



# **DR/Xpert®**

## **Installation Guide**

**Release 2.2.4**



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# 1

# About This Guide

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## TOPICS COVERED IN THIS CHAPTER

[Documentation Amendment History \(page 1-2\)](#)

[Software Documentation Library \(page 1-2\)](#)

[Customer Service \(page 1-2\)](#)

[Problem Reporting Information \(page 1-3\)](#)

[Cautionary and Notable Items \(page 1-3\)](#)

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[Reference Guide Chapter Summaries \(page 1-4\)](#)

## Introduction

This guide explains the installation and basic customization of the DR/Xpert® product.

## Documentation Amendment History

This section lists any notable amendments to the DR/Xpert Installation Guide.

**Table 1-1** Document Revision History

Date	Revision Description
June 2005	Initial Installation Guide created.
June 2006	Updated product names and added information on additional features.
May 2007	Updated product name and added information on additional features.
October 2007	Updated document to reflect Release 2.1.1.
September 2008	Updated product name.
November 2008	Added the DEFAULTS parameter value. FACTSETS parameter value is obsolete.
July 2010	Updated document to reflect Release 2.2.3
April 2012	Updated document to reflect Release 2.2.4

## Software Documentation Library

This documentation can also be found online on the OpenTech Systems Technical Support web site (<http://www.opentechsystems.com/support.php>). Registration is required to access the web site.

All documents in the OpenTech Systems Software Documentation Library are in PDF format and can be read using Adobe Acrobat Reader. Acrobat Reader can be downloaded free at:

<http://www.adobe.com/acrobat>.

## Customer Service

OpenTech Systems' Technical Support can be reached:

- By Phone: 469-635-1500
- By Fax: 469-635-1507
- By Email: [support@opentechsystems.com](mailto:support@opentechsystems.com)

Normal business hours are Monday through Friday from 8:30 a.m. to 5:00 p.m., Central Standard Time. However, user assistance is available 24 hours a day, 7 days a week.

After hours support can be reached by calling 469-635-1500 and leaving a message. When leaving a message, specify whether your support request is urgent. If it is urgent, a Technical Support representative will contact you immediately. If it is not urgent, you will be contacted the following business day.

International customers should contact their local distributor in the event that they encounter problems with an OpenTech Systems product.

## Problem Reporting Information

In order for Technical Support to research any problems you may have with DR/Xpert, have the following information available:

- Product release, version and PTF level
- OS/390 or z/OS release number
- JCL that was submitted
- Job output and dump, if generated
- Any error message codes
- Any other information you think may be important to understanding the problem

## Cautionary and Notable Items

The alert statements—**Note**, **Caution**, and **Warning**—are formatted in the following styles:



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**Note** This symbol appears in the margin next to items that should be given special consideration. Understand these items completely before continuing with the installation and customization process.

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**Caution** Advises of important information, such machine or data error that could occur should the user fail to take or avoid a specified action.

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**Note** This symbol appears next to items that offer information about the use of this software or that describe differences between this and previous releases.

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## JCL Example Conventions

This guide and the DR/Xpert product libraries contain JCL and control statement examples. Keep in mind that examples may not be appropriate for every environment. Most of these examples will require some modification before they will function properly in your specific environment.

## Reference Guide Chapter Summaries

The Installation Guide consists of the following chapters:

**Chapter 1, “About This Guide”** – This section provides an amendment history of the manual, customer service contact information and problem reporting tips.

**Chapter 2, “Pre-Installation”** – This section explains the product software requirements and items to consider before installing the DR/Xpert product.

**Chapter 3, “Installation Instructions”** – This section explains the installation and basic customization procedure for DR/Xpert.

**Chapter 4, “Additional Customization”** – This section explains additional customization steps for DR/Xpert.

**Chapter 5, “Additional TLMS Requirements”** – This section provides information about additional steps that need to be performed by TLMS users in order to scratch obsolete tape backups.

**Chapter 6, “Product Maintenance”** – This section provides information about how the DR/Xpert product is distributed and where to find available maintenance.

**Appendix A, “Pre-Installation Checklist”** – This section provides a checklist of items to review and the information needed before installing DR/Xpert on your system.

**Appendix B, “Installation Checklist”** – This section provides a checklist that can be used to track your installation progress.

**Appendix C, “Customization Checklist”** – This section provides a checklist that can be used to track customization progress.

# 2

# Pre-Installation

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## TOPICS COVERED IN THIS CHAPTER

- [Operating System Requirements \(page 2-2\)](#)
- [Operating System Support Policy \(page 2-2\)](#)
- [Backup Restore Utility Requirements \(page 2-2\)](#)
- [SMF Data Requirements \(page 2-3\)](#)
- [Process Filtering Considerations \(page 2-3\)](#)
- [Production Job Scheduler Requirements \(page 2-4\)](#)
- [Tape Management System Requirements \(page 2-4\)](#)
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- [Automated Tape Library Interface Requirements \(page 2-5\)](#)
- [Other Considerations or Requirements \(page 2-5\)](#)
- [Product Installation Library Descriptions \(page 2-7\)](#)
- [CopyCrypt Pre-Installation Requirements \(page 2-8\)](#)
- [Tape Management System Considerations \(page 2-9\)](#)

## Introduction

Before installing DR/Xpert, review this chapter thoroughly. This chapter contains information on DR/Xpert's software requirements, installation recommendations and special considerations.

A pre-installation checklist is included in [Appendix A](#) of this manual. The Pre-Installation Checklist should be completed before beginning the installation of DR/Xpert.



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**Note** The installation of DR/Xpert does not require SMP/E.

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## Operating System Requirements

DR/Xpert operates on the following operating systems:

**Table 2-1** Supported Operating Systems

O/S	Release
OS/390	R2.10 (IBM ended support on 10/01/2004)
z/OS	All currently supported IBM z/OS releases

## Operating System Support Policy

OpenTech Systems, Inc. recommends that customers keep current on operating system releases and maintenance to ensure optimum compatibility, usability and support with our products. If a customer runs OpenTech Systems products on an unsupported IBM operating system release, Technical Support will continue to accept support requests and attempt to assist customers, with the exception of modifying our products through zaps or PTFs. Note that customers must always maintain a supported release of an OpenTech Systems product and the products must be covered under current annual maintenance.

## Backup Restore Utility Requirements

DR/Xpert uses utilities and program products from other vendors to provide backup and restore functions. The following are products DR/Xpert uses for backup and restore services:

DFSMSdss	Also known as DFDSS, an IBM program and is part of DFSMS.
ABARS	An IBM program product and is a subcomponent of IBM's DFSMSHsm system.
FAVER	A product from Computer Associates intended for loading and unloading VSAM files

FDRABR	A dataset archive and restore product produced by Innovation Data Processing.
DMS	Also known as CA-Disk, an archive and restore product produced by Computer Associates

## SMF Data Requirements

The DR/Xpert Collection process uses site SMF data as a primary source of information to analyze production processing profiles to identify the critical files that are needed to restart the production batch processing streams at the designated point (sync-point). The SMF record types that must be captured by the collection process are:

- Record Type 14
- Record Types 15, 61, and 65
- Record Type 30, Subtypes 1,4 and 5
- Record Type 64 (not required for Tape only analysis)

The collection process retrieves these records by reading the daily SMF dump file(s) or by using data intercepted by DR/Xpert's SMF Data Collector.



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**Warning** OpenTech Systems strongly recommends the use of our SMF Data Collector for day-to-day operation. This product gives DR/Xpert immediate file access information, which is important if DR/Xpert's backup component is employed.

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SMF dump files can be used when DR/Xpert is being implemented for the first time. During the implementation phase, SMF dump files provide historical file access that can be input to the first ANALYSIS job. Additionally, some users may use DR/Xpert strictly for its ANALYSIS tools and forego DR/Xpert's management of backup and recovery. These users can opt for the use of SMF dump files over DR/Xpert's SMF Data Collector.

Additionally, if DR/Xpert's SMF Data Collector (started task) is to be used, SMF exit IEFU83 must be enabled.

## Process Filtering Considerations

In most sites, the SMF data contains dataset access information that is not required to complete the Critical Dataset Analysis. For example, SYS1 datasets and similar infrastructure datasets may be accessed by production jobs, but from a DR backup and restore perspective, they are normally managed by infrastructure specific backup processes and should not be included in the application recovery strategy. The customization processes in this documentation identify ways to exclude these non-application critical datasets.

## Production Job Scheduler Requirements

The production schedulers currently supported by the DR/Xpert are:

- CA-7
- OPC/E (TWS)
- ESP

If production jobs are being run from outside the control of a production scheduler, they can be added using jobnames standards or user-supplied joblists. The scheduler must supply a job-complete exit. This is the exit that DR/Xpert uses to post a request to the backup queue for job-triggered dataset backups.

## Tape Management System Requirements

DR/Xpert requires the use of one of the following tape management systems:

**Table 2-2** Required Tape Management Systems

TMS	Release
A-Auto	R6.0
AFM	V2.4
CA-1	R5.2, R11.0, R11.5, and R12
Control-T (Control-M/Tape)	R5.0, R5.1, R6.0, R6.1, R6.2, R6.3, and R7.0
DFSMSrmm	R1.4, R1.5, R2.10, Z1.1, Z1.2, Z1.3, Z1.4, Z1.5, Z1.6, Z1.7, Z1.8, Z1.9, Z1.10, Z1.11, Z1.12, and Z1.13 (see note below)
TLMS	R5.4, R5.5, R11.0, R11.5, and R12
ZARA (Automedia)	R1.3, R1.4, R1.5, R1.6, R1.7, and R1.8



**Note** See the Tape Management System Considerations section in this chapter for any special requirements specific to each tape management system.

In OpenTech Systems documentation for RMM, “R” indicates an OS/390 release number and “Z” indicates a z/OS release number. For example, if using RMM 1.4 for a OS/390 system, RMM R1.4 would be used. If using RMM 1.4 for a z/OS system, RMM Z1.4 would be used.

## Tape Management System Support Policy

OpenTech Systems, Inc. recommends that our customers keep current on tape management system releases and maintenance to ensure optimum compatibility, usability and support with our products. If a customer runs our products on a tape management system that is no longer supported by its vendor, Technical Support will continue to accept support requests and attempt to assist customers, with the exception of modifying our products through zaps or PTFs. Note that customers must always maintain a supported release of an OpenTech Systems product and the products must be covered under current annual maintenance.

## Automated Tape Library Interface Requirements

DR/Xpert supports the use of the following ATL software interfaces:

**Table 2-3** Supported ATL Software Interfaces

ATL Manufacturer/Software Interface	Release
IBM / LCS or HDS / LCS	R1.4, R1.5, R2.10, Z1.1, Z1.2, Z1.3, Z1.4, Z1.5, Z1.6, Z1.7, Z1.8, Z1.9, Z1.10, Z1.11, Z1.12, and Z1.13 (see note below)
STK / HSC	R1.2, R2.0, R2.1, R4.0, R4.1, R5.0, R5.1, and R6.0
Memorex / LMS	all
Sutmyn / LMS	all
Comparex / LMS	all
VTAPE (CA or SAMS)	VTAPE R2.x, R11.x, R11.5, or R12



**Note** In OpenTech Systems documentation for LCS, “R” indicates an OS/390 release number and “Z” indicates a z/OS release number. For example, if using LCS 1.4 for a OS/390 system, LCS R1.4 would be used. If using LCS 1.4 for a z/OS system, LCS Z1.4 would be used.

