



DR/Xpert®

Product Update Bulletin

Release 2.2.4



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Updates & New Features

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Introduction

The following updates have been made to the DR/Xpert product for Release 2.2.4. This is an outline of the new features. For complete descriptions on using these new features, refer to the DR/Xpert User Guide, or contact Technical Support with any questions you may have.

Changes in DR/Xpert R2.2.4

- 1 Added support for the following tape management systems:
 - CONTROL-T/R7.0
 - RMM/Z1.13
 - CA1/R12
 - TLMS/R12
- 2 Added support for the following tape media types:
 - StorageTek T10000C (5TB Native capacity)
 - StorageTek T10000CS (1TB Native Capacity)
 - IBM TS1140 / 3592-E07 (up to 4TB native capacity)
- 3 Added support for the following tape library interfaces:
 - IBM-LCS/Z1.13
- 4 DR/Xpert has the ability to override the default attributes for product related SYSOUT files. To use this function, a new PARMLIB member RPTALLOC has been added. Through RPTALLOC, DR/Xpert product SYSOUT files can be directed to different output classes, forms, and output writers. Alternatively, DR/Xpert SYSOUT files can be directed to a disk file as a generation dataset associated with individual SYSOUT files.
- 5 DR/Xpert provides new control over its work file allocations, giving you the ability to change default space allocation values for product datasets. Space overrides are specified in a new member in the parameter library named DSNALLOC. For more information, refer to the documentation for DSNALLOC in *DR/Xpert User Guide*.
- 6 DR/Xpert supports overrides for the actions taken when one of its write-to-operator (WTO) messages are issued. These overrides include affecting the step's condition code or changing the routing and descriptor codes for any product WTO message. See the OTMSGID member of PARMLIB.
- 7 DR/Xpert VDR driver exploits fast table lookup under VDR if the VDR release supports it. Faster table lookup was introduced in Tape/Copy R2.7.4 and VDR/LE R2.7.4. DR/Xpert can exploit this VDR feature by passing an include file (to VDR) with specific GDG generations rather than a generation data group followed by a wildcard. The benefit of this exploitation is reduced VDR tape usage, reduction in initial GDG backup, and reduction in VDR runtime in support of DR/Xpert backups. See the VDR-SUPPORTS-FAST-TABLE-LOOKUP parameter.

- 8 DR/Xpert can pass user specified DFSMSSdss execute card parameters to the internal invocation of ADRDSSU. An example would be pass TYPRUN=NORUN to ADRDSSU. See the DFDSS-OVERRIDE keyword parameter.
- 9 A new parameter allows DR/Xpert to limit its number of simultaneous HSM recall requests; this parameter can be used to eliminate ARC0059I messages from HSM caused by DR/Xpert. See MAXIMUM-HSM-RECALLS-PER-JOB keyword parameter.
- 10 When DR/Xpert is recovering datasets through the ABARS driver, two new keyword parameters provide values for the ARECOVER command's DSCONFLICT and MIGRATEDDATA keywords. See ARECOVER-DATASETCONFLICT and ARECOVER-MIGRATEDDATA keyword parameters.
- 11 A new keyword parameter allows DR/Xpert to create a new backup when collocation rules cause a dataset to change.
- 12 A performance enhancement allows HSM MCDS information to be extracted and cached giving quicker access to HSM data.
- 13 The maximum number of queue records (BKPQUEUE dataset) has been increased from 99,999 to 999,999,999.
- 14 An enhancement to the AUDIT running as PARM=SIM produces common utility control cards for tape management, IDCAMS, and HSEND that will cleanup DR/Xpert resources. These control cards provide visibility to DR/Xpert's cleanup that will be performed when PARM=SIM is removed.
- 15 For customers who use DR/Xpert's ABARS driver, the AUDIT program has been enhanced to look for DR/Xpert controlled ABARS aggregates that are orphaned; that is, ABARS aggregates that no longer correspond to any DR/Xpert aggregates. DR/Xpert will automatically remove them from HSM's BCDS.
- 16 The following new members are introduced in DR/Xpert R2.2.4:
 - New PARMLIB members
DELPROGS
DSNALLOC
RPTALLOC
 - The following members have been moved from PARMLIB to JCLLIB
OTCDBA99
OTCDBTAL

Changes in DR/Xpert R2.2.3

1 New TSO Applications Provide Comprehensive Status Displays

R2.2.3 provides several display applications giving information related to DR/Xpert's three functional areas: identification, backup, and recovery. Each application starts with a dataset cross-reference lists providing an overview display; then, any line item may be selected to display individual detail information.

TSO functions include:

- Identification
 - a List all Production Datasets
 - b Display detailed information regarding production datasets, including DR/Xpert critical status decisions
- Backup
 - a Display active backup aggregate list
 - b Display specific aggregate status
 - c Display list of dataset definitions within DR/Xpert's backup database
 - d Display detailed information regarding dataset definitions within DR/Xpert's backup database, including active backups and backup history
 - e Display backup utility's dataset and volume information
 - f Display datasets associated with a backup
- Recovery
 - a Display applications associated with recovery
 - b Display datasets associated with recovery by application or by aggregate
 - c Monitor recovery
 - d Predict recovery time and resources

2 Backup by Application

Files for one or more applications may be selected by name or application mask; and backups can be made specifically for those selectable applications.

The benefits are an acceleration of the backup schedule, getting backup work completed as soon as it becomes available; and similarly, components of the application are ready for vaulting earlier.

