

Block Storage as a Service (BSaaS) within the Cloud

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Why aren't **ALL**
applications run
in the cloud ???

Barriers...

Many solutions

Security

SLAs / Architectures

Availability

Unpredictable / Variable

Performance

Shared vs. Private Infrastructure



Public / Shared
Infrastructure

Alamy



Private
Infrastructure

How can the use of flash...

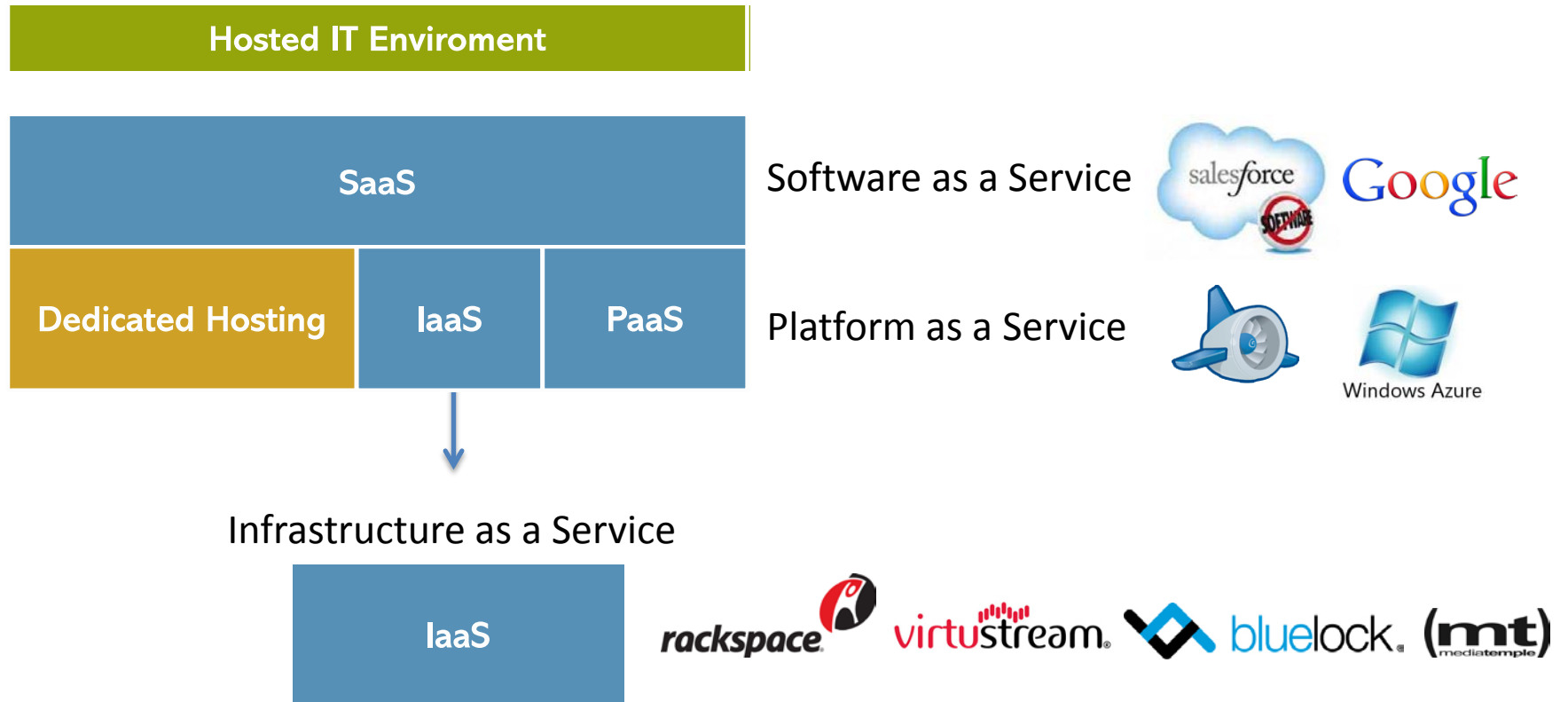


Makes cloud customers feel LESS like this...

