StorSimple Appliance Patch Release Notes

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Welcome

Thank you for purchasing StorSimple's Storage Appliance. This document provides release notes identifying open issues with the software version 2.1.1 (build 2.1.1-267) installed on your StorSimple Appliance.

New Features Introduced in Version 2.1.1

The following are the new features included in version 2.1.1 (build 2.1.1-267).

1. **Performance and Scale Improvements**
   - IO rate optimizations for random read/write workloads
   - Adaptive, content-aware compression. Increased throughput and reduced CPU load without reduction in compression savings.
   - Improved snapshot and cloud snapshot/clone performance
   - Optimize all-zero writes to reduce time for free space zeroing with sdelete and expedite Windows Server format operations.

2. **VMware vStorage APIs for Array Integration (VAAI)**
   - vStorage APIs for Array Integration provides hardware acceleration functionality to your VMware ESX/ESXi 4.1 or later hypervisors. It enables your host to offload specific virtual machine and storage management operations to the StorSimple appliance hardware. With the storage hardware assistance, your host performs these operations faster and consumes less CPU, memory, and storage fabric bandwidth.
   - With VMware VAAI support, StorSimple also introduces Cloud Reclaim functionality to further manage Cloud storage costs through automatic block-level space reclamation for files deleted inside VMware Virtual Machine Disks.

3. **Self-service, Non-disruptive Upgrade**
   - Support Cloud Snap/Clone operations during upgrade

- Single package upgrades - user uploads a single upgrade package. Upgrade is automated for both controllers and related components.
- Pre-upgrade verification engine added to advise user of configuration or operational constraints and required remediation prior to starting upgrade.
- Detailed upgrade progress status with ability to cancel and revert.

4. **Management Updates**

- Volume access control management simplified. Enhancements implemented to avoid human errors in shared volume access.
- Advanced performance and cost tuning options through Custom volume type definitions. Control block size, tiering priority and dedup algorithm.
- Email alert layout updated and simplified for better usability.
- Alert added on configuration changes to remind administrator to backup configuration.
- Navigation usability enhancements for system settings, QoS, diagnostics, technical support package, etc.
- Enhanced Connected Initiators view – list the online volumes seen by each initiator.
- Added Web UI control to enable/disable SSH and HTTP connections for management access.
- Report enhancements - added primary volume dedup estimates, report cloud capacity for primary and backup cloud accounts and report outstanding host IOs on latency chart.
- Added support for Google Chrome browser, for Web UI access.
- Simplified support package downloads through Technical Support page in Web UI.

5. **Cloud Provider Support**

- HP Cloud - support for new HP authentication enhancements.
- Nirvanix - support for backup and archiving use cases (with 512KB fingerprints).

- Added support for Amazon GovCloud

- Added region configuration for Google Cloud

6. **Windows Dynamic Disks and Multi-partition Disks Support**

- Dynamic disks – added support for application-consistent backup of simple and mirrored sets.

  - Add StorSimple volume as a mirror to an existing SAN to provide data protection (for StorSimple supported workloads).

  - Enables background, online migration from 3rd party SAN to StorSimple with non-disruptive cutoff.

  - Can mirror across two Cloud Providers or regions while taking application-consistent backups.

- Mount and retrieve data from dynamic disk backups without impacting live mirror sets.

- Added support for application-consistent backup of multi-partition disks.

Issues Resolved in Version 2.1.1

The following table contains issues from the previous build 2.1.1-249 that have been addressed in this software version (2.1.1-267).

ID	Summary
CSC-3892	The deletion of a volume group with very large number of associated backup runs could result in UI timeout issues.
CSC-3890	The Connected Initiators page may not be up-to-date after changing the Access Control Records and/or associated volumes.
CSC-3360	When shutting down the active controller, the standby is shutdown as well.
CSC-3029	The StorSimple appliance controller may decide to reboot or power off because it cannot monitor the battery status.

Release Notes for Version 2.1.1

The release notes for version 2.1.1 (2.1.1-267) for the StorSimple Storage Appliance are tabulated below. The issues reported in this version of software are marked with an *. All the other issues have carried over from previous releases.

