

ZADARA STORAGE

Managed, hybrid storage

Research Brief

EXECUTIVE SUMMARY

In 2013, Neuralytix first documented Zadara's rise to prominence in the then, fledgling integrated on-premise and in-cloud storage market. Over the last two years, Zadara has demonstrated the staying power of its solution and the high standard it has set for even the largest storage competitors to meet. This Research Brief will analyze the Zadara VPSA solution as it relates to the needs of the modern enterprise.

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INTRODUCTION

Elastic cloud computing platforms such as Amazon Web Service (AWS) Elastic Compute Cloud (EC2) and Microsoft Azure have many benefits for enterprises. These platforms have the most obvious benefit of pricing based on usage. Other benefits include the ability to bring up instances without the need for major capital investments.

However, the problem that these services also have is that they lack a reliable, flexible, high performing, and scalable storage subsystem. Take AWS for example, they offer two options – the Elastic Block Storage (EBS) and Simple Storage Service (S3).

While EBS is the default storage option for EC2, it is also multi-tenant network-attached storage. It persists independent of the compute instance. The challenge with this architecture is that it offers little in the way of quality of service, performance and flexibility. The performance is limited by what other users may also be demanding of EBS.

S3 on the other hand, is an advanced object store. Object stores have many benefits, but they require significant recoding of existing applications to take advantage of them. They do not conform to the standard URI nomenclature, and offer simple GET and PUT commands via HTTP. So, one cannot simply take a standard Linux application, host it on AWS and use S3 natively.

Outside these two options, AWS customers have no other choice. This has been a major limiter in the adoption of cloud computing platforms for hosting mission critical applications such as RDBMS (Microsoft SQL or Oracle, for example).

For high transaction applications, many of them still require traditional block devices. EBS now provides traditional block devices, but it does not have the sufficient performance levels.

What these applications demand is a high performance, reliable, feature rich, scalable storage subsystem that is POSIX compliant and has the “look and feel” of traditional on-premise network attached storage systems. In other words, cloud storage that has the “look and feel” of traditional SAN and NAS storage.

Zadara Storage

Zadara Storage, an Irvine, CA based company with development offices in Israel and India, has solved this problem. Neuralytix research suggests that Zadara is the leading provider in this space.

In short, Zadara Storage presents to AWS EC2 instances (as well as similar elastic compute clouds from other vendors) with enterprise-class storage. Consider it *elastic enterprise storage*.

The premise behind Zadara is that it delivers an enterprise storage service with the flexibility and cost elasticity of cloud services, but the performance, manageability, connectivity, scalability and advanced data protection features of traditional on-premise enterprise storage systems.

Flexibility and Cost Elasticity of Cloud

The Zadara storage solution is akin to most other cloud based solutions:

- No upfront capital investment (a pure OpEx model);
- Fully managed service;
- Elastic pricing (pay as you use model); and
- Elastic management and configuration.

Traditional Enterprise Storage Benefits

To the benefits above, Zadara has designed its solution to include features that are typical with traditional on-premise storage systems:

- Dedicated storage controller performance and reliability;
- User variable caching;
- Replication and other advanced storage services;
- User definable disk drives and RAID types;
- Block and file based access;
- Cluster support; and
- High Availability, Disaster Recovery, Business Continuity.

Zadara calls its *Virtual Private Storage Arrays* (or VPSAs); and it combines the benefits of cloud with the benefit of enterprise grade storage systems.

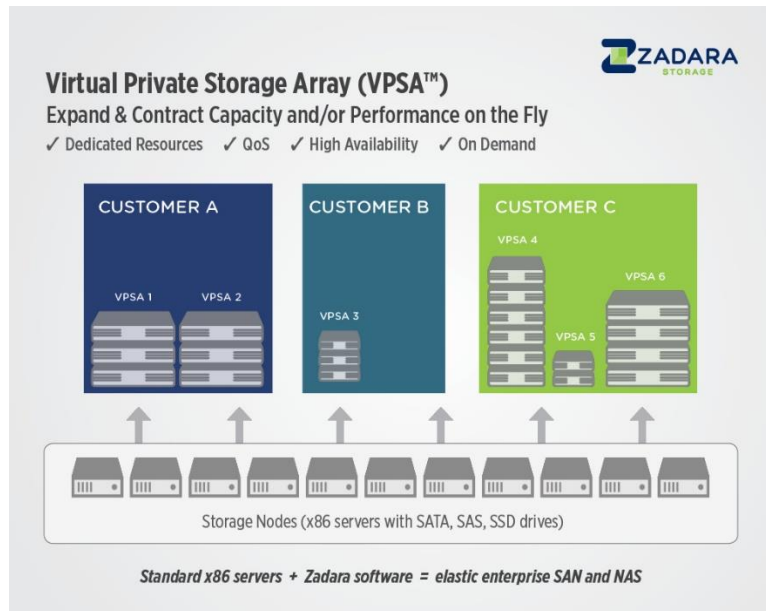


Figure 1: Zadara Virtual Private Storage Arrays (Zadara Storage 2013)

On-premise to In-Cloud Coexistence

Historically, on-premise storage and in-cloud storage have very different characteristics, performance, cost, and management platforms.

