

What is HyperCloud[®]?

And How it Revolutionizes
IaaS for Service Providers.



OrionVM | HyperCloud

HyperCloud is an end-to-end premium hosted cloud platform (virtual compute, storage, & networking) IT service providers can instantly white-label and deploy as their own. Built on a groundbreaking hyperconverged architecture using supercomputer components, HyperCloud bottles the web-scale power of a Facebook-like cluster into a turnkey, one-stop service anyone can use to manage their own suite of enterprise-grade Public, Private, and Hybrid cloud solutions.

HUGE HyperCloud Benefits:

- **Highly Improved Efficiency** – HyperCloud is EASY to deploy, EASY to use, EASY to maintain and adjusts to changing IT needs. Instant & cost-effective scaling - pay only for resources you consume.
- **Ease of Deployment** – Minutes vs. weeks or months.
- **Easy Migration** from your legacy physical or virtual infrastructure.
- **Highly Economical** - Lower compute cost by more than 50% of old cloud.
- **Higher Performance** – HyperCloud provides far greater IO performance for any IT deployment. including High Performance computing environments.
- **OpEx vs. CapEx** – No capital investment. Build your cloud and start using it in minutes vs. weeks! Free up your capital for other strategic projects.
- **Reliability** – Groundbreaking and highly innovative architecture ensures rock solid stability.
- **Infinite Scaling** - Add/remove IT assets with a click of the mouse.
- **Rapid Innovation** - If you choose the HyperCloud you will enjoy current and forthcoming innovations.
- **Reduced liabilities** of DIY Data Center and competing cloud alternatives make the new cloud a no brainer.
- **Enterprise Compliant & Secure** - Industry-leading SLAs effectively address the most stringent deployment security requirements.
- **Open & No Vendor Lock-In** – Easily migrate on/off platform with fully open well-documented APIs.
- **GREEN GREEN GREEN** - MUCH lower PUE / cost efficiencies with 50%+ smaller hardware footprint due to our innovative architecture.
- **Plus many more** technical/product features and business benefits.

HyperCloud WHY IT MAKES SENSE

*Why are many intelligent businesses **moving** their IT assets to the HyperCloud infrastructure?*



