Quantum

# FlexSync 3.0 Release Notes

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# Release Notes: FlexSync 3.0

FlexSync 3.0 includes enhancements and bug fixes. To view a list of resolved issues and known limitations, see Change Requests: Known Issues and Fixed Issues on page 5.

## Operating Systems No Longer Supported Effective with FlexSync 3.0

- RedHat Enterprise Linux (RHEL) 6
- CentOS 6
- Debian 9

## New Features and Enhancements in FlexSync 3.0

- You can now synchronize (read/write) to an S3 repository (this functionality is also referred to as FlexSync-object). FlexSync-object includes support for:
  - An Amazon Web Services (AWS) S3 repository, or a Quantum ActiveScale S3 repository.
  - Multi-part uploads.
  - AWS Signature Version 2 (V2) and AWS Signature Version 4 (V4) signing.
  - Hypertext Transfer Protocol Secure (HTTPS) communication protocol.

  **Overview of FlexSync-object**

  Within the StorNext Unified User Interface (UUI), you can configure FlexSync-object to synchronize data from multiple sites to an S3 repository. The UUI allows you to configure basic task configuration, management, and monitoring. The FlexSync-object functionality is designed as a Revision Control System (RCS) and it provides typical features such as check-in (commit), check-out, and update (pull) to manage multiple revisions of files.

  At **site A**, you can:

  1. Initialize your S3 repository for use by FlexSync.
  2. Connect your S3 repository to your StorNext file system.
  3. Edit your file(s).
  4. Commit (synchronize) your file(s) to your S3 repository.

  At **site B**, you can:

  1. Connect to the same S3 repository as **site A**.
  2. Synchronize your local repository based on the contents of your S3 repository.

At both sites, you can:

- Edit, commit, and update your data.
- Configure automated tasks to perform the synchronization to your S3 repository.

**Limitations for FlexSync-object**

The following are limitations of the FlexSync-object functionality:

- The StorNext file system is the only supported file system.
- StorNext managed directories are not supported.
- Named streams are not supported.
- Thin/sparse file system access is not supported.
- A file is written to an S3 repository as an object; in other words, there is no file system naming in the S3 repository.
- The UUI supports most key functions; however, you cannot perform a manual check-out, a manual check-in (commit) or a manual update using the UUI. You can only perform a manual check-out, a manual check-in (commit) or a manual update using the FlexSync CLI.

- Beginning with FlexSync 3.0, you can download the FlexSync Man Pages Reference Guide PDF. The following are new FlexSync-object specific CLI commands (for complete details, refer to the FlexSync Man Pages Reference Guide PDF):

  **New for /opt/quantum/flexsync/bin/flexsyncadmin**

  - add-default-object-task
  - add-object-task
  - check
  - clean
  - delete
  - edit-register-config
  - edit-repo-config
  - getconfig
  - init
  - register
  - repos
  - rstconfig
  - setconfig
  - unregister

  **New for /opt/quantum/flexsync/bin/flexsync**

  - checkout
  - commit

  - copy
  - diff
  - dump
  - get
  - help
  - info
  - list|ls
  - log
  - mkdir
  - revert
  - update
- Beginning with FlexSync 2.3, log files are located at **/var/log/flexsync**.

  **Note:** For FlexSync 2.2.4 (or earlier), log files are located at **/opt/quantum/flexsync** and **/var/log/messages**.

  - When you execute a daemon or CLI command, the information is logged in a respective file, as follows:
    - For **flexsyncd**, the log file is located at **/var/log/flexsync/flexsyncd.log**.
    - For **flexsyncadmind**, the log file is located at **/var/log/flexsync/flexsyncadmind.log**.
    - For **flexsync**, the log file is located at **/var/log/flexsync/flexsync.cli.log**.
    - For **flexsyncadmin**, the log file is located at **/var/log/flexsync/flexsyncadmin.cli.log**.
  - A log file is rolled using a standard Linux **logrotate** function; by default, a log file is rolled when its size exceeds 100 MB. The configuration file is located at **/etc/logrotate.d/flexsync_logrotate**. For more information, see **Configure FlexSync Log Maintenance** on the Troubleshooting Tools page.

# Important Information about Your FlexSync Installation or Upgrade

You must install or upgrade FlexSync on each system using the feature, including the source destination, the target destination, and the managing appliance.

**Caution:** Mixed versions of FlexSync daemons is not supported and results in a communication error. You must install the same version of FlexSync, or upgrade to the same version of FlexSync on all of the hosts or systems using Flexsync. A newer version of the Flexsync daemon cannot communicate with an older version within a configuration, or on another host or system.

## Information about Storage Manager Storage of Temporary Files and FlexSync

As part of the replication process, FlexSync creates temporary files on the destination. If your destination is a managed StorNext directory, then it is not desirable to allow StorNext Storage Manager to store the temporary files as it might cause problems in some cases. To prevent Storage Manager from storing the temporary files you must update the TSM configuration file, **excludes.store** entry depending upon the version of FlexSync you are running.

For complete details, see Storage Manager Storage of Temporary Files and FlexSync.

For additional information about FlexSync, visit the FlexSync Documentation Center.

## Related Product Release Notes

Configured and managed through a simple but powerful graphical user interface, FlexSync is an optionally licensed feature for use with StorNext. Visit the Quantum Documentation Portal to stay up-to-date with the other Quantum products in your environment.

# Change Requests: Known Issues and Fixed Issues

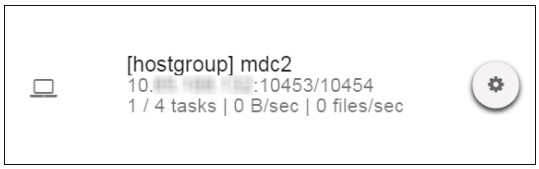
The following tables present known issues and fixed issues for FlexSync.