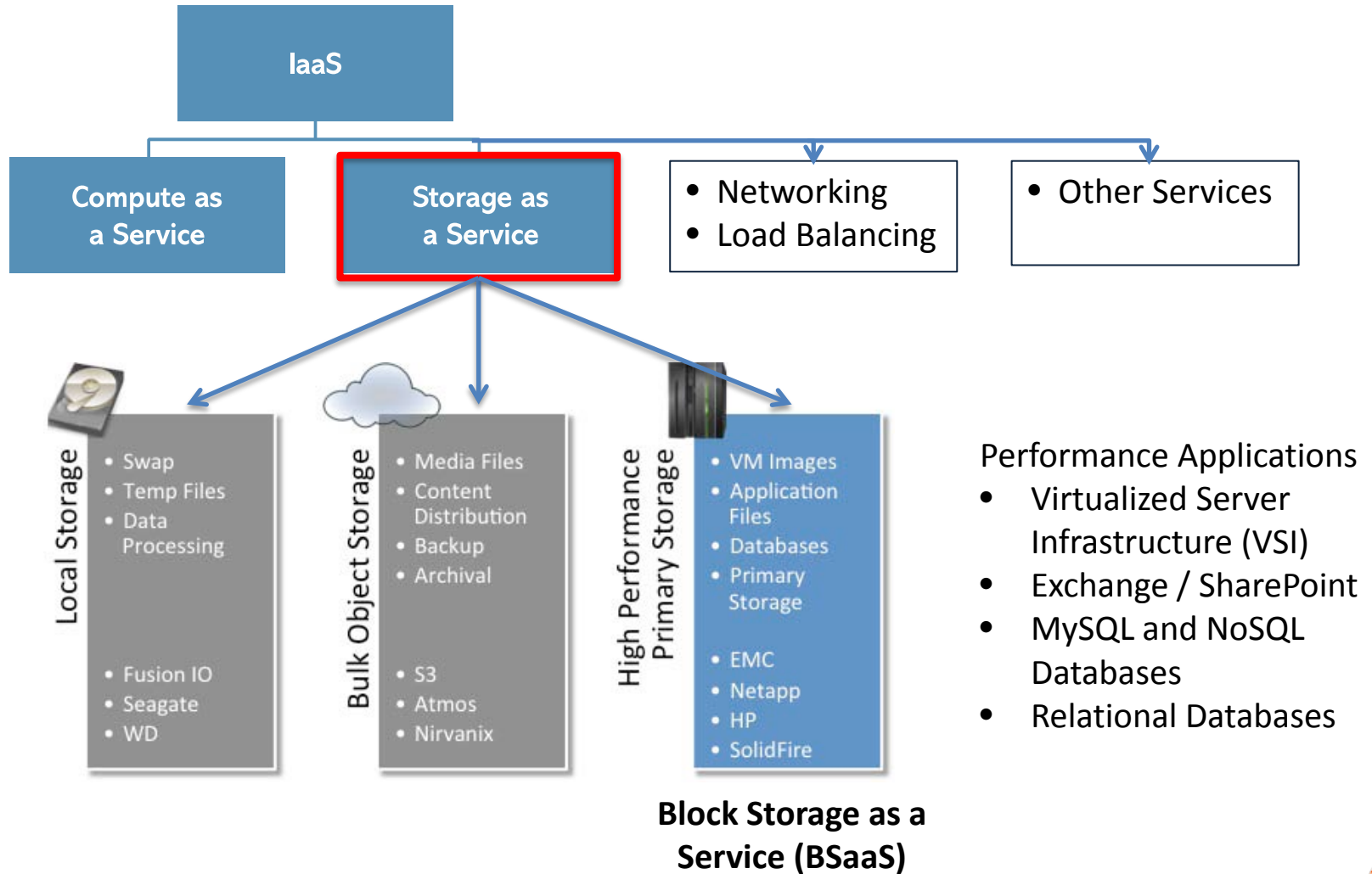
And MORE like this...



