Parallels Cloud Server 6.0

Readme

July 11, 2014

Contents

About This Document

This document provides the first-priority information about Parallels Cloud Server 6.0 and supplements the included documentation.

About Parallels Cloud Server 6.0

Parallels Cloud Server 6.0 is a virtualization solution that allows you to simultaneously run Parallels virtual machines and containers on the same physical server, thereby making more efficient use of your server's hardware resources.

System Requirements

The system requirements slightly change depending on whether you will deploy Parallels Cloud Server 6.0 as a stand-alone installation or as part of a Parallels Cloud Storage cluster.

Requirements for Standalone Installations

The hardware and software requirements for running Parallels Cloud Server 6.0 as a standalone installation are as follows:

- **Platform**: x86 or x86-64 platform with Intel VT-x or AMD-V hardware virtualization support.
- **CPU**: 1.5 GHz or faster (a 64-bit processor is required for launching 64-bit guest operating systems).
- **Memory**: 2 GB of RAM (4 GB or more recommended).
- **Hard disk**:
    - *root (/)*: 10-12 GB.
    - `/vz`: 30 GB or more (usually all the remaining free disk space), must be formatted to ext3.
    - *swap*: based on RAM, as per table below:

RAM	swap
up to 4 GB	2 GB
4-16 GB	4 GB
16-64 GB	8 GB
64-256 GB	16 GB
256-512 GB	32 GB

- **Network**: 1 or more Ethernet cards (1 Gbps or faster).
- **Other hardware**: DVD-ROM drive.

- **Operating system**: None. Parallels Cloud Server 6.0 is installed directly on the server hardware.

Both the actual number of virtual machines and Containers you can run on a physical server and their performance depend on required resources. In general, the more resources your physical server has, the more virtual machines and Containers you can run and the higher their performance will be.

Requirements for Servers in Parallels Cloud Storage Clusters

If you plan to deploy a Parallels Cloud Storage cluster, make sure your servers meet the requirements below.

Metadata Servers

A metadata server must meet the following requirements:

- **Software**: Parallels Cloud Server 6.0.
- **RAM**: 1 GB per each 100 TB of storage.
- **Disk space**: 20 GB or more.
- **Network**: 1 or more Ethernet adapters (1 Gbps or faster); a static IP address for each Ethernet adapter.

Chunk Servers

A chunk server must meet the following requirements:

- **Software**: Parallels Cloud Server 6.0.
- **RAM**: 1 GB or more.
- **Disk space**: 100 GB or more.
- **Network**: 1 or more Ethernet adapters (1 Gbps or faster).

Clients

A chunk server must meet the following requirements:

- **Software**: Parallels Cloud Server 6.0.
- **Network**: 1 or more Ethernet adapters (1 Gbps or faster).

There are no special requirements to the CPU, RAM, and disk space that must be available on a client, except for the general recommendations for running Parallels Cloud Server. However, at least 16 GB of RAM are recommended.

Network

Your network must:

- operate at 1 Gbps or faster,

- have non-blocking Ethernet switches.

> **Note:** For more information on Parallels Cloud Storage requirements, see the *Parallels Cloud Storage Administrator's Guide*.

Supported Guest Operating Systems

Listed below are the operating systems that have been tested in virtual machines and Containers and are officially supported in Parallels Cloud Server 6.0.

Virtual Machines

Windows

- Windows Server 2012 R2
- Windows Server 2008 R2 with Service Pack 1 (x64)
- Windows Server 2003 R2 with Service Pack 2 (x86, x64)

Linux

- Red Hat Enterprise Linux 6.x (x86, x64)
- Red Hat Enterprise Linux 5.x (x86, x64)
- Fedora 20 (x86, x64)
- Fedora 19 (x86, x64)
- Fedora 18 (x86, x64)
- Fedora 17 (x86, x64)
- Fedora 16 (x86, x64)
- CentOS 6.x (x86, x64)
- CentOS 5.x (x86, x64)
- SUSE Linux Enterprise Server 11 with Service Pack 2 (x86, x64)
- SUSE Linux Enterprise Server 10 (x86, x64)
- openSUSE 12.x (x86, x64)
- Debian GNU/Linux 7.0 (x86, x64)
- Debian GNU/Linux 6.0 (x86, x64)
- Ubuntu 14.04 (x86, x64)
- Ubuntu 13.10 (x86, x64)
- Ubuntu 13.04 (x86, x64)
- Ubuntu 12.10 (x86, x64)
- Ubuntu 12.04 (x86, x64)

- Ubuntu 11.10 (x86, x64)
- Ubuntu 10.04 (x86, x64)

FreeBSD

- FreeBSD 10 (x86, x64)
- FreeBSD 9 (x86, x64)

Containers

- Red Hat Enterprise Linux 7.x (x64)
- Red Hat Enterprise Linux 6.x (x86, x64)
- Red Hat Enterprise Linux 5.x (x86, x64)
- Fedora 20 (x86, x64)
- Fedora 19 (x86, x64)
- Fedora 18 (x86, x64)
- Fedora 17 (x86, x64)
- Fedora 16 (x86, x64)
- CentOS 6.x (x86, x64)
- CentOS 5.x (x86, x64)
- SUSE Linux Enterprise Server 11 with Service Pack 2 (x86, x64)
- openSUSE 12.x (x86, x64)
- Debian GNU/Linux 7.0 (x86, x64)
- Debian GNU/Linux 6.0 (x86, x64)
- Ubuntu 14.04 (x86, x64)
- Ubuntu 13.10 (x86, x64)
- Ubuntu 13.04 (x86, x64)
- Ubuntu 12.10 (x86, x64)
- Ubuntu 12.04 (x86, x64)
- Ubuntu 11.10 (x86, x64)
- Ubuntu 10.04 (x86, x64)

Installing Parallels Cloud Server 6.0

To install Parallels Cloud Server 6.0, follow these steps:

1 Depending on your installation type, configure the server to boot from the DVD-ROM, USB driver, or over the network.

2 Boot the server.

3 Follow the on-screen instructions to install Parallels Cloud Server.

For the complete installation instructions, see the *Parallels Cloud Server 6.0 Installation Guide* and the *Installation via PXE Server* guide.

Starting to Work with Parallels Cloud Server 6.0

After you have successfully installed the product and restarted the physical server, you can use one of the following ways to start working with Parallels Cloud Server 6.0:

- using the command-line utilities,
- using Parallels Virtual Automation.

Managing Parallels Cloud Server with the Command-line Utilities

Parallels Cloud Server 6.0 provides a set of command-line utilities for managing Parallels virtual machines and containers both locally and remotely.

- To manage virtual machines and Containers locally—that is, from the same server on which Parallels Cloud Server 6.0 is installed—log in to the server as root using the password you have provided during installation.
- To manage virtual machines and Containers remotely, connect to Parallels Cloud Server 6.0 (e.g., via SSH) using the IP address indicated on the server's welcome screen. Log in to the server as root using the password you have provided during installation.

