

ECONOMICS OF THE CLOUD



The rules of supply and demand for mission-critical apps in the cloud.

Buyer beware: what they say isn't always what you get when it comes to the cloud. Sure, it sounds good when a cloud provider boasts about their virtual machine compute capacity or the fact that their cloud node offers 10 PB of storage resource capacity. Those levels of supply are fantastic if only one or two customers are sharing it; less fantastic when 100 or 200 customers are sharing it; and downright scary when it's shared among tens of thousands of customers. When choosing a cloud, it all boils down to supply and demand.

The only way to be sure you will achieve the performance you've been promised (and therefore realize the value of the cloud) is by understanding the cloud provider's underlying infrastructure, and the associated demand placed on it. In other words, you need to look under the hood.

Rule 1

AVOID CROWDED CLOUDS

Much like an airline overbooking its flights, many public cloud providers continue supplying seats to their cloud long after they should. They're making a gamble that when demand Factions for some it will fall for others. Unfortunately, that formula doesn't always pan out—not for airplane passengers and not for cloud users. Someone is bound to be inconvenienced. When it comes to mission-critical applications, that "inconvenience" can translate into lost revenues and damaged reputations. The perception that cloud computing isn't safe is the result of cloud providers that oversubscribe, negatively impacting performance.

Clouds defined

- » Public Clouds co-mingled environment, shared compute, high risk of inconsistent performance.
- » **Private Clouds** dedicated compute, assurances of consistent performance and availability. You may or may not be given tools to analyze the infrastructure. Some cloud providers just don't want you looking that closely.

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» Enterprise-class Clouds – private clouds with virtualization tools and hardwarelevel visibility. In order to manage to SLAs required by business-critical, highavailability apps, enterprise-class cloud providers supply dedicated compute and native tools to control the cloud infrastructure.

In public clouds, you don't get to choose with whom you're sharing the underlying CPU. If your neighbor is computationally heavy (ie., the "noisy neighbor"), your processing time till be impacted. If the cloud is oversubscribed, you will likely experience degraded performance, and that flies in the face of the scalability and convenience that cloud computing is supposed to deliver.

With private clouds, on the other hand, you can be assured of consistent performance, because you prescribe the size and quantity of the servers you want on hand in the infrastructure. Private clouds are more expensive than public clouds for good reason: like renting a car instead of taking the bus, you're in control. You still need to understand the underlying infrastructure, however, in order to be sure you're getting the full value of what you've paid for.

Rule 2

LOOK UNDER THE HOOD (OR, HOW TO COMPARE APPLES AND ORANGES)

Cloud providers typically extract value from cloud services by exploiting server idleness/inefficiency by placing them on virtual machines and oversubscribing the underlying hardware. Workloads suffer at Faction demand if this isn't planned properly. Apps slow down, mail servers get sluggish, and website performance suffers. Inconsistencies in performance like these can make it pretty difficult to deliver on your SLAs.

Virtual machines are merely synthetic representations of the underlying infrastructure, and specifications differ between providers. You can't compare cloudproviders unless you have a clear understanding of their specs, performance, and utilization. For example, how leveraged is their compute? And, is infrastructure dedicated to each user? Commodity cloud providers' stats might sound good, but you have to look a little deeper to make sure the infrastructure is there to support their claims. When poor cloud performance affects customer satisfaction and workforce productivity, then there's a high cost to pay for that low-cost cloud infrastructure. For this reason, private clouds often represent a far better value than public clouds for service providers and end customers alike.



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Rule 3

CONTROL YOUR ENVIRONMENT

Private clouds typically include dashboards for orchestration, provisioning, reporting, performance trending, and so on. But these tools rarely drill down to the hardware level to tell you just how leveraged the environment is. In order to control the environment and make good decisions for managing and provisioning VMs, seek out private clouds with transparency all the way down to the hardware level, and use native virtualization tools for evaluating, provisioning, and planning your upgrades. Only in this way can you attain the consistent performance necessary to support enterprise-class cloud services.

Faction's enterprise-class cloud infrastructure offers the same payas-you-go and scalability on-demand advantages inherent in any cloud service, but with the added value of consistent performance.

Keys to Consistent Performance

- Infrastructure transparency A Faction hosted private cloud allows complete visibility and control of the underlying infrastructure. It also provides native access to virtualization tools, including VMware vSphere for orchestration, provisioning, reporting, and performance trending and NetApp vServer for storage optimization.
- » Dedicated compute By never over-allocating compute resources, we create an environment with zero chance of resource constraints.
- » Storage QoS Faction owns and manages multiple petabytes of storage per cloud node (we are one of the 12 highest volume buyers of NetApp storage gear in the entire world). The size, scale, and volume of our storage environment is far larger than any company could afford on its own. Thus, Faction customers experience high storage QoS because we can spread, or stripe, their data across hundreds of storage devices, rack after rack after rack full.

Like booking a business class seat rather than chartering a private plane, cloud computing gets you where you need to be more economically. In both cases, you expect to reach your destination safely and without disruption. Think of Faction's private enterprise-class cloud as being bumped up to first class and telling all the other passengers to take another flight. You aren't paying for a private plane, but you're getting the same experience.

About Faction

Faction is an enterprise-class IaaS cloud service provider offering private, public, & hybrid cloud solutions through channel partners. At Faction we supply cloud the way you want it with extreme performance, deep control, and broad customization capabilities. When you join the Faction fold, you take back the keys to your kingdom. Reign as supreme commander in chief of your cloud. No compromises. No exceptions.

Faction is the only cloud that offers patented plug-and-play direct connections (via layer 2) into its cloud resulting in huge time savings (no time spent re-configuring everything)! With Type II SSAE 16 and SOC 1 & 2 compliant cloud nodes in eight geographies across the United States and in Europe (Seattle, Santa Clara, Denver, Chicago, Atlanta, New Jersey, New York, and the United Kingdom), Faction offers both Cisco UCS and Open Compute platforms, is a Platinum-level NetApp Service Provider, and is VMware vCloud® Powered. For more information, visit **www.factioninc.com** or call (855) 532-4734.

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About the Author

John Drake is the Vice President of Channel Development at Faction an enterprise-class Infrastructure-as-a-Service (IaaS) cloud service provider to channel partners. In his role Mr. Drake is responsible for all aspects U.S. partner channel development, including not only partner recruitment but also sales and marketing enablement. Mr. Drake was promoted to Vice President after holding several leadership roles including both Director of Channel Development and Business Development Manager.