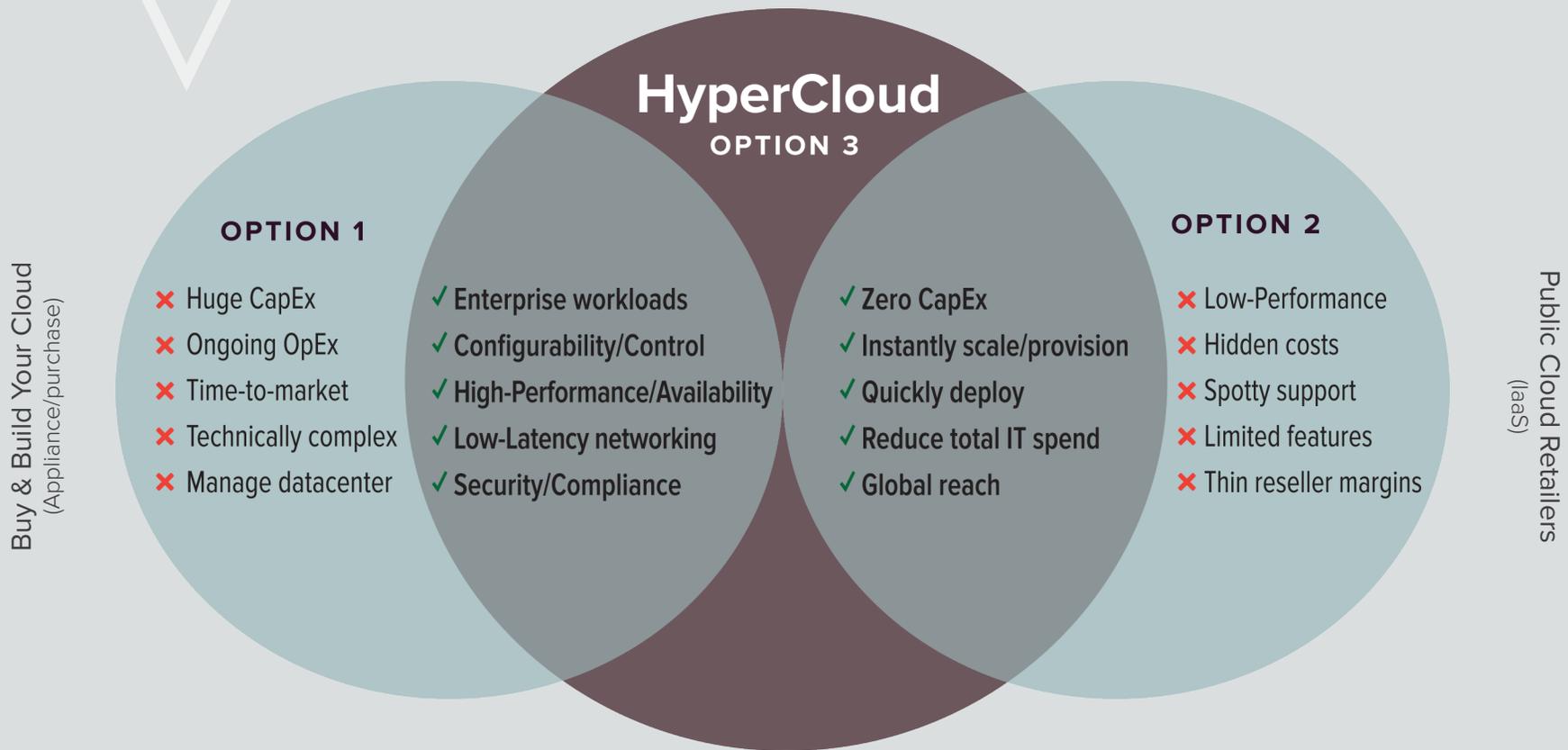


Introduction

In today's global business environment, the success of a company depends largely on how agile, fast, flexible, and responsive it can be to changing market dynamics and customer demands. If you consider that your company's IT infrastructure can help you innovate faster, seize market opportunities, and actually drive business success, then choosing the right path for your company's Cloud infrastructure becomes paramount. Many first paths to the cloud start out sounding easy and cost-effective until reality sets in and you're paying a lot more than expected and potentially experiencing serious and even crippling outages. IF you could avoid such disappointing outcomes and have markedly increased benefits from the cloud for a FAR more reasonable price compared to some of the first-generation providers (AWS, MSFT, Google, IBM, HP, etc.), wouldn't that make great business sense? To bypass the limitations of yesterday's cloud, your company requires a new kind of computing infrastructure – it requires HyperCloud.

HyperCloud represents the next major step in the evolution of cloud computing. Software defined infrastructure, standard redundancies and supercomputer technology are providing remarkable advantages for your computing needs, allowing you to adapt and grow your IT footprint at the speed of business. With rock solid reliability, and a superior price/performance ratio, our IaaS solution is built to ensure the success for any size or shape of cloud deployment. While the legacy approach to cloud infrastructure has worked up to this point, its limitations are becoming clear. Over time, a number of shortcomings have emerged, including performance unpredictability, limited scalability, pricing challenges, lack of flexibility, integration issues, etc. Due to these limitations, many of the first cloud efforts fall significantly short of their initial promise, failing to evolve in parallel with their customers' business needs and sophistication. HyperCloud's unique innovation for cloud infrastructure makes these problems a thing of the past.

HyperCloud - **All** of the benefits. **None** of the drawbacks.

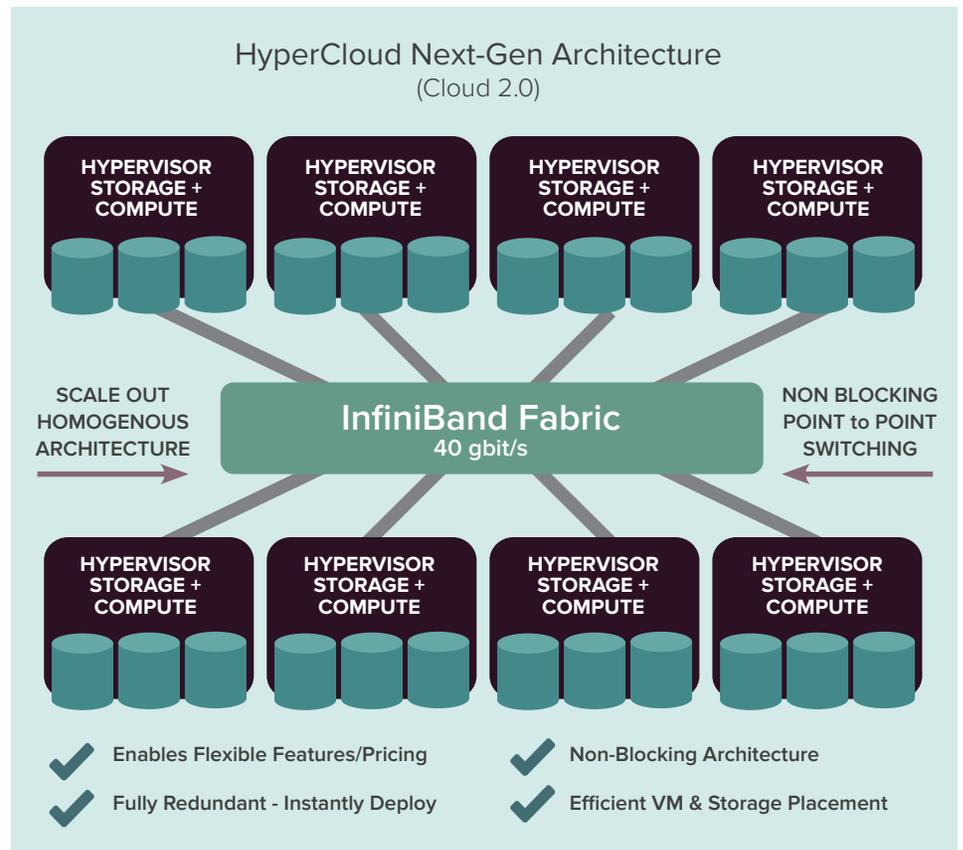
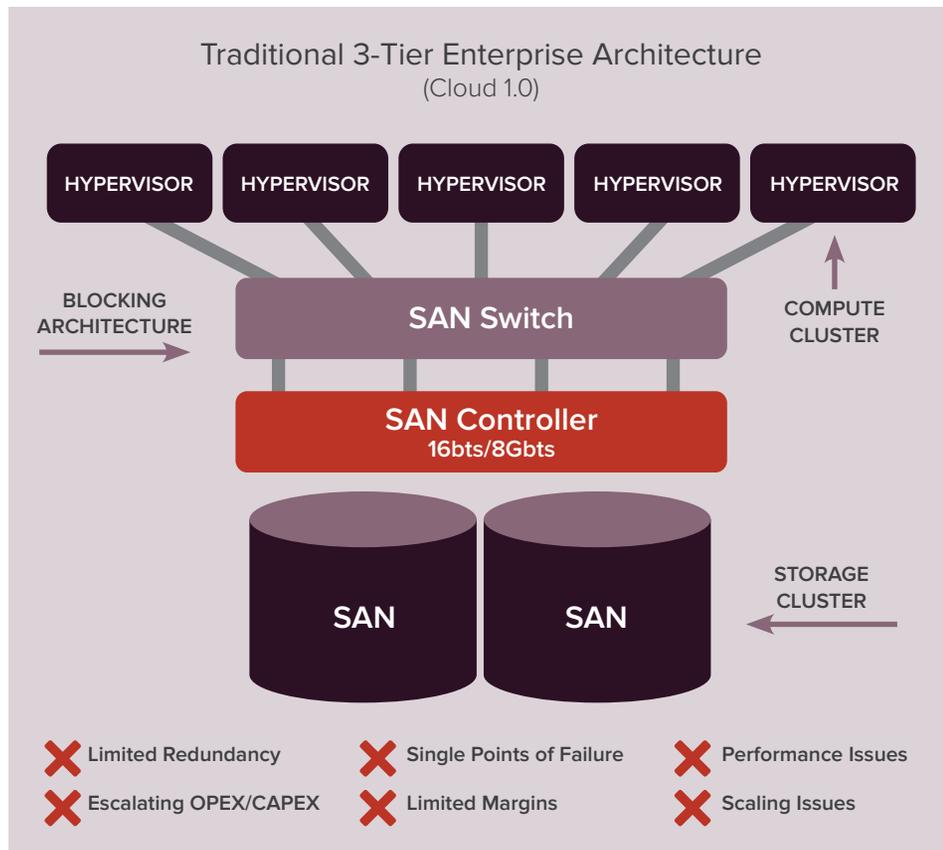