## Other Considerations or Requirements

The subsections that follow address other required utilities or authorizations for DR/Xpert to function properly.

### Sort Utilities

DR/Xpert requires the use of one of the following sort utilities:

- DFSORT
- SYNCSORT

## APF-Authorization

The DR/Xpert load library must be APF authorized. Use your site's standard procedure to authorize the DR/Xpert load library during the DR/Xpert installation.

## International Foreign Characters

DR/Xpert use special characters in some of its PARMLIB library table entries. If DR/Xpert is used in a country where certain special characters may not have the same interpretation as in the United States, the hex code translation shown in [Table 2-4](#) can be used to ensure that the proper hex codes are associated with each special character.

**Table 2-4** Hex Code for Special Characters

Special Character	Hex Code
!	5A
\$	5B
*	5C
/	61
%	6C
#	7B
@	7C
=	7E

## Product Installation Library Descriptions

Table 2-5 gives approximate space requirements for the installation of DR/Xpert on 3390 DASD volumes, as well as the library descriptions and attributes.

**Table 2-5** DR/Xpert Space Requirements

Dataset	DSORG	RECFM	Space (approx.)	Description
INSTALL	PO	FB	600 TRK	Installation JCL and XMIT content to be RECEIVED
JCLLIB	PO	FB	26 TRK	Installation job streams and JCL stream models for initial history data analysis and scheduled production job stream processing
LOADLIB	PO	U	500 TRK	Routines and utility modules
MSGS	PO	FB	9 TRK	Messages issued for the ISPF panels
OBJ	PO	FB	284 TRK	Pre-LinkEdit delivery of COBOL modules
PANELS	PO	FB	17 TRK	ISPF Interface (panels)
PARMLIB	PO	FB	26 TRK	Customizable processing parameters and filters to support site requirements unique to each site
REXX	PO	FB	26 TRK	ISPF Interface (CLISTS)
SKELS	PO	FB	9 TRK	ISPF Interface (JCL skeletons)
TABLES	PO	FB	9 TRK	ISPF Interface (tables)
XMITFILE	PO	FB	570 TRK	Transmit file used for product library installation

### Authorization Codes



**Warning** DR/Xpert requires a 16-character authorization code for each CPU on which the product will execute. If an authorization code is not provided, the DR/Xpert job will not run successfully.

Product authorization codes are generated using the 6-character CPU serial number of the CPU. If you are in need of an authorization code and do not know the 6-character CPU serial number, you can find out that information by:

- Issuing the 'D M=CPU' MVS command on the system console.  
OR
- Using the JCL provided in the CPUID member of the DR/Xpert JCLLIB. This JCL may require job card modification and you should supply your APF-authorized DR/Xpert LOADLIB in the STEPLIB DD. After the job completes successfully, the last line of output should look similar to this:

## Obtaining An Authorization Code

Authorization codes can be obtained by:

- Emailing [productkey@opentechsystems.com](mailto:productkey@opentechsystems.com).
- Contacting your DR/Xpert Sales Representative.
- Completing the product key request form in the secure Support Portal area of our Web site



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**Note** Please have your CPU model and the 6-character CPU serial number available when requesting an authorization code.

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## CopyCrypt Pre-Installation Requirements

Review the items listed in [Table 2-6](#) before implementing DR/Xpert with CopyCrypt for encrypting or decrypting backup tapes.



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**Note** More information about implementation of CopyCrypt is available in [Chapter 12](#) of the DR/Xpert Users Guide.

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**Table 2-6** CopyCrypt Pre-Installation Requirements

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<b>Authorization Codes</b>	In order to use CopyCrypt with DR/Xpert, an authorization code with CopyCrypt enabled is required. If a CopyCrypt enabled authorization code is not provided, CopyCrypt will not run. To obtain an authorization code, contact Technical Support. Your CPU model and serial number(s) are required to generate the authorization code(s). If you are unsure of your CPU serial number, there is a job in the CPUID member of the DR/Xpert JCLLIB that can be used to retrieve this information.
<b>ICSF</b>	CopyCrypt requires the following for users that will use IBM ICSF hardware encryption: <ul style="list-style-type: none"><li>• The started task for ICSF must be running.</li><li>• The processors must be defined to ICSF.</li><li>• The ICSF load library must be in the System LINKLST.</li><li>• The user may define key labels or key encryption keys (KEKs) to ICSF if the cryptographic co-processor is available.</li></ul>

---

**Table 2-6** CopyCrypt Pre-Installation Requirements

<b>Security</b>	<p>The batch job user id that CopyCrypt will be using to perform its functions needs to be authorized by your security system (RACF, ACF2, etc.) to read the input dataset and create a new output dataset.</p> <p>Also, if an encryption key, or KEK was used to encrypt the data (rather than using a password), additional measures will need to be taken to assure access to ICSF is available.</p> <p>For RACF, READ access is require for RACF class CSFSERV (which is used to control access to ICSF services). The in-storage RACF profiles will need to be refreshed after the user or group is given the READ permission for CLASS(CSFSERV). If not properly authorized, the CopyCrypt job will receive “OT000064E ICSF ERROR” followed by RACF messages indicating “INSUFFICIENT ACCESS AUTHORITY”.</p> <p>For security facilities other than RACE, please check with the security administrator to make sure the user id used to perform CopyCrypt functions is properly authorized.</p>
<b>DFSMSdss User Installation Options Exit (ADRUIXIT)</b>	<p>CopyCrypt requires the DFSMSdss User Installation Options Exit (ADRUIXIT) be customized for use with CopyCrypt and applied.</p> <p>See <i>Step 17 - Install/Update/Link the ADRUIXIT Exit</i> for details.</p>

## Tape Management System Considerations

This section lists other items that should be taken into special consideration when using DR/Xpert with a specific tape management system, or a specific release of a tape management system.



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**Note** More information about implementation of CopyCrypt is available in [Chapter 12](#) of the DR/Xpert Users Guide.

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While OpenTech Systems makes every attempt to identify and inform our customers of any tape management system issues/fixes that could adversely affect DR/Xpert processing, we assume no responsibility for errors or omissions in this document.

### CA-1 R5.2

If APAR QO49675 is applied to your CA-1 R5.2 installation, be sure that APAR QO49896 is also applied. APAR QO49896 fixes a problem that occurs after application of APAR QO49675 which causes TMC updates not to occur even though they are reported as being successful.

## Control-T R6.1

The minimum maintenance level required for IOA is PTF PA07398, which updates load module IOADBS. The minimum maintenance level required for Control-T (Control-M/Tape) is PTF PA07946, which updates load module CTTDBT. Before these PTFs were issued, the tape database could be corrupted by jobs running in a shared database environment. Control-T R6.1 users are urged to contact BMC to verify that they have all applicable maintenance applied to IOA and Control-T.

## ZARA R1.3

- ZARA R1.3 must be at PTF level 39 with additional PTFs T130ATCW, T130ATCX and T130A054.
- There is an error in the ZARA API that causes ZARA to indicate SUL tapes as SL tapes, and so DR/Xpert is unable to distinguish between SL and SUL labels. As a result, DR/Xpert will treat all SUL tapes as SL tapes unless ZARA PTF T130ATDK is applied. Processing an SUL tape as SL will not cause an error or abend, but it will create a copy that has an incorrect label type. If T130ATDK is not applied, the only bypass is to identify all SUL volsers and place them in the LOSTVOLS member of the DR/Xpert PARMLIB so that they are excluded from DR/Xpert processing.

## DFSMSrmm EDGHSKP Function

DR/Xpert tape-to-tape copy jobs execute PGM=EDGHSKP, with PARM='RPTEXT,DATEFORM(J)', to obtain a copy of the RMM database. EDGHSKP is also used by data centers to perform RMM housekeeping (scratch processing, storage location management, VRS processing, etc.).

RMM only allows one instance of EDGHSKP to run at a time. Any attempt to run EDGHSKP when another instance of EDGHSKP is already running results in a failed job and generates RMM message EDG6205E.

DR/Xpert's call to EDGHSKP can be bypassed by inserting the following into the DR/Xpert job JCL:

```
//BYPSDUMP DD DSN=<edghskp.file>
```

This causes DR/Xpert to use an RMM extract dataset that has previously been created (must be in Julian format).

Another way to avoid this problem is to create a simple queuing mechanism for jobs that invoke EDGHSKP by adding a dummy DD that points to a predefined dataset using DISP=OLD in every job step that calls EDGHSKP. This causes those jobs to process one at a time without failing since only one job step can have the DISP=OLD control of the dummy dataset at a time.

## DFSMSrmm R2.10

Sites that have applied APAR OW47481 should also ensure that APAR OW50282 is also applied. If OW47481 is applied without OW50282, users can experience looping DR/Xpert tape-to-tape jobs.

## All TLMS Releases



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**Warning** See [Chapter 5](#) for TLMS specific instructions relating to TLMS dataset expiration process and adding Retention Master File (RMF) entries.

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# 3

# Installation Instructions

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## TOPICS COVERED IN THIS CHAPTER

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- Further PARMLIB/JCLLIB Customization (page 3-13)

## Introduction

This chapter explains how to install the DR/Xpert product files and perform the initial customization of DR/Xpert libraries. Use the Installation Checklist found in [Appendix B](#) to mark off the steps as they are completed to ensure that the installation is done completely.



---

**Note** Throughout this chapter (and the rest of this manual) “@DSPREFIX” represents the dataset name prefix chosen on your “[Pre-Installation Checklist](#)”.

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## Step 1– Pre-Installation Checklist

Review [Chapter 2](#) and complete the Pre-Installation Checklist located in [Appendix A](#).

## Step 2– Save XMIT File

The DR/Xpert product is distributed as an XMIT file on CD, emailed, or downloaded from the support web site (or sent on a cartridge tape, if required by the user). Save the file named DRXPRT.XMITFILE (from the CD or email, or product download) to a directory on your PC.



---

**Warning** If installing DR/Xpert from a cartridge tape, refer to the installation instructions you received with the tape.

---

## Step 3 – Upload XMIT File

Upload DRXPRT.XMITFILE to your mainframe as a binary file (with no ASCII and CRLF translation) using INDSFILE, FTP or your terminal emulator’s file transfer option. Name the new mainframe file @DSPREFIX.DRXPRT.XMITFILE. If pre-allocating the mainframe target file, the DCB attributes should be:

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



---

**Note** The DRXPRT.XMITFILE requires approximately 457 TRKS of DASD space.

---

## Step 4 – RECEIVE the XMIT File

Use the TSO RECEIVE command below to restore the XMIT file into its original PDS library structure.

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

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

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

Enter the following reply:

```
DSN ('@DSPREFIX.DRXPRT.INSTALL') VOL (vvvvvv)
```

Where vvvvvv is the DASD volume where you wish to create the DR/Xpert INSTALL library. (The VOL parameter is optional.)



