



## **Introduction to Zetta Enterprise Cloud Storage**

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Storage administrators must grapple with enterprise data growth rates of over 60% a year, driven by the need to comply with new and expanding regulatory requirements, the pervasive use of electronic communications, the rising use of the Internet as a collaboration tool, and the increasing size of data files driven by the improving resolution of all types of media. It is estimated that this demand will create more than 600,000,000 new terabytes of unstructured data globally over the next 4 years, more than 3 times the total universe of all enterprise and consumer storage to date.

Today's data storage administrators inside enterprises are faced with an untenable task: store ever-increasing volumes of business-critical data, reliably and securely, in the face of declining budgets and increasingly overworked staffing loads. Any IT professional with responsibility for data storage is familiar with the following concerns:

- Experiencing consistent data growth
- Capital and operating expense constraints
- Data center facilities overcrowding
- Increased administration overhead
- Constant fear due to risk of data loss or data corruption

### Existing Solutions Fall Short

In the first quarter of 2009, these enterprise IT professionals have two options available to try to meet this challenge, and each has significant drawbacks and shortcomings.

#### *On-Premise NAS Expansion – Enterprise Feature Set and File System*

The first choice is to “double-down” and purchase additional network-attached file systems from legacy storage hardware vendors. These systems have enterprise-grade feature sets (snapshots, replication, transparency, manageability, etc.) and – with enough management expertise – can achieve predictable data integrity, security, and availability. However, any IT professional who has managed large data sets (upwards of 10TBs) recognizes that these solutions are inflexible, are very capital-intensive to implement, operate and scale, and bring major management challenges and complexities.

Purchasing these large-scale managed NAS arrays involves substantial upfront capital outlay, and utilization of the raw storage invariably falls well short of expectations, as these bulk purchase increments require costly (and frequently flawed) assessments of future growth needs. Knowing how much capacity to buy is nearly impossible, and missing the mark has expensive ramifications; under-provision and you need to buy and manage multiple small arrays; over-provision and you are left with costly unusable capacity depreciating in your data center. By the time a large storage array is half-full, it is also likely to be several-generations of technology behind and in danger of becoming obsolete.

Additionally, these systems are very complex and expensive to operate, and this complexity increases exponentially as the scale of the storage increases. Good storage administrators are a scarce, expensive resource, and storage consumes extensive, costly space, cooling and power in the data center.

Storage vendors also play too large a role in dictating both purchase quantity and purchase interval, based on confusing hardware/software bundling and configuration requirements, which may or may not align to your needs. And vendor lock-in is a real concern – moving to another storage vendor can involve an expensive forklift upgrade in technology and significant training on a whole new set of processes and tools.

#### *Online Web Object Store (Today's Cloud Storage Offerings) – On-Demand Business Model*

The second option is to try to make today's Web 2.0-centric cloud storage offerings work for enterprise use cases. These offerings' on-demand business models alleviate some of the challenges associated with enterprise file storage systems, as they facilitate pay-as-you-grow pricing, lower management overhead, and no upfront costs. However, while these solutions fill a great niche providing inexpensive storage for Web2.0 developers, they were never designed for enterprise mission critical data storage, and lack many needed capabilities that enterprises require and enterprise IT professionals demand.

First, today's developer-centric cloud storage offerings do not offer best-in-class performance, quality and reliability backed by meaningful SLAs. These solutions are not optimized for the enterprise concerns of data integrity, privacy, security, and service reliability, and therefore do not offer the predictability or peace-of-mind that an enterprise-class on-premise filer brings. These solutions do not offer sophisticated data integrity schemes and lack reliability and integrity features such as snapshotting and replication, which are table stakes for enterprise data storage today.