### Known Issues

| ID | Description |
|---|---|
| QSYN-806 | Tasks started with the **`flexsyncadmin start-task`** command are exempt from the **`flexsyncd(8) maximum concurrent task`** limit. As a result, your system might experience higher than normal system resource usage. |

| ID | Description |
|---|---|
| QSYN-826 | Case sensitive settings (**`caseInsensitive=false`**) must be configured on both the source and destination hosts. Otherwise, the destination host will merge two files/directories that match on the identical spelling of a file name, even when the names do not match on case.<br><br>**Example**<br><br>The source host is configured to honor case sensitivity (**`caseInsensitive=false`**). The following 2 files exist on the source host:<br><br>• **ABC**<br>• **abc**<br><br>Both files are replicated to a destination host that has not been configured to honor case sensitivity (**`caseInsensitive=true`**). The destination host does not recognize a difference between the 2 file names, so they are merged into 1 file:<br><br>**ABC**<br><br>**Workaround:** Configure your target host with the same case sensitivity setting as your source host. See the StorNext Man Pages Reference Guide. |
| QSYN-829 | Under the following circumstances, FlexSync might start repeatedly replicating the same content:<br><br>• When source file systems are replicated with the auditing feature enabled, the auditing feature will make further changes to the source file system. As a result, FlexSync might interpret the files as candidates for additional replication.<br>• Read activity in the file system might cause FlexSync to scan for content to replicate.<br><br>Both instances *usually do not* result in additional data transfers by Flexsync. However, under certain circumstances, such as when extended attributes are replicated, this issue can occur.<br><br>**Workaround:** Do not configure a replication task if the auditing feature is enabled on the source file system, or when replicating extended attributes. |

| ID | Description |
|---|---|
| QSYN-911 | Under the following specific circumstances, reverse tasks can overwrite the original source data:<br>a. Create a replication task.<br>b. While the task is estimating, suspend it.<br>c. Create a corresponding reverse task.<br>d. Start both the original source and corresponding reverse tasks.<br>**Workaround:** Do not simultaneously run the original source task and its corresponding reverse task. |
| QSYN-912 | When viewing a Task Report, you might see two vertical scroll bars if the browser window is not tall enough to display all of the line items. |
| QSYN-1256 | Mixed versions of FlexSync daemons is not supported and results in a communication error.<br>You must install the same version of FlexSync, or upgrade to the same version of FlexSync on all of the hosts or systems using Flexsync. A newer version of the Flexsync daemon cannot communicate with an older version within a configuration, or on another host or system.<br>See Considerations in the FlexSync Documentation Center. |

| ID | Description |
|---|---|
| QSYN-1356 | The **FlexSync Dashboard** host status display contains an activity monitor that displays the following information:<br>• The number of active tasks. For example, **1 / 4 tasks**.<br>• A throughput number in bytes per second. For example, **10 B/sec**.<br>• A count of files being transferred per second. For example, **10 files/sec**.<br>  <br>The throughput number shows information about active tasks only, and is updated across the entire running time of the tasks. With multiple tasks that start and finish at different times, the throughput number can be artificially low because it no longer includes one or more tasks that were also consuming resources.<br>Also, because the information is captured across different tasks and at different points in time within each task and then aggregated at the user interface, it is unlikely to accurately represent the data being transferred at a specific point in time.<br>These factors combine to make it difficult to determine the real bandwidth consumption until a task completes. At that point, the exact number of bytes transferred and elapsed time of the replication pass are available in the Task Report. |
| QSYN-1357 | The Bandwidth Throttling option works by providing the requested number of credits each second to be shared among all of the active tasks. If no tasks have run for at least one second, the next task to start finds one second's worth of credits available immediately.<br>During the first second of replication for that task, it is possible for the task to consume twice the requested bandwidth rate.<br>**Note:** This might result in the per-host activity monitor displaying an aggregate throughput higher than the bandwidth limit until more time elapses and that extra second's worth of bandwidth consumption is averaged in across a longer interval. |
| QSYN-1486 | If you use a managed file system, do not use a directory associated with a storage manager policy as the source path or destination path of a task.<br>**Note:** Sub-directories of these directories and their descendants are permitted as source and destination paths. |

| ID | Description |
|---|---|
| QSYN-1881 | If you enable debug logging and run a task for an extended period of time, and then attempt to display a task report using the GUI, the progress might continue to spin.<br>See the **flexsyncd** man page for information about the debug logging option (**--debug \| -d**). |
| QSYN-2468 | There is a chance if running the new UUI, after an upgrade from 6.3.1 to 7.0.1 one may need to cycle flexsync in order for the new UUI to connect?<br>To restart the See the **flexsyncd** man page for information about the debug logging option (**--debug \| -d**).<br>If you upgrade FlexSync Application, you need to restart the FlexSync daemons if they were not stopped prior to the upgrade. See Restart the FlexSync Daemons. |
| QSYN-3096 | In the TSM logs, you might see the following errors:<br>`XXX: Invalid open ID passed to mdt1devGetWAStorageRestIF()...`<br>`YYY: Invalid open ID passed to mdt1dev_get_dev_type()...`<br>**Workaround:**<br>You can ignore the errors. |
| QSYN-3136 | When you suspend a task, the operation might require additional time to process because FlexSync is performing asynchronous operations to receive data.<br>**Workaround:**<br>To interrupt the process, restart the **flexsyncd** daemon. |
| QSYN-3193 | When you disable the **Force Rescanning** option, FlexSync forces a full file system scan with every replication pass.<br>**Workaround:**<br>Configure the **Force Rescanning** option to a high value such as **365** (or greater) days. |

