

DSI Conductor Software Release & Installation Notes

Release Date: 03/15/2024

Conductor V2R5 (requires VTL Agent version 2.03.019 or higher on all VTL servers)

What's New in Version V2R5

Service Management:

The Service Management software has been adapted to better align with the new DSI Storsight Multi-Tenancy capabilities. See the **"VTL Conductor for IBM I – Service Management – V2R5"** documentation.

Conductor:

This release is primarily a maintenance release that addresses improved automation processing for: media management, import, transfer and media duplication activities; general bug fixes; and improvements to user interface applications.

Added a new *DELAY qualifier for Conductor Export and Duplicate job scheduling. This allows the user to set a delay period (based on tape qualification time) that will determine when export or duplication jobs are scheduled.

When tapes are associated with deduplication policies that perform replication, Conductor will not qualify a volume for export/duplication until the qualified tape has completed replication activities.

This release removes code that would fail an import job if the imported tape's size exceeded the library's defined Maximum Capacity value for media. The VTL software now handles this situation without producing exceptions or errors.

What's New in Version V2R4

Conductor:

A new build process results in a much smaller installation and software footprint.

Improved communications management between the IBM host and the VTL Agent. This improves performance and reliability when multiple Conductor clients will be accessing the same DSI VTL.

Conductor has been qualified for use with the new DSI "Cloud" VTLs available to IBM cloud customers (iSCSI).

An improved Job Management application provides more list filtering, the count of jobs in the current view, and an ability to dump a job report using the current view of the Job Management application. See section **5-Reviewing/Managing Conductor/VTL Job Activity** for more information.

A *TRANSFER capability has been added to Conductor. This allows for the replication-based migration of media inventories to new DSI VTL servers or for automated recovery of primary media inventories from replica servers. It may be thought of as an export process for DSI-to-DSI migrations.

Migrations may be performed at the BRMS-Network level or at the LPAR level, with media qualification at each level available. Conductor will automatically perform all of the adjustments to the Conductor media database as well as perform all of the media property maintenance on the VTL and in BRMS that may be required to complete the media transfer:

- removing existing replication configurations for the source media, where applicable.
- automatically assigning source media to a new dedupe/replication policy for migration, where applicable.
- converting the new replica tape on the new server to a primary tape upon replication completion.
- assigning the new server's deduplication policy to the new tape on the new VTL server.
- automatically replicating the new server media to the new backup VTL, where applicable and when running in real time mode.
- updating BRMS as necessary, where desired, to reflect the new location for migrated media.
 - a. BRMS updates may occur in real time as tapes are migrated or be performed at the end of the migration process using BRMS commands.

The *TRANSFER option may also be used to recover primary media inventories from replica servers should this become necessary.

See section **3.8.9-Performing Automated Media Transfers or Recoveries** for more information on using the *TRANSFER function.

The *IMPORT function has been adapted to allow for automatic BRMS-Network level media qualification.

BRMS-Network level imports may now be run from the *ALL relationship created by Conductor (via Option 6 – **IBM i System Integration**); previously, network-level imports required the load of the DSISIS/IMPCTL table and the use of an alternate import management mechanism.

This alternative model remains available but, in most cases, may be superseded by the use of the *ALL relationship *IMPORT.

See section **3.8.2-Importing BRMS Legacy Media via LPAR Relationships** for more information on using the *ALL-LPAR *IMPORT functions.

A new command “DSI” is added to access the DSI Conductor Main Menu (the old “Conductor” command remains available).

The media duplication engine has been improved to better support BRMS duplication of media sets produced in parallel-drive backups as well as duplication of individual tapes produced by a parallel backup.

*IMPORT and automated media management activity may now auto-suspend, and auto-resume, based on the available storage on the primary VTL falling below and rising back above a specified minimum ratio of free storage. See section **3.4.5-Configure Monitoring** for more information on how to set the suspend threshold value for these functions.

*IMPORT processing will now recognize media overruns during imports. Overruns may occur when the source tape contains more data than allowed by the VTL’s “Maximum Capacity” value for a library. Previously, these tapes would indicate a normal completion status. In V2R4, *IMPORT jobs that result in overruns will automatically delete the imported media at *IMPORT completion and place the *IMPORT job in *FAILED status with appropriate messaging as to how to recover the import within the job details.

Corrected an issue where Conductor was in cases attempting to release unallocated storage, which produced dump reports on some systems.

Service Management:

Support for LT08 and 12,000GB maximum tape capacities for VTL 10.x servers.

Authorization data for managed client LPARs is now automatically provided to Failover servers, where applicable, eliminating the need for the user to transfer this data automatically.

Conductor's *IMPORT and *TRANSFER abilities may now be enabled and disabled for managed clients via the Service Management application, allowing the service provider to easily enable or disable these functions for a managed client.

- When enabled, managed clients will be able to register *SIR (dedupe) servers to their EV0, enabling imports to use the "import/dedupe" logical unit of work as well as support Conductor managing *TRANSFER activity, and provides temporary access to other supporting activities for these functions that are otherwise blocked from use by managed clients.
- Upon *IMPORTS and/or *TRANSFERS being disabled for a managed LPAR, any *SIR registrations will be automatically removed from the managed client configuration, and otherwise restricted functions/options are returned to a disabled state.

Creation of replication policies via the service management application now utilizes stored, encrypted passwords for replica servers; these passwords may be captured, encrypted, and stored using the "agentPWD" command provided with the DSI Agent software. See the DSI VTL Agent documentation or your DSI support representative for more information.