In addition, these solutions were built to serve the needs of web developers who are satisfied with a proprietary web service API to post and retrieve data. However, an enterprise IT professional is not willing to rewrite his entire application infrastructure to adapt to a custom API – an enterprise IT professional needs his storage solution to plug into his infrastructure smoothly and reliably, leveraging standard storage access protocols (NFS, CIFS, iSCSI, etc) and full POSIX-compliance (standard POSIX system calls including 'open', 'seek', 'write', 'sync' are required by almost all applications in today's IT data center deployments, and ensure a strong consistency model).

Last, enterprise file storage systems come with robust file systems, enabling the standardized organization of unstructured data, making it easy to store, access, and find files. Today's cloud storage offerings contain no file system semantics, but rather represent generic "buckets" into which only entire, opaque "objects" can be stored and retrieved. Web object stores without file systems force the user to build in entirely new, foreign data organization schemas; in an enterprise, this would require a complete rewrite to all existing infrastructure and applications.

Zetta Enterprise Cloud Storage combines the best attributes of each of the options described above, providing an enterprise feature set and file system in an on-demand, cloud storage service. With Zetta, customers can

- Benefit from an enterprise feature set and file system without needing to purchase, install and maintain complex, expensive and inefficient storage hardware and software;
- Benefit from a cloud-based, on-demand, pay-as-you-grow storage solution, without needing to rewrite all applications and storage administration practices or foregoing enterprise quality & reliability.

Zetta is the first & only solution designed from the ground up to offer the integrity, security, reliability, compatibility, performance and value necessary to meet the primary storage needs of the enterprise, delivered in an on-demand business model, making Zetta the only cloud storage offering that meets the high demands of today's enterprise IT administrators seeking a general purpose storage solution for their rapidly-expanding primary data.

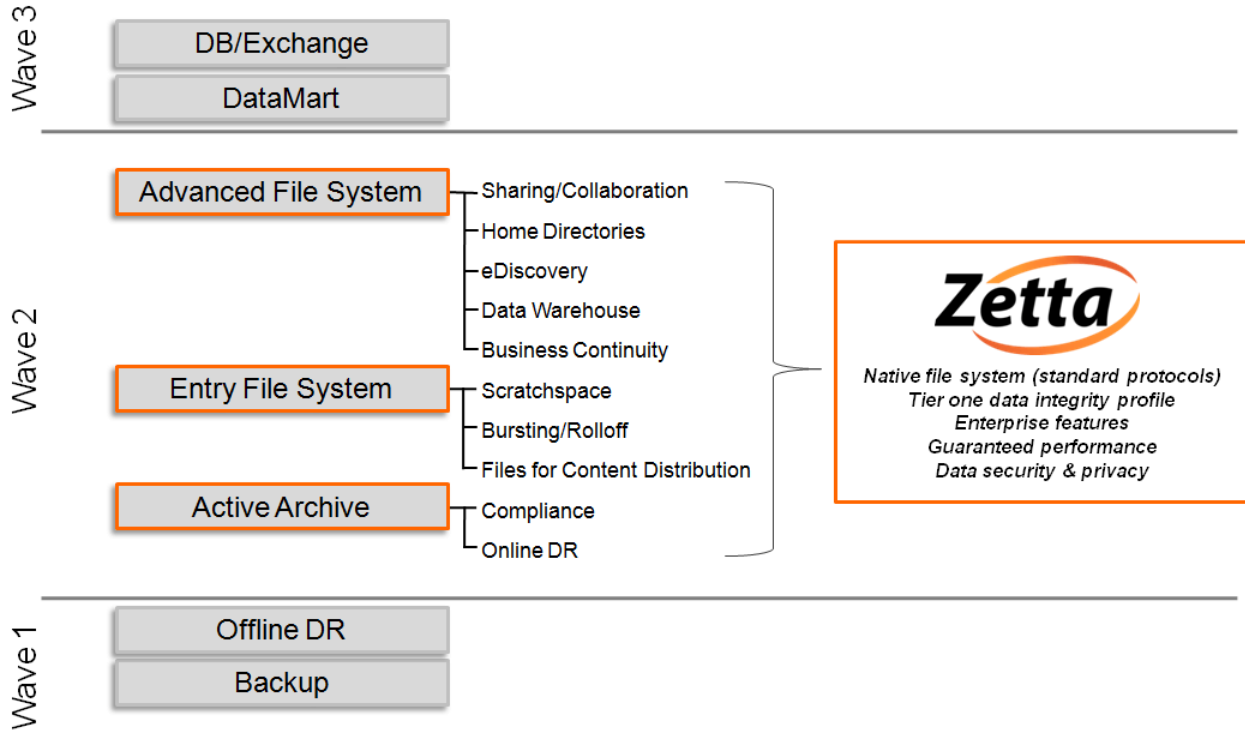
<b>Zetta Enterprise Feature Set and File System</b>	<b>Zetta On-Demand Business Model</b>
<ul style="list-style-type: none"><li>• Enterprise class data integrity</li><li>• Standard interfaces (CIFS, NFS, etc.) – no reprogramming required</li><li>• Guaranteed data security and privacy</li><li>• Performance assurances</li><li>• Snapshots and replication</li></ul>	<ul style="list-style-type: none"><li>• Instant-on, scalable capacity</li><li>• Reduced management overhead</li><li>• Low capital costs</li><li>• Lower operating costs</li><li>• Pay as you grow (100% utilization)</li><li>• Minimal data center footprint</li></ul>