| ID | Description |
|---|---|
| QSYN-3385 | If two files from two different checkout directories that contain identical path names, modification times and file sizes are committed at approximately the same time, the first file is successfully committed and synchronized to your S3 repository, whereas the second file is not. This is similar to two users writing to the same file in a file system, except in that case, the second writer succeeds. FlexSync looks to commit the second file, but does nothing because the file appears to have already been committed; the file is not processed and a conflict is not reported.<br><br>You might only notice this issue when you view your S3 repository, or check out another directory and inspect the file. If you notice your repository content is not valid, performing another commit process results in no action being taken. FlexSync considers the file to already be committed.<br><br>**Workaround:**<br><br>To work around this issue, do one of the following:<br><br>• **To retain both files**:<br>◦ Move the second (non-repository) instance of the file to a new name.<br>◦ Run the **/opt/quantum/flexsync/bin/flexsync get** command to retrieve the existing file from the repository and place it in the original name.<br>**Note:** You must provide the destination path in the command.<br>**Example**<br>`/opt/quantum/flexsync/bin/flexsync get flexsync://reponame/path/to/testfile /stornext/site1/checkoutdir/path/to/testfile`<br>◦ At the next commit, the renamed file appears to be newly created and that instance of the file is synchronized to your S3 repository with its new name.<br>• **To retain the second instance of the file**:<br>◦ Run the **touch** command to update the modification time (**mtime**) of the second file.<br>◦ At the next commit, FlexSync acknowledges the file does not match the content in the S3 repository and the file is synchronized to your S3 repository with the same name, effectively replacing the first commit. |

| ID | Description |
|---|---|
| QSYN-3487 | If you checkout to a sub-directory within a directory that is already checked out, you might not be able to update or commit data to your S3 repository.<br><br>This could also result in additional data (from the sub-directory) that is committed to your S3 repository if you attempt to commit at the top-level directory.<br><br>**Workaround:**<br><br>Do not perform a checkout process to a sub-directory within a directory that is already checked out. |
| QSYN-4391 | If you execute the **/opt/quantum/flexsync/bin/flexsync update** command, in the early percentages, the **Postprocessing** output might display an incorrect amount of time to complete the process. See the blue text in the example below.<br><br>**Example**<br><br>`Postprocessing...`<br>`Postprocessing... 0% [> ] 03h20m32s 4 files/sec`<br>`Postprocessing... complete [15 seconds]`<br>`Complete.`<br><br>**Workaround:**<br><br>To work around this issue, allow the **Postprocessing** process to continue. As the **Postprocessing** process continues, the time calculation improves and becomes accurate. |

# Fixed Issues

### FlexSync 2.3.1 and FlexSync 3.0

| ID | Description |
|---|---|
| QSYN-4262 | Fixed an issue where on a single Node Xcellies Workflow Director (XWD) the API gateway needs to be handled. |
| QSYN-4265 | Fixed an issue where **flexsyncd** occasionally core dumps. |
| QSYN-4266 | Fixed an issue where FlexSync 2.3.0 might not be picked up by the Unified User Interface (UUI). |
| QSYN-4291 | Fixed an issue with the UUI registration with multiple API gateways not working. |
| QSYN-4300 | Updated the default **tsm-media-reqs** configuration parameter from **unlimited** to **3**. |

| ID | Description |
|---|---|
| QSYN-4314 | Updated the default **shared-conn** configuration parameter from **true** to **false**. |
| QSYN-4338 | Fixed an issue where FlexSync replication gets stuck if media is unavailable. |
| QSYN-4343 | Fixed an issue where **flexsyncd** occasionally deadlocks. |

### FlexSync 2.3.0

| ID | Description |
|---|---|
| QSYN-2151 | Prune scan is taking a long time. |
| QSYN-2179 | **flexsyncd** crashes if not enough disk space. |
| QSYN-2340 | FlexSync needs its own log file. |
| QSYN-2442 | Should have better error if wrong password entered for **flexsyncadmin**. |
| QSYN-2446 | The **flexsyncadmin** man page does not show options for edit-host. |
| QSYN-2466 | Need to support transferring ACLs from NFSv4 (Isilon) system into StorNext. |
| QSYN-2635 | Supporting multiple gateway registration. |
| QSYN-3082 | Need better error than "no media available for retrieval of XX truncated". |
| QSYN-3216 | Replace Error message "File Unexpected truncated" with better errors. |
| QSYN-3284 | Need log file for CLI operations. |
| QSYN-3287 | When you enable debugging logging, do not flood with logs. |
| QSYN-3308 | Implement NFS ACL support in FlexSync. |
| QSYN-3362 | Drop support for RHEL/CentOS 6 and Debian 9. |
| QSYN-3490 | Documentation: Update exclusion documentation to state that you cannot use a leading space, an ending space, a file name with a space, and/or a directory with a space. |
| QSYN-3499 | Exclusion list string, needs to parse out starting space delimiter " " characters. |
| QSYN-3568 | Documentation: SMB share generated files from windows client failing to replicate from NFSv4 source to NFSv4 target. |
| QSYN-3638 | Documentation: As a user, I want to know where a log file is located and how to configure log rolling. |
| QSYN-3662 | Documentation: As a user, I want to know how to configure items for NFSv4 (Isilon). |