---

**Note** If you require more information on using the TSO RECEIVE command, issue “TSO HELP RECEIVE” on the ISPF command line for an explanation of the command and its available parameters.

---

## Step 5 – Execute first run of NEWNAMES CLIST (*Optional*)

The DR/Xpert INSTALL library received in “[Step 4 – RECEIVE the XMIT File](#)” contains a CLIST for tailoring DR/Xpert JCL and PARMLIB members. The name of the CLIST is “NEWNAMES”. The NEWNAMES CLIST is optional. You may use the CLIST to tailor DR/Xpert’s JCL; or as an alternative, you may tailor the JCL by hand.

As noted in item #4 of the checklist in [Chapter A](#), “[Pre-Installation Checklist](#).” uses “@DSPREFIX” as a default high level qualifier throughout the DR/Xpert libraries for STEPLIB and OTPRMLIB JCL statements. The objective of this step is to tailor DR/Xpert JCL libraries converting the beginning part of the dataset names, mostly found in STEPLIB and OTPRMLIB statements, from @DSPREFIX making desired dataset names.

The NEWNAMES CLIST tailors DR/Xpert JCLLIB, PARMLIB, INSTALL, and REXX members. It tailors JCL members in mass according to the following rules:

- 1 The NEWNAMES CLIST uses JOB card information found in the JOBCARD member when it tailors JCL. All JCL members will be tailored with fields from the JOBCARD member; however the original JOB name for each tailored member is preserved.
- 2 The NEWNAMES CLIST generates customized STEPLIB and OTPRMLIB DD-statements based on the information you supply on the installation panel. When the CLIST is ready to execute, two members are stored in the executing library: STEPLIB and PARMLIB. These members can be tailored and used by future invocations of the NEWNAMES CLIST.
- 3 The NEWNAMES CLIST provides a volume serial field used for directing the unpacking of DR/Xpert installation libraries to a specific disk volume.

To invoke the NEWNAMES CLIST, type “EX” in front of the NEWNAMES member when displaying the DR/Xpert INSTALL library in 3.4, as shown in [Figure 3-1](#), “[Invoking NEWNAMES CLIST](#).”

EDIT		OT00.DRXPRT.INSTALL			Row 0001 of 0017		
Command ==>		Scroll ==> CSR					
Name	Prompt	Size	Created	Changed	ID		
_____	JOB CARD	11	2008/08/29	2008/08/29 13:28:55	OPENTECH		
_____	LINKOBJ	135	2008/08/29	2008/12/12 13:15:58	OTSEDIT		
ex_____	NEWNAMES	881	2008/08/29	2008/08/29 13:28:55	OPENTECH		

**Figure 3-1** Invoking NEWNAMES CLIST

Conversely, you may use the following TSO EXEC command:

```
TSO EXEC '@dsprefix.DRXPRT.INSTALL(NEWNAMES)'
```

The following screen is produced when the NEWNAMES CLIST is invoked.

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

Describe your environment:

What is LE/370's SYSLIB..... XXX.SCEELKED
library?

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

Enter TMC Load library name..... LINKLIST
Can be the DSNAME, 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
```

**Figure 3-2** JCL Customization Panel

Update the resulting panel according to the following field description and as required by your data center's standards. When finished, press PF3 to execute the CLIST.

Explanation of panel fields from top to bottom:

**1** What are LE370's runtime libraries?

LE370 libraries are specified in panel's first two fields. These fields may be blank, contain a dataset name, NONE, or LINKLIST. The CLIST will use the data from these fields to tailor DR/Xpert STEPLIB concatenations.

The CLIST will follow these rules related to LE370 libraries when generating STEPLIB statements:

- To direct the NEWNAMES CLIST to exclude one or both LE370 datasets from DR/Xperts STEPLIB concatenations, provide NONE or LINKLIST. NONE and LINKLIST are synonyms and will produce the same results.
- To exclude both fields from DR/Xpert STEPLIB, provide LINKLIST in the installation panel's first field; the second field will be ignored.
- To provide one LE370 library, enter a valid dataset name value in the first field and specify NONE or LINKLIST in the second.
- If the first field is blank, the CLIST will use "CEE.SCEERUN" as a default value.
- If the second field is blank, the CLIST uses "CEE.SCEERUN2" as a default value. The second panel field is ignored if the first field is NONE or LINKLIST.
- These fields can contain the valid dataset names for the LE370 load libraries and as required.
- OpenTech Systems recommends LINKLIST when the correct LE370 libraries are present in the data center's link list.

**2** What if the DSN prefix is used for DR/Xpert's libraries?

The NEWNAMES CLIST replaces the contents of this field anywhere @DSPREFIX.DRXPRT and occurs in DR/Xpert JCL and PARMLIB libraries.

**3** Enter TMC Load library name.

This field contains the data center's tape management system load library. The NEWNAMES CLIST includes this dataset names in DR/Xpert STEPLIB concatenations. If this field is set to LINKLIST or NONE, this field is ignored and has no part in STEPLIB customization. The tape library load library name is the last entry in DR/Xpert STEPLIB. It is not affected by the values specified for the LE370 libraries.

OpenTech Systems recommends the specification of LINKLIST if the correct tape management load library is in the data center's link list.

**4** Is there a specific volume for DR/Xpert library allocations?

The NEWNAMES CLIST places the contents of this field in the RECEIVE control statements found in DR/Xpert installation library, RECEIVE member. This field describes the volume RECEIVE JCL uses when unpacking members contained in DR/Xpert INSTLIB dataset.

**5** Save STEPLIB/PARMLIB members.

The NEWNAMES CLIST tailors STEPLIB or OTPRMLIB statements in DR/Xpert JCL libraries one of two ways. It uses information provided on the installation panel or it uses the contents of STEPLIB and PARMLIB members.

When this field is set to PANEL, the NEWNAMES CLIST uses information from the installation panel to populate STEPLIB and PARMLIB JCL statements. Before the CLIST begins, it stores STEPLIB and OTPRMLIB data in members in the invoking PDS.

When this field is set to SAVED, the NEWNAMES CLIST replaces STEPLIB and OTPRMLIB DD-statements with the contents of the STEPLIB and PARMLIB members, respectively.

## 6 Previous Dataset Prefix.

This panel field is a reference to the original string used when DR/Xpert performs a mass string replacement from @DSPREFIX.DRXPRT. This field is available for overriding the source field for the mass change, although you should not expect to provide different data for this field.

OpenTech Systems recommends leaving this field as @DSPREFIX.DRXPRT.



---

**Warning** To cancel the CLIST without updating your DR/Xpert INSTALL library with the defined values, type "CANCEL" on the Command line.

---



---

**Note** Note that this initial run of the NEWNAMES CLIST only updates the INSTALL library members. The next step of the installation RECEIVES the other product installation files, and the CLIST can be run again (refer to Step 7) to update the newly RECEIVED libraries as well.

---

## Step 6 – Edit RECEIVE JCL Member

Edit the RECEIVE member of the INSTALL library.

If NEWNAMES CLIST was not executed, follow the instructions in the JCL comments and update the job card and the dataset name prefix used throughout the job (@DSPREFIX). Update the UNIT and VOL parameters in the RECEIVE statements in the JCL to direct the allocation of the DR/Xpert libraries to the DASD volume selected on the Pre-Installation Checklist.

Users that executed the NEWNAMES CLIST in Step 5 can review the JCL to ensure that the jobcard, dataset names, and VOL parameters are correct before job submission.

Submit the RECEIVE member JCL. The DR/Xpert product libraries are then allocated.

## Step 7 – Execute Second Run of NEWNAMES CLIST (*Optional*)

If desired, execute the NEWNAMES CLIST as described in Step 5 to update the DR/Xpert product libraries received in Step 6 with your LE/370 runtime library value and new dataset name prefix.



---

**Warning** To cancel the CLIST without updating your DR/Xpert libraries with the defined values, type "CANCEL" on the Command line.

---

## Step 8 - APF Authorize LOADLIB

The DR/Xpert LOADLIB must run with APF authorization under MVS. 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,SMS
```

OR

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



---

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

---

## Step 9 – Edit LINKOBJ JCL Member

Edit the LINKOBJ member of the INSTALL library.

If NEWNAMES CLIST was not executed, follow the instructions in the JCL comments and update the job card and the dataset name prefix used throughout the job (@DSPREFIX) and the LE370 object library in the SYSLIB DD.

Users that executed the NEWNAMES CLIST in Step 7 should review the JCL to make sure that the jobcard and dataset names are correct.

Submit the LINKOBJ member JCL.

## Step 10 – Apply Maintenance

Go to OpenTech Systems' Support web site (<http://www.opentechsystems.com/support.php>) and download any maintenance that may be available for the release of DR/Xpert you are installing. Instructions for applying the maintenance will be included on the web site.



---

**Warning** If you encounter any problems applying the maintenance, please STOP the installation and contact Technical Support before proceeding.

---

## Step 11– Customize REXX Library



---

**Warning** Users that have executed the NEWNAMES CLIST in Step 7 can skip Step 1 and Step 2 as these dataset name updates have already been made. Proceed to Step 3.

---

- 1 Edit the OTCD@PRM member of the DR/Xpert REXX library. Change “@DSPREFIX” in the following lines to the high-level qualifier chosen for the DR/Xpert product libraries during installation:

```
CDPRMLIB = '@DSPREFIX.DRXPERT.PARMLIB'
```

```
CDDOCLIB = '@DSPREFIX.DRXPERT.LOADLIB'
```

- 2 After saving the changes to the OTCD@PRM member, edit the DRXPERT member in the REXX library and change “@DSPREFIX” in the following lines to the high-level qualifier chosen for your the DR/Xpert product libraries during installation:

```
ADDRESS TSO "ALTLIB ACTIVATE APPLICATION(EXEC) ",  
"DATASET ('@DSPREFIX.DRXPRT.REXX') "  
ADDRESS ISPEXEC  
"LIBDEF ISPLLIB DATASET ID ('@DSPREFIX.DRXPRT.LOADLIB') "  
"LIBDEF ISPLLIB DATASET ID('@DSPREFIX.DRXPRT.PANELS') "LIBDEF  
ISPLMLIB DATASET ID('@DSPREFIX.DRXPRT.MSGS')"  
"LIBDEF ISPSLIB DATASET ID ('@DSPREFIX.DRXPRT.SKELS') "
```

- 3 After the changes are made, place a copy of the DRXPRT member into a SYSPROC or SYSEXEC concatenated dataset for access by users at log on (TSO DRXPRT).

DR/Xpert can also be invoked by entering the following command from the TSO command panel:

```
EX `@DSPREFIX.DRXPRT.REXX(DRXPRT) '
```

## Step 12 – Customize LIBRYDEF Member

Edit the LIBRYDEF member of the DR/Xpert PARMLIB.

The LIBRYDEF member is used to define the type of automated or virtual tape libraries you use (if any). Enter the manufacturer name, software interface, release level and load library name of your automated /virtual tape library.



---

**Note** If the tape library interface load library is listed in your system's Linklist concatenation, you can use the word "LINKLIST" in place of the load library name.

---

The information should be entered as shown in the following examples.

