CASE STUDY
Intel® Xeon® E7 processor
Intel® Core™ i7 vPro™ processor
Canyon Technical Services Ltd.
GeoTrac International Inc.

Oil Field Worker Safety Secured

CHALLENGE

- **Canada's oil industry** dispatches workers to remote areas where destination mapping changes by season and road conditions, and with a tight job market, companies have to send staff alone to these job sites in harsh weather conditions.

SOLUTION

- **GeoTrac Maps & Tracks For Safety:** Built on a network infrastructure powered by Intel®, GeoTrac International Inc.* provides oil and gas industry clients like Canyon Technical Services Ltd.* with real-time vehicle tracking, worker safety systems and driver education to boost efficiency, security and save money.

IMPACT

- **GeoTrac uses virtualization technology** to consolidate 30 servers to three for its mission critical applications running on Dell PowerEdge* servers featuring Intel® Xeon® E7 processors, cutting space needed in the data centre while reducing power consumption by 50%.
- **Through its server network**, GeoTrac's real-time tracking of trucks and drivers saves Canyon dispatchers hundreds of hours and up to $3,800 per month in cellular phone costs.
- **GeoTrac's automated calculation** of fuel tax saves Canyon more than $8,900 a year and cuts the time needed to calculate tax rebates each quarter from 120 hours to eight.

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In Canada's oil industry there is a shortage of qualified labour so employers need to keep control over where, when and how many staff are needed on each job. In addition, the harsh climate requires firms to keep people safe in remote locations.

Canyon Technical Services, a rapidly growing fracturing company in the oil and gas industry, looked to technology for efficiency and safety. Sheri Roth, Manager of Information Technology at Canyon, needed real-time reliability and scalability to support this expanding company.

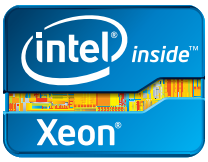
"I never wanted hardware to be a limiting factor in the applications we run and in the user experience," says Roth, whose staff use a range of Intel-powered PCs, including Dell Latitude* laptops powered by 2nd Generation Intel® Core™ i5 processors. "Our custom applications ensure the efficiency and accuracy of our daily work so we can't compromise on the hardware on which these critical applications run. We need to make sure that the heartbeat (powered by our hardware) of the system is as strong as possible. The secret to our success is unparalleled uptime and user satisfaction."

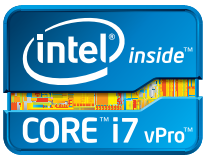
Roth was also looking to boost efficiency in fleet dispatch, lone worker safety, repair and maintenance, mapping, and the calculation of fuel tax rebates. She turned to Calgary-based GeoTrac International, which specializes in fleet management and lone worker safety.

With mission critical applications protecting workers, GeoTrac recently refreshed its entire network, upgrading to Dell PowerEdge* servers with Intel® Xeon® E7 processors and Dell Vostro* laptops powered by 3rd Generation Intel® Core™ vPro™ processors.

"We have so much faith in technology from Intel," says Kevin MacDonald, Vice President of Product and Operations at GeoTrac. "We have invested hundreds of thousands of dollars in enhancing our operation centre and ensuring we have the best in disaster recovery, which is what you need when dealing with mission critical applications and it's all running on Intel."

"It came down to picking technology that was proven," says Kirk Slone, GeoTrac's Chief Technology Officer. "We can't afford to take a gamble with a new vendor or a new technology, and we needed a durable solution to ensure reliable access for our clients. Intel was the natural choice. We were looking to move into virtualization





"Hyperthreading lets our developer and GIS staff be more productive. They can work on other things while data is compiling behind the scenes. We need to be able to have multiple applications running at one time to help save time and money."

and needed processors that could support multiple cores and large amounts of memory. Intel does that."

By virtualizing its new Dell PowerEdge servers with Intel® Xeon® E7 processors, GeoTrac consolidated space in its data centre and cut power use. Slone projects they will cut the number of circuits needed in half and within the next 6 months, and power consumption should drop by up to 50%. At the same time, Slone needed to ensure its server network was scalable enough to handle real-time access to data from its client base which has grown in less than four years from 50 clients tracking a few thousand trucks to 350 clients tracking 15,000 vehicles.

"Our customers don't care where their trucks were an hour ago, they want to know where it is right this second," says Slone. "It is absolutely essential that the information coming into our data centre is processed immediately and available for our customers."

Keeping Remote Workers Safe

Canyon's drivers routinely work alone at a well site to deliver equipment and products before a job starts. To ensure safety, Canyon needed a system to alert the office of any problems. GeoTrac offers a range of alerts including emergency dispatch when accidents are detected, and timers that trigger alarms if a driver leaves a vehicle but doesn't return on schedule. All these alarms are triggered through GeoTrac's Intel-powered server network and alert Canyon's staff working on Intel-based PCs.

"Because of the (tight) labour market, you often have one person in each vehicle which can be dangerous in the winter on a lease site. If you don't have technology (like ours) worker safety can be a big issue," says MacDonald.

Additionally, GeoTrac provides real-time information about vehicle speed and driver habits to facilitate ongoing driver education. There's also an integrated engine control module that feeds information about speed, oil pressure, direction and more so in the event of an accident, they can immediately recreate what happened.