### Zetta Use Cases

Because of limitations with today's online web object stores, market adoption of cloud storage to date has been confined to two use cases: nascent Web 2.0 apps and online backup/disaster recovery for consumers and small businesses. Without best-in-market data integrity, a native cloud file system, enterprise features, existing protocol/POSIX support, and guaranteed security and performance, these use cases were all that existing cloud storage solutions could reasonably support.

With Zetta Enterprise Cloud Storage, that changes. Zetta's solution disrupts the storage market and makes cloud storage a viable option for a whole new range of customers and a whole new range of storage use cases, by bringing enterprise scalability (to the hundreds of petabytes), an enterprise, standards-based file system, and enterprise QOS guarantees to a multi-tenant, on-demand storage solution.

There is a continuum of use cases that Zetta can support in the cloud, and customer adoption will likely mature, migrating to ever-increasingly-complex use cases. Figure 1, below delineates these use cases into three adoption waves.



**Figure 1: Cloud Storage Use Case Adoption Waves**

### *Cloud Storage Adoption; the First Wave*

In figure 1, “Wave 1” represents where cloud storage adoption is focused today, due primarily to limitations in existing cloud storage offerings in the market. Backup and disaster recovery have the following characteristics that make them attractive for early cloud storage adoption:

- “Static” data sets – backup/DR data is not dynamic – in essence write once/read only in emergency.
- Not primary storage – by their very nature, backup/DR is focused on creating secondary copies of data, making this data inherently “lower risk” (i.e. another copy exists on-premise).
- Benefit to offsiteing – best practices dictate that backup copies of data should be stored remote from the primary copy.

Despite the fact that these use cases have clear affinity to cloud storage, only very small businesses and consumers have adopted cloud storage for backup & disaster recovery in meaningful volume today, because existing cloud storage offerings do not meet the hurdle for large enterprise adoption even in these relatively straightforward use cases.

For enterprise IT professionals to adopt cloud storage for backup and disaster recovery, they need a cloud storage solution to meet requirements that exceed the capabilities of existing cloud object stores, most notably:

- Guaranteed data integrity, including sophisticated RAID deployment, continuous proactive error correction, and the ability to do true snapshots and replication,
- Enterprise-grade data security and privacy.

As we'll see in the next section of this whitepaper, Zetta provides all this and more – With Zetta, even the most sophisticated and demanding enterprises can trust their data to the cloud.

