Small Business Case Study

Intel® Centrino® Mobile Technology & Dual-Core Intel® Xeon® Processor Technology

Information Management

GEOTrac International

GEOTrac
"Your Global Positioning and Communications Company"

Phenomenal growth starts with phenomenal reliability.

Solution Summary

Using GPS-based technology, GEOTrac International helps companies effectively manage and track their equipment and personnel. Less than two years old, the company was rocketed into providing international business services for its clients and needed to develop an agile technology environment that could grow rapidly, while providing a robust architecture to effectively manage the increasing data requirements of clients. GEOTrac is building its business on IBM Blade Servers* with Dual-Core Intel® Xeon® processor based technology to handle its growth requirements, while leveraging the flexibility of wireless notebooks with Intel® Centrino® mobile technology to keep in touch with clients while travelling around the world.

Business Challenge

For many businesses, tracking equipment and supplies as they travel the globe is tricky, especially in areas where traditional communication networks are unavailable or unreliable. GEOTrac International has developed a worldwide network of GPS-based tools and applications to help businesses and the military pinpoint important equipment and personnel 24/7, regardless of whether conventional tracking technology is available.

As a small business, GEOTrac started out helping oil and gas companies to track expensive pieces of equipment being moved from one job site to another. In an industry that would shut down if one part were missing, ensuring all pieces of a drilling rig arrived in the right place at the right time was critical. Only two years old, the company attended an Oil and Gas show in Calgary where its technology attracted the interest of global oil companies. The industry quickly saw advantages to the GPS-based tracking solution and virtually overnight GEOTrac went from zero units in the field to 1,000 units being tracked at any time. VP of Business Development Brian Pike said this rapid growth underscored the need to build a network infrastructure that could grow instantly as clients purchased and brought online more and more GPS tracking units, while providing flexibility to enhance services and provide more detailed mapping options online.

An added challenge for the growing company was the amount of raw data being generated, parsed and stored in client databases on a daily basis.

"As a global business, our network has to be available and running all the time," says Pike, noting that for some of their clients, access to information about the precise location of their devices is critical.

Their original network infrastructure relied on four traditional, generic rack-mounted servers with Intel® Pentium® 4 processor technology and running Microsoft Windows 2000*. To accommodate new clients, they would purchase a new server, wait for it to arrive, configure it and put the client online. Stanley Luo, GEOTrac's CTO says this was taking too long for customers who wanted to be able to purchase the units and have them operational immediately.

Solution

By moving their entire network infrastructure to IBM Blade Servers* with Dual-Core Intel® Xeon® processor technology, GEOTrac was able to add more servers, update software while staying online, and grow as quickly as their clients demanded it. Today, their network infrastructure is built on 14 IBM Blade Servers*, running Dual-Core Intel® Xeon® processor technology and they have mirrored their network at a collocation facility in Alberta to add redundancy. They have plans to add a second collocation facility in the Middle East later this year.

"With the Blade farm, we can have a client purchase 1,000 devices tomorrow and get them up and running within a day," says Pike. "We changed basically our whole collocation facility to IBM Blade technology* last year because we needed the flexibility to grow as fast as our clients demanded."

Luo says the ability to cold-load a new blade server into their system was a key reason to choose the IBM Blade Servers*. "We realized we needed to be able to add users quickly and with Blade technology, we can 'plug and play' by putting another component into our rack."

Pike adds that as a small business, the decision to move to IBM Blade Servers* has made sense financially. They can have a spare Blade Server* available to add to their facility without the major expense traditionally associated with a server.

"We now have the ability to expand our farm by taking a $4,000 Blade Server*, plug it in and away we go," says Pike.

Since moving to IBM Blade Servers* with Dual-Core Intel® Xeon® processor technology, GEOTrac's network operations centres estimates processing speed increased by 266%. GEOTrac says clients have noticed the increased speed and improved performance over their network.

In addition, to the advantages of expandability and cost, GEOTrac needed to ensure the information being sent to GEOTrac clients from its tracking devices can be safely stored. With customers wanting to store data for up to two years, Luo projects their database will continue to grow incrementally. Luo explains that every five minutes, each device reports back to GEOTrac and that information is mapped and provided to the clients. At the end of this year, GEOTrac projects that it will have more than 4,000 units reporting back to their servers.

"Our database is literally growing by the minute," says Luo. "Since customers want to keep their data for two years, we had to build a system architecture that can be expanded very easily. That's why we went with the Blades."

Key Advantages

For GEOTrac, ease of implementation is critical. Luo says they always choose Intel®-processors because they know it will work well with their software. "We use Intel® so we know we aren't going to run into problems of software not being compatible with the processors," he said. "Our job is hard enough getting our software and intellectual property to work in all environments. We don't need added complexity of software conflicts. You have to take the variables out of everything when you are doing work like ours."