### Example 1

If you have an IBM virtual tape server that is using LCS release 1.5 on a z/OS system as the software interface and the load library is included in your system's link list, your LIBRYDEF entry would be:

```
* LIBRARY  
* INTERFACE ADDITIONAL PARAMETERS  
  
*-----+ +-----+  
IBM-LCS/Z1.5 LOADLIB=LINKLIST
```

## Example 2

If you have STK silos that are using HSC release 4.1 as the software interface and the load library MY.HSC.LOADLIB is not included in your system's link list, your LIBRYDEF entry would be similar to:

```
* LIBRARY
* INTERFACE  ADDITIONAL PARAMETERS

*-----+ +-----+
STK-HSC/R4.1 LOADLIB=YOUR.HSC.LOADLIB.GOES.HERE
```

An entry should be made in the LIBRYDEF member for each automated / virtual library that uses a different library interface.



---

**Note** Wildcards are not supported in the LIBRYDEF member. An asterisk in column 1 indicates a comment.

---

## Step 13 – Customize USERSETS Member

DR/Xpert is a parameter driven tool. During each job, DR/Xpert merges input parameters from three potential sources to obtain the parameters that control the execution of the job. When DR/Xpert loads a parameter value, the search order for the parameter value is:

- 1 PGMSETS – A DD name in the DR/Xpert job JCL; parameters changed through ISPF panels or manually entered into the JCL. (If no PGMSETS DD is found in the job, the PGMSETS member of the DR/Xpert PARMLIB is checked for overriding parameter values.)
- 2 USERSETS – PARMLIB library member; user's installation-wide settings.
- 3 DEFAULTS - The factory defaults are now contained in a load module, the contents of which are documented in the user parameter manual and displayed in the Parameter Summary Report produced when this product's programs are executed.

Logically, parameter values are taken from the first source (PGMSETS, USERSETS, or DEFAULTS) in which they are found. The parameter/value format of the PGMSETS, USERSETS, and DEFAULTS is the same.

As part of the installation process, several parameters must be set in the USERSETS member to identify your job scheduler, job checking software, desired dataset name high-level qualifier, etc. to DR/Xpert.



---

**Warning** Note that some parameters do not apply to all installations. Read parameter descriptions in the Parameter Reference Guide to see if a parameter does/does not apply to your installation based on the tape management system or job scheduler used.

---

Update the parameter values based on the description in the Parameter Reference Guide and save the USERSETS member.

## Step 14 – Provide AUTHCODE

Enter the authorization code obtained during pre-installation into the AUTHCODE member of the DR/Xpert PARMLIB library. A unique authorization code is required for each CPU on which DR/Xpert will run.



**Note** If you do not yet have your authorization code, refer to [“Obtaining An Authorization Code”](#) for information on how to get your code.

---

## Step 15 - Run SETUPATL Job

Edit the SETUPATL member of the DR/Xpert INSTALL library. The JCL in this member invokes a program that gathers the system retrieving tape unit information and automatic tape library information.

If NEWNAMES CLIST was not executed, enter a job card conforming to your data centers standards and update the dataset name prefixes (@DSPREFIX) according to the information gathered using the [“Pre-Installation Checklist”](#).

Users that executed the NEWNAMES CLIST in Step 7 can review the JCL to make sure that the jobcard and DR/Xpert library names are correct before job submission.

Submit the SETUPATL member JCL. The ATL Library Name Report (see [Figure 3-3](#)) is produced to show the ATLS found and defined to DR/Xpert by the SETUPATL job.

REL x.x.x PTF x	D R / X P E R T	PROGRAM
OTCDC010		
DATE: xx/xx/xxxx	TIME: xx:xx:xx	ATL LIBRARY NAME REPORT FOR OPENTECH_SYSTEMS,_INC.
1		PAGE
ATL	TFNM	ATL
NAME	R/V	CODE
-----	+	----
OTATL001	R	3
OTVTL001	V	3
OTVTL002	V	3
OTVTL003	V	3
OTVTL004	V	3
PROCESS COMPLETED WITH	CC=00	

**Figure 3-3** ATL Library Report

A report will also be produced to show the updates made to the IOCNTLTB member of the DR/Xpert PARMLIB, which lists all tape device types found.

## Installation Requirement for CopyCrypt

The following additional step is required only for users that will use CopyCrypt for encrypting and decrypting backup tapes made by DR/Xpert.



**Warning** Further set up is required to use CopyCrypt. See [Chapter 12, “Encryption”](#) in the Users Guide for more information.

---

## Step 16 - Run SETUP Job

Edit the SETUP member of the DR/Xpert INSTALL library. The JCL in this member invokes an automated setup utility that defines DR/Xpert's work files and required GDGs. The datasets are defined using the dataset prefix specified in the DYNAMIC-ALLOCATION-DATASET-NAME-PREFIX parameter in the USERSETS member of the DR/Xpert PARMLIB library.

If NEWNAMES CLIST was not executed, enter a job card conforming to your data centers standards and update the dataset name prefixes (@DSPREFIX) according to the information gathered using the [“Pre-Installation Checklist”](#).

Users that executed the NEWNAMES CLIST in Step 7 can review the JCL to make sure that the jobcard and DR/Xpert library names are correct before job submission.

Submit the SETUP member JCL. The Critical Data Set Work File Setup Report (see [Figure 3-4](#)) is produced to show the work files generated by the SETUP job.

FILE-ID	GDG BASE NAME	STATUS
BKPCOPY	OT17.TEST.DRXPRT.B.BKPCOPY	NEW GENERATION CREATED
BKPCOPY	OT17.TEST.DRXPRT.O.BKPCOPY	NEW GENERATION CREATED
DSIREPRT	OT17.TEST.DRXPRT.B.DSIREPRT	NEW GENERATION CREATED
DSIREPRT	OT17.TEST.DRXPRT.O.DSIREPRT	NEW GENERATION CREATED
TRIGCNTL	OT17.TEST.DRXPRT.O.TRIGCNTL	PDS CREATION SUCCESSFUL
RSTJOBS	OT17.TEST.DRXPRT.O.RSTJOBS	PDS CREATION SUCCESSFUL
HSMCNTL	OT17.TEST.DRXPRT.O.HSMCNTL	PDS CREATION SUCCESSFUL
DSSCNTL	OT17.TEST.DRXPRT.O.DSSCNTL	PDS CREATION SUCCESSFUL
DSNBKUPS	OT17.TEST.DRXPRT.O.DSNBKUPS	PDS CREATION SUCCESSFUL
BKPCOPY	OT17.TEST.DRXPRT.O.BKPCOPY	PDS CREATION SUCCESSFUL
TRIGCNTL	OT17.TEST.DRXPRT.B.TRIGCNTL	PDS CREATION SUCCESSFUL
RSTJOBS	OT17.TEST.DRXPRT.B.RSTJOBS	PDS CREATION SUCCESSFUL
HSMCNTL	OT17.TEST.DRXPRT.B.HSMCNTL	PDS CREATION SUCCESSFUL
DSSCNTL	OT17.TEST.DRXPRT.B.DSSCNTL	PDS CREATION SUCCESSFUL
DSNBKUPS	OT17.TEST.DRXPRT.B.DSNBKUPS	PDS CREATION SUCCESSFUL
BKPCOPY	OT17.TEST.DRXPRT.B.BKPCOPY	PDS CREATION SUCCESSFUL
TRIGCNTL	OT17.TEST.DRXPRT.B.TRIGCNTL	PDS CREATION SUCCESSFUL
RSTJOBS	OT17.TEST.DRXPRT.B.RSTJOBS	PDS CREATION SUCCESSFUL
HSMCNTL	OT17.TEST.DRXPRT.B.HSMCNTL	PDS CREATION SUCCESSFUL
DSSCNTL	OT17.TEST.DRXPRT.B.DSSCNTL	PDS CREATION SUCCESSFUL
DSNBKUPS	OT17.TEST.DRXPRT.B.DSNBKUPS	PDS CREATION SUCCESSFUL
BKPCOPY	OT17.TEST.DRXPRT.B.BKPCOPY	PDS CREATION SUCCESSFUL
TRIGCNTL	OT17.TEST.DRXPRT.B.TRIGCNTL	PDS CREATION SUCCESSFUL
SITEDATA	OT17.TEST.DRXPRT.SITEDATA	PDS CREATION SUCCESSFUL
BKPCOPY	OT17.TEST.DRXPRT.B.BKPCOPY	NEW GENERATION CREATED
BKPCOPY	OT17.TEST.DRXPRT.O.BKPCOPY	NEW GENERATION CREATED
DSIREPRT	OT17.TEST.DRXPRT.B.DSIREPRT	NEW GENERATION CREATED
DSIREPRT	OT17.TEST.DRXPRT.O.DSIREPRT	NEW GENERATION CREATED

Figure 3-4 Critical Data Set Work File Setup Report

## Step 17 - Install/Update/Link the ADRUIXIT Exit

CopyCrypt requires the installation of DFSMSdss User Installation Options Exit (ADRUIXIT). The ADRUIXIT can be applied to your normal target libraries or it can be applied directly to the DR/Xpert LOADLIB to prevent it from effecting non-CopyCrypt processes.

OpenTech Systems supplies two versions of ADRUIXIT with the changes that are required for CopyCrypt processing as follows:

- The first version is a pre-compiled ADRUIXIT object, which is located in the ADRUIXIT member of the DR/Xpert OBJ library. This object is ready to be applied, assuming that you do not already have a customized ADRUIXIT or if you are targeting the DR/Xpert LOADLIB library and do not need CopyCrypt processing to include your ADRUIXIT customizations.

- The second version is provided as sample ADRUIXIT source and compile JCL, which is located in the UIXITSRC member of the DR/Xpert JCLLIB. This source can be compiled as is, or it can be used to create a new exit that includes any customized ADRUIXIT logic that you currently have in place.



---

**Note** For CopyCrypt processing, it is required that the UFNOIN flag in the ADRUFO record is set to ON when performing decryption processing and that the UFNOOUT flag is set to ON when performing encryption and unencrypted output writes should be suppressed. Refer to the sample ADRUIXIT source for more details.

---



---

**Warning** For information and instructions on modifying and applying the ADRUIXIT exit, refer to the z/OS DFSMS Installation Exits manual.

---

The ADRUIXIT must be linked into the DFSMSdss ADRDSSU load module. The installation method can be either SMP/E or Non-SMP/E, as described in the following subsections.

---



---

**Warning** This process should only be performed by personnel familiar with these functions.

---

## SMP/E Installation

SMP/E Installation consists of 3 steps:

- 1 Receive ADRUIXIT into the SMP/E global zone in the form of a USERMOD using the job in JCLLIB member UIXITRCV. By default, the USERMOD is named DSSUXIT. This name can be changed in the SMPPTFIN DD, if desired.
- 2 Execute job UIXITAPC from the DR/Xpert JCLLIB to perform an “Apply Check” of the received USERMOD. If you have assigned a name other than DSSUXIT to the USERMOD, be sure to update the USERMOD name in the SMPCNTL DD.
- 3 Execute job UIXITAPP from the DR/Xpert JCLLIB to perform the “Apply” of the USERMOD. This links the ADRUIXIT exit with the DFSMSdss ADRDSSU module, and write ADRDSSU to the DR/Xpert LOADLIB. Again, if you have assigned a name other than DSSUXIT to the USERMOD, be sure to update the USERMOD name in the SMPCNTL DD.