ID	Summary	Comments and/or Workarounds
CSC-4036*	The configuration file sent in call home message is encrypted but not anonymized.	Please leave the Call Home option disabled until this issue is resolved.
CSC-4013*	Setting up a Preferred LUN value above 255 will not be handled by the system.	Please avoid setting the preferred LUN of a volume to a value greater than 255. The preferred LUN value should be within 0-255 range.
CSC-4007*	The web UI may not be accessible for few minutes during the upgrade from 2.0.3 to 2.1.1.	During the upgrade from version 2.0.3 to version 2.1.1, the Web UI may display the error message "Operation completed with status = CSA_STATUS_SERVER_API_DISABLED" for a few minutes during a specific phase of the upgrade. Please try to access the UI after a couple of minutes and the monitoring of the upgrade progress should be available again.
CSC-4001*	When a volume is deleted without removing it from a volume group, further backups on the VG for remaining volumes will fail with "One or more of the source volumes unavailable (Backupexception)".	Edit the volume group and save it again without making any changes. Any further backups will now succeed.
CSC-3996*	Deletion of a volume during upgrade can cause the upgrade to fail.	This failure does not impact the Host/Application I/Os. The upgrade operation can be retried but the volume deletion operation should be avoided until the upgrade process is complete.

CSC-3994*	After a successful pre-validation on the Software Upgrade screen, the Start Upgrade button may not be accessible.	As a work-around, please retry the operation after waiting for an hour. If the issue still persists, restart the active controller and then start the upgrade process again.
CSC-3974*	The Configuration Restore process may not be successful.	After performing the Configuration Restore operation in the Setup Wizard, the user is redirected to the login screen. Upon logging in, the user is returned to the Setup Wizard without any message banner. The Configuration Restore continues in the background. Continue executing the Setup Wizard until the Summary page and click Finish. If at the end of the process the configuration has not been properly restored, please contact StorSimple support.
CSC-3973*	A Google cloud account restore during configuration import may lead to "Forbidden Access" to the cloud.	This is a known Google limitation on the number of different devices that can use the same Google credentials and authentication tokens. If possible, avoid performing multiple imports of the same Google account. You can also contact StorSimple support for alternative solution to address this known limitation.
CSC-3953*	Following a restore/configuration import operation and a 2.0.1 → 2.1.1 software upgrade, the 'Enable Monitoring' checkbox for Cloud Configuration and Volumes may be unchecked.	After the upgrade, the user should check 'Enable Monitoring' for all the objects that require monitoring.
CSC-3899*	SCSI ABORT may occur with Round Robin multipath policy set on Centos host. iSCSI sessions might get disconnected/connected resulting in high host I/O latencies.	There is no known workaround for this issue at this time.
CSC-3805*	The configuration file imported from a C1020 does not include DNS Server Settings and requires additional manual steps to restore on the StorSimple appliance models.	Configuration restore using a configuration file from Model C1020 is not supported on StorSimple appliances. You may use Model C1020 configuration files to import specific sub-items and merge with an existing StorSimple appliance configuration. To import configuration files, go to Manage

		→ Configuration → Configuration Import.
CSC-3726*	The StorSimple Appliance controller may reboot under heavy load.	Under very rare circumstances, the controller may become very slow or unresponsive. When the system detects such a situation, a reboot of the active controller is automatically triggered and a failover to the standby controller occurs. The system then continues to operate normally without any host disruption. If this doesn't occur, please contact StorSimple support to restore the system to a fully functional state.
CSC-3672	When the fingerprint type is altered for a custom volume, the read-write performance may be impacted.	The performance is impacted because the data may need to be de-duplicated again based on the different type. Such an operation would require additional CPU cycles as well as extra reads and writes from storage. Once the entire volume content is fully rewritten, the read-write throughput will again stabilize to the optimal value.
CSC-3563	Printing reports in portrait orientation may overflow and not print correctly.	Printing of reports is supported only in the Landscape orientation.
CSC-3525	Upload of the upgrade package for version 2.0.3 may stop abruptly.	This is generally seen when the upload reaches 35-40%, in particular when the system is operating under heavy load. This issue is addressed in build 2.0.2.88, therefore it is recommended to perform a patch upgrade to build 2.0.2.88 first and then again upgrade to version 2.0.3.
CSC-3514	The cloud properties popup may not close properly when clicking on the X button on the top right hand corner.	As a work-around, please refresh the whole page and reopen the pop up again.
CSC-3494	Invalid cloud configuration/credential settings may lead to the entire system becoming very slow connecting to the cloud for valid accounts.	Please contact StorSimple support to help resolve the problem and bring the system back to its full functionality. This issue will be fully addressed in upcoming releases.
CSC-3390	When the StorSimple appliance is powered off and quickly powered on,	This issue has been observed very sporadically when forcing a quick power off/on through a managed APC that

