

# ASTON MARTIN RED BULL RACING ACCELERATES WITH EDGE OPTIMIZED INFRASTRUCTURE

HPE SimpliVity delivers efficiency  
and responsiveness

## Objective

Improve performance and increase agility while reducing storage costs from edge to core.

## IT Matters

- Faster application performance and provisioning
- Compact footprint at trackside, edge sites
- Increased responsiveness and efficiency
- Simplified management

## Approach

Rev up business performance with edge optimized infrastructure and HPE SimpliVity.

## Business Matters

- Reduced IT costs
- Reliable, compact platform uses less power
- Accelerated speed of decision making
- Free up time to focus on F1 innovation



## KEEPING UP WITH THE PACE OF CHANGE FROM EDGE TO CORE

Nothing matters more in Formula One racing than speed. In a sport where wins are decided by a hundredth of a second, every vehicle component and every decision matters. Since 2005, UK-based Aston Martin Red Bull Racing has been a competitive force in Formula One racing. As of the beginning of the 2020 season, the team has notched 62 wins and 8 world championships, in part by adapting to design changes and new regulations with agility.

Data plays a pivotal role in the team's success. Aston Martin Red Bull Racing depends on IT to deliver the right data with high performance for everything from onsite track support at the edge to vehicle design at the core manufacturing site.

With proprietary, Formula One-specific manufacturing applications and virtual desktops generating significant amounts of





critical data, Aston Martin Red Bull Racing needed a solution for its demanding virtualized estate requirements. “We needed to be more agile and efficient at the edge with each race event,” says Chris Middleton, Head of IT Infrastructure Operations at Aston Martin Red Bull Racing. “Application performance affects how quickly we can react and make a change to enhance vehicle performance.”

With efficiency and speed being of the essence, the organization explored hyperconverged IT and ultimately decided on [HPE SimpliVity](#).

## SHIFTING TO AN IMPROVED INFRASTRUCTURE

Based in Milton Keynes in Buckinghamshire, England, Aston Martin Red Bull Racing designs and manufactures its high-performance race cars. In addition, the on-site IT organization supports a variety of collaboration functions across the business.

A Formula One race car is a finely-tuned machine driven by a gifted athlete. But it is also a technology platform. Each race weekend generates around 400 GB of critical data. Crucial decisions—such as when to “pit” a car during a race—depend on real-time monitoring and lightning-fast analysis. To deliver such indispensable insights a portable data center is set up trackside to support the team each race weekend.

Historically, the racing team made use of a mix of traditional virtualized servers with shared networked storage. Due to ongoing, growing demand on infrastructure, it was time for the Team to upgrade their legacy estate of VMs, virtual desktops, and hardware. With

50 TB of growing data, infrastructure sprawl was becoming a costly liability, and software engineers using virtual desktops were noticing performance lags.

“All of our cars are evolving prototypes, with 30,000 changes made a year,” says the Team’s CIO, Matt Cadieux. “We need reliable infrastructure that is very agile to support the needs of our engineers and new business demands.” Speed wins the race so Aston Martin Red Bull Racing’s highly specific applications must have fast and responsive infrastructure.

In addition, each year may bring new technological advances, rapidly emerging competitive challenges, and changing Formula One regulations. When it comes to keeping up with the pace of change, Aston Martin Red Bull Racing’s infrastructure must be able to move at the pace of the sport.

## A MASSIVE INCREASE IN PERFORMANCE AT THE EDGE

Faster IT would help the Aston Martin Red Bull Racing’s team sustain its competitive advantage. The IT team considered both refreshing their traditional architecture and shifting gears to hyperconverged infrastructure. To find the right solution, the team opted for rigorous testing: “We went through a formal benchmarking exercise,” explains Cadieux. “We took real racing workloads and asked vendors to impress us, and HPE SimpliVity impressed both in terms of performance and ease of management.”

HPE SimpliVity is now the foundation for Aston Martin Red Bull Racing’s VM and VDI estate, both at the trackside edge for race-day operations and at the factory. The difference





is huge. For example, on race days, the team offloads data from a car in real time, then post-processes it for analytics. With HPE SimpliVity, the time required to crunch all the data has dropped 78%—from nine to two minutes. “It’s a massive increase in performance,” says Cadieux. “What that means is we can get better answers quicker when we’re on the racetrack where seconds count.”