Components for implementing backup by application include:

- APPLEND, a mini-sweep of DR/Xpert's database looking for work belonging to specific applications
- APPLBKUP, a job to schedule backups of applications identified by APPLEND.

These jobs can be run together or APPLBKUP can run after several APPLEND jobs have run.

3 DFDSS Backup to Disk

Functionality for DR/Xpert's DFDSS driver has been extended to allow customers to direct DR/Xpert backups to disk as well as tape. Formerly, DR/Xpert forced all DFDSS backups to tape devices; but a new option in R2.2.3 allows DR/Xpert to direct DFDSS to disk. DR/Xpert will manage disk storage requirements and dynamically allocate a disk backup file according to the aggregate size requirements.

Configuration changes to support DFDSS disk backup files are controlled by statements in DR/Xpert's collocation rules table (COLOCTBL). If you want to have DFDSS backup files on disk, use DSSDISK in place of rules that once specified DFDSS. Backing up files to disk can be mixed with backups to tape based on the granularity of the collocation rules.

Example COLOCTBL

```
IF DEVTYPE EQ DISK
AND APPLNAME EQ >TODISK
THEN GROUPA.DSSDISK
IF DEVTYPE EQ DISK
THEN GROUPA.DFDSS
DEFAULT GROUPA.TAPECOPY
```

The following USERSETS parameters may be useful for controlling backup dataset attributes. See [DR/Xpert Parameters Guide](#) for more information on these keyword parameters. See [DR/Xpert User Guide](#) for more information related to coding rules for the COLOCTBL.

```
BACKUP-TO-DISK-DATA-CLASS
BACKUP-TO-DISK-MANAGEMENT-CLASS
BACKUP-TO-DISK-SPACE-UNIT-TRACK-LIMIT
BACKUP-TO-DISK-STORAGE-CLASS
BACKUP-TO-DISK-UNIT
BACKUP-DFDSS-BLKSIZE
```

4 TAPECOPY Driver Performance Improvements via Bulk Volume Information Retrieval

Performance Technology from OpenTech Systems VDR product has been introduced into DR/Xpert. DR/Xpert shares logic with VDR exploiting BVIR information from a Virtual Tape System. Beginning with DR/Xpert R2.2.3, the TAPECOPY driver can order access according to each file's internal location on a VTS backend tape. This improvement reduces tape thrashing.

Components to implement this feature include:

- BVIR Database
- BLDBVIRD job stream to query the VTS systems tape repository and build the BVIR database. This job stream and the BVIR database can be shared between VDR and DR/Xpert. BLDBVIRD is intended for IBM VTS customers.
- For STK VTS systems, schedule BVIRBLDS in place of BLDBVIRD.
- The following keywords are related to BVIR support. Refer to [DR/Xpert Parameters Guide](#) for further explanation of these keywords:

BVIR-JOB-NAME
BVIR-JOB-NAME-SCROLLING
BVIR-JOB-NAME-SCROLLING-LIMIT
DYNAMIC-ALLOCATION-BVIRVSAM-DATA-VOLSER
DYNAMIC-ALLOCATION-BVIRVSAM-DATASET-NAME-PREFIX
DYNAMIC-ALLOCATION-BVIRVSAM-INDEX-VOLSER
MAXIMUM-ACCEPTABLE-BVIR-DB-AGE-IN-DAYS

At a minimum, consider non-default values for BVIR-JOB-NAME, DYNAMIC-ALLOCATION-BVIRVSAM-DASET-NAME-PREFIX, and MAXIMUM-ACCEPTABLE-BVIR-DB-AGE-IN-DAYS.

See [DR/Xpert User Guide](#) for more information related to BLDBVIRD and BVIRBLDS job streams. See [DR/Xpert Parameters Guide](#) for information related to the preceding USERSETS parameters.

5 DR/Xpert TAPECOPY Driver Supports "ASIS" Copies

DR/Xpert TAPECOPY driver has been extended to support "ASIS" copies from source tape volumes. This feature allows tape-to-tape backups to retain the original volume count for the source tape's volume set.

This feature benefits customers who have a range of small capacity tape volumes; and, the customer would likely use TAPECOPY in-place recovery to recover critical tape files.

Specification for this feature is through a new driver name in DR/Xpert's collocation table, TAPEASIS. If you want to have "ASIS" tape backups, use TAPEASIS in places where TAPECOPY was formally coded. See [DR/Xpert User Guide](#) for more information on coding rules for COLOCTBL.

DR/Xpert provides a new selectable field available in the COLOCTBL rules member, VOLSER. This new field is provided to filter TAPEASIS usage based on a tape volume range. In the example below, SMALLVOL is a list of small capacity volumes. Those volumes will be assigned to the TAPEASIS driver, while the TAPECOPY driver will service other tape volumes.

Example COLOCTBL

```
IF DEVTYPE EQ TAPE
AND VOLSER EQ >SMALLVOL
THEN GROUPA.TAPEASIS
IF DEVTYPE EQ TAPE
THEN GROUPA.TAPECOPY
```

6 DR/Xpert Backup JOB Supports "ANY" as Driver Type

DR/Xpert backup jobs can be altered to service any aggregate or driver type for backup. Normally, DR/Xpert generates JCL members, encoding different DRIVER-TYPE parameters for each driver it needs. For example, some backup jobs might have DRIVER-TYPE TAPECOPY to service backups for tapes and some jobs might have DRIVER-TYPE DFDSS to service backups for disk files. With the new release, DR/

Xpert backup jobs can specify DRIVER-TYPE ANY and the backup job will invoke either TAPECOPY or DFDSS as determined by the backup program.