After logging in to the server, you can start managing Parallels virtual machines and Containers with the following command-line utilities:

- `prlctl`: use this utility to perform day-to-day operations and migrate virtual machines and Containers.
- `pstorage`: use this utility to create, manage, and monitor Parallels Cloud Storage clusters.
- `pstat`: use this utility to collect statistics on your virtual machines and containers.

For more information on these and other utilities, see their respective man pages.

Managing Parallels Cloud Server with Parallels Virtual Automation

Parallels Virtual Automation is a Web interface you can use to remotely manage Parallels Cloud Server 6.0. Parallels Virtual Automation is automatically set up during Parallels Cloud Server installation if you select the **Install PVA Agent for Parallels Server** and **Install PVA Management Node** check boxes in the Parallels Cloud Server installer.

To connect to a server using Parallels Virtual Automation, do the following:

1 On any computer that can access Parallels Cloud Server over network, launch a supported Web browser.

2 Visit the IP address or hostname of the Container acting as the Master Server (configured during installation).

3 Log in to the Master Server as root using the password you have provided during installation.

For more information on managing Parallels Cloud Server with Parallels Virtual Automation, consult the *Parallels Virtual Automation Administrator's Guide*.

Changelog

Parallels Cloud Server 6.0

What's New

- **Parallels Cloud Storage.** Parallels Cloud Server 6.0 introduces Parallels Cloud Storage, a solution allowing you to quickly and easily transform low-cost commodity storage hardware and network equipment into a protected enterprise-level storage, like SAN and NAS.

  Parallels Cloud Storage is optimized for storing large amounts of data and provides replication, high-availability, and self-healing features for your data. Using Parallels Cloud Storage, you can safely store and run Parallels virtual machines and Containers, migrate them with zero downtime, provide high availability for your Parallels Cloud Server installations, and much more.

- **Container-in-an-image-file layout.** In Parallels Cloud Server 6.0, the Container layout has been redesigned to store all files in a single image (similar to a virtual machine's hard disk). Such standalone nature:

  - Enables easier migrations and backups due to a faster sequential I/O access to Container images than to separate Container files.

  - Removes the need for OS and application templates once a Container is created.

  - Allows the use of native Linux disk quotas that are journaled and does not require quota recalculation after disasters like server crashes.

- **Memory and IOPS deduplication.** Parallels Cloud Server 6.0 introduces support for memory and IOPS deduplication. Identical files in multiple Containers are efficiently cached to help eliminate memory and I/O bottlenecks, increase the number of running Containers per Parallels server, and reduce the starting times of multiple similar Containers.

- **Rebootless updates.** Parallels Cloud Server 6.0 supports rebootless updates. During a rebootless update, all running virtual machines and Containers are suspended and resumed rather than shut down and started. This greatly reduces their downtime and virtually eliminates the service outage or interruption for end users.

- **Console access to Containers.** Parallels Cloud Server provides you with the possibility to get access to the Container console. Using the console, you can log in to a Container if it is running or view the progress of the startup and shutdown processes.

- **Updates with yum.** Parallels Cloud Server 6.0, the `vzup2date` utility has been replaced with the standard `yum` utility, greatly simplifying the procedure of updating all components of your system.

- **Containers with preinstalled application templates.** In Parallels Cloud Server 6.0, you can preinstall application templates to OS EZ template caches to speed up creating multiple Containers based on the same set of OS and application templates.

- **Virtual machines with 32 CPU cores, 128 GB of RAM, and 5 TB of disk space.** In Parallels Cloud Server 6.0, you can create virtual machines with up to 32 CPU cores, 128 GB of RAM, and 5 TB of virtual disk space.

- **Support for Open vSwitches.** Parallels Cloud Server 6.0 comes with support for Open vSwitches, multi-layer software network switches that are well suited to function as virtual switches in virtualized environments, providing virtual machines and containers with network connectivity.

- **CPU identification masks for virtual machines.** In Parallels Cloud Server 6.0, you can control the CPU features available to virtual machines, allowing their migration between servers with different CPU feature sets.

- **Virtual machine configuration samples.** In Parallels Cloud Server 6.0, you can quickly and easily change the configuration of a virtual machine by applying a new configuration sample file to it, without the need to manually change all its settings.

Known Issues and Restrictions

- Xen virtual machines cannot be migrated to Parallels virtual machines (#PSBM-12122).

- A Linux virtual machine with less than 4 GB of RAM may hang on start-up. To work around the problem, use the `iommu=soft` option when booting the virtual machine. For details, see http://kb.parallels.com/en/114764 (#PSBM-11807).

- Creating a virtual machine in Parallels Cloud Server 6.0 set up in a Parallels Desktop for Mac virtual machine may take a long time (#PSBM-8528).

- You may fail to assign IPv6 addresses to virtual machines running certain Linux operating systems (e.g., CentOS 5.6). To work around the problem, enable IPv6 support in the guest operating system (e.g., by editing the `/etc/modprobe.conf` file). For more details, see http://kb.parallels.com/en/112044 (#PSBM-8344).

- Converting a Hyper-V virtual machine to a Parallels virtual machine may fail. To work around the problem, use the `--allow-no-os` option when converting the virtual machine (#PSBM-7201).

- Creating a cache with updates may fail for containers that run Red Hat Enterprise Linux 5 (#PSBM-15707).

- Running the Iometer tool in a virtual machine with Windows and a small amount of RAM may cause the virtual machine to crash. To work around the problem, increase the amount of RAM or swap allocated to the virtual machine (#PSBM-15403).

- Rebooting several servers in a Parallels Cloud Storage cluster simultaneously may cause the servers to hang. To work around the problem, restart one server at a time (#PSBM-14749).

- It is impossible to use the iptables functionality on physical servers with Open vSwitch bridges enabled (#PSBM-14334).

- Traffic shaping may not work for bridged virtual network adapters on physical servers with Open vSwitch enabled (#PSBM-14260).

- The Bash `echo` command does not report an error when trying to write to a file located on a Parallels Cloud Storage cluster, even if the cluster does not have enough free space (#PSBM-12621).

- The ebtables rules are flushed after restarting the `ebtables` service (#PSBM-15641).

- Backing up a virtual machine with large virtual disks stored on an LVM partition may take a long time (#PSBM-14971).

- Setting encrypted passwords for containers that run Ubuntu 10.04 is not supported. To work around the problem, set the password in plain text. For more details, see http://kb.parallels.com/en/114759 (#PSBM-14886).

- Running virtual machines with Windows Server 2012 and Windows 8 is supported only on servers that have CPUs with the NX (No-eXecute) feature enabled. For details, see http://kb.parallels.com/en/114760 (#PSBM-14837).

