



iSTREAM Release Notes

Version 4.2.0.0

iSTREAM version 4

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1. Introduction

iSTREAM V4R2M0 is a new release of iSTREAM. This version of the document is related to the PTF level 7S54004.

The principal difference between iSTREAM V4R2M0 and the previous V4R1M2 modification is in the features added to the iSYNC (iSTREAM File Data Replication) product option.

iSTREAM release V4R2M0 is backwards-compatible with all V4 releases. iSTREAM V4, however, is not completely object backwards-compatible with the previous versions of iSTREAM (3.6 and earlier). This means that multistreaming and transformation definitions have to be re-entered and recompiled before use. Therefore, iSTREAM version 4 is primarily recommended for new users, an upgrade of an earlier release requiring manual effort.

iSTREAM V4R2M0 has been designed for seamless slip-installation over all other iSTREAM V4 releases and modifications.

Modifications introduced by iSTREAM releases V4R0M0, V4R0M1, V4R1M0, and V4R1M1 and V4R1M2 have been included in separate sections.

2. iSTREAM V4R2M0 modifications

Reorganise While Active for Finastra(Misys) Equation is delivered as a functional PTF (7S54004). The PTF includes an enhancement to Finastra Equation system enabling the "while-active" mode for the database reorganisation previously included in the Equation EOD as phase C85. This PTF is copyrighted to iBoost Systems. The documentation for all iBoost Systems products is only available from iBoost Systems.

iSYNC feature (option 7 of the iSTREAM LP) has been enhanced as follows.

- The feature has been given a new name (previously it was known as iSTREAM File Replication).
- Multiple replication sets can now be defined for the same library unit. Each iSYNC line command has been enhanced with the replication set identifier parameter. Using this enhancement, multiple independent replication processes can be submitted and operated for the same library unit.
- Names of files in the same replication set must no longer be unique.
- Archival (*ARC) data replication type has been introduced. This mechanism can be used when records deleted from source library files need to be added to the target "archive" files, rather than deleted from them.

3. iSTREAM V4R1M2 modifications

Reorganise While Active for Finastra(Misys) Equation is delivered as a functional PTF (7S44004). The PTF includes an enhancement to Finastra Equation system enabling the "while-active" mode for the database reorganisation previously included in the Equation EOD as phase C85. This PTF is copyrighted to iBoost Systems. The documentation for all iBoost Systems products is only available from iBoost Systems.

Base feature has been enhanced as follows.

- New APPLYSPS and OMIT parameters have been added to the APYISTPTF command.
- New licence control framework has been implemented. If a licence for one of the product options expires, an error message is sent to the system operator message queue. This error, however, can be ignored for 21 days after the licence key expiration.

iSTREAM Access for Windows feature has been enhanced as follows.

- PTF installation process allows PTFs to be loaded and applied separately.

iSTREAM File Replication feature has been enhanced as follows.

- Cross-partition data replication is now supported as an option for the journal-based file data replication algorithm.
- Forced Write by RRN mechanism is deprecated for journal-based replication. RRNs of the source and target file records, however, are expected to be identical, if at the beginning of the replication process the target file structure is exactly the same as that of the source file (available for V4R1M1 as a PTF).
- The j-type replication mechanism has been optimised to use target file record blocking (available for V4R1M1 as a PTF).
- Prestart feature has been introduced to allow saving time and resource at the time of the replication process invocation.

4. iSTREAM V4R1M1 modifications

Reorganise While Active for Finastra(Misys) Equation is delivered as a functional PTF (7S34004). The PTF includes an enhancement to Finastra Equation system enabling the "while-active" mode for the database reorganisation previously included in the Equation EOD as phase C85. This PTF is copyrighted to iBoost Systems. The documentation for all iBoost Systems products is only available from iBoost Systems.

Base feature has been enhanced as follows.

- CHGDFTIST command can now be used to define the verbose (VRBLOG) mode based on job switch values.
- New system values JITCMPTFM and ENAEXTREG have been introduced.
- External registration facility (CRCVSAR) has been modified for high performance.

