

Toyota Racing Development teams with HP

HP workstations help provide engineers with top-of-the-line racing technologies



“For us, the bottom line is winning races. If one or more Toyota drivers are standing on the podium at the end of race day, then we’ve done our job. We’re confident HP will continue to help us do just that.”

– Jaxon Tate, IT systems support engineer, Toyota Racing Development

HP customer case study:

Toyota Racing Development engineers rally around HP workstations to help win races

Industry: Automotive

Objective:

To stay ahead of the competition, Toyota Racing Development engineers needed high-powered 64-bit computing to process complex calculations and proven reliability to run diverse software applications

Approach:

Engineers turned to HP workstations, equipped with 64-bit processing technology, high-powered graphics cards and multiple gigabytes of RAM – enough to crunch any job

IT improvements:

- Seamless hardware/software compatibility
- Proven reliability means fewer service and support issues

Business benefits:

- Faster design process
- Greater workplace efficiency
- Improvements in engineering innovation

Toyota Racing Development (TRD USA, Inc.) adheres firmly to its parent company’s winning philosophy of collaboration and collective decision making. As a result, Toyota is one of today’s elite names in racing, with victories in the Indianapolis 500 and Manufacturers Championships in the CART, IRL and NASCAR Craftsman Truck racing series.

To enable the level of collaboration needed to win races, TRD turned to HP workstations for racing design, development and manufacturing support.

“We needed 64-bit workstations and HP was the only hardware maker that had them,” recalls TRD IT systems support engineer Jaxon Tate. “HP was thinking from the engineer’s perspective and was clearly ahead of the pack. We had a lot of confidence in their ability to design a workstation that could handle heavy-duty design and manufacturing software applications.”



Customer at a glance

About Toyota Racing

Since its inception in 1979, TRD USA has earned an industry-wide reputation as a top racing performance engineering company. TRD engineers and builds engines for the NASCAR Craftsman Truck Series, as well as engines for most Toyota factory-backed U.S. racing efforts.

For more information, visit www.trdusa.com.

Contact the HP Customer Reference Program, 281-514-5755, for more information.

HP workstations drive results

TRD uses the industry's highest-powered software tools and suites, including Parametric Technologies' ProWildfire 2.0 and 3.0, MSC vNastran, Flowmaster Thermal Management, MATLAB Simulink and signal processor simulators, CGTech Vericut and Surfcam 5 Axis Plus CMA. Many of these applications run simultaneously and in unison on a workstation, crunching up to eight gigabytes of random access memory.

"We're not exaggerating when we say we need the absolute most powerful, fully-loaded workstations on the market," Tate notes.

To meet its needs, TRD uses HP workstations equipped with at least eight gigabytes of RAM. These workstations are powered by either Dual-Core Intel Xeon® processors or Dual-Core AMD Opteron™ processors and outfitted with the newest NVIDIA graphics cards running at 1GB or 512 MB.

The HP workstations allow engineers to open, modify and save very large CAD drawings in just seconds. Many of these drawings have 10,000 or more features. "When you're talking these numbers, it's an extremely detailed rendering and a very large CAD file," Tate notes. "Without 64-bit computing, it would take a long time to open, edit, regenerate and save these files."

Reliability and performance set the mark

Just like on the race track, time is the enemy in race car design. Any gains or refinements achieved in the design lab can ultimately lead to better performance on the track.

"The racing world is a world of inches and seconds," says Mark England, supervisor of manufacturing and engineering, TRD USA. "Those are the margins of victory. It's our job to constantly innovate, making these cars as good as possible, using every small advantage we can implement through design."

TRD's design team coordinates with the Toyota Racing manufacturing team on virtually every front. Using software such as MSC Nastran, design engineers can run complex simulations for heat transfer, dynamics and aeroelasticity, incorporating feedback from the manufacturing team regarding different types of vehicle construction materials. The teams can then coordinate on machine simulation cuts using CGTech Vericut software. This improves design efficiency by helping reduce both the cost of materials and machine errors.

"Our visibility using these applications is typically three- or four-dimensional. They eat up a lot of horsepower. HP workstations make it possible to run these applications at full strength," says England. "Sometimes we'll have 10 applications open and running on a single workstation, without any decrease in speed or performance."

TRD upgrades its workstations every two years. As Tate points out, the team expects its computers to perform as well toward the end of their lifecycle as they do on day one.

"We can't afford any lags in performance, especially with design software being so much more demanding than in years past," says Tate. "Reliability is essential. We're confident that our 64-bit HP workstations are equipped to handle the workload until our next product refresh."

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To learn more, visit www.hp.com

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