Informatica® PowerExchange 10.4.0

Release Guide

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Preface

Read the *Informatica® PowerExchange® Release Guide* to get a cumulative summary of product changes across recent PowerExchange releases. The guide covers new features, new and changed commands and parameters, and behavior changes, by component or source type. The guide also covers changes to supported data sources and operating systems and any removed functionality.

For lists of fixes, enhancements, and known limitations, see the *PowerExchange Release Notes*.

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CHAPTER 1

Summary of PowerExchange New Features and Changes

This chapter includes the following topics:

About This Summary

This chapter summarizes the new features and changes in recent PowerExchange releases and hotfixes.

For each release or hotfix, the following types of changes are described:

- New features
- New, changed, and deleted commands
- New, changed, and deleted parameters and options
- Changes to supported versions of operating systems and data sources
- Significant behavior changes
- Significant documentation changes

For more information about these changes, see the chapters for specific components and data sources.

The following releases and hotfixes are covered:

Version	Release Date
10.4.0	December 2019
10.2 HotFix 2	April 2019
10.2 HotFix 1	August 2018
10.1.1 HotFix 2	November 2017
10.2	September 2017
10.1.1 HotFix 1	June 2017
10.1.1	December 2016
10.1	June 2016
10.0	November 2015

PowerExchange 10.4.0

This section lists the new features and changes in PowerExchange 10.4.0.

New Features in 10.4.0

The following table lists PowerExchange 10.4.0 features by PowerExchange component or data source:

Component or Data Source	Feature Reference
IBM i Installer	"IBM i Installer" on page 45
IMS	"Updated Components in the PowerExchange ECCR CRG.LOAD Library for IMS Synchronous CDC" on page 126 "Getting Source DBD Information from the IMS Catalog" on page 127
PostgreSQL sources	"Support for PostgreSQL CDC Sources" on page 161
PowerExchange Utilities	"PWXUMAP Utility" on page 91 "PWXUCCLPRT Utility" on page 91 "DTLURDMO Utility Enhancements" on page 90

Parameter and Option Changes in 10.4.0

PowerExchange 10.4.0 includes parameter and option changes.

DBMOVER Configuration File Statements

The following table identifies new, changed, or deprecated statements in the DBMOVER configuration file:

Statement	New, Changed, or Deprecated
FILEMAPPED_MEMORY_DIR	New
IMSBSDS	New
LU00FILE	New
MSQL CAPI_CONNECTION	Changed - LOCKAVOIDANCE parameter change
MYSQL CAPI_CONNECTION	Changed - MYSQLBINLOG parameter change
NODE	Changed - Trailing [Y|N] parameter deprecated
PG CAPI_CONNECTION	New
SSL_REQ_CLNT_CERT	Changed - Default behavior change

For more information, see .

DTLREXE Utility Statements

The following table identifies a new parameter that you can add in each DTLREXE control statement:

Statement	New, Changed, or Deprecated
DELETE	Changed - New config parameter
PING	Changed - New config parameter
SUBMIT	Changed - New config parameter
SYSTEM	Changed - New config parameter

For more information, see .

DTLUCBRG Utility Parameters

The following table identifies new and changed parameters for the DTLUCBRG utility:

Parameter	New, Changed, or Deprecated
TABLE	Changed
VSMOPTS	New

For more information, see .

DTLURDMO Utility Statements

The following table identifies new control statements for the DTLURDMO utility:

Statements	New, Changed, or Deprecated
INPUT	New
NOTIMESTAMPS	New
REG_COPY FASTLOAD	New
REPORTDEST	New
TESTMODE	Changed
VALIDATE	Changed

For more information, see "DTLURDMO Utility Statements and Parameters" on page 92.

PowerExchange DTLSMFRP Program Parameter

The following table identifies a new parameter in the DTLSMFRP sample JCL for generating reports of SMF statistics.

Parameter	New, Changed, or Deprecated
SYSOUT	New

For more information, see " DTLSMFRP JCL Parameter" on page 84.

PowerExchange Express CDC for Oracle Configuration File

The following table identifies a new parameter in the OPTIONS statement in the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg:

Parameter	New, Changed, or Deprecated
SPILL_FILE_PREFIX	New

The following table identifies new and deprecated parameters in the READER statement:

Parameter	New, Changed, or Deprecated
ARCHIVEDEST1	Deprecated
ARCHIVEDEST2	Deprecated
ARCHIVEDEST	New

For more information, see "PowerExchange Express CDC for Oracle Configuration File" on page 150.

Changes to Supported Operating Systems and Data Sources in 10.4.0

PowerExchange 10.4.0 introduces the following changes to the operating systems and data sources that PowerExchange supports.

For more information about version and maintenance requirements for operating systems and data sources, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

Data Sources

The following table identifies added, dropped, or deferred data source or target versions in PowerExchange 10.4.0:

Data Source	Version	Operating System	Bulk	CDC	Added, Dropped, or Deferred
Adabas	8.2.*x* 8.1 7.4	z/OS	-	-	Dropped
CICS Transaction Server	4.1	z/OS	-	-	Dropped
Datacom	14 12	z/OS	-	-	Dropped
Db2 for i	7.4	IBM i (i5/OS)	Supported - sources and targets	Supported - sources	Added
Db2 for i	7.1	IBM i (i5/OS)	-	-	Dropped
Db2 for z/OS	10 9.1	z/OS	-	-	Dropped
IDMS	18 17	z/OS	-	-	Dropped
IMS	12 11 10	z/OS	-	-	Dropped
MySQL	8.0	Linux or Windows	Not supported	Supported - sources	Added
Oracle	18*c*[1]	Linux, UNIX, or Windows	Toleration support - sources and targets	Toleration support - sources	Added
Oracle	12*c* R1 11*g* R2	Linux, UNIX, or Windows	-	-	Dropped

Data Source	Version	Operating System	Bulk	CDC	Added, Dropped, or Deferred
PostgreSQL[2]	11.*x* 10.*x*	Linux or Windows	Not supported	Supported - sources	Added
1. PowerExchange bulk data movement and Express CDC for Oracle add toleration support for Oracle 18.*c*. *Toleration support* means that PowerExchange can capture data from Oracle 18*c* sources but does not support any of the new features introduced in Oracle 18*c* that the source database uses. For Amazon RDS for Oracle sources, PowerExchange Express CDC for Oracle supports only version 12.2. 2. PowerExchange does not support EnterpriseDB (EDB) PostgreSQL.					

Operating Systems

The following table identifies changes to supported operating system versions in PowerExchange 10.4.0:

Operating System	Version	Added or Dropped
IBM i (i5/OS)	7.4	Added
IBM i (i5/OS)	7.1	Dropped
Windows	2019	Added
z/OS	1.11, 1.12, 1.13	Dropped

PowerExchange Navigator

The following table identifies changes to supported Windows operating system versions for the PowerExchange Navigator in PowerExchange 10.4.0:

Version	Added or Dropped
Windows 2019	Added
Windows 7	Dropped

PowerExchange 10.2 HotFix 2

This section lists the new features and changes in PowerExchange 10.2 HotFix 2.

New Features in 10.2 HotFix 2

The following table lists PowerExchange 10.2 HotFix 2 features by PowerExchange component or data source:

Component or Data Source	Feature Reference
CICS Transaction Server	"Support for CICS Transaction Server Version 5.5" on page 165
MySQL sources	"Catalog of MySQL Source Table Definitions" on page 143

Parameter and Option Changes in 10.2 HotFix 2

PowerExchange 10.2 HotFix 2 includes parameter and option changes.

PowerExchange Agent EDMSDIR Options

The table identifies a changed option in the PowerExchange Agent EDMSDIR module in the USERLIB library.

Option	New, Changed, or Deprecated	Reference
IAUPABND	Changed	"Changes to the IAUPABND Option in the EDMSDIR Module" on page 48

DBMOVER Configuration File Statements

The following table identifies new, changed, or deprecated statements in the DBMOVER configuration file:

Statement	New, Changed, or Deprecated
MYSQL CAPI_CONNECTION	Changed - New CATSERVER, CATSCHEMA, CATUSERNAME, CATEPASSWORD, CATPASSWORD, and ONTABLEDDL parameters

For more information, see "DBMOVER Configuration File Statements" on page 60.

PWXPC Session Attributes

The following table identifies changed PowerCenter Client for PowerCenter (PWXPC) session attributes:

Attribute	New, Changed, or Deprecated
Pre SQL	Changed - New DATACLASS and STORECLASS parameters
Post SQL	Changed - New DATACLASS and STORECLASS parameters

For more information, see "PWXPC Session Attributes" on page 50.

Behavior Changes in 10.2 HotFix 2

The following table lists PowerExchange 10.2 HotFix 2 behavior changes by PowerExchange component or data source or target:

Component or Data Source/Target Type	Reference
PowerExchange Logger for Linux, UNIX, and Windows	"Checksum Testing of CDCT Records" on page 73

Changes to Supported Operating Systems and Data Sources in 10.2 HotFix 2

PowerExchange 10.2 HotFix 2 introduces the following changes to the operating systems and data sources that PowerExchange supports.

For more information about version and maintenance requirements for operating systems and data sources, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

Data Sources

The following table identifies added, dropped, or deferred data source or target versions in PowerExchange 10.2 Hotfix 2:

Data Source	Version	Operating System	Bulk	CDC	Added, Dropped, or Deferred
CICS Transaction Server	5.5	z/OS	Not applicable - Use VSAM bulk data movement instead.	Supported - sources	Added

PowerExchange 10.2 HotFix 1

This section lists the new features and changes in PowerExchange 10.2 HotFix 1.

New Features in 10.2 HotFix 1

The following table lists PowerExchange 10.2 HotFix 1 features by PowerExchange component or data source:

Component or Data Source	Feature Reference
Adabas	"Support for Adabas Version 8.4.x" on page 103 "pwxcmd Commands for the Adabas ECCR" on page 104
CICS Transaction Server	"Support for CICS Transaction Server Version 5.4" on page 166
Datacom	"Support for Datacom Version 15.1" on page 108 "pwxcmd Commands for the Datacom Table-Based ECCR" on page 109
IDMS	"pwxcmd Commands for the IDMS ECCR" on page 124
IMS	"Support for IMS Version 15" on page 130 "Updated Components in the PowerExchange ECCR CRG.LOAD Library for IMS Synchronous CDC" on page 130 "pwxcmd Commands for the IMS Log-Based ECCR" on page 130
Microsoft SQL Server	"Support for Microsoft SQL Server 2017" on page 135
Monitoring and tuning	"Generating Reports from SMF Statistics Records" on page 85
MySQL sources	"Support for MySQL CDC Sources" on page 145
Oracle	"PowerExchange Express CDC for Oracle Support for Amazon RDS for Oracle Sources" on page 151 "Toleration Support for Oracle 12c R2 Sources" on page 152
PowerExchange Client for PowerCenter	"Time-based Restart Points for CDC Sessions That Retrieve Data from the Logger" on page 51
PowerExchange Logger for Linux, UNIX, and Windows	"Time-based Restart Points for CDC Sessions That Retrieve Data from the Logger" on page 51
PowerExchange utilities	"Data Map Creation Utility Enhancement" on page 94 "DTLUCBRG Utility Generates Before-Image and Change-Indicator Columns" on page 95 "DTLUCBRG Utility Generates Capture Registrations for MySQL Sources" on page 95 "PWXUCGRP Utility for Reporting the Capture Registrations in the CCT File" on page 96 "PWXUGSK Utility for Reporting SSL Information" on page 96

Parameter and Option Changes in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 includes parameter and option changes.

DBMOVER Configuration File Statements

The following table identifies new, changed, or deprecated statements in the DBMOVER configuration file:

Statement	New, Changed, or Deprecated
ADABAS_MU_SEARCH	New
AS4J CAPI_CONNECTION	Changed - New option for the LIBASUSER parameter
CAPX CAPI_CONNECTION	Changed - New VALIDATEREGS parameter
CMDNODE	Changed - Supports pwxcmd commands for PowerExchange ECCRs
LRAP CAPI_CONNECTION	Changed - New FUZZYRSTART parameter
MYSQL CAPI_CONNECTION	New
NODE	Changed - New Y|N parameter
SVCNODE	Changed - Supports pwxcmd commands for PowerExchange ECCRs
UOWC CAPI_CONNECTION	Changed - New CUOWS parameter

For more information, see .

PowerExchange Express CDC for Oracle Configuration File Parameter

The following table identifies a new parameter in the DATABASE statement in the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg:

Statement	Parameter	New, Changed, or Deprecated
DATABASE	RDS	New

For more information, see .

PowerExchange Condense Configuration Parameters

The following table identifies a new parameter in the PowerExchange Condense CAPTPARM configuration member:

Parameter	New, Changed, or Deprecated
CONDF_PART_BUFNO	New
CONDF_PART_LRECL	Changed - New default value

For more information, see .

PowerExchange Agent EDMSDIR Options

The table identifies a new option that you can optionally specify in the PowerExchange Agent EDMSDIR module in the USERLIB library.

Option	New, Changed, or Deprecated	Reference
IAUPABND	New	"IAUPABND Option in the EDMSDIR Module" on page 49

PWXPC Connection Attributes

The following table identifies changed PWXPC connection attributes:

Attribute	New, Changed, or Deprecated
PWX Override	Changed

For more information, see "PWXPC Connection Attributes" on page 52.

PowerExchange ODBC Data Source Properties

The following table identifies a changed parameter option for the PowerExchange ODBC driver:

Property	New, Changed, or Deprecated
PWXOVERRIDES	Changed

For more information, see "Parameter and Option Changes in 10.2 HotFix 1" on page 173.

DTLUCBRG Utility Parameters

The following table identifies new and changed parameters for the DTLUCBRG utility:

Parameter	New, Changed, or Deprecated
CREATEBICI	New
DBID	Changed - New MYS option
INSTANCE	Changed - Now accepts an instance identifier for a MySQL database server
MYSOPTS > DBSERVER	New - Required for MySQL CDC

For more information, see "DTLUCBRG Utility Parameters" on page 96.

Command Changes in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces changes to pwxcmd commands.

pwxcmd Commands

PowerExchange 10.2 HotFix 1 enhances the pwxcmd commands to include monitoring and control of the Adabas, IDMS, and IMS log-based ECCRs and Datacom table-based ECCR on z/OS.

The following table identifies the pwxcmd commands that are now supported the ECCRs:

Command	New, Changed, or Deprecated
pwxcmd close	New for the log-based ECCRs and Datacom table-based ECCR
pwxcmd displaystats	New for the log-based ECCRs and Datacom table-based ECCR
pwxcmd displaytrace	New for the log-based ECCRs and Datacom table-based ECCR
pwxcmd traceoff	New for the log-based ECCRs and Datacom table-based ECCR
pwxcmd traceon	New for the log-based ECCRs and Datacom table-based ECCR

For more information, see "pwxcmd Commands for the Adabas ECCR" on page 104, "pwxcmd Commands for the Datacom Table-Based ECCR" on page 109, "pwxcmd Commands for the IDMS ECCR" on page 124, and "pwxcmd Commands for the IMS Log-Based ECCR" on page 130.

PWXUSSL Utility Commands

PowerExchange 10.2 HotFix 1 introduces new PWXUSSL commands.

The following table identifies the new commands:

Command	New, Changed, or Deprecated
CONVERT_CERT_PKCS12_PEM	New
PING	New
REPORT_CODES	New
REPORT_CONFIG	New
REPORT_ERROR_CODES	New

For more information, see "PWXUSSL Utility New Commands" on page 98.

Changes to Supported Operating Systems and Data Sources in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following changes to the operating systems and data sources that PowerExchange supports.

