



Zadara Storage Cloud

16.05 Release Notes

September 2016

Revision 7

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1. Scope

This document describes the Zadara Storage Cloud release notes.

Section 3 describes new functionality and list of changes per release.

Section 4 lists limitations and known issues

2. Revision History

Date	Revision	Released packages	Description
May 2016	1	VPSA image: 16.05-404-90 SN package: 16.05-404-90	16.05 GA
June 2016	2	VPSA image: 16.05-404-90 SN package: 16.05-404-90	Some items added
July 2016	3	VPSA image: 16.05-404-113 SN package: 16.05-404-113	Maintenance patch
July 2016	4	VPSA image: 16.05-404-118 SN package: 16.05-404-118	Maintenance patch
August 2016	5	VPSA image: 16.05-404-121 SN package: 16.05-404-121	Maintenance patch
September 2016	6	VPSA image: 16.05-404-123 SN package: 16.05-404-123	Maintenance patch
September 2016	7	VPSA image: 16.05-404-126 SN package: 16.05-404-126	Maintenance patch Added 8901

3. New Functionality and change list

What's New in Zadara Storage Cloud

IO Engines Specification

Memory allocation for each VPSA Engine was revised as well as the max drives the engine can serve.

The following table describes the IO Engines:

Engine	Previous Name	vCPU	Memory	Max #drives
200	Baby	2	4 GB	5
400	Basic	4	12 GB	10
600	Boost	6	20 GB	20
800	Blast	8	24 GB	30
1000	Blazing	10	32 GB	40
1200		12	48 GB	60
1600		16	64 GB	80

ZIOS

Zadara Intelligent Object Store (ZIOS) complements Zadara's unified storage solution that now offers Block, File and Object Storage on the same platform. It is a new product that runs side by side with the VPSA on Zadara Clouds. ZIOS provides practically infinite scalability for storing data that is static in nature such as: Multimedia, Web Content, Big Data, archive and backup files. It provides easy access to storage anywhere, anytime and from any device over HTTP, and allows remote access to the data, even over the Internet. ZIOS is a private object store that is compatible with the public object stores and supports the same interface (S3 RESTful API's, Swift API), while allowing customers to keep the data on-premises or in the cloud. ZIOS is unique in the industry in that it provides "private" object store with dedicated storage resources. This provides both higher levels of security, but also guarantees consistent levels of performance.

For more information on ZIOS Object Storage see [here](#)

What's New in VPSA

Extended Flash Cache

The existing Flash Cache mechanism of the VPSA was extended to allow much larger cache. Each VPSA is provisioned with a base flash cache partition, which is utilized by the VPSA for both metadata and read/write caching. A basic amount of Flash Cache comes with the engine, and included in the engine price.

Customers can now choose to expand the cache in 200GB increments up to the maximum of 3.2 TB.

Extended flash cache can be ordered at the VPSA creation time, or later at any point in time. The VPSA flash cache size is elastic, it can be increased or decreased on-line based on the workload. The following table describe the Flash Cache for each IO Engine:

Engine	Previous Name	Base Cache	Max Extended Cache
200	Baby	20 GB	0
400	Basic	20 GB	400 GB
600	Boost	40 GB	800 GB
800	Blast	60 GB	1200 GB
1000	Blazing	80 GB	1600 GB
1200		100 GB	2400 GB
1600		100 GB	3200 GB

Fibre Channel

Zadara VPSA can now provide 16Gbs FC connectivity in addition to iSCSI and iSER.

Zadara Storage Cloud can optionally be connected to Fibre Channel (FC) SANs. VPSA can expose block virtual volumes to connected hosts through FC. For FC support, two or more SNs of Zadara Storage Cloud can be populated with Qlogic SRIOV FC HBAs. When a FC-enabled VPSA is created, it is scheduled on SNs that have FC HBA & FC SRIOV interfaces.

Zadara SRA for VMware SRM

Zadara Storage Replication Adapter (SRA) is an interface between VMware Site Recovery Manager (SRM) and Zadara VPSA. This integrates the storage array with SRM to provide Array based replication for virtual machines. Customers using SRM to protect their vSphere environment, can now base their solution on Zadara VPSA storage and its mirroring to replicate data between the sites.

Zadara SRA provides the ability to automate and orchestrate the following activities:

- Discovery of Array and Devices configured for replication
- Test Recovery and Cleanup
- Planned Migration
- Disaster Recovery
- Re-protect by reversing mirror direction
- Failback

Containers Memory Pool

In order to let the VPSA admin better ability to control the memory consumption of apps running as Docker containers on the VPSA, a new construct was added: Container Memory Pool. All containers belonging to the same pool share the amount of memory assigned to them.