### *Cloud Storage Adoption; the Second Wave*

The Zetta solution opens up a whole new range of use cases for enterprise cloud storage adoption, labeled "Wave 2" in Figure 1 – this could be termed "the enterprise adoption wave", during which enterprise IT professionals are beginning to seek cloud storage solutions for unstructured primary data. For Wave 2 adoption, a cloud storage solution must meet three additional requirements:

- Existence of a standard file system
- Native support for standard storage protocols (e.g. NFS, CIFS, iSCSI, etc.)
- Guarantees of performance

However, before Zetta, there was no cloud storage solution that provided this full complement of features, which has held back enterprise adoption of cloud storage. Zetta provides all these features, making Zetta the optimal home for enterprise primary data in the cloud.

### *Cloud Storage Adoption; the Third Wave*

The last wave in cloud storage will involve enterprise adoption of cloud storage for high I/O structured data – such as databases like Exchange and SQL. This wave of adoption involves the highest hurdles for an online solution, given the stringent requirements around transactional performance and very low latency.

With the introduction of its unique cloud architecture, Zetta challenges traditional storage systems. It is the first and only multi-tenant architecture designed from the ground up to offer the integrity, security, reliability, performance, compatibility and value necessary to meet the primary storage needs of the enterprise.

Zetta accomplished this by combining multiple technical innovations into a single, cohesive service infrastructure that has enabled us provide a consistent level of performance to a broad range of application profiles. Some of these innovations include (i) the ubiquity of high speed Internet, (ii) the increased efficiency of processors, (iii) the increased size of available disk at acceptable cost, and (iv) the maturity of virtualization.

Before Zetta, enterprises had no alternative but to try to do it themselves, a costly and inflexible alternative. Zetta replaces the need to pay for expensive and inefficient storage hardware, complex storage software, costly maintenance/support/replacement contracts and additional storage specific IT administration staff.

The key technological underpinnings of Zetta's Enterprise Cloud Storage are designed to deliver the following benefits to enterprise IT professionals seeking a home for their primary data in the cloud:

- Volume-based data integrity
- Enterprise compatibility (easy adoption/integration)
- Native cloud file system
- Data security & privacy
- Guaranteed, SLA-backed performance
- Continuous availability
- Massive scale with common namespace
- Management & control

### **Volume-based data integrity**

Among the prime design considerations underlying Zetta Enterprise Cloud Storage is data integrity. With decades of hard-learned lessons gained from experience managing and administering petabytes of operational storage, Zetta has designed its data protection controls to give maximum protection against the most common and most troublesome causes of data loss – drive failure, bit rot, network failure, controller failure and controller corruption – while still maintaining customer performance. Zetta customers who store more than 1 copy of their data with Zetta are guaranteed not to experience data loss.

#### *RAIN6 N+3*

Our data integrity guarantees begin with our best-in-class RAIN6 N+3 encoding algorithm. Similar in concept to traditional RAID encoding amongst drives, Zetta's RAIN6 technology redundantly encodes

customer data across discrete computers (“nodes”). Zetta's RAIN6 is configured by default to always offer 3 parity copies of encoded data – this level of redundant protection is not available even in traditional storage hardware from top vendors, and dramatically improves component redundancy, availability profiles and raises mean time to data loss to amazing levels.

### *Comprehensive Hashing; Continuous Comparison, and Correction*

While redundant encoding is a large part of any data protection strategy, low level hardware errors unavoidable on today's current disk technologies, and as data footprint grows we need to make sure that data corruption can be identified and resolved prior to data loss. So the Zetta Cloud File System constantly seeks out and corrects corruptions in the data at multiple layers of the Cloud File System.

We do this using an advanced hash algorithm that is used to protect, detect, and repair errors before they impact customers. Cryptographic hashing is performed on every file as we receive it, and additionally on every chunk as we store it; then, using spare system cycles, a background process continually traverses all hard drives, running comparisons to detect corruptions and repair them before any data can be lost. If either of these hashes ever detects corruption, we can fix it using our triple redundancy RAIN6 encoding. This also allows Zetta to provide make these hashes available to the customer to enable confirmation that data stored at Zetta is identical to data sent by the customer application, allowing the application to independently verify that the data on the Zetta storage solution is the data that was sent by the application, and that the data hasn't been corrupted while in our possession.