Asynchronous execution feature has been enhanced as follows.

- Optional unit-level override of SAVACT options has been introduced.

User-defined command transformation feature has been enhanced as follows.

- Transformation based on command parameter adding ("++" transformation definition prefix) has been enabled.
- Command transformation performance improved with the introduction of the user space based cache.

Rollback feature has been enhanced as follows.

- VFYOBLOCK command has been replaced with CHKOBJLCK command having similar functionality.

Performance Investigator has been enhanced as follows.

- Profiling groups were introduced in order to facilitate profiling of multiple unrelated groups of jobs using the same target collection.
- ENDAPPGRP command has been added to selectively end currently active iSTREAM PI performance profile collectors.

iSTREAM File Replication feature has been enhanced as follows.

- RRN- and LF-based replication methods have been added to the list of replication options.



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- File format names and unique keys fields are now automatically retrieved during the replication compilation from the underlying physical files (tables) and logical files, if defined.
- VRBLOG system variable now control message logging during the DSPFILSYN monitor activity period. By default, all joblog messaging is suppressed by the DSPFILSYN processor, unless VRBLOG variable value is set to *YES.
- The number of service jobs submitted to process journal-based file data replication is now controlled by a new CMPRPLUNT command parameter.
- Selective reassignment of file replication to different service jobs can be performed using command line API CRCESTS.
- STRGRPSYN command has been made available for restarting the replication process for groups of files.
- CMPRPLUNT command has been enhanced in order to allow selective compilation and compilation to the previous target release of the operating system.
- "Process Reset" capability has been added to the DSPFILSYN monitor
- PRESET parameter of STRRPLUNT command has been enhanced to facilitate replication restart after a normal or abnormal end.

5. iSTREAM V4R1M0 modifications

Reorganise While Active for Finastra(Misys) Equation is delivered as a functional PTF (7S24005). The PTF includes an enhancement to Finastra Equation system enabling the "while-active" mode for the database reorganisation previously included in the Equation EOD as phase C85. This PTF is copyrighted to iBoost Systems. The documentation for all iBoost Systems products is only available from iBoost Systems.

iSTREAM Access for MS Windows feature has been introduced.

All MS Windows front end functions for iSTREAM have been packaged as a separate 7S77STR LP option 6 and is to be installed on both the IBM i server and the MS Windows iSTREAM operational console. Option 6 has to be separately licensed in order to perform the front end functions. The functions provided by the iSTREAM Access for MS Windows are as follows:

- Installation (complete and selective) of iSTREAM LP options on target IBM i servers
- Creation of iSTREAM PTF set virtual optical drives from the media provided, PTF group and selective PTF installation
- Configuration of iSTREAM CCT (Flash, User-defined Transformations, and Rollback)
- Configuration of iSTREAM Multistreaming
- Performance Investigations using iSTREAM PI

Each of the above functions makes use of the iSTREAM Access for MS Windows and the related functional option of iSTREAM.

iSTREAM File Replication feature has been introduced.

iSTREAM File Replication is a utility designed to provide a simple intra-partition file synchronisation mechanism. It can be used when an exact copy of the production system files has to be created with minimum delay.

One of the obvious ways of fulfilling such a requirement is implementation of a generic object replication system based on journals. iSTREAM File Replication, however, is positioned as a budget synchronisation mechanism. It makes use of straightforward file comparison and update. A journal-based replication algorithm is also offered, primarily to address performance degradation when replicating a large number of files with static content.

Base feature has been enhanced as follows.

- Release V4R1M0 can be slip-installed over any of the previous releases starting from V3R5M0 with no preliminary manual updates of the system.
- DLTUNTCFG command removes the hot library, replication control library and all iSTREAM service objects from the control library.



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- SAVUNTCFG and RSTUNTCFG commands now process objects in the control library.
- Status messages added to the APYISTPTF command processor.

Asynchronous execution feature has been enhanced as follows.