For quite some time, the first way WAS the only way. Being among market pioneers has its advantages, but being the one to introduce a truly disruptive innovation that leapfrogs competitors and customer expectations is a lot better. Think of cars vs. air travel. Cars were good, but air travel made massive business evolution a reality. Traditional IT moving to the first cloud environments was SMART. Now you can make a brilliant move and FLY into the cloud instead of driving. With HyperCloud you can escape the vicious cycle of declining performance and hidden/unpredictable costs associated with the first cloud standards. The new way of deploying cloud storage allows you to eliminate the high costs of SAN storage as well as significantly lower your costs for high-performance computing.



Groundbreaking Cloud Architecture = **GAME-CHANGER** (HyperCloud)

[All Clouds are **not** created equal...how is your cloud built?]



The award-winning HyperCloud bottles the web-scale power of a Google-like cluster into a turnkey cloud platform that partners leverage as their own. Built with commodity hardware, Hypercloud delivers an unmatched combination of price-performance & product features.

HOW

is this **better** than first-generation clouds like AWS, Google, & Rackspace?

HyperCloud Differentiators

- ✓ Price/Performance: HyperCloud's innovative/unique design delivers the best ratios on the market
- ✓ Flexibility:
 - Decoupling of Memory / Storage/ Network components
 - Not locked down to fixed ratio plans
- ✓ Pure Flash Storage
- ✓ Private L2 Networks & separate public networks
- ✓ Both Windows/Linux support
- ✓ Self-Healing, auto-failover & reliability – Infiniband!
- ✓ Consistency of performance
- ✓ Excellent Support – customer success over \$\$ philosophy
- ✓ Software-Defined Datacenter - virtualize everything, use IT-as-a-Service to gain infinite scalability

HOW can this be and HOW does this work?