### *Snapshots & Replication*

One of the defining features of enterprise-class storage is the capability to create rich snapshots and perform replication. In traditional storage products snapshots are limited by the size of the storage device you deploy and replication is limited by the total throughput and capacity that the controllers or network loops allow.

Zetta provides snapshots that are free from the capacity and performance limitations of single devices and fixed size clusters. Zetta's massively parallel architecture enables multi-site, multi-volume replication without the limitations that a fixed controller speed and network loop count have in traditional storage products.

### **Enterprise compatibility (easy adoption/integration)**

Another prime design consideration underlying Zetta Enterprise Cloud Storage is enterprise compatibility. The overwhelming majority of enterprise applications and IT architectures rely on open standards to interconnect and communicate with storage resources.

However, existing cloud storage providers are backed by web object stores, which do not support existing industry-standard storage access technologies, but are instead accessed through proprietary web APIs. This is fine for Web 2.0 developers, but is inadequate for enterprises that have neither the time nor the resources to rewrite their application infrastructure to support a new API.



Zetta remains committed to the existing standards and interfaces used by today's enterprise applications. Zetta's service offers POSIX compatible storage – over 20 years of software development has relied on the use of the POSIX standard for interacting with a storage system (responsible for executing basic commands like “Seek”, “Read”, “Write”, “Sync”, etc.). And Zetta's service is accessed via a growing number of industry standard storage access technologies including CIFS, NFS, FTP, sFTP, WEBDAV and soon iSCSI and others. This has several tangible enterprise benefits:

- Enterprises can quickly and easily add Zetta storage without expensive or risky changes to existing IT environments – to customers, a Zetta Virtual Volume looks and feels just like a local, network-mounted file server, rather than a custom API.
- Use of standard protocols prevents vendor lock-in. Since Zetta uses only published, mature, industry standard interfaces, like NFS and CIFS, customers do not get locked in through adherence to a proprietary API.

Zetta is Enterprise Cloud Storage On-Demand, with a feature set that guarantees:

- Instant, scalable capacity-on-demand
- Best-in-class data integrity
- Government-grade data security
- Assured data privacy
- Unmatched system reliability & availability
- Standards-based, plug-and-play integration to existing IT architectures
- Dedicated quality of service
- Unsurpassed performance
- Cost-efficient, pay-as-you-grow model
- Future technology protection

Furthermore, Zetta was built to adapt to new standards in the future – as emerging technologies in the object storage space become standardized in the coming years, Zetta can easily add new protocols and application interfaces to insure your data is never stuck behind a customized, unsupported or stale interface technology.

### **Native file system**

The Zetta solution comes with an extensive implementation of a full file system, built for delivery in the cloud – the Zetta Cloud File System. File systems are tried-and-true solutions for the standard organization of unstructured data (files). Enterprise storage professionals have deep, extensive knowledge of file system semantics and structures.

Zetta is the first and only cloud storage provider with a native cloud file system. Zetta's file system has the following advantages:

- Easy to store, access, and find files using existing knowledge and training.
- Able to extend your on-premise file system, enabling “bursting to the cloud” on-demand to support traffic spikes, and “rolling off” older data to the cloud.
- Native support for file-based applications, such as eDiscovery, content distribution, collaboration, etc.
- Quick deployment without extensive new testing.
- Rapid deployment of home directories for organizations of any size.

## **Data security & privacy**

Data security and privacy is a key concern as customers begin their transition to cloud services, and Zetta provides a comprehensive, highly secure data storage solution without the complexity, additional expense and associated management overhead needed to deploy secure storage within traditional storage products. In many cases Zetta's storage already meets or exceeds the compliance requirements customers face for their data storage.