	some drives show up as missing.	would cut the power to the appliance for less than 1 second. As a work-around, please ensure that the power is applied again a few seconds after the power-off (what is usually called a "delayed power-on" in a managed APC).
CSC-3282	Appliance failover is observed when the data read from the cloud is incorrect due to transient network issues.	This known issue is being actively investigated in conjunction with the cloud providers. The StorSimple system is able to detect and recover from such a situation by performing a failover and never returns any incorrect data to the iSCSI initiator.
CSC-3253	In rare instances, on resetting the active controller, the Host I/Os may get aborted.	In some high load scenarios, host I/Os are aborted because the appliance takes more than 20 seconds before completing the operation. The issue subsides after the load reduces. As a workaround, a reduction in host load, and/or a failover of the controller is recommended.
CSC-3238	Using invalid credentials for Web Proxy settings may result in a controller fail-over.	If invalid credentials have been input in the Web Proxy Settings in Web UI, the active node will reboot and there will be a cluster failover. Ensure that valid credentials are applied for the Web Proxy settings.
CSC-3224	In Firefox 3, while configuring QoS templates, the Save/View Timeline buttons may get disabled.	This issue can be observed only in some specific sequences of operations involving deleting and creating multiple QoS templates. The issue can be overcome by refreshing the browser page and then attempting the configuration of the QoS template again.
CSC-3222	In RDP sessions Web UI popups cannot be closed by clicking on the x in the top right corner for the first time.	Click on the red icon again to close the popup.
CSC-3217	Reports cannot be printed in IE9 and Fire Fox.	Use IE8 for printing out Reports.

CSC-3211	The Web UI displays the error "Server Error:'~/Telerik.Web.UI.WebResource.axd' is missing in web.config. RadScriptManager requires a HttpHandler registration in web.config."	There is a rare known issue in which the Web UI becomes inaccessible and displays the error mentioned. The Web UI only remains in this state for a brief period of time and will become accessible again within one minute. No user intervention is required.
CSC-3198	Web UI may render incorrectly on a restarted appliance.	Accessing the Web UI on a new browser window will resolve the issue.
CSC-3196	A canceled Cloud Clone or Cloud Snapshot restore/clone job may resume after a controller fail-over.	If the user cancels the restore/clone job, and then triggers a controller fail-over or the system fails over automatically for some other reason, then a canceled job will resume unless the cancel action has been completely processed by the system. To work-around this issue, the user needs to cancel the job again and ensure no more fail-overs are triggered until the cancel action has been fully processed by the system.
CSC-3180	Under rare circumstances a disk failure may cause the system to go offline.	There are some corner case scenarios that may occur with a high stress read workload. When the StorSimple software detects a failure in a drive from which it cannot quickly and easily recover from, it intentionally brings down the system in order to protect the data integrity. Should such an event occur, please contact StorSimple support to address the issue and restore its full functionality.
CSC-3169	A different state may be displayed on the serial console when the system is in recovery mode.	In earlier releases, in the case of repeated controller fail-overs, the serial console on both controllers displayed the recovery console screen. In this release, one controller may instead continue to display the management console screen, with the state shown as "OFFLINE".
CSC-3154	If one of the Web UI charts is kept open in Auto-refresh mode, the refresh may stop after some time.	Normally this issue can be overcome by opening a new browser session and select the same chart display page again with Auto-refresh mode.

		If the Web application fails to open, i.e. the login page does not come up; the issue can be worked around by forcing an active controller reboot.
CSC-3042, CSC-3067	The StorSimple Appliance controller reboots when an I/O to the internal disks takes an abnormally long time to complete.	Under extremely rare circumstances, an I/O to a drive (SSD or HDD) may take an abnormally long time. The StorSimple software detects such an incomplete operation and forces a controller fail over to ensure that the system can continue serving I/Os without causing application timeouts. StorSimple will provide any necessary fix through a software patch, nonetheless should an unforeseen hardware glitch occur such a fail over is the best course of action.
CSC-2896	Different rate limiting values on multiple cloud configurations are not honored.	When multiple cloud configurations are setup and rate limiting is enabled in more than one, the overall throughput towards the cloud will converge over time to the smallest rate limiting value configured (as opposed to the sum of the configured rates).
CSC-2782	In rare circumstances, when the active controller reboots, the entire system may become unresponsive for some time.	Due to an issue in the configuration of the hardware chipset, the two controllers may not be able to communicate for some time; during this period of time the serial console will display messages indicating that correctable link errors are occurring. This issue typically self corrects after some time which may vary from few seconds to a few minutes. During this time access to the volumes will be lost.