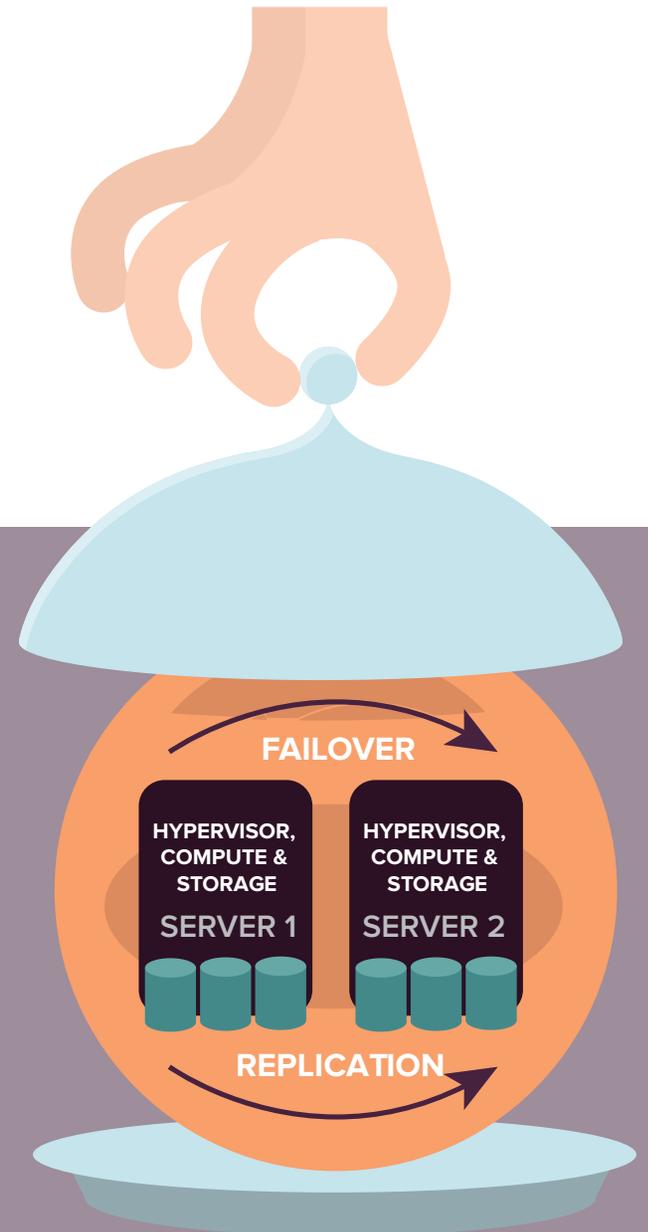
We use the industry standard [Xen Hypervisor](#) to run your virtual machine instances. Xen is a microkernel hypervisor that allows you to run multiple instances on the same physical server, all with complete isolation and security. We host this equipment in our top-tier [Equinix](#) data centers around the world. Compared to other hypervisors, Xen provides the performance we were looking for, along with the rock solid reliability and security that you demand. On most of our instances, we take advantage of a specific mode in Xen called PVHVM – which stands for Paravirtualized Drivers on HVM. This delivers the best of both worlds – the operating system support and CPU performance of HVM (Hardware Virtual Machine) with the Network and Disk performance of a PV (Paravirtualised) driver. Utilizing Xen, we are able to run almost any operating system within our environment, including Linux, Windows Server and FreeBSD.



Rather than work around the issues relating to traditional IaaS systems, or retrofit existing infrastructure to fit as others have done, we redesigned the whole system from scratch, entirely removing these issues from the equation. Firstly, our cloud infrastructure platform is built around a decentralized and distributed architecture. We utilize a homogeneous node architecture, where each node has compute, memory, and storage assets. By utilizing homogeneous servers we are able to deliver greater performance at reduced cost. Traditionally, using direct attached storage has introduced issues such as reduced flexibility and redundancy, but HyperCloud has overcome this issue by utilizing a distributed storage architecture over InfiniBand, creating a virtual SAN across our cluster. This architecture reduces latency, is more cost effective, and mitigates the points of contention and failure that Centralized SANs can cause. The virtual disk of each server can be mounted on any physical server (allowing us to move the instances around the cluster) and is also replicated across multiple servers for redundancy. InfiniBand was designed specifically for low latency and sustained data transfer, making it perfect for a high performance cloud to be built on. Benchmarks and figures aside, it has also allowed us to design and develop some great features that regular Ethernet and Xen would not have afforded us.

Would you like a slice of “high-availability” with that?

With this redundant, decentralized [InfiniBand](#) fabric, we’re able to continuously replicate storage across several nodes while maintaining performance. It allows us to distribute storage efficiently across our cluster, as well as remove hot-spots without impacting high performance for customers. As for your instances, having network-backed storage allows us to automatically migrate your instances to different nodes in the event of a physical server failure, rather than having to wait for a technician to enter a data center and perform recovery operations on a physical node. This design **drastically** reduces downtime, **simplifies** the deployment of instances, and provides more immediate feedback to customers.



What about **SECURITY?**



- All of our servers are stored within a Tier 3 facility, namely Equinix/AT&T Data Centers.
- We maintain a private cage for our equipment with 24/7 security and biometric access control.
- All access into our cage needs to be authorized.
- Some of the key security features of our platform include:
 - Segregated networks run for command and control, storage and customer traffic. These are air-gapped networks running on different switches. All access to our internal network is performed over a certificate-based VPN with strict access controls. Only tier 3 engineering staff have access to this network.
 - All external communications are performed over SSL encrypted sessions
 - No credentials are ever stored in plain-text. OrionVM HyperCloud encrypts and salts all credentials.
 - Ensures customer data resiliency by replicated data across multiple physical chassis ensures customer data resiliency.
 - We have strict access control systems to ensure that all customer data is contained within their user account and isn't allowed to be mounted by any other user.
 - All access to our management systems is restricted using public key authentication systems and all access is logged.
 - CCTV security at all offices.
- **HyperCloud takes security very seriously – we do not allow third party access to our facilities, and we utilize secure VPN technologies and public key authentication. Only authorized select staff have access to the facilities.**



Great,
so how can my
cloud be
administered?