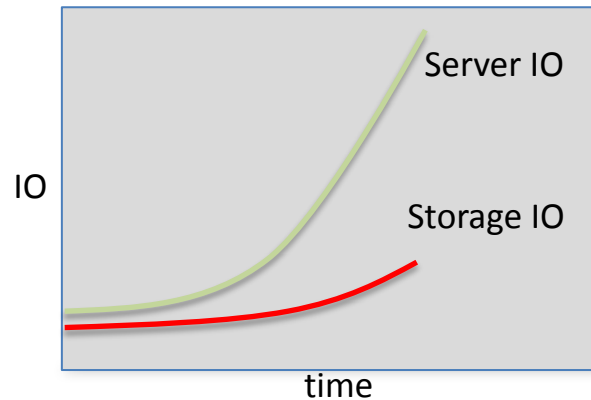
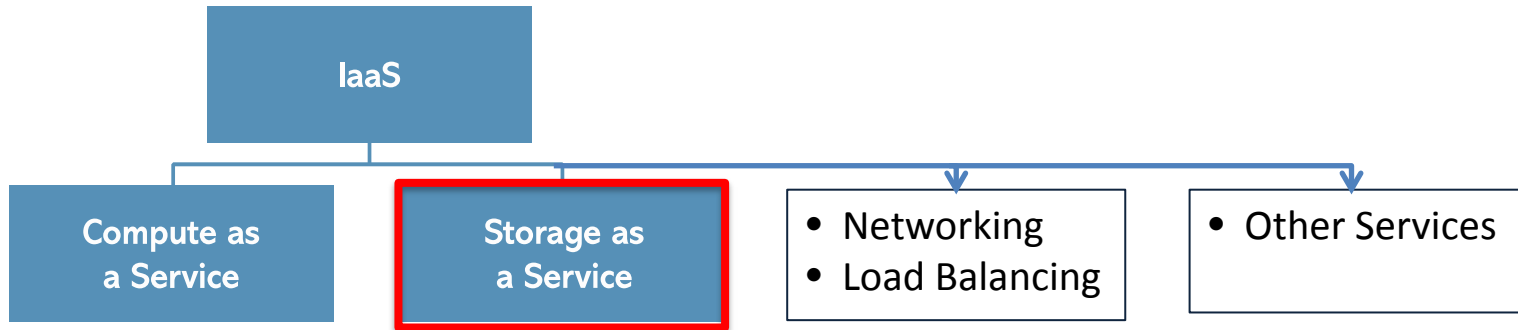
Cloud Segmentation



Infrastructure as a Service (IaaS)



Infrastructure as a Service (IaaS)



- Radical imbalance between server and storage performance
- Poor storage performance limits key enterprise applications from moving into the cloud

Traditional storage infrastructure can not fulfill the promise of cloud computing

Complications of Cloud Scale



- Large Multi-Tenant population
- Shared Infrastructure
- Massive number of virtualized applications
- Massive amount of random IO
- Customer activities are unknown
- Difficult to “right-size” storage for performance sensitive customers

How do you provide predictable performance to thousands of applications within a shared infrastructure?

BSaaS using traditional storage

Technical

- Performance is unpredictable and can't be guaranteed
- Systems are oversized to provide adequate IOPs = unused storage sprawl
- Systems lack efficiency tools and operate at low utilization rates (30 – 40%)

Business

- System acquisition cost = high
- Low tenancy level
- Difficult to create a viable business model



How is flash enabling BSaaS

- Flash is being used in a variety of areas, enabling dramatic increases in application performance in the cloud
 - Direct-attached
 - Host based caching
 - Array based caching
 - Array based tiering
 - All-solid-state arrays
- Issues remain...
 - Flash is costly
 - Write endurance issues
 - How do you manage / maintain performance across multiple tenants?
 - How do you raise efficiency to lower cost?
 - How do you manage these systems at cloud scale?

Use of flash alone, does not enable a viable BSaaS model

Block Storage as a Service in the cloud requires a three phase approach

