

# High Availability KVM

Rock-Solid Reliability for cPanel and Core-Managed Virtualized Servers

## Technical Overview

### How does it work?

A High Availability KVM Instance (HA KVM) uses two parent servers and one virtual instance to provide improved uptime and data redundancy. You'll have access to the virtual instance, which behaves exactly like a regular server. It's where, for example, Apache, MySQL, and all of your content is hosted. That virtual instance is replicated between the two parents, which are configured as an active/hot spare pair. This means that one parent is active at a time and the other is ready (with a copy of all of your data) to take over immediately in case of catastrophic hardware failure. Because the entire instance fails over, all of your IPs and service configurations are preserved during failover; the instance that starts on the hot standby during failover is identical to the one that was running on the active parent.

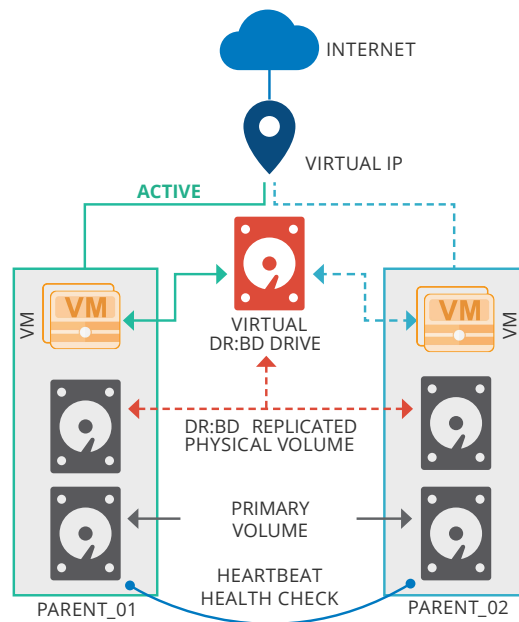
One important note is that failover, whether unexpected in the case of hardware failure or expected in case of planned maintenance, does require a reboot of the instance. However, a reboot incurs far less downtime than a typical hour-long maintenance window or emergency maintenance in the case of hardware failure. Additionally, virtual instances typically boot much more quickly than dedicated hardware.

### How is data replicated?

Instance data is replicated instantly between the parent servers over a dedicated network connection. To achieve this, we use Linbit's enterprise grade software Distributed Replicated Block Device (DRBD). The replication is synchronous, which means that if data is successfully written to disk on your instance, it has been written to the hot spare as well.

### What happens if the active node fails?

Proven High Availability software Heartbeat is running on both of the parent nodes, waiting to detect catastrophic failure. When an active node failure is detected, the hot spare will boot your instance. Since all of your data is being replicated synchronously, every bit of data which was written to disk prior to the fault will be available for you once the instance comes online. Besides hardware failure, our support technicians and Sonar Monitoring team are standing by 24/7/365 to take action anytime an issue is detected with failover or if your instance becomes unresponsive.



**When reliability is the No. 1 priority for your virtualized server, High Availability KVM is the best solution. Liquid Web offers two core classes of this product to satisfy your infrastructure needs:**

BUSINESS CLASS	ENTERPRISE CLASS
Standard Hard Drives	Hot-Swappable Hard Drives
Single Power Supply	Redundant Power Supplies
1G Bonded Connection for DRBD	10G Connection for DRBD
Dynamic Page Loads per second*: 40	Dynamic Page Loads per second*: 100
Random Write IOPS**: 20,000	Random Write IOPS**: 120,000

\* Results recorded by simulating 600 simultaneous clients requesting a default installation of WordPress for 60 seconds.

\*\* Direct I/O, random 4k writes using iозone.