### FlexSync 2.2.4

| ID | Description |
|---|---|
| QSYN-962 | FlexSync should retry failed network operations. |
| QSYN-1356 | Improve accuracy of per-host throughput monitor. |
| QSYN-1401 | sparse file replication needs improvement. |
| QSYN-2053 | flexsyncd uses a lot of memory on the target node when retrieving truncated files. |
| QSYN-2089 | flexsync task does not complete, flexsync task forever in waiting: can't handle case where flexsync does not receive TSM stats. |
| QSYN-2094 | During data recovery activity, attempts to restore individual (large) files failed. |
| QSYN-2140 | Need retry logic for transient media retrieval errors. |
| QSYN-2314 | No marker available: No such operation, please disable option event |
| QSYN-2337 | Filter check is skipped on the source for unmanaged mdarchive enabled file system. |
| QSYN-2346 | flexsync_db_list_core got stuck with big task log. |
| QSYN-2373 | media_by_files rest api takes too long for large number of truncated files. |
| QSYN-2432 | Flexsync exclusions will block all files if a space is incorrectly left at the end of the entry |
| QSYN-2438 | Throttle the tsm file retrieval failure log entries |
| QSYN-2482 | Suspending a task can cause it to report an error state |
| QSYN-2484 | flexsync cli remote request getting disconnect errors for managed file system |
| QSYN-2535 | Some input parameter validation needed for flexsyncadmin |
| QSYN-2598 | task report errors reported appears to always be one more than actual number |
| QSYN-2610 | flexsync reports an estimation error every time if a file has a resource fork larger than 4k |
| QSYN-2657 | Fix retrying on source flexsyncd restart |
| QSYN-2672 | Provide summary statistics after estimation phase for better accountability |
| QSYN-2673 | metadata changes are mishandled for truncated files on a local host task |

| ID | Description |
|---|---|
| QSYN-2676 | Investigate avoiding reading truncated files when metadata only changes are made and a start-scan is run |
| QSYN-2678 | File not transferred to non-namedstream FS if named stream present on file |
| QSYN-2695 | Flexsync tmp files are inadvertently getting truncate exclude set from apple double file exclude designation |
| QSYN-2697 | Provide timing stats for copying files during task run |
| QSYN-2706 | The api needed to provide some kind of time out for waiting of incoming api/v1/rtv_files_by_media_data and api/v1/rtv_files_by_media_stat to prevent Flexsync to hang in case of TSM failure. |
| QSYN-2708 | Setting versioning enabled can leave tmp file behind when versioning occurs |
| QSYN-2752 | hit a segmentation fault in flexsyncd |
| QSYN-2757 | tmp file getting left on target |
| QSYN-2860 | --times getting different results between SN FS versus EXT4 |
| QSYN-2871 | FLEXSYNCD_SAVE_TASK_PERIOD_IN_SECONDS 30*60 should be configurable |
| QSYN-2925 | ignore-times=true doesn't work as expected |
| QSYN-2968 | Mismatch in total_trunc_files and processed_files_count leads to replication task stopping with errors |
| QSYN-2983 | daemon restarts after being killed, but sometimes doesn't come back online |
| QSYN-3044 | Requests hang after networking error |
| QSYN-3051 | Add open socket info to flexsync gather |
| QSYN-3137 | Fix Error log to contain path |
| QSYN-3148 | remove-task with --deletemydata not specified returns 0 instead of 1 |

### FlexSync 2.2.2

| ID | Description |
|---|---|
| QSYN-2672 | Provide summary statistics after estimation phase for better accountability. |
| QSYN-2673 | Metadata changes are mishandled for truncated files on a local host task. |

| ID | Description |
|---|---|
| QSYN-2692 | SM versioning test failing in cluster reporting unexpectedly truncated on files with metadata only changes. |

### FlexSync 2.2.1

| ID | Description |
|---|---|
| QSYN-521 | Avoid storing flexsyncd passwords plain text in flexsyncadmind database |
| QSYN-1222 | Need a way to enable flexsync debugging without also enabling qevhttp debugging |
| QSYN-1776 | flexsync re-replicates files when extended attrs are preserved and Apple double files were deleted from source |
| QSYN-1875 | Add test for new ignore FSID check |
| QSYN-1991 | When TSM is down, task sometimes not reporting error correctly |
| QSYN-2054 | Getting connection error when TSM down and error not reported as expected in task log |
| QSYN-2092 | Need the ability to clone a task in the CLI, rather than having to create one from scratch |
| QSYN-2093 | Documentation: Need the ability to clone a task in the GUI, rather than having to create one from scratch |
| QSYN-2106 | Flexsync should have more than one debug level |
| QSYN-2139 | Versioning enabled default when task created by GUI |
| QSYN-2142 | flexsync command should error out on bad marker or marker file |
| QSYN-2146 | Update EULA for the StorNext 7.0.1 Release. |
| QSYN-2157 | Documentation: Need the ability to clone a task in the CLI, rather than having to create one from scratch |
| QSYN-2158 | Need the ability to clone a task in the GUI, rather than having to create one from scratch |
| QSYN-2162 | After reversing a task, editing the new task cannot be submitted until scheduled replication is enabled |
| QSYN-2308 | New flexsyncd valgrind error |
| QSYN-2310 | Need a method to modify task name, source path, and destination path after cloning a task |