This feature provides additional flexibility for DR/Xpert backup JCL stored and controlled by a third-party scheduling product. Assuming that each customer directs DR/Xpert to use two or more different drivers; the customer can schedule the same backup JCL members and allow the DR/Xpert backup program determine the driver to invoke.

Components and procedure to implement this feature include:

- Copy generated backup job streams, found in DR/Xpert's BKPIJOBS dataset to another dataset. For example, copy job streams to a PDS belonging to a scheduling system.
- Modify the DRIVER-TYPE keyword to "ANY"

Additionally, the following keywords supplement the "ANY" driver feature. Consider providing these optional control statements in USERSETS according to processing needs.

REPEAT-DRIVERS: YES

REPEAT-DRIVER-AFTER-FAILURE: YES

7 Single Backup Database Support

DR/Xpert optionally supports a single backup database instead of two. That is, a customer can have a combined DR/Xpert database containing online and batch data backup rules. This feature benefits scheduling and managing the DR/Xpert GUI component.

Components to implement this feature:

- Run one-time REXX script to extract and move online datasets to the batch database.
- Modify or add the following control statement in USERSETS:

ONLINE-DATABASE: NO

8 Import non-DR/Xpert Backup into Backup Database

Components of any DFDSS backup can be imported into the DR/Xpert backup database.

Components to implement this feature include:

- Run RESTORE with TYPRUN=NORUN
- Capture SYSPRINT to a disk file.
- Use REXX Script to create update control cards for DR/Xpert database.

DR/Xpert will backup these datasets again whenever they change; and, these datasets will participate in recovery operations like any other DR/Xpert-controlled dataset.

9 Closer Integration Between DR/Xpert and VDR

DR/Xpert interprets information provided by VDR to confirm that VDR has successfully processed DR/Xpert-managed datasets. The VDR statuses of files are reflected in status flags within DR/Xpert's backup database.

Components to implement this feature are independent VDR functions. DR/Xpert simply interprets VDR information to update DR/Xpert's database.

- During backup phase, VDR Inventory File
- During recovery phase, VDR Business Continuity Database
- VDRCFIRM job stream confirms VDR backup of DR/Xpert-controlled datasets using VDR's inventory file. DR/Xpert is somewhat dependent on an accurate inventory file, but the information DR/Xpert is simply assurance that VDR's backup is complete. This is important as the INCLDSNS file DR/Xpert makes for VDR might not be given to a VDR backup job. This process confirms that VDR knows about the backups DR/Xpert wants VDR to backup.
- VDR Business Continuity Database is used to confirm VDR recovery is complete. DR/Xpert assumes VDR is recovered prior to DR/Xpert recovery jobs begin running; therefore, the Business Continuity Data base is available before DR/Xpert's VDR recovery jobs need to update the backup database.

VDRCFIRM and DR/Xpert VDR recovery jobs allow for reruns; therefore, VDR and DR/Xpert confirmation processes can be rerun until the status is acceptable.

See [DR/Xpert User Guide](#) for more information on the VDRCFIRM job stream. See VDR product documentation for topics related to VDR's Inventory File and Business Continuity Database.

10 Equate Dataset's Application by Dataset Name Rule

DR/Xpert can assign application names to specific datasets using dataset name rules. These rules are supplemental, but supersede assigning a dataset's application via its creating job.

Dataset application name assignment is controlled by equating dataset names to application names in the APPLDSNS rule member.

This feature will benefit customers whose dataset naming conventions imply the functional group where the dataset belongs; and, whenever the dataset naming conventions are better than using the application name belonging to the dataset's creating job.

11 Identify Production Jobs by Rule

By option, DR/Xpert will identify production jobs by a metric in SMF data; or DR/Xpert will identify production jobs by scheduling product's production job report.

DR/Xpert can identify production jobs using a combination of the following pieces of information. The first two selectable fields: job name and identification by scheduling system is DR/Xpert traditional method of identifying production jobs. The remaining are new criteria available in DR/Xpert R2.2.3.

- a Job name
- b Identification of job from a scheduling systems' production job report
- c Job class
- d Job type (JES2, STC, TSO)
- e Security User
- f Security Group

g Accounting Information

This new feature benefit customers who have strong production rules defining production JOB Classes, RACF users, or RACF groups; and, the customer prefers these rules as a method to identify production jobs.

Implementation of this feature is accomplished via these components:

- Specify USE-PRODRULE: YES in USERSETS
- Specify rules in PRODRULE member

For example, production jobs can be identified with the following rule making all numeric class jobs production:

```
IF JOBCLASS EQ!  
THEN PRODUCTION  
DEFAULT NON-PRODUCTION
```

12 New SMF Collection Requirements

Beginning DR/Xpert R2.2.3, the Analysis program uses SMF 61 and 65 records to track file creations and deletions; and beginning DR/Xpert R2.2.3, DR/Xpert uses step interval-time records to get job related information.

DR/Xpert uses SMF 61 and 65 records to track files creation and deletion. This is particularly a benefit when IEFBR14 or IDCAMS performs delete and allocation functions. The support for SMF record-types 61 and 65 benefits DR/Xpert giving less reliance on DR/Xpert's JCL scan utility.

To implement these changes, change SMFPRMnn or an equivalent facility to direct SMF to collect SMF 61 and 65 records. For detailed information on z/OS SMF collection, definition and configuration; see *MVS Installation and Tuning Reference*.

