

## **iSTREAM for Finastra Equation**

*Version 4.1.2.0*

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## **Trademarks**

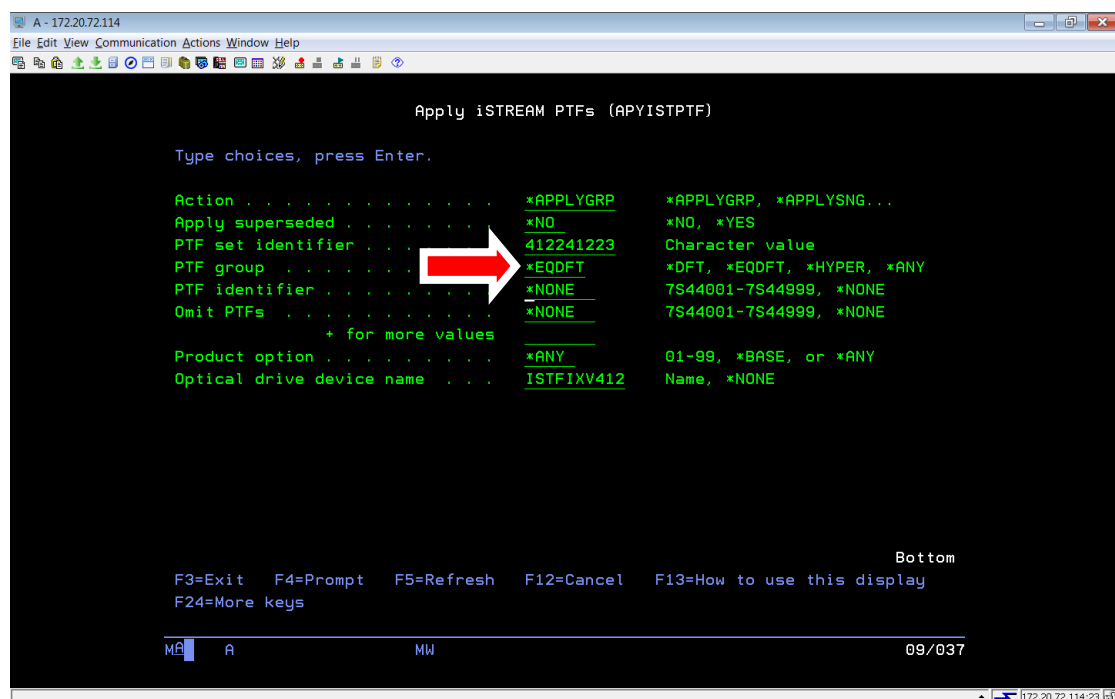
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## 1. Introduction

iSTREAM for Finastra Equation includes four enhancements to iSTREAM delivering enhanced functionality for Finastra Equation core banking system product. These enhancements are

- iSTREAM enabler for Finastra Equation (PTF 7S44001 - E type)
- iSTREAM for Finastra Equation BRMS bridge (PTF 7S44002 - H type)
- iSTREAM for Finastra Equation ROBOT/SAVE bridge (PTF 7S4403 - H type)
- RWA (Reorganisation-While-Active) for Finastra Equation (PTF 7S44004 - E type)

