

# Zadara Storage

---

## The Value of OpEx-based Storage-as-a-Service (STaaS)

An ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) White Paper

June 2016



*IT & DATA MANAGEMENT RESEARCH,  
INDUSTRY ANALYSIS & CONSULTING*

# Zadara Storage

## The Value of OpEx-based Storage-as-a-Service (STaaS)

### Table of Contents

- Situation Analysis ..... 1
- The Cloud Market ..... 1
- Industry Best Practices ..... 2
- Zadara Storage ..... 2
- What Is New With Zadara? ..... 4
  - ZIOS Intelligent Object Storage: Private Object Storage ..... 4
  - Fibre Channel Support ..... 4
  - Security Improvements ..... 4
  - Large Flash Cache ..... 4
  - Disaster Recovery Solution ..... 4
- The EMA Perspective ..... 5



### Situation Analysis

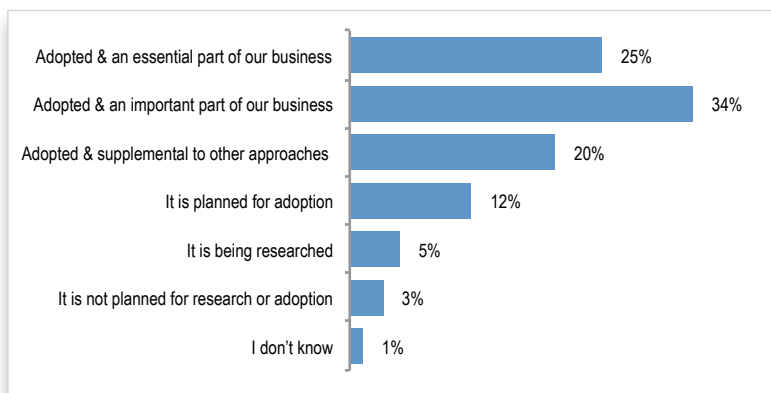
Overall, data growth within the typical data center is at 42% per year. New applications driven by big data, video, social media, and mobile devices are fueling this unparalleled growth in storage. Data is also kept active longer in the lifecycle as corporations use analytics to look for trends, opportunities, and competitive advantage. The traditional approach to meet storage needs was to deploy expensive, proprietary systems from large, mainstream vendors. The conventional wisdom was that this approach resulted in the lowest amount of risk. The problem with this approach lies both with the cost and the agility. Companies were paying a hefty premium for storage that was very reliable, but difficult to maintain and upgrade, was non-elastic, and locked in the IT organization. Budgets are not growing at the same rate as data. The growth in both the *volume* and *value* of the data is driving an exponential cost curve that cannot be sustained by the traditional CapEx model. IT organizations are looking for more flexible, cost-effective ways to store data and are exploring alternative approaches. Users are looking to break away from the traditional cycle of planning, negotiating with a vendor, purchasing, installing, and managing/patching/upgrading the storage for 3-5 years, then starting the cycle all over again.

### The Cloud Market

Cloud compute and storage use is growing exponentially as companies of all sizes look for ways to accelerate application rollouts, reduce capital costs, and lower operational overhead. IT organizations and businesses are attracted to the self-service, on-demand, and elastic provisioning characteristics of the cloud. In the chart to the right, EMA research reflects that the cloud is essential or important to business with 59% of all respondents. Another 20% of respondents have currently adopted the cloud as a supplemental resource to more traditional or on-premise approaches to the business. These numbers reflect that the cloud is a key resource in meeting IT compute and storage needs for almost 80% of respondents.

The term “cloud computing and storage” can apply to a number of deployment options, including multiple cloud types (public, private, and hybrid), approaches (third party, co-location, services providers), and cloud service providers (Amazon Web Services, Microsoft, Google, and many others).