- On systems upgraded from Parallels Server 4 Bare Metal to Parallels Cloud Server 6.0, `prlctl list -a` may not show the IP addresses of container-bridged network adapters. To view such IP addresses, use the `vzlist -o IP` command #PSBM-14528).

- Soft lockups in the Linux kernel, up to version 2.6.37, may occur on stopping virtual machines. For more information, see http://kb.parallels.com/en/114761 (#PSBM-13963).

- Creating snapshots of a Container that has at least one `prlctl enter` or `prlctl exec` session open is not supported. To make a snapshot, close the open sessions first (#PSBM-11871).

- Using the WMI console is not supported in Windows virtual machines that you enter with the `prlctl enter` command. For more information on how to work around the problem, see http://kb.parallels.com/en/114766 (#PSBM-9811).

- Parallels Cloud Server may freeze a container trying to consume more disk space than you allocated to it. To solve the problem, increase the amount of disk space for the affected Container (#PSBM-12213).

- The `prlctl` utility does not support certain for Containers that were supported by `vzctl` in the previous versions of Parallels Server Bare Metal. To work around the problem, use the `vzctl` utility instead.

- The offline management feature does not work for Containers operating in the bridged networking mode. For details, see the KB article at http://kb.parallels.com/en/111356.

- The offline management feature might not work for running virtual machines that operate in the bridged networking mode. The reason for this is that the destination MAC address in incoming offline management packets is changed when the packets are processed on the Parallels server. As a result, the processed packets contain a source MAC address different from the destination one in incoming packets and might be dropped by your router.

  To solve the problem, reconfigure the router to accept packets with the same IP address but different MAC addresses. As an alternative, you can set the network adapter of a virtual machine to operate in the host-routed mode.

Parallels Cloud Server 6.0 Update 1

What's New

- Tier support in Parallels Cloud Storage clusters (#PSBM-10645).

- Support for EFI BIOS in virtual machines running Windows operating systems (#PSBM-11117).

- A way to set passwords for the VNC console securely (#PSBM-15494).

- Improved chunk allocation randomization and balancing of reads for better and more scalable performance.

Bug Fixes

- Under certain conditions, upgrading Parallels Server Bare Metal 5.0 to Parallels Cloud Server 6.0 could fail (#PSBM-16945).

- The man pages for Parallels Cloud Storage did not offer information about configuration parameters (#PSBM-17005).

- A Container could fail to start due to an error after modifying the `/etc/resolve.conf` file (#PSBM-17072).

- The virtual image block devices of different containers could have the same UUIDs under certain conditions (#PSBM-17163).

- For ploop-based Containers, the `vzmigrate` utility did not keep the Container's private folder in `<CT_PrivateArea>.migrated` (#PSBM-17171).

- A chunk server could not use the repositories specified in the `/etc/pstorage/clusters/<cluster_name>/bs.list` file (#PSBM-17369).

- The `max_offline_cs` parameter was replaced with the `max_offline_hosts` parameter for convenience (#PSBM-17311).

- Under certain conditions, the `numabalanced` daemon could become non-operational (#PSBM-17461).

- The `pstorage-hwflush-check` utility could report errors even if a client was functioning properly (#PSBM-17586).

- The `pstorage make-cs` and `pstorage make-mds` commands could fail to operate on existing but empty repositories (#PSBM-17587).

- The `pstorage mnt-top` command could fail on reads from request files (#PSBM-17618).

- The de-duplication daemon (`pfcache`) could become non-operational under certain conditions (#PSBM-17778).

- Under certain conditions, the temporary Container snapshot created during backup could not be merged back after backup (#PSBM-17786).

- A number of fixes for minor issues (#PSBM-15483, #PSBM-16818, #PSBM-16822, #PSBM-16878, #PSBM-16903, #PSBM-16994, #PSBM-17255, #PSBM-17272, #PSBM-17473, #PSBM-17487).

Parallels Cloud Server 6.0 Update 2

What's New

- Greatly improved Parallels Cloud Storage performance in 10GbE clusters (#PSBM-17158, #PSBM-17709, #PSBM-17852).

- Improved Parallels Cloud Storage DNS TXT discovery during kickstart installations (#PSBM-17573).

- Now a warning is issued if there are not enough chunk servers with unique `host_id` (based on the max-host-replicas parameter) (#PSBM-17844).

- Fixed Parallels Cloud Storage license auto-renewal (#PSBM-18269).

- Fixed Parallels Cloud Storage replication settings changes blocking writes until replicated if previous min replicas parameter was too low (#PSBM-18489).

- Fixed Parallels Cloud Storage authentication with a non-default umask (#PSBM-18819).

- Improved performance of Windows virtual machines in Parallels Cloud Storage (#PSBM-18983)

- Introduced Parallels Cloud Storage performance history in the `stat -F` command.

- Changed the recommended configuration for Parallels Cloud Storage to individual hard drives over hardware RAID with or without SSD for the journal/cache.

- Introduced new Parallels Cloud Storage performance counters in `top` and `stat` commands (QDepth, RMW, JFull).

Bug Fixes

- Container migration from Parallels Cloud Server to Parallels Virtuozzo Containers 4.0 could fail (#PSBM-17182).

- Listing virtual servers residing in Parallels Cloud Storage could take too long (#PSBM-17761, #PSBM-18035).

- `pfcached` could overflow system log in case of issues with the `pfcache` image (#PSBM-17780).

- Compacting virtual machine's disk image could be non-effective under certain conditions (#PSBM-17818).

- Incoming traffic to virtual machines could be corrupted (#PSBM-17889).

- Two default gateways could be in Debian/Ubuntu-based Containers under certain conditions (#PSBM-18000).

- Virtual machines crashed on servers with AMD processors (#PSBM-18094, #PSBM-18505, #PSBM-18515).

- Virtual machines residing in Parallels Cloud Storage did not start due to the lack of disk space on the system partition (#PSBM-18268).

- Ploop image could become corrupted after Container migration (#PSBM-18293).

- Could not create virtual machines from templates located on shared storage but registered on a different Node (#PSBM-18471).

- "Unknown" commands inside virtual machine's log file (#PSBM-18524).

- Virtual machines failed to resume (#PSBM-18532).

- Virtual machines crashed under certain conditions (#PSBM-18592).

- ARP entries related to migrated Containers could remain on the source server after migration (#PSBM-18674).

- Migration of virtual machines over Parallels Cloud Storage could fail (#PSBM-18675).

- The Parallels Cloud Server installer could ask for Chunk Server mount point even if the Chunk Server role was not selected (#PSBM-19024).

Parallels Cloud Server 6.0 Update 3

What's New

- **High Availability for Parallels Cloud Storage clusters** (#PSBM-13291). High Availability keeps virtual machines and Containers operational even if the Hardware Node they are hosted on fails. In such cases, the affected virtual environments continue working on other, healthy Hardware Nodes in the cluster. High Availability is ensured by:

  - Replication of metadata servers. For a Parallels Cloud Storage cluster to function, not all but just the majority of MDS servers must be up. By setting up multiple MDS servers in the cluster you will make sure that if an MDS server fails, other MDS servers will continue controlling the cluster.