## Non-SMP/E Installation

Execute job UIXITLTK from the DR/Xpert JCLLIB to link the ADRUIXIT object into the DFSMSdss ADRDSSU load module, and write ADRDSSU into the DR/Xpert LOADLIB library.



---

**Warning** ADRUIXIT should be re-linked after you have applied IBM maintenance that has modified module ADRDSSU.

---

## Removing the ADRUIXIT Exit

If, for any reason, the ADRUIXIT installation exit needs to be removed from the system, an SMP/E restore job is provided in the UIXITRST member of the DR/Xpert JCLLIB. By default, the USERMOD is named DSSUXIT but if that name was modified during installation (see SMP/E Installation instructions above); the user must modify the RESTORE control card in the UIXITRST job to reflect the correct USERMOD name for the exit prior to executing the restore job.

## Further PARMLIB/JCLLIB Customization

After DR/Xpert product libraries, work files, GDGs have been installed and initial customization has been completed, **proceed to Chapter 4, “Additional Customization”** for further instructions on customizing some of the JCL models and PARMLIB members that will be used by the DR/Xpert data collection/identification and backup job streams. [Chapter 4](#) also lists the customization steps that are specific only to users of certain job schedulers.



# 4

# Additional Customization

---

## TOPICS COVERED IN THIS CHAPTER

- Step 1 - JCL Library Specification (page 4-2)
- Step 2 - Identify Jobs Not Submitted by Job Scheduling Software (page 4-2)
- Step 3 - Identify Online Regions and Tasks (page 4-3)
- Step 4 - Filter System Infrastructure Files (page 4-3)
- Step 5 - Filter Creating Program Names (page 4-4)
- Step 6 - Filter DD Names (page 4-4)
- Step 7 - Filter Specific Dataset Names (page 4-4)
- Step 8 - Filter Specific DASD Volumes (page 4-5)
- Step 9 - Filter Specific SMS Storage Classes (page 4-5)
- Step 10 - Identify SMF SYSIDs (page 4-6)
- Step 11 - Job Scheduler Production Job Lists (page 4-6)
- Step 12 - Configure Work Station Names (page 4-8)
- Step 13 - SMF Collection (page 4-9)
- Step 14 - Define Application Rules (page 4-11)
- Step 15 - Define Collocation Rules (page 4-12)
- Step 16 - Define Recovery Rules (page 4-12)
- Step 17 - Evaluate Report Rules (page 4-13)
- Step 18 - Define Encryption Rules (page 4-13)
- Additional Implementation Instructions (page 4-13)

## Introduction

This chapter includes additional customization of the DR/Xpert product libraries that is required for file identification and exclusion, as well as customization steps that are specific to certain job schedulers.



---

**Note** Before proceeding with the additional customization, the installation steps listed in [Chapter 3, "Installation Instructions"](#), must be complete.

---

## Step 1- JCL Library Specification

The JCLLIBS member of the DR/Xpert PARMLIB is used to identify the production JCL libraries, known to your job scheduling package, that DR/Xpert scans for JCL changes.

Edit the JCLLIBS member and enter the dataset name(s) for your production JCL libraries and select a unique file ID (8 characters or less) for each JCL library.

Save and exit the JCLLIBS member.

## Step 2 - Identify Jobs Not Submitted by Job Scheduling Software

The JOBNAMES and PRODRULE members of the DR/Xpert PARMLIB are used to identify jobs (by job name or job name pattern) that are not submitted through the data center's job scheduler, but that are considered part of critical application job flows, and therefore should be identified and backed up by DR/Xpert. For example, some data centers do not submit their online systems through their job scheduling software. In that case, the online jobs would be included in DR/Xpert processing using this member.

Edit the JOBNAMES member and define job names or job name patterns that are not scheduled by the data center's job scheduling software but should be included (or excluded) in DR/Xpert's processing. This member uses include (INCL=) and exclude (EXCL=) statements to include or exclude jobs for consideration.

Save and exit the JOBNAMES member.

## Step 3 - Identify Online Regions and Tasks

DR/Xpert separates files used for batch processing from those used by online regions and tasks. The ONLJOBS and ONLPGMS members of the DR/Xpert PARMLIB library are used in conjunction with one another to identify CICS regions and started tasks so that the datasets required for onlines can be handled apart from the critical batch datasets. The ONLJOBS member of the DR/Xpert PARMLIB library is used to identify the job names of CICS regions and online started tasks by full job name or job name mask. The ONLPGMS member is used to identify the CICS online regions by program name or pattern.

DR/Xpert's use of two filters allow for the identification of online jobs using two different strategies:

- Identify specific job names as online, or
- Identify any job that uses a specific program name as online

In one method, the ONLPGMS filter performs initial identification of online jobs by their program name (such as DFHSIP), and then ONLJOBS further qualifies production jobs by a job name mask. In the other method, the ONLPGMS is nullified by including all program names, and then the ONLJOBS filters specific Production CICS regions. OpenTech Systems suggests that the second method be used because it requires less day-to-day management of production CICS job lists. If a new CICS job is introduced as production, it is considered online according to the strength of the ONLPGMS filter.

Edit the ONLJOBS and ONLPGMS members by entering the names of your CICS and IMS regions and/or online started tasks so that the datasets required for online regions and tasks can be located and separated from standard batch files.

Save and exit the ONLJOBS member and the ONLPGMS member.

## Step 4 - Filter System Infrastructure Files

The SMFINFRA member of the DR/Xpert PARMLIB library is used to identify system infrastructure datasets so that they can be filtered from DR/Xpert processing, as these datasets are typically backed up and recovered by volume using other methods.

Edit the SMFINFRA member and enter the dataset names (or dataset name patterns) for the data center's infrastructure datasets (such as SYS1.\* datasets). DR/Xpert includes a default list of infrastructure dataset name patterns in SMFINFRA, but this list can be supplemented or modified based on your data center standards.

Save and exit the SMFINFRA member.

## Step 5 - Filter Creating Program Names

The PROGRAMS member contains the names of programs whose output you want DR/Xpert to filter for backup consideration. This member contains both include and exclude filters; however, the member's normal use would be to exclude output from programs that either perform their own backup and recovery or they are inappropriate as critical data. Use this member to exclude datasets from DR/Xpert's analysis when they are created by special programs (like FDR or DFDSS).

Edit the PROGRAMS member and enter the creating program names for datasets that are not to be considered critical by DR/Xpert. DR/Xpert includes a default list of program names in PROGRAMS, but this list can be added to or modified based on your data center standards.

Save and exit the PROGRAMS member.

## Step 6 - Filter DD Names

The ONLDDNF and DDNAMES members are used to filter datasets based on the names of the DDs under which the dataset was referenced. These members contain both include and exclude filters. ONLDDNF filter checking is limited to online regions, whereas the DDNAMES filter pertains to all regions (online and batch).

Edit the ONLDDNF and DDNAMES members and enter the DD names for datasets that are not to be considered critical by DR/Xpert.

Save and exit the ONLDDNF and DDNAMES members.

## Step 7 - Filter Specific Dataset Names

The DSNAMES member is used to filter specific datasets from consideration during DR/Xpert's daily collection phase. The intent of this member is to provide more granular inclusion or exclusion than provided by the SMFINFRA and PROGRAMS tables. Use SMFINFRA and PROGRAMS to filter a broad range of datasets. Then use DSNAMES to fine tune the results not handled by SMFINFRA and PROGRAMS.

Edit the DSNAMES member and enter the dataset names that you want included or excluded for monitoring by DR/Xpert, which are NOT already filtered by the SMFINFRA and PROGRAMS tables.

Save and exit the DSNAMES member.

## Step 8 - Filter Specific DASD Volumes

The VOLUMES member is used to filter specific DASD volumes from consideration during DR/Xpert's daily collection phase. This table can be used to prevent the names of production datasets on test volumes from consideration as critical datasets.

The MIRRORED member is similar to the VOLUMES member, except it is specifically used to identify files on mirrored DASD devices. The content of the MIRRORED member is specified by UCB address, volume serial number, or both. Additionally, the customer strategy for disaster recovery with the use of mirrored devices differs, based on the locality of the mirror.

Remotely mirrored devices provide immediate recovery at a remote location. However, the cost of remote mirroring is expensive. This makes what is placed on the mirrored resource a cost consideration. DR/Xpert provides accounting of production datasets residing on or off of mirrored devices. Data management personnel can use DR/Xpert reports to prune the production datasets that land on mirrored devices and the SMS control statements that control the allocation of these datasets.

Locally mirrored devices provide individual device backup through redundancy, but offer no real recovery in a location-wide disaster. Therefore, DR/Xpert allows the customer to control the backups performed for datasets on locally mirrored devices through the BACKUP-FILES-ON-MIRRORED-VOLUMES parameter.

Lastly, multi-volume datasets, including VSAM alternate indexes that are part of a logical VSAM Sphere, can straddle mirrored and non-mirrored devices. DR/Xpert will backup the entire dataset or all components when parts are on a mirrored device and parts are off of a mirrored device.

Edit the VOLUMES member and enter the volume serial numbers that you want included or excluded for monitoring by DR/Xpert and/or use the MIRRORED member to identify files on mirrored DASD.

Save and exit the VOLUMES and MIRRORED members.

## Step 9 - Filter Specific SMS Storage Classes

The STORCLAS member is used to filter datasets from consideration for DR/Xpert identification based on SMS storage class.

Edit the STORCLAS member and enter the SMS storage classes that you want included or excluded for monitoring by DR/Xpert.



---

**Note** If this member is empty or contains only comments, then datasets from all storage classes are considered for analysis by DR/Xpert.

---

Save and exit the STORCLAS member.

## Step 10 - Identify SMF SYSIDs

The SYSIDTBL member of the DR/Xpert PARMLIB library is used to identify the SMF SYSIDs for which SMF data should be collected for analysis by DR/Xpert. Any SMF SYSIDs not included in this member will be excluded from processing; therefore, it is likely that the SYSID of your test LPARs should not be listed in this member.

Edit the SYSIDTBL member and enter the SMF SYSIDs that DR/Xpert should include in collection and analysis.



---

**Note** If there are no SMF SYSIDs listed in this member, the entire SMF content is collected for analysis.

---

Save and exit the SYSIDTBL member.

## Step 11 - Job Scheduler Production Job Lists

DR/Xpert requires a production job list and retrieves this information from the data center's job scheduling software. Each job scheduler uses a slightly different method. Click on your job scheduling software name below to go to those customization instructions:

- *CA7 Users*
- *ESP Users*
- *OPC Users*

### CA7 Users

The CA7JOBS member of DR/Xpert's JCLLIB and the CA7DATA member of PARMLIB is referenced by the first daily critical dataset data collection (COLLECT) when run in an environment with CA7 (SCHEDULING-PRODUCT-NAME: CA7). The COLLECT JCL contains an "INCLUDE" statement for each job scheduler supported. CA7 users will be instructed to "uncomment" the INCLUDE statement for CA7.

The CA7JOBS member in JCLLIB contains the job stream that the COLLECT job invokes to produce a production job list as part of data collection. The CA7DATA member of PARMLIB contains the control cards needed by CA7JOBS to produce the listing of data needed by DR/Xpert.

