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Resilient Cloud Storage

Elastic and distributed data storage system

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Advantages

Resilient Cloud Storage

The primary advantage of Resilient Cloud Storage is that unlike most of viable solutions the system has no centralized controllers, which pass all data traffic through themselves. Centralized controllers have bandwidth restrictions and become the bottleneck of the system in case of the increase in number of drive enclosures connected to them. As the limit is reached, additional controllers (high performing ones are always high priced) and drive enclosures to connect to them are needed to increase performance.

In our case in system with no centralized controllers passing data traffic through themselves clients communicate directly with drive modules and if it's necessary to increase performance or capacity of the system, additional drive modules are simply installed in scale out fashion.

This way it is possible to start with minimum necessary quantity and ramp up smoothly as the demand for capacity and/or performance grows.

Cases

Resilient Cloud Storage

Resilient Cloud Storage with its unique properties ideally fits most popular server virtualisation environments such as OpenStack, VMware, KVM, Microsoft Hyper-V, Xen as well as applications and desktops virtualisation solutions such as Citrix XenApp, XenDesktop and VMware Horizon.

Thanks to effective combination of high performance solid state drives and high capacity hard disk drives, architecture capable of scaling out both capacity and performance, solutions based on Hadoop, MSSQL, Oracle, Cassandra, MySQL/MariaDB, ElasticSearch, MongoDB, PostgreSQL show exceptional results.

Properties mentioned above, along with redundancy, carefully architected to increase availability and reliability, make Resilient Cloud Storage a perfect solution for storage of media companies' video archives, huge corporate file stores, large surveillance systems' archives as well as for archive storage of large data volumes and backups.

With simple architecture, based on unified components, you get a system which is predictable, transparent and easy to scale out. It means, that when you need to scale, your investments are fully protected and utilised.

Resilient Cloud Storage

Scalable data storage system

Elastic and distributed data storage system. By virtue of its scale-out architecture the system with several storage modules can be easily transformed into structure with several thousands of storage modules and several hundreds of petabytes of storage volume.

Elasticity and fault tolerance

The Resilient Cloud Storage solution enables administrators to add, move and remove drives, change volumes configuration without any downtimes. Software senses any changes in infrastructure and rebalances data in the network without interruptions.

Scalability and performance

The Resilient Cloud Storage solution overcomes traditional barriers of data storage systems scalability and provides ability to scale out up to hundreds of petabytes. Parallel architecture and distributed volumes allow to create massively parallel system with I/O operations performed in distributed environment. As a result, increase in number of storage modules will lead to linear system performance improvement.

Features and capabilities of
data storage system

Resilient Cloud Storage

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Scale out architecture

Architecture of system provides scalability from several units to thousands of storage modules and from several terabytes to hundreds of petabytes.

Growth of performance by scaling out

Capacity and performance of system increases linearly as additional storage modules are being added.

Automatic balancing

Allows to add, remove and maintain drive modules without downtimes. Rebalancing of data between storage modules is performed automatically in case of change in number of storage modules.

Use of different media types

System supports both HDDs and SSDs.

Integration with legacy data storage systems

It is possible to virtualize your storage systems by connecting them to Resilient Cloud Storage.

Automatic recovery

The system recovers automatically after single failure events.

Resilient Cloud Storage

List of modules

№	Part Number	Name
1	RCSC1001	Resilient Cloud Storage Coordinator 1001
2	RCSDM10118SSD6SD	Resilient Cloud Storage Data Module 1011 8 SSD 6 SD
3	RCSDM10116SSD8SD	Resilient Cloud Storage Data Module 1011 6 SSD 8 SD
4	RCSI1021	Resilient Cloud Storage Interconnect 1021
5	RCSCNI1031	Resilient Cloud Storage Control Network Interconnect 1031
6	RCSHRCI1041	Resilient Cloud Storage Hardware Remote Control Interconnect 1041
7	RCSRPCM1051	Resilient Cloud Storage Remote Power Control Module 1051
8	RCSVCA1061	Resilient Cloud Storage Virtual Connection Appliance

Resilient Cloud Storage Coordinator 1001

Purpose

Manages storage modules and coordinates their work in unified data control architecture.

Provides coordination of storage modules operation and contains information about topology, status and data distribution within storage.