  - Replication of data. All data chunks are replicated and the replicas are kept on different chunk servers. If a chunk server fails, other chunk servers will continue providing the data chunks that were stored on the failed server.

  - Monitoring of Hardware Nodes' health.

- **Basic Dynamic Resource Scheduling** (#PSBM-19150). Dynamic Resource Scheduling (DRS) provides load balancing for the High Availability feature in the Parallels Cloud Storage cluster and ensures that:

  - Virtual environments, which were moved from a failed Hardware Node to a healthy one, are returned to the original Hardware Node once it is up again.

  - Running virtual environments are spread across Hardware Nodes according to Nodes' license capacity. For example, if there are more virtual environments running on a Hardware Node than its license allows, the 'extra' virtual environments will be moved to the Node which is the least occupied in terms of license capacity.

- **Online conversion of VZFS4-based Containers to the Container-in-an-image-file (ploop) layout** (#PSBM-18696). Using the `vzmigrate --convert-vzfs --online` command, you can now convert VZFS4-based Containers to the Container-in-an-image-file (ploop) layout without restarting them. Source servers running the following Parallels products are supported:

  - Parallels Virtuozzo Containers for Linux 4.6 (TU-4.6.0-254),

- Parallels Virtuozzo Containers for Linux 4.7 (TU-4.7.0-310),
- Parallels Server Bare Metal 5 Update 9,
- Parallels Cloud Server 6.0 Update 3.

Bug Fixes

- Could not migrate a Container online or configure iptables in that Container if the `connlimit` rule was set in the iptables configuration file (#PSBM-17553).
- SSD/HDD read balancing was required inside CS (#PSBM-17791).
- Resuming a suspended Container could fail on `vz` restart (#PSBM-17995).
- Parallels Cloud Server documentation was only available after product installation (#PSBM-18949).
- Virtual machines relocated from a failed Hardware Node were reported as running by the `shaman` utility while being, in fact, unregistered (#PSBM-19076).
- DNS resolver did not use all available methods to obtain the default domain names (#PSBM-19540).
- Two sockets in `/var/run/vzevents` could cause tools to hang (#PSBM-19765).
- File leases stuck after MDS master change prevented virtual machines and Containers from being started, migrated, or backed up (#PSBM-19814).
- Container registration issues after migration between Hardware Nodes in a Parallels Cloud Storage cluster (#PSBM-19855).
- P2V migration could fail due to segmentation fault (#PSBM-19931).
- Restarting the master MDS could cause virtual machines to stop (#PSBM-19978).
- Sporadic replication could go on for hours after CS reboot (#PSBM-20007).
- A number of other minor issues (#PSBM-16846, #PSBM-16880, #PSBM-16988, #PSBM-18267, #PSBM-18511, #PSBM-18581, #PSBM-18636, #PSBM-18695, #PSBM-18737, #PSBM-18988, #PSBM-19103, #PSBM-19229, #PSBM-19255, #PSBM-19280, #PSBM-19373, #PSBM-19395, #PSBM-19399, #PSBM-19400, #PSBM-19401, #PSBM-19423, #PSBM-19426, #PSBM-19461, #PSBM-19463, #PSBM-19473, #PSBM-19495, #PSBM-19505, #PSBM-19506, #PSBM-19583, #PSBM-19620, #PSBM-19656, #PSBM-19681, #PSBM-19767, #PSBM-19768, #PSBM-19808, #PSBM-19813, #PSBM-19833, #PSBM-19838, #PSBM-19864, #PSBM-19915, #PSBM-19969, #PSBM-19973, #PSBM-20171, #PSBM-20210, #PSBM-20248).

Parallels Cloud Server 6.0 Update 3 Hotfix 2

Bug Fixes

- Unnecessary warnings in Parallels Cloud Storage logs if the number of CSes was higher than the number of required replicas (#PSBM-20472).

- Parallels service could become unresponsive when trying to merge old backup snapshots. Also, if a virtual machine had a disk named `<dir_name>`.hdd/`<disk_name>`.hdd, backup snapshots remained unmerged after backup (#PSBM-20611).

- Graceful shutdown of a node could cause relocation of its resources (#PSBM-20698).

- Space overusage due to MDS not recognizing overcommited chunks (#PSBM-20893).

- A local DoS exploit in the latest 2.6.32 kernels (#PSBM-20912).

Parallels Cloud Server 6.0 Update 3 Hotfix 3

Bug Fixes

- A virtual machine with a BusLogic SCSI HDD's emulation type could fail to boot (#PSBM-20946).

- Under certain circumstances, a memory allocation failure could cause network configuration related activities to hang due to a missing lock release on the particular error path (#PSBM-21008).

- Parallels Tools could not be installed in a virtual machine with the latest CentOS 5 operating system inside (#PSBM-21029).

Parallels Cloud Server 6.0 Update 3 Hotfix 4

Bug Fixes

- Filesystem errors after tests (#PSBM-21123).

- Dynamic Resource Scheduling not working due to SNMP issues (#PSBM-21132).

- Online migration could fail for virtual machines created using Parallels Virtual Automation (#PSBM-21217).

- Hardware Node could reboot if time on it had been set back (#PSBM-21224).

- An unclear error message was shown after attempting to apply settings to a migrated virtual machine (#PSBM-21274).

Parallels Cloud Server 6.0 Update 3 Hotfix 5

Bug Fixes

- RTNL messages were in the wrong order on virtual machine start (#PSBM-20777).

Parallels Cloud Server 6.0 Update 4

What's New

- **Support for 16TB virtual hard disks in Containers and virtual machines** (#PSBM-15670). Introduced in this update, the ploop v2 format removes the 2-terabyte disk space

limitation and allows creating up to 16-terabyte ploop images for Containers and virtual machines. Newly created Containers use the ploop v2 format by default.

- **Support for NFSv4.* mounts in Containers** (#PSBM-17793). You can enable NFSv4 support on a Hardware Node by running the `sysctl -w fs.nfs.nfs4_ct_enable=1` command. To make sure the NFSv4 support remains enabled after Node reboot, add the `fs.nfs.nfs4_ct_enable=1` line to `/etc/sysctl.conf`.

  Next time a resource is mounted, Parallels Cloud Server will automatically choose the latest NFS version supported by both the server and client.

- **Support for failure domains in Parallels Cloud Storage** (#PSBM-20618). A failure domain is a set of services which can fail in a correlated manner. Due to correlated failures it is very critical to scatter data replicas across different failure domains for data availability.

