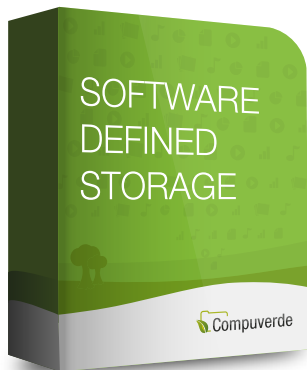


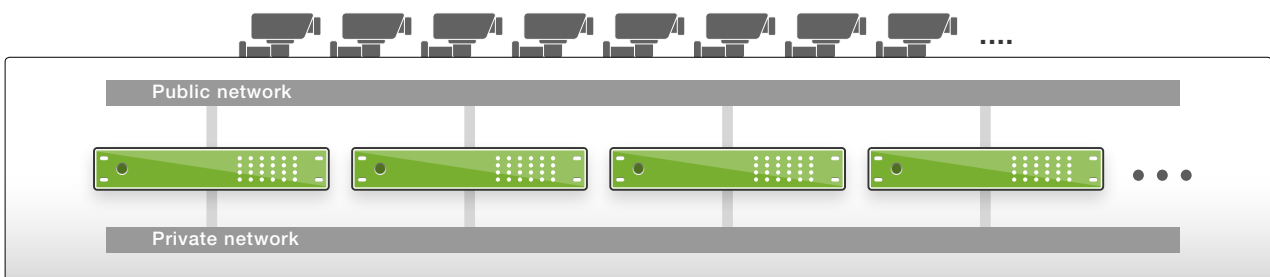
Storage for Video Surveillance

Video surveillance may involve collecting data from numerous cameras, 24 hours a day, 365 days of the year. This massive amount of data could be a challenge to any storage system. Compuverde offers high performance and is easily scalable to accommodate future demands.



The storage solution needs to have the performance required for continuous read/write operations. It should be cost effective and easily scalable to accommodate to future increase in quantity and quality improvements.

With Compuverde, you get a cost-effective, easy-to-manage and highly scalable storage solution. It is completely built in-house with no open source, hence creating a strong coherence between the protocols, the unified file system and the storage.



High Availability

Compuverde is a high availability solution that offers active-active storage nodes, meaning that you are able to access the storage cluster from all the nodes. The storage solution is strictly synchronous, so that when you write data to one node, it is immediately available through all the nodes in the cluster. The use of Virtual IP ensures that your cluster is always up and running, and also give the opportunity to upgrade the firmware on your nodes during runtime.

Easily Scalable

The Compuverde storage solution is easily scalable. You could start from four nodes and scale to hundreds of nodes, thousands of cameras. To scale out, simply install a server with Compuverde and add it to your existing cluster using the Compuverde Management Tool. The software will automatically balance your existing data through all the new nodes to ensure that there is no hot spots or bottlenecks.

Self-healing

When a node in your cluster goes down, Compuverde automatically detects the loss of the node and starts replicating missing data, using available space. In case you have support personnel onsite that handle hardware failures, you could choose to delay the self-healing process according to your requirements. The system can be configured to send a message to the administrator in case of such issues.

Complies with IT governance rules

File policies can be set up to comply with data-retention regulations and also have the possibility of protecting your data by using storage disks that encrypt data at rest.

Telecom grade

Compuverde enables 99.999% reliability. In addition, fault recovery is extremely fast and allows for complete redundancy.

Snapshots

With Compuverde you are protected from unwanted data changes by creating manual or automatic snapshots. These snapshots are created instantaneously, will occupy the minimum amount of space and give you the ability to revert to a previous state in case of unwanted changes.

Upgrades

To increase capacity and throughput, simply add nodes of any size to the cluster, on-the-fly with no need to take the service offline. Mixed sizes are supported, so if you later decide to add larger nodes than what is used today, there is no need for "forklift" upgrades. The storage cluster will automatically rebalance, distribute existing data and utilize the new capabilities. Similarly, firmware upgrades and hardware replacements are done on-the-fly using Virtual IP to ensure continuous service.

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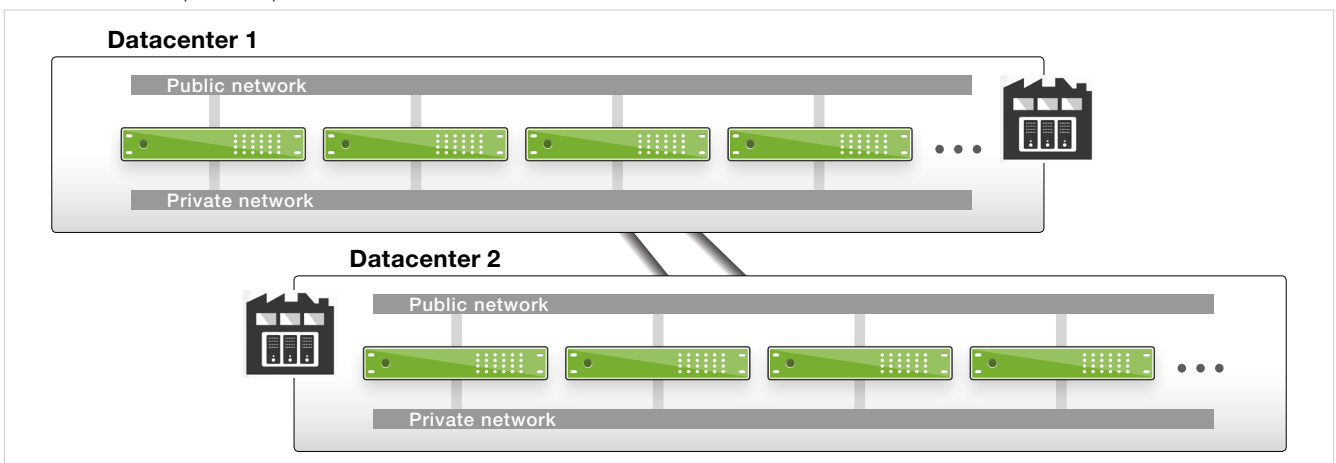
Metro Cluster

With Compuverde Metro Cluster, the storage cluster is stretched to two locations to form one truly high available storage cluster. The storage is accessible through any gateway node at any of the two locations. The two parts of the cluster – primary and secondary – communicate through a high speed connection.

With Metro Cluster, you have replication between the two data centers and both is active. You are allowed to lose one entire data center and still be up and running. Within each cluster, erasure coding gives low data footprint and at the same time good redundancy. With erasure coding Metro (n+2), you are allowed two node failures at the same time, without losing any data. In case of hardware failure, you can either resolve the issue, or the self-healing process will start after a pre-set period of time.

All nodes share the exact same functionality and responsibility. This means there is no potential hot spots or single point of failure within the storage cluster. It also scales very easy and linearly with both capacity and performance by just adding more nodes to the cluster.

Using Virtual IP, all the nodes in a cluster appear available at all times, continuing to deliver service when a node is down. The cluster will detect the failure and then assign the missing IP address to another node. This way, the IP address will still be available, while the cluster will continue to operate with the remaining nodes.



Recommended hardware specifications

CPU	x64 (4+ cores)
RAM	32+ GB
Boot disk	60+ GB
Cache disk	100+ GB NVMe SSD
Storage disks	SAS / SATA disks
Network	2 x 10 Gigabit
Network switch	2 x switches
Number of nodes	Scale out from 4 nodes

The Compuverde Management Tool requires a Windows computer (64-bit Windows 7 or later, 100 MB for installing the Management software) on the same subnet as the storage cluster back-end interface.