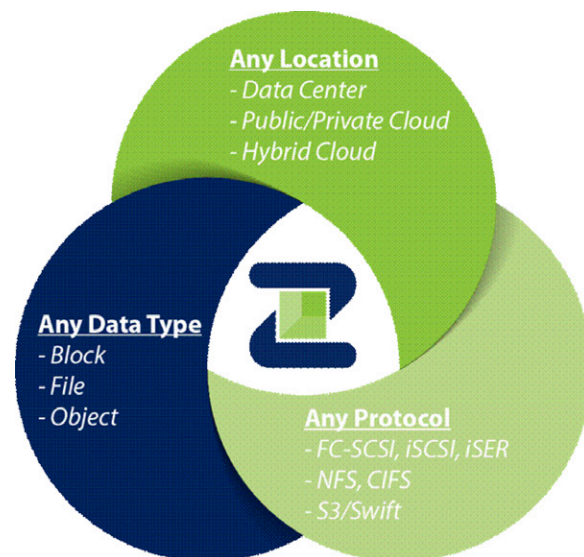
IT cloud selections are strongly influenced by requirements such as cost, performance, security, availability, elasticity, and other factors. Often, these requirements will change over time. The cloud choice for any company must be able to evolve to meet new internal requirements, leverage the latest technologies, and adjust to shifts in the market.



### Industry Best Practices

Although the cloud provides significant benefits to meet the escalating growth of compute and storage, there are factors to consider in making the most of the transition. First, make sure that moving to the cloud delivers greater material benefits including economic savings, scalability, and lower administration and does not remove the functionality that IT currently relies on with the traditional enterprise storage. Any cloud-based solution must not take a step backward in functionality such as availability (HA/DR, replication, snapshots, clustering), application flexibility (multiple data types), and infrastructure diversity (multiple connectivity and protocol support). Compromises should not be made when moving to the cloud. Leaving the rigid world of traditional CapEx storage will not gain net benefits if the result is an equally rigid world of OpEx storage. Identify vendor choices that offer a wide range of deployments, data types, connectivity options, and pricing flexibility.

The second best practice is to stage the transition from on-premise to the cloud. Walk before you run; the process does not require an all-or-nothing proposition. Initially, move the data to the cloud that makes sense. Many companies start with secondary data such as backup or archive. Look for vendors that offer on-premise Storage-as-a-Service (STaaS) to achieve the value of the cloud while keeping data on-premise. With this approach, one can gain confidence in the cloud model before migrating exclusively to the cloud, or meet regulatory or corporate compliance that forbids data from being kept offsite.



### Zadara Storage

IT organizations want to focus on managing their business, not managing their data. Zadara Storage provides high performance and highly available enterprise-class STaaS that reduces the burden of procuring and managing storage. Zadara utilizes a software-defined yet complete approach, delivering an OpEx “pay-as-you-go” model. The OpEx model enables customers to procure just what they use, with no upfront fees or long-term commitments. Delivering an OpEx solution with no capital costs, Zadara’s STaaS solutions include storage management, maintenance, and pro-active support.

What differentiates Zadara from alternative cloud STaaS solutions is that Zadara can support virtually any combination of infrastructure, protocols, and connectivity, removing the need to modify applications or obsolete hardware when adopting the cloud. Zadara supports any location (Data Center, Public/Private Cloud, Hybrid Cloud), any data type (block, file, or object), and any protocol (FC-SCSI, iSCSI, iSER, NFS, CIFS, S3/Swift). This ubiquitous approach ensures that Zadara will work seamlessly with your existing environment without the requirement of proprietary APIs or specialized hardware. When it comes to off-premise cloud, Zadara supports connectivity to service providers such as Amazon Web Services, Microsoft Azure, CloudSigma or Dimension Data, and colocation providers such as Equinix, Telecity and others.