## **FASTER PERFORMANCE OFF AND ON THE TRACK**

At the main Milton Keynes factory, HPE SimpliVity is also making a big difference for the organization’s backend systems. 80% of the organization’s business critical apps are running on HPE SimpliVity. This ranges from virtual desktops and DevOps tools at the core data center to collaboration tools and analytics at the edge.

“By enabling our Aerodynamists to use a unified workspace to support the design processes, they now have the ability to work faster and produce more design iterations,” states Matt Sorrell, Principal Aerodynamicist. “This results in a more optimized design for each circuit and better results on track.”

HPE SimpliVity is also enabling the team to be agile. During the early days of the COVID-19 pandemic, the virtual desktop environment allowed various parts of the business to follow the UK government guidelines and efficiently work from home with access to critical applications and data.

On the edge at the track, efficiency gains have been massive. “By bringing HPE SimpliVity to support our trackside operations, we’ve been able to deliver a more reliable, faster, and optimized IT infrastructure,” states Simon Kessler-Lyne, Head of Event IT. “This enables our trackside engineers to focus on car performance, knowing that they can rely on the IT infrastructure to deliver and backup the data that they need.” Since Aston Martin Red Bull Racing has HPE SimpliVity both at the edge and the core, they are able to use Citrix virtual machines to give engineers access to tools and data remotely wherever they are. For example, the Team’s trackside Parts & Lifting Controller uses Citrix to access crucial parts databases remotely from the track—so the teams at the factory can react faster to backfill spares and be ready for the next race.

**“From edge to core, HPE SimpliVity delivers superior efficiency and performance. Our teams’ feedback has been very positive.”**

– Chris Middleton, Head of IT Operations, Aston Martin Red Bull Racing



## Case Study

Aston Martin  
Red Bull Racing

## Industry

Automotive



### Customer at a Glance

#### Hardware and Software Solution

- HPE SimpliVity
- HPE SimpliVity with optional GPU accelerators
- HPE InfoSight with HPE SimpliVity
- Support for Citrix VDI

### RAPID DEPLOYMENT AT THE EDGE

To support race season, portable IT needs to be quickly setup and provisioned for each event. Trackside space is a challenge and there is no time for outages. Confidence in all systems is key along with rapid provisioning. With HPE SimpliVity, the Aston Martin Red Bull Racing team increased speed of deployment by 4X: “HPE SimpliVity reliably provisioned in 30 minutes, less than a quarter of the time of the legacy system,” states Chris Middleton, Head of IT Infrastructure Operations. Lightning fast edge-site agility is key. The time savings enables engineers to work from the track earlier, optimizing their productivity. “In 2020, the revised calendar includes many triple headers, where we have races three weekends in a row. In tightly scheduled events like that, trackside equipment must go straight to the next race circuit to be set up,” Middleton comments. “To ensure team productivity, it is essential that the mobile edge-data center is packed-down at circuit 1 and transported and available at circuit 2 within just a couple of days.”

Another area of improvement has been increased data protection and streamlining software and security patching processes.

“We are able to deploy updates to critical workloads and digital workspaces knowing that in the event of any installation or patch issues, each workload can be recovered in minimal time,” states Middleton. “This allows for an aggressive software release cadence which gives our engineering teams the updates to the toolsets they require to analyze data faster and more efficiently.”

Using HPE InfoSight, the team now gains a deeper understanding of all workloads running on HPE SimpliVity. Quick visibility to issues improves IT agility. Previously, the fault-finding process would require several toolsets and taken much longer due to having to cross correlate data over multiple platforms. HPE InfoSight also presents resource demand trends and forecasts, which help in capacity planning. HPE InfoSight automatically identifies opportunities to improve performance and optimize resources, and makes clear recommendations.

At the end of the day, it's all about performance. HPE SimpliVity helps the Aston Martin Red Bull Racing Formula One Team go from success to success. Happy racing.

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