| ID | Description |
|---|---|
| QSYN-2312 | Upgrade, backup and restore functionality should support encrypted passwords and secret key in DB |
| QSYN-2315 | flexsync_scan_local:path: Too many open files |
| QSYN-2320 | EPERM error in multihost test. |
| QSYN-2332 | Clone method in GUI retains original task's schedule, leading to a race while editing the new task |
| QSYN-2333 | GUI shows task with no schedule as being scheduled every 1 second |
| QSYN-2334 | Gateway and smtp credentials should be encrypted |
| QSYN-2338 | Need to change the stable-2.2 version number to 2.2.1 |
| QSYN-2341 | Convert remaining object storage flexsync test from matrix to minio |
| QSYN-2342 | TSM down not detected correctly. Continues on to estimation pass |
| QSYN-2345 | Audit that stuff supposed to be in 2.2.1 is actually in 2.2.1 |
| QSYN-2347 | Documentation: Update FlexSync Best Practices Guide |
| QSYN-2355 | Documentation: FlexSync Installation steps for RedHat are incorrect |
| QSYN-2356 | Documentation: FlexSync Installation steps need rework |
| QSYN-2357 | Documentation: It's unclear when adding users what daemon to put |
| QSYN-2361 | Confusing error msg on version upgrade |
| QSYN-2362 | Duplicate task log messages for active task |
| QSYN-2363 | flexsyncadmind reports upgrade version error when ports are inaccessible |
| QSYN-2364 | Documentation: Add info on versioning to Best Practices section of our docs |
| QSYN-2372 | Need to update upgrade tests for 2.2.1 and 3.0.0 |
| QSYN-2374 | Task suspend/resume has issues with the task log |
| QSYN-2379 | Documentation: Section on Installation and Storage Manager needs delineation |
| QSYN-2380 | flexsyncamind reporting remote flexsyncds offline when they just need to be upgraded |

| ID | Description |
|---|---|
| QSYN-2381 | Documentation: Update to best practices Item |
| QSYN-2382 | status keeps reporting that flexsyncd on the remote node needs to be upgraded |
| QSYN-2383 | Documentation: FlexSync, drop support for upgrades from pre-1.1.3 Releases |
| QSYN-2389 | Add upgrade test back into std regression suite |
| QSYN-2391 | Add email_reporting to upgrade tests |
| QSYN-2393 | Documentation: Update documentation Item on hops from system to system |
| QSYN-2394 | Documentation: Reformat the Best Practices section to make it easier to read |
| QSYN-2395 | flexsyncadmind core dump in email reporting when a flexsyncd host runs old version |
| QSYN-2396 | old version flexsyncd panicked when receiving http code 205 from src running 2.2.x |
| QSYN-2397 | Error fetching fsm fsinfo |
| QSYN-2404 | 2.2.1 exclusion test failing with a licensing error |
| QSYN-2406 | valgrind errors in stable-2.2 tests |
| QSYN-2407 | upgrade test failing on email report |
| QSYN-2408 | vgrind_SM_mhost failing adding hostgroup with error 5 |
| QSYN-2409 | flexsyncd incorrectly reporting offline |
| QSYN-2411 | GUI warns user too frequently for offline nodes |
| QSYN-2412 | Offline message prevents getting status from CLI |
| QSYN-2413 | vgrind_mhost_SM test flexsyncadmind startup incorrectly has fsid-timer specified. Need to remove |
| QSYN-2417 | Remove GUI popup for offline and downrev host. Add appropriate status_string to be displayed in CLI and UI |
| QSYN-2419 | Change license from private_cloud to flex_private_cloud |
| QSYN-2420 | Convert valgrind tests to minio |
| QSYN-2421 | add upgrade tests for 2.1.4 to 2.2.1 and 3.0.0 |

| ID | Description |
|---|---|
| QSYN-2422 | flexsyncd coredump on 2.2.1 |
| QSYN-2423 | flexsyncadmin coredumps on 2.2.1 |
| QSYN-2424 | GUi needs to report when host is downrev. |
| QSYN-2429 | Failed to set option sync_schedule after setting to manual |
| QSYN-2430 | Release Notes: Document the EOL of the existing FlexSync UI |
| QSYN-2435 | host password cannot be updated. |
| QSYN-2436 | Test fails on fsid checking. |
| QSYN-2439 | config-restore with downrev hosts returning 0 instead of 1 |
| QSYN-2440 | Fix valgrind upgrade test |
| QSYN-2445 | Documentation: Update info about changing passwords |

### FlexSync 2.1.5

| ID | Description |
|---|---|
| QSYN-1907 | No warning if flexsync can't read xattr on source and preserve xattr is selected |
| QSYN-1950 | flexsyncd segmentation fault occurs upon flexsyncd_rest_file_data_finish / flexsync_vfs_close() |
| QSYN-2346 | flexsync_db_list_core got stuck with big task log |
| QSYN-2405 | Data miscompare after flexsyncd restart and start-task |
| QSYN-2524 | flexsyncd getting segmentation violation and producing core dump |
| QSYN-2536 | Core dump in Flexsync 2.1.5 |
| QSYN-2554 | flexsyncd.pstack isn't captured on non systemd linux by flexsync_gather |
| QSYN-2555 | flexsyncadmin valgrind errors |
| QSYN-2571 | core dump in json_to_evbuffer |
| QSYN-2598 | task report errors reported appears to always be one more than actual number |
| QSYN-2610 | flexsync reports an estimation error every time if a file has a resource fork larger than 4k |

| ID | Description |
|---|---|
| QSYN-2673 | metadata changes are mishandled for truncated files on a local host task |
| QSYN-2677 | metadata only changes on truncated files causing "file unexpectedly truncated" errors in the network transfer case |
| QSYN-2678 | File not transferred to non-namedstream FS if named stream present on file |
| QSYN-2718 | stable-2.1 getting unexpectedly truncated files with metadata only changes in network case |

### FlexSync 2.1.4

| ID | Description |
|---|---|
| QSYN-1921 | segmentation fault in flexsyncd in flexsync_rtv_tsm_data_init |