NAS Quotas

VPSA now allows to set capacity quota for users and groups per NAS share. Quotas can be defined for individual users or per users group. Administrator that want usage report per user/group, without quota enforcement, can use this feature too.

NAS (SMB) File History

SMB File History gives end users the ability to restore a single file/directory from the VPSA snapshots, without the need for the storage admin to restore the whole volume. Restore is done using the Windows 8/10 previous releases option.

NAS Defrag

VPSA provides an option to run File System defragmentation as a background process that does not affect the VPSA operation. VPSA admin can activate/deactivate the defrag process. Periodic defragmentation can improve the file system performance.

Major Changes & Bug fixes

#	Component	Description
4366	VPSA	Allow users to change encryption password
4759	VPSA	Improve cache statistics metering
5775	VPSA	Allow delete snapshot of a destination mirror job
6275	VPSA	Any user can be configured to receive email notifications
6305	VPSA	Available capacity is given in GB for volume creation, volume expand and pool expand dialogs
6421	VPSA	Metering was added for Containers Memory Pool
7113	VPSA	Added an option to mark SMB shares as "browseable" or hidden
7231	VPSA	VPSA admin can control the password policy
7266 7308	VPSA	Allow users (with the respective role) change user's email address
7316	VPSA	A new "paths" tab was added to servers in the VPSA GUI to show the connectivity between the server and the storage
7508	VPSA	Support hidden files in SMB shares, where users can define the filter
7567	VPSA	Transactional Pools max capacity is limited 20TB
7647	VPSA	VPSA GUI - new Metering tab look & feel
7678	Command Center	Command Centers allows enable/disable of VPSA API pass-through. For security reasons it is disabled by default
7715	VPSA	RAID5 can be used on SSD's larger than 1.5TB
7732	VPSA	Windows Access Based Enumeration is now supported on the SMB Shares
7785	Command Center	The BE/FE link speed was added to the NIC information
7805	Command Center	Setup volumes are now labeled "Setup"
7864	VPSA	Improvements to the progress bar of snapshot mirroring in the metering tab
7921	Provisioning Portal	"Update User Data" button was removed from Provisioning Portal admin view
7695	VPSA	A warning was added when hibernating a VPSA that the Encryption password must be remembered to restore the VPSA
7904	VPSA	Manual "Create Server" dialog has a new look and feel
7966	VPSA	Few changes in user roles definition: <ul style="list-style-type: none"> - Snapshots Create\update\delete permissions should not be dependent on Volume or Pool permission - Attaching a Volume to a Server is allowed if the user has update permissions on Volumes OR on Servers - Clone creation is allowed if the user has Volume Creation permission - Attaching\detaching Snapshot Policies to\from a Volume requires Volume update permission
8029	Provision Portal	Provisioning Portal now shows drive sizes in both TB and TiB
8059	VPSA	Browser compatibility issue was fixed. Create a custom snapshot policy now works on Firefox
8164	VPSA	A fix was introduced to a crucial security bug in <u>Windows</u> and <u>Samba</u> known as "Badlock" (CVE-2016-2118 , CVE-2016-0128)
8198	VPSA	A REST API was added to pause a snapshot policy
8305	Command Center	Display the number of total backup jobs restore jobs of B2S3
8328	VPSA	AES-256-CBC is now used instead of RC4 for encrypting mirroring traffic
8405	VPSA	A problem that caused VPSA failover due to problems on a remote mirroring target was fixed

Major Changes & Bug fixes in Build 113

IO Engines Specification

Memory was added to each VPSA Engine to improve performance and reliability.

The following table describes the IO Engines:

Engine	Previous Name	vCPU	Memory	Max #drives
200	Baby	2	6 GB	5
400	Basic	4	12 GB	10
600	Boost	6	20 GB	20
800	Blast	8	28 GB	30
1000	Blazing	10	36 GB	40
1200		12	52 GB	60
1600		16	68 GB	80