  Every Parallels Cloud Storage service component now has topology information assigned to it. Topology paths define a logical tree of components—physical locations consisting of 5 identifiers which are referred to as `room.row.rack.host.CS`. The first 3 topology path components (`room.row.rack`) can be configured by user via `/etc/pstorage/location` configuration files. The last 2 components (`host.cs`) are auto-generated and should not be modified by user. The unique host identifier is randomly generated during installation and located at `/etc/pstorage/host_id`. CS is a unique service identifier generated upon CS creation.

- **Support of HDD hot plugging and unplugging to easily add new or replace failed HDDs** (#PSBM-20760). Introduced in this update is `pstorage-hotplug`, a set of scripts which use `udev` and enable you to automatically create and start a CS on an HDD hot plug event and stop a CS on an HDD hot unplug event (stopped CSes need to be deleted manually). The HDDs in question must be detected by the operating system and not work via a RAID controller.

> **Note:** Special considerations apply to sharing SSD write cache between running CSes. This functionality is not implemented yet, so CSes with SSD journals will not be started automatically on disk hotplug.

Bug Fixes

- Offline migration of ploop Containers resulted in much longer downtime compared to VZFS Containers (#PSBM-19407).

- Unfinished operations prevented virtual machines from booting for much too long (#PSBM-20157).

- `prl_convert` could fail with the `RESIZER_REPAIR_FS_VOLUME_ERROR` error (#PSBM-20300).

- Could not backup virtual machines with attached physical HDDs (#PSBM-20366).

- Backing up a virtual machine could fail if its virtual hard disk was being compacted (#PSBM-20607).

- Online migration failures were reported in Parallels Virtual Automation only after 24 hours if the source and destination nodes had no swaps configured (#PSBM-20622).

- Online migration could fail for virtual machines created in Parallels Virtual Automation (#PSBM-20687).

- Impossible to have EID unchanged during Container migration (#PSBM-20717).

- Dispatcher could hang after backup failure (#PSBM-21919).

- A number of other minor issues (#PSBM-18017, #PSBM-18267, #PSBM-18902, #PSBM-19176, #PSBM-19512, #PSBM-19805, #PSBM-19885, #PSBM-19999, #PSBM-20006, #PSBM-20022, #PSBM-20079, #PSBM-20353, #PSBM-20374, #PSBM-20564, #PSBM-20613, #PSBM-20640, #PSBM-20678, #PSBM-20685, #PSBM-20714, #PSBM-20756, #PSBM-20799, #PSBM-20885, #PSBM-20906, #PSBM-20913, #PSBM-21014, #PSBM-21205, #PSBM-21358, #PSBM-21397, #PSBM-21516, #PSBM-22083).

Parallels Cloud Server 6.0 Update 4 Hotfix 2

Bug Fixes

- Online Container migration could freeze (#PSBM-22372).

- MDS could hang during license update (#PSBM-22373).

- MDS could be running in the `unavail` state (#PSBM-22379).

- Added Microsoft-signed drivers to Parallels Cloud Server 6.0 (#PSBM-22388).

- MDS server could fail to start after update to Update 4 (#PSBM-22422).

- The `/vz` partition could freeze after backup (#PSBM-22710).

- Update could fail due to `initramfs` image corruption (#PSBM-22715).

- MDS could exit due to a bug (#PSBM-22774).

- Incorrect `df` output from `pstorage` after update to Update 4 (#PSBM-22803).

Parallels Cloud Server 6.0 Update 4 Hotfix 3

Bug Fixes

- Ploops did not work on HDDs with 4096-byte sectors (#PSBM-21987).

- Dispatcher could crash on restart (#PSBM-22175).

- The elapsed time of new processes was shown incorrectly after `vzreboot` (#PSBM-22925).

- Incorrect calculation in `ploop_ioff_to_sec` for ploops over 2TB (#PSBM-23054).

Parallels Cloud Server 6.0 Update 5 (SP1)

What's New

- **16 TB virtual hard disks** (#PSBM-15670). The maximum size of virtual hard disks supported by Containers and virtual machines has increased to 16 TB.

- **The new global memory consumption limit** (#PSBM-17887). The new limit makes sure that no backup, restore, or migration operation will occupy too much of the Node's memory, potentially leading to an out-of-memory situation. You can set it via the VZ_TOOLS_MEMLIMIT parameter of the global configuration file /etc/vz/vz.conf.

- **The new user-friendly list of chunk and metadata server paths** (#PSBM-20877). Using the `pstorage list-services` command, you can now easily locate CS and MDS servers on storage devices attached to your Parallels Cloud Storage cluster.

- **The new DRS relocation mode for High Availability clusters** (#PSBM-21305). In the new resource relocation mode, virtual machines and Containers which were running on a failed Hardware Node are relocated to healthy Nodes based on available RAM and license capacity.

Bug Fixes

- Required libraries were missing in the Parallels Transporter installer for Parallels Virtuozzo Containers for Windows (#PSBM-20968).

- The `vzpkg update` command could fail to install new packages added to an EZ template (#PSBM-21459).

- The `prlctl exec` command could hang in POA installations (#PSBM-22075).

- `dd oflag=dsync` worked slowly in ploop Containers if the ploop grew (#PSBM-22381).

- Shared migration could fail because a Container with the same ID or root path could exist at destination (#PSBM-22889).

- Unable to fill a pre-allocated image above 2TB (#PSBM-22961).

- A non-sparse ploop image could become sparse during migration (#PSBM-22993).

- `vzreboot` could cause soft lockups (#PSBM-23189).

- Parallels Virtual Automation could show incorrect placement of relocated resources (#PSBM-23202).

- Container replication issues on hard disk failure (#PSBM-23325).

- No callback from parallels-server to PACI IM after migration or backup (#PSBM-23338).

- Virtual machine restoration could be slowed by processing of devices listed in `/proc/devices` (#PSBM-23489).

- A number of minor issues (#PSBM-15095, #PSBM-20022, #PSBM-20250, #PSBM-20614, #PSBM-20905, #PSBM-21109, #PSBM-21111, #PSBM-21309, #PSBM-21891, #PSBM-21894, #PSBM-21937, #PSBM-22083, #PSBM-22215, #PSBM-22240, #PSBM-22374, #PSBM-22376, #PSBM-22392, #PSBM-22492, #PSBM-22707, #PSBM-22778, #PSBM-22780, #PSBM-22828, #PSBM-22879, #PSBM-23037, #PSBM-23097, #PSBM-23229, #PSBM-23505, #PSBM-23523, #PSBM-23532).

Known Issues and Restrictions

- Could not migrate a physical server with a 16TB HDD running CentOS 6.4 x64 to a virtual machine (#PSBM-21244).

- Could not migrate a Container with over 2TB of data to a virtual machine (#PSBM-21613).

- On 32-bit Linux guest operating systems, the maximum size of a virtual hard disk was limited to 17592186040320 bytes (16 TiB - 4 KiB) (#PSBM-22193).