All information stored on the Zetta system is encrypted "at rest" at all times using unique customer keys for every volume – keys that are protected with government-grade, FIPS 140-2 certified hardware security modules.

In addition, the Zetta architecture – while fully multi-tenant – provides 100% logical separation of customer data through virtualization combined with our "key-per-volume" practices– it is impossible for your data to be accessed by another Zetta customer.

## **Guaranteed, SLA-backed performance**

There are multiple components of "quality of service" – in this section, we refer specifically to the performance of the Zetta Enterprise Cloud Storage system when under load by multiple customers concurrently.

Legacy on-premise data storage systems are typically deployed to host the data of a single customer or single application within a customer, where control over data types and access patterns is managed in one place and tuned for a single use. This results in inadequate storage utilization<sup>1</sup>, and is impractical for a cloud storage provider who must host multiple customers with different usage patterns and varying data types on a single scale-out infrastructure.

Thin provisioning can aid in the virtualization of storage hardware, but it cannot mitigate the challenges of multiple users and random application access fighting for the resources of a single disk shelf or disk subsystem. And while the areal density of hard drive technology continues to improve, I/O capacity and data throughput capacity have not improved at similar rates, limiting the effectiveness of virtualization. So how does Zetta ensure that the load of one customer doesn't impact other users of the system?

Zetta is able to provision scalable virtual volumes and also guarantee the performance of each individual virtual volume, regardless of the number of other customers or workloads accessing the storage system at the same time, by leveraging the very high degree of parallelism available in our distributed computing infrastructure. The modular design of the Zetta hardware stack allows us to upgrade independent components without disrupting customer access, ensuring the right ratios and avoiding contention within the stack at all times. With strict service level agreements wrapped around performance we are ensuring our customers receive the expected performance at ALL times.

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<sup>1</sup> As a related aside, any hosted storage service that uses traditional data storage devices will also suffer from this limitation, and will be unable to vary these parameters based on individual customer needs, leading to a lack of consistent performance, higher costs or both.

Then there's the issue of network latency. How can a Zetta solution hope to provide the same latency performance an on-premise solution can provide?

First, the last several years have seen incredible advances in both the speed and quality of high bandwidth IP networking, and competition among IP Service Providers has resulted in significant additional available IP capacity and ever-lower transit costs.

Also, Zetta operates in key metro regions throughout the United States and is connected to a variety of metro Ethernet and national fiber networking providers. Through this infrastructure Zetta is able to provide its storage at close distances over high speed, low latency networks to improve storage response time and maintain low costs. In addition to enabling private virtualized data storage over the wide area Internet, Zetta is also equipped to connect to its customers via MPLS or local loop leased-line circuits to create higher performance, fixed costs solutions.

### **Continuous Availability**

The Zetta system architecture has been designed to provide continuous availability to customers. Not only is our RAID scheme set to N+3, so too is our system architecture – the Zetta system architecture is configured to be reliably available and operational in the event of multiple simultaneous component outages – up to three simultaneous failures of any logical component in the Zetta architecture.

### **Massive scale with common namespace**

Existing large-scale enterprise-grade managed NAS arrays are sold in bulk units of capacity, paid for upfront, requiring costly (and frequently flawed) assessments of future growth needs. Forecasting future capacity needs is notoriously difficult – growth is certain, but growth rates are guesses. And changing data types and new application requirements constantly challenge IT professionals to make tradeoffs, cut corners, or over-provision today in an effort to (hopefully) achieve their goals later.

It is nearly impossible to “guess right”, and both under-provisioning and over-provisioning have costly impact (either resulting in additional capital outlay and management costs or resulting in excess capacity depreciating in the data center). Additionally, these systems are very complex and expensive to operate, and this complexity increases exponentially as the scale of the storage under management increases. And ultimately utilization rates of the raw storage fall well below expectations.