The statements below are examples of the control statements found in z/OS SMFPRMnn PARMLIB member and represent the SMF records DR/Xpert needs. The ellipses represent other SMF record types required by the customer.

```
SYS (TYPE (14, 15, 61, 64, 65, 30, . . .) ,  
SUBSYS (JES2, TYPE (14, 15, 61, 64, 65, 30, . . .) ,
```

Additionally, DR/Xpert supports the collection of SMF Step Interval Timing Records. This change allows DR/Xpert to accelerate the identification of files belonging to long running jobs such as CICS. OpenTech support personnel may direct customers to collect step interval-timing records when CICS applications run longer than a week.

For detailed information related to generating SMF type 30 step interval-timing records, see IBM MVS Installation and Tuning Reference, chapter 71 SMFPRMxx (System Management Facility (SMF) parameters). The default, NOINTERVAL, prevents generation of step interval-time records.

The following are examples that generate the records DR/Xpert requires:

```
SYS (. . . , INTERVAL (010000) , . . . ) or SYS (. . . , INTERVAL (SMF) , . . . )
```

13 New Criteria for Aggregate File Recycle

DR/Xpert aggregate files can be recycled as a percentage of original aggregate backup size. This feature is made effective using the following USERSETS parameters.

THRESHOLD-PERCENTAGE-OF-ORIGINAL-BACKUP-SIZE: YES

READ-ONLY-SIZE-THRESHOLD: nn%

When these parameters are set, the aggregate recycle percentage is a percentage of the original aggregate size. Aggregates are recycled when the loss of datasets to new backups cause the active dataset capacity to fall below the specified percentage.

This feature benefits situations when more granular control over useful (active) backup capacity is needed. Small capacity tape volumes will be the most likely beneficiaries, for example, virtual tape systems (VTS). This is because, with small tape volumes, the loss of one or two datasets can cause significant internal fragmentation within the backup.

14 The following new members are introduced in DR/Xpert release 2.2.3:

■ New PARMLIB members

APPLDSNS
PRODRULE
KNOWBKUP

■ New JCLLIB members

APPLBKUP
APPLEND
APPRBKUP
BLDBVIRD
BVIRBLDS
UPFROM
VDRCFIRM
VDRCLEAN

15 The following members are updated in DR/Xpert release 2.2.3:

■ Updated PARMLIB members

ATLDRVRS
COLOCTBL (documentation)
LIBRYDEF
SMFSPRES
WTOAGGOK
ZEKERX

■ Updated JCLLIB members

NEWNAMES

■ Added support for the following tape management systems:

Control-T R8.0
RMM/Z1.13

Changes in DR/Xpert R2.2.2

1 FDRABR Support

Support for FDRABR is available for clients who are licensees for FDRABR, an Innovation Data Processing product.

Configuration changes to use FDRABR are accomplished by changing rules in DR/Xpert's collocation rules table (COLOCTBL) to reference FDRABR for backing up disk files.

Example COLOCTBL

```
IF DEVTYPE EQ DISK
THEN     GROUPA.FDRABR
DEFAULT GROUPA.TAPECOPY
```

Additional parameter library members are prototypes for FDRABR backup and recovery. For more information, please see new member description for FDRDUMP and FDRREST in [Appendix D, "PARMLIB Library"](#) of the DR/Xpert's User Guide.

2 Support for Incremental Backup after Datacenter-Wide Backup Event.

DR/Xpert can support incremental backups after a backup period has begun. DR/Xpert defines a backup period beginning as the result of a disk backup event and/or a tape backup event. These events are defined by datacenter-wide activity like full volume backups and VTS Exports. These events should include other backup activities like backing up ICF catalogs and the tape catalog.

DR/Xpert provides a new JOB stream to register the datacenter-wide event in its backup database. For more information, please see BKUPPNT in [Appendix C, "JCLLIB Library"](#) of DR/Xpert's User Guide.

DR/Xpert has introduced three new pairs of keywords that control registration, recovery, and expiration of backups. The pairs represent functions performed for disk and tape. For more information on the following keywords, please see [Parameter Reference Guide](#).

```
REGISTER-DISK-BACKUP-PERIOD
DISK-RECOVERY-STARTS-FROM
EXPIRE-DISK-AGGREGATE-WHEN

REGISTER-TAPE-BACKUP-PERIOD
TAPE-RECOVERY-STARTS-FROM
EXPIRE-TAPE-AGGREGATE-WHEN
```

3 Enhanced Support for VDR INCLDSNS Members.

DR/Xpert has enhanced the formatting for VDR selection control files, also known as, VDR's INCLDSNS dataset members. This enhancement is for customers who are licensed to use OpenTech Systems VDR product and prefer using VDR for critical tape file backup.

In order to use this feature, the customer will provide the name of a dataset that is shared between DR/Xpert and VDR. VDR JCL would contain this file via the // INCLDSNS DD-statement.

The following USETSETS keyword identifies the dataset share between products:

VDR-CONTROL-FILENAME: DRX.INCLDSNS.FILE

DR/Xpert will allocate the specified dataset, if it does not already exist. DR/Xpert appends new file names at the end of the shared dataset, it is sorted, and duplicates are removed.

Other configuration changes to direct DR/Xpert to populate an INCLDSNS file for VDR are accomplished by changing rules in DR/Xpert's collocation rules table (COLOCTBL) to reference VDR for backing up disk files.

