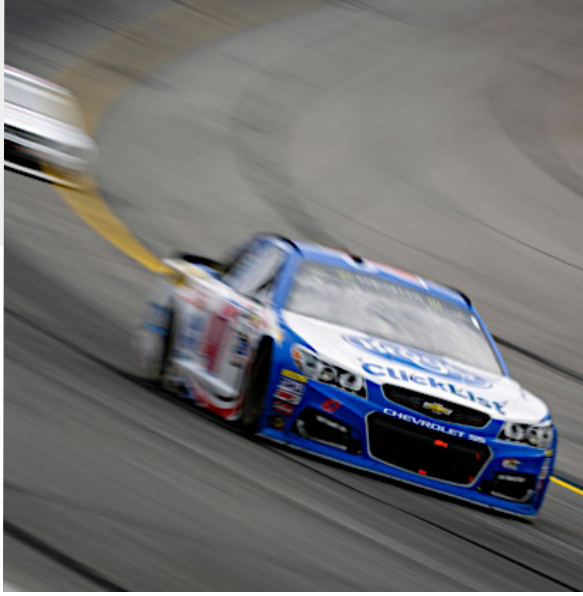

Driving precision and performance on the racetrack

JTG Daugherty Racing speeds past the competition with Dell mobile and IoT solutions that boost car performance and help engineers gain new analytical insights.

Motorsports | United States

Business needs

JTG Daugherty Racing wanted to gain a competitive edge by increasing racing performance and gathering data insights faster.

Solutions at a glance

- Dell Latitude 15 5000 Series Laptops
- Dell Latitude 12 Rugged Tablets
- Dell Precision 7000 Series Mobile Workstations
- Dell EMC PowerEdge Servers
- Dell Embedded Box PC 3000
- Dell Edge Gateway 5000
- Dell Edge Gateway 3000

Business results

- Optimizes car performance during races through new mobile tools
- Gives technicians a complete view of car performance

12.5min

Reduces race simulation creation time from 45 minutes to 12.5 minutes

75%

Boosts productivity by 75% for tire specialists

In the intensely competitive world of auto racing, drivers are always striving to find new ways to gain an edge on the racetrack. That's why JTG Daugherty Racing, a team that competes in the Monster Energy NASCAR Cup Series, uses data analytics to give its drivers a competitive advantage. JTG Daugherty Racing analyzes testing and racing data on its cars, looking at engine and tire information gathered from onboard electronic control modules and testing rigs. Armed with this data, teams can optimize everything from suspension spring performance to timing and scoring. Because it needed to compete better against larger teams, JTG Daugherty Racing sought a new technology solution that could further boost performance. "There's such a sense of urgency in motor sports racing. When a car comes into the garage or the crew chief wants to try a new setup, you have seconds to come up with a solution to get that together for them," says Brian Burns, a race engineer for JTG Daugherty Racing. To increase racing performance, JTG Daugherty Racing sought new mobile tools that crew members and engineers could use to analyze data during practices and races.

Deploying Dell mobile tools and IoT technologies

JTG Daugherty Racing chose to collaborate with Dell to implement Dell client solutions, Dell Internet of Things (IoT) technologies and Dell EMC server technologies. "Racing has become very technical, and Dell is always on the cutting edge of what's new and what's best," says Tad Geschickter, team owner of JTG Daugherty Racing. "A company like ours doesn't have a large infrastructure. Dell allows us to do a lot of things and play larger than we really are."

JTG Daugherty Racing deployed Dell Precision 7000 Series mobile workstations with Intel® Core™ processors used by racing engineers to power simulation workloads and analyze scoring and timing data in real time. The team also implemented Dell Latitude 15 5000 Series laptops, which engineers use to run real-time decision-making software. In addition, the team's tire specialists use Dell Latitude 12 Rugged Tablets to scan tire data from barcodes and collect updated data about tire age, materials and measurements. Team shock specialists use Dell Embedded Box PC 3000 to test shock absorber performance.

"A lot of what we do requires some serious computing power. That's where Dell comes in. The ability to run faster simulations increases our productivity to help find that critical tenth of a second."