"If there's an accident, we instantly dispatch help which ensures the safety of lone workers in remote locations, but we can also use the same technology to provide coaching and improve driving habits, particularly on things like ice roads where driving habits need to be specifically monitored and controlled," adds MacDonald.

In addition, Canyon receives engine alerts from GeoTrac's monitoring software which allows them to prevent damage and reduce fleet repair costs. For example, since the system monitors engine RPMs, Canyon can ensure levels don't drop below a specific threshold, allowing them to avoid damage to the diesel particulate filter which Roth estimates costs $5,000 each.

Roth is also looking to expand the solution to include electronic pre-trip and post-trip inspection reports that can be run on the GeoTrac Road Pilots* (in-vehicle tablets running GeoTrac software). Roth says this will greatly reduce the duplication of effort and delay in getting that information into its fleet maintenance application, which should help get vehicles repaired quicker to reduce the chance of breakdown.

Streamlining Dispatch

At Canyon, coordinating and dispatching its growing fleet to its multiple job sites each day was getting more and more difficult.

"We knew there was a better way to communicate with drivers and see at a glance where trucks were," says Roth, whose staff log into GeoTrac's Dell PowerEdge servers with Intel® Xeon® E7 processors from their 2nd Generation Intel® Core™ i5 processor-powered desktop and laptops for instant access to information about where each vehicle is or is going.

"GeoTrac has a mapping solution that displays lease roads and legal subdivision coordinate mapping. That was a real differentiator for us," she says, noting this instant online visibility saves Canyon thousands of cellular minutes each month because dispatchers don't need to keep calling drivers. It has also reduced fuel costs since they can now see where all their vehicles are and dispatch the closest vehicle.

"We also save 100s of hours each month not searching for trucks and calling drivers. We can now see at glance where a unit is and since each base is 'geofenced' dispatch, fleet maintenance or the bulk plant are alerted when units comes into the yard. The key here is efficiency," she says.

Roth adds that Canyon is currently looking at removing cellular phones in the trucks and using GeoTrac's Road Pilot to communicate between the driver and dispatch, which she estimates would reduce monthly cellular costs by up to $3,800 every month.

Another project Roth is considering is the creation of a driver time sheet for bulk drivers. "One of our pain points is tracking the loads that are transported to the well site ahead of the actual job. Trying to track down paperwork in a timely matter to ensure drivers are paid is a constant issue that we could definitely utilize the GeoTrac technology to solve," she says.

Mapping Remote Locations

For oil and gas companies, getting workers to well sites along remote or seasonal roads is not easy on a consumer-grade GPS system. GeoTrac has its own geographic information systems (GIS) department, so its maps have all the routes oil and gas companies will need, including seasonal ice roads. GeoTrac maps include all the key attributes such as weight restrictions, road types and other road details so clients know if they can bring the personnel, trucks or equipment along a specific route.

MacDonald says this is particularly important for western Canada's oil and gas industry which drills about 15,000 new holes a season. "All that drilling happens when the earth is frozen because you are bringing in heavy equipment across muskeg and marsh," he says. "In the winter, it is dark for 18 hours of the day and temperatures are 35 to 40 degrees below zero so you need to make sure your truckers get there safely. If they leave a vehicle, they can lose fingers and toes so it's about more than getting them there, it's about getting them there safely."

GeoTrac's GIS department creates, updates and builds the road infrastructure network for customers, keeping it current and up-to-date thanks to the speed and power of its Dell Vostro laptops with 3rd Generation Intel® Core™ i7 vPro processors.

Calculating Savings

In addition to worker safety, Canyon uses GeoTrac's Asset Control Centre* to track its total mileage electronically which speeds the calculation of fuel use and eligible tax rebate. Roth says it took one person three weeks every quarter to calculate their fuel tax, and they knew it would continue to get worse as they grew.

Now by accessing GeoTrac systems powered by Intel® Xeon® E7 processors, fuel tax is calculated automatically so what used to take Canyon 120 man hours now takes eight, which Roth says reduces their costs from $9,600 to $640 per year.

Solutions Built On Intel

Internally, Slone says they've standardized on 3rd Generation Intel Core processors to get "cost-effective performance". GeoTrac staff was provided with Dell* laptops or desktops with Intel® Core™ i5 vPro or Intel® Core™ i7 vPro processors.

"We depend on Intel's multi-threading abilities," says Slone, "Hyperthreading lets our developer and GIS staff be more productive. They can work on other things while data is compiling behind the scenes. We need to be able to have multiple applications running at one time to help save time and money."

Slone also noted that in some other companies, staff in processor-intensive positions might be given two PCs in order to handle development and day-to-day administration but with Intel® Core™ i7 processor-based PCs, one system does it all. "It means less overhead and less to manage."

ABOUT CANYON TECHNICAL SERVICES LTD.

Based in Calgary, AB Canyon Technical Services Ltd. is specializes in providing hydraulic fracturing and other well-stimulation services, including coiled tubing, acidizing, cementing, nitrogen and CO2, for oil and natural gas producers in Western Canada.

www.canyontech.ca

ABOUT GEOTRAC INTERNATIONAL

GeoTrac International was founded in 2003 and provides oil and gas industry clients with a complete fleet management solution that improves safety, reduces operational costs, increases productivity, and generates revenue.

www.geotracinternational.com

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