Characteristics	Value
Network interfaces	2x10 Gbit SFP+ 2x1 Gbit, 1 Gbit IPMI (copper)
Power supply	One 400W power supply
Placement	In standard 19″ rack Occupies 1U
Weight	19 kg

Resilient Cloud Storage
Data Module 1011 8 SSD 6 SD

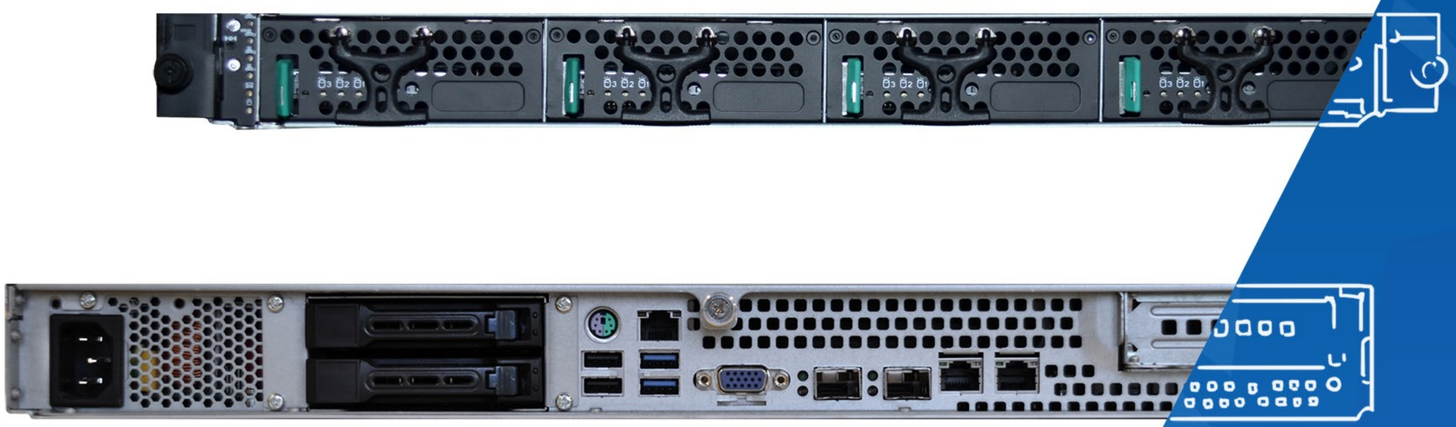
Purpose

Provides efficient data storage and management as well as high performance. Besides, the module provides such capabilities as instant data recovery, cloning, replication and snapshotting.

Characteristics	Value
Disk subsystem	6 HDDs 3.5" 8 SSDs
Usable storage space SSD	2 Tb (3 replicas) 3 replicas are placed on different storage modules
Usable storage space HDD	11 Tb (3 replicas) 3 replicas are placed on different storage modules

Characteristics	Value
Network interfaces	2x10 Gbit SFP+ 2x1 Gbit, 1 Gbit IPMI (copper)
Power supply	One 400W power supply
Placement	In standard 19" rack Occupies 1U
Weight	24 kg

Resilient Cloud Storage
Data Module 1011 6 SSD 8 SD



Purpose

Provides efficient data storage and management as well as high performance. Besides, it provides such capabilities as instant data recovery, cloning, replication and snapshotting.

Characteristics	Value
Disk subsystem	8 HDDs 3.5" 6 SSDs
Usable storage space SSD	1.5 Tb (3 replicas) 3 replicas are placed on different storage modules
Usable storage space HDD	14.7 Tb (3 replicas) 3 replicas are placed on different storage modules

Characteristics	Value
Network interfaces	2x10 Gbit SFP+ 2x1 Gbit, 1 Gbit IPMI (copper)
Power supply	One 400W power supply
Placement	In standard 19″ rack Occupies 1U
Bec	25.3 kg

Resilient Cloud Storage Interconnect 1021

Purpose

High-speed bus combines data storage modules into unified storage network.

Characteristics	Value
Network interfaces	48x10 Gbit SFP+ 4x40 Gbit QSFP+
Power supply	Two power supplies by 350W
Placement	In standard 19” rack Occupies 1U
Weight	10 kg

Resilient Cloud Storage
Control Network Interconnect 1031

Purpose

Storage system modules and controllers management bus.

Characteristics	Value
Network interfaces	48x1 Gbit (copper) 4x1 Gbit, SFP
Power supply	One power supply by 350W
Placement	In standard 19″ rack Occupies 1U
Weight	5 kg

Resilient Cloud Storage

Hardware Remote Control Interconnect 1041

Purpose

Hardware remote management bus.

Provides an ability to manage electrical power and console access remotely and independently of main management network of storage modules and controllers.