Pike notes that the ability to grow with client needs is critical and the company has to ensure they are providing top quality services, "When a client logs into our system, he has to see his asset. We have to be up 100% of the time, a 99.9% uptime rating isn't high enough. We're out of business if someone can't see what they want when they want it."

Technology Tracks Lifeline Services

One of GEOTrac's clients is NTCL, a transportation company that uses tugs and barges on the Mackenzie River to provide a lifeline to northern communities where cellular service is spotty and radio transmissions are unreliable.

Ross Potter, Manager of Information Systems at NTCL says their efficiency was limited by the technology available in the far north. Relying on radio transmissions did not allow them to effectively move their barges around quickly during the short June to October timeframe when ships can travel the river. Potter says they would leave a barge in one location longer than it needed to be, and with remote communities relying on NTCL for delivery of food, fuel and building supplies, efficiency is critical.

Using GEOTrac's GPS technology, Potter can use the Internet and instantly see where every barge and tug is located, plan the next shipment and maximize deliveries during their short season to ensure the remote northern communities have the supplies they need before they are cut-off for the long winter months.

"We are the lifeline for these communities. It is an essential service," he says, noting NTCL's six tugs and each of the 66 barges are transporting anywhere from 2,000 tonnes of supplies across distances that take from three hours to nine days to traverse.

With each barge equipped with GEOTrac tracking systems, NTCL can log onto the tracking software running on IBM Blade Servers* with Dual-Core Intel® Xeon® processor technology and instantly see which barge needs to be moved, where it is, where it needs to go next and precisely what cargo is on board.

"We're working in a very remote environment where technology is not always reliable," says Potter. "With GEOTrac, we have been able to gain efficiency that was never possible before."

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NTCL is planning to take advantage of the instant messaging technology to further increase communication between barges, tugs and home base. Potter sees real advantages to being able to warn captains of weather hazards or other important information that they need immediately, whether they're inside or outside radio range.

Constant Travel Means Wireless Is A Must

In addition to relying on IBM Blade technology* with Dual-Core Intel® Xeon® processors, GEOTrac's office depends on the flexibility of a wireless LAN. With company growth going through the roof and building an international business overnight, Pike is constantly traveling to client sites in Canada, the Middle East and Russia.

"For us, there's no other way," says Pike who depends on his Toshiba Satellite laptop* with Intel® Centrino® mobile technology to stay in touch when travelling the world. "I'm out of the office all the time," says Pike, who accesses all of his corporate data over a secure VPN connection through a firewall requiring WAP keys with SSL encryption. The longer battery life allows Pike to be more productive.

GPS Tracks Freight

"One of the largest users of the GEOTrac tracking system is the oil and gas industry, which moves material and equipment worth millions by marine vessel, rail, air and truck in a time sensitive arena," Pike explains. When companies like ExxonMobil, Chevron, Royal Dutch Shell, BP and ConocoPhillips need to move expensive equipment to sites around the globe, they rely on local transportation companies, which are not always dependable. He cited an example of a truck driver in Africa who made an unscheduled detour en route to his final destination and missed the shipper's delivery window by several days. This caused the company to think the item was waylaid in transit and spent money to send another part. With GEOTrac's In-Transit-Visibility (ITV) system* transmitted over GEOTrac's servers with Dual-Core Intel® Xeon® processor technology, companies can instantly know where that equipment is rather than assuming it was lost in transit.

In another example, an oil services company located in Northern Alberta increased the cost of its multi-million dollar engineering project by 10% because of misrouted construction equipment resulted in delays. After using GEOTrac solutions on its equipment, downtime is significantly reduced resulting in financial savings, says Pike.

Future Uses

With the company growing so quickly, Pike is focusing on their core area of expertise which is GPS tracking. Enhancements to their solution to include satellite image overlays and other reporting programs are being developed for clients.

GEOTrac is also planning to integrate their devices into a satellite modem so that maintenance can be done onsite by a client using a Tablet PC with Intel® Centrino® mobile technology. They are also planning to adapt their reports to be visible on other wireless devices such as smart phones, PDAs and cell phones. "Soon we hope to allow freight forwarders to call up a small map on their cell phone to track shipments when away from the office."

Since the data requirement of their customers is also growing incrementally, Luo has already started looking into adapting their solution to 64-bit technology to take advantage of the speed and agility of the servers using Intel® Itanium® 2 processor technology.

"Our goal is to have 100,0000 modems reporting to our systems which is a tremendous amount of reporting. We are going to need to take advantage of the new Intel® processing technology and speed," says Pike. "We are committed to taking advantage of the latest technology so that our clients can use new and enhanced services from around the world."

Find out more about a business solution that is right for your company by contacting your Intel representative, or visit the Intel® Business Enterprise website at intel.ca/business or its industry solutions specific sites at intel.ca/business/bss/industry

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