YOURLOGO here ACME Corp

Instances Quick Create Advanced Create

GENERAL	Name	Region	Template	Memory	Public IP	State	Virtualization	Actions
Dashboard	Firewall	US West 1 (SV2)	VyOS 1.1 (Helium)	1.0 GB	23.90.76.1	Running	Full virtualization (HVM)	
COMPUTE	lacme-app01	US West 1 (SV2)	Windows Server 2012 R2	8.0 GB	-	Running	Full virtualization (HVM)	
Instances	lacme-app02	US West 1 (SV2)	Windows Server 2012 R2	4.0 GB	-	Running	Full virtualization (HVM)	
STORAGE	lacme-app03	US West 1 (SV2)	Windows Server 2012 R2	8.0 GB	-	Running	Full virtualization (HVM)	
Disks	lacme-app04	US West 1 (SV2)	CentOS 6	4.0 GB	-	Stopped	Full virtualization (HVM)	
NETWORKING	lacme-app05	US West 1 (SV2)	Windows Server 2012 R2	8.0 GB	-	Running	Full virtualization (HVM)	
Internal Networks								
Internal IP Addresses								
External IP Addresses								

Select an instance from the list above to view its details.

24/7 self-service web portal for complete control

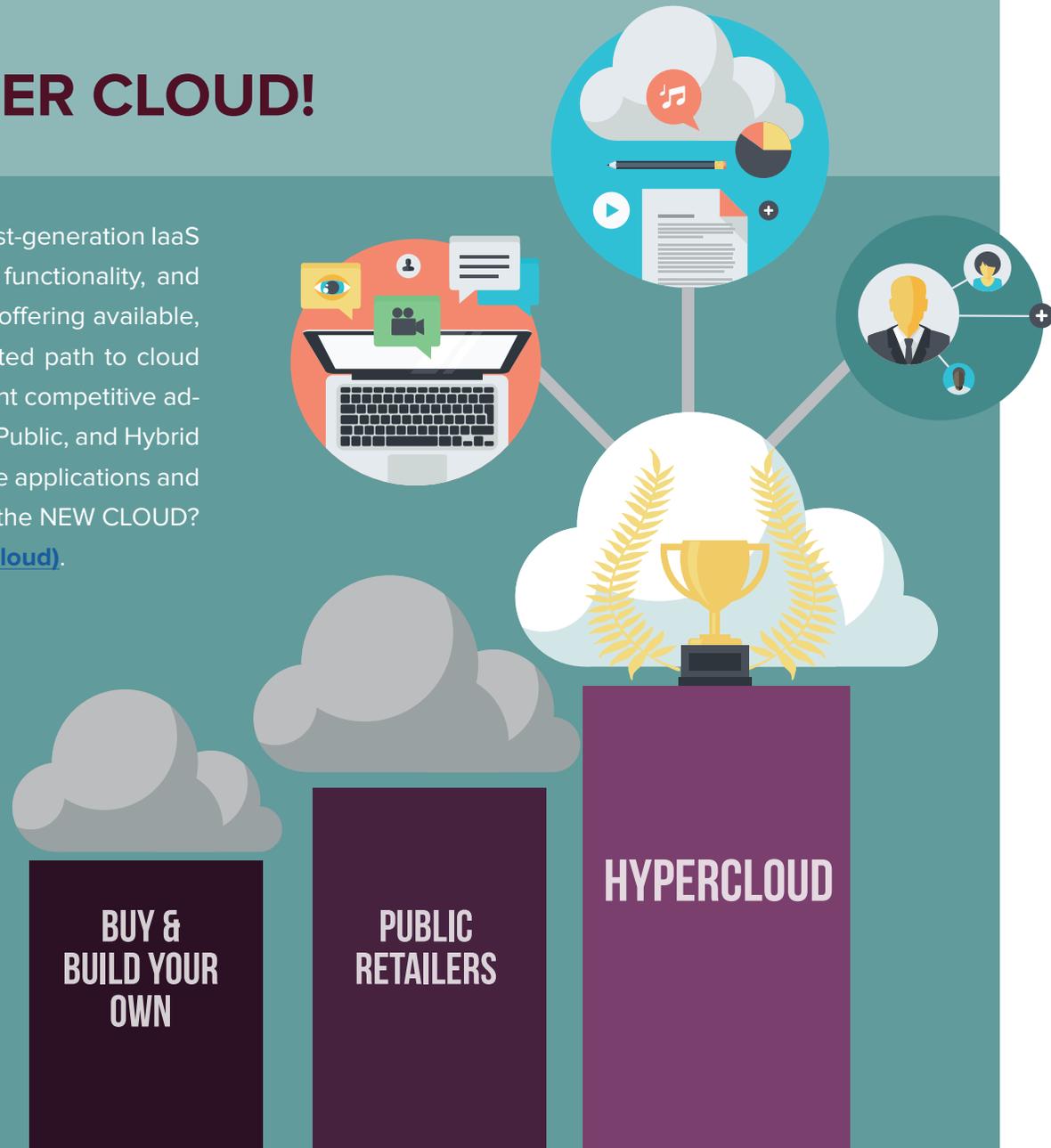
This industry-leading infrastructure is accessible through several channels. Central to this is our completely pre-built web panel. When you deploy your cloud using our platform, you can customize the entire front-facing experience for yourself or your customers, including logos, colors, page layout, and support links. From this panel, you can create, administer, and remove instances and their associated resources. For simpler tasks, they can be up and running with one of our predefined operating system templates in minutes, with only the RAM and storage space they require being specified. For more customized instances, you are free to allocate storage and IP addresses and then pull them together into a new instance. Instances can be assigned storage and IP addresses during advanced configuration, or indeed any time they're shut down. As you're probably already aware, this **elastic provisioning** provides far more flexibility than traditional hosting providers.