They are included in all PTF sets and installed using the standard iSTREAM PTF installation utility. The PTFs of E or H types are not loaded and installed by default. PTFs of E (Equation) type can be bulk-installed when \*EQDFT group is selected for installation.



```

A - 172.20.72.114
File Edit View Communication Actions Window Help
Apply iSTREAM PTFs (APYISTPTF)

Type choices, press Enter.

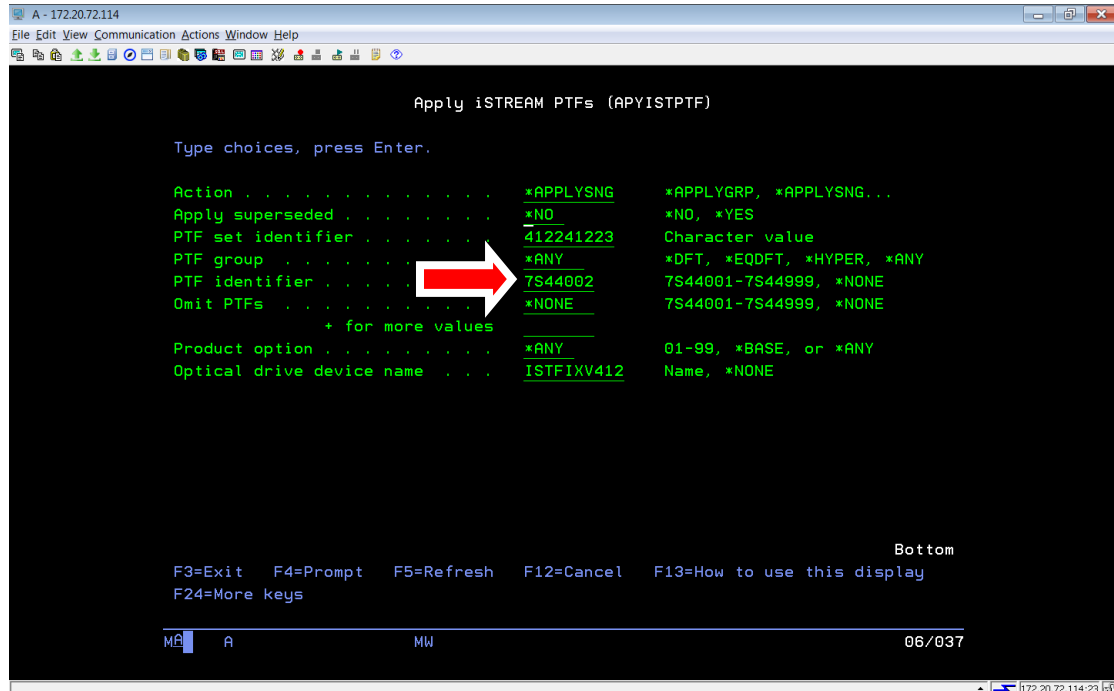
Action . . . . . *APPLYGRP      *APPLYGRP, *APPLYSNG...
Apply superseded . . . . . *NO      *NO, *YES
PTF set identifier . . . . . 412241223  Character value
PTF group . . . . . *EQDFT      *DFT, *EQDFT, *HYPER, *ANY
PTF identifier . . . . . *NONE      7S44001-7S44999, *NONE
Omit PTFs . . . . . *NONE      7S44001-7S44999, *NONE
+ for more values
Product option . . . . . *ANY      01-99, *BASE, or *ANY
Optical drive device name . . . . . ISTFIXV412  Name, *NONE

Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys

MA A MW 09/037
  
```

## iSTREAM for Finastra Equation

H-type (Hidden) PTFs can only be installed selectively. For example, installation of PTF 7S24002 has to be explicitly requested:



```

A - 172.20.72.114
File Edit View Communication Actions Window Help
Apply iSTREAM PTFs (APYISTPTF)

Type choices, press Enter.

Action . . . . . *APPLYSNG      *APPLYGRP, *APPLYSNG...
Apply superseded . . . . . *NO      *NO, *YES
PTF set identifier . . . . . 412241223  Character value
PTF group . . . . . *ANY      *DFT, *EQDFT, *HYPER, *ANY
PTF identifier . . . . . 7S44002  7S44001-7S44999, *NONE
Omit PTFs . . . . . *NONE      7S44001-7S44999, *NONE
+ for more values
Product option . . . . . *ANY      01-99, *BASE, or *ANY
Optical drive device name . . . . . ISTFIXV412  Name, *NONE

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys

Bottom
MA  A  MW  06/037
  
```

Selective installation can be requested for any PTF, not just those of the H type.

PTFs can also be loaded (and later applied) from the virtual optical drive ISTFIXV001 created as part of the PTF set installation. In this case, IBM commands LODPTF and APYPTF should be used. These commands, however, do not recognise the difference between iSTREAM PTFs of different types treating all of them equally.

Additional Equation handshaking features can be provided by iBoost Systems in the form of functional PTFs. The documentation for such enhancements should be obtained directly from iBoost Systems.

## 2. iSTREAM enabler for Finastra Equation

This PTF set implements two Equation handshaking functions, automatic generation of End-of-Day checkpoints in iSTREAM mode and multistreaming of report requests invoked using EQRRPT report driver program.

