



Controlling Criminal Behavior – Across Billions of Points in Time



Law enforcement agencies need immediate access to accurate, real-time information when tracking and monitoring offenders and predicting criminal behavior. Knowing that every second counts when it comes to preventing crime, SecureAlert – provider of patented, wireless, GPS location technologies and systems – turned to ParAccel.

Top 3 Benefits

- ▶ **Accelerated data access** times – from minutes to seconds – for large, complex and often impromptu queries requested by law enforcement officials
- ▶ **More precise and timely monitoring** of tracked offenders' activity, leading to more effective crime prevention efforts and preservation of law enforcement resources
- ▶ **Data compression** issues no longer hindering data storage and scanning efficiency

SecureAlert, headquartered in Sandy, Utah, is a valued partner for federal, state and local law enforcement agencies. Through its SecureAlert Monitoring, Inc., subsidiary, the company observes and tracks more than 15,000 individuals in the United States, as well in select countries in Central America, South America and Eastern Europe. It monitors a wide range of probationers and parolees – from nonviolent offenders and juveniles to high-risk individuals such as gang members and those who have committed sex crimes or acts of domestic violence. SecureAlert's electronic monitoring programs and services allow probationers and paroled offenders to reintegrate into society – and provides resource-strapped law enforcement agencies with “extra eyes” out in the field.

SecureAlert's TrackerPAL II™ is an ankle worn “electronic tether” that uses GPS tracking technology 24 hours a day. Not surprisingly, constant monitoring of thousands of offenders is a very data-intensive task. “The GPS data we collect on offenders multiplies extremely

rapidly – a trace every minute for each person we track,” said Steven Florek, vice president and managing director, Offender Insights and Knowledge Management, at SecureAlert. “That translates to billions and billions of records.”

Accelerated Insight: Providing Law Enforcement with an Extra Advantage

“One way we are really helping our customers preserve resources is by rapidly analyzing thousands of GPS data points in a scatter plot and determining whether they all represent one specific ‘cluster,’” explains Florek. “So, for example, if a late night robbery occurs near the home of an offender who is on probation for theft, we can analyze the time-stamped GPS traces and let law enforcement know that from 5 p.m. to 6 a.m., an offender was definitely at his or her home – and therefore, is not a suspect.”



“ParAccel not only met our expectations of performance and capacity, it exceeded them.”

Steven Florek, VP/Managing Director, Offender Insights and Knowledge Management, SecureAlert

Challenges

- ▶ Improve management and organization of billions of data points derived from round-the-clock GPS tracking of probationers and paroled offenders
- ▶ Conduct faster and more accurate analysis of data to identify patterns of behavior that could denote existing or planned criminal activity
- ▶ Provide law enforcement with the ability to conduct impromptu and highly complex queries to determine if tracked offenders are potential suspects in crimes

Solution

- ▶ SecureAlert, a leading provider of GPS tracking devices and services for monitoring probationers and paroled offenders, turned to ParAccel to conduct ultra-fast, advanced queries on GPS trace data to help its customers – federal, state and local law enforcement agencies – predict criminal behavior and prevent crimes before they occur.

According to Florek, ParAccel is also helping SecureAlert pinpoint suspicious behavior, such as pacing or stalking, that could indicate an offender is contemplating committing a crime. “We recently notified a local law enforcement agency that an offender we were tracking was going to the same place every day at 2 p.m., which was not a location on their normal commuting route,” Florek said. “Upon further analysis of the data, we learned that this individual – a convicted sex offender – was monitoring a new school bus stop. Law enforcement hadn’t known about the new stop, so they immediately made it a prohibited zone for the offender and are now keeping even closer watch of his activity.”

Staying Ahead in the Race Against Crime

In addition to predicting and preventing criminal activity, ParAccel’s analytic platform is allowing SecureAlert to alert law enforcement about offenders who may be headed for other types of trouble that could be detrimental to their own well-being. “We are able to identify patterns of homelessness behavior more quickly, for example,” said Florek. “Timely notification about this type of unhealthy behavior by probationers and paroled offenders can help law enforcement better support those re-entering society and make sure they stay engaged with the rehabilitation services they need to successfully reintegrate.”

According to Florek, prior to SecureAlert’s deployment on ParAccel the company was burdened by data compression issues that hindered its efforts to store and scan data efficiently. PADB features a built-in adaptive compression capability that automatically analyzes data in each column and assigns the most efficient data compression algorithm. In addition to adaptive compression, the core database also relies on a columnar-based, massively parallel processing (MPP) architecture, and its next-gen Omne optimizer to deliver industry-leading analytic performance. Using ParAccel to tame its huge data has helped to “turbocharge” SecureAlert’s ability to deliver critical information rapidly into the hands of law enforcement.

“Our processing rates are phenomenal with ParAccel – a basic query on the billions of records in our database now takes about 8-10 seconds to run. And a more complex query that may have taken 15 minutes to process in the past now can be accomplished in 60-90 seconds.” He added, “ParAccel not only met our expectations of performance and capacity, it exceeded them. The incredible speed with which we can deliver relevant answers to law enforcement for even the most complicated queries is saving them precious time – and more than likely, lives.”

ABOUT PARACCEL, INC.

ParAccel, Inc. is the proven leader in high performance analytics. Our software-only platform provides the best scalability and price-performance for the widest variety of analytics, unlocking the most value from all available data for both Operational and Discovery workloads.

For more information please
contact us at info@paraccel.com
or call 866.903.0335

www.ParAccel.com