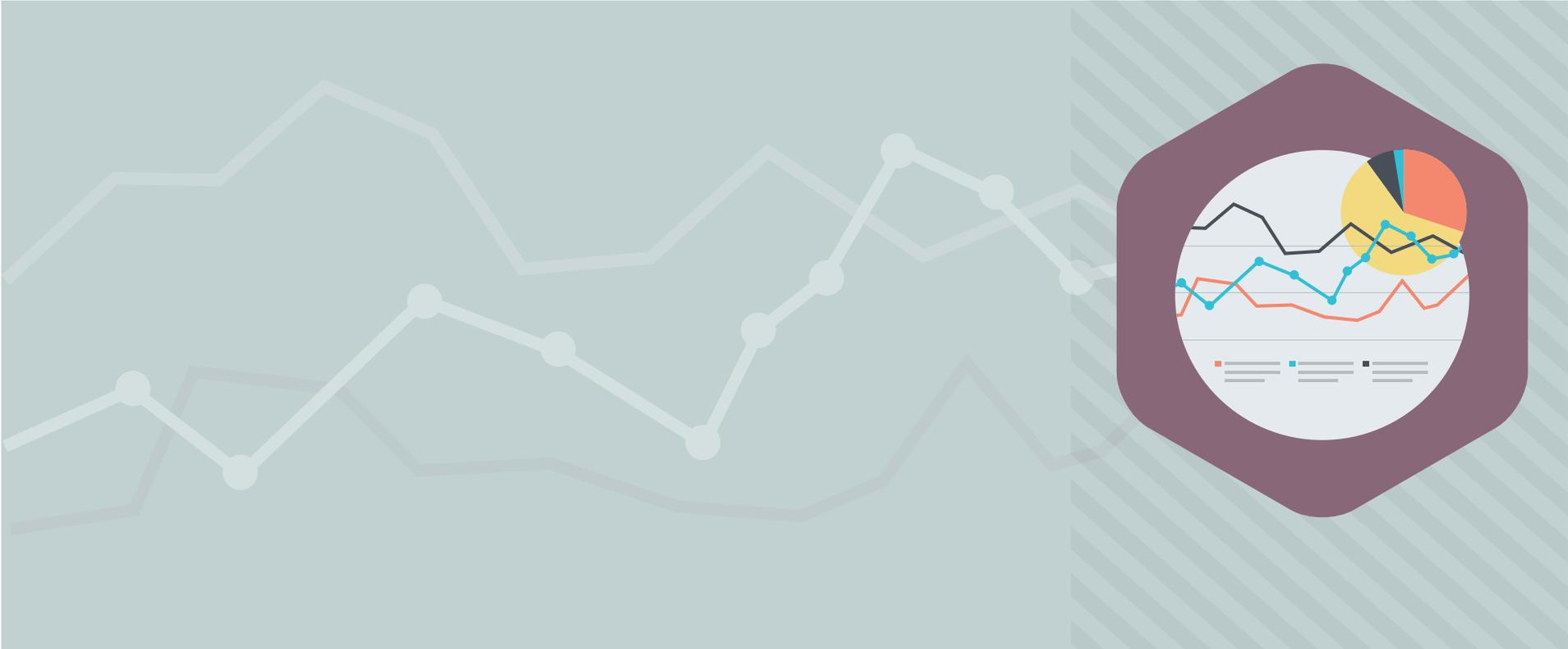
Conclusion:

HyperCloud is a **BETTER CLOUD!**

HyperCloud is built to go beyond the limitations of the first-generation IaaS platforms. With a unique combination of features and functionality, and price / performance ratio unmatched by any other IaaS offering available, our platform can put your organization on an accelerated path to cloud success. Focus on core competencies and gain an instant competitive advantage with HyperCloud underpinning all your Private, Public, and Hybrid cloud infrastructure needs. We look forward to seeing the applications and solutions you deploy using the platform. Want to try out the NEW CLOUD? Get in touch for a test flight. (www.orionvm.com/hypercloud).