Edit the CA7JOBS member and update the dataset names specified in the STEPLIB, UCC7CMDS, BATCHIN, and BATCHOUT DDs to reflect the dataset names used for these proprietary CA7 datasets at your data center. If you did not use the NEWNAMES CLIST during installation to update the dataset name prefixes from the DR/Xpert defaults, update those as well.

Save and exit the CA7JOBS member.

Edit the CA7DATA member of PARMLIB and update the object of the LOGON statement to include a CA7 user ID defined at your data center.

Save and exit the CA7DATA member.

## ESP Users

The ESPJOBS member of DR/Xpert's JCLLIB and the ESPDATA member of PARMLIB is referenced by the first daily critical dataset data collection (COLLECT) when run in an environment with ESP (SCHEDULING-PRODUCT-NAME: ESP). The COLLECT JCL contains an "INCLUDE" statement for each job scheduler supported. ESP users are instructed to "uncomment" the INCLUDE statement for ESP.

The ESPJOBS member in JCLLIB contains the job stream that the COLLECT job invokes to produce a production job list as part of data collection. The ESPDATA member of PARMLIB contains the control cards needed by ESPJOBS to produce the listing of data needed by DR/Xpert.

Edit the ESPJOBS member and update STEPLIB DD with the name of your ESP load library (if not supplied in the system LINKLST). If you did not use the NEWNAMES CLIST during installation to update the dataset name prefixes from the DR/Xpert defaults, update those as well.

Save and exit the ESPJOBS member.

Edit the ESPDATA member of PARMLIB and change the time in the "FROM" statement according to your data center's production window time. The remaining control cards should not be modified by the user unless directed specifically by Technical Support.

Save and exit the ESPDATA member.

## ESP Required Exit

The ESPPARMS member of PARMLIB contains control cards that need to be added to ESP's configuration statements in order to implement DR/Xpert's job end notification exit (YAECD010) for ESP environments.

The YAECD010 module is located in the DR/Xpert LOADLIB library. Copy the YAECD010 module into a library accessible to ESP through the STEPLIB, JOBLIB, or the system LINKLST.

Add the following control statements to the member or file referenced by ESP's // ESPPARM DD statement:

```
EXIT FUNCTION (JOBENDNOTIFY) MODULE (YAECD010)
```



---

**Note** No editing is required for the ESPPARMS member of the DR/Xpert PARMLIB library.

---

## OPC Users

The OPCJOBS member of DR/Xpert's JCLLIB and the OPCRPT01 member of PARMLIB will be referenced by the first daily critical dataset data collection (COLLECT) when run in an environment with OPC (SCHEDULING-PRODUCT-NAME: OPC). The COLLECT JCL contains an "INCLUDE" statement for each job scheduler supported. OPC users are instructed to "uncomment" the INCLUDE statement for OPC.

The OPCJOBS member in JCLLIB contains the job stream that the COLLECT job invokes to produce a production job list as part of data collection. The OPCRPT01 member of PARMLIB contains the control cards needed by OPCJOBS to produce the listing of data needed by DR/Xpert.

Edit the OPCJOBS member and update the dataset names specified in the EQQMLIB, EQQPARM, and EQQADDS DDs to reflect the dataset names used for these proprietary OPC datasets at your data center. If you did not use the NEWNAMES CLIST during installation to update job card and dataset name prefixes from the DR/Xpert defaults, update those items as well.

Save and exit the OPCJOBS member.

The OPCRPT01 member contains control cards that specify the sort of the records reported by OPC through the OPCJOBS procedure. These control cards should not be modified by the user unless directed specifically by Technical Support.



---

**Note** No editing is required for the OPCRPT01 member of the DR/Xpert PARMLIB library.

---

## Step 12 - Configure Work Station Names

The WSNAMES member is used to identify the scheduler system names and SMF IDs and relates them to DR/Xpert's JDTCODEL member. The JDTCODEL member is then used to by the DR/Xpert started task (OTCDTASK) to add items to DR/Xpert's local queue file or submit JCL to a remote location.

The first field is either the SYSID configured for your job scheduler or the SMF-ID that the job scheduler is running under. The user can choose either SYSID or SMF ID—whichever is preferred. DR/Xpert maps the job scheduler SYSID or SMF ID (first field) to the JDTCODEL tag designated in the second field.

You may have more than one SYSID/SMF ID referring to the same JDTCODEL tag specified by the second field. This method, shown in [Figure 4-1](#), allows you to combine multiple systems to be backed up by a single DR/Xpert started task.

MASTER	SYSA
SYSA	SYSA
SYSB	SYSA

**Figure 4-1** Multiple-System Backup, Same JDTCODEL

You may also choose to have unique values for the second field across multiple statements, as shown in [Figure 4-2](#). If your scheduler product centralizes job start and stop activity from multiple systems into a single monitor region, then correspondingly, DR/Xpert can initiate backups from a single started task to multiple systems.

SYSA	SYSA
SYSA	SYSB
SYSA	SYSC

**Figure 4-2** Multiple-System Backup, Unique JTDMODEL

Edit the WSNAMES member and enter the scheduler system names and SMF IDs.  
Save and exit the WSNAMES member.



---

**Note** See [Chapter 6 “WSNAMES and JTDMODEL Member Relationship”](#) in the User Guide for detailed information on the configuration and use of the WSNAMES member.

---

## Step 13 - SMF Collection

DR/Xpert evaluates SMF dataset OPEN records to determine which datasets are critical for backup and recovery. The collection of SMF 14, 15, 30, and 64 records is essential and a basic requirement for this product. Ask the administrator responsible for system configuration to verify the existence or activate an SMF member in IPL parameter library to collect these records.

The following are the parameters of interest to DR/Xpert.

```
SYS (TYPE (... , 14 , 15 , 61 , 64 , 65 , 30 (1 , 4 , 5) , ...) ,  
     EXITS ( . . , IEFU83 , ...)
```

[Figure 4-3](#) shows a basic example for SMFPRM00. Note that the preceding parameters are the only ones to be important to DR/Xpert. Other parameters should remain unchanged.

```
ACTIVE
DSNAME(SYS1.MAN1,
        SYS1.MAN2,
        SYS1.MAN3)
NOPROMPT
REC(PERM)
MAXDORM(3000)
STATUS(010000)
JWT(0400)
SID(SYS1)
LISTDSN
SYS(TYPE(14,15,61,64,65,30(1,4,5),255),
     EXITS(IEFU83,IEFU84,IEFACTRT,
           IEFUSI,IEFUJI,IEFU29),NOINTERVAL,NODETAIL)
```

**Figure 4-3** Example SMFPRM00

Additionally, some data centers may instruct SMF to begin collecting these records dynamically using the SETSMF operator command. Note, however, that adding exit IEFU83 (which is required for the DR/Xpert SMF Data Collector, real-time SMF collection task) cannot be done dynamically.

DR/Xpert can collect SMF data in one or two ways: either by using your daily SMF file, or by using real-time SMF data collection through a started task/job. **Using DR/Xpert's SMF Data Collector task is the preferred method of implementation;** however, both options are discussed in the following sections.

### Using DR/Xpert's SMF Data Collector (Recommended)

DR/Xpert provides a “real-time” SMF Data Collector task which, although optional, is highly recommended. The DR/Xpert SMF Data Collector extracts SMF data real-time using the SMF IEFU83 exit.



---

**Warning** Using the DR/Xpert SMF Data Collector task is the recommended method of implementation. SMF Exit IEFU83 must be enabled.

---

Using the real-time SMF Data Collector provides these benefits:

- DR/Xpert has a feature that keeps track of older backups of read-only files and schedules backups of files as they become updated. The use of this feature is recommended, and if used, the SMF Data Collector is a requirement. The requirement provides the earliest notification of critical files being created or updated.
- The collected record types can be suppressed. Data centers that currently do not collect SMF 14 and 15 records will have not have to increase their SMF datasets size. The SMF Data Collector can either suppress or pass these records for recording into traditional SMF collection files.
- The SMF Data Collector extracts minimum fields from SMF data to create a significantly smaller set of SMF data for DR/Xpert's use.

- The SMF Data Collector records to a z/OS System Logger stream (LOGR). This LOGR stream can be shared between SYSPLEXes and LPARs. SMF data is immediately available from systems that share the LOGR. This simplifies operation of DR/Xpert by eliminating special considerations for merging traditional SMF data before providing it to DR/Xpert.



---

**Note** Refer to [Chapter 4, “SMF Data Collector”](#) in the User Guide for detailed information on the configuration and use of the SMF Data Collector.

---

## Using Traditional SMF Record Collection

DR/Xpert can use traditional SMF data collection with raw, unloaded SMF data as input. DR/Xpert reads SMF data daily and extracts important fields to build a significantly compressed version of the SMF data. In order to use this method, the data center’s daily SMF dataset(s) must be used as input into DR/Xpert’s daily SMF extract process (refer to [Chapter 3, “SMF Collection”](#) in the User Guide).

## Step 14 - Define Application Rules

DR/Xpert can relate group names to production jobs using an association rule. This group name is loosely called an application, but it can be larger than an application. It can be a company or a company's division. Furthermore, it can be more complex than a simple application. It can be an application within a division, or, it can be an application within a division within the European or American operation of a company.

Once a group of jobs is associated with an application name, datasets owned by that application are elements within that application. The elements within the group can be clustered together during backup or some groups can be restored with greater recovery expediency over others. Furthermore, some groups can be backed up together and restored together.

In its simplest implementation, groups are applications, and all applications are backed up together. In that case, the benefit of groups is backup reporting by application.

In more complex implementations, groups can be multi-tiered; for example, company/application, or, company/department/application. Group backups can be clustered so that certain backups will contain elements from only certain groups.

Edit the APPLRULE member and enter the rules to associate jobs to applications.

Save and exit the APPLRULE member.



---

**Note** Refer to [Chapter 10, “Applications and Groups”](#) in the User Guide for detailed information on the configuration and use of application rules.

---

## Step 15 - Define Collocation Rules

By DR/Xpert's definition, collocation is dividing work to separate backup units, or aggregates. Some of these divisions are required, some are optional.

DR/Xpert must separate tape-to-tape backups from disk-to-tape backups. Therefore, collocation rules are closely associated with the backup method, also known as the backup driver. Disk-to-tape backups make up at least one collocation group, and tape-to-tape backups make up another. Additionally, any special differences forces a different collocation group, such as separating those datasets that require encryption for those that do not need to be encrypted.

The customer may want additional boundaries on backups directing different applications or applications groups to different backup volumes. The benefit might be to improve recovery service levels for certain critical applications; or, in the case of a service bureau, the benefit might be separation and distinction of data between clients.

Edit the COLOCTBL member and enter the rules to define different backup groups.

Save and exit the COLOCTBL member.



---

**Note** Refer to [Chapter 11, "Collocation"](#) in the User Guide for detailed information on the configuration and use of collocation rules.

---

## Step 16 - Define Recovery Rules

The RECOVERY member of the DR/Xpert parameter library defines rules for recovery sets. A recovery set describes the applications that are recovered together according to your business requirements.