#	Component	Description
3124	VPSA	VPSA Doesn't lockdown if just the standby VC is constantly rebooting
8485	VPSA	Fixed hung task panic that may occur on RAID1 recovery
8498 & 8515	VPSA/ZIOS Cloud Controller	Version upgrade will not start if there are not enough compute resources in the cloud to fulfill the needs of the new version
8612	VPSA	Fixed an issue where reconnect of local mirror fails if destination volume was previously attached to a server
8633	VPSA	Improved VPSA failover time when there are many SMB shares
8657	VPSA	All bitmap updates of md RAID1 written in 4KB blocks to improve performance of small IOs
8659	ZIOS	Fixed an issue in which an account member cannot access a self-created container
8660	ZIOS	Fixed a case in which ZIOS incorrectly counts the number of drives added to a storage policy
8687	VPSA	Fixed a failure to replace a drives in "available" state in a Multi Zone cloud
8693	VPSA	Allow setting NAS quotas to user and group with names that contain spaces
8708	VPSA	Fixed a problem that might lock down the VPSA when a host tries to login without CHAP
8739	VPSA + VSS Provider	Added a new API to create multiple snapshots at once. VSS provider uses the new API when creating shadow copy. Note: Zadara VSS provider version 1.0.11.28 supports VPSA version 16.05-404-112 and newer.
8747	VPSA	Disable VMware VAAI xcopy command in order to solve VMotion stall when pool is over loaded
8753	VPSA	Better exception handling in zadara_cfg to provide more information in case manual server creation fails
8813	VPSA	Fix a very rare case where version upgrade or model change fails and starts an endless reboot loop
8825	VPSA	Fix an issue in which after VPSA version upgrade from 15.07 to 16.05, NFSv3 file lock stopped working

Major Changes & Bug fixes in Build 117

#	Component	Description
8853	Provisioning Portal	Fix a bad presentation of the amount of RAM for VPSA engines 1200 and 1600
8866	ZIOS	Fix an issue where GUI does not present more than 12 users
8867	Provisioning Portal	Fixed an issue where VPSA is created with its recommended extended cache while the requested extended capacity was zero
8870	VPSA	Fixed a display issue in which "SMB Hide Unwriteable" field is always "No", regardless if it's real setting
8871	VPSA	Allow creation of Volume Clone on the destination of mirror, without breaking the mirror
8886	VPSA	Fixed an issue in which some of the SMB options keep their default values on a new share creation
8900	VPSA	Fixed an issue in which "SMB Hidden Files" field is cleared on any SMB option update

Major Changes & Bug fixes in Build 118

#	Component	Description
8442	VPSA/ZIOS Cloud Controller	Fix HA for proper handling of a split-brain as a result of heartbeat loss situations

Major Changes & Bug fixes in Build 121

#	Component	Description
6264	VPSA/ZIOS Provisioning Portal	Support Chinese, Japanese and Korean translation for 16.05 features
8945	VPSA	Fix an issue in which VPSA stops when a new server is registered via iSCSI login, before it was defined via the VPSA GUI
8947	VPSA	Set maximum transfer length to 1MB (was 8M by mistake)
8965	Command Center	Updated SSL certificate
9011	VPSA	Fix an issue where SMB ACLs in extended attributes get lost once file history is enabled

Major Changes & Bug fixes in Build 123

#	Component	Description
8976	VPSA	Upgrade to SCST 3.0.2-27.04 to fix a VC panic when Solaris with Qlogic HBA does SCSI rescan
9012	VPSA	Fix a possible race condition in which user might fail to open a file with NT_STATUS_SHARING_VIOLATION error

Major Changes & Bug fixes in Build 126

#	Component	Description
9125	Provisioning Portal	Rename 'management_address' to 'management_url' in the output of GET /api/vpsas/{vpsa_id} API
9133	Provisioning Portal	Fixed an issue in which Provider Groups are not displayed in the ZIOS creation dialog
9173	Provisioning Portal	Fixed wrong calculation of the base ZIOS price
9198	VPSA	Assigning block volumes to Docker containers is no longer supported due a risk of data corruption. File shares assignment to Docker containers is supported and safe.

4. Known issues and limitations

#	Component	Description
455	VPSA	VPSA GUI is not support on IE-8
542	VPSA	Failure of both active controller and a drive at the same time may result in a temporary failure of RAID5 group. To recover, either wait for the drive to come back online, or issue "Force Recover" from the VPSA GUI.
661	VPSA	Linux Server LVM limitation: It is required to de-activate LV before issuing iSCSI logout. Failing to do so will result in a failure to re-login to a VPSA iSCSI Target.
867	VPSA	Enabling IPsec may affect IO throughput in some Windows machines
1186	VPSA	The option to replace a drive in a 'rebuild' state is blocked Workaround: Replace the drive once rebuild completed
1257	VPSA	"Server Connect" requires open-iscsi initiator on Linux-based Servers
1614	VPSA	Servers behind a NAT are not supported (for NFS or iSCSI connectivity).
1795	VPSA	For a proper NFS functionality, need to run Server Connect after NFS client is installed on the Server
2048	VPSA	Multiple drives removal through VPSA GUI may fail if one or more of those drives store VPSA Boot data. Workaround: Remove the drives one by one
2273	Storage Node	When adding a first drive of a new drive type to the Zadara Cloud (HDD, SSD or Cache SSD), you must wait 1 minute before allocating such a drive type to a VPSA. Please note that removing the last drive of a given drive type removes this drive type from the Cloud.
2382	VPSA	IO onto an NFS share may be suspended up to 2 min following a VC failover or shutdown due to slow retry logic on the NFS client side.
2409	VPSA	Microsoft Limitation: If you are creating a clone of a Microsoft cluster volume/disk resource through the VPSA GUI and assign the clone to the same cluster nodes, the disk will come online as Reserved on both nodes. Hence, you will not be able to access the disk or add it as a new disk resource. Workaround: To prevent this from happening you can change the disk id from within diskpart. Please follow the steps below: 1) Assign the clone to a non-clustered server. 2) Login to the server and online the drive through Disk Management utility. 3) Open a command line and type "diskpart"