Parallels Cloud Server 6.0 Update 5 (SP1) Hotfix 1

Bug Fixes

- Unable to mount ploop images (#PSBM-24092).

- Unable to add new MDS to Parallels Cloud Storage clusters (#PSBM-24093).

- Parallels Cloud Storage mount points not recovered after network breakdown (#PSBM-24109).

- `pdrs` incorrectly handled combined licenses (#PSBM-24116).

- Could not migrate Containers with conversion (#PSBM-24125).

- Shared Folders not mounted automatically in CentOS 6 guests (#PSBM-24148).

- `pdrs` produced empty core dumps (#PSBM-24154).

- Incorrect memory overcommit factor in Containers (#PSBM-24164).

- netfilter did not allow connections to MDS by default (#PSBM-24167).

- No network functionality in Containers (#PSBM-24170).

- Could not update the `qt` package with `yum` (#PSBM-24177).

- Parallels Cloud Storage could hang on concurrent creation or deletion of filesystem objects (#PSBM-24275).

- Dropped e1000 tx packets could cause mail delivery issues on mail servers set up in virtual machines (#PSBM-23390).

- A number of minor issues (#PSBM-21123, #PSBM-23535, #PSBM-23793, #PSBM-23985, #PSBM-24004, #PSBM-24015, #PSBM-24043, #PSBM-24054, #PSBM-24101, #PSBM-24104, #PSBM-24110, #PSBM-24139, #PSBM-24149).

Parallels Cloud Server 6.0 Update 5 (SP1) Hotfix 2

What's New

- **New EZ templates.** Ability to create Containers with Fedora 20 and openSUSE 13.1 distributions inside.

  Note: To be able to use such Containers, reboot to the updated kernel (2.6.32-042stab084.17 or newer).

Bug Fixes

- Setting non-fully qualified domain names to virtual machines could lead to domain resolution issues (#PSBM-24243).

Parallels Cloud Server 6.0 Update 5 (SP1) Hotfix 3

Bug Fixes

- Downsizing of ploop-based Containers worked incorrectly (#PSBM-23217).

- Offline migration with ploop conversion and enabled `QUOTAUGIDLIMIT` could fail with error code 65 if Container was based on a legacy (std) template (#PSBM-24058).

- Live migration of Containers did not work under certain conditions (#PSBM-24351).

- Reverting to a snapshot after cloning a Container changed clone's UUID and name to the parent's (#PSBM-24387).

- `vzctl` could crash while reverting to a snapshot (#PSBM-24388).

- Attempting to migrate a Container back to the cluster from a non-cluster node could result in Container filesystem corruption (#PSBM-24407).

- `vzctl convert` of runnning VZFS Containers did not work with Plesk installed (#PSBM-24516).

- Disk space calculated was incorrectly during migration with ploop conversion of cPanel VZFS Containers (#PSBM-24525).

- A number of minor issues (#PSBM-23963, #PSBM-24154, #PSBM-24267, #PSBM-24284, #PSBM-24390, #PSBM-24456, #PSBM-24493, #PSBM-24504, #PSBM-24517).

Parallels Cloud Server 6.0 Update 5 (SP1) Hotfix 5

Bug Fixes

- Wrong traffic reported for newly created Containers (#PSBM-24674, #PSBM-24702).

- Offline conversion of VZFS Containers to the ploop layout was broken (#PSBM-24737).

- Migration with the `--convert-vzfs` option could fail if a file existed under a bind mount (#PSBM-24648).

- Ploop could get damaged if the Hardware Node was short on disk space (#PSBM-24758).

Parallels Cloud Server 6.0 Update 5 (SP1) Hotfix 9

Bug Fixes

- The `conntrack` module should not be disabled on the Hardware Node if the Node is managed by PACI (#PSBM-16884).

Parallels Cloud Server 6.0 Update 6

What's New

- **Automatic loading of kernel modules on Container start or resume** (#PSBM-13097). The new `vzctl --netfilter` command allows you to set the state of `iptables` modules for backup/restore or live migration. If some of the iptables modules allowed for a Container are not loaded on the Hardware Node where that Container has been restored or migrated, they will be automatically loaded when that Container starts.

- **Highly Available iSCSI targets on Parallels Cloud Storage** (#PSBM-23763). The `pstorage-iscsi` tools provide a convenient way of accessing Parallels Cloud Storage clusters from operating systems and third-party virtualization solutions. With these tools, you can export ploop images stored in Parallels Cloud Storage clusters as iSCSI LUNs.

- **Ability to stop relocation of virtual machines and Containers if too many Hardware Nodes fail** (#PSBM-18423). The new `RELOCATION_SKIP_THRESHOLD` parameter in the `shaman.conf` configuration file allows you to set how many Hardware Nodes can be down at the same time before `shaman` stops relocating virtual machines and Containers. Relocation resumes as soon as the number of failed Nodes drops below the threshold.

- **Automatic Data Balancing** (#PSBM-23871). To maximize I/O performance of storage drives in a cluster, Parallels Cloud Storage automatically balances drive load by moving data chunks from drives under high load to those under less load as well as moving the most used ("hot") data chunks to faster drives and least used ("cold") data chunks to slower drives.

- **Improved HDD hotplug support for LSI RAID controllers** (#PSBM-24292). The improved support of hot plugging and unplugging of HDDs connected to LSI RAID controllers allows you to easily add new or replace failed hard disks. Disks connected to LSI RAID controllers must work in the passthrough mode (JBOD) or RAID0.

  > **Note:** Special considerations apply to sharing SSD write cache between running CSes. This functionality is not implemented yet, so CSes with SSD journals will not be started automatically on disk hotplug.

- **Easier identification of CSes on LSI RAID controllers.** Parallels Cloud Storage now provides the pstorage-hotplugd locate command to easily identify CSes on LSI RAID controllers by distinctive LED patterns.

- **New Microsoft Windows Server 2012 R2 guest OS** (#PSBM-23872). Microsoft Windows Server 2012 R2 is now supported as a guest OS in virtual machines.

- **IPSec support in Containers** (#PSBM-20174). The IPSec protocol is now supported in Containers.

- **Switching to snapshots of running virtual environments without resuming them** (PSBM-24513). The new `--skip-resume` option for the `prlctl snapshot-switch` command allows you to skip automatic virtual machine or Container resume when switching to snapshots of running virtual machines or Containers.

- **Ability to delete virtual machine HDDs used in snapshots** (#PSBM-24992). The new `--destroy-image-force` option for the `prlctl set --device-del` command allows you to delete virtual machine's HDDs even if they are used in that virtual machine's snapshots.

- **Improved cleanup of temporary Container snapshots** (#PSBM-24727). New automatically merged 'temporary snapshots' ensure that disk space is not wasted on snapshots left over from failed backups or migrations.