Example COLOCTBL:

```
IF  DEVTYPE  EQ  DISK
THEN  GROUPA.DFDSS
DEFAULT  GROUPA.VDR
```



Note OpenTech Systems recommends scratching this shared dataset daily. The datasets should be scratch after VDR runs, but before DR/Xpert submits its first backup of the day.



Warning OpenTech Systems believes that the VDR and TAPECOPY drivers are incompatible with one another. Do not specify both of them in the COLOCTBL.

4 Changed Members.

The following members contain changes in DR/Xpert's PARMLIB. These changes constitute new information to support new features provided by DR/Xpert R2.2.2.

```
CLEANUP
RDOBKUP
FACTSETS
EDITRTNS
```

The following members contain changes in DR/Xpert's JCLLIB. These changes constitute corrections to problems discovered in the product.

```
OTCDBONL
NEWNAMES
TLMSSTEP
```

5 New Members.

The following members are new to DR/Xpert's PARMLIB. These members were added for FDRABR support.

```
FDRDUMP
FDRREST
```

The following members are new to DR/Xpert's JCLLIB. These members were added to support an incremental backup period.

```
BKUPPNT
```

Changes in DR/Xpert R2.2.1

1 Dynamic Aggregate Assignment

The list of items grouped together for a single backup (an aggregate) is assigned to a backup job at execution time. This provides for any backup job to service any aggregate which is ready for servicing and without specific specification of the aggregate identifier inside JCL.

Use the USERSETS keyword

AGGREGATE-IDENTIFIER: AUTO

Conversely, and if the user chooses to, DR/Xpert can assign specific aggregates to specific job streams.

Use the USERSETS keyword

AGGREGATE-IDENTIFIER: NOAUTO

2 Consistent JCL statements

DR/Xpert generates the same external JCL content, from job to job, and from day to day varying only one control card that binds backup driver to a job stream. For purpose of reference, the varying parameter is listed below, but it is always generated and there is no reason to manually code it.

AGGREGATE-TYPE: driver-name (e.g, DFDSS)

In the above example, if the driver name were DFDSS, the JCL would look for one or more aggregates that must be backed up using DFDSS. No reference to a specific aggregate is mentioned anywhere in the JCL.

3 Identify backup job names by either source media type or backup driver utility.

Using a meta-character coded within the jobname found in DMPMODEL (a PARMLIB member), DR/Xpert can substitute a character representing either (1) the media type of user files that make up the aggregate or (2) a character representing the driver that will service the aggregate.

The meta-character DR/Xpert has assigned for this purpose is the greater than sign (>). DR/Xpert replaces the meta-character in the job name with an alphabetic character corresponding to a media type or a backup driver. The decision to use media type over driver (or visa versa) is controlled from the BKUPJOBS member.

DMPMODEL's job name has two other meta-characters: a question mark (?) scrolling character that numbers DR/Xpert backup jobs iteratively; and, an exclamation mark that represents backup system (batch or online).

The following USERSETS keywords control the range of replacement characters used in place of the question mark.

SCROLL-JOB-NAMES-FROM: 0
JOB-NAME-CHARS: 0123456789AB...etc.
JOB-NAME-SCROLLING-LIMIT: 0

For purposes of this example, a job name pattern of “//BKP>??” in DMPMODEL could produce a job name like //BKPT00 for a tape-to-tape backup.

Refer to the documentation for BKUPJOBS and DMPMODEL, both PARMLIB members, for information on controlling the character representing source media or driver.

- 4 Backup job JCL can be stored into different JCL libraries based on source media type or backup driver. Using a rule set member, DR/Xpert directs backup JCL to any JCL PDS based on library.

Refer to the documentation for BKUPPDS (a PARMLIB member) for specification of rules directing JCL to different backup JCL PDS files. The default rule provides backward compatibility to the same JCL library used in previous releases.

DEFAULT &PREFIX..&BKPID..BKPJOB

- 5 By option, DR/Xpert can create and delete backup JCL libraries.

DR/Xpert will always create its backup JCL PDS files when they do not exist. Specify the following control card in USERSETS to delete DR/Xpert’s backup JCL PDS files at DR/Xpert’s end-of-cycle. This option benefits users who allow DR/Xpert to generate any number of backup jobs each day, and it eliminates the need to perform PDS file compression on DR/Xpert’s backup JCL libraries.

SCRATCH-BACKUP-PDS: YES

- 6 Fluctuating versus fixed backup job creation.

So that DR/Xpert’s daily backup job mix is predictable, the user can specify options to create a fixed set of backup jobs. Alternatively, and depending on the user requirements, DR/Xpert has options to create jobs based on the number of aggregates created; thus, the job requirement changes from day-to-day.

Refer to documentation for BKUPJOBS member in PARMLIB for more information on controlling DR/Xpert’s fixed job creation and fluctuating job creation.

- 7 By option, a DR/Xpert backup job can backup more than one aggregate set.

Should the user specify a fixed number of backup jobs and backup requirements exceed the fixed job count, the user can direct DR/Xpert to service more than one aggregate per job. With this option, the schedule never has inadequate jobs to service backup requirements; backup drivers simply continue to service backup work until all work is complete.

REPEAT-DRIVERS: YES

Conversely, extra backup jobs can be scheduled without any impact. When DR/Xpert encounters extra backup job streams, they complete as empty backups and no backup file is created. However, if the user wants to be aware of empty backup jobs, the following USERSETS keyword can be set to a non-zero value to set job step return codes whenever a backup job starts without any work to do.