Tags: [Cloud](#), [Cloud Computing](#), [IaaS](#), [IaaS Platform](#), [Hyperconvergence](#), [InfiniBand](#), [Infrastructure](#), [wholesale cloud](#), [Wholesale Cloud Platform](#), [Xen](#)





Appendix – Supporting Grids & Documentation

COMPETITIVE GRID

HyperCloud vs Public Cloud

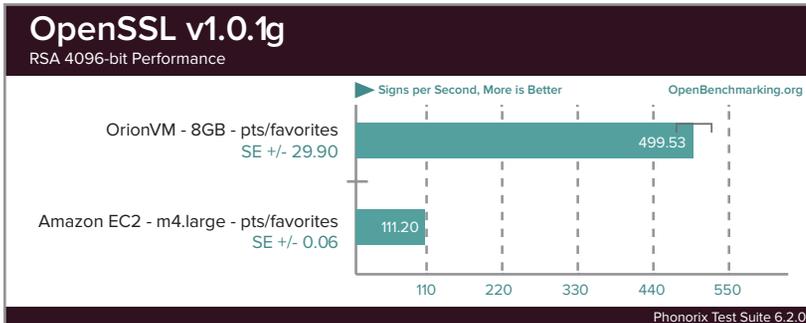
	HyperCloud	Amazon Web Services	Rackspace	Azure	GCE
Turnkey White Label Solution	✓	✗	✗	✗	✗
Billing Integration	✓	Limited	Limited	Limited	Limited
Enterprise Grade (IQ /resilience)	✓	✗	✗	✗	✗
Price Savings vs. Cloud Market Rates	20-80%	5-15%	\$\$ above	5-10%	5-15%
Initial Time Investment	Hours/Days	1-2 Months	1-2 Months	1-2 Months	1-2 Months
Cost estimation	<i>Simple & accurate</i>	Complex & inaccurate	Complex & inaccurate	Complex & inaccurate	Complex & inaccurate
Underlying Cloud Technology	<i>Cloud 2.0</i>	Cloud 1.0	Cloud 1.0	Cloud 1.0	Cloud 1.0
Competitive Offerings	<i>100% channel-only select partners can sell HyperCloud</i>	Highly likely - anyone can also purchase direct from vendor	Not likely	Highly likely - anyone can also purchase direct from vendor	Highly likely - anyone can also purchase direct from vendor
Ongoing Licensing Fees & Charges	\$0	\$0	\$0	\$\$\$\$	\$0
Vendor Support	<i>24/7 Phone, Email</i>	Post to forums, Costly Enterprise support	Add-on Management Support	Post to forums, Costly Enterprise support	Post to forums, Costly Enterprise support

CPU BENCHMARKS

OrionVM's HyperCloud vs AWS

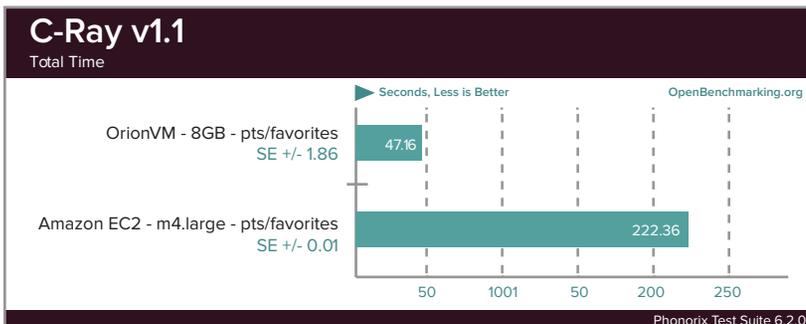
Summary: a wide range of cloud compute/storage performance tests were conducted by a prospective third party client using the open benchmarking tool Phoronix and the results clearly show the superior functioning of OrionVM's HyperCloud vs. the equivalent cloud infrastructure running on AWS.

Source: www.phoronix.com/



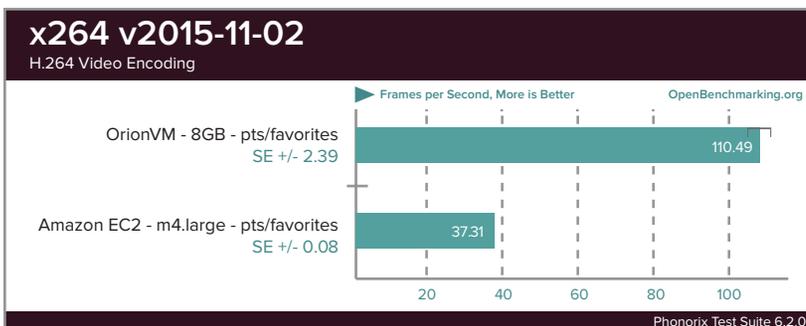
OpenSSL Performance - OrionVM Exceeds AWS Performance

- OrionVM delivers far greater OpenSSL performance than AWS which will assist in delivering a higher number of pages per second to customers (especially where HTTPS pages are concerned).
- OrionVM gives more CPU time to instances than AWS does, resulting in this high level of performance difference.



