

Find out how Platform9 helped PubMatic setup an OpenStack private cloud quickly and easily, on their existing infrastructure

PubMatic

PubMatic saves up to \$8 million a year in Opex

PubMatic is a leading marketing automation software company for publishers. Through real-time analytics, yield management, and workflow automation, PubMatic enables publishers to make smarter inventory decisions and improve revenue performance. The company has offices worldwide, and is headquartered in Redwood City, California.

Udy Gold is the vice president of Data Center and Cloud Operations for PubMatic. In his [presentation at OpenStack Summit 2016](#), Udy spoke about his experience setting up and managing infrastructure on a public cloud, how their public cloud operating costs subsequently spiraled out of control, and how an OpenStack private cloud environment finally met their requirements.

PubMatic's journey holds several key learnings for companies looking to expand their infrastructure with sufficient spending controls on capital as well as operational expenses. This case study will summarize why PubMatic initially chose a public cloud and the associated problems they faced, and later how PubMatic saved millions on OpEx after migrating to an OpenStack private cloud.



Public cloud is not good or bad - it is a different way of running infrastructure. It serves some while it is not a good fit for others.



PubMatic's journey to a sustainable private cloud began in the public cloud

PubMatic is in the adtech industry. Their solution runs real-time bids for online ad impressions, receives bids from publishers and then publishes the ad with the winning bid. All of these transactions happen in less than 300 milliseconds. For example, by the time the New York Times homepage has loaded in a browser, PubMatic has already served the ad for the highest bidder on the website. This response time has to be backed by an extensive and high-performance infrastructure. PubMatic achieves this by operating across multiple, geographically dispersed data centers. As their business depends on high-volume data and network traffic, these data centers always need to perform at a certain threshold.

Why did PubMatic initially choose a public cloud?

The PubMatic team was working against the clock to launch their analytics platform. The development, QA and deployment teams needed several hundred servers to meet their deadline. They had limited budget to scale their hardware the way they wanted to. As a result, a lot of engineering work was on hold. To accelerate, they made the decision to move to a public cloud because they could not repurpose older production hardware since their traffic was also growing quickly.

Prefacing PubMatic's experience with public clouds, Udy had an important warning for the audience: Do not treat the public cloud as a data center! Since public clouds operate like "CPUs-for-hire," renting hundreds of instances for long timeframes can make the operating costs shoot up very quickly. PubMatic soon realized that controlling costs in a public cloud would not be easy. And using the public cloud did not eliminate all OpEx costs: PubMatic would still need to involve several staffers to support resource management, network monitoring, troubleshooting and managing access controls. Their costs spiralled quick from \$30,000 a month to more than \$400,000 a month. Since users could automatically spin up VMs, one time a QE engineer accidentally spun up 500 servers and they weren't detected until 24 hours later.



Cost on public cloud was 18 times of what it was originally predicted and 5 times of what it was supposed to be, even after considering a 3.5X increase during the project.



Assessing alternatives to public cloud

At this point, PubMatic decided to explore alternatives to public cloud and considered a private cloud strategy. They put together requirements and policies to govern their decisions about infrastructure assets and investments. These included:

- Using their existing data center hardware without making any changes to it
- Having a centralized management dashboard which would allow teams to control, deploy, monitor things in their own environment
- Supporting virtualization provisioning and managing environments on VMware, KVM and Docker
- Creating as simple an integration as possible

PubMatic eventually settled on a private/hybrid cloud model where they would largely run on OpenStack private cloud, but rely on the public cloud for capacity spikes. This would reduce the dependency and hence the cost associated with the latter.

“ *OpenStack is like being in a relationship. The fact that you “have it” is not enough. IT requires work to make it work for you.* ”

Managing costs with Platform9 Managed OpenStack as the alternative to public cloud

As an alternative to public cloud, PubMatic decided to migrate to an OpenStack-based private cloud, which would provide them with a public cloud-like experience, but on their own on-premises data center infrastructure. They chose Platform9 Managed OpenStack to implement what has become an “OpenStack-first” strategy for a variety of reasons. According to Udy, there were several reasons for choosing Platform9:

- Platform9’s deployment model – full OpenStack capabilities provided as managed service with guaranteed SLAs: the SaaS-based solution simplified OpenStack monitoring, management, troubleshooting, upgrades, etc.
- Platform9 is hardware agnostic, so PubMatic could just plug and play
- Tenant self-management and control
- Multi-region support for PubMatic’s geographically-dispersed architecture
- Support for both VMware and Docker
- Out-of-box management dashboard where PubMatic could monitor the overall environment for better planning e.g. how many CPUs they’re consuming currently

“ *We saved easily \$6-8 million on OpEx a year.* ”

Udy Gold on his migration from public cloud to Platform9 Managed OpenStack

So how did PubMatic's "cloud hopping" story end?

The migration to a Platform9 Managed OpenStack private cloud enabled PubMatic to save between \$6-8 million of OpeEx each year – a total reduction of 90% in expenses. PubMatic is now able to support its development and QA teams without having to worry about runaway operating costs. The dev and QA teams self sustain in managing resources for their own environments. This has also reduced the number of support tickets to request VMs. Udy emphasized that every organization's cloud journey is different and there is no black-and-white/ one-size-fits-all solution; he offered his experiences as a way to help others avoid his trial-by-fire with the public cloud.



I did not expect to rely on OpenStack as a solution and now I consider it as a prerequisite from my vendors



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See what it's like to easily build a private cloud on your infrastructure. [Start a Free Trial](#).

Platform9 leverages your on-premises or hybrid infrastructure, pooling resources in a single data center or across multiple regions or cloud providers. IT sets policies and quotas, and creates libraries of images and templates to enable controlled consumption of resources. Platform9 makes it easy for developers to help themselves to the resources they need within the limits set by IT and use open APIs to drive automated workflows across the build-test-release pipeline, using virtual machines and containers side by side. Please check out our [solutions](#) for OpenStack and Kubernetes.