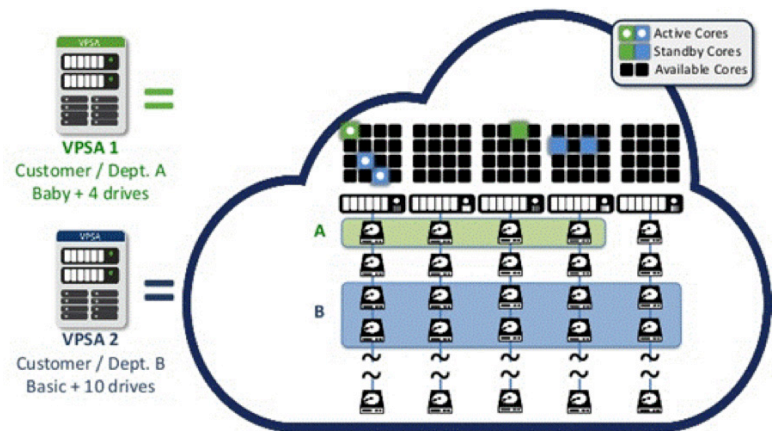
# Zadara Storage

## The Value of OpEx-based Storage-as-a-Service (STaaS)

An exclusive capability of the Zadara service is that in addition to a public cloud or co-located service options, the storage for the service infrastructure can be located onsite within the customer's four walls and firewall. The On-Premise-as-a-Service (OPaaS) approach offers all of the advantages of off-premise cloud storage while retaining data onsite. For the on-premise option, the IT organization works with Zadara to identify current and future capacity and performance requirements. A Zadara system is shipped and installed at the customer's location, without any upfront CapEx costs. Storage is utilized and invoiced on an "as needed basis," the same as with off-premise cloud storage. Data may extend across on-premise, public cloud, and colocation environments. Data can be replicated across all three locations to meet data availability requirements.

Zadara storage capacity is configured into a software-defined Zadara Storage Cloud providing a common capacity pool that can then be allocated as block, file and/or object storage to one or more users within the enterprise. The VPSA Storage Array supports block and file storage and the ZIOS Intelligent Object Storage solution support object storage. The Zadara Storage arrays are created utilizing an intuitive, easy-to-use console facility that requires limited steps including choosing the service provider (if public), geographical location, storage node option (various configurations available), how much HDD and SSD capacity is needed, drive types, and the desired data protection scheme (e.g., RAID 1, 5, 6, or 10).

Zadara Storage supports full resource isolation, which delivers a single-tenant experience in a multi-tenant environment, thus eliminating the "noisy neighbor" problem and ensuring higher levels of security. Zadara supports block, file, and object data types, as well as FC-SCSI, iSCSI, iSER, CIFS, NFS, and S3/Swift protocols. Zadara also provides many of the services required for enterprise class storage. Features include policy-driven snapshots, zero-capacity clones, Multi-Zone HA for metropolitan failover, remote replication, and both inflight and at-rest encryption. Additionally, Zadara's encryption policy gives users the keys. Zadara does not maintain the keys, which gives users complete control of their data. Zadara also supports Docker Containers via their Zadara Container Services (ZCS) offering. In order to facilitate usage metering and chargebacks, Zadara Storage provides the reporting of total and per-user storage consumption. The figure at the right shows two VPSAs that were allocated from Zadara Cloud resources.



### What Is New With Zadara?

It is not sufficient to deploy new technology to meet changing needs and new problems. A solution must be able to address new business and operational challenges and adapt to evolving market forces. The open, software-based storage approach taken by Zadara Storage can readily adjust to this dynamic environment, leveraging new and emerging technologies as they become available. Zadara's latest release adds additional capabilities to address the needs of virtually any enterprise. This latest version, announced on April 12, 2016 is available to all Zadara customers. Enhancements include the following:

#### ZIOS Intelligent Object Storage: Private Object Storage

Object storage has become a cost-effective target for persistent or infrequently updated data that requires scaling up tens or even hundreds of PBs. Object storage utilizes rich metadata stored with each object, enabling information to be accessed directly without needing to know the physical location. It is the simplest approach to storing data. Applications are now being written to natively store data as objects, and Zadara can now utilize object storage as a target.

#### Fibre Channel Support

iSCSI and iSER (iSCSI with RDMA) are starting to replace Fibre Channel for block storage. However, a significant portion of enterprise capacity consists of fibre channel attached storage accessed by servers populated with the requisite HBAs. With the addition of fibre channel support, Zadara onsite storage can be seamlessly accessed by these servers, and also support emerging connectivity options as well.

#### Security Improvements

At or near the top of all IT spending priorities are initiatives about improving security. Zadara continually enhances the security of their solutions, using industry-standard technology and processes with which the IT staff is already familiar.

Zadara supports both at-rest and in-flight data encryption using the Advanced Encryption Standard (AES256). AES is the universal standard for encryption and meets most worldwide and United States government encryption requirements. A new password policy gives the VPSA administrator control over aspects such as user permissions, data expiration, and historical access.