- New Command Option parameters was introduced for ENAFLSEXE, DISFLSEXE and LSTFLSEXE commands.
- Prune flash requests function has been enabled from DSPFLSRQS display.
- The default command transformation enablement can be suppressed by the installation process.
- LSTFLSJOBA command has been introduced. This command is an API allowing the calling program to determine whether any of the earlier submitted flash server processes require attention.

User-defined command transformation feature has been enhanced as follows.

- @CMD variable has been added to the list of command transformation variables. CKSTACK specification has been extended with = and <> operators.

Rollback feature has been enhanced as follows.

- New PROMPT parameter added to VFYOBJLCK command. It can be used to suppress WRKOBJLCK prompting for objects with locks detected.#
- The default command transformation enablement can be suppressed by the installation process.

Multistreaming feature has been enhanced as follows.

- CMPSPTDFN command re-creates the synchro file, if it has been deleted.

6. iSTREAM V4R0M1 modifications

Functional modifications introduced in iSTREAM V4R0M1 are as follows.

Reorganise While Active for Finastra(Misys) Equation is delivered as a functional PTF (7S14005). The PTF includes an enhancement to Finastra Equation system enabling the "while-active" mode for the database reorganisation previously included in the Equation EOD as phase C85. This PTF is copyrighted to iBoost Systems. The documentation for all iBoost Systems products is only available from iBoost Systems.

Base feature has been enhanced as follows.

- Cross-partition licence verification framework has been made available. This framework allows preventive verification of the potential licence usage overrun.
- ISTVVAL data area containing current iSTREAM system values is deleted when iSTREAM LP is deleted. This data area is also created by RSTLICPGM 7S77STR command process, if not already exists.
- Spool and job control message queues in ISTVQS library renamed.
- Job (Jnnnnnn) and spool (SPLnnnnnn) control queues in ISTVQS library renamed to Juntuuuuuu and Luntnnnnnn respectively.
- ENDISTMOD command releases all iSTREAM licences acquired by the job.
- Licence requestors explicitly release licences when the related functions end.
- INSISTLIC command invocation option added to ISERV menu. 7S77STR 5050 feature licence is requested every time STRISTMOD command is used.
- APYISTPTF command for iSTREAM PTF installation using the 5250 interface has been introduced.

Asynchronous execution feature has been enhanced as follows.

- CRTTFMFIL command default for library name changed to *CTLLIB.
- Execution of flash background processes in remote partitions has been enabled.
- SAVCKPWAIT system value can now be used to define the save-while-active flash process timeout in the remote partition.

Command Transformation feature has been enhanced as follows.

- Transformation definition file is now to be restored to its original library during the unit configuration restore. If the library does not exist, the file is restored to ISTVQS under the name CRCVCMDunt.
- Working with transformation source members is now supported on systems with no PDM installed.



- CLRPFM command has been enabled for user-defined transformation.

Unit rollback feature has been enhanced as follows.

- Maximum file record length limit for multithreaded parallel rollback has been increased from 6,000 to 32,133 bytes.
- *JOBCTL no longer required for running iSTREAM rollback operations due to the elimination of dependency on ADDENVVAR and RMVENVVAR system commands.
- CLRPFM-protection of tables containing CLOBs/BLOBs.

Multistreaming feature has been enhanced as follows.

- Optional generation of merged spool files has been added.
- Working with generated multistreaming source is now supported on systems with no PDM installed.
- CRCSSIG command line utility has been added to provide a simplified interface for signing user-compiled multistreaming components before they can be used by iSTREAM.
- DFNSPTRNG command processor has been extended to support definition of first-level range specific breakdown of the second multistreaming level.
- DLTSPTRDFN command now allows deletion of split range definitions only.

Performance Investigator feature has been enhanced as follows.

- PI collection log can now optionally be saved to ANSLOG file in QTEMP library for browsing.
- Calculation of I/O delta statistics for files has been removed from PDC collectors. These statistics are now calculated by the collection normalisation step.

7. iSTREAM V4R0M0 modifications

Base feature has been enhanced as follows.