DR/Xpert's builds recovery JCL based what the Recovery JCL Program finds in the backup database and based on association rules in the RECOVERY member. The results of different rule criteria in this member are recovery JCL stored into multiple partitioned datasets. Think of each partitioned dataset as a recovery set. Each partitioned dataset represents a different tier in a multi-tiered recovery. There are no real limits to the number of tiers in a recovery, only practical ones.

The priority of recovery sets are the result of emphasizing the recovery job streams from one partitioned dataset over the JCL in another PDS. Recovery of multiple recovery sets can occur at the same time, but objectives will naturally emphasize one over another. When a recovery set is restored, production cycles for the applications within that set can begin.

When datasets are used across multiple applications, the applications should be in the same recovery set. This practice ensures that the applications are restored in the same state they were backed up. DR/Xpert provides a report identifying co-requisite applications. Avoid running production work associated with two interdependent applications before both applications are restored; otherwise, unexpected results can occur.

Edit the RECOVERY member and enter the rules to define different recovery sets.

Save and exit the RECOVERY member.



---

**Note** See [Chapter 7, “Step 16 - Define Recovery Rules”](#) in the User Guide for detailed information on the configuration and use of recovery rules.

---

## Step 17 - Evaluate Report Rules

The REPORTS member of DR/Xpert parameter library defines reporting criteria for DR/Xpert's reporting database. The report rules can distinguish the datasets' critical and noncritical attributes, whether the original dataset resides on mirrored or non-mirrored devices, if the automatic tape library originated a file, or what was the media it originated.

This REPORTS member can be modified whenever needed, but this member is considered part of customization because the content of the rules differ from datacenter to datacenter.

Edit the REPORTS member and make changes the rules to affect the type of reports your datacenter requires. Save and exit the REPORTS member.



---

**Note** See [Chapter 13, “Reports”](#) in the User Guide for detailed information on the configuration and use of reporting rules.

---

## Step 18 - Define Encryption Rules

DR/Xpert can use either CopyCrypt or IBM's encryption facility, if installed, to encrypt the DR/Xpert managed backup tapes. To use these features, the CRYPTRUL member of the PARMLIB is customized to identify critical datasets that should be encrypted when written to backup.

Edit the CRYPTRUL member and enter the encryption rules to identify which datasets require encryption services.

Save and exit the CRYPTRUL member.



---

**Note** Refer to [Chapter 12, “Encryption”](#) in the User Guide for detailed information on the configuration and use of encryption.

---



---

**Warning** Additional changes may need to be made to the DR/Xpert libraries depending on the user environment. Any such changes will be explained in the User Guide, where applicable.

---

## Additional Implementation Instructions

After completing the preceding steps, DR/Xpert product libraries, initial work files and GDGs have been generated, and initial customization has been completed. Refer to the User Guide for information on implementing the DR/Xpert job streams.



# 5

# Additional TLMS Requirements

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## TOPICS COVERED IN THIS CHAPTER

[Tape Expiration Using DR/Xpert \(page 5-2\)](#)

[Addition to TLMS Daily Maintenance \(page 5-2\)](#)

[Updating the TLMS RMF \(page 5-4\)](#)

[TLMS Scratch Report \(page 5-5\)](#)

## Tape Expiration Using DR/Xpert

When DR/Xpert performs its Backup Audit and Scratch Process and TLMS is the tape management system, an extra process must be implemented to ensure that the tapes are scratched when appropriate. (The setting of the MOVED-DATASET-RETENTION-PERIOD parameter determines when the dataset should be scratched.)

With other tape management systems, DR/Xpert is able to simply change the expiration date of the tape so that it is scratched by the next scratch job. However, the TLMS Retention Master File (RMF) prevents DR/Xpert from using this method because the RMF causes the expiration date of the input tape to revert to what it was before DR/Xpert changed it. This would prevent the tape from being scratched as it should be.



---

**Warning** Follow the instructions in this chapter to ensure that tapes are able to be scratched by the DR/Xpert backup auditing and scratch process. Refer to [Chapter 8, “Backup Auditing and Scratch Process”](#) in the User Guide for more information.

---



---

**Note** The examples in this chapter use OT.DRXPRT as the dataset name prefix, however this would be replaced by whatever the setting of the DYNAMIC-ALLOCATION-DATASET-NAME-PREFIX parameter in the USERSETS member of the DR/Xpert PARMLIB.

---

## Addition to TLMS Daily Maintenance

In order to manage the situation described in [“Tape Expiration Using DR/Xpert”](#), the DR/Xpert audit and scratch process sets the creating job name in input tape’s TLMS database record to “OPENTECH” and sets the last used date to the current day (the date of the conversion).



---

**Warning** A step must then be added to your TLMS daily maintenance process (either to your maintenance job itself, or scheduled as a separate job, as long as it runs prior to the CATTRS step in the TLMS daily maintenance job). The JCL for this step is located in the TLMSSTEP member of the DR/Xpert JCLLIB library.

---

The TLMSSTEP gathers all of the TLMS database records that have a creating job name of “OPENTECH” and are not cataloged in the system (ICF) catalog and then compares their last used date, plus the value of the MOVED-DATASET-RETENTION-PERIOD parameter, to the current date.

If the last used date + MOVED-DATASET-RETENTION-PERIOD is less than or equal to the current date and if the location id *is equal to* the value listed for the DATA-CENTER-ID parameter (in your USERSETS), the dataset name of that record is changed to the value of the DYNAMIC-ALLOCATION-DATASET-NAME-PREFIX parameter (in the USERSETS) plus “.EXPIRED”.

### Example 1

If the DYNAMIC-ALLOCATION-DATASET-NAME-PREFIX parameter is set to OT.DRXPRT in USERSETS, the dataset name of the tape management system record would be changed to “OT.DRXPRT.EXPIRED”.

If the last used date + MOVED-DATASET-RETENTION-PERIOD is less than or equal to the current date, and if the location id is NOT equal to the value listed for the DATA-CENTER-ID parameter (in the USERSETS), the dataset name of that record is changed to the value of the DYNAMIC-ALLOCATION-DATASET-NAME-PREFIX parameter (in the USERSETS) plus “.EXPIRExx” (xx = the location id on the volume record).

### Example 2

If the DYNAMIC-ALLOCATION-DATASET-NAME-PREFIX parameter is set to OT.DRXPRT in USERSETS and the location id on the volume record is 99, the dataset name of the tape management system record would be changed to “OT.DRXPRT.EXPIRE99”.



---

**Note** If the location id contains a space in either the first or second byte, the space is replaced with a “#” character when the new dataset name is created.

---

### Example 3

If your DYNAMIC-ALLOCATION-DATASET-NAME-PREFIX parameter is set to OT.DRXPRT in USERSETS and the location id on the volume record is “4” the dataset name of the tape management system record would be changed to “OT.DRXPRT.EXPIRE#4”.

## Updating the TLMS RMF

In addition to adding the TLMSSTEP to the TLMS daily maintenance process, entries must also be added to the Retention Master File (RMF) to tell TLMS to scratch datasets with the dataset name of the DYNAMIC-ALLOCATION-DATASET-NAME-PREFIX, plus “.EXPIRED” or “.EXPIRExx” (such as “OT.DRXPRT.EXPIRED” or “OT.DRXPRT.EXPIRE99”) defined with a retention type 6 (move immediate).

### ON-SITE

The entry into the RMF update procedure (CATRMFU) for on-site datasets (those with a location id equal to the value of the DATA-CENTER-ID parameter; the default of DC is used here) would look like the following:

```
TDAOT.DRXPRT.EXPIRED  
6DC
```

### OFF-SITE

The entry into the RMF update procedure (CATRMFU) for off-site datasets would look like the following (xx = the location id on the volume record):

```
TDAOT.DRXPRT.EXPIRExx  
6DC 5xx0001
```

This rule allows the volume to rotate back from the off-site storage and be expired. Code 5 is “elapsed days” processing so the additional rule is saying that the volume should return from the xx location after one day.

The RMF update procedure (CATRMFU) for datasets with a location id of 9C would look like the following:

```
TDAOT.DRXPRT.EXPIRE9C  
6DC 59C0001
```

## TLMS Scratch Report

The TLMS Scratch Report is generated to show the detail activity of tapes expiring under TLMS control. The total number of unexpired tapes is listed at the end of the report. See [Figure 5-1](#).

RELEASE x.x.x	PTF LEVEL x	D R / X P E R T			PROGRAM xxxxxxxx
DATE: xx/xx/xxxx	TIME: xx:xx:xx	SCRATCH REPORT FOR OPENTECH_SYSTEMS,_INC.			PAGE
1					
MSGID	DATASET NAME	VOLSER	EXPDT	REASON	
M0150	OT.APPLA.BACKUP	203894	95349	EXPIRED BACKUP TAPE IS CATALOGED	
M0151	OT.APPLB.BACKUP	203943	95349	EXPIRED BACKUP TAPE IS FLAGGED FOR SCRATCH	
.	.	.	.	.	
M0152	OT.APPLC.BACKUP	207431	95349	EXPIRED BACKUP TAPE FAILED TO FLG FOR SCRATCH	
NUMBER OF DR/XPRT BACKUP TAPES AWAITING EXPIRATION:					115

**Figure 5-1** Scratch Report



# 6

# Product Maintenance

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## TOPICS COVERED IN THIS CHAPTER

[OpenTech Systems Product Distribution \(page 6-2\)](#)

[Maintenance Philosophy and Types \(page 6-2\)](#)

[Applying Maintenance \(page 6-3\)](#)

## OpenTech Systems Product Distribution

All OpenTech Systems software products that are distributed at the base level; that is, without maintenance. Maintenance updates, in the forms of PTFs and zaps, are available for download from the OpenTech Systems Customer Support secure web site. Maintenance should be downloaded when notification has been received at minimum. OpenTech Systems strongly advises that maintenance be applied when available and practical. For more information about receiving automatic notification through email of product maintenance or updates, refer to [Chapter 1, "About This Guide"](#).

All maintenance is cumulative. Therefore, only the most current PTF and associated zaps need to be applied, as each PTF contains all previous maintenance associated with the current release of the product.



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**Note** Only the most current PTFs and associated zaps are available for download. If, for any reason, it is not practical or viable to maintain currency of the DR/Xpert software product, it is recommended that published PTFs and zaps be downloaded and saved as they become available. By saving the files when they are available, the changes can be applied at the user's procedural discretion.

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## Maintenance Philosophy and Types

The following sections describe OpenTech Systems' software maintenance philosophy and the types of maintenance that are performed.

### Published PTF

Published PTFs, such as those listed on the OpenTech Systems Technical Support web site, are preventative full module library replacements and contain cumulative maintenance for all reported problems as of the date of issuance. As all changes are tested, it is recommended that these PTFs be installed and applied in every Logical Partition (LPAR) in which DR/Xpert is installed and executing. Only the most current PTF is available for download.

New published PTFs supersede previous PTFs and associated zaps. Special zaps that have been created and applied to address a specific user need will be overwritten, and a new special zap must be requested from Technical Support, if necessary (refer to the section *Special Zap* in this chapter).

