

Taking Computing to the Edge

Billions of data points? No problem. McLaren Racing shows what's possible with edge computing.

Customer profile

Automotive | United Kingdom



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Edward Green

Head of Commercial Technology,
McLaren Racing

Business needs

McLaren Racing counts on edge solutions and systems from Dell Technologies to keep its Formula 1 cars ahead of the pack.

Business results

- Gaining more value from data captured at the edge with real-time insights from low-latency analysis
- Making split second decisions to improve competitiveness
- Leveraging data, analytics, and edge and high performance computing for real-time performance optimization
- Arming engineers and the trackside team with data-driven insights to enable immediate responses to issues of concern

Solutions at a glance

- Dell EMC PowerEdge servers
- Dell EMC OpenManage system management
- Integrated Dell Remote Access Controller (iDRAC)
- Dell EMC Micromodular data center

Gaining insights at the edge

For companies of all sizes and types, edge computing technologies are essential to competitive advantage. To create that advantage, these rapidly emerging technologies create new opportunities for businesses to gain deeper and more immediate insights from data.

What exactly is the edge? In the Dell Technologies view, the edge is where data is acted on near its point of creation to generate immediate, essential value. For McLaren Racing, those data-driven insights are essential to optimize race performance and speed innovation.

This move to the edge enables real-time insights and allows McLaren to deploy intelligent systems to respond to events, safety issues, structural changes and more — in real time — and make those necessary changes on the fly.

This is the way it is at McLaren Racing, which relies on edge computing solutions from Dell Technologies to keep its Formula 1 cars ahead of the pack.

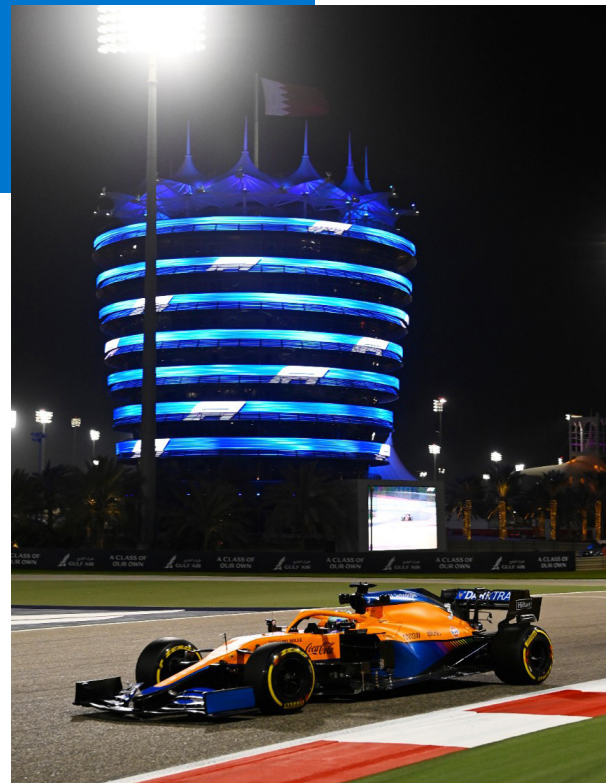
Racing ahead with data analytics

A modern Formula 1 car carries close to 300 sensors, which can stream as many as 100,000 data points a second. For McLaren Racing, this all adds up to tremendous opportunities based on enormous amounts of data.

For McLaren, this is where the design process starts — at the edge — with each car streaming telemetry data to trackside compute stacks.

“Over a given season, we end up with billions of data points,” says Edward Green, Head of Commercial Technology at McLaren Racing. “You need an enormous amount of compute to deal with all of the sensing telemetry that’s coming from the car, and to process it as fast as possible. We capture that data at the edge and use all of it to inform our performance strategy.”

In a modern F1 race, seconds really do count, Green notes. “Being able to add performance means that you’re making those decisions quicker and faster, which impacts your overall race competitiveness.”



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Leveraging leading technologies

At McLaren Racing, technology plays a pivotal role in everything from the development of the car and its components to the real-time performance tuning of the car on the track.

Central to this technology are two sets of Dell Technologies compute racks with Dell EMC PowerEdge servers that travel with the racing team and sit trackside to collect and analyze the data coming from the car. Bringing compute, storage and networking closer to the points where data is generated removes the barriers that come with network latency.

To enhance its competitiveness, McLaren recently updated its trackside telemetry servers to bring new levels of performance out to the edge. Some of the streaming data is analyzed in near real time, at the edge, to inform split-second race day decisions, while other data is routed to the McLaren Technology Center.

“We bring that data in real time back to the McLaren Technology Center,” Green says. “That gives us the low latency analysis to drive mission control, which supports the team trackside.”

In particular, McLaren Racing needs an enormous amount of compute to deal with the sensing telemetry data that’s coming from a car in motion, and to process it as quickly as possible. And that’s one of the reasons McLaren Racing partners with Dell Technologies to enable analytics at the edge.



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“Dell Technologies give us that scale of compute, so we have edge-to-core-to-cloud capability every time we go racing on track,” he says. “With a relatively small IT function, our role is to find partners that are passionate and want to work with us on that journey, and that’s one of the key parts of our partnership with Dell Technologies.”