C-Ray CPU Benchmark - OrionVM Exceeds AWS Performance

- OrionVM instance took much less time to perform the C-Ray



Video Encoding - OrionVM Exceeds AWS Performance

- OrionVM allocates more overall CPU time to this delivering a higher number of Frames Per Second (FPS) rendered by this virtual machine.
- This also indicates a potential increase in the number of pages that can be served per second on a CPU heavy application (such as Wordpress)

STORAGE & SYSTEM BENCHMARKS

OrionVM's HyperCloud vs AWS



SQLite Insertions - OrionVM Exceeds AWS Performance

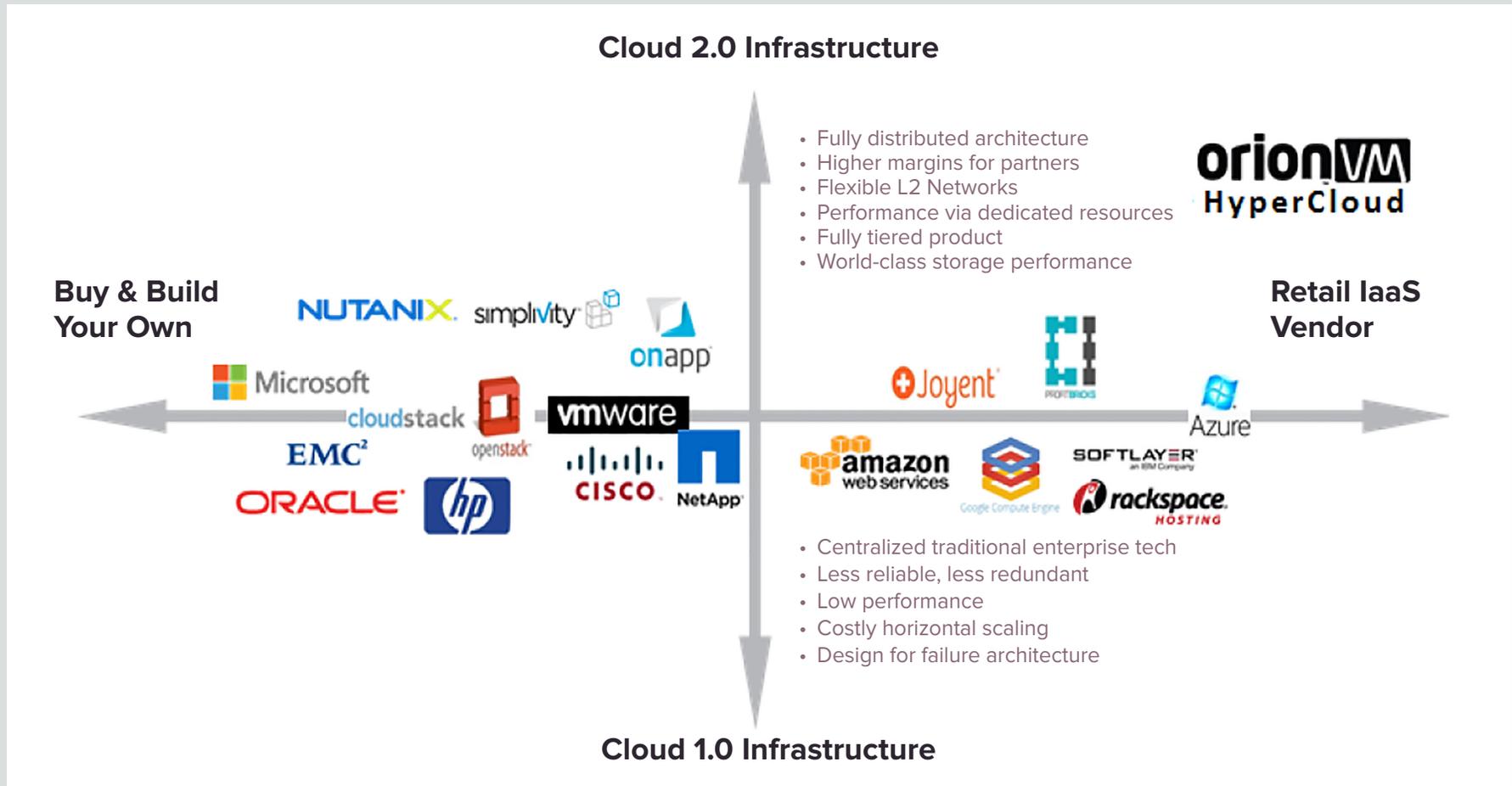
- OrionVM completed the SQLite Insertion test in half the time than the AWS M4 instance. This is an indication of the increased storage performance delivered by our SSD storage which leverages enterprise class SSDs and a low latency InfiniBand fabric.
- The increased storage performance should accelerate database backed web applications, and should allow a higher number of page



Dbench - OrionVM Exceeds AWS Performance

- This is a throughput test on the file system. OrionVM's SSD storage delivers higher performance than the AWS instance due to our InfiniBand backed platform.
- As mentioned above, this should accelerate database backed applications and deliver more web pages per second per instance

2016 Cloud Infrastructure | Market Map & Landscape



Global Datacenter Locations

Current Regions:

California, USA (Equinix SV2)
Ashburn, Virginia, USA (AT&T DC1)

Sydney, Australia (Equinix SY3)
Sydney, Australia (Equinix SY2)

Coming Soon

Expansion in US & AU
Singapore/Hong Kong/Japan
London/Ireland/Amsterdam
Others based on customer demand

