Parallels® Cloud Storage

Data Sheet

High Performance. Fault Tolerant. Low Cost

Parallels Cloud Storage dramatically improves server availability and performance with elastic, scalable storage. Turn unused disk space on your server nodes into cloud storage at a fraction of the cost of competing solutions.

Parallels Cloud Storage is:

- Fault tolerant – no single point of failure
- High performance – meets or exceeds local rotational disks
- Low cost – turn unused disk space into a resilient cloud storage pool
- Scalable to petabytes

Parallels Cloud Storage is built on SATA direct-attached storage and 1 GigE networking infrastructure and provides SAN-like capabilities for hosting provider data centers. It can provide storage for containers, virtual machines, snapshots, backup images, large log and media files and shared hosting deployments.

Storage Optimized For The Cloud

Parallels Cloud Storage is a distributed, shared storage solution that decouples computation from storage. This enables virtual machines and containers to be instantly migrated to an operational physical server whenever the original server becomes unavailable. Storage for virtual machines and containers is no longer limited to locally attached disks as the server can access the entire storage cluster distributed across multiple physical machines. Parallels Cloud Storage is used to:

- Store and run Parallels virtual machines and containers
- Eliminate VPS downtime due to hardware failures
- Deliver high availability cloud servers
- Enable zero downtime server migration and non-disruptive replication

Cost-Effective

Parallels understands the cost pressures facing hosting companies today. In most cases existing disks and network infrastructure are underutilized. Parallels Cloud Storage is the lowest cost cloud storage solution available because it leverages existing, unused disk space instead of high cost, dedicated storage arrays and networking technology. No new hardware is needed. Parallels Cloud Storage delivers performance equivalent to or better that local disks by:

- Spreading the storage across all nodes in the cluster to uniformly utilize available disk bandwidth
- Providing support for SSD caching to burst existing I/O performance by an order of magnitude and increase hardware utilization and density

Key Features

Scalable

High performance and scalable to petabytes.

Hot-pluggable

Expands easily when adding additional nodes and devices.

Data Protection

Provides user data check-summing and verification. Also performs background data verification “scrubbing” to ensure that all data is still readable and correct.

SSD Caching

Bursts I/O performance by an order of magnitude, increasing hardware utilization and density.

Rebalance

When new storage servers are introduced into a cluster or come online after failure, the system will rebalance the storage across the total cluster.

Failure Tolerant and Redundant

Users can set the level of redundancy required and Parallels Cloud Storage will automatically detect failed nodes/drives and perform auto-recovery to maintain the specified level of redundancy. During failure recovery the storage cluster adjusts to provide continuous data access for the clients.

Auto Recovery

Automatically recovers damaged, lost or inaccessible data replicas below the configured replication level if a drive/node fails.

High Availability

Ensures that the end user will not experience a loss of service if the server suffers a hardware failure. In the event of a failure the system automatically switches to redundant data copies and can quickly restart the service on another physical machine.

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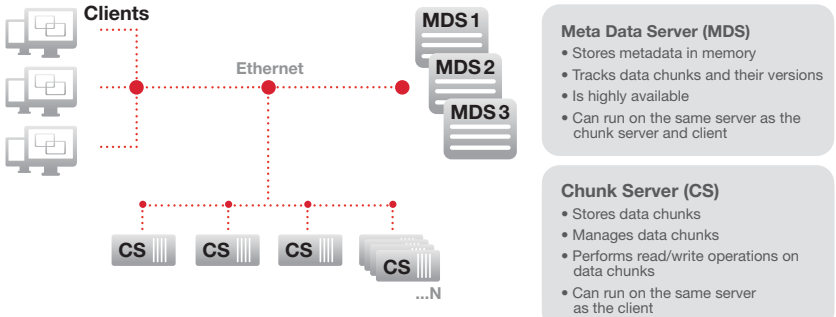
How do we do this?

Parallels Cloud Storage leverages untapped storage on existing server nodes and connects them into a shared storage cluster. All stored files, including virtual machine and container images are broken into fixed-sized data chunks. The chunks are then replicated (typically into three copies) and stored across the disk arrays in the cluster. When a disk drive fails or a server becomes unavailable, copies of data stored on that disk or server are available on the remaining active drives.



Accordingly, the data remains available and is highly resilient to hardware failures. When a failure occurs, Parallels Cloud Storage automatically regenerates the lost data to ensure that the storage cluster stays healthy, resilient, and reliable.

Parallels Cloud Server 6

Flexibility to deploy containers and hypervisors

Parallels Cloud Storage is delivered as a component of Parallels Cloud Server 6, the only solution available today that permits coexistence and migration between servers running container or hypervisor technology. Take advantage of the scalability and streamlined operations of operating system virtualization (containers) as well as high performance virtual machines (hypervisors) for isolated applications or simultaneous heterogeneous environments.

Performance

- Comparable to SATA direct attached storage performance
- Up to 50 times faster than SATA direct-attached storage with SSD caching
- On a 14-machines cluster with four rotational HDDs each delivers 13K IOPS on random 4K reads and up to 600K IOPS with SSD caching
- On the same 14-machine cluster, 1 TB drive failure recovery takes only 10 minutes!

Requirements

Software

Parallels Cloud Server 6

Infrastructure

- Separate, dedicated 1 or 10 GigE storage network recommended
- SATA / SAS / SSD drives on storage nodes
- 1 GB RAM per each 100 TB in cluster for Metadata Servers

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