Included in the PTF is the iSTREAM version of KAPSWAP command used to swap Equation EOD phases. When in iSTREAM mode, this command is executed instead of the native Equation KAPSWAP command. The iSTREAM version of the KAPSWAP processor executes the native Equation command and then creates a checkpoint with the same name as the newly created phase. All this is transparent to the user, no changes to the iSTREAM configuration are required, except to keeping the unit journal definition in sync with the actual Equation unit journal configuration.

Standard Equation EQRRPT requests cannot be directly multistreamed using iSTREAM, because DFNSPTPRM provides only one set of multistreaming parameters per program and, therefore, different reports invoked via EQRRPT would only have only one set of master files and stream breakdown criteria. With iSTREAM, in order to multistream a request of the

```
CALL PGM(EQRRPT) PARM('RPTNAME')
```

type a proxy program containing the above call has to be created. This program can be given any name and stored in any library included in the library list of target jobs. DFNSPTPRM command can then be used to define multistreaming for the newly created proxy program.

The Equation handshaking PTF provides a special iSTREAM line command CRTERIPGM that can be used to create multistreaming proxy programs. CRTERIPGM (Create Equation Report Invocation Program) has the following parameters:

- Program name
- Equation report mnemonic name
- Object library where the generated program is stored
- Source library where the source code for the proxy program is stored as a member of CRCESRC file. The member is named after the Equation report mnemonic
- Program target release
- Replace indicator

It is recommended to use KLIBunt as the object library and KFILunt as the target source code library. The member in CRCESRC file should not be modified or deleted. Libraries containing both the above source file and generated object code must be part of the job library list at runtime.

For example, to create a multistreaming proxy for P72CRPR report the following command could be executed:

```
CRTERIPGM PGM(P72CRPR#) RPTMNM(P72CRPR) OBJLIB(*KLIB)  
          SRCLIB(*KFIL) RLS(*CURRENT) REPLACE(*NO)
```

## iSTREAM for Finastra Equation

This command would generate P72CRPR# program and store it in KLIBunt library, where *unt* is the name of the Equation unit the compilation job is signed on to. Program source would be saved in P72CRPR member of CRCESRC file in KFILunt library. If the file does not exist, it is created.

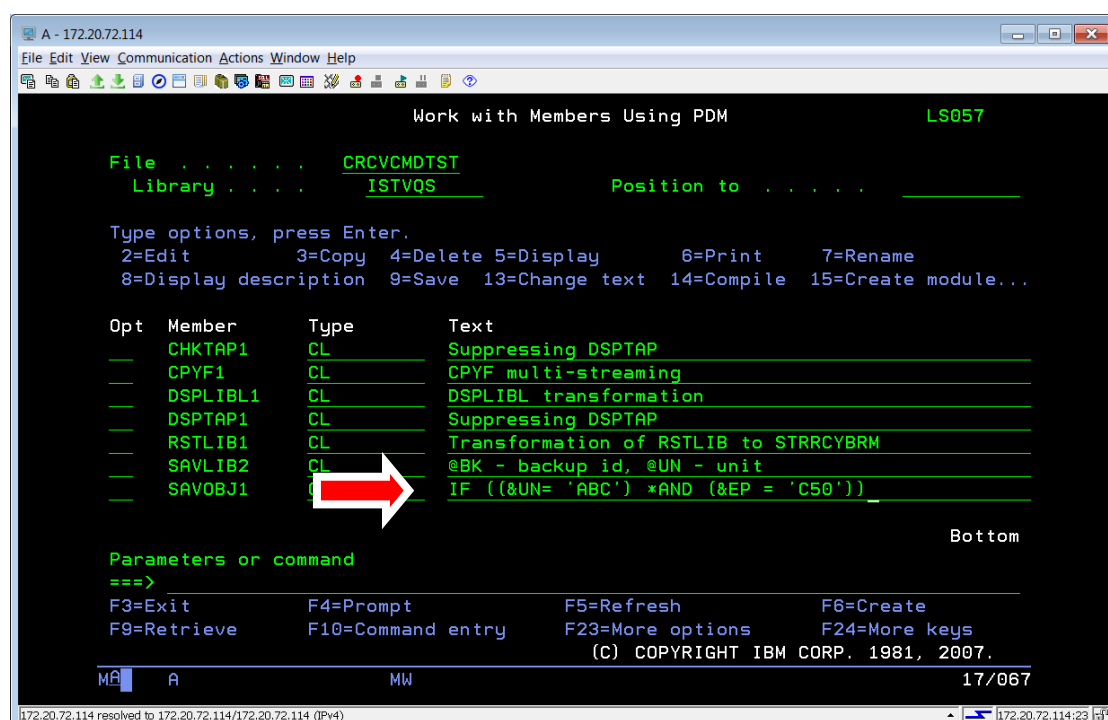
Multistreaming for P72CRPR report is defined using DFNSPTPRM command. The program component to be multistreamed, however, should be P72CRPR#, i.e. the newly generated proxi program.