This has been a major inhibitor to adoption for many enterprises.

To address this specific problem, Zadara has designed its VPSAs such that it can be offered both as a service in-cloud or as an on-premise solution.

Since the VPSA provides the look and feel of a traditional storage system, enterprises can choose to adopt the on-premise platform, providing an on-ramp and eventual gateway to in-cloud application migration.

Cost

One of the major attractions of cloud services is the low or zero upfront investment. However, enterprise storage has always been a CapEx heavy investment, and a higher, although often unmeasured cost to maintain the equipment.

Zadara's VPSA allows its customers to have zero upfront investment. They pay by the hour - only for what they use.

Performance

The availability of dedicated, high bandwidth storage solutions to meet the demand of enterprise class software, such as Microsoft

SQL and Oracle, has been lacking from Infrastructure-as-a-Service (IaaS). This is simply because there hasn't been a solution.

Alternative solutions cannot guarantee storage resources. At best, services such as EBS and S3 give a “best effort” service level. On the other hand, the VPSA architecture from Zadara can deliver high I/O, and high bandwidth storage with the added benefit of Quality of Service (QoS). This is accomplished by providing each customer their own unique set of resources. This performance isolation provides a multi-tenant environment, with a single-tenant experience.

QoS particularly for in-cloud virtual servers is important. Different servers run different workloads that in turn has a varied demand for storage resources.

Redundancy

Since the VPSA architecture is seamless between on-premise and in-cloud capacity, it provides an ideal architecture for customers who want to create a high-availability (HA) solution between traditional datacenters and the public cloud.

HA is not limited to on-premise to in-cloud migrations and redundancy. The Zadara solution provides HA on both its on-premise offering and cloud offering. This results in a double layer of redundancy.

Zadara's Multi-Zone HA feature offers automatic, real-time failover across geographically distributed locations. This feature protects against a complete facility failure. By leveraging Zadara's protection zones, users have full redundancy at both the cloud and data center eliminating all single-points-of-failure in the architecture. Additionally, Zadara customers can asynchronously replicate to any of Zadara's public storage clouds around the world.

Compliance

As enterprises increasingly operate at a worldwide level, the need to comply with regulations in different parts of the world can be daunting.

Zadara allocates dedicated hardware resources (i.e., disk drives, memory, CPU) when each VPSA is created. This capability is important to customers who require isolated resources.

Zadara offers full data encryption (in-flight and at-rest). However, they uniquely offer customer managed encryption keys. This puts the full control into the customer's hands. Zadara does not have access to the encryption keys. This is another very important compliance feature.

Zadara has now made its in-cloud service available in datacenters in 10 countries – serving North America, Europe, Asia and the Pacific.

CONCLUSION

Zadara has clearly established itself as a leader in managing storage and delivering storage services across on-premise and in-cloud storage capacity.

This Research Brief has focused heavily on the seamlessness of Zadara's architecture, as it relates to on-premise and in-cloud. This function cannot be underscored enough.

There are many appliances, software, and hardware approaches that can help consolidate storage within a datacenter. But enterprises are increasingly relying on in-cloud services. Also, most enterprises have desires to present more of its technology services over the web. These services are most likely to be delivered through distributed in-cloud virtual servers.

However, enterprises will not like the additional development resources and time necessary to integrate data between on-premise servers and in-cloud servers.

Yet, the lure of new technologies such as Hadoop and *Big Data* demand the opportunity to reach across all of an enterprise's datasets. Thankfully, Zadara Storage offers a VPSA solution that can seamlessly support the hybrid storage model and provide all of the enterprise storage features customers have come to expect – yet with the economics, flexibility and agility of the cloud.

Neuralytix believes that Zadara's first-mover advantage, along with the marquee clients, and maturity of the VPSA architecture sets a high bar for the storage industry.

CONTACT US

To learn more about Neuralytix and our other solutions, [contact](#) your local representative – or visit Neuralytix.com.

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