For more information about version and maintenance requirements for operating systems and data sources, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

Data Sources

The following table identifies added, dropped, or deferred data source or target versions in PowerExchange 10.2 Hotfix 1:

Data Source	Version	Operating System	Bulk	CDC	Added, Dropped, or Deferred
Adabas	8.4.*x*	z/OS	Supported - sources and targets	Supported - sources	Added
Amazon RDS for Oracle	-	Linux or Windows	-	Supported - sources	Added
CICS Transaction Server	5.4	z/OS	Not applicable - Use VSAM bulk data movement instead.	Supported - sources	Added
Datacom	15.1	z/OS	Supported - sources and targets	Supported - sources	Added
Db2 LUW	10.1, 9.7	Linux, UNIX, or Windows	-	-	Dropped
IMS	15	z/OS	Supported - sources and targets	Supported - sources	Added
Microsoft SQL Server	2017	Windows	Supported - sources and targets	Supported - sources	Added
Microsoft SQL Server	2008	Windows	-	-	Dropped
MySQL Enterprise Edition	5.7	Red Hat Linux or Windows	Not supported	Supported - sources	Added
Oracle	12*c* R2	Linux, UNIX, or Windows	Toleration support[1] - sources and targets	Toleration support[1] - sources	Added

1. PowerExchange bulk data movement and Express CDC for Oracle adds toleration support for Oracle 12*c* R2 (12.2). PowerExchange Oracle CDC with LogMiner does not support 12*c* R2. *Toleration support* means that PowerExchange can capture data from Oracle 12*c* R2 sources but does not support any of the Oracle 12*c* R2 new features that the source database uses, including SCN values longer than 281474976710656 bytes. Exception: PowerExchange Express CDC can capture change data from a single pluggable database (PDB) in a container database (CDB) in an Oracle 12*c* multitenant environment.

Operating Systems

The following table identifies changes to supported operating system versions in PowerExchange 10.2 HotFix 1:

Operating System	Version	Added or Dropped
HP-UX[1]	11.31	Added for Oracle CDC source redo logs only
Red Hat Linux on IBM Z[1]	7.5, 6.9	Added
SUSE Linux	12 SP1, 11 SP4	Changed, now includes service packs on 11 and 12
Windows	2016	Added for sources and targets
Windows	2010	Dropped for sources and targets
Windows	2007, 2008	Dropped for the PowerExchange Navigator client
Windows Server	2008 R2	Dropped for sources, targets, and the PowerExchange Navigator
1. The Oracle redo logs can reside on a HP-UX system, but the PowerExchange Listener and PowerExchange Logger for Linux, UNIX, and Windows must run on a remote machine with another supported operating system. 2. Linux on IBM Z is supported for Db2 for LUW and Oracle sources only.		

PowerExchange 10.2

This section lists the new features and changes in PowerExchange 10.2.

New Features in 10.2

The following table lists PowerExchange 10.2 new features by PowerExchange component or data source:

Component or Data Source	Feature Reference
DB2 for z/OS	"DB2 12 for z/OS Support" on page 115 "Support for Image Copy Data Sources That Include Inline LOB Columns" on page 116 "Support for LOBs in DB2 for z/OS CDC Sources" on page 116
IMS	"Updated Components in the PowerExchange ECCR CRG.LOAD Library for IMS Synchronous CDC" on page 131
Microsoft SQL Server	"Microsoft SQL Server NTLM and Active Directory Authentication for Access to SQL Server Sources" on page 135
Monitoring and tuning	"Improvements to SMF Statistics Records and Documentation" on page 86

Component or Data Source	Feature Reference
Oracle	"Reporting DDL Operations on Registered Oracle Source Tables" on page 153
PowerExchange Navigator	"PowerExchange Navigator Overrides for the DBMOVER Configuration File and PowerExchange License Key File" on page 81

Parameter and Option Changes in 10.2

PowerExchange 10.2 includes parameter and option changes.

DBMOVER Configuration File Statements

The following table identifies new, changed, or deprecated statements in the DBMOVER configuration file:

Statement	New, Changed, or Deprecated
CONSOLE_MSG	New
ENCRYPT	Changed
ENCRYPTLEVEL	Changed
MSQL CAPI_CONNECTION	Changed - New LOCKAVOIDANCE, RECONNTRIES, and RECONNWAIT parameters
UDB CAPI_CONNECTION	Changed - New AGEOUTPERIOD parameter

For more information, see "DBMOVER Configuration File Statements" on page 63.

PowerExchange Express CDC for Oracle Configuration File Parameter

The following table identifies a new parameter in the OPTIONS statement in the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg:

Statement	Parameter	New, Changed, or Deprecated
OPTIONS	REPORTDDL	New

For more information, see "PowerExchange Express CDC for Oracle Configuration File" on page 154.

DB2 for z/OS ECCR Statements in the REPL2OPT DD Data Set

The following table identifies a changed configuration statement in the data set or RUNLIB member that is allocated by the REPL2OPT DD statement in the DB2 for z/OS ECCR JCL:

Statement	New, Changed, or Deprecated
IFI306	Changed - New NDWAIT parameter

For more information, see "DB2 ECCR Configuration Statements in the REPL2OPT DD Data Set" on page 117.

PWXPC Connection Attributes

The following table identifies changed PWXPC connection attributes:

Attribute	New, Changed, or Deprecated
Array Size	Changed
Encryption Level	Changed
Encryption Type	Changed

For more information, see "PWXPC Connection Attributes" on page 52.

PowerExchange ODBC Data Source Properties

The following table identifies a changed parameter option for the PowerExchange ODBC driver:

Property	New, Changed, or Deprecated
LEVEL	Changed
OPTION	Changed
PWXOVERRIDES	Changed

For more information, see "Parameter and Option Changes in 10.2" on page 174.

DTLUTSK Utility Parameter

The following table identifies a new parameter for the DTLUTSK utility:

Statement	New, Changed, or Deprecated
NODETYPE	New

For more information, see "DTLUTSK Utility Parameter" on page 99.

PowerExchange Navigator Parameter for Issuing the LISTLOCATIONS Command

The following table identifies a new parameter that you can enter in the **Database Row Test** dialog box when you issue the LISTLOCATIONS command:

Parameter	New, Changed, or Deprecated	Reference
NODETYPE	New	"Parameter for Issuing the LISTLOCATIONS Command" on page 82

Behavior Changes in 10.2

The following table lists PowerExchange 10.2 behavior changes by PowerExchange component or data source or target:

Component or Data Source/Target Type	Reference
CICS/VSAM	"Improved CICS/VSAM ECCR Reporting of Data Sets with CDC Disabled" on page 166
IMS	"Support for IMS Command Code A" on page 131
Microsoft SQL Server	"Ability to Change the Registration Status from History to Active When the Database Is Not Active" on page 137 "Improved Handling of Capture Registration Deletions" on page 136

Changes to Supported Operating Systems and Data Sources in 10.2

PowerExchange 10.2 introduces the following changes to the operating systems and data sources that PowerExchange supports.

For more information about version and maintenance requirements for operating systems and data sources, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

Data Sources

The following table identifies added, dropped, or deferred data source or target versions in PowerExchange 10.2:

Data Source	Version	Operating System	Bulk	CDC	Added, Dropped, or Deferred
Adabas[1]	8.3.4	z/OS	Supported - sources and targets	Supported - sources	Certified
DB2 for z/OS	12	z/OS	Supported - sources and targets	Supported - sources	Added

1. PowerExchange 10.0 introduced support for Adabas 8.3.*x*. In PowerExchange 10.2, bulk data movement and CDC have been certified with Adabas 8.3.4.

Clarification of Oracle 12c support: Testing of PowerExchange Express CDC for Oracle with Oracle 12*c* sources indicates that Express CDC works with Oracle 12*c* Release 1 but does not work with Oracle 12*c* Release 2. For more information, contact Informatica Global Customer Support.

Operating Systems

The following table identifies changes to supported operating system versions in PowerExchange 10.2:

Operating System	Version	Added or Dropped
AIX	7.2	Added
AIX	6.1	Dropped
Windows	10	Added for sources and targets
z/OS	2.3	Added
1. PowerExchange 10.1.1 added Windows 10 support for the PowerExchange Navigator client and z/OS Installation Assistant.		

PowerExchange 10.1.1 HotFix 2

This section lists the new features and changes in PowerExchange 10.1.1 HotFix 2.

Parameter and Option Changes in 10.1.1 HotFix 2

PowerExchange 10.1.1 HotFix 2 introduces parameter and option changes.

DBMOVER Configuration File Statements

The following table identifies new, changed, or deprecated statements in the DBMOVER configuration file:

Statement	New, Changed, or Deprecated
TCPIP_ACCEPT_NONBLOCK	New

For more information, see "DBMOVER Configuration File Statements" on page 66.

PowerExchange 10.1.1 HotFix 1

This section lists the new features and changes in PowerExchange 10.1.1 HotFix 1.

New Features in 10.1.1 HotFix 1

The following table lists PowerExchange 10.1.1 HotFix 1 new features by PowerExchange component or data source:

Component or Data Source	Feature Reference
DB2 for z/OS	"DB2 12 for z/OS Support" on page 115

Parameter and Option Changes in 10.1.1 HotFix 1

PowerExchange 10.1.1 HotFix 1 introduces parameter and option changes.

DBMOVER Configuration File Statements

The following table identifies new, changed, or deprecated statements in the DBMOVER configuration file:

Statement	New, Changed, or Deprecated
CONSOLE_MSG	New
MSQL CAPI_CONNECTION	Changed - New LOCKAVOIDANCE parameter
LOWVALUES	Changed

For more information, see "DBMOVER Configuration File Statements" on page 66.

DB2 for z/OS ECCR Statements in the REPL2OPT DD Data Set

The following table identifies a changed configuration statement in the data set or RUNLIB member that is allocated by the REPL2OPT DD statement in the DB2 for z/OS ECCR JCL:

Statement	New, Changed, or Deprecated
IFI306	Changed - NDWAIT parameter added

For more information, see "DB2 ECCR Configuration Statements in the REPL2OPT DD Data Set" on page 117.

Changes to Supported Operating Systems and Data Sources in 10.1.1 HotFix 1

PowerExchange 10.1.1 HotFix 1 introduces the following change to a data source that PowerExchange supports.

For more information about version and maintenance requirements for operating systems and data sources, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

Data Sources

The following table identifies added, dropped, or deferred data source or target versions in PowerExchange 10.1.1 HotFix 1:

Data Source	Version	Operating System	Bulk	CDC	Added, Dropped, or Deferred
DB2 for z/OS	12	z/OS	Supported - sources and targets	Supported - sources	Added

PowerExchange 10.1.1

This section lists the new features and changes in PowerExchange 10.1.1.

New Features in 10.1.1

The following table lists PowerExchange 10.1.1 new features by PowerExchange component or data source:

Component or Data Source	Feature Reference
Adabas	"Support for Adabas Cipher Codes" on page 105
DB2 for i5/OS	"DB2 for i5/OS Version 7.3 Support" on page 111
DB2 for Linux, UNIX, and Windows	"Support for DB2 for Linux, UNIX, and Windows Version 11.1" on page 114
DB2 for z/OS	"Support for LOB Datatypes in DB2 for z/OS Data Maps" on page 119
Microsoft SQL Server	"SQL Server CDC with a PowerExchange Listener on Linux" on page 139 "Support for Microsoft SQL Server 2016" on page 139
Monitoring and tuning	"Improvements to Statistics Fields in SMF Records" on page 87
PowerExchange Listener	"Expanded OpenLDAP and Oracle LDAP Support for Requests to the PowerExchange Listener" on page 68
PowerExchange Logger for Linux, UNIX, and Windows	"Monitoring Statistics Printed at PowerExchange Logger for Linux, UNIX, and Windows Shutdown" on page 76 "Expanded OpenLDAP and Oracle LDAP Support for Requests to the PowerExchange Logger" on page 76
PowerExchange Navigator	"Support for Multiple Versions of the PowerExchange Navigator" on page 83
PowerExchange Utilities	"Enhancement to the Data Map Creation Utility" on page 99

Parameter and Option Changes in 10.1.1

PowerExchange 10.1.1 includes parameter and option changes.

DBMOVER Configuration File Statements

The following table identifies new, changed, or deprecated statements in the DBMOVER configuration file:

Statement	New, Changed, or Deprecated
PRGIND	Changed
PRGINT	Changed
START_UP_USER_EXIT	New

For more information, see "DBMOVER Configuration File Statements" on page 68.

DB2 for z/OS ECCR Statements in the REPL2OPT DD Data Set

The following table identifies a new configuration statement in the data set or RUNLIB member that is allocated by the REPL2OPT DD statement in the DB2 for z/OS ECCR JCL:

Statement	New, Changed, or Deprecated
SHOWGENERATED	New

For more information, see "DB2 ECCR Configuration Statement in the REPL2OPT DD Data Set" on page 119.

Command Changes in 10.1.1

PowerExchange 10.1.1 introduces a change to a DB2 for z/OS ECCR command.

DB2 for z/OS ECCR Commands

PowerExchange 10.1.1 changes a DB2 for z/OS ECCR command.

The following table identifies the changed command:

Command	New, Changed, or Deprecated
DISPLAY	Changed

For more information, see "DB2 for z/OS ECCR DISPLAY Command" on page 119.

Behavior Changes in 10.1.1

The following table lists PowerExchange 10.1.1 behavior changes by PowerExchange component or data source:

Component or Data Source	Feature Reference
Installation and upgrade	"Installation Change for DB2 for z/OS CDC" on page 46
PowerExchange for DB2 for z/OS	"Improved Support of FlashCopy Image Copies as Sources" on page 121

Changes to Supported Operating Systems and Data Sources in 10.1.1

PowerExchange 10.1.1 introduces the following changes to the operating systems and data sources that PowerExchange supports.

For more information about version and maintenance requirements for operating systems and data sources, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

Data Sources

The following table identifies added, dropped, or deferred data source or target versions in PowerExchange 10.1.1:

Data Source	Version	Operating System	Bulk	CDC	Added, Dropped, or Deferred
DB2 for i5/OS	7.3	i5/OS	Supported - sources and targets	Supported - sources	Added
DB2 for i5/OS	6.1	i5/OS	No longer supported	No longer supported	Dropped
DB2 for Linux, UNIX, and Windows	11.1	Linux, UNIX, and Windows, except Solaris[1]	Supported - sources and targets	Supported - sources	Added
Microsoft SQL Server	2016	Windows	Supported - sources and targets	Supported - sources	Added

1. PowerExchange does not support DB2 for Linux, UNIX, and Windows 11.1 on Solaris because IBM does not support this DB2 version on Solaris.

Operating Systems

The following table identifies changes to supported operating system versions in PowerExchange 10.1.1:

Operating System	Version	Added or Dropped
i5/OS	7.3	Added
i5/OS	6.1	Dropped
Solaris	11 (64-bit SPARC)	Added back, last supported in 9.6.1 HotFix 4
SUSE Linux	11 (64-bit, Opteron and EM64T)	Added back, last supported in 9.6.1 HotFix 4
Windows	10	Added only for the PowerExchange Navigator client and z/OS Installation Assistant

PowerExchange 10.1

This section lists the new features and changes in PowerExchange 10.1.