At runtime EQRRPT special processor included in the PTF would retrieve the name of the proxi program and call it. Then, the multi-streaming framework would be activated.

There is a couple of special considerations for Equation in relation to the use of DFNSPTPRM command. First, when defining multistreaming for a EQRRPT-based component, the unique id for it should be set to "MTxxxxx" where x stands for any alphameric character. This would prevent Equation from submitting report programs to batch, and thus run them in the iSTREAM-created stream jobs. Second, ACMD1-ACMDn parameters should be used to sign on each of the stream jobs to the appropriate Equation unit, e.g.

```
ACMD1('CALL EQNSIGN PARM(&UNIT)') +
ACMD2('CALL EQNSDAT')
```

The only other feature of iSTREAM enablement for Equation is command transformation parameter &EP. This parameter can be used for conditional transformation definitions, specifically, for limiting the scope of transformation definitions to certain Equation phase(s). The following picture provides an example of such &EP use.



## **2.1 Workload capping**

If RLBTOCKP command is executed in the Equation environment (from RBKEQCKP program) with workload capping undefined (WLCGRP parameter), iStream attempts to add background rollback processes to RLBKWGEQ capping group. If no workload capping group with this name exists, a warning message is issued to the joblog of each of the background rollback streams, but the rollback process is not otherwise affected.

This functionality is part of the iSTREAM core and does not require any specific PTfs to be installed.



### **3. iSTREAM for Finastra Equation BRMS bridge**

This PTF implements BRMS support for Finastra Equation based on command transformation functionality of iSTREAM. If this PTF is applied and BRMS support is initialised and configured for an Equation unit, Equation unit jobs automatically start using BRMS commands to backup and restore Equation objects and libraries. The scope of the modification includes backup and restore operations that can be invoked from the following Equation menus: CMENU, KMENU1, KMENU6, KMENUL, KMENUR, KMENUS and KMENUT. All EOD-invoked backups are subject to transformation irrespective of the way the EOD process is executed.

#### **3.1 Initialisation and configuration**

Once the PTF has been loaded and applied, INZQBUNT command has to be executed for each target Equation unit. It is assumed that the name of the Equation unit is always the same as the name of the iSTREAM library unit. INZQBUNT command enables backup and recovery system commands used by Equation for iSTREAM command transformation and creates a new command transformation definition file for the unit in ISTVQS library.

If command transformation definitions have already been created for the unit, they have to be saved prior to the initialisation, because INZQBUNT command may overwrite them while copying new members to the transformation definition file. Potentially, user command transformation definitions may compromise Equation BRMS bridge functionality, so product and custom definitions should only be merged by an expert in iSTREAM command transformation.

By default, Equation BRMS bridge only kicks in if the name of the tape device configured in Equation for backup and restore is TAP08. This convention can be changed; in order to do this, transformation definitions for the given unit contained in ISTVQS/CRCVCMDunt file have to be modified accordingly. Changing the template definitions in ISTSSYS/CRCVCMDBRM file would automatically change the device naming default for all Equation units initialised after the template change.

iSTREAM mode for the unit named after its Equation counterpart must be configured with CMDTFM(\*YES) parameter.

#### **3.2 System and BRMS considerations**

ISTEQU media policy must be defined before Equation BRMS bridge is used for the first time. All Equation backups will use this policy.

QSAVACCPH system value controls saving of access paths by the bridge when performing Equation BRMS backups.

Tape device description TAP08 must be manually created. The device does not have to describe any configured hardware.



It is strongly recommended that \*SAVSYS special authority be granted to user profiles involved in Equation backup and recovery activities using the Equation BRMS bridge.

### **3.3 Usage notes**

Equation BRMS bridge maintains its own backup directory. It is stored in the library ISTVQS as a file with the name CRCBDIR. This file contains such information about each Equation backup as the type of the backup (journals or database), the name of the Equation unit and date/time of the backup. Over time the number of records in this file can grow, so to trim the file CLNEQBDIR command can be used. Once a record has been deleted from the directory file, the related backup becomes unavailable to the bridge.