The naming convention for published PTFs is product name, release number, and PTF number. For example, the first PTF for DR/Xpert Release 2.2.4 would be DR/Xpert R2.2.4 PTF1.

### Published Zap

Published zaps resolve a reported problem that may affect multiple customers. Some zaps may have specific prerequisite relationships with previously released PTFs or zaps and as such, will be documented in the comments section of the zap. All current published zaps related to the current PTF are available for download.

The naming convention for zaps specific to DR/Xpert is PTFxxZnn, where 'xx' is the PTF level and 'nn' is the zap number (for example, PTF01Z01).

## Special Zap

A “special” zap is a zap that has been created by OpenTech Systems Technical Support to address a specific need but that may not be required or needed by the majority of users. All special zaps are tested, within the scope OpenTech Systems environment(s); additional testing may be required by the end user.

Special zaps are not published, per se, and are only available to those customers who request them should the need arise.

The naming convention for special zaps specific to DR/Xpert is PTFxxSnn, where *xx* is the PTF level and *nn* is the zap number, as in PTF01S01.

## Applying Maintenance

All maintenance files including published PTFs, zaps or special zaps, contain instructions relevant to their application. They may be contained in a separate text file within the zipped file for the product or documented on the OpenTech Systems support Web site.



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**Warning** It is recommended that all published PTFs, zaps and special zaps be downloaded and saved. This can be accomplished by saving them to the DR/Xpert JCLLIB or creating a PTFLIB or ZAPLIB PDS; the OpenTech Systems naming convention should be used.

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All maintenance should be reviewed for release bulletins and/or documentation that accompanies the maintenance package in case of changes that may require manual changes to the DR/Xpert product libraries as a result of maintenance.

Member ZAP in the product JCLLIB may be used for applying zap maintenance.



# A Pre-Installation Checklist

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## TOPICS COVERED IN THIS APPENDIX

[Checklist \(page A-2\)](#)

## Checklist

To ensure a timely and successful installation of DR/Xpert, OpenTech Systems strongly recommends that this Pre-installation Checklist be completed before starting the installation so that it can be used during the actual installation process.

This document should be printed, completed, and saved with a hardcopy of the Installation guide or alternatively, saved as a member in the INSTALL library for future reference.

**Table A-1** Pre-Installation Checklist

#	Task	Done
1	Review DR/Xpert's software requirements in <a href="#">Chapter 2, "Pre-Installation"</a> .	<input type="checkbox"/>
2	Register for access to OpenTech Systems' Support web site: <a href="http://www.opentechsystems.com/support.php">http://www.opentechsystems.com/support.php</a>	<input type="checkbox"/>
3	When Support web site access is approved, review the Support Notices section of the Support web site for any notices and requirements that may have changed since the publication of this document.	<input type="checkbox"/>
4	Record the dataset name prefix (high level qualifier) that you would like to use for DR/Xpert's datasets. @DSPREFIX = _____	<input type="checkbox"/>
5	Record the generic name for the DASD units at your site (SYSDA is the default value), and the name of the DASD volume where you would like to install the DR/Xpert product libraries. UNIT = _____ VOLSER = _____	<input type="checkbox"/>
6	Make a note of the 16-digit authorization code generated by Technical Support or given to you by your DR/Xpert sales representative. AUTHCODE = _____	<input type="checkbox"/>
7	Record the name of your production job scheduling product and dataset name of the production JCL library. Production Job Scheduler name = _____ Job Scheduler JCL library name(s) = _____	<input type="checkbox"/>
8	Record the name, version and release of your tape management system and the dataset names of the tape management system database and load library. Tape Management System name & release level = _____ Tape Management System database name = _____ Tape Management System load library name = _____	<input type="checkbox"/>
	<b>Note</b> The tape management system database name is not required for RMM users. The tape management system load library name is not required for TLMS users, or for users who have the tape management system load library name already in their system's Linklist concatenation.	

**Table A-1** Pre-Installation Checklist

#	Task	Done
9	<p>Record the type(s) of automated/virtual tape library software interface (such as LCS or HSC), the software interface release level and software interface product load library name.</p> <p>ATL/VTL interface = _____</p> <p>ATL/VTL release level = _____</p> <p>ATL/VTL load library name = _____</p> <p><b>Note</b> The ATL/VTL interface load library name is not required for users who have the ATL/VTL interface load library name already in their system's Linklist concatenation.</p>	<input type="checkbox"/>
10	<p>Record the name of the sort product and DD name to assign to the sort statement file used by the sort product on your system.</p> <p>Sort Product=_____</p> <p>Sort Product DD name=_____</p>	<input type="checkbox"/>
11	<p>Record the name of the SMF dataset(s) containing Record type 14, 15, 30 (subtypes 1,4, and 5), and 64.</p> <p>SMF record dataset(s)=_____</p>	<input type="checkbox"/>
12	<p>Record the name of the COBOL LE/370 object library and runtime library.</p> <p>LE/370 object library=_____</p> <p>LE/370 runtime library=_____</p>	<input type="checkbox"/>
13	<p>Record the name of the DFSMShsm MCDS dataset(s).</p> <p>HSM MCDS dataset(s)=_____</p>	<input type="checkbox"/>
14	<p>Record the name of the production procedure libraries (PROCLIBs).</p> <p>PROCLIB dataset(s)=_____</p>	<input type="checkbox"/>
15	<p>Record the name of the production JCL libraries.</p> <p>Production JCL libraries=_____</p>	<input type="checkbox"/>
16	<p>The high-level qualifiers used for infrastructure datasets (for example: SYS1, SYS2, etc.).</p> <p>Infrastructure HLQs=_____</p>	<input type="checkbox"/>
17	<p>The name of the CICS production and test systems.</p> <p>Production CICS system(s)=_____</p> <p>Test CICS system(s)=_____</p>	<input type="checkbox"/>
18	<p>The name of the SMF IDs for production systems.</p> <p>SMF IDs=_____</p>	<input type="checkbox"/>



# B Installation Checklist

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## TOPICS COVERED IN THIS APPENDIX

[Checklist \(page B-2\)](#)

## Checklist

The Installation Checklist is a quick reference for installing the DR/Xpert software files. To ensure a timely and successful installation of DR/Xpert, OpenTech Systems strongly recommends that this Installation Checklist, along with the [Appendix A, “Pre-Installation Checklist”](#), be printed or available in some other form, for reference during the installation of this software product.



**Note** This checklist is a guide only. Refer to [Chapter 3, “Installation Instructions”](#), for a complete, step-by-step, description of each task.

**Table B-1** Installation Checklist

#	Task	Done
1	Complete the <a href="#">“Pre-Installation Checklist”</a> .	<input type="checkbox"/>
2	Save XMIT file to a directory on your PC.	<input type="checkbox"/>
3	Upload the XMIT file from your PC to your mainframe.	<input type="checkbox"/>
4	Enter the TSO RECEIVE command and restore parameters to create the INSTALL library.	<input type="checkbox"/>
5	Execute the <i>first</i> run of the NEWNAMES CLIST to update the job cards and dataset name prefixes in the INSTALL library (optional).	<input type="checkbox"/>
6	Edit the RECEIVE JCL in the INSTALL library and submit it to create the other DR/Xpert product libraries	<input type="checkbox"/>
7	Execute the <i>second</i> run of the NEWNAMES CLIST to update the job cards and dataset name prefixes in the libraries received by Step 6 (optional).	<input type="checkbox"/>
8	APF authorize the DR/Xpert LOADLIB.	<input type="checkbox"/>
9	Edit the LINKOBK JCL in the INSTALL library and submit it.	<input type="checkbox"/>
10	Apply all available DR/Xpert maintenance zaps (if any) from the OpenTech Systems’ Support web site.	<input type="checkbox"/>
11	Customize the OTCD@PRM and DRXPRT members of the REXX library.	<input type="checkbox"/>
12	Customize the JOBSTMTS member of the PARMLIB library.	<input type="checkbox"/>
13	Customize the USERSETS member of the PARMLIB library.	<input type="checkbox"/>
14	Provide product authorization key in the AUTHCODE member of the PARMLIB library.	<input type="checkbox"/>
15	Edit the SETUPATL JCL in the INSTALL library and submit it to run the automated set-up utilities to retrieve tape unit information and automatic tape library information.	<input type="checkbox"/>
16	Edit the SETUP JCL in the INSTALL library and submit it to run the automated set-up utilities to create DR/Xpert’s work files and GDG bases.	<input type="checkbox"/>
17	Install/Update/Link the ADRUIXIT. (CopyCrypt users only)	<input type="checkbox"/>



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**Note** After the installation is complete, proceed with the additional customization instructions in [Chapter 4, "Additional Customization"](#).

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# C Customization Checklist

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## TOPICS COVERED IN THIS APPENDIX

[Checklist \(page C-2\)](#)

## Checklist

Use the checklist below for quick reference when performing the required additional customization of the DR/Xpert product after installing product libraries. **This checklist is only a guide; refer to [Chapter 4, “Additional Customization”](#), for a complete description of the required customization.**

**Table C-1** Customization Checklist

#	Task	Done
1	Specify production JCL libraries in the JCLLIBS member.	<input type="checkbox"/>
2	Identify jobs not submitted by the job scheduling software in the JOBNAMES member.	<input type="checkbox"/>
3	Identify online regions and tasks in the ONLJOBS and ONLPGMS members.	<input type="checkbox"/>
4	Filter system infrastructure files by specifying them in the SMFINFRA member.	<input type="checkbox"/>
5	Filter datasets based on creating program names in the PROGRAMS member.	<input type="checkbox"/>
6	Filter datasets based on DD names in the ONLDDNF and DDNAMES members.	<input type="checkbox"/>
7	Filter datasets with specific dataset names in the DSNAMES member.	<input type="checkbox"/>
8	Filter datasets based on DASD volume serial numbers in the VOLUMES member and identify mirrored volumes in the MIRRORED members.	<input type="checkbox"/>
9	Filter datasets based on SMS Storage Class in the STORCLAS member.	<input type="checkbox"/>
10	Identify production LPAR SMF SYSIDs in the SYSIDTBL member.	<input type="checkbox"/>
11	Customize procedures and control cards DR/Xpert uses to have job scheduling software generate production job lists.	<input type="checkbox"/>
12	Customize work station names in the and WSNAMES member.	<input type="checkbox"/>
13	Ensure that the proper SMF records required by DR/Xpert are being collected. Also, decide whether traditional SMF data collection (SMF daily file extracts) or the DR/Xpert SMF Data Collector task will be used as the method of providing DR/Xpert with your data center’s SMF data.	<input type="checkbox"/>
14	Define application rules in the APPLRULE member.	<input type="checkbox"/>
15	Define collocation rules in the COLOCTBL member.	<input type="checkbox"/>
16	Define recovery rules in the RECOVERY member.	<input type="checkbox"/>
17	Evaluate and define reporting rules in the REPORTS member.	<input type="checkbox"/>
18	If encryption will be used to encrypt the DR/Xpert managed backups, specify the encryption rules in the CRYPTRUL member and read <a href="#">Chapter 12</a> of the User Guide for more information on the use of encryption with DR/Xpert.	<input type="checkbox"/>



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**Note** After the above customization is complete, refer to the implementation instructions in the DR/Xpert User Guide.

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