#### Large Flash Cache

Flash increases application performance, especially those that access data in a random fashion. For many applications, only 10% of the data is highly active at any one time. Since flash is expensive compared with capacity-based hard disk drives (HDD), significant average performance gains can be achieved for a fraction of the cost of an all-flash tier. The cache can be added in 200GB increments up to a maximum of 3.2TB. Now with support for a large 1.6TB SSD, flash is deployed at a lower cost, enabling the benefits of cache to be leveraged at a lower cost and with less physical hardware.

#### Disaster Recovery Solution

EMA research shows that backup and disaster recovery is the greatest challenge facing the average data center. It is not enough to have data reside just within the cloud; there must be a graceful process to recover operations in the event of an on-premise incident. VMware Storage Replication Manager (SRM) provides a streamlined replication, recovery, and test process that can deliver minimal downtime. Now, Zadara provides a Storage Replication Adapter (SRA) that integrates SRM with replicated Zadara storage. The simplicity of VMware SRM and the flexibility of Zadara storage are combined to lower the administrative effort while reducing the cost of both on-premise and offsite disaster recovery storage.



### The EMA Perspective

Historically, IT consumed significant resources to exercise the traditional process of creating multi-year storage planning cycles. In addition to being laborious, unforeseen business, technical, and operational dynamics often render the storage plan obsolete not long after it is created. Having to make capital purchases from this process is inflexible, risky, and incurs costs for storage that may not be used for months or even years. It is clear that a new method of storing, retrieving, and protecting data is required to meet the needs of today's enterprise. The legacy, capital-based model that puts all the risk on the buyer can no longer be supported. What Zadara does is simplify the life of IT administration. Zadara reduces the risks of traditional storage planning by migrating to an operational model that quickly adjusts to the dynamics of the enterprise without having to overprovision or risk not having sufficient resources. Day-to-day storage maintenance, hot fixes, and painful migrations are eliminated. Zadara addresses these challenges whether the choice is to use on-premise or off-premise storage.

The Zadara value proposition is simple yet comprehensive, supporting any data type (block file & object), any protocol (FC, iSCSI & ISER, CIFS, NFS, and S3/Swift), and any location (data center, public/private cloud, or hybrid cloud). This level of flexibility seamlessly supports existing and future applications and infrastructure. The support for diversity of data types, protocols, and locations are unique to Zadara Storage. The on-premise Zadara option delivers all the self-service, on-demand, and elastic provisioning of the cloud with data and storage infrastructure onsite. With the integration of VMware's SRM, data located within on-premise Zadara storage is protected offsite with minimal effort and an integrated, elegant recovery process.

Zadara removes the risk from storage planning, consumption, and data protection. Best efforts are made to identify near-term requirements, but the configuration can change on the fly without costly over-provisioning. If there is too much storage or performance, then the configuration can be reduced. If resources are insufficient, then they can be upgraded, acquiring only what is needed. If additional capacity or performance is needed to meet short-term demands, such as end of month processing, temporarily add resources until the transitory needs pass. The legacy CapEx storage model can no longer effectively support today's enterprise. What Zadara does is leverage what is best about the cloud and deliver it in an open, flexible, and cost-effective approach that meets the storage needs of the emerging enterprise.

### **About Enterprise Management Associates, Inc.**

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help EMA's clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals and IT vendors at [www.enterprisemanagement.com](http://www.enterprisemanagement.com) or [blogs.enterprisemanagement.com](http://blogs.enterprisemanagement.com). You can also follow EMA on [Twitter](#), [Facebook](#) or [LinkedIn](#).

---

This report in whole or in part may not be duplicated, reproduced, stored in a retrieval system or retransmitted without prior written permission of Enterprise Management Associates, Inc. All opinions and estimates herein constitute our judgement as of this date and are subject to change without notice. Product names mentioned herein may be trademarks and/or registered trademarks of their respective companies. "EMA" and "Enterprise Management Associates" are trademarks of Enterprise Management Associates, Inc. in the United States and other countries.

©2016 Enterprise Management Associates, Inc. All Rights Reserved. EMA™, ENTERPRISE MANAGEMENT ASSOCIATES®, and the mobius symbol are registered trademarks or common-law trademarks of Enterprise Management Associates, Inc.

#### **Corporate Headquarters:**

1995 North 57th Court, Suite 120

Boulder, CO 80301

Phone: +1 303.543.9500

Fax: +1 303.543.7687

[www.enterprisemanagement.com](http://www.enterprisemanagement.com)

3389.052316