A complete solution for this issue will be provided in the upcoming releases. |
| CSC-2719 | Rebooting the controller from the shell results in a "500 Internal Server Error" in the Web UI. | This issue is caused by a rare race condition when web requests coincide with the web service starting up. The problem can be worked around by forcing an additional controller reboot. |

CSC-2593	An existing iSCSI session remains active even after disabling the iSCSI checkbox in the UI.	The "iSCSI Enabled" setting is effective only after a controller reboot/failover. The existing sessions are not altered, therefore: • Existing iSCSI sessions from hosts remain active after disabling the checkbox • New iSCSI sessions to a target are successful using the IP address of the interface which is unmarked as "iSCSI Enabled" In order to overcome this issue, please reboot the active controller. The automatic failover will ensure that the desired configuration is applied correctly from that point onwards.
CSC-2573	Active Directory domain user is able to login with old password after the password is changed in the domain.	This is due to the old password being cached by the Domain Controller server that has been configured. This password remains available when authentication occurs. Since the StorSimple application cannot force a flush of the old passwords, please connect to the Domain Controller server and perform the necessary flush operation.
CSC-2335	Using the 'Printer friendly version" link in Firefox for the charts will result in a printed page with an empty white area instead of the chart.	This issue is due to a Firefox limitation that doesn't render the content of the HTML "object" element during printing. In order to overcome this limitation, please use a supported IE version to print charts. Note: You need to manually select Landscape orientation before printing any of the charts to ensure an accurate print of the charts.
CSC-2321	Performing a configuration restore from a saved xml file on an appliance that has a different Management IP than the one saved in the configuration file, may result in a "No Route to host" error on the Audit Logs screen.	A controller failover would solve the issue.
CSC-2317	The ACR maps are lost when performing	This issue occurs when:

	a configuration restore twice.	1. A DR configuration restore is performed from a previously created configuration file (e.g. config1.xml) 2. A new configuration file is created after the appliance is working again (e.g. config2.xml) 3. A new DR configuration restore is performed using the new configuration file (config2.xml) In order to work around this issue, the user could selectively import the ACRs from the original configuration file (config1.xml) or brand new ACRs could be configured after the second configuration restore.
CSC-2300	When a configuration restore/import fails, the same cloud account may be configured multiple times.	Upon configuration restore or import failures, in few rare circumstances some portions of the configuration are restored/imported. In case the restore or import operation is repeated again, the same cloud account might be configured multiple times. In order to work around this issue, please check the configuration after the failure and delete any partially imported information, especially the cloud account portion.
CSC-1549	Multiple fail-overs performed under heavy load may result in loss of iSCSI connection between the host and the appliance.	Under heavy I/O, if there are fail-overs performed there is possibility of active controller reboot. This may result in loss of iSCSI connection between initiator and target. In order to restore the proper connectivity, reboot the appliance.
CSC-1538	In the Hardware Page the standby controller appears in a different state when it has been shut down or pulled out.	This is a known issue in the underlying platform code that will be fixed in a future release. There are no negative side effects on the system behavior.
CSC-1334	Under stress testing of the system failover, the host may lose access to the appliance volumes.	When performing stress testing of the system failover, inducing continuous failures (artificially), a Windows host may lose access to the volumes. StorSimple is actively working with Microsoft to analyze the issue which may be a problem on the host side. In order to restore the volume

		access, please force an iSCSI rediscovery of the target or power cycle the host.
CSC-867	Microsoft iSCSI initiator doesn't support LUN ID 255.	Use a LUN ID of 0 to 254.

Contacting Technical Support

Should you encounter any issues with your StorSimple Storage Appliance, please do not hesitate to contact StorSimple Technical Support at:

- Telephone: 1-855-2STORSIMPLE (1-855-278-6744)
- Email: support@storsimple.com
- Web: www.storsimple.com/support

Please contact StorSimple technical support to create your support account to allow you to access product documentation and other resources including software images, technical reports, release notes, and other collateral using StorSimple's File Transfer Protocol (FTP) server at:

- ftp://ftp.storsimple.com