Characteristics	Value
Network interfaces	48x1 Gbit (copper) 4x1 Gbit, SFP
Power supply	One power supply by 350W
Placement	In standard 19″ rack Occupies 1U
Weight	5 kg

Resilient Cloud Storage
Remote Power Control Module 1051

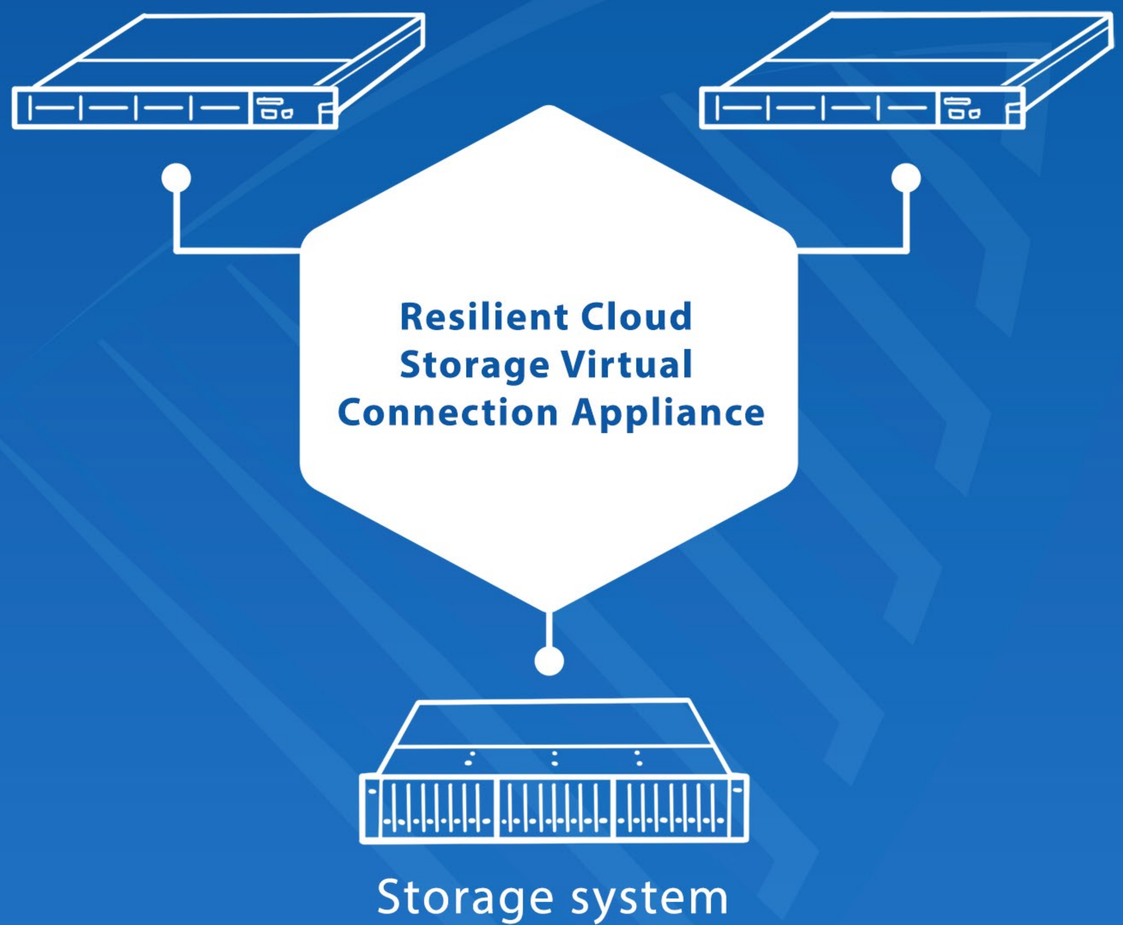
Purpose

Allows to restart and switch remotely installed hardware on and off.

Module with automatic power source switching capability. Switchable outlets and LAN interface (Ethernet) allow management of single outlets in real time or in accordance with defined program.

Characteristics	Value
Placement	In standard 19″ rack Occupies 1U
Weight	5 kg
Outlets types	10 outlets (8 controlled outlets C13 type 2 uncontrolled outlets C19 type)

Resilient Cloud Storage
Virtual Connection Appliance



Purpose

Provides interconnection between virtual infrastructure and storage system.

Characteristics	Value
Interface type	VMware Virtual Appliance
Module type	Software

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RCNTEC ensures operation of telecommunication networks and information systems and helps hundreds of thousands of people all over the world work effectively.

The company that has built and maintains telecommunication networks that span thousands of kilometers in some of the most hardly accessible corners of Russia.

The one that has created and operates “humanless” fully remotely operated Data Centers.

The company that has developed and runs sophisticated monitoring system that allows to manage quality of rendered services.

The one, whose customers are top high-tech companies in oil and gas industry, mining, medicine, retail, software development, government and municipal agencies.

Unusual Startup with more than twenty years of history.

Today it is a global company with presence in more than 80 cities across Russia and EU constantly exploring and developing new solutions, building new products, opening up new directions and markets. It is a global team with more than 1000 people.

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