Aston Martin Red Bull Racing accelerates performance with hyperconverged IT

HPE SimpliVity delivers speed and responsiveness

> "HPE SimpliVity's hyperconverged infrastructure enables us to get better answers quicker when we're on the racetrack and seconds count."
>
> –Matt Cadieux, CIO, Aston Martin Red Bull Racing

Keeping up with the pace of change

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 F1 racing. As of the beginning of the 2019 season, the team has notched 59 wins and 8 world championships, in part by adapting to design changes and new regulations with agility.

IT plays a pivotal role in the team's success. Aston Martin Red Bull Racing depends on IT to deliver high performance for everything from its business processes to vehicle design to onsite track support on race days.

With proprietary, F1-specific applications generating significant amounts of data, Aston Martin Red Bull Racing needed a solution for its growing storage needs for the virtualized estate. "We needed to be more agile," says Neil Bailey, head of IT infrastructure at Aston Martin Red Bull Racing. "Application performance affects how quickly we can react and make a change to enhance vehicle

The high-pressure world of F1 racing

- Wins can result from a difference of .01 seconds
- Teams have little time to react to changing requirements
- Ultra-competitive field with the fastest race cars in the world
- Data-intensive environment has significant storage needs

HPE SimpliVity helped Aston Martin Red Bull Racing speed-up its infrastructure.

performance." With efficiency and speed being of the essence, the organization explored hyperconverged IT and ultimately decided on HPE SimpliVity.

Legacy infrastructure puts the brakes on performance

Based in Milton Keynes in Buckinghamshire, England, Aston Martin Red Bull Racing designs, manufactures, and races its high-performance F1 vehicles. In addition, the on-site IT organization supports administrative functions such as marketing, finance, and human resources.

A mix of traditional virtualized servers plus virtual desktop infrastructure resulted in roughly 500 VMs spread across disparate hardware, creating a disjointed and heterogeneous environment. With 50 TB of data, infrastructure sprawl was becoming a costly liability, and software engineers using virtual desktops were noticing performance lags.

F1-specific use cases added urgency to finding a faster storage solution. A race car may be a finely tuned machine driven by a gifted athlete, but it is also a technology platform, generating around 400 GB of data on a race weekend. Crucial decisions—such as when to "pit" a car during a race—depend on lightning-fast analysis conducted by a portable data center that is set up trackside on race day.

Aston Martin Red Bull Racing's proprietary F1 applications also demand fast and responsive infrastructure. "All of our cars are evolving prototypes, with 30,000 changes made a

year," says CIO Matt Cadieux. "We need to make sure the infrastructure is there and is very agile to support the needs of our engineers and new business demands."

In addition, each year may bring new competitive challenges, technological advances, and changing F1 regulations. When it comes to keeping up with the pace of change, Aston Martin Red Bull Racing's infrastructure has to be able to move at the pace of the sport.

A massive increase in performance

Aston Martin Red Bull Racing's IT team considered both traditional architectures and hyperconverged infrastructure in its search for faster IT. The competitive selection process involved rigorous testing. "We went through a formal benchmarking exercise," explains Cadieux. "We took real workloads and asked vendors to impress us, and HPE SimpliVity impressed both in terms of performance and ease of management."

HPE SimpliVity provides the basis for Aston Martin Red Bull Racing's VMware® and VDI estate, both in the factory and trackside for race-day operations. The difference is noticeable. 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 for post-processing has gone from nine minutes 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 and seconds count."

Greater than

50%

reduction in time

needed to post-process critical race data workloads

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Faster performance on and off the track

At the Milton Keynes factory, HPE SimpliVity is making a difference in the organization's backend systems. 80% of the organization's business critical apps are running on HPE SimpliVity. This ranges from the system that manages parts lifecycle management to email.

Having achieved significant benefits in the factory, it was time to help their race team. "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 Kesslar-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."

There are 21 race locations to transport the team's IT equipment to every season. Systems need to be quickly setup and shut down for each event. Trackside space is a challenge and power surges or outages can be quite an issue. Confidence in the systems is key.

Both within the factory and trackside, the organization has seen some of its biggest wins in its virtual desktop infrastructure. "Straightaway, users noticed a big difference in terms of responsiveness," says Bailey.

Another area of improvement has been the ability to backup and recover the Citrix® VDI environment in the event of failure. HPE SimpliVity also made a big impact on Aston Martin Red Bull Racing's workload and data recovery. When the research and development team experienced a corruption, they needed to recover their virtual workstations quickly. With HPE SimpliVity, the IT team recovered the workstation in about one minute and with only three clicks. Today, anyone on the IT team can perform this simple task. "Before, the process would have taken over an hour with multiple, complex steps," says Bailey.

Learn more at
hpe.com/info/simplivity

"When we moved users over to HPE SimpliVity, the feedback was really positive. Users noticed a big difference in levels of performance."

– Neil Bailey, Head of IT Infrastructure, Aston Martin Red Bull Racing

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ASTON MARTIN
Red Bull RACING

Objective

Improve performance and increase agility while reducing storage costs at the central factory and remote trackside events.

Approach

Rev up business performance with HPE SimpliVity.

IT Matters

- Expand application performance
- Compact/smaller footprint at trackside sites
- Increase responsiveness and flexibility
- Simplify management

Business Matters

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

Customer at a Glance

Hardware and Software Solution

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

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