Tony Palmer
No. 47 Kroger ClickList Chevrolet Race Engineer, JTG Daugherty Racing

Optimizes car

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The team uses Dell Edge Gateway 5000 and 3000 devices to gather insights about scoring and timing. The devices aggregate real-time NASCAR scoring and timing data for every car on the racetrack and send it directly to the Dell Precision 7000 Series mobile workstations and Dell Latitude 12 Rugged Tablets. JTG Daugherty Racing also uses Dell EMC PowerEdge servers in its office in Harrisburg, North Carolina, and on trucks that transport cars to races. The servers store critical car data that simplifies car setup at tracks.

Maximizes racing performance

JTG Daugherty Racing is using its mobile and analytical tools to enable better car performance during races. For example, the team's engineers look at updated scoring and timing data, collected via the Dell Edge Gateway devices, on their Dell workstations and rugged tablets. Additionally, the team takes data downloaded from a car's electronic control unit to view information on brake and throttle pressure, exhaust temperatures and speed after each lap of a race. Tire specialists in pit stops during races use the tablets to check how tires are wearing. Armed with this information on their devices, engineers and tire specialists can more easily strategize for a race, because they can see how specific engine or tire changes affect performance.

"Our tire specialists have increased their productivity by 75 percent using Dell Latitude 12 Rugged Tablets. They can work more efficiently because of the insights they're getting from the tablets."

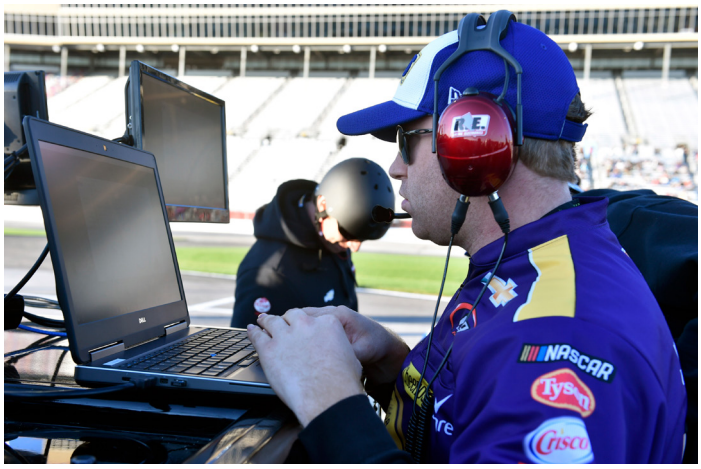
Tad Geschickter
Team Owner, JTG Daugherty Racing

Cuts race simulation time from 45 minutes to 12.5 minutes

Timing is everything in the racing world. Taking advantage of Dell Precision workstations to build virtual cars and run complete race simulations, JTG Daugherty Racing engineers and drivers have reduced the time it takes to run a full race simulation from 45 minutes to 12.5 minutes. "Dell plays a big role in what we do both at the shop and at the track," says Tony Palmer, the team's No. 47 Kroger ClickList Chevrolet race engineer. "A lot of what we do requires some serious computing power. That's where Dell comes in. The ability to run faster simulations increases our productivity to help find that critical tenth of a second." As a result of faster simulations, the team can more easily qualify for a race and even improve race positioning.

Increases productivity for tire specialists by 75 percent

Previously, JTG Daugherty Racing tire specialists spent many hours looking at spreadsheets to view updated data on tire models and age. Now, using a customized on-screen keyboard on the Dell rugged tablets, specialists quickly scan tire barcodes to see a tire's age, weight and other measurements. "Our tire specialists have increased their productivity by 75 percent using Dell Latitude 12 Rugged Tablets," says Geschickter. "They can work more efficiently because of the insights they're getting from the tablets."



Gives technicians a complete view of car performance

JTG Daugherty Racing technicians now have a full picture of a car's performance, because they can see real-time NASCAR data and other updated race information on their mobile devices in pit boxes and qualifying boxes in the field. Team members use dashboards on their devices to analyze and compare current and historical data from previous races and lap times, along with track and weather conditions. With a comprehensive view of car performance and race conditions, the team can further improve performance for drivers. "In NASCAR, we process large amounts of data quickly to gain insights, and then develop conclusions and solutions," says Geschickter. "Additionally, we leverage resources located in remote locations, so there is a need to move data to multiple points quickly. Dell provides solutions to accomplish this seamlessly."

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