

Data Center Optimization is Like NASCAR without the Beer



Lori MacVittie, 2011-08-06

Driving a car in a circle, even at high speed, may sound easy but it's not a one-man job: it takes a team with visibility to avoid accidents and enable a successful race.



Optimization and visibility, on the surface, don't seem to have much in common. One is about making something more efficient – usually faster – and the other is about, well, being able to see something. It's the difference between driving *in* a race and *watching* a race.

But if you've ever looked into racing – high speed, dangerous racing like NASCAR – you know that the driver of a car in the race does better if he's got an idea of what the track looks like while he's driving. He needs visibility, and for that reason he's constantly in contact with his crew, who can see the entire race and provide the driver with the information he needs to make the right moves at the right time to win.

“ Team members carrying a two-way radio tuned to the team frequency during a NASCAR race may include the owner, team manager, driver, crew chief, team spotter, crew members, competition director, engineers, mechanics and specialists. Even more people are involved in a multi-car team. The driver most often consults with his team's race spotter and crew chief during a race. Of course, the owner or team manager can intervene whenever he or she feels it's necessary.

The team spotter provides essential information to help the driver get the car around the racetrack and, with any luck, into Victory Lane. Even as NASCAR race cars have become safer in recent years, the driver's ability to see to the sides and rear of the car has been diminished by full-face helmets and head-and-neck-restraint devices. The spotter often serves as a second set of eyes for the driver during the race. He watches the "blind spots" to the sides and rear of the car and confirms via radio when the track is clear for a pass or maneuver. It is not surprising that many spotters are former drivers. ”

-- [How does a NASCAR driver communicate with the pit crew?](#)

Drivers in a race with high stakes like NASCAR know they can't do it alone and they can't do it without a clear, on-demand understanding of where they are, where other racers are, and what's going on. They can't optimize their next move – go high? drop inside? speed up? slow down? – unless they understand how that will impact their position in the race based on conditions around them. They need visibility to optimize their moves. Inside the data center is a similar story – without the fancy high-tech helmets and beer.

DATA CENTER OPTIMIZATION

The ultimate goal of a data center is the delivery of an application. Security, availability and performance concerns – operational risks – are all addressed through the implementation of products and policies and processes. In order to optimize the delivery of an application, it's necessary to have visibility into the interconnections and interdependencies of each gear in the cog; to understand how they all work together and collaborate in a way that allows the dynamic adjustment of policies related to security and access management, performance and availability in such a way as to encourage successful delivery, not impede it.

Optimizing applications has to be about optimizing the data center and its components, because applications, like NASCAR drivers, aren't islands and they don't operate in a vacuum. There's a lot of [other moving pieces that go into the delivery of an application](#) and all must work together to ensure a successful implementation and a positive operational posture. That visibility comes from many positions within the data center but the most important one may be the most strategic; the spotter, the [application delivery controller](#) that is generally deployed at what is certainly the "pole position".

Just as the spotter in a race is able to see the conditions of the track as well as the car, the [application delivery controller](#) "sees" the conditions of the applications, the network, the client and the environs as a whole and is able to better share contextual data



STRATEGIC POINT of CONTROL



(n) a location within an architecture at which it is strategically beneficial and efficient to apply and enforce policies governing security, performance, and reliability of services

necessary to make the right moves at the right time in order to optimize delivery and "win" the race. This strategic point of control, like the spotter, is vital to the success and well-being of the application. Without the visibility afforded by components in the data center capable of making contextual decisions, it's possible

the application may fail – crash or be otherwise unable to handle the load. Unlike NASCAR, application failures can be more easily addressed through the use of virtualization and rapid provisioning techniques, but like a pit-stop it still takes time and will impact the overall performance of the application.

Visibility is essential to optimization. You can't optimize what you can't see, you can't react to what you don't know, and you can't adjust to conditions of which you aren't aware. Strategic points of control are those locations within the network at which it is most beneficial and efficient to apply policies and make decisions that enable a positive operational posture without which application security, performance or reliability may be negatively impacted.

THE BLIND SPOTS of cloud computing

This is the reason [cloud computing will continue to be difficult and outages so frustrating](#); resources leveraged in a cloud are cheaper, easier to provision and certainly take a weight off operators' shoulders, but it denies those operators and network admins and application developers the *visibility* they need to optimize and successfully **deliver** applications. Deploying applications is easy, but delivering them is a whole other ball game, fraught with difficulties that are made more onerous by the creation of architectural "blind spots" that cannot be addressed without a spotter. It is these blind spots that must be addressed, the ability to see behind and in front and around the application that will enable optimization.

It may be that the only way to address those blind spots is through the implementation of a hybrid cloud computing model; one that leverages cloud computing resources without sacrificing the control afforded by existing enterprise architectural solutions. Through the extension of the visibility that already exists in the enterprise to the cloud, in a way that enables flexibility and scale without sacrificing control.

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