NO-BACKUP-READY-RETURN-CODE: 0

If a failure occurs during a backup, the user can direct DR/Xpert to continue with another aggregate.

REPEAT-DRIVER-AFTER-FAILURE: YES

- 8** In Release 2.2.4, DR/Xpert has extended the control over backup tape capacity providing controls at driver or media type level, as opposed to previous releases providing backup capacity control from a system-wide standpoint. Additionally, this release provides three size strategies for filling the contents of aggregate backups.

THRESHOLD Control cards for this strategy specify a fixed or unlimited number of backup jobs. The size limit is up to a maximum threshold. If a fixed number of jobs is specified, exactly that number of jobs will be stored in the backup JCL PDS per cycle. If an unlimited number of backup jobs is specified, DR/Xpert will generate a new JCL member each time the threshold is met.

BALANCED Control cards for this strategy specify a fixed number of backup jobs. The size limit is ignored. The size of data per aggregate is evenly distributed across the specified number of jobs within a given media type or backup driver.

BALANCEX This strategy is similar to BALANCED except the number of jobs is incremented by the count specified in strategy's control card until the average aggregate size is less than the size limit. If the job count is 1, the increment is by 1; if the job count is 3, the increment is by 3.

- 9** In Release 2.2.4, a new member list overrides DR/Xpert's ANALYSIS for non-critical files that the user wants treated as critical files. This list provides a better alternative to manual addition of file names to the backup database because the files are reported in the ANALYSIS job stream with a reason identifying the override list.

For information about overriding non-critical file decisions, refer to documentation for the REQUIRED member in PARMLIB.

The following USERSETS keyword identifies inserts a constant job name for datasets contained in the REQUIRED member. This is an eye-catcher for non-critical file overrides in the critical file reports and the critical/non-critical file database.

REQUIRED-FILES-IDENTIFIER: REQUIRE

- 10** A new parameter provides more control over deleting items when the backup data base maintenance program is executing (OTCDBIN1). The parameter provides a mechanism of prevent automatic deletion for items when DR/Xpert's analysis determines that they are no longer critical. The items are marked on OTCDBIN1's detail report as bypassed due to option. The items can be deleted manually after research.

MAINTENANCE-ACTION-FOR-DELETE: NONE | DELETE

- 11** Three optional sub-reports have been added to the backup database maintenance program (OTCDBIN1) to mirror its DETAIL report. These optional sub-reports (ADDS, DELETES, and UPDATES) reflect the additions, deletions, and modifications respectively. The purpose of these reports is to give the user better visibility into changes that affect the backup database. Any or all of these DD statements can be added to OTCDBIN1 JCL, and the DETAIL report can be overridden as DUMMY (to limit duplicated report output). The format of ADDS, DELETES, and UPDATES is identical to the DETAIL report.
- 12** The Recovery JCL Generating program has two new reports.
- Firstly, a summary report has been added providing a single detail line per aggregate. The line contents are the aggregate backup file name, recovery size of active datasets, utility driver name, and backup tape volume list.
- Secondly, a tape pull list report contains a raw volume serial list of all tapes required for a complete recovery.
- 13** The Recovery program detail report has been modified giving the user distribution control over the contents of the detail report. The recovery status information can be directed to different report files depending on attributes for each recovered files. The objective for this change was to separate recovery status information for disk files versus tape files, but the rule set that implements this separation is not limited to just media type.
- Refer to the RMONITOR report for information related to separating Recovery Monitor Information to one or more reports.
- 14** DR/Xpert deletes TMCDUMP and related files at end of the SETUPATL job stream.
- 15** Support for existing keyword ABEND-IF-CC-EXCEEDS has been extended to the backup and recovery programs.



Note ABEND-IF-CC-EXCEEDS affects jobs generated from DMPMODEL and RESMODEL PARMLIB members. If granular control for these job streams are required, consider adding ABEND-IF-CC-EXCEEDS as //PGMSETS overrides to these members.

- 16** Support a new HSM recall driver exists for customers who replicate using snap shot or similar facilities. The purpose of this driver is to recall critical datasets from HSM level-2 backups so that critical files reside on either primary disk or HSM staging disk (level-1).
- The ARCHIVE-RECALL-ACTION keyword has been extended to support this driver.
- ARCHIVE-RECALL-ACTION: RECALL-ML2
 RECALL-ML1
 RECALL
 NONE
- 17** The collocation string (COLOCTBL member in PARMLIB) requires two tokens instead of four. The third and fourth tokens are default values, if not specified. This change was added to improve readability and to simplify specification of collocation strings. Therefore, the only information required in the collocation string is the collocation group and a backup driver name.

For more information on the collocation string, refer to documentation for COLOCTBL.

- 18** In Release 2.2.1, the customer can override the read-only status of datasets by rule instead of a system-wide specification as supported by previous releases. Datasets referenced explicitly or implicitly by this rule set are backed up without regard to their being updated.

See the documentation on RDOBKUP member for more information related to scheduling daily backups for datasets while ignoring previous backups that are still good.