In contrast, Zetta's Enterprise Cloud Storage service enables you to configure one or many virtual volumes without the need to worry about shelf widths, controller ratios, name space constraints or rapidly changing storage connectivity standards. Individual volumes (with full 128-bit namespace) can scale to a petabyte or more and with an unlimited amount of virtual volumes available there is no practical limit to the amount of data you can store. And you never have to design, purchase, stack, rack, administer, recover, replace or rebuild a hardware storage system ever again.

And with just-in-time footprint provisioning, estimates are a thing of the past – with Zetta, you pay for only what you need when you use it. The on-demand purchasing model enables you to scale exactly when you need to.



Zetta has architected and built its systems to scale to many thousands of customers. Built using tested principles of distributed computing, Zetta is confident it can continue to scale its service to benefit a virtually unlimited number of customers who are looking to store hundreds of petabytes of data.

### **Management & control**

Zetta's Virtual Storage Volume looks, behaves and responds to your commands in a fashion very similar to existing traditional storage devices on your network. Zetta's Service Management Platform enables you to quickly configure and mount a virtual storage volume. Customers can set up snapshots, configure replication, and automate reporting and alerts so you always know the status of your data.

Zetta strives to give its customer complete transparency to data integrity events including automated rebuilding, window of vulnerability calculations and performance against your targets or our service level agreement. A clear and concise web interface enables easy administration of hundreds of terabytes of data, all while reducing workloads, improving data integrity metrics and providing detailed information on storage resource utilization.

Zetta's entry into the cloud storage market signals a turning point in the cloud storage market – for the first time customers can acquire an enterprise feature set and file system in an on-demand cloud storage service. This facilitates a whole new set of uses cases for cloud storage, and yields a set of tangible business benefits to enterprise IT professionals and CFOs. With Zetta, customers can

- Benefit from an enterprise feature set and file system without needing to purchase, install and maintain complex, expensive and inefficient storage hardware and software;
- Benefit from a cloud-based, on-demand, pay-as-you-grow storage solution, without needing to rewrite all applications and storage administration practices or foregoing enterprise quality & reliability.

### *Zetta is enterprise class storage*

Zetta offers enterprise-class storage in the cloud. “Enterprise-class” refers to:

- *Best-in-class data protection*, leveraging an unsurpassed RAIN6 N+3 scheme, proactive error seeking with automated correction, and true snapshotting and replication;
- *Continuous availability*, guaranteed through N+3 redundancy throughout the system architecture;
- *Guaranteed security and privacy*, through full encryption at rest, using a PKI and per-volume keys stored in FIPS 140-2 rated hardware;
- *Assured per-volume performance*, by taking advantage of a modular architecture and network advances.
- *Massive scale*, individual volumes (with full 128-bit namespace) can scale to a petabyte or more and with an unlimited amount of virtual volumes available there is no limit to the amount of data you can store.

### *Zetta offers plug-and-play integration with existing IT architectures*

Enterprises can quickly and easily add Zetta storage without expensive or risky changes to existing IT environments – to customers, a Zetta Virtual Volume looks and feels just like a local, network-mounted file server, rather than a custom API. We accomplish this by combining full POSIX compliance with support for existing, widely adopted enterprise storage access protocols, such as NFS, CIFS, and others. Our standardized access methods also mean that there is no proprietary API to encourage vendor lock-in.

### *Zetta offers a robust native file system*

Zetta is the first and only cloud storage provider with a native cloud file system, enabling IT professionals to easily store, access, and find files (using existing knowledge and training), extend on-premise file systems seamlessly, natively support file-based applications, and deploy quickly.



### *Zetta lets customers maximize ROI and conserve capital*

With just-in-time footprint provisioning and an on-demand purchasing model, Zetta enables you to pay for only what you need when you use it – poor estimates of need, large upfront capital outlay, and inadequate capacity utilization are things of the past. Additionally, use of Zetta “future-proofs” your storage investment – Zetta constantly evolves to leverage advances in storage technologies so you don’t need to.