### FlexSync 2.1.3

| ID | Description |
|---|---|
| QSYN-1986 | Some of the stable-2.1 tests need fixing up |
| QSYN-2016 | Number of streams should be tunable for object storage and tape |
| QSYN-2017 | Fix stable-2.1 error message check to match corrected error |
| QSYN-2075 | Change the default flexsyncd data timeout to 15 minutes |
| QSYN-2085 | enhancement: 2.1.2 introduced hard-coded limits for direct retrieval (MAX_RTV_REQ_ CNT* & MAX_FILE_CNT_PER_RTV_REQUEST); these must be converted into tunables |
| QSYN-2087 | Documentation: Number of streams should be tunable for object storage and tape |
| QSYN-2099 | Wrong crt_last_stats_time placed in job->j_crt structure |
| QSYN-2102 | task log needs more detail about retrieval requests |
| QSYN-2103 | truncated file replication giving wrong final replicated count |
| QSYN-2108 | FlexSync does not copy files with dates in the future if a cool down time has been specified |
| QSYN-2124 | Bump up flexsync version to 2.1.3 in stable-2.1 branch |
| QSYN-2129 | Documentation: Document mdarchive cache size requirements for truncated file replication |
| QSYN-2130 | Restores not updating tsm options correctly |

| ID | Description |
|---|---|
| QSYN-2131 | Error in `/opt/quantum/flexsync/sbin/flexsyncd': double free or corruption |
| QSYN-2133 | Compatibility Guide: Update compatibility matrix for 2.1.3 |
| QSYN-2148 | config-restore test not properly handling tsm-req-files, tsm-obj-reqs, tsm-media-reqs |
| QSYN-2160 | fix up upgrade tests for 2.1.3 |
| QSYN-2161 | flexsyncadmin not detecting upgrade of client nodes correctly |
| QSYN-2309 | Remove DELETEMYDATA reference from upgrade test |
| QSYN-2311 | Need to change scheduled runs for stable-2.1 to use single variable for sntest options |
| QSYN-2316 | 10 million file replication 100k files truncated failed with timeouts |
| QSYN-2317 | Need to port a couple of tests back from master to stable-2.1 to avoid failures |
| QSYN-2321 | flexsyncd valgrind error in 2.1.3 |
| QSYN-2331 | 20 million truncated files test failure |
| QSYN-2353 | flexsyncd seg fault in segmented file test with 6.3.0 after unexpected timeout |
| QSYN-2354 | data miscompare 6.4.0 with 2.1.3 segmented truncated file test |

### FlexSync 2.1.2

| ID | Description |
|---|---|
| QSYN-1769 | Enhancement request for speeding up the files_by_media query |
| QSYN-1904 | Retrieval of truncated files very slow with object storage |
| QSYN-1912 | Enhancing pruning work for files in a media |
| QSYN-1990 | Documentation: Update the FlexSync information in the StorNext Compatibility Guide |
| QSYN-1992 | Seems to require flexsyncadmind restart to clear version mismatch error. Also true for 2.1.1 |
| QSYN-2001 | Hit a data miscompare |
| QSYN-2002 | flexsyncadmind version mismatch error needs fixing up |
| QSYN-2003 | flexsyncd timed out after all truncated files retrieved |

### FlexSync 2.1.1

| ID | Description |
|---|---|
| QSYN-1841 | Need to add an advanced option to ignore the FSID for task operations |
| QSYN-1842 | Documentation: Update for New advanced Tab option:FSID Check |
| QSYN-1843 | GUI Update:Add the new option for FSID Check to the Advanced tab for Task creation. |
| QSYN-1876 | flexsyncd panic upon failure to insert document: "SQL logic error or missing database" [with debug turned on but not strictly] |
| QSYN-1877 | Task hangs when replicating and source file system changes - FSID check disabled |
| QSYN-1878 | evbuffer disconnect when replicating offline files from object storage source |
| QSYN-1882 | valgrind errors in stable-2.1.1 |
| QSYN-1883 | flexsync replication fails w/ "Failed to open existing file * No data available" if destination file truncated |
| QSYN-1884 | fsid check disabled on stable 2.1, cannot be enabled |
| QSYN-1890 | Needs to be investigated - Do we have 'SQLite overflow' issue with enabled AUDIT option? |
| QSYN-1891 | Documentation: Need to reload GUI after upgrade to 2.1.1 to see FSID check option |
| QSYN-1895 | If source machine upgraded to 2.1.1 and destination remains at 2.1, no error |
| QSYN-1897 | new valgrind errors stable-2.1 |
| QSYN-1900 | valgrind error fix, as for stable-2.1 |
| QSYN-1908 | modify multihost_SM test to do some truncated target tests |
| QSYN-1909 | Documentation: Define character set limitation for FlexSync |
| QSYN-1910 | SM segment test failed due to peer disconnection under valgrind |
| QSYN-1913 | Documentation: Need to document FSMand fsrestd timeout recommendation for object storage flexsync source |
| QSYN-1915 | Increase the fsm and fsrestd timeout for managed tests using object storage |
| QSYN-1917 | New valgrind errors in stable-2.1 with Multihost managed segmented file test |
| QSYN-1918 | extend timeouts for some tests as needed |
| QSYN-1920 | Break up treecmp database creations to avoid slow processing |

