Private vs. Public Cloud

Here at Converge, we've adopted the Cloud as a means to facilitate collaboration and data distribution using our existing CAD tools, namely SOLIDWORKS. We provide and implement EpiGrid Cloud-hosted services to help you eliminate IT burdens when trying to solve the difficult problems of data management and collaboration. However, with a seemingly endless amount of Cloud providers, why should you choose EpiGrid over household names like Amazon Web Services (AWS), Microsoft's Azure, or even DropBox?

This topic is near and dear to EpiGrid as development of these Cloud-hosted CAD services required a hosting provider for it to work. That is requirement number one and all options were on the table initially. Think of the Cloud-hosting provider as the server AND the IT staff to manage the server. The equivalence can be drawn to any on-premise server your business currently uses - there is a cost for the server hardware and the maintainance of it.

Just like your internal IT support of those server infrastructures, Cloud-hosting providers have varying levels of integration and support. The household names, such as AWS, Azure, and Dropbox all provide a Cloud-hosted architecture that can be used with SOLIDWORKS to varying degrees, but the fundamental difference between these options and EpiGrid is the notion of a Public Cloud vs. Private Cloud.

EpiGrid invested in a Private Cloud infrastructure for the following reasons:

Management of the solution	**Security and Compliance**
Predictible Pricing	**Performance**

In a Public Cloud, server resources such as processors, RAM, and even HD storage are shared with individuals from massive server farms with seemingly infinite resources. This type of Cloud is great for housing and sharing simple office documents, as PDFs, PowerPoints, etc... are not complex nor large documents. However, CAD data is far more complex, with multiple file references, toolbox files, imported files, multiple revisions of files, etc... This is where a simple Cloud solution like DropBox breaks down, as it struggles to manage the intricacies of complex file relationships.

Luckily, SOLIDWORKS has tools designed to manage the complexities of CAD data. We've been evangelizing SOLIDWORKS PDM for years, and it provided the link necessary to leverage the Cloud in the context of an engineering office environment. With PDM, a Cloud-server can be spun up just like an on-premise server, and a PDM Standard or Professional vault can be deployed to it. If only it were that easy.

Benefits of a Private Cloud:

Management of the solution

The most important bullet point for us when considering Public Vs. Private Cloud is the ability for Converge to manage not only the Cloud-host, but also the PDM Vault as well. We're able to deploy, train, AND manage the vault seamlessly after the fact. Since we own the hardware and licensing at the host, instead of carving out virtual servers from a conglomeration of servers, we're able to manage the solution top to bottom, all while reducing the amount of time your design team spends on IT impediments.

AWS, Azure, and any other option we've come across suffers from one important strike - they are application-agnostic, meaning each platform may work for CAD, but it's not tailored specifically for CAD.

EpiGrid was started by engineers, for engineers to comingle the latest Cloud technology with the highly complex CAD tools of the trade. You don't want to spend your time developing a platform for your own CAD data management and distribution, so EpiGrid has gone ahead and done it for you.

Security and Compliance

One of the most important aspects of a Cloud-hosted solution is the necessity for it to be in compliance with any governing agency that has final approval of a given design. We strive to deliver a system that meets any compliance standard imposed on your organization.

Below are some key points that speak to the reliability and compliance of our Cloud-hosted solutions:

- UPS POWER REDUNDANCY - N+1, Iso-redundant configuration
- 2N GENERATOR POWER CAPACITY - 9,400 (kW)
- REDUNDANCY - N, N+1
- COOLING REDUNDANCY - N+1
- SECURITY - 24/7 Onsite Security Personnel, CCTV Camera Systems - 90-Day Retention, Biometric and Photo Badge Access, Elevator Authentication
- COMPLIANCE - SOC2, SOC3, HIPAA, SSAE 16, PCI, FISMA, Privacy Shield Compliant

Predictible Pricing

When developing a Cloud-hosted solution for SOLIDWORKS PDM, EpiGrid considered utilizing a Public Cloud provider, and with each provider, the pricing of the platform made it nearly impossible to predict what the cost would be month-to-month.

With AWS, Azure, and the likes, you are billed on network traffic and usage of the server. This could mean wild shifts in pricing month-to-month with normal use. A stable pricing structure was 100% necessary, where your bill doesn't change from month-to- month regardless of traffic or usage. This is only possible with a Private Cloud.

Also, thanks to this Private Cloud infrastructure, our support team has access to the back-end components of your Cloud-hosted server, so if anything goes wrong, we will have a support agent logging into the server within minutes to troubleshoot. And in the case of the inevitable hardware failure, our hosting provider has boots on the ground in the datacenters to quickly and discreetly swap out any faulty hardware.

Performance

One expectation for users of Cloud technology, especially engineers, is that it will perform better than their current solution. This is rather difficult to compare when dissecting Public vs. Private Cloud. However, if given the same set of criteria, i.e. distance from the host, identical dataset, same network components, a Private Cloud solution should perform as good, if not better than a Public Cloud. You will by no means be sacrificing performance for the sake of the previously mentioned benefits.

However, measurable performance gains will be found in the way you work, and how these Cloud tools enable the freedom to truly collaborate with vendors, contractors, third-party stakeholdres, etc...

And although the scope of this document is to examine Public vs. Private Cloud infrastructures, it's also worth noting that in most cases, any Cloud solution will help boost work performance versus a traditional on-premise solution.

So what's been holding you back from PDM?

Implementation cost? IT constraints? Something else? Our SOLIDWORKS PDM in the Cloud package addresses all of these issues and much, much more. Contact us today and learn how we can put a cost-effective PDM Cloud-hosted solution into the hands of your designers in a matter of days, and it will be worry-free because it's being managed by us, the PDM experts.