Virtual resource assignments are now executed using the VTL Target WWPN (instead of the LPAR client WWPN). This allows for creation of Fibre Channel clients in a variety of ways, some of which cannot be completed using the VTL Console (e.g., Multipath where allowed, some logical library configs using multiple fibre paths).

See the **VTL Conductor for IBM i – Service Management - V2R4** document for more information.

What's New in Version V2R3

Service Management:

Fibre Channel client management has been enhanced to support a variety of client configuration models. See section **3.2.1.1-Creating a Fibre Channel Client Entity** for more information on configuring Fibre Channel clients, and section **3.3.3-Assigning Library and Drive Resources to the VTL Client Entity**.

iSCSI client management is now supported. See section **3.2.1.2-Creating an iSCSI Client Entity** for more information on configuring iSCSI clients, and section **3.3.3-Assigning Library and Drive Resources to the VTL Client Entity**.

Conductor:

Imports:

- Modified BRMS-integrated import processes (when targeting virtual libraries with local device descriptions) to mount and dismount a tape after import to trigger deduplication/replication activities.
 - This replaces the "run policy" approach which queues all policy tapes. This greatly increases deduplication queue efficiency during imports but requires that an eject-triggered deduplication policy with a "change size" of 0 be utilized by the import job and that at least 2 virtual drives above max loads be available to each server/library for which Conductor is running imports to ensure Conductor can mount/dismount tapes.
 - Where possible, two extra drives per fibre path is the ideal.
 - Non-integrated imports will continue to use the "run policy" approach.
- Adapted the import message handler to attempt to assign the deduplication policy to an imported tape up to three times before considering a failure (failure requires manual dedupe policy assignment and execution).
- Adapted the import message handler to attempt to trigger dedupes up to three times before failure (failure requires manual deduplication execution; this will happen should virtual drives not be available to Conductor during imports).



- Prevent the issuance of the "Unable to change BRMS dupflag" message when import jobs fail or are canceled.
- Properly set IMPCTL "processed" column status values on failed or canceled import jobs when using the library-level import options.
- Corrected the import sequence indication on integrated LPAR import reports.
- Added qualified tape counts to the bottom of the IMPAUDRPT reports (import pre- and post-run reports).

DVMM:

- Corrected a bug in auto-config that could shut down the config function without error notification before all network LPARs had been evaluated.
- Adjusted the way DVMM determines which virtual library is the parent for media when calculating active media counts for shared BRMS classes.

Miscellaneous:

- Provided an optional method to re-route QSYSOPR-targeted messages to a queue other than QSYSOPR:
 - Create data area DSIMSGQ in library DSISYS of *CHAR type with length 20
 - CRTDTAARA DTAARA(DSISYS/DSIMSGQ) TYPE(*CHAR) LEN(20) TEXT('Identifies the*MSGQ to replace QSYSOPR for DSI messages')
 - Create an alternate message queue (DSI recommends DSISYS/DSYSOPR) and assign authorities as indicated:
 - CRTMSGQ MSGQ(DSISYS/DSYSOPR) TEXT('*MSGQ to accept Conductor messages targeted to QSYSOPR') MSGQFULL(*WRAP)
 - GRTOBJAUT OBJ(DSISYS/DSYSOPR) OBJTYPE(*MSGQ) USER(DSIUSER) AUT(*ALL)
 - Place the alternate *MSGQ name in positions 1-10 of the data area and the library in position 11-20:
 - CHGDTAARA DTAARA(DSISYS/DSIMSGQ (1 10)) VALUE('DSYSOPR')
 - CHGDTAARA DTAARA(DSISYS/DSIMSGQ (11 20)) VALUE('DSISYS')
 - When Conductor finds this data area and finds a valid *MSGQ name/library in the data area, messages targeted to QSYSOPR will instead be directed to the specified *MSGQ.

Install Instructions:

1. Transfer the DSISYS250.SAVF install file to an IBM i library as a *SAVF. Ideally, use name DSISYS250 for the *SAVF.
2. Log into the IBM host with an ID with *SECADM rights.
3. If upgrading from a prior version, create a backup *SAVF object into which the current version can be saved.
4. If upgrading from a prior version, end the DSISYS and if applicable, the DSIMON subsystems. Wait for them to terminate.
 - a. The DSIMON subsystem may be ended *IMMED;
 - b. The DSISYS subsystem should be ended *CNTRLD.
 - c. Ensure no users are locking the DSISYS library or any DSISYS library objects before continuing using the command WRKOBJLCK QSYS/DSISYS *LIB.
5. If updating from a prior version, issue the following command to save the current version:
 - a. SAVLICPGM LICPGM(2CB8D11) DEV(*SAVF) CHKSIG(*NONE) SAVF(<your *SAVF lib>/<your backup *SAVF>)
 - b. Once the current version has been saved successfully, re-check step 4c (library lock check) and continue with the next step when no locks are held.
6. RSTLICPGM LICPGM(2CB8D11) DEV(*SAVF) SAVF(<your *SAVF library>/DSISYS250).
7. If a new install, follow the configuration instructions from the Conductor user guide to configure your software.
8. If overlaying an existing install, the DSISYS subsystem will be automatically restarted. If using Conductor's duplication policy engine, manually restart the DSISYS/DSIMON subsystem.
9. If any errors occur during the upgrade, please capture the joblog for the upgrade job and forward that to DSI support.
 - a. Use DLTLICPGM LICPGM(2CB8D11) to remove the incomplete upgrade.
 - b. Use the command from option 6, changing the SAVF() parameter to the library and file name into which the previous version was saved in step 5.
 - c. Start the DSISYS and where applicable, DSIMON subsystems.
 - d. This will restore the pre-update state of the Conductor software.