		<p>4) Now follow the next diskpart commands: DISKPART> list disk DISKPART> select disk [type here the disk number of your clone] DISKPART> uniqueid disk id=[type here a unique ID, should be 8 digits]</p> <p>5) Goto VPSA GUI, detach the clone from the non-clustered servers and attach it to your clustered servers.</p> <p>6) Now you can use the clone as a cluster disk resource.</p>
2593	VPSA	If a RAID-5 rebuild of a new or replaced Drive is aborted, when it is resumed - it will restart from the beginning.
2920	VPSA	VPSA GUI is presenting wrong metering values for controller's cache and system if Read or Write chart are disabled
3350	VPSA	If a VPSA does not expose LUN 0 and LUN 1 (but exposes other LUNs), Linux iscsiadm will not present any other VPSA LUNs. Windows Hosts will not present VPSA LUNs greater than 7.
4363	ALL	Moving from local license server to public license server and vice versa is not supported
4916	Command Center	"Add Drive" operation (via Command Center) can be performed only against VPSA with software version 14.11 or newer.
5033	SN	Maximum 11 VCs are supported on a Storage Node with Mellanox NICs
5578	SN	Disk is not removed from SN drives list upon ejection if previously it was moved between different slots
5639	VPSA	VC failover may fail if HB network is down
5851	VPSA	IOs from Containers are not counted in Volume's performance metering
6501	ZIOS	Customers using external Load Balancer, should upload a custom certificate generated for the matching IP\domain name, or they will get SSL warning when connecting to the ZIOS.
7051	ZIOS	It takes few minutes for ZIOS account capacity to update
7067	ZIOS	When a ZIOS member is connected to the GUI, and the zios admin switches between SSL termination on-off, the member does not see the updated REST URL until she logged out and in again
7169	ZIOS	SSL Certificate trust warning when using Public IP for ZIOS. Customers are advised to bring their
7616	ZIOS	Account is created with no permissions when untrusted custom SSL certificate is used
7795	ZIOS	Setting ZIOS container permissions via S3 browser is partially supported
7806	VPSA	Can't mirror encrypted volumes from 16.05 VPSA to a remote VPSA running 15.07 or earlier versions
8104	VPSA	SMB File History snapshot cannot be deleted if Restore is in progress or snapshot is in use
8125	Provisioning Portal	When creating VPSA 15.07 over Cloud 16.05, must set Extended cache bar to Zero
8142	Provisioning Portal	After upgrading the cloud, the option to create new ZIOS will be missing for few minutes...
8186	VPSA	<p>NAS Quota Limitations:</p> <ul style="list-style-type: none"> - Changing the default quota limit does not affect existing users/groups - Cannot monitor users consumption without setting quota - User's consumption is taken in account only for her primary group, even if the user belongs to multiple groups - Quota limits might not be effective for users defined in trusted domains
8377 8786	ZIOS	Some ZIOS GUI functions do not work if GUI was opened via Command Center: ZIOS Console, Account Permissions tab
8496	ZIOS	Metadata policy expansion is not supported when the first 3 VCs are fully populated with drives
8471	Cloud Manager	If FC HBA is removed from an SN that hosts VPSA with FC enabled, the VC's will fail to start. All VCs of VPSAs with FC support should be

		evacuated or deleted before removing the FC HBA.
8535	ZIOS	If ZIOS account is created during the first minutes after ZIOS creation (while policies are in "Not Ready" state) it will have no permissions set. Permissions will have to be set later
8540	ZIOS	When uploading a custom certificate, ZIOS is using it for objects operations (REST API) however GUI keeps using the default certificate
8789	ZIOS	When creating an account via ZIOS API, the default account permissions (allow all members) is not automatically assigned to it, as it is when the account is created via the ZIOS GUI.
8848	Command Center	Rsyslog configuration is lost following CCMaster failover
8901	VPSA	B2S3 uses its own mechanism to maintain its backups, do not delete any of the objects stored by the B2S3 service, nor archive them to Glacier