeg to Atlanta and build a fully redundant secondary site in Las Vegas. Together, KORE and Compugen developed a new architecture, acquired all the necessary Cisco equipment, including Catalyst switches and ASR routers, and installed, tested and launched the new network. Compugen directly assisted KORE with the cutover for the first ten customers to the new network.

"This was always intended to be a team effort," says Thomas. "We didn't want Compugen to just come in and build a network for us; we wanted our own people to work alongside Compugen through the whole project for the purpose of knowledge transfer so we could finish the migration and support the network on an ongoing basis."

Although this endeavour was highly successful, it was not without its challenges, one of which was managing all the logistics associated with migrating the VPN connections between the KORE network operations centres and those of the six major telecom carriers KORE partners with as well as migrating all existing customers without service interruption.

"Another challenge was getting the carriers to conform to our specs and re-architect how they connect to partners such as KORE," states Morris, citing the example of how the project team worked with carriers to help them support the Border Gateway Protocol (BGP), a more resilient and scalable routing protocol that is also better for customers because it is faster and fails over much more quickly than VPN.

Results

With its fully redundant two-site operation and automatic failover, the new KORE IP data network is available 99.999 per cent of the time, compared to the 98.861 per cent uptime previously measured. The entire network, supporting hundreds of thousands of customer devices, can be failed over to the secondary datacentre site in less than four lost pings – virtually instantaneous, and transparent to KORE customers. The most important consequence of this was that KORE customers are far more confident in the reliability of the service they are buying.

"Many of our customers have customers of their own, so when there is trouble with the network, our customers face their own customer support issue, which has both cost and revenue implications" explains Thomas. "Now, with total network availability, our customers are ecstatic and confident with their purchase decision, and many are moving all of their wireless network services over to KORE."

The resiliency and reliability of the network has also been a big factor in enabling KORE to win new business, including one of the largest vending companies in North America and a large power company, whose business is highly regulated, so uptime for them is critical.

"We are one of few major M2M players that can offer prospective customers a complete, high-availability, fully geo-redundant, failsafe network, and customers appreciate that," adds Thomas.

Dramatically improved performance is another important benefit customers are gaining as a result of the joint KORE-Compugen effort. With overall network latency cut in half, faster data acquisition is allowing for faster downstream processing and decision-making, an especially important consideration for customers operating with real-time data.

"Also, with geographic failover between Atlanta and Las Vegas, we can do maintenance on our network infrastructure anytime," enthuses Morris. "I can take down a core switch in Atlanta without affecting outbound traffic to customers."

In addition, customers now have greater flexibility in how they connect to the KORE network – as many as six different methods versus the previous one or two – and the new network is much more scalable – current peak utilization is only at six per cent, so growth in excess of 10 million devices on the network can easily be supported.

"Our experience with Compugen was so successful that we subsequently engaged their services again to help us to rebuild our backend datacentre infrastructure based on Cisco's new Unified Computing System server platform, an EMC SAN and VMware virtualization software, which the KORE-Compugen team used to consolidate 35 production servers into virtual machines running on just four physical servers," concludes Thomas.

