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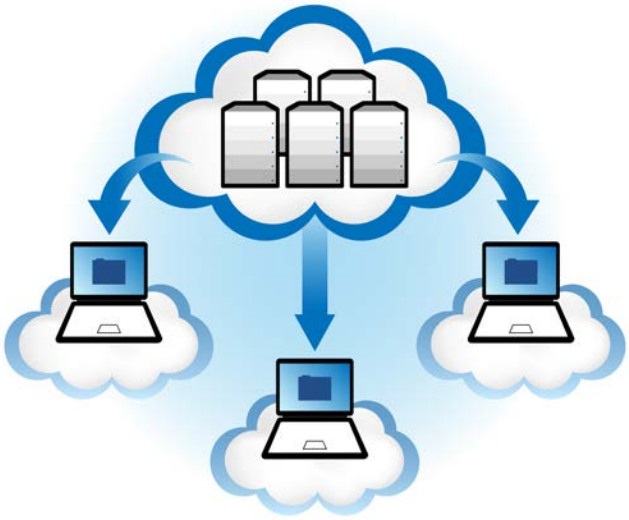

What can the cloud do for me?

An interview with Eli Almog, formerly in the office of the CTO at BMC.

Collect | Aggregate | Correlate

Executive Summary

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About

AppFirst is the leading SaaS-based application problem resolution service designed to provide mid-market application architects and DevOps complete visibility into their applications across the entire application stack. AppFirst is an agnostic solution, supporting a wide range of applications, regardless of language, application type or location (cloud, physical or virtual servers) and incorporates its patent-pending Miss Nothing Data capability. This unique feature is designed to provide clear insight into executing applications and quickly correlate with other data sources, allowing a proactive approach where IT professionals can see changes before they become problems, reduce customer churn, and drive down the cost of operations.

Founded in 2009, AppFirst is a New York City-based company backed by top-tier venture capital investors, including Javelin Venture Partners, FirstMark Capital and First Round Capital. For more information, visit www.appfirst.com. Follow us on Twitter @appfirst, or subscribe to the AppFirst blog to stay up-to-date on the latest AppFirst news.

AppFirst recently sat down with **Eli Almog**, a thought leader in the application performance management space. Eli formerly served in the office of the CTO at BMC. In our discussion, he goes over how to prepare to migrate to the cloud, and what to do once you're there.

What exactly is the cloud and what are the benefits of cloud computing?

The most basic thing you need to define when you talk about the "cloud" is what the cloud really is. Generally, when people hear the word "cloud" they think it means hosting their application outside their firewall. And some organizations aren't ready for that. You don't want to use umbrella terminology because you lose the attention of a big part of the community that's not ready to host their application outside of their firewall. You really need to look at it through the eyes of virtualization: **private cloud** (on-premises, behind your firewall), **public cloud** (computing resources shared among multiple customers) or a **hybrid solution**.

At a very high level, the cloud is leveraging automation and virtualization by providing a mechanism where one can **allocate resources quickly**. The goal behind that is to get better overall utilization from the compute power. In today's organizations, a typical physical environment utilizes about 15% CPU. Cloud computing and virtualization gives you the ability to create a "mini-container" in the form of virtual machines that can fit on a shared device(s), giving you much better utilization from physical hardware (around 50-70% CPU utilization). This number will fluctuate, but it depends on the organization and how aggressive they want to be in the cloud. This means, for the very first time, you can really get the most out of your infrastructure. And in terms of a public cloud, having dynamic access to resources is very compelling.
In addition to optimizing CPU utilization, another major benefit of

moving to a cloud environment is that you pay as you use. You don't buy a box and get stuck paying for it when it's not in use. You buy compute power and pay for the time that it's up and running (based on whatever measurement the cloud provider is giving you). The whole idea of usage-based pricing and charge backs, (which is information that can come from the monitoring infrastructure), is critical to ensure your engagement in cloud services is economically sound.

How do I know which cloud environment to move to?

There are three ways you can move into a cloud environment. You can opt for a private cloud, a public cloud, or a hybrid. This decision is based on your organization's needs and the needs of your application. Some components of your application are better staying on physical servers than moving to the cloud.

For example, based on the functionality point of view, some people will tell you not to put heavy I/O activity in the cloud. So one way to handle this situation is by splitting up your application architecture with a hybrid solution. There could be parts of your application architecture that need to be on physical infrastructure, such as an area that requires I/O from physical storage. While you keep your heavy I/O activity on physical boxes, the subsystems of your application that are CPU or memory heavy could be moved to the cloud.

What do I need to do before moving to the cloud?

Once you've defined what the cloud really is, the next thing you need to take into consideration is that in order to move to the cloud with minimal risk, you need to fully understand your entire **application stack** and your overall **application workload**. You need to be able to safely say to yourself:

"Yes, I can share resources with other applications and I don't need to have my own physical device, because I have some level of guarantee that I'll always have the resources I want. And if I want or need more resources, I can get them fairly quickly."

Nowadays, when you talk about applications, it doesn't necessarily mean one process on one box. Applications today have multiple tiers, and each tier might have different instances. For example, you could have four, five, even ten web servers that sit behind a load balancer, another five or ten application servers, and connections to one or two databases. Because app stacks are so much more complex than they used to be, you really have the make sure you're looking at the complete environment.

The only way to do that is to make sure you have the **right application performance management solution** in place and the right measurements of your physical environment. That way, you have clear definitions and descriptions of how your application performs. If you have the right monitoring tool and you have the right measurements of your application behavior, you can **right-size** what you need.

This is all about confidence. Once you fully understand your application and how it runs now, you can feel much more comfortable moving to the cloud because you know what you need in order to feel safe.

Once my application is moved to the cloud, what do I do next?

After you migrate and feel comfortable that everything's running well in your new world, you need to **continuously monitor** and understand your applications' overall performance and behavior because change is always happening.

Now you're in a situation where you're sharing resources with several other virtual machines. Their behavior is something you don't know and have no control over. If all of a sudden your "neighbor's" application requires a lot of memory, your application's memory needs may be impacted. The cloud vendors don't provide this level of visibility to you; you need to be on top of it yourself. And just because a cloud provider says you are getting certain bandwidth, for instance, you might not be getting it all the time. You're sharing the physical network with others. So if you have what is known as a "noisy neighbor," your application can suffer considerably. Your neighbor could be "hogging" all the resources.

Even worse is that this changes throughout the day. Your application could be running just fine at 9 AM, but be significantly impacted at 2 PM, because your neighbor's resource requirements increased, and that means your application is getting less resources than it was.

Some of the resources you once had full control of, you no longer have. When you had your own physical box, you didn't share it with anybody. So when there were problems on the box, the only one to blame was you and your application. No one else was using your resources. So, in essence, while cloud technology is making your life easier in terms of resource utilization management, all the monitoring problems you had in the past get magnified.

For instance, as a customer of a cloud environment or a cloud monitoring solution, you need to know your data is secure and unexposed. You need to know if your providers are truly multi-tenant and that your data is completely invisible

to others.

Today, it's not just about moving to the cloud. It's about moving to the cloud and monitoring your cloud applications thoroughly to ensure you are running at peak performance.

You need to be smart and efficient. But most importantly, you need to have the data to truly know the resources your application needs to deliver a great customer experience and save money.

Conclusion:

Although the cloud might be the right environment for your application, you need to be thoughtful about it. You need to ensure you have complete visibility into your application, understand what it means, and be constantly watching your environment for changes.