19 New Members

The following items are new members introduced in DR/Xpert Release 2.2.1:

- New PARMLIB Members
 - BKUPJOBS
 - BKUPPDS
 - RDOBKUP
 - REQUIRED
 - RMONITOR
 - VOLMEDIA
- New JCLLIB Members
 - RECYCDN

20 Changed Members

The following members were changed by DR/Xpert Release 2.2.1. The changes are replaced in the target libraries without:

- PARMLIB Members that changed
 - EDITRTNS
 - FACTSETS
 - TAPENAME
 - TMSDRVRS
- JCLLIB Members that changed:
 - NEWNAMES
 - OTCDBMTE (Obsolete)

21 Changed Members

The following members are changed in DR/Xpert Release 2.2.1, but the changes are limited to additional comments and correction to comments:

- Changed PARMLIB Members:
 - APPLRULE (Documentation change only)
 - CRYPTRUL (Documentation change only)

OUTCODE (Documentation change only)
RECOVERY (Documentation change only)
REPORTS (Documentation change only)

■ JCLLIB Members that changed:

RECYCLE1 (Documentation changes only)
RECYCLE2 (Documentation changes only)

22 Changed Members

The following members existed in an earlier version of DR/Xpert, but changed in DR/Xpert Release 2.2.1. When these members are copied from the newer release library, STEPLIB, OTPRMLIB, PGMSETS changes you have made to these members may need customization again.

■ PARMLIB Members that changed:

COLOCTBL Change removes last two nodes of collocation string; OpenTech Systems recommends retaining your current member.
DMPMODEL Enhancement to jobname pattern adds a new meta-character (>), review the documentation regarding new meta-character and keep or reject changes according to your discretion.
DUMP Removal of SET MAXCC Clause, change is highly recommended.
USERSETS Consider adding the following keywords to USERSETS.

SCRATCH-BACKUP-PDS: YES | NO
REPEAT-DRIVERS: YES | NO
REPEAT-DRIVER-AFTER-FAILURE: YES | NO

■ JCLLIB Members that changed:

OTCDBMTD Program change
RECOVERY Additional Step was added for new customers, existing customers may have no reason to copy these changes.

23 FACTSETS and EDITRTNS parmlib members are obsolete and their values are now stored in a DEFAULTS load module.

General Release Notes

Important Notice

Problem Reporting Information

OpenTech Systems would like to remind our users that in order to research any problems you may be having while using the DR/XPERT product, it is required that the job log and/or dump can be sent for review. If you experience an abend of a DR/XPERT job and are unable to resolve the problem using the “Action” information provided in the DR/XPERT Messages & Codes Guide, please call Technical Support at 469-635-1500 or send the job log, dump and any other information that you think would be of help in diagnosing the problem to support@opentechsystems.com.

DR/XPERT Maintenance

Please remember to register and utilize OpenTech’s Technical Support web site at <http://www.opentechsystems.com/support.php> for keeping up to date on the latest DR/XPERT maintenance and announcements.

It is recommended that you check for any new maintenance on our web site before calling Technical Support if you experience any problems with the DR/XPERT product, as a fix may already be available for the problem you are having.

2 Upgrade/Installation Instructions

TOPICS COVERED IN THIS CHAPTER

[Upgrading from Previous Releases of DR/Xpert \(page 2-2\)](#)



Note Below are the instructions on upgrading to DR/XPert Release 2.2.4.

Upgrading from Previous Releases of DR/Xpert

Use the check list below as a quick reference when upgrading from an earlier release of DR/Xpert to release 2.2.4. The check list references an XMIT file; this file can be found on the product CD you received; or in a product installation file OpenTech Systems emailed to you. This check list is only a guide; individual customer requirements and customization may be necessary.

- 1 Save the XMIT file to a directory on your hard drive.
- 2 Upload the XMIT file from your PC to your mainframe as a binary file (i.e., with no ASCII and CRLF translation). You may use IND\$FILE, FTP or your terminal emulator's file transfer option for this operation. Name the new mainframe file @DSPREFIX.DRXPert.XMITFILE (where @DSPREFIX is your chosen high level qualifier for DR/Xpert software files). The DR/Xpert.XMITFILE requires approximately 550 tracks on a 3390 disk drive. If pre-allocating the mainframe target file, the DCB attributes must be:

```
DCB=(LRECL=80, BLKSIZE=3120, RECFM=FB, DSORG=PS)
```

- 3 Enter the TSO RECEIVE command and restore the parameters to create the DR/Xpert R2.2.4 INSTALL library.

```
TSO RECEIVE INDA ('@DSPREFIX.DRXPert.XMITFILE')
```

After the command is issued, you will receive the following prompt:

```
INMR906A Enter restore parameters or 'DELETE' or 'END' +
```

Enter the following reply (the VOL parameter is optional):

```
DSN ('@DSPREFIX.DRXPert.INSTALL') VOL (vvvvvvv)
```

- 4 Tailor the installation JCL by changing all dataset names beginning with @DSPREFIX to a prefix you have chosen.

OpenTech Systems provides a REXX script to assist you with the conversion of dataset prefixes throughout the INSTALL library. The script name is NEWNAMES. OpenTech Systems distributes it in two libraries: INSTALL and JCLLIB. This script will alter each member containing @DSPREFIX to your new prefix.

Using ISPF and from the INSTALL library's PDS directory, enter EX beside the NEWNAMES member.