### *Zetta comes with automated infrastructure management*

Zetta's Enterprise Cloud Storage service enables you to configure one or many highly scalable virtual volumes without needing to worry about shelf widths, controller ratios, name space constraints or rapidly changing storage connectivity standards. And you never have to design, purchase, stack, rack, administer, recover, replace or rebuild a hardware storage system ever again.

Zetta is staffed with storage administration experts, with experience managing multiple petabytes of sensitive, business-critical data and achieving extremely high uptimes and extremely strong data integrity profiles. Using Zetta ensures that you will always be leveraging the best possible configuration of your storage system, tuned using best practices by expert data storage staff.

### *Zetta means improved business continuity*

Using Zetta Enterprise Cloud Storage, you automatically get offsite data storage in multiple redundant data centers. If your site suffers a disaster, your data will be safe with us.

### *Zetta = lower risk*

Zetta offers administrative, management, and technology benefits that exceed what is available in market today, even from established storage vendors. Storing your data is not a risk – it mitigates your risk, significantly.

Before Zetta, enterprises needing reliable, secure, standards-based storage had to make a choice:

- Rewrite all applications and storage administration practices to benefit from the advantages of a cloud-based, on-demand storage solution, and even then forego enterprise quality & reliability, or
- Benefit from an enterprise feature set, but need to purchase, install and maintain complex, expensive and inefficient storage hardware and software without the appropriate expertise.

Zetta Enterprise Cloud Storage combines the best of both of today's offerings, providing an enterprise feature set and file system in an on-demand, cloud storage service. Zetta is the only cloud storage offering that meets the high demands of today's enterprise IT administrators seeking a general purpose storage solution for their rapidly-expanding primary data. Zetta greatly broadens the use cases that can be supported by cloud storage, giving IT professionals a new viable choice when seeking a storage solution.

With Zetta, enterprises can:

- Access instant, scalable capacity-on-demand
- Lower their risk
- Leverage the experts
- Protect against technology evolution
- Maximize ROI

Zetta is the first & only solution designed from the ground up to offer the integrity, security, reliability, compatibility, performance and value necessary to meet the primary storage needs of the enterprise, delivered in an on-demand business model, making Zetta the only cloud storage offering that meets the high demands of today's enterprise IT administrators seeking a general purpose storage solution for their rapidly-expanding primary data.

Regardless of the size of organization or budget, Zetta can vastly improve your IT practice with better data protection, better prevention against data loss and increased data storage availability.



## About Zetta

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Zetta's founders developed the Zetta business plan while they were experiencing the day-to-day difficulties associated with management of large-scale commercial storage systems. As the data under management grew irresistibly and exponentially (well into the petabytes), it became very clear that existing storage solutions are inadequate for today's storage needs, and it also became clear that purchasing, integrating and managing new failure-prone storage can be an extremely time-, resource- and labor-intensive exercise that rarely satisfies the goals of the project.

Zetta aims to provide a platform for mission-critical enterprise data in the cloud. We have created an online storage offering that actually meets the requirements of enterprise IT people – a solution we ourselves would want to use – thereby providing a home the basis for a whole new set of data to transition into the cloud.

The Zetta founding team includes Lou Montulli, early web pioneer and founding engineer of Netscape and veteran of Shutterfly and Epinions; Jeff Treuhaft, recently GM of a \$135M business unit of VeriSign, founding technology product manager of Netscape and veteran of Silicon Graphics; Jeff Whitehead, most recently CIO of Shutterfly and veteran of Shopping.com and Netscape; and Jason Harrison, most recently lead engineer at Shutterfly and veteran of Seascope where he led delivery of the first software application certified by Lloyd's Register for international naval navigation. The extended Zetta team is filled with veterans from EqualLogic, EMC, Netscape, RSA, Symantec, VMware and Yahoo. We have collectively successfully built and operated multiple disruptive, scalable and successful platforms over the last 15 years.