### FlexSync 2.1.0

| ID | Description |
|---|---|
| QSYN-20 | QSyncD needs email alerts |
| QSYN-1550 | Need additional reporting to validate incomplete metadb query processing |
| QSYN-1552 | flexsync could potentially manage auth token better |
| QSYN-1563 | Flexsyncd core dump: FlexSync error: Failed to fetch metadata |
| QSYN-1636 | Dealing with TSM retrieval retry mechanism |
| QSYN-1657 | Failed to create tmp errors when file was created |
| QSYN-1682 | flexsyncdump usage message does not list the version option |
| QSYN-1700 | Maturity: flexsyncd core dumping |
| QSYN-1707 | Error parsing response json: evbuffer of zero size given |
| QSYN-1708 | No error when source upgraded to 2.0.x, destination at 1.3.0 |
| QSYN-1713 | Email Reporting: Error received when using the GUI to configure a default monthly notification schedule |
| QSYN-1714 | regression_local_B test failed with Disconnected by peer evbuffer of zero size given |
| QSYN-1716 | remove-task does not accept advertised options such as --all |
| QSYN-1721 | evbuffer failure and disconnects |
| QSYN-1723 | flexsyncadmind coredump |
| QSYN-1724 | Truncated file error is incorrect for local replications |
| QSYN-1725 | xattr not getting replicated correctly for MAC metadata test with 6.3.0 |
| QSYN-1726 | Documentation: As a user, I want to know how to configure an exclusion for a full path directory |
| QSYN-1727 | Extra error when wrong password supplied to flexsyncadmin - Error parsing request json:evbuffer of zero size |
| QSYN-1729 | Documentation: how to prepare for a flexsync host relocation? |

| ID | Description |
|---|---|
| QSYN-1730 | Documentation: how to prepare for a flexsync host network reconfiguration, when tasks are already in place? |
| QSYN-1731 | evbuffer of zero size message when there is a task error |
| QSYN-1732 | flexsyncadmin show-email-reporting is not longer 2.0.2 |
| QSYN-1734 | Hosts offline after config restore. Appears to be an auth_token problem |

### FlexSync 1.3.0

| ID | Description |
|---|---|
| QSYN-1598 | Delta update failed:Timed out waiting for data |
| QSYN-1566 | Whether or not to use delta compression should be configurable |
| QSYN-1653 | Quick status email notification feature |
| QSYN-1659 | Add GUI dialog to configure email reporting |
| QSYN-1660 | Add human readable output for flexsyncadmin show-email-reporting |
| QSYN-1661 | Improve status report syntax |
| QSYN-1662 | Investigate coverity issues in SMTP library |
| QSYN-1663 | Update flexsyncadmin man page to describe email reporting |
| QSYN-1664 | Test SMTP client with more SMTP servers |
| QSYN-1666 | Use "ASAP" model for cron scheduling versus traditional handling |
| QSYN-1668 | Finish GUI work for email reporting |
| QSYN-1670 | Email reporting should have configurable from address, SMTP username & password |
| QSYN-1673 | It would be helpful if email notification would tell user to also check task reports |
| QSYN-1674 | last letter of user name truncated when displaying SMTP user |
| QSYN-1675 | When source is long path name, all information not available in email notification |
| QSYN-1677 | GUI email reporting screen should not require SMTP user/password |
| QSYN-1678 | GUI should allow user to click disabled with no other fields |

| ID | Description |
|---|---|
| QSYN-1679 | email reporting GUI does not allow slash (incrementer) in advanced tab |
| QSYN-1680 | Documentation: As a user, I want to know how to configure email reporting |
| QSYN-1681 | Using one of the GUI yearly email reporting options results in invalid cron expression |
| QSYN-1683 | flexsyncadmin coredump when disabling email reporting, possibly after backup/restore |
| QSYN-1684 | email reporting config not preserved by backup/restore |
| QSYN-1685 | email reporting GUI should instruct users to separate email addresses with commas |
| QSYN-1687 | email smtp should use AUTH LOGIN instead of AUTH PLAIN |
| QSYN-1689 | flexsyncadmind core dumping in upgrade test |
| QSYN-1690 | flexsync status report should indicate email failure |
| QSYN-1692 | Documentation: flexsync documentation should be explicit about destination path should not be a stornext FS mount point or some FlexSync features will have unexpected behavior such as versioning and extraneous file deletion |
| QSYN-1696 | Documentation: Updates are needed to theNetowkring Tips and FAQ Page |
| QSYN-1702 | Create additional automated email tests for flexsync 2.0.3 and 1.3.0 |
| QSYN-1703 | Need automated test for email reporting settings backup and restore |
| QSYN-1706 | Documentation: Users should be told to restart GUI after upgrade |
| QSYN-1709 | Need debian tests for 1.3.0 release |
| QSYN-1710 | Create final 1.3.0 Build |

### FlexSync 1.2.3

| ID | Description |
|---|---|
| QSYN-1452 | This fix resolves an issue where FlexSync caused a segmentation fault due to an unhandled null pointer exception. |

### FlexSync 1.2.2

| ID | Description |
|---|---|
| QSYN-1429 | This fix resolves an issue where replicating a file with extended attributes created from Linux and an associated empty AppleDouble file resulted in a flexsyncd core dump. |

### FlexSync 1.2.1

| ID | Description |
|---|---|
| QSYN-1386 | For StorNext file systems that do not have **namedStreams** enabled, macOS puts extended attributes into AppleDouble files. Linux continues to store extended attributes with the main file.<br><br>This fix resolves an issue where files with a mixture of extended attributes on both the main file and in an AppleDouble file causes a FlexSync panic. |
| QSYN-1396 | When syncing a previously replicated large file where only the metadata has changed, or very little of the data has changed, timeout errors can occur.<br><br>For example:<br><br>`Delta update of dir1/file.0012 failed: error 3: Timed out waiting for data`<br><br>**WARNING:** Prior to installing the **flexsync-1.2.1** RPM, you must upgrade the **quantum_librsync** RPM from **quantum_librsync-2.0.0-1** to **quantum_librsync_2.0.0-2**. |
| QSYN-1399 | This fix resolves an issue that causes a task error related to symbolic links (symlinks), such as the following:<br><br>`Failed to create symlink '/Volumes/backups/Original Media/._flexsync_tmp_XIES3155.mov': File exists` |