Menu	Functions	Confirm	Utilities	Help		
VIEW	OT.DRXPRT.INSTALL			Row 00002 of 00019		
Command ==>				Scroll ==> CSR		
	Name	Prompt	Size	Created	Changed	ID
_____	JOBCARD		11	2010/04/08	2010/04/08 17:47:36	OPENTEC
_____	LINKOBJ		69	2010/04/08	2010/04/08 17:54:39	OTSEEDIT
EX _____	NEWNAMES		810	2010/04/08	2010/04/08 17:47:36	OPENTEC
_____	PARMLIB					
_____	RECEIVE		81	2010/04/08	2010/04/08 17:54:39	OTSEEDIT
_____	SETUP		34	2010/04/08	2010/04/08 17:54:39	OTSEEDIT
_____	SETUPATL		52	2010/04/08	2010/04/08 17:54:40	OTSEEDIT
_____	STEPLIB					
_____	UPFROM		1254	2010/04/08	2010/04/08 17:47:36	OTSEEDIT
_____	XMJCL					
_____	XMLOAD					
_____	XMMMSG					
_____	XMOBJ					
_____	XMPANL					
_____	XMPARM					
_____	XMREXX					
_____	XMSKEL					
_____	XMTABL					
	End					

The script will produce a panel with fields that you may further tailor. The fields are:

- a The prefix name for the INSTALL library, DR/Xpert assumes a dataset name prefix using the leading nodes from the INSTALL dataset name.
- b The Tape Management System's load library name, the script assumes the file is in the data center's link list. You may override this with the dataset name as required.
- c The VOLSER to which you want to direct DR/Xpert libraries. Leave this field blank if you want z/OS to choose the volumes upon which it will allocate DR/Xpert libraries.
- d Select the place where DR/Xpert will get PARMLIB and STEPLIB information. This information can be from the data you entered on the PANEL or it can be from information SAVED in members STEPLIB and PARMLIB.
- e Press **PF3** to execute the script; or enter **CANCEL** to terminate without action.

Hint: Each time NEWNAMES executes, it creates STEPLIB and PARMLIB members. You may tailor these members and rerun NEWNAMES as a mechanism to fine tune JCL changes throughout these libraries.

```
DR/Xpert JCL Configuration
Command ==>                               Scroll ==> CSR

Describe your environment:

What is the DSN prefix used... OT.DRXPRT
for DR/Xpert's libraries?

Enter TMC Load library name..... LINKLIST
                                Can be the DSNNAME, LINKLIST, or NONE

Is there a specific volume for...
DR/Xpert library allocations      If the VOLSER is left blank, no VOL parameter
                                will be used during allocation of DR/Xpert
                                libraries (Suggested value is blank).

Save STEPLIB/PARMLIB members..... PANEL
                                Panel: uses library information from
                                this panel to populate STEPLIB
                                and PARMLIB members. The STEPLIB
                                and PARMLIB members are used to
                                tailor STEPLIB and PARMLIB JCL
                                statements.
                                Saved: uses data you have stored in
                                STEPLIB and PARMLIB members to
                                tailor JCL.

Previous Dataset Prefix..... @DSPREFIX.DRXPRT
                                Value is normally @DSPREFIX.DRXPRT
                                The value can be changed in order to
                                facilitate mass changes to DR/Xpert
                                JCL, e.g., when library names are
                                changed.

Press PF3 to execute, type "CANCEL" to exit
```

- 5 Edit the UPFROMJ JCL in the DR/Xpert R2.2.4 INSTALL library. This job consists of the following two steps:
 - a **DCAMS** - Renames several existing DR/Xpert libraries to @DSPREFIX.DRXPRT.OLD.*.

If you are using a completely new prefix for the new release, this step can be skipped; otherwise, this step will rename LOADLIB, PARMLIB, JCLLIB, and REXX PDS files appending .OLD before the file type.
 - b **IKJEFT01** - Receives the libraries from the INSTALL library. These are the files that will be used to upgrade your current DR/Xpert libraries. The job will overlay your SKELS, MSGS, PANELS, and LOADLIB libraries (which generally are not customized by the user).
- 6 Edit the LINKOBJ member of the INSTALL library. Following the instructions in the JCL comments, update the job card, the dataset name prefix used throughout the job (@DSPREFIX) and update the LE/370 object library in the SYSLIB DD. Submit the LINKOBJ member JCL.

9 Rerun the NEWNAMES script.

Following the procedures in step 4, execute the NEWNAMES script a second time; this will correct any references to @DSPREFIX found in JCLLIB and PARMLIB; and it will correct any references to your previous STEPLIB or PARMLIB libraries that were copied from the old JCLLIB in STEP 8.

10 If the DR/Xpert LOADLIB was allocated to a different (non-SMS) DASD volume than used previously, it will need to be APF authorized again. This APF authorization may be temporarily set using the MVS SETPROG system command from a system console. The format of the SETPROG command is:

```
SETPROG APF,ADD,DSNAME=@DSPREFIX.DRXPRT.LOADLIB,VOL=vvvvvv
```

or, if residing on an SMS DASD volume:

```
SETPROG APF,ADD,DSNAME=@DSPREFIX.DRXPRT.LOADLIB,SMS
```

11 Submit JCLLIB(SETUP) to convert SMFMERGE and JCLMAST datasets from previous release formats to R2.2.4.

12 Before DR/Xpert's OTCDBIN1 job runs using R2.2.4 libraries, delete BKPQUEUE datasets. If you forget, you will receive a SOC7 abend in your daily sweep (OTCDBTAL); the resolution is to delete BKPQUEUE datasets and rerun OTCDBIN1 and OTCDBTAL.



Warning NEWNAMES must be run in step 9; otherwise JCLLIB and PARMLIB will contain references to the previous version of DR/Xpert.



Warning The effect of the SETPROG command is only temporary. The authorization will be lost the next time the system is IPL'd. Please have the DR/Xpert LOADLIB permanently authorized as soon as possible.



Note After the installation is complete, the XMIT file can be deleted from your system.