- **Memory usage statistics from guest OS** (#PSBM-21913). Memory usage statistics can now be reported to subscribers from guest operating systems.

- **GPT partition support for physical-to-virtual migration** (#PSBM-18226). GPT partitions are now supported for migrating Windows-based physical hosts to virtual machines.

Bug Fixes

- The "Make sure that Parallels Tools are properly installed in the virtual machine" warning is shown during backup of Windows Server 2012 R2 with installed Parallels Tools (#PSBM-21377).

- Cannot add new MDS to cluster (#PSBM-24093)

- x86_64 versions of `libstdc++`, `libxml2`, and `glib2` missing from the `centos-6-x86_64` template (#PSBM-24115).

- Need to temporarily disable UNIX socket communications due to hang-ups under memory pressure (#PSBM-24426).

- Incorrect network restarts by Guest Tools in Debian and Ubuntu (#PSBM-24475)

- Newly created Containers may not start, ploop devices may not be mounted, the "invalid argument" is shown (#PSBM-24671)

- Overcommitted chunks should be removed even on non-healthy clusters to free disk space (#PSBM-24722)

- Custom shaman scripts are not executed (#PSBM-24730).

- Cannot configure name server and search domain in running Container with resolvconf installed (#PSBM-24918).

- Memory leak in `vzctl2_get_env_status` (#PSBM-24926).

- `prlctl` cannot resize disk to more than 4TB (#PSBM-25222).

- Online conversion of large Containers to ploop fails (#PSBM-25424).

- An MDS could hang in a busy loop on parallel file removal (#PSBM-25901).

- A number of other bugs (#PSBM-20653, #PSBM-21010, #PSBM-21649, #PSBM-21864, #PSBM-22795, #PSBM-23503, #PSBM-23726, #PSBM-24018, #PSBM-24397, #PSBM-24406, #PSBM-24453, #PSBM-24501, #PSBM-24520, #PSBM-24629, #PSBM-24952, #PSBM-25102, #PSBM-25115, #PSBM-25118, #PSBM-25252, #PSBM-25317, #PSBM-25445, #PSBM-25462, #PSBM-25821, #PSBM-26058).

Known Issues and Restrictions

- Parallels Tools are not installed in the guest OS after physical-to-virtual migration of Windows Server 2012 R2 (#PSBM-25680).

- Cannot establish IPsec connections from Parallels Cloud Server Hardware Node to Containers. For more information, see http://kb.parallels.com/120008.

Parallels Cloud Server 6.0 Update 6 Hotfix 1

Bug Fixes

- Under certain circumstances, the shaman daemon may fail to start (#PSBM-26496).

Parallels Cloud Server 6.0 Update 6 Hotfix 3

Bug Fixes

- Various kernel panics caused by stack overflow could be triggered by high disk I/O activity (#PSBM-23683, OVZ# 2846).

- Under certain circumstances, CentOS 6.5 virtual machine could hang (#PSBM-25427).

- Checkpointing code was enhanced to support `ip6tables` rules saving and restoring (#PSBM-25872, OVZ# 2916).

- The `numabalanced` service is designed to move Containers between NUMA nodes in order to increase overall system performance. Previously, such migrations resulted in confusingly huge values of `numastat:node_other` and `numastat:numa_miss` parameters (#PSBM-26309).

- Network console configured via bonded network interface could cause kernel panic (#PSBM-26668).

- Under certain circumstances, reinstallation of ploop Containers from Power Panel could not be possible (#PSBM-26738).

- VNC server could not start after a reboot from inside the Container (#PSBM-26740).

- Non-shared migration of Containers with custom private areas kept on Parallels Cloud Storage (#PSBM-26741).

Parallels Cloud Server 6.0 Update 6 Hotfix 4

Bug Fixes

- Under certain conditions, virtual machines may crash. (#PSBM-27006)

- The `prlctl create --uuid` command does not work with the `--vmtype` *<vm>* option. (#PSBM-27046)

- An issue in the futex subsystem allowed a local user to gain ring 0 control via the `futex` syscall. An unprivileged user could use this flaw to crash the kernel (resulting in denial of service)

or for privilege escalation. Using this vulnerability, a local unprivileged user of a Container could potentially crash the Hardware Node or gain host root privileges. (#CVE-2014-3153)

References

- https://access.redhat.com/security/cve/CVE-2014-3153

Parallels Cloud Server 6.0 Update 6 Hotfix 5

Bug Fixes

- An OpenSSL vulnerability could allow for a man-in-the-middle attack against an encrypted connection, so an attacker could intercept an encrypted data stream allowing them to decrypt, view and then manipulate said data. (#PSBM-27293, #CVE-2014-0224)

- Other OpenSSL vulnerabilities: #CVE-2010-5298, #CVE-2014-0076, #CVE-2014-0195, #CVE-2014-0198, #CVE-2014-0221, #CVE-2014-3470.

References

- https://access.redhat.com/site/articles/904433
- https://www.openssl.org/news/secadv_20140605.txt

Parallels Cloud Server 6.0 Update 6 Hotfix 7

Bug Fixes

- Failed online Container migration on shared storage results in file system corruption. (#PSBM-27479)

- Container snapshot remains after failed online Container migration on shared storage. (#PSBM-27456)

Parallels Cloud Server 6.0 Update 6 Hotfix 9

Bug Fixes

- Online migration of an active packet socket could fail with the message "CPT ERR: page without mapping". Checkpointing code has been enhanced to support online migration of packet sockets. (#PSBM-24091)

- Online Container migration could fail if files from /proc/$PID/ were still open after the process with PID $PID had stopped. (#PSBM-25452)

- HP Performance Agent could fail due to the absence of the /proc/sysvipc/msg file. The SYSVIPC procfs interface has been provided, so the /proc/sysvipc/{msg,sem,shm} files are now available. (#PSBM-26563)

- Certain netfilter kernel modules (nf_nat, nf_conntrack_ipv4, nf_conntrack_ipv6) could not be loaded automatically if requested from inside Containers. (#PSBM-26669)

- The top utility run inside a Container could show confusing equal values of used CPU power for every CPU available inside that Container; even though the total CPU power used inside the Container was shown correctly. (#PSBM-26714)

- The iproute2 utility could show netlink warnings in the log. For example, "[2532930.556624] netlink: 20 bytes leftover after parsing attributes". (#PSBM-26757)

- A kernel panic could occur due to a race between bridge device deletion and packet forwarding. (#PSBM-26931)

- A Hardware Node with hundreds of gigabytes of RAM could suffer from high memory and CPU latencies (as displayed by vzstat or pstat) if the vzstat.ko kernel module was loaded. (#PSBM-26984)

- A Container could fail to start if its configuration file contained an empty IPTABLES parameter and the iptable_raw kernel module was loaded on the Hardware Node. (#PSBM-27181)

- Under certain circumstances, a kernel panic could occur in dquot_initialize() under heavy disk I/O load and with quotas enabled. (#PSBM-27506)