### FlexSync 1.2.0

| ID | Description |
|---|---|
| QSYN-931 | A file system's extended attributes, when created by a macOS Samba client and contained in the AppleDouble file, may be placed in the inode when the file system is replicated with FlexSync. In this situation, if you use Samba to share the replicated destination, the extended attributes may not be visible from the macOS Samba client. |

### FlexSync 1.1.3

| ID | Description |
|---|---|
| QSYN-819 | Removing a task and requesting that the versions be removed can result in **flexsyncd** consuming large amounts of memory and CPU when there are many versions to remove. |
| QSYN-1258 | The **Task Report** displays an active task log every 11$^{th}$ entry. The **FlexSync Dashboard** fetches logs in batches of 10, and then **flexsyncd** adds in the active log.<br>If you have more than 10 task logs, then the active task log appears as the 1$^{st}$ entry, the 11$^{th}$ entry, and so on. |

### FlexSync 1.1.0

| ID | Description |
|---|---|
| QSYN-797 | If you try to remove a host that is offline or otherwise unavailable, then **flexsyncadmind** attempts to complete the removal of that host if it becomes available again. This results in an error and the application might become unresponsive.<br>You cannot remove a host that is offline or otherwise unavailable.<br>**Note:** The host's **flexsyncd** daemon must be running and reachable at its configured DNS name or IP address. |
| QSYN-918 | The number of reported active tasks may not be consistent between the FlexSync Dashboard and FlexSync CLI. |
| QSYN-939 | Partial configuration restores can result in inconsistent configurations and should be avoided at this time.<br>See Restore Your Configuration in the FlexSync Documentation Center. |
| QSYN-947 | If you are disconnected from the FlexSync Dashboard, the displayed **Reload** button may not work correctly.<br>**Workaround:** Close the browser tab or window, and initiate a new session with the FlexSync Dashboard. |

| ID | Description |
| --- | --- |
| QSYN-1090 | For tasks with versioning enabled, prior to FlexSync 1.0.5, the top level directory of each version was named using colons to separate the components of the time portion of the name. For example:<br><br>`src-12-14-2017-13:48:29`<br><br>In order to be compatible with Windows clients, the naming scheme no longer uses colons. For example:<br><br>`src-2017-12-14_13-50-02`<br><br>Upon upgrading to FlexSync 1.1.0, existing version directories are renamed to match the new scheme. The expiration of existing versions will continue to operate normally. |

| ID | Description |
|---|---|
| QSYN-1148 | Beginning with FlexSync 1.1.0, you are no longer required to include the **<hostgroup_name>** argument in the command syntax for the following **flexsyncadmin** CLI commands:<br>• add-default-task<br>• add-task<br>• edit-task<br>• remove-task<br>• remove-version<br>• reverse-task<br>• show-task-reports<br>• show-versions<br>• start-scan<br>• start-task<br>For example, prior to FlexSync 1.1.0, the **<hostgroup_name>** argument was required to start a replication task:<br>`/opt/quantum/flexsync/bin/flexsyncadmin -U admin -P password start-task <hostgroup_name> <dest_host_name> <task_name>`<br>In FlexSync 1.1.0 (or later), the **<hostgroup_name>** argument is not required to start a replication task.<br>For example:<br>`/opt/quantum/flexsync/bin/flexsyncadmin -U admin -P password start-task <dest_host_name> <task_name>` |

### FlexSync 1.0.5

| ID | Description |
|---|---|
| QSYN-1051 | Minor changes have been made to the **Task Configuration** dialog box in the **FlexSync Dashboard**.<br><br>Some of the items in the **Advanced** tab have been moved to a new tab named **Attributes**.<br><br>Also, new tasks now replicate extended attributes by default. This has a performance impact regardless of whether files contain extended attributes. If it is not required, you can disable replicating extended attributes in the **Attributes** tab of the **Task Configuration** dialog box by deselecting the **Preserve extended attributes** check box.<br><br>See FlexSync Dashboard: Configure Replication Tasks in the FlexSync Documentation Center. |
| QSYN-1106 | When one or more configured hosts were inaccessible, in some cases the it was not possible to create a new task through the **FlexSync Dashboard**.<br><br>a. Ensure that all configured hosts are accessible.<br><br>b. Create the task using the **FlexSync CLI**. See FlexSync CLI: Configure Replication Tasks in the FlexSync Documentation Center.<br><br>c. Upgrade to FlexSync 1.0.5. |

### FlexSync 1.0.4

| ID | Description |
|---|---|
| QSYN-970 | The **Force update** check box and tool tip on the **Task Configuration** window's **Advanced** tab is misnamed, which could lead to confusion about what the functionality actually does.<br><br>**Resolution:** The **Force update** check box has been renamed to **Skip newer files**. This functionality skips files that are newer on the destination during a replication task. |
| QSYN-1000 | If SSL is disabled for a replication task, **flexsyncd** will not be able to communicate with the StorNext File System Manager. This failure in communication causes continuous scanning of the task. |

### FlexSync 1.0.2

| ID | Description |
|---|---|
| QSYN-895 | When a replication task is run from the FlexSync Dashboard and the replicated files contain ACLs, the flexsyncd daemon running on the destination host might crash. This issue happens regardless of whether the **Preserve ACLs** option is selected on the **Advanced** tab of the **Task Configuration** window.<br><br>See FlexSync Dashboard: Configure Replication Tasks in the FlexSync Documentation Center. |

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