New Features in 10.1

The following table lists PowerExchange 10.1 new features by PowerExchange component or data source:

Component or Data Source	Feature Reference
CICS Transaction Server	"Support for CICS Transaction Server Version 5.3" on page 168
DB2 for i5/OS	"Generating SQL Statements for Re-creating Source or Target Objects for Troubleshooting" on page 112
DB2 for z/OS	"Improved Support of DB2 for z/OS Image Copies as Sources" on page 121
IMS	"IMS Version 14 Support" on page 132 "Updated Components in the PowerExchange 10.1 ECCR CRG.LOAD Library for IMS Synchronous CDC" on page 132
Microsoft SQL Server	"PowerExchange CDC No Longer Requires SQL Server Management Objects" on page 139
Oracle	"PowerExchange Express CDC for Oracle Supports Oracle Direct-Path Operations" on page 155 "PowerExchange Express CDC for Oracle Ability to Read Copies of Archived Redo Logs" on page 155 "PowerExchange Express CDC for Oracle Support for Oracle RESETLOGS Operations" on page 155 "PowerExchange Express CDC for Oracle Support for Amazon EC2 Cloud Environments" on page 156
PowerExchange Listener	"OpenLDAP Support for Requests to the PowerExchange Listener" on page 69
PowerExchange Logger for Linux, UNIX, and Windows	"OpenLDAP Support for Requests to the PowerExchange Logger" on page 77
PowerExchange Utilities	"Enhancements to the Data Map Creation Utility" on page 100

Parameter and Option Changes in 10.1

PowerExchange 10.1 includes parameter and option changes.

DBMOVER Configuration File Statements

The following table identifies new, changed, or deprecated statements in the DBMOVER configuration file:

Statement	New, Changed, or Deprecated
ADA_TIMEZONE_CHECK	New
LDAP_OPENSSL	New

Statement	New, Changed, or Deprecated
LRAP CAPI_CONNECTION	Changed - New UIDFMTIMS parameter
SECURITY	Changed - New fourth positional parameter

For more information, see "DBMOVER Configuration File Statements" on page 69.

PowerExchange Condense Configuration File Parameters

The following table identifies a new parameter in the PowerExchange Condense CAPTPARM configuration member:

Parameter	New, Changed, or Deprecated
OPER_WTOR_ENABLED	New

For more information, see "PowerExchange Condense Configuration File Parameter" on page 56.

Adabas ECCR Parameter

The following table identifies a new optional parameter that you can specify in the RUNLIB(ADAECRP1) member for the Adabas ECCR:

Parameter	New, Changed, or Deprecated
ETID_DATE	New

For more information, see "Adabas ECCR Parameter" on page 106.

DB2 for z/OS ECCR Statements in the REPL2OPT DD Data Set

The following table identifies changes to configuration statements in the data set or RUNLIB member that is allocated by the REPL2OPT DD statement in the DB2 for z/OS ECCR JCL:

Statement	New, Changed, or Deprecated
IFI306 [OPT={N|Y|F}]	Changed - new OPT=F keyword value
SKIPURDML	New

For more information, see "DB2 ECCR Configuration Statements in the REPL2OPT DD Data Set" on page 122.

PowerExchange Express CDC for Oracle Configuration File Parameters

You can specify some new parameters and options in the OPTIONS and READER statements of the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg.

The following table identifies new parameters in the OPTIONS statement:

OPTIONS Parameter	New, Changed, or Deprecated
LOGARCHIVEWAIT	New
PARTITION_DROP_FAIL	New
RETRYONKILLSESSION	New
SUPPORT_DIRECT_PATH_OPS	New

The following table identifies new parameters and options in the READER statement:

READER Parameter	New, Changed, or Deprecated
MODE > ARCHIVECOPY	New ARCHIVECOPY option
DIR	New
FILE	New

For more information, see "PowerExchange Express CDC for Oracle Configuration File" on page 156.

PWXPC Connection Attributes

The following table identifies changed PWXPC connection attributes:

Attribute	New, Changed, or Deprecated
Array Size	Changed
Offload Processing	Changed

For more information, see "PWXPC Connection Attributes" on page 53.

Changes to Supported Operating Systems and Data Sources in 10.1

PowerExchange 10.1 introduces the following changes to the operating systems and data sources that PowerExchange supports.

For more information about version and maintenance requirements for operating systems and data sources, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

Data Sources

The following table identifies added, dropped, or deferred data source or target versions in PowerExchange 10.1:

Data Source	Version	Operating System	Bulk	CDC	Added, Dropped, or Deferred
CICS Transaction Server	5.3	z/OS	Not applicable - Use VSAM bulk data movement instead.	Supported - sources	Added
CICS Transaction Server	3.1, 3.2	z/OS	-	-	Dropped
IMS	14	z/OS	Supported - sources and targets	Supported[1] - sources	Added
IMS	9.1	z/OS	-	-	Dropped
1. Both IMS synchronous CDC and log-based CDC support IMS 14 sources.					

Operating Systems

The following table identifies changes to supported operating system versions in PowerExchange 10.1:

Operating System	Version	Added or Dropped
i5/OS	5.4	Dropped
SUSE Linux	12 (64-bit, Opteron and EM64T)	Added
z/OS	2.2	Added

Documentation Change in 10.1

This section describes changes and enhancements to the PowerExchange 10.1 documentation.

Terminology Change

The term *PowerExchange Logger for MVS* has been changed to *PowerExchange Logger for z/OS* throughout the PowerExchange 10.1 documentation. The only exceptions are topics that pertain to an earlier PowerExchange release in which the term *PowerExchange Logger for MVS* was still in use.

PowerExchange 10.0

This section lists the new features and changes in PowerExchange 10.0.

New Features in 10.0

The following table lists PowerExchange 10.0 new features by PowerExchange component or data source:

Component or Data Source	Feature Reference
DB2 for i5/OS	"Support for LOB Datatypes" on page 112
DB2 for z/OS	"Support for LOB Datatypes" on page 123
IMS	"Updated Components in the PowerExchange 10.0 ECCR CRG.LOAD Library for IMS Synchronous CDC" on page 133
Oracle	"PowerExchange Express CDC for Oracle Supports Oracle Index-Organized Tables" on page 159 "PowerExchange Express CDC for Oracle Supports Oracle 12c Multitenant Pluggable Databases" on page 159
PowerExchange Logger for Linux, UNIX, and Windows	"Enhanced Monitoring Statistics for the PowerExchange Logger for Linux, UNIX, and Windows" on page 77
PowerExchange Navigator	"Ability to Specify Restart Tokens for a Database Row Test" on page 83
PowerExchange Utilities	"Enhancements to the Data Map Creation Utility" on page 101
VSAM	"CICS/VSAM ECCR Support for VSAM ESDS Data Sets" on page 169

Parameter and Option Changes in 10.0

PowerExchange 10.0 introduces parameter and option changes.

DBMOVER Configuration File Statements

The following table identifies new, changed, or deprecated statements in the DBMOVER configuration file:

Statement	New, Changed, or Deprecated
GDGLOCATE	Changed
MSSQL_SERVER_CONNECT_TIMEOUT	New
MSSQL_SERVER_STATEMENT_TIMEOUT	New
SECURITY_MSGSUPP	New

For more information, see "DBMOVER Configuration File Statements" on page 72.

PowerExchange Logger for Linux, UNIX, and Windows Parameters

The following table identifies a new parameter in the PowerExchange Logger configuration file, pwxccl.cfg:

Parameter	New, Changed, or Deprecated
STATS	New

For more information about these parameters, see "PowerExchange Logger Configuration File Parameter" on page 78.

PowerExchange Express CDC for Oracle Configuration Parameter

The following table identifies changes to statements in the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg:

Statement	New, Changed, or Deprecated
OPTIONS	Changed - New TRUNCINVALIDCHARS parameter

For more information, see "PowerExchange Express CDC for Oracle Configuration File" on page 160.

CICS/VSAM CDC Override Options

The following table identifies the CICS/VSAM CDC override options that you can specify in the new //EDMKOVRD DD statement in the CICS startup procedure or in the data set to which this DD points:

Option	New, Changed, or Deprecated
CAPTURE_ESDS	New
CAPTURE_KSDS	New
CAPTURE_RRDS	New
CAPTURE_CMDT	New
BACKOUTRC	New
ESDSFAIL	New
DSN	New

For more information, see "CDC Override Options in the EDMKOVRD DD Data Set" on page 170.

PWXPC Connection Attributes

The following table identifies changed PWXPC connection attributes:

Attribute	New, Changed, or Deprecated
Location	Changed
PWX Override	Changed

For more information, see "PWXPC Connection Attributes" on page 54.

PowerExchange ODBC Data Source Properties

The following table identifies a changed property for PowerExchange ODBC data sources:

Property	New, Changed, or Deprecated
Location	Changed

For more information, see "Location Property" on page 175.

Command Changes in 10.0

PowerExchange 10.0 introduces changes to PowerExchange Logger for Linux, UNIX, and Windows command-line commands and PWXUCDCT utility commands.

PowerExchange Logger for Linux, UNIX, and Windows Commands

PowerExchange 10.0 adds commands for producing monitoring statistics for the PowerExchange Logger for Linux, UNIX, and Windows.

The following table identifies the commands:

Command	New, Changed, or Deprecated
DG	New
DL (or DS)	New
pwxcmd displaystats -type {logger|groups}	Changed - New -type (-tp) option and arguments

For more information, see "Command Changes in 10.0" on page 79.

CICS/VSAM ECCR Commands

PowerExchange 10.0 adds commands for the CICS/VSAM ECCR.

The following table identifies the new and changed commands:

Command	New, Changed, or Deprecated
DISPLAY	Changed to also cover ESDS data sets.
EXITPGMS	New
OPTIONS	New
REFRESH	New
RESTART	New

For more information, see .

Behavior Changes in 10.0

The following table lists PowerExchange 10.0 behavior changes by PowerExchange component or data source:

Component or Data Source	Reference
Installation and upgrade	"Changes to PowerExchange Installation and Functionality on Windows" on page 47
Microsoft SQL Server CDC	"Installation of the DataDirect ODBC Driver for SQL Server" on page 141

Changes to Supported Operating Systems and Data Sources in 10.0

PowerExchange 10.0 introduces the following changes to the operating systems and data sources that PowerExchange supports.

For more information about version and maintenance requirements for operating systems and data sources, see the *PowerExchange Installation and Upgrade Guide*.

Data Sources

The following table identifies new, changed, or deprecated data source versions in PowerExchange 10.0:

Data Source	Version	Operating System	Bulk	CDC	New, Changed, or Deprecated
Adabas	All	Linux, UNIX, or Windows	No longer supported	-	Deprecated
Adabas	8.3.*x*	z/OS	X	X	New

Data Source	Version	Operating System	Bulk	CDC	New, Changed, or Deprecated
Adabas unload files	-	z/OS	No longer supported	-	Deprecated
CA Datacom	15	z/OS	X	X	New
CA Datacom	11	z/OS	No longer supported	No longer supported	Deprecated
CA IDMS	19	z/OS	X	X	New
C-ISAM	-	AIX, HP-UX, Red Hat Linux, SUSE Linux, Solaris, and Windows	No longer supported	-	Deprecated
Microsoft SQL Server	2008, 2012[1]	Windows	No longer supported	No longer supported	Deprecated

1. Microsoft SQL Server 2008 and 2012 are no longer supported. However, Microsoft SQL Server 2008 R2 and 2012 R2 are supported for bulk data movement and CDC.

Operating Systems

The following table identifies changes to supported operating system versions in PowerExchange 10.0:

Operating System	Version	New or Deprecated
HP-UX	Any	Deprecated
Redhat Enterprise Linux	6.5, 7.0 (64-bit, Opteron, EM64T)	New
Redhat Enterprise Linux	5.9, 6.4 (64-bit, Opteron, EM64T)	Deprecated
Redhat Enterprise Linux	5.3, 6.1 (64-bit, IBM System z)	Deferred. To be reinstated in a future 10.x release.
Solaris SPARC	10	Deprecated
Solaris SPARC	11	Deferred. To be reinstated in a future 10.x release.
SUSE Linux	11 (64-bit, Opteron, EM64T and IBM System z)	Deferred. To be reinstated in a future 10.x release.
Windows Server 2012 (64-bit)[1]	-	Deprecated

Operating System	Version	New or Deprecated
Windows Server 2008 SP2 (32-bit, 64-bit)	-	Deprecated

1. Windows Server 2012 is no longer supported for sources, targets, the PowerExchange Navigator, and client environments in which PowerExchange runs. However, Windows Server 2012 R2 is still supported.

2. Windows Server 2008 (32-bit, 64-bit), with or without SP2, is no longer supported for sources, targets, the PowerExchange Navigator, and client environments. However, Windows Server 2008 R2 (64-bit) is still supported.

CHAPTER 2

PowerExchange Installation and Upgrade

This chapter includes the following topics:

PowerExchange 10.4.0 - New Features and Changes for Installation and Upgrade

This section describes the PowerExchange 10.4.0 new features and changes that are related to PowerExchange installation and upgrade.

New Features in 10.4.0

PowerExchange 10.4.0 introduces the following new feature that is related to PowerExchange installation and upgrade:

IBM i Installer

When you install PowerExchange on the IBM i operating system (formerly i5/OS), you can now perform a full installation, an upgrade, or a hotfix installation by using the IBM i Installer.

The IBM i Installer can perform the following tasks:

- Set variables and change PowerExchange parameters and data set names for the PowerExchange installation on the IBM i operating system in a single process.
- Move the software library binary files to the software library on the IBM i system.
- Customize the DBMOVER configuration file on the IBM i system.

Important: The IBM i Installer only runs on 64-bit Windows systems. If you attempt to run the installer on a 32-bit system, the installation fails.

Behavior Changes in 10.4.0

PowerExchange 10.4.0 introduces the following behavior change that is related to installation and upgrade:

PowerExchange for z/OS LOADLIB Allocation

PowerExchange 10.4.0 installation allocates the z/OS LOADLIB as an extended partitioned data set (PDSE) instead of as a partitioned data set (PDS).

PowerExchange 10.1.1 - New Features and Changes for Installation and Upgrade

This section describes the PowerExchange 10.1.1 new features and changes that are related to PowerExchange installation and upgrade.

Behavior Changes in 10.1.1

PowerExchange 10.1.1 introduces the following installation behavior change:

Installation Change for DB2 for z/OS CDC

During an installation or upgrade, PowerExchange now uses the DB2BINDB and DB2SGENB members in the RUNLIB library to bind the DB2 plan and packages and to upgrade the capture directory tables for all supported versions of DB2 for z/OS CDC sources.

Previously, PowerExchange used the DB2BIND and DB2 DB2SGEN8 members for DB2 sources earlier than Version 11 by default. For DB2 11 and later sources, you had to select the **DB2 V11+** option on the **DB2 CDC Parameters** page of the **z/OS Installation Assistant** to use the DB2BINDB and DB2GENB members, which are required for these later versions.

Now, when you run the jobs that bind the DB2 plan during an installation or upgrade, PowerExchange automatically uses the DB2BINDB and DB2GENB members for all supported DB2 or z/OS versions. Because the **DB2 V11+** option is no longer necessary to distinguish among bind members, it has been removed from the z/OS Installation Assistant. This change helps simplify the installation and upgrade process.

For more information, see the "Installing and Upgrading PowerExchange on z/OS" chapter in the *PowerExchange Installation and Upgrade Guide*.

PowerExchange 10.0 - New Features and Changes for Installation and Upgrade

This section describes the PowerExchange 10.0 new features and changes that are related to PowerExchange installation and upgrade.

Behavior Changes in 10.0

PowerExchange 10.0 introduces the following behavior change that is related to installation and upgrade:

Changes to PowerExchange Installation and Functionality on Windows

PowerExchange 10.0 introduces changes to installation and functionality on Windows. PowerExchange adds certain functionality to its 64-bit executables on Window and removes certain functionality from its 32-bit executables on Windows. The changes also affect the PowerExchange installation program for Windows.