- Under certain circumstances, a soft CPU lockup could occur in case of high memory pressure inside a Container and OOM killer activity. (#PSBM-27508)

- Online migration of a Container with nested bindmounts could fail with an error during restore. In particular, this issue affected Containers running cPanel as well as Fedora 17 and newer. (#PSBM-27525)

- Virtual machines created from shared templates remained in the invalid state after creation. (#PSBM-27831)

- Checkpointing mechanism could not handle silly-renamed files if SimFS was used over NFS. (#OVZ-2242)

- An attempt to run a KVM VM could fail due to insufficient permissions while accessing a device. (#OVZ-2915)

- Under certain circumstances, PID allocation code deficiency could lead to a Hardware Node crash. (#OVZ-2983)

References

- https://rhn.redhat.com/errata/RHSA-2014-0771.html

- https://www.redhat.com/security/data/cve/CVE-2013-6378.html

- https://www.redhat.com/security/data/cve/CVE-2014-0203.html

- https://www.redhat.com/security/data/cve/CVE-2014-1737.html

- https://www.redhat.com/security/data/cve/CVE-2014-1738.html

- https://www.redhat.com/security/data/cve/CVE-2014-1874.html

- https://www.redhat.com/security/data/cve/CVE-2014-2039.html

Parallels Cloud Server 6.0 Update 7

New Features

- **Multiple virtual hard disks in Containers** (#PSBM-15338). Even though new Containers are created with just one virtual hard disk, you can now add more disks to a Container and keep the corresponding ploop images at locations of your choice, be it directly attached HDDs or SSDs or Parallels Cloud Storage. Such functionality allows creating more flexible Containers, in which, for example, the operating system is kept on a fast SSD and user content is stored on a capacious HDD or Parallels Cloud Storage.

- **Ability to select which Container disks to compact** (#PSBM-26001). The new `--autocompact` parameter for the `prlctl set` command allows you to select which Container disks should be compacted by the `pcompact` tool. For details, see the *Parallels Cloud Server Command Line Reference Guide*.

- **S.M.A.R.T. monitoring of physical disks used by Parallels Cloud Storage** (#PSBM-26433). The S.M.A.R.T. status of physical disks is now monitored by the `smartctl` tool installed along with Parallels Cloud Server. Every 10 minutes, the tool polls all physical disks attached to Hardware Nodes in the cluster, including caching and journalling SSDs, and reports the results to the MDS server. You can view disk poll results in the output of the `pstorage top` command (press **d** to switch to the disks table).

- **Ability to change iSCSI target's IP address** (#PSBM-26416). Now, if you need to change the IP address of an iSCSI target, stop the target, then run the command `pstorage-iscsi set -t <target_name> -a <new_IP_address>`.

- **Ability to increase iSCSI LUN size** (#PSBM-26175). Now, if you need to increase the size of an iSCSI LUN, stop the target, then run the command `pstorage-iscsi lun-grow -t <target_name> -l <lun_ID> -s <new_size>`.

- **Chunk server failure flags in pstorage top** (#PSBM-24724). The flags in the CS section of `pstorage top` now indicate the reasons for CS failure. For more details, see the *Parallels Cloud Storage Administrator's Guide*.

- **Monitoring of lost packets and network latencies for Parallels Cloud Storage services** (#PSBM-27003, #PSBM-26211). Based on these monitoring results, Parallels Cloud Storage optimizes network traffic between its services. The lost packets and network latencies are shown in the `RETRANS` and `LAT_AVG`, `LAT_MAX`, `LAT_TOP` columns in the CS section of `pstorage top` (press **i**). Lost packets as well as network latency values marked orange and red may indicate network issues.

- **Ability to reset traffic statistics for running Contrainers** (#PSBM-21243). The `vztactl reset_ve_stat` command now works for running Containers as well.

Bug Fixes

- Intel i350 NICs could silently drop the ARP packet generated by `arpsend` for VLAN interfaces. (#PSBM-22719)

- The Parallels Tools service startup type was switched from `Auto` to `Delayed`. (#PSBM-23163)

- Newly created ploop images could not be mounted after resizing. (#PSBM-24671)

- Replication performance was optimized in regard to SSD journals (#PSBM-25768)

- `prl_backup_client` could crash or hang if it used more than 1024 file descriptors. (#PSBM-26171)

- The `ISCSI_ROOT` variable now points to `/pstorage/<cluster_name>/iscsi` by default (#PSBM-26178)

- Autocompletion now works for `pstorage-iscsi` commands (#PSBM-26196).

- Unlicensed disk capacity is now shown in `pstorage top` (#PSBM-26342)

- CloudLinux Server 5 virtual machines could experience 1-2 minute hangs. (#PSBM-26394)

- The dispatcher could not start external processes (e.g., shaman, iptables) if it used more than 1024 file descriptors. (#PSBM-26422)

- Listening addresses can now be set for existing chunk servers with the `pstorage configure-cs` command. (#PSBM-26436)

- The dispatcher could crash after failure to stop the VNC server. (#PSBM-26583)

- Virtual machines with routed networking and enabled offline management could lose network after migration. (#PSBM-27454)

- Virtual machines created from shared templates remained in the invalid state after creation. (#PSBM-27729, #PSBM-27814)

- A number of other bugs (#PSBM-22777, #PSBM-23917, #PSBM-24500, #PSBM-24812, #PSBM-24876, #PSBM-24928, #PSBM-25604, #PSBM-25670, #PSBM-25734, #PSBM-25869, #PSBM-25922, #PSBM-25986, #PSBM-26164, #PSBM-26294, #PSBM-26340, #PSBM-26446, #PSBM-26570, #PSBM-26659, #PSBM-26966, #PSBM-27296, #PSBM-27447, #PSBM-27489, #PSBM-27507, #PSBM-27566, #PSBM-27642, #PSBM-27899).

Known Issues

- Containers with multiple virtual hard disks cannot be backed up or restored via Parallels Virtual Automation or using the `vzabackup`/`vzarestore` commands.

Deprecated Features

Features considered deprecated will be removed in the next major release of Parallels Cloud Server. They will, however, work and remain supported in Parallels Cloud Server 6.0. The following features are deprecated:

- The Virtuozzo file system (VZFS). For more information, see http://kb.parallels.com/119015.

- Migration of physical servers to Containers and migration of Xen virtual machines to virtual machines. For more information, see http://kb.parallels.com/119016.

- The `vzbackup`, `vzabackup`, and `pbackup` utilities. For more information, see http://kb.parallels.com/119017.

- The global iptables mask configured in `/etc/sysconfig/vz`.

- All UBC resources except `physpages` and `swappages`.

- The `vziptables` parameter configured in the kickstart file used for unattended installations of Parallels Cloud Server.

Contact Information

Product website: http://www.parallels.com.