Configuration of BRMS is the responsibility of the customer and generally does not affect the functionality of the bridge. Equation backups, therefore, can be stored in save files on disk, on tape, or on tape library media.

When a file restore option is selected from any of the Equation menus, Equation usually displays a prompt or information screen containing such information as the date the phase of the required backup, the phase to be created after the restore, etc. Those screens cannot be modified, as they are generated by the Equation system, but information on these screens related to the identity of the tape to be loaded has to be ignored, since tape devices are no longer handled by Equation - instead, BRMS functions are invoked by the bridge. Therefore, tapes requested by messages on such screens can be treated as virtual tapes actually handled by BRMS. BRMS messages should not be ignored.

Each time a library is to be restored by the Equation recovery process, Equation BRMS bridge makes use of CRCBBPR command to prompt the operator for the identity of the backup to be used. Answering CRCBBPR prompts plays the same role as physical selection and loading of the required tape. If multiple backups satisfy CRCBBPR selection criteria the latest is always used by Equation BRMS bridge.

## 4. iSTREAM for Finastra Equation ROBOT/SAVE bridge

This PTF implements ROBOT/SAVE support for Finastra Equation based on the command transformation functionality of iSTREAM. If the PTF is applied and ROBOT/SAVE support is initialised and configured for an Equation unit, Equation unit jobs automatically begin using ROBOT/SAVE commands to backup and restore Equation objects and libraries. The scope of the modification includes backup and restore operations that can be invoked from the following Equation menus: CMENU, KMENU1, KMENU6, KMENUL, KMENUR, KMENUS and KMENUT. All EOD-invoked backups are subject to transformation irrespective of the way the EOD process is executed.

### 4.1 Initialisation and configuration

Once the PTF has been loaded and applied, INZEQRUNT command has to be executed for each target Equation unit. It is assumed that the name of the Equation unit is always the same as the name of the iSTREAM library unit. INZEQRUNT command enables backup and recovery system commands used by Equation programs for iSTREAM command transformation and creates a new command transformation definition file for the unit in ISTVQS library.

If command transformation definitions have already been created for the unit, they have to be saved prior to the initialisation, because INZEQRUNT command may overwrite them while copying new members to the transformation definition file. Potentially, user command transformation definitions may compromise Equation ROBOT/SAVE bridge functionality, so product and custom definitions should only be merged by an expert in iSTREAM command transformation.

By default, Equation ROBOT/SAVE bridge only kicks in if the name of the tape device configured in Equation for backup and restore is TAP07. This convention can be changed; in order to do this transformation definitions for the given unit contained in ISTVQS/CRCVCMD $unt$  file have to be modified accordingly. Changing the template definitions in ISTSSYS/CRCVCMDRBS file would automatically change the device naming default for all Equation units initialised after the template change.

iSTREAM mode for the unit named after its Equation counterpart must be configured with CMDTFM(\*YES) parameter.

### 4.2 System and ROBOT/SAVE considerations

Complete ROBOT/SAVE configuration including encryption key setup must be performed before enabling Equation ROBOT/SAVE bridge functionality for any Equation unit using INZEQRUNT command.

Tape device description TAP07 must be created manually. The device does not have to describe any configured hardware. The target tape drive for Equation backup and restore operations should be configured in the command transformation definition file for the unit.

It is strongly recommended that \*SAVSYS special authority be granted to user profiles involved in Equation backup and recovery activities using Equation ROBOT/SAVE bridge.

### **4.3 Usage notes**

Equation ROBOT/SAVE bridge transforms standard Equation backup commands used by Equation system programs to the related ROBOT/SAVE commands. For example, SAVLIB command is transformed into RBSSAVLIB and SAVOBJ into RBSSAVOBJ.

Configuration of ROBOT/SAVE is the responsibility of the user and generally does not affect the functionality of the bridge. Equation backups, therefore, can be encrypted using any of the available keys and/or algorithms.

iSTREAM for Finastra Equation

## **5. RWA (Reorganisation-While-Active) for Finastra Equation**

This enhancement is owned and supported by iBoost Systems (™). The user manual and other documentation for it are available from the owner only.