The following changes apply to PowerExchange installation and functionality on Windows:

- Changes to functionality in PowerExchange 32-bit and 64-bit Windows executables are introduced.
- A single installation program now installs 32-bit and 64-bit executables. A single zip file is provided.
- The installation directory structure has been modified. A bin32 subdirectory is now installed as a subdirectory of the main PowerExchange installation directory.
- File names for installed 32-bit Windows .dll files have been changed to enable PowerExchange 32-bit and 64-bit Windows executables to operate without conflict on the same machine.
- You can no longer select **local** as the **Location** attribute for PWXPC connections and ODBC data sources.
- PowerExchange LDAP user authentication on Windows is deprecated.

The following table summarizes the 32-bit and 64-bit executables that are provided for PowerExchange components and features in 10.0 and in previous releases:

Feature or Component	Executables Provided in PowerExchange 10.0	Executables Provided in Previous Releases
PowerExchange Navigator PowerExchange utilities	64-bit executables only[1]	32-bit executables only
PowerExchange Listener CDC support Bulk data movement support PowerExchange support for the PowerCenter Integration Service, Data Integration Service, and Informatica Developer	64-bit executables only	Both 32-bit and 64-bit executables
PowerExchange ODBC ODBC Administrator support	Both 32-bit and 64-bit executables	Both 32-bit and 64-bit executables
Support for the PowerCenter Client	32-bit executables only	32-bit executables only
1. PowerExchange 10.0 provides both 32-bit and 64-bit executables for the DTLREXE utility.		

CHAPTER 3

PowerExchange Agent

This chapter includes the following topics:

PowerExchange 10.2 HotFix 2 - New Features and Changes for the PowerExchange Agent

This section describes the PowerExchange 10.2 HotFix 2 new features and changes that are related to the PowerExchange Agent.

Parameter and Option Changes in 10.2 HotFix 2

PowerExchange 10.2 HotFix 2 introduces the following change to the PowerExchange Agent EDMSDIR options module:

Changes to the IAUPABND Option in the EDMSDIR Module

The IAUPABND option in the EDMSDIR options module for the PowerExchange Agent has been extended to apply to batch DL/I jobs:

IAUPABND={Y|N}

Controls the behavior of IMS online update transactions and online batch jobs in an IMS control region when the CCERR=ABEND option is specified and the PowerExchange Logger for z/OS ends abnormally after the IMS control region is running. This option also controls the behavior of IMS batch DL/I jobs when the PowerExchange Logger is not available when the job starts. The option has the following effects:

- In the online environment, this option does not affect transactions that access the database in read-only mode.

- In the batch DL/I environment, this option does not affect jobs that use PSBs that do not update any database.

- In all environments, this option has no effect when CCERR=CONT is specified.

Note: If the PowerExchange Logger is down when you try to start the IMS control region, this option is ignored and control region startup fails.

Valid values are:

- **Y**. In an online environment, all update transactions and online batch jobs abend. In a batch DL/I environment, the batch job abends.
- **N**. In an online environment, only the transactions and online batch jobs that update registered source segments abend. In a batch DL/I environment, only the batch DL/I jobs that update registered source segments abend.

Default is Y.

For more information, see the "PowerExchange Agent" chapter in the *PowerExchange CDC Guide for z/OS*.

PowerExchange 10.2 HotFix 1 - New Features and Changes for the PowerExchange Agent

This section describes the PowerExchange 10.2 HotFix 1 new features and changes that are related to the PowerExchange Agent.

Parameter and Option Changes in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following PowerExchange Agent EDMSDIR option:

IAUPABND Option in the EDMSDIR Module

You can specify the new IAUPABND option in the EDMSDIR options module for the PowerExchange Agent:

IAUPABND={Y|N}

Controls the behavior of online update transactions in an IMS control region when the CCERR=ABEND option is specified and the PowerExchange Logger for z/OS ends abnormally after the IMS control region is running.

This option affects only transactions that update the IMS database. This option does not affect transactions that access the database in read-only mode.

This option is ignored when CCERR=CONT is specified.

Valid values are:

- **Y**. All update transactions abend, including those that update segments that are not registered for change data capture.
- **N**. Only the transactions that update registered segments abend.

Default is Y.

For more information, see the "PowerExchange Agent" chapter in the *PowerExchange CDC Guide for z/OS*.

CHAPTER 4

PowerExchange Client for PowerCenter

This chapter includes the following topics:

PowerCenter 10.2 HotFix 2 - New Features and Changes for the PowerExchange Client for PowerCenter

Parameter and Option Changes in 10.2 HotFix 2

The PowerCenter 10.2 HotFix 2 version introduces changes for PowerCenter session attributes.

PWXPC Session Attributes

In the **Pre SQL** and **Post SQL** attributes for a PowerCenter session, you can specify a CREATEFILE command for creating an SMS-managed data set on z/OS with the following new parameters:

- DATACLASS. The SMS DATACLAS value to use for the new SMS-managed data set.
- STORECLASS. The SMS STORECLAS value to use for the new SMS-managed data set.

For the session, these parameter values override the default classes that are determined by ACS routines.

For more information, see Appendix A in the *PowerExchange Interfaces for PowerCenter* publication.

PowerCenter 10.2 HotFix 1 - New Features and Changes for the PowerExchange Client for PowerCenter

New Features in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following new features for PWXPC:

Time-based Restart Points for CDC Sessions That Retrieve Data from the Logger

If you use the PowerExchange Logger for Linux, UNIX, and Windows to log change data from a local or remote data source, you can optionally specify a date and time value as the restart point for PowerCenter CDC sessions that extract the change data from the Logger log files. Time-based restart points are source-specific.

Important: A problem with this feature was found shortly before the PowerExchange 10.2 HotFix 1 release. A time-based restart of a PowerCenter CDC session might fail. Contact Informatica Global Customer Support to request the emergency bug fix (EBF) for this issue, which should be available soon. Alternatively, as a workaround, remove all CAPI_CONNECTION statements from the DBMOVER configuration file on the Integration Service machine where the PowerCenter CDC session runs. Make sure that no other PowerCenter tasks require these statements.

To set a time-based restart point, define a pair of explicit override statements in the restart token file, each with the same extraction map name to identify the source object. In one statement, specify the RESTART_TIME option. In the other statement, specify a date and time value. Use the following syntax:

```
extractionMapName=RESTART_TIME
extractionMapName=datetime
```

Parameters:

extractionMapName

> The name of an extraction map for the data source. To determine the extraction map name, use one of the following methods:
>
> - For CDC data map sources, see the **Schema Name Override** and **Map Name Override** attributes in the session properties. These attributes override the schema name and map name in the source extraction map. Or, in Designer, see the **Schema Name** and **Map Name** values in the source Metadata Extensions.
>
> - For relational sources, see the **Extraction Map Name** attribute in the session properties.
>
> After the extraction map has been used to extract change data, the table name is appended to this value in the format *extractionMapName_tableName*. Use the full name when defining an explicit override statement.

RESTART_TIME

> This option allows you to use a date and time value as the restart point for extraction processing in the Logger log files.

datetime

> The date and time to use as the restart point in PowerExchange Logger for Linux, UNIX, and Windows log files. This value must be in the format YYYYMMDDhhmmssuuuuuu, where YYYY is a four-digit year, MM

is the month, DD is the day of the month, hh is hours, mm is minutes, ss is seconds, and uuuuuu is microseconds.

For more information, see the "Extracting Change Data" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows* or the "Configuring the Restart Token File" chapter in the *PowerExchange Interfaces for PowerCenter* publication.

Parameter and Option Changes in 10.2 HotFix 1

The PowerCenter 10.2 HotFix 1 version introduces changed PowerCenter connection attributes.

PWXPC Connection Attributes

In PowerCenter, a new override option is available for DB2 relational connections.

You can configure the following changed connection attributes:

PWX Override

Changed. You can configure the new USE_CATALOG_METADATA override in the **PWX Override** attribute in PWXPC DB2 relational connections.

USE_CATALOG_METADATA={N|Y}

Specify USE_CATALOG_METADATA=Y to have PowerExchange read metadata from the DB2 catalog during a DB2 bulk load session instead of issuing a SELECT statement. PowerExchange then does not require SELECT privileges on the target table to get the metadata that is required for creating the DB2 load statement.

For more information, see the "Connections" chapter in *PowerExchange Interfaces for PowerCenter*.

PowerCenter 10.2 - New Features and Changes for the PowerExchange Client for PowerCenter

Parameter and Option Changes in 10.2

The PowerCenter 10.2 version introduces changed PowerCenter connection attributes.

PWXPC Connection Attributes

You can configure the following changed connection attributes:

Array Size

Changed. The maximum value of the **Array Size** connection attribute has been reduced from 100000 to 5000. If you specify a value greater than 5000, PowerExchange changes the value to 5000 and issues warning message PWX-07630.

Encryption Level

Changed. The **Encryption Level** connection attribute now defines the encryption level when the **Encryption Type** attribute is set to **AES**.

Enter one of the following values to define the encryption level:

- **1**. Use a128-bit encryption key.
- **2**. Use a 192-bit encryption key.
- **3**. Use a 256-bit encryption key.

Default is **1**.

Encryption Type

Changed. The following table identifies new and deprecated values for the **Encryption Type** connection attribute:

Value	New or Deprecated
AES	New
DES	Deprecated
RC2	Deprecated

Enter one of the following values to specify the encryption type:

- **None**
- **AES**

Default is **None**.

Note: PowerExchange changes an **Encryption Type** value of **DES** or **RC2** to **AES**.

For more information, see the "Connections" chapter in the *PowerExchange Interfaces for PowerCenter*.

PowerCenter 10.1 - New Features and Changes for the PowerExchange Client for PowerCenter

Parameter and Option Changes in 10.1

PowerCenter 10.1 introduces changed PowerCenter connection attributes.

PWXPC Connection Attributes

You can configure the following changed connection attributes:

Array Size

Changed. You can specify the array size for a DB2 for z/OS compressed image copy data source. If zIIP processing is enabled, PowerExchange dispatches the number of rows that you define for Array Size to the zIIP processor for expansion.

Offload Processing

Changed. PowerExchange supports offload processing for DB2 for z/OS image copy data sources. To enable offload processing, select **Filter After** for the **Offload Processing** connection attribute.

For more information, see *PowerExchange Interfaces for PowerCenter*.

PowerCenter 10.0 - New Features and Changes for the PowerExchange Client for PowerCenter

Parameter and Option Changes in 10.0

PowerCenter 10.0 introduces changed PowerCenter connection attributes.

PWXPC Connection Attributes

You can configure the following changed connection attributes:

Location

Changed. You can no longer select **local** as the Location when you define a connection or import source or target definitions on a 32-bit Windows system.

PWX Override

Changed. You can configure the new CONNECTSTRINGCODEPAGE override in the **PWX Override** attribute in all PWXPC connections.

CONNECTSTRINGCODEPAGE=*code_page*

Code page of the characters in the connection string. Enter this override if PowerExchange issues message PWX-07610.

For more information, see *PowerExchange Interfaces for PowerCenter*.

CHAPTER 5

PowerExchange Condense

This chapter includes the following topics:

PowerExchange 10.2 HotFix 1 - New Features and Changes for PowerExchange Condense

This section describes the PowerExchange 10.2 HotFix 1 new features and changes that are related to PowerExchange Condense.

Parameter and Option Changes in PowerExchange 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces a new and changed parameters in the PowerExchange Condense CAPTPARM configuration member.

PowerExchange Condense Configuration Parameters

PowerExchange 10.2 HotFix 1 includes the following parameter changes for the PowerExchange Condense CAPTPARM configuration member on z/OS:

CONDF_PART_BUFNO

New. Indicates whether the PowerExchange Condense system can incrementally increase the number of block buffers to improve I/O processing of partial condense files. When this parameter is enabled, PowerExchange Condense can use up to 32 buffers. Valid values are:

- **N**. Do not allow PowerExchange to increase the number of block buffers for partial condense files.
- **Y**. Allow PowerExchange Condense to increase the number of block buffers for partial condense files. This option might increase memory usage.

Default is N.

CONF_PART_LRECL

Changed. The default value was changed from 147444 to 32756 bytes.

For more information, see the "PowerExchange Condense" chapter in the *PowerExchange CDC Guide for z/OS*.

PowerExchange 10.1 - New Features and Changes for PowerExchange Condense

This section describes the PowerExchange 10.1 new features and changes that are related to PowerExchange Condense.

Parameter and Option Changes in PowerExchange 10.1

PowerExchange 10.1 introduces a new parameter for the PowerExchange Condense CAPTPARM configuration member.

PowerExchange Condense Configuration File Parameter

In PowerExchange 10.1, you can add the following new parameter to the PowerExchange Condense CAPTPARM configuration member on z/OS or i5/OS:

OPER_WTOR_ENABLED={N|Y}

Controls whether PWX-06449 WTOR messages are issued when PowerExchange Condense detects that a record is missing from the CDCT file after synchronization of the checkpoint file to the CDCT file. This message requires a user reply of Y or N.

Synchronization occurs at PowerExchange Condense initialization, after a warm start of a PowerExchange Condense job. During synchronization, if any record in the checkpoint file does not match a record in the CDCT file based on the key fields, the checkpoint file record is not added to the CDCT file. The CDCT file is then missing a record that points to a condense file from which to extract change data for a registered source object and time stamp. For each record that is missing from the CDCT file, PowerExchange issues the following PWXX-06446 warning message followed by the optional PWX-06449 WTOR message:

```
PWX-06446 Checkpoint to CDCT synchronization not done for time stamp "time_stamp"
tag "registration_tag" number record_count reason.
PWX-06449 The CDCT cannot be fully synchronized with the checkpoint file because of
missing resources. Continue? (Y/N)
```

You must respond Y or N to the PWX-06449 message to indicate whether to continue or end PowerExchange Condense processing. Use this parameter to suppress these WTOR messages if you want PowerExchange Condense to continue and if the loss of some change data during extraction processing is tolerable for the reported time stamps and registrations.

Valid values:

- **Y**. When PowerExchange Condense detects missing records in the CDCT file after checkpoint-to-CDCT synchronization, PWX-06449 messages are displayed as WTOR messages and written to the PowerExchange message log. You must reply Y or N to each of these messages to indicate whether PowerExchange Condense processing should continue without the CDCT records or stop.

  - If you reply Y, PowerExchange Condense continues processing. In this case, extraction processes will not be able to find some condense files based on the CDCT file for data extraction. Skipping some change data might be acceptable if the condense files contain old data or if the CDC workflow already processed these condense files. Use the time stamps reported in the PWX-06446 messages to determine if the data is old. If you need to extract the data, you must cold start the CDC session from an earlier point in time.

  - If you reply N, PowerExchange Condense stops.

- **N**. When PowerExchange Condense detects missing records in the CDCT file, PWX-06449 messages are suppressed. PowerExchange Condense processing continues uninterrupted without the PWX-06449 WTOR messages.

Default is Y.

For more information, see the "PowerExchange Condense" chapter in the *PowerExchange CDC Guide for z/OS* or *PowerExchange CDC Guide for i5/OS*.

This parameter is also available in 9.6.1 HotFix 4. It is not available in 10.0.

Behavior Change in 10.1

PowerExchange 10.1 introduces the following behavior change for PowerExchange Condense.

Change to PowerExchange Condense Initialization

Previously, after you started a PowerExchange Condense job on z/OS or i5/OS, the Controller task started and then started the Command Handler and Condense subtasks concurrently. In PowerExchange 10.1, the Controller starts the Command Handler subtask and waits for the Command Handler to reply with a initialization complete event before starting the Condense subtask.