- CRCVSPP, CRCVSPW and CRCVCSJ APIs have been repackaged. Programs with these names can no longer be used. Instead, procedures with the related names have been added to the new service program ISTVCOR0.
- CHGDFTIST (iSTREAM default values) command has been extended to support the extended flash timeout list and multithreaded rollback mode parameters.
- Using the PTF installation App, individual PTFs can now be applied directly from the Cyprolics Web PTF repository.
- Cross-partition licence verification framework has been made available. This framework allows preventive verification of the potential licence usage overrun.
- RGZCPYFACT system value has been added.

Asynchronous execution feature has been enhanced as follows.

- Workload capping feature for flash asynchronous processes has been added. The name of the workload capping group can now be specified on STRISTMOD command.
- CHGDFTIST command parameters have been extended to allow defaults for all three values of SAVACTWAIT element list of SAVxxxxxx commands to be defined.
- qualified commands, e.g. *LIBL/SAVLIB or *SYSTEM/SAVLIB, are supported for asynchronous execution.

Command Transformation feature has been enhanced as follows.

- Internal conditional transformation program interface has changed; conditional transformations have to be recompiled before use.
- Restore Unit Configuration command (RSTUNTCFG) attempts to restore the earlier saved transformation definition file to the library with the same name as the one it was saved from.
- qualifiers *LIBL and *SYSTEM are now supported for commands used in transformation configurations.

Unit rollback feature has been enhanced as follows.

- Workload capping feature for iSTREAM rollback processes has been added. The name of the workload capping group can now be specified on RLBTCKP command.
- Maximum file record length limit for multithreaded parallel rollback has been increased from 6,000 to 32,133 bytes.

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- ISTVCM4 utility program can be used to create clone commands for all CRCC* processors in ISTSSYS library. The clones have the names identical to the original IBM commands transformed into their CRCC* equivalents in rollback protection mode. This feature could be used to additionally protect the target files for rollback when commands, e.g. CLRPFM, are invoked from the prompter. ISTVCM5 command line utility can be used to delete the proxi command objects created by ISTVCM4 from ISTSSYS library.

- qualifiers *LIBL and *SYSTEM can now be used with commands protected for rollback.

- RGZPFM processor based on CPYF command has been implemented.

Multistreaming feature has been enhanced as follows.

- New stream auto-balancing feature has been introduced (*AUTO breakdown special value of the split definition field of DFNSPTPRM command). It is designed to provide advanced functionality compared to *VFMS breakdown definition approach. The new breakdown method delivers similar functionality but does not require creation of maintenance of *VFMS files.

- All multistreaming definitions have to be recreated and recompiled (the syntax of DFNSPTPRM and DFNMSFSPC commands has not changed).

- Multistreaming definitions and objects generated by previous releases of iSTREAM are only source-compatible with version 4. This means that after the installation of version 4 the existing multistreaming configurations may stop working properly and require the definitions to be re-entered and recompiled.

- Synchro objects for work files are now created in the hot library. The synchro file that used to be created in ISTVQS library is no longer used.

- Optional inline generation of merged spool files has been introduced.

- In order to compile the customised source members generated by iSTREAM the following commands should now be used:

```
CRTCLMOD  MODULE(&CLIB/&CMP) SRCFILE(&SLIB/&SRC)
CRTPGM    PGM(&CLIB/&CMP) MODULE(&CLIB/&CMP) +
          BNDSRVPGM( (ISTSSYS/ISTVCOR4 *DEFER) )
```

The new programs therefore have to be compiled with the bind service program ISTVCOR4. This service program contains CRCSSPP and CRCSSPW APIs.

Performance Investigator feature has been enhanced as follows.

- The limit to the number of ODPs that could be analysed per job has been increased to 200.

- Collections created by previous releases of iSTREAM can be analysed by the Performance Investigator included in version 4 of iSTREAM, but an attempt to overwrite such a collection with a new one may end in error. Before submitting the performance collector with an option of using the existing collection library



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this library, if exists and has been created by an earlier release of PI, has to be deleted.

- STRDTAQCOL command (5250 only) has been added for collection of data queue related statistics.