This initialization behavior allows the Command Handler to respond to commands immediately after it initializes, instead of waiting for the Condense subtask to finish initialization. Also, because the initialization sequence of the subtasks is now always the same, the message output from startup processing is more consistent.

The following additional changes improve PowerExchange Condense performance:

- PowerExchange Condense tracks and reports fewer status events.
- PowerExchange Condense no longer uses a Dump subtask, also called the Dump Handler, for dumping some memory in hexadecimal format.

For more information, see the *PowerExchange CDC Guide for z/OS* and *PowerExchange CDC Guide for i5/OS*.

C H A P T E R   6

PowerExchange Listener

This chapter includes the following topics:

PowerExchange 10.4.0 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.4.0 new features and changes that are related to the PowerExchange Listener.

Parameter and Option Changes in 10.4.0

PowerExchange 10.4.0 introduces the following changes to DBMOVER configuration statements:

DBMOVER Configuration File Statements

The DBMOVER configuration file includes the following new and changed statements:

FILEMAPPED_MEMORY_DIR=*path/directory*

> *New*. This statement specifies the directory that stores temporary file-mapped memory files for PowerExchange Listener statistics on AIX PPC64, i5/OS (IBM i), and Solaris SP64 systems. If you set the STATS statement to MONITOR in the DBMOVER configuration file, the memory statistics are generated when either the optional monitoring interval in the MONITOR parameter elapses or when you issue the DISPLAYSTATS or pwxcmd displaystats command.
>
> By default, temporary file-mapped memory statistics files are written to the current directory of the user, or if the current directory is not available, to the top-most root directory of the file system.

Informatica recommends that you specify a directory that is dedicated to storing file-mapped memory statistics files and that is on a locally mounted disk.

IMSBSDS=(*ims_ssid ,bootstrap_hlq*[,*search_preference*])

New. Identifies the high-level qualifier of the IMS bootstrap data set, which is required to retrieve database descriptor (DBD) information in DBDLIB (DBGEN) format from the IMS catalog. This statement also indicates the order in which PowerExchange searches the IMS DBDLIB library or IMS catalog for DBD information for source objects. Specify this statement if you want PowerExchange to retrieve DBD information from the IMS catalog for creating data maps or for the run-time extraction of data during CDC or IMS unload processing.

In this statement, the *search_preference* is one of the following options:

- **D**. First search the DBDLIB library and then search the IMS catalog, if available.
- **C**. First search the IMS catalog and then search the DBDLIB library.
- **O**. Search the IMS catalog only.

If you do not specify an option, PowerExchange searches only the DBDLIB library by default and does not use the IMS catalog.

LU00FILE=*pdse_name*

New. Specifies the partitioned data set extended (PDSE) that you allocated to hold database descriptor (DBD) output from the IMS Catalog Library Builder Utility, DFS3LU00. This statement is required to retrieve DBD information in source format from the IMS catalog for use in creating data maps.

MSQL CAPI_CONNECTION

Changed. The optional LOCKAVOIDANCE parameter has been renamed to SQLNOLOCK. The original LOCKAVOIDANCE name exceeded the maximum name length of 12 characters, which could cause multiple types of errors. The purpose and behavior of the parameter remain the same. Syntax is:

```
CAPI_CONNECTION=(NAME=capi_connection_name
        ,TYPE=(MSQL
            ,DISTDB=distribution_database
            ,DISTSRV=distribution_server
        [,SQLNOLOCK={N|Y}]...))
```

If you currently use the LOCKAVOIDANCE parameter, edit the dbmover.cfg file to change the parameter name to SQLNOLOCK to avoid potential errors.

MYSQL CAPI_CONNECTION

Changed. The optional MYSQLBINLOG parameter can now include any of the options that the mysqlbinlog utility supports, such as the --ssl- options. Syntax is:

```
MYSQLBINLOG=path/binlog_file_name option1 option2...
```

PowerExchange passes the options to the utility when the CDC session runs. For information about the utility options, see the *MySQL Reference Manual*.

If any part of the MYSQLBINLOG value includes spaces, you must enclose the entire MYSQLBINLOG value in double-quotation marks ("). Furthermore, if any part of the *path/binlog_file_name* value or an option includes a space, escape the value with the backslash (\) character and also enclose the value in double-quotation marks, for example:

```
MYSQLBINLOG="\"c:\bin\test dir\mysqlbinlog.exe\" --ssl-mode required "
```

If the *path\binlog_file_name* value begins with the hyphen (-) character, the entire value is treated as a utility option, as if no *path/file_name* value was specified.

NODE

Changed. The optional [Y|N] parameter at the end of the NODE statement has been deprecated. This parameter was used to control client TLS/SSL security certificate validation. If this parameter is included in the NODE statement, it is ignored.

PG CAPI_CONNECTION

New. This new statement is required to capture change data from PostgreSQL source tables. For more information about the syntax and parameters, see "DBMOVER Configuration File" on page 162.

SSL_REQ_CLNT_CERT

Changed. The default value now depends on the operating system type of the PowerExchange server. The default is N for PowerExchange servers that run on Linux, UNIX, or Windows. The default is Y for PowerExchange servers that run on IBM i or z/OS.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.2 HotFix 2 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.2 HotFix 2 new features and changes that are related to the PowerExchange Listener.

Parameter and Option Changes in 10.2 HotFix 2

PowerExchange 10.2 HotFix 2 introduces the following changes to DBMOVER configuration statements:

DBMOVER Configuration File Statements

The DBMOVER configuration file includes the following new and changed statements:

MYSQL CAPI_CONNECTION

This statement can now include the following new parameters:
CATSERVER=*server_name*

Optional. The server name or DSN of the server that contains the DDL-updated catalog tables that store source table definitions.

Default is the MySQL source server name. You can use the default if you created the catalog tables and installed the MySQL ODBC drivers on the source server.

CATSCHEMA=*schema_name*

Required. The name of the schema for the DDL catalog tables.

CATUSERNAME=*user_name*

Optional. A user name that is used to connect to the catalog server.

Default is the MySQL source user name if the catalog tables exist on the source server.

CATEPASSWORD=*encrypted_password*

> Optional. The encrypted password of the specified catalog user. Specify either CATEPASSWORD or CATPASSWORD but do not specify both parameters.
>
> Default is the password of the MySQL source user if the catalog tables exist on the source server.

CATPASSWORD=*password*

> Optional. The clear-text password of the specified catalog user. Specify either CATPASSWORD or CATEPASSWORD but do not specify both parameters.
>
> Default is the password of the MySQL source user if the catalog tables exist on the source server.

ONTABLEDDL={WARN|WARN-UNTIL-EOL|FAIL}

> Optional. Indicates whether PowerExchange issues a warning message and continues processing or ends abnormally when it encounters a DDL record for a source that is not consistent with the source registration. Options are:
>
> - WARN. Issue a warning message and continue capture processing.
> - WARN-UNTIL-EOL. Issue a warning message and continue capture processing until the end-of-log (EOL). Then issue an error message and terminate capture processing.
> - FAIL. Issue an error message and terminate capture processing.
>
> Default is WARN-UNTIL-EOL.

For more information, see the "DBMOVER Configuration File" chapter of the *PowerExchange Reference Manual*.

PowerExchange 10.2 HotFix 1 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.2 HotFix 1 new features and changes that are related to the PowerExchange Listener.

Parameter and Option Changes in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following changes to DBMOVER configuration statements:

DBMOVER Configuration File Statements

The DBMOVER configuration file includes the following new and changed statements:

ADABAS_MU_SEARCH={Y|N}

New. Enables PowerExchange to include Adabas multiple-value fields in SQL search and selection operations. A multiple-value field is a single field that occurs a variable number of times in a record. It appears as type MU in an Adabas record description. Valid values are:

- **Y**. PowerExchange uses multiple-value Adabas descriptor fields in searches. If you specify a multiple-value field in a WHERE clause of an SQL SELECT statement, PowerExchange scans the field for values specified in the search.
- **N**. PowerExchange will not include Adabas multiple-value fields in searches.

Default is N.

Note: If you set the ADABAS_MU_SEARCH statement to Y, make sure that the ADAOPT statement is also set to Y to use L3 commands to read records from file in logical sequence by descriptor value.

AS4J CAPI_CONNECTION

In this statement, you can specify the following parameter with the new P option:
LIBASUSER={N|Y|M|P}

Changed. Specify the P option if you want PowerExchange to write the name of the program that made a DML change to the DTL__CAPXUSER field of the change record.

The default value of N is retained.

CAPX CAPI_CONNECTION

This statement can now contain the following optional parameter:
VALIDATEREGS={N|Y}

New. Controls whether the PowerExchange extraction of data from PowerExchange Logger for Linux, UNIX, and Windows ends or continues if it detects a source entry in the CDC interest list for which the PowerExchange Logger is *not* capturing change data. In this situation, the extraction process issues message PWX-36947, either as error message or informational message.

Options are:

- **Y**. The PowerExchange Logger extraction process issues message PWX-36947 as an error message and then ends.

- **N**. The PowerExchange Logger extraction process issues message PWX-36947 as an informational message and continues processing.

Default is N.

CMDNODE

Changed. You can now use the CMDNODE statement to collect capture statistics for a PowerExchange Adabas, IDMS, or IMS log-based ECCR or Datacom table-based ECCR on z/OS. Use the following parameters:

- *Changed.* Set the *service_name* parameter to the ECCR name. The ECCR name must match the ECCR specified on the corresponding SVCNODE statement.

- *New.* Specify the ECCR option instead of CONDENSE or LISTENER.

LRAP CAPI_CONNECTION

This statement can now contain the following new optional parameter:
FUZZYRSTART={Y|N}

New. Controls whether the restart2 token in the restart information that the PowerExchange Client for PowerCenter sends to the PowerExchange Logger for z/OS for a CDC session points to a begin-uow record or any RBA position that you specify in the restart2 token.

This parameter also pertains to the Restart Token 2 value that you specify for PowerExchange Navigator CAPX and CAPXRT database row tests.

Options are:

- **Y**. Allow the restart2 token to point to any RBA position in the PowerExchange Logger logged data. This option enables you to skip a problematic record.

- **N**. Require the restart2 token to point to a begin-uow record in the PowerExchange Logger logged data.

Default is Y.

In previous PowerExchange releases, the default behavior was to always point to a begin-uow record. You can reinstate this behavior by specifying FUZZYRSTART=N.

MYSQL CAPI_CONNECTION

New. This statement is required to capture change data from MySQL source tables. For more information about the syntax and parameters, see "DBMOVER Configuration File" on page 146.

NODE

Changed.You can now specify whether SSL client certificate validation is required by using a trailing Y|N parameter at the end of the statement. Default is Y.

SVCNODE

Changed. You can now specify an ECCR name in the *service_name* parameter. The ECCR name must match the ECCR that is specified in the corresponding CMDNODE statement.

UOWC CAPI_CONNECTION

This statement can now contain the following optional parameter:
CUOWS=*number_of_concurrent_UOWs*

New. The expected number of concurrent UOWs that contain data of CDC interest. If you specified a large MEMCACHE value, have excessive spill file allocations, and a large number of concurrent UOWs reported in message PWX-10742 or PWX-10782, increase this parameter value to cause less memory cache to be used per UOW. By reducing memory cache use per UOW, more concurrent UOWs can be accommodated without allocating spill files. This parameter in no way restricts the maximum number of concurrent UOWs that the UOW Cleanser can process.

Valid values are 1 through 65535. Default is 34.

For more information, see the *PowerExchange Reference Manual*.

PowerExchange 10.2 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.2 new features and changes that are related to the PowerExchange Listener.

Parameter and Option Changes in 10.2

PowerExchange 10.2 introduces the following changes to DBMOVER configuration statements:

DBMOVER Configuration File Statements

The DBMOVER configuration file includes the following new and changed statements:

CONSOLE_MSG={N|Y}

New. On Linux, UNIX, and Windows systems, the CONSOLE_MSG statement specifies whether to write certain messages to the domain log in addition to writing them to the PowerExchange log file on the Integration Service machine.

Valid Values:

- **N.** PowerExchange does not write the messages to the domain log.
- **Y.** PowerExchange writes the messages to the domain log.

Default is Y.

ENCRYPT={AES|N|Y}

Changed. The following table identifies new and deprecated values for the ENCRYPT statement:

Value	New or Deprecated
AES	New
DES	Deprecated
RC2	Deprecated

Note: PowerExchange changes an ENCRYPT value of DES or RC2 to AES.

ENCRYPTLEVEL={1|2|3}

Changed. The ENCRYPTLEVEL statement now defines the encryption level when the ENCRYPT statement specifies **AES**.

Enter one of the following values in the ENCRYPTLEVEL statement:

- **1**. Use a128-bit encryption key.
- **2**. Use a 192-bit encryption key.
- **3**. Use a 256-bit encryption key.

LOWVALUES={N|Y}

Changed. The LOWVALUES statement now applies to PowerExchange NRDB, DB2, and CDC sources and targets. In previous releases, the statement applies only to VSAM files on z/OS and to sequential files on Linux, UNIX, Windows, or z/OS.

The LOWVALUES statement specifies whether PowerExchange preserves hexadecimal '0' values, called *low values*, in source character fields when passing these values to a PowerCenter session. When the session runs, the PowerExchange Client for PowerCenter (PWXPC) can write these values to the target.

MSQL CAPI_CONNECTION

This statement can now contain the following optional parameters:

LOCKAVOIDANCE={N|Y}

New. For Microsoft SQL Server sources, the LOCKAVOIDANCE parameter in the MSQL CAPI_CONNECTION statement controls whether PowerExchange SELECT statements use the NOLOCK hint when querying the SQL Server distribution database for change data. The NOLOCK hint can avoid lock contention with SQL Server utilities but might cause PowerExchange to miss some change records. Options are:

- **N**. PowerExchange SELECT queries that retrieve data from the distribution database do not use the NOLOCK hint. If locks are held on some change records, PowerExchange queries cannot retrieve the data until the locks are released. With this setting, PowerExchange queries might take longer to complete. However, no changes are skipped and data integrity is preserved. Use this option only when the MULTIPUB parameter is set to Y.

- **Y**. PowerExchange SQL SELECT queries that retrieve data from the distribution database use the NOLOCK hint. Use this option only when the MULTIPUB parameter is set to N. If the MULTIPUB parameter is set to Y, SQL Server might use allocation order scans to retrieve data for PowerExchange queries, which can result in missed change data and data corruption.

    Tip: Instead of using LOCKAVOIDANCE=Y, Informatica recommends that you set the isolation level for the distribution database to READ_COMMITTED_SNAPSHOT ON to avoid data integrity problems.

    Default is **N** if MULTIPUB is set to Y, or **Y** if MULTIPUB is set to N.

RECONNTRIES={*number*|12}

New. For Microsoft SQL Server sources, specifies the maximum number of times that PowerExchange tries to reconnect to the Microsoft SQL Server database after the connection is dropped. Use this parameter in conjunction with the RECONNWAIT parameter if you get the following ODBC connection error and want to improve connection resiliency:

```
PWX-15790 ODBC driver for Microsoft SQL Server returned error [08S01]
[Informatica][ODBC SQL Server Wire Protocol driver]Unexpected Network Error.
ErrNum = 10054.
```

Valid values are 0 or any positive number. A value of 0 results in no connection retries. Default is 12.

RECONNWAIT={*seconds*|5}

New. For Microsoft SQL Server sources, specifies the number of seconds that PowerExchange waits before any attempt to reconnect to a Microsoft SQL Server database after the connection has been dropped. Use this parameter in conjunction with the RECONNTRIES parameter if you get the PWX-15790 message for an ODBC driver error and want to improve connection resiliency.

Valid values are 0 through 3600. A value of 0 results in no waiting between connection retries. Default is 5.

UDB CAPI_CONNECTION

This statement can now contain the following optional parameter:

AGEOUTPERIOD=*minutes*

New. For DB2 for Linux, UNIX, and Windows sources, this parameter specifies the age, in minutes, at which an outstanding DB2 UOW that has no change records of CDC interest will be removed from the calculation of the CDC restart point. The age is calculated as the difference between the start time of the outstanding UOW and the current time. Use this parameter to prevent CDC failures that can occur if you shut down and then restart capture processing for a DB2 source while the transaction is outstanding. After the restart, the DB2 transaction log in which the outstanding UOW started might not be available, causing the PowerExchange DB2 read process to fail.

Valid values are 60 to 43200. No default value is provided.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.1.1 HotFix 2 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.1.1 HotFix 2 new features and changes that are related to the PowerExchange Listener.

Parameter and Option Changes in 10.1.1 HotFix 2

PowerExchange 10.1.1 HotFix 2 introduces the following changes to DBMOVER configuration statements:

DBMOVER Configuration File Statements

The DBMOVER configuration file includes the following new statement:

TCPIP_ACCEPT_NONBLOCK={N|Y}

New. On z/OS systems, the TCPIP_ACCEPT_NONBLOCK statement specifies whether TCP/IP ports on which the PowerExchange Listener listens are blocking or nonblocking ports.

Valid Values:

- **N.** PowerExchange Listener listening ports are blocking ports. When a blocking port is accessed, it blocks other attempts to access the port.
- **Y.** PowerExchange Listener listening ports are nonblocking ports.

Default is N.

Define TCPIP_ACCEPT_NONBLOCK=Y if the following conditions apply:

- You perform a security check by using a port scanner such as Nessus.
- The PowerExchange Listener appears to hang indefinitely on the main Listener port or ignore commands.
- A Listener port for a netport job is defined.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.1.1 HotFix 1 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.1.1 HotFix 1 new features and changes that are related to the PowerExchange Listener.

Parameter and Option Changes in 10.1.1 HotFix 1

PowerExchange 10.1.1 HotFix 1 introduces the following changes to DBMOVER configuration statements:

DBMOVER Configuration File Statements

The DBMOVER configuration file includes the following new and changed statements:

CAPI_CONNECTION=(NAME=*capi_connection_name*,TYPE=(MSQL,…[LOCKAVOIDANCE= {N|Y}]))

New. The LOCKAVOIDANCE parameter in the MSQL CAPI_CONNECTION statement controls whether PowerExchange SELECT statements use the NOLOCK hint when querying the SQL Server distribution

database for change data. The NOLOCK hint can avoid lock contention with SQL Server utilities but might cause PowerExchange to miss some change records. Options are:

- **N**. PowerExchange SELECT queries that retrieve data from the distribution database do not use the NOLOCK hint. If locks are held on some change records, PowerExchange queries cannot retrieve the data until the locks are released. With this setting, PowerExchange queries might take longer to complete. However, no changes are skipped and data integrity is preserved. Use this option only when the MULTIPUB parameter is set to Y.

- **Y**. PowerExchange SQL SELECT queries that retrieve data from the distribution database use the NOLOCK hint. Use this option only when the MULTIPUB parameter is set to N. If the MULTIPUB parameter is set to Y, SQL Server might use allocation order scans to retrieve data for PowerExchange queries, which can result in missed change data and data corruption.

  Tip: Instead of using LOCKAVOIDANCE=Y, Informatica recommends that you set the isolation level for the distribution database to READ_COMMITTED_SNAPSHOT ON to avoid data integrity problems.

Default is **N** if MULTIPUB is set to Y, or **Y** if MULTIPUB is set to N.

CONSOLE_MSG={N|Y}

New. On Linux, UNIX, and Windows systems, the CONSOLE_MSG statement specifies whether to write certain messages to the domain log in addition to writing them to the PowerExchange log file on the Integration Service machine.

Valid Values:

- **N.** PowerExchange does not write the messages to the domain log.
- **Y.** PowerExchange writes the messages to the domain log.

Default is Y.

LOWVALUES={N|Y}

Changed. The LOWVALUES statement now applies to PowerExchange NRDB, DB2, and CDC sources and targets. In previous releases, the statement applies only to VSAM files on z/OS and to sequential files on Linux, UNIX, Windows, or z/OS.

The LOWVALUES statement specifies whether PowerExchange preserves hexadecimal '0' values, called *low values*, in source character fields when passing these values to a PowerCenter session. When the session runs, the PowerExchange Client for PowerCenter (PWXPC) can write these values to the target.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.1.1 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.1.1 new features and changes that are related to the PowerExchange Listener.

New Features in 10.1.1

PowerExchange 10.1.1 introduces the following new feature for PowerExchange Listeners:

Expanded OpenLDAP and Oracle LDAP Support for Requests to the PowerExchange Listener

PowerExchange introduces expanded support for the OpenLDAP and Oracle LDAP implementations to authenticate PowerExchange Listener requests.

PowerExchange supports the OpenLDAP implementation on the following platforms:

- AIX
- Linux x64
- Solaris SPARC
- Windows x64

PowerExchange supports the Oracle LDAP implementation on the following platforms:

- Linux x64
- Solaris SPARC

For more information, see the "PowerExchange Security" chapter in the *PowerExchange Reference Manual*.

Parameter and Option Changes in 10.1.1

PowerExchange 10.1.1 introduces the following changes to DBMOVER configuration statements:

DBMOVER Configuration File Statements

The DBMOVER configuration file includes the following new and changed statements:

PRGIND={N|Y}

Changed. For relational bulk data movement sources, include the PRGIND statement in the DBMOVER configuration file on the PowerCenter Integration Service machine. For CDC sources and nonrelational bulk data movement sources, continue to include the PRGIND statement in the DBMOVER configuration file on the PowerExchange Listener machine.

PRGINT={*number_rows*|250}

Changed. For relational bulk data movement sources, include the PRGINT statement in the DBMOVER configuration file on the PowerCenter Integration Service machine. For CDC sources and nonrelational bulk data movement sources, continue to include the PRGINT statement in the DBMOVER configuration file on the PowerExchange Listener machine.

START_UP_USER_EXIT=(PROGRAM_NAME=*program_name*,LANGUAGE=*language*)

New. Specifies the name and programming language of a user exit program that PowerExchange calls each time the PowerExchange Listener starts or shuts down. Use this statement to enable the PowerExchange Listener to read an Adabas database that is encrypted with an Adabas cipher code. The user exit program that you define must provide a result set that includes the cipher code and some additional information.

For more information about user exit program requirements for Adabas cipher code support, see the "Adabas Bulk Data Movement" chapter in the *PowerExchange Bulk Data Movement Guide*.

Parameters:

PROGRAM_NAME=*program_name*

Required. Name of the user exit program.

LANGUAGE=*language*

> Required. Programming language in which the user exit program is written. Options are:
>
> - **A**. Assembler language.
> - **C**. C language.

For more information about the START_UP_USER_EXIT statement, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.1 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.1 new features and changes that are related to the PowerExchange Listener.

New Features in 10.1

PowerExchange 10.1 introduces the following new feature for PowerExchange Listeners:

OpenLDAP Support for Requests to the PowerExchange Listener

PowerExchange introduces support for the OpenLDAP implementation to authenticate PowerExchange Listener requests. PowerExchange continues to support the Oracle LDAP implementation.

When you enable LDAP authentication, the PowerExchange Listener connects to an LDAP server to authenticate the enterprise user ID and password of clients that connect to the PowerExchange Listener.

With the introduction of support for OpenLDAP, PowerExchange provides LDAP user authentication on all Linux, UNIX, and Windows platforms where the PowerExchange Listener can run, including the following platforms:

- AIX
- Red Hat and SUSE Linux x64
- Windows x64

The PowerExchange installation program installs the OpenLDAP client files on each Linux, UNIX, or Windows machine where you install PowerExchange.

For more information, see the "PowerExchange Security" chapter of the *PowerExchange Reference Manual*.

Parameter and Option Changes in 10.1

PowerExchange 10.1 introduces the following changes to DBMOVER configuration statements:

DBMOVER Configuration File Statements

The DBMOVER configuration file includes the following new and changed statements:

ADA_TIMEZONE_CHECK

> *New*. The ADA_TIMEZONE_CHECK statement controls whether PowerExchange issues the PWX-03206 message only once for each Adabas database that it accesses and that does not have an Adabas DD

statement for timezone (//TZINFO DD) defined. PWX-03206 indicates that the Adabas DD statement for timezone (//TZINFO DD) was not found in the Adabas nucleus JCL.

Use the following syntax:

```
ADA_TIMEZONE_CHECK={N|Y}
```

Valid values:

- **N.** PowerExchange issues PWX-03206 only once for each Adabas database that it tries to access that does not have an Adabas DD statement for timezone defined.
- **Y.** PowerExchange issues a PWX-03206 message for each access to an Adabas database that does not have an Adabas DD statement for timezone defined.

Default is Y.

LDAP_OPENSSL

New. The LDAP_OPENSSL statement enables LDAP secured connections between PowerExchange on Linux, UNIX, or Windows and the LDAP server. This statement also specifies certificate information for a Transport Layer Security (TLS) connection to the LDAP server.

If you are using the OpenLDAP client, define the LDAP_OPENSSL statement and specify OPEN_LDAP for the fourth positional parameter in the SECURITY statement.

If you are using the Oracle LDAP client, use the LDAP_TLS statement instead of the LDAP_OPENSSL statement.

Use the following syntax:

```
LDAP_OPENSSL=({CAPATH=directory|CAFILE=filepath}
              [,CERTFILE=filepath,KEYFILE=filepath]
              [,PASS=passphrase|EPASS=encrypted_passphrase]
              [,START_TLS={N|Y}]
               )
```

The LDAP_OPENSSL statement includes the following parameters:

CAPATH=*directory*

Required if CAFILE is not specified. Directory where OpenSSL can find CA certificate files in PEM format.

CAFILE=*filepath*

Required if CAPATH is not specified. File that contains one or more CA certificates in PEM format.

CERTFILE=*filepath*

Optional. Client signing certificate. Include this parameter if the LDAP server is configured to require a signed certificate from its clients. The certificate and key files must be in PEM format. The certificate file must be named by the hash of the CA certificate.

KEYFILE=*filepath*

Required if CERTFILE is specified. Client private key for signing its certificate. The certificate and key files must be in PEM format.

PASS=*passphrase*

Optional. If the key file is DES-encrypted, the passphrase that is used to access the private key that is associated with the client certificate. Do not enter both the PASS and EPASS parameters.

EPASS=*encrypted_passphrase*

Optional. If the key file is DES-encrypted, the encrypted passphrase that is used to access the private key that is associated with the client certificate. Do not enter both the PASS and EPASS parameters.

START_TLS={N|Y}

Optional. Controls whether PowerExchange uses the StartTLS extended LDAP operation to initiate secure network traffic on a normally unsecured port. Default is N.

LRAP CAPI_CONNECTION

The following new optional parameter can be specified in the LRAP CAPI_CONNECTION statement:

UIDFMTIMS={UID|PSB|ALL}

New. For IMS synchronous CDC data sources, controls the type of value that PowerExchange uses to populate the generated DTL__CAPXUSER column in each change record. Options are:

- **UID**. Returns the user ID of the user who made the IMS change.
- **PSB**. Returns the IMS program specification block (PSB) name.
- **ALL**. Returns both the user ID and PSB name in the format *userid:psbname*.

Default is UID.

This parameter is also available in 9.6.1 HotFix 4. It is not available in 10.0.

SECURITY

Changed. The SECURITY statement has a new fourth positional parameter. The parameter has the following valid values:

{ORACLE_LDAP|OPEN_LDAP}

If you specify LDAP for the third positional parameter, specifies which set of LDAP client libraries to load.

Options are:

- **ORACLE_LDAP.** PowerExchange loads the Oracle LDAP client libraries.
- **OPEN_LDAP.** PowerExchange loads the OpenLDAP client libraries.

Default is ORACLE_LDAP.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.0 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.0 new features and changes that are related to the PowerExchange Listener.

Parameter and Option Changes in 10.0

PowerExchange 10.0 introduces the following changes to DBMOVER configuration statements:

DBMOVER Configuration File Statements

The DBMOVER configuration file includes the following new and changed statements:

GDGLOCATE={Y|N}

Changed. The default value for this parameter changed from N to Y. By default, the PowerExchange Listener now uses the most recent z/OS catalog information to determine the latest absolute generation in a GDG based on a relative generation number when reading or writing a generation data set.

In prior releases, the default value was N. This value causes the PowerExchange Listener to not refresh the generation table with the latest information from the z/OS catalog after it references the GDG the first time by using a relative generation number. All future Listener requests that use the relative generation number will access the same absolute generation as the first reference.

MSSQL_SERVER_CONNECT_TIMEOUT=*seconds*

New. Specifies the timeout interval, in seconds, for a PowerExchange Navigator, DTLUCBRG utility, or DTLURDMO utility connection to a Microsoft SQL Server Management Objects (SMO) interface to manage SQL Server publications. After this interval elapses, the connection times out with error message PWX-15700. If you receive PWX-15700 messages for a timeout error, use this statement to increase the timeout interval. Valid values are 1 to 86400. Default is 60 seconds.

MSSQL_SERVER_STATEMENT_TIMEOUT=*seconds*

New. Specifies the timeout interval, in seconds, for processing a Transact-SQL statement issued by the PowerExchange Navigator, DTLUCBRG utility, or DTLURDMO utility to the Microsoft SQL Server Management Objects (SMO) interface. After this interval elapses, processing of the Transact-SQL statement stops with error message PWX-15700. If you receive PWX-15700 messages related to this error, use this statement to increase the timeout interval. Valid values are 1 to 86400. Default is 60 seconds.

SECURITY_MSGSUPP={Y|N}

New. Controls whether to suppress the messages that are issued by RACF or a similar z/OS security product, such as CA Top Secret or ACF2, when verifying the logon credentials of a PowerExchange job or started task.

Valid values:

- **Y**. Suppress logon verification messages from RACF or a similar z/OS security product for PowerExchange jobs and started tasks. This option can help prevent flooding the system console with messages for successful logons.

- **N**. Allow RACF or a similar z/OS security product to write logon verification messages for PowerExchange jobs and started tasks. For example, RACF might issue the following ICH408I message for an invalid logon of a PowerExchange utility user to the operator console and JES Job Log:

```
13.55.14 STC00011 ICH408I USER(AUSER) GROUP(TEST) NAME(AUSER NAME1) 373
 373 LOGON/JOB INITIATION - INVALID PASSWORD
13.55.14 STC00011 IRR013I VERIFICATION FAILED. INVALID PASSWORD GIVEN.
```

Default is Y, which preserves the behavior in prior PowerExchange releases.

Note: For the PowerExchange Listener to use this parameter, you must also specify SECURITY=(2,*x*) or (1,*x*) in the same DBMOVER configuration file. If you specify SECURITY=(0,*x*), this parameter is ignored.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

CHAPTER 7

PowerExchange Logger for Linux, UNIX, and Windows

This chapter includes the following topics:

PowerExchange 10.2 HotFix 2 - New Features and Changes for the PowerExchange Logger

This section describes the PowerExchange 10.2 HotFix 2 changes that are related to the PowerExchange Logger for Linux, UNIX, and Windows.

Behavior Change in 10.2 HotFix 2

PowerExchange 10.2 HotFix 2 introduces the following behavior change for the PowerExchange Logger for Linux, UNIX, and Windows.

Checksum Testing of CDCT Records

PowerExchange now performs a checksum test of records in the CDCT file of the PowerExchange Logger for Linux, UNIX, and Windows to detect corrupted records and to avoid potential errors while reading information from the CDCT file.

The addition of checksums to the CDCT file makes the file incompatible with PowerExchange releases earlier than 10.2 HotFix 2. Before you apply 10.2 HotFix 2, back up your existing CDCT file. Then, if you need to fall back from 10.2 HotFix 2 to the earlier release, you can restore the CDCT file from the backup.

PowerExchange 10.2 HotFix 1 - New Features and Changes for the PowerExchange Logger

This section describes the PowerExchange 10.2 HotFix 1 new features and changes that are related to the PowerExchange Logger for Linux, UNIX, and Windows.

New Features in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following new feature for the PowerExchange Logger for Linux, UNIX, and Windows:

Time-based Restart Points for CDC Sessions That Retrieve Data from the Logger

If you use the PowerExchange Logger for Linux, UNIX, and Windows to log change data from a local or remote data source, you can optionally specify a date and time value as the restart point for PowerCenter CDC sessions that extract the change data from the Logger log files. Time-based restart points are source-specific.

Important: A problem with this feature was found shortly before the PowerExchange 10.2 HotFix 1 release. A time-based restart of a PowerCenter CDC session might fail. Contact Informatica Global Customer Support to request the emergency bug fix (EBF) for this issue, which should be available soon. Alternatively, as a workaround, remove all CAPI_CONNECTION statements from the DBMOVER configuration file on the Integration Service machine where the PowerCenter CDC session runs. Make sure that no other PowerCenter tasks require these statements.

To set a time-based restart point, define a pair of explicit override statements in the restart token file, each with the same extraction map name to identify the source object. In one statement, specify the RESTART_TIME option. In the other statement, specify a date and time value. Use the following syntax:

```
extractionMapName=RESTART_TIME
extractionMapName=datetime
```

Parameters:

extractionMapName

The name of an extraction map for the data source. To determine the extraction map name, use one of the following methods:

- For CDC data map sources, see the **Schema Name Override** and **Map Name Override** attributes in the session properties. These attributes override the schema name and map name in the source extraction map. Or, in Designer, see the **Schema Name** and **Map Name** values in the source Metadata Extensions.

- For relational sources, see the **Extraction Map Name** attribute in the session properties.

After the extraction map has been used to extract change data, the table name is appended to this value in the format *extractionMapName_tableName*. Use the full name when defining an explicit override statement.

RESTART_TIME

This option allows you to use a date and time value as the restart point for extraction processing in the Logger log files.

datetime

The date and time to use as the restart point in PowerExchange Logger for Linux, UNIX, and Windows log files. This value must be in the format YYYYMMDDhhmmssuuuuuu, where YYYY is a four-digit year, MM is the month, DD is the day of the month, hh is hours, mm is minutes, ss is seconds, and uuuuuu is microseconds.

For more information, see the "Extracting Change Data" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows* or the "Configuring the Restart Token File" chapter in the *PowerExchange Interfaces for PowerCenter* publication.

Parameter and Option Changes in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 adds a parameter for the PowerExchange Logger for Linux, UNIX, and Windows.

DBMOVER Configuration File Parameter

You can optionally include the new VALIDATEREGS parameter in the CAPX CAPI_CONNECTION statement in the DBMOVER configuration file.

VALIDATEREGS={N|Y}

New. Controls whether the PowerExchange extraction of data from PowerExchange Logger for Linux, UNIX, and Windows ends or continues if it detects a source entry in the CDC interest list for which the PowerExchange Logger is *not* capturing change data. In this situation, the extraction process issues message PWX-36947, either as error message or informational message.

Options are:

- **Y**. The PowerExchange Logger extraction process issues message PWX-36947 as an error message and then ends.

- **N**. The PowerExchange Logger extraction process issues message PWX-36947 as an informational message and continues processing.

Default is N.

PowerExchange 10.1.1 - New Features and Changes for the PowerExchange Logger

This section describes the PowerExchange 10.1.1 new features and changes that are related to the PowerExchange Logger for Linux, UNIX, and Windows.

New Features in 10.1.1

PowerExchange 10.1.1 introduces the following new feature for the PowerExchange Logger for Linux, UNIX, and Windows:

Monitoring Statistics Printed at PowerExchange Logger for Linux, UNIX, and Windows Shutdown

The PowerExchange Logger for Linux, UNIX, and Windows can now publish summary monitoring statistics each time it stops in response to a Logger SHUTCOND or SHUTDOWN command or at the end of a batch run. You must specify the STATS=(MONITOR) parameter, with or without the *interval* subparameter, in the PowerExchange Logger configuration file, pwxccl.cfg.

The following monitoring messages are issued at shutdown:

```
PWX-00723 Command <Shutdown stats> succeeded
PWX-37130   PWXCCL pid = 9064      Writer status = Shutting down
PWX-37134   CPU Time =    0:00:00.686404
PWX-37131   Memory  (Current/Total/Maximum)
PWX-37132    Controller: (476/477/1853) KB    Command Handler: (476/477/1853) KB    Writer: (0/0/0) KB
PWX-37105    Total Memory 16468 KB
PWX-37135   Status 9064              Totals  I=000000001404 U=000000000000 D=000000001404
C=000000000228 Total=000000003036
PWX-37136    CurrFileOpened : 2016-08-19 10:37:47 I=000000000000 U=000000000000 D=000000000000
C=000000000000 Total=000000000000
PWX-37137     Active Cycle  : 2016-08-19 10:37:47 I=000000001404 U=000000000000 D=000000001404
C=000000000228 Total=000000003036
```

For more information, see the "Monitoring CDC Sessions" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows* and the "PowerExchange Logger for Linux, UNIX, and Windows Commands" chapter in the *PowerExchange Command Reference*.

Expanded OpenLDAP and Oracle LDAP Support for Requests to the PowerExchange Logger

PowerExchange introduces expanded support for the OpenLDAP and Oracle LDAP implementations to authenticate PowerExchange Logger for Linux, UNIX, and Windows requests.

PowerExchange supports the OpenLDAP implementation on the following platforms:

- AIX
- Linux x64
- Solaris SPARC
- Windows x64

PowerExchange supports the Oracle LDAP implementation on the following platforms:

- Linux x64
- Solaris SPARC

For more information, see the "PowerExchange Security" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.1 - New Features and Changes for the PowerExchange Logger

This section describes the PowerExchange 10.1 new features and changes that are related to the PowerExchange Logger for Linux, UNIX, and Windows.

New Features in 10.1

PowerExchange 10.1 introduces the following new feature for the PowerExchange Logger for Linux, UNIX, and Windows:

OpenLDAP Support for Requests to the PowerExchange Logger

PowerExchange introduces support for the OpenLDAP implementation to authenticate pwxcmd requests to the PowerExchange Logger. PowerExchange continues to support the Oracle LDAP implementation.

When you enable LDAP authentication and a pwxcmd command connects to the SVCNODE port of the PowerExchange Logger, PowerExchange connects to an LDAP server to authenticate the enterprise user ID and password that the pwxcmd command provides.

With the introduction of support for OpenLDAP, PowerExchange provides LDAP user authentication on all Linux, UNIX, and Windows platforms where the PowerExchange Logger can run, including the following platforms:

- AIX
- Red Hat and SUSE Linux x64
- Windows x64

The PowerExchange installation program installs the OpenLDAP client files on each Linux, UNIX, or Windows machine where you install PowerExchange.

For more information, see the "PowerExchange Security" chapter of the *PowerExchange Reference Manual*.

PowerExchange 10.0 - New Features and Changes for the PowerExchange Logger

This section describes the PowerExchange 10.0 new features and changes that are related to the PowerExchange Logger for Linux, UNIX, and Windows.

New Features in 10.0

PowerExchange 10.0 introduces the following new feature for the PowerExchange Logger.

Enhanced Monitoring Statistics for the PowerExchange Logger for Linux, UNIX, and Windows

PowerExchange 10.0 provides new commands for publishing enhanced PowerExchange Logger monitoring statistics on demand. PowerExchange also provides a new PowerExchange Logger parameter to enable collection of these monitoring statistics and optionally print them at a specific interval. Use these statistics to monitor PowerExchange Logger processing status and computer resource usage.

The statistics are written to the PowerExchange message log and displayed on screen.

Important: Before you can use the new commands, you must specify the new STATS=(MONITOR) parameter in the PowerExchange Logger pwxccl.cfg configuration file to enable collection of the monitoring statistics.

If the PowerExchange Logger runs in the foreground, issue the DL or DG command from the command line on the system where the PowerExchange Logger runs. If the PowerExchange Logger runs in background mode

or you want to issue the commands from a remote Linux, UNIX or Windows system, use the pwxcmd program to issue the displaystatus -tp {logger|groups} command.

The DL (or DS) command or pwxcmd displaystatus -tp logger command prints the following statistics for a PowerExchange Logger process and its tasks:

```
PWX-26011 Command handler received command "DS"
PWX-00723 Command <display L stats> succeeded
PWX-37130   PWXCCL pid = 7144        Writer status = Reading or waiting for source data
PWX-37134   CPU Time =    0:00:02.574016
PWX-37131   Memory  (Current/Total/Maximum)
PWX-37132    Controller: (981/983/1849) KB    Command Handler: (673/674/708) KB    Writer:
(5127/5147/5181) KB
PWX-37135   Status  7144                 Totals  I=000000024344 U=000000000000 D=000000024336
C=000000004004 Total=000000052684
PWX-37136    CurrFileOpened : 2015-08-11 13:20:39 I=000000024344 U=000000000000 D=000000024336
C=000000004004 Total=000000052684
PWX-37137    Active Cycle  : 2015-08-11 13:21:01 I=000000024344 U=000000000000 D=000000024336
C=000000004004 Total=000000052684
```

The DG command or pwxcmd displaystatus -tp groups command prints the following statistics for each PowerExchange Logger group definition:

```
PWX-26011 Command handler received command "DG"
PWX-37138   Grp: dtld004 Regs=1 IUD=000000000000 C=000000000000 Unflushed=000000000000
PWX-37138   Grp: dtld003 Regs=2 IUD=000000000470 C=000000000028 Unflushed=000000000000
PWX-37138   Grp: dtld002 Regs=2 IUD=000000003276 C=000000000196 Unflushed=000000000000
```

If no PowerExchange Logger group definitions exist, the DG or pwxcmd displaystatus -tp groups command prints the following statistics, as if all registrations were in one group:

```
PWX-26011 Command handler received command "DG"
PWX-37138   Grp: c:\pwx\capture/condenseO Regs=5 IUD=000000032292 C=000000001931 Unflushed=000000034223
PWX-37139      FirstRec=2015-05-22 13:59:10.603648  Open file=c:\pwx\capture/
condenseO.CND.CP150707.T1816001
PWX-37140      BeginSeq =000000009DE6000000000000000088D800000000 BeginRstrt
=D4C9C7D340400000000037DA00000000
PWX-37141      LastSeq  =000001587438000000000000000158728600000000
PWX-37142      CommitSeq=000001589B24000000000000000158 9B2400000000
CommitRstrt=D4C9C7D340400000000037DA00000000
```

Also, you can configure the PowerExchange Logger to print monitoring statistics at a specific interval by including the optional *interval* subparameter in the STATS parameter in the pwxccl.cfg file. In this case, the PowerExchange Logger displays an abbreviated form of the DL command output on screen to avoid flooding the screen with messages over time. For example:

```
PWX-37132    Controller: (981/983/1849) KB    Command Handler: (0/0/34) KB    Writer: (5127/5147/5181)
KB
PWX-37135   Status  7144                 Totals  I=000000024344 U=000000000000 D=000000024336
C=000000004004 Total=000000052684
PWX-37136    CurrFileOpened : 2015-08-11 13:20:39 I=000000024344 U=000000000000 D=000000024336
C=000000004004 Total=000000052684
PWX-37137    Active Cycle  : 2015-08-11 13:21:01 I=000000024344 U=000000000000 D=000000024336
C=000000004004 Total=000000052684
```

For more information, see the "Monitoring CDC Sessions" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows* and the "PowerExchange Logger for Linux, UNIX, and Windows Commands" chapter in the *PowerExchange Command Reference*.

Parameter and Option Changes in 10.0

PowerExchange 10.0 adds a parameter for the PowerExchange Logger for Linux, UNIX, and Windows.

PowerExchange Logger Configuration File Parameter

You can add the following new parameter in the PowerExchange Logger pwxccl.cfg configuration file to collect enhanced PowerExchange Logger monitoring statistics and optionally to publish these statistics at a regular interval:

STATS=(MONITOR[,*interval*|0])

Enables PowerExchange Logger collection of the following monitoring statistics:

- PowerExchange Logger process ID (PID)

- Status of the PowerExchange Logger Writer task

- CPU time used by the PowerExchange Logger

- Memory use (current/total/maximum) in kilobtyes, total and for the Controller, Command Handler, and Writer tasks

- The number of inserts, updates, deletes, and commits that the PowerExchange Logger processed, total since the Logger started and for the current active log file and the active logging cycle

Also, enables collection of the following statistics for PowerExchange Logger group definitions, if defined:

- The number of DML operations and commits processed for each group

- Then number of change records that have not yet been flushed to a Logger log file on disk

- The name of the open Logger log file for each group and the file open timestamp

The statistics are printed on demand to the PowerExchange message log and on screen when you enter the DL or DG command from the command line or the pwxcmd displaystats -tp {logger|groups} command from a remote system.

Include the optional *interval* subparameter to print the Logger statistics at a regular interval.

{*interval*|0}

Optional. The interval, in minutes, after which PowerExchange publishes monitoring statistics for the PowerExchange Logger. The interval-based statistics that are written to the PowerExchange message log file are the same as those published by the DL (or DS) command and pwxcmd displaystats -tp logger command. However, fewer interval-based statistics are displayed on screen to prevent flooding the screen with messages over time.

Valid values are 0 through 120. Default is 0, which disables interval-based reporting of PowerExchange Logger monitoring statistics.

For more information, see the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

Command Changes in 10.0

In PowerExchange 10.0, you can enter new commands from the command line to print enhanced PowerExchange Logger monitoring statistics on demand. Also, you can add a new option to the existing pwxcmd displaystats command to print these monitoring statistics from a remote Linux, UNIX, or Windows system.

Before you use any of these commands, you must specify the STATS=(MONITOR) parameter in the PowerExchange Logger pwxccl.cfg configuration file to enable the collection of these statistics.

New command-line commands:

DG

Displays monitoring statistics for each PowerExchange Logger for Linux, UNIX, and Windows group that is defined. A group is a set of PowerExchange Logger log files for a group of registered source tables. The following statistics are reported:

- The group name and the number of capture registrations in the group

- The total number of insert, update, and delete records that the PowerExchange Logger processed for the group
- The number of commits that the PowerExchange Logger processed for the group
- The number of change records that the PowerExchange Logger has not yet flushed from memory to its log files on disk
- The file name of the open Logger log file and the timestamp for when the file was opened

DL

Displays monitoring statistics for a PowerExchange Logger for Linux, UNIX, and Windows process and its tasks. The following statistics are reported:

- The PowerExchange Logger process ID
- The status of the PowerExchange Logger Writer subtask at the time the command is issued
- The CPU time used by the PowerExchange Logger since it started
- PowerExchange Logger memory use, total and by the Controller, Command Handler, and Writer tasks. For the tasks, memory use is reported in the following categories:
  - Current. The amount of memory that the task is currently using.
  - Total. The amount of memory in use by the task plus related header overhead. This value fluctuates as memory is dynamically allocated and freed during PowerExchange Logger processing
  - Maximum. The largest amount of memory that has been recorded for the "Total" category up to the point in time when the monitoring statistics are generated.
- Counts of inserts, updates, deletes, and commits that the PowerExchange Logger has processed, total and for the open Logger log file and the active logging cycle

Changed pwxcmd command:

The pwxcmd displaystats command includes the following new -type option:

```
pwxcmd displaystats {-service|-sv} service_name
                [{-user|-uid|-u} user_ID
                [{-password |-pwd|-p} password}|{-epassword|-e} encrypted_password}]
                [{-type|-tp} [{logger|groups}]]
```

For the -type (or -tp) option, you can enter one of the following arguments:

- **logger**. Report monitoring statistics for the PowerExchange Logger process and tasks. The statistics include the PowerExchange Logger process ID (PID), Writer subtask status, CPU time used, memory use by task type, and counts of inserts, updates, deletes, and commits processed.
- **groups**. Report statistics for each PowerExchange Logger group that is defined. The statistics include the number of registrations in the group, the total number of DML operations processed, the number of commits processed, the name of the open Logger log file for the group, the timestamp of the open log file, and the number of change records that have not yet been flushed to a log file.

Default is logger.

For more information about all of these commands, see the "PowerExchange Logger for Linux, UNIX, and Windows Commands" chapter and "pwxcmd Commands" chapter in the *PowerExchange Command Reference*.

CHAPTER 8

PowerExchange Navigator

This chapter includes the following topics:

PowerExchange 10.2 - New Features and Changes for the PowerExchange Navigator

This section describes the PowerExchange 10.2 new features and changes that are related to the PowerExchange Navigator.

New Features in 10.2

PowerExchange 10.2 introduces the following new feature in the PowerExchange Navigator:

PowerExchange Navigator Overrides for the DBMOVER Configuration File and PowerExchange License Key File

PowerExchange provides the ability to override the default locations of the DBMOVER confiugration file and PowerExchange license key file that the PowerExchange Navigator uses.

When you add or edit a PowerExchange resource configuration, you can specify the location of the files for the resource configuration. You can also override the default locations by using the command line or environment variables.

The **Current Configuration** tab of the **Resource Configuration** dialog box displays the paths and file names of the DBMOVER configuration file and PowerExchange license key file. After each path and file name, a string in brackets indicates the source that the Navigator uses to determine the path and file name.

The following table identifies the sources that the Navigator uses to find the DBMOVER configuration file and PowerExchange license key file, in increasing order of precedence:

Source	Designation in GUI for DBMOVER Source	Designation in GUI for License Key Source	Description
System defaults	[Install Path]	[Install Path]	If you specify no override, the Navigator loads the dbmover.cfg and license.key files that are located in the PowerExchange root installation directory. This is the path that contains the Navigator executable file, dtlui.exe.
Environment variables	[$PWX_CONFIG]	[$PWX_LICENSE]	You can define the following environment variables before you start the Navigator: - PWX_CONFIG. Enter the full path to the dbmover.cfg. - PWX_LICENSE. Enter the full path to the license.key.
Command line arguments	[Command Line]	[Command Line]	When you start the Navigator from the command line or from a Windows shortcut, you can specify the following arguments: - config. Enter the full path to the DBMOVER configuration file. - license. Enter the full path to the license key file.
PowerExchange Navigator overrides	[NAVIGATOR]	[NAVIGATOR]	You can specify Navigator overrides in the **Resource Configuration** dialog box for a particular resource configuration name.

For more information, see the "PowerExchange Navigator Introduction" chapter in the *PowerExchange Navigator User Guide*.

Parameter and Option Changes in 10.2

PowerExchange 10.2 introduces new parameters for the DTLUTSK utility.

Parameter for Issuing the LISTLOCATIONS Command

When you select **List Locations** from the **Fetch** list the **Database Row Test** dialog box, you can enter the new NODETYPE parameter in the **SQL Statement** box to specify the type of locations to list.

Use the following syntax:

```
listlocations nodetype={N|A|S}
```

Specify one of the following values for nodetype:

- N. Default. List locations that are defined in NODE statements in the DBMOVER configuration file.

- A. List locations that are defined in NODE or SVCNODE statements in the DBMOVER configuration file.

- S. List locations that are defined in SVCNODE statements in the DBMOVER configuration file.

PowerExchange 10.1.1 - New Features and Changes for the PowerExchange Navigator

This section describes the PowerExchange 10.1.1 new features and changes that are related to the PowerExchange Navigator.

New Features in 10.1.1

PowerExchange 10.1.1 introduces the following new feature in the PowerExchange Navigator:

Support for Multiple Versions of the PowerExchange Navigator

PowerExchange introduces support for running multiple versions of the PowerExchange Navigator on the same Windows platform.

When you first start the PowerExchange Navigator for a new product version, the **Resource Configuration** dialog box prompts you to enter the resource path to use with this version of the Navigator. To edit the configuration, click the **Edit Configuration** tab. A new **Import** button enables you to import the configuration from a previous version of the Navigator.

For more information, see the "PowerExchange Navigator Introduction" chapter in the *PowerExchange Navigator User Guide*.

PowerExchange 10.0 - New Features and Changes for the PowerExchange Navigator

This section describes the PowerExchange 10.0 new features and changes that are related to the PowerExchange Navigator.

New Features in 10.0

PowerExchange 10.0 introduces the following new feature in the PowerExchange Navigator:

Ability to Specify Restart Tokens for a Database Row Test

When you perform a database row test in the PowerExchange Navigator with a **DB Type** value of **CAPX** or **CAPXRT**, you can now specify restart tokens to control the point in the change stream from which the row test begins fetching data. Use this feature whenever you want to bypass some change records, for example, old records that have been archived off disk or records that are not consistent with an updated extraction map.

In the **Database Row Test** dialog box, click the **Advanced** button. Then on the **General** tab of the **CAPX Advanced Parameters** dialog box or **CAPXRT Advanced Parameters** dialog box, specify the sequence token in the **Restart Token 1** field and specify the restart token in the **Restart Token 2** field.

Note: You can generate token values that identify the current end of the change stream from the PowerExchange Navigator or with the DTLUAPPL utility.

For more information, see the "Database Row Test" chapter in the *PowerExchange Navigator User Guide*.

CHAPTER 9

PowerExchange Monitoring and Tuning

This chapter includes the following topics:

PowerExchange 10.4.0 - New Features and Changes for Monitoring and Tuning

This section describes the PowerExchange 10.4.0 new features and changes for PowerExchange monitoring and tuning.

Parameter and Option Changes in 10.4.0

PowerExchange 10.4.0 introduces a new parameter for the DTLSMFRP program.

DTLSMFRP JCL Parameter

PowerExchange 10.4.0 adds a new parameter to the sample JCL in the DTLSMFRP member of the RUNLIB library. The PowerExchange DTLSMFRP program can generate reports of PowerExchange activity based on statistics records that PowerExchange writes to SMF. The new, optional SYSOUT parameter specifies where to route the reports.

For example, to route the reports to SYSOUT class A, specify:

```
//SMF EXEC PGM=DTLSMFRP,PARM='0,252,SYSOUT=A'
```

The default class is X.

For more information, see the "SMF Statistics Logging and Reporting" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.2 HotFix 1 - New Features and Changes for Monitoring and Tuning

This section describes the PowerExchange 10.2 HotFix 1 new features and changes for PowerExchange monitoring and tuning.

New Features in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following new monitoring features:

Generating Reports from SMF Statistics Records

On z/OS, you can use the PowerExchange DTLSMFRP program to generate reports of PowerExchange activity based on statistics records that the PowerExchange Listener writes to SMF. The program reads the statistics records from SMF archived data sets only.

To generate reports from SMF statistics records, you must first define a STATS statement in the PowerExchange DBMOVER configuration file. The STATS statement specifies the SMF record type of the records that contain PowerExchange statistics. You must define a STATS statement for each record type for which you want to report statistics. The DTLSMFRP program uses the record type to find the SMF records for PowerExchange in the SMF system and to determine the type of report to generate.

The DTLSMFRP program can generate the following types of reports:

- **Time and CPU statistics**. Reports the type of SMF record, the process ID of the PowerCenter client connection, the job name and user ID associated with the client, the start time of the PowerExchange Listener or client, the end time of the client connection to the Listener, and the CPU time used during the reporting interval and as of the end of the session, by SMF record.

- **PowerCenter session information**. Reports the map name and PowerCenter session ID, by SMF record.

- **Access method statistics**. Reports the access method, the file name or table name that the access request used, the number of rows that were read and that were written, and the number of bytes that were read and that were written, by SMF record.

- **DB2 statistics**. If you have a DB2 for z/OS source, reports the DB2 SSID, plan name, connection type (CONNTYPE), authorization ID (AUTHID), correlation ID, SQL statements processed, number of rows processed, SQL return code (SQLCODE), reason code (RSNCODE), number of updates, deletes, and inserts processed, and CPU usage, by SMF record.

For more information, see the "SMF Statistics Logging and Reporting" chapter in the *PowerExchange Reference Manua*l.

PowerExchange 10.2 - New Features and Changes for Monitoring and Tuning

This section describes the PowerExchange 10.2 new features and changes for PowerExchange monitoring and tuning.

New Features in 10.2

PowerExchange 10.2 introduces the following new monitoring feature:

Improvements to SMF Statistics Records and Documentation

Improvements have been made to SMF statistics records. Also, the documentation on SMF statistics logging in the *PowerExchange Reference Manual* has been enhanced to provide more detail on SMF record format and layout and how to view statistics written to SMF or a file.

In the General section of SMF records, the following statistics fields now report cumulative System z Integrated Information Processor (zIIP) times:

- PWXGTCP reports the zIIP qualified time.
- PWXGTOT reports the time spent on the zIIP.
- PWXGTOF reports the zIIP time that was offloaded to the Central Processor.

Documentation enhancements include:

- The description of the SMFxSTY field in the "Standard SMF Header with Subtype" section has been enhanced.
- The "SMF Triplet Section Descriptor" topic has been added to describe the triplet fields in records logged to SMF.
- Instructions for viewing statistics written to SMF have been added.
- The documentation now notes that you must use the pwxstats.file data map to view statistics that have been written to SMF or a sequential data set from the PowerExchange Navigator. The data map file must have the same version and release level as the PowerExchange Listener. You should not edit this file.
- Graphics have been added to show the general layout of records written to SMF and to a sequential data set, also called a PowerExchange file.

For more information, see "SMF Statistics Logging" in the *PowerExchange Reference Manual*.

PowerExchange 10.1.1 - New Features and Changes for Monitoring and Tuning

This section describes the PowerExchange 10.1.1 new features and changes for PowerExchange monitoring and tuning.

New Features in 10.1.1

PowerExchange 10.1.1 introduces the following new monitoring feature:

Monitoring Statistics Printed at PowerExchange Logger for Linux, UNIX, and Windows Shutdown

The PowerExchange Logger for Linux, UNIX, and Windows can now publish summary monitoring statistics each time it stops in response to a Logger SHUTCOND or SHUTDOWN command or at the end of a batch run. You must specify the STATS=(MONITOR) parameter, with or without the *interval* subparameter, in the PowerExchange Logger configuration file, pwxccl.cfg.

The following monitoring messages are issued at shutdown:

```
PWX-00723 Command <Shutdown stats> succeeded
PWX-37130   PWXCCL pid = 9064        Writer status = Shutting down
PWX-37134   CPU Time =    0:00:00.686404
PWX-37131   Memory  (Current/Total/Maximum)
PWX-37132    Controller: (476/477/1853) KB    Command Handler: (476/477/1853) KB    Writer: (0/0/0) KB
```

```
PWX-37105    Total Memory 16468 KB
PWX-37135    Status  9064              Totals  I=000000001404 U=000000000000 D=000000001404
C=000000000228 Total=000000003036
PWX-37136    CurrFileOpened : 2016-08-19 10:37:47 I=000000000000 U=000000000000 D=000000000000
C=000000000000 Total=000000000000
PWX-37137    Active Cycle  : 2016-08-19 10:37:47 I=000000001404 U=000000000000 D=000000001404
C=000000000228 Total=000000003036
```

For more information, see the "Monitoring CDC Sessions" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows* and the "PowerExchange Logger for Linux, UNIX, and Windows Commands" chapter in the *PowerExchange Command Reference*.

Improvements to Statistics Fields in SMF Records

Usability improvements have been made to the statistics fields in System Management Facilities (SMF) records on z/OS. The record field names have been enhanced to more easily identify fields. Also, in some sections, more fields have been added to report additional information.

Note: To log statistics records in SMF or to a sequential data set on z/OS, you must specify the STATS statement in the DBMOVER configuration file. Include the SMF parameter to write statistics records in SMF, or include the FILE parameter to write statistics records to a sequential data set.

If you previously logged SMF statistics records to a sequential data set on z/OS, perform the following tasks after you upgrade to 10.1.1:

1. Create a new data map for accessing SMF statistics records. The new data map must reflect the new record layout. You can use the updated pwxstat.file data map in the *PowerExchange 10.1.1 installation*\examples\datamaps directory.

2. Remove the existing sequential data set to which you logged SMF statistics in the previous release. PowerExchange cannot access records of the old format based on the new data map.

3. Allocate a new sequential data set for SMF statistics. Ensure that the data set is large enough to accommodate the new larger record sizes. For variable length, blocked data sets, the following DCB allocation attributes are usually sufficient: LRECL 5000 and BLKSIZE 27998. Then specify the data set name in the FILE parameter of the STATS statement in the DBMOVER configuration file.

Also, if you have been using SMF statistics records programmatically, verify that the PowerExchange 10.1.1 record content and format changes do not disrupt your programmatic use of these records.

For more information, see the "Statistics Logging with SMF" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.0 - New Features and Changes for Monitoring and Tuning

This section describes the PowerExchange 10.0 new features and changes for PowerExchange monitoring and tuning.

New Features in 10.0

PowerExchange 10.0 introduces the following new monitoring feature:

Enhanced Monitoring Statistics for the PowerExchange Logger for Linux, UNIX, and Windows

PowerExchange 10.0 provides new commands for publishing enhanced PowerExchange Logger monitoring statistics on demand. PowerExchange also provides a new PowerExchange Logger parameter to enable collection of these monitoring statistics and optionally print them at a specific interval. Use these statistics to monitor PowerExchange Logger processing status and computer resource usage.

The statistics are written to the PowerExchange message log and displayed on screen.

Important: Before you can use the new commands, you must specify the new STATS=(MONITOR) parameter in the PowerExchange Logger pwxccl.cfg configuration file to enable collection of the monitoring statistics.

If the PowerExchange Logger runs in the foreground, issue the DL or DG command from the command line on the system where the PowerExchange Logger runs. If the PowerExchange Logger runs in background mode or you want to issue the commands from a remote Linux, UNIX or Windows system, use the pwxcmd program to issue the displaystatus -tp {logger|groups} command.

The DL (or DS) command or pwxcmd displaystatus -tp logger command prints the following statistics for a PowerExchange Logger process and its tasks:

```
PWX-26011 Command handler received command "DS"
PWX-00723 Command <display L stats> succeeded
PWX-37130   PWXCCL pid = 7144        Writer status = Reading or waiting for source data
PWX-37134   CPU Time =     0:00:02.574016
PWX-37131   Memory  (Current/Total/Maximum)
PWX-37132    Controller: (981/983/1849) KB    Command Handler: (673/674/708) KB    Writer:
(5127/5147/5181) KB
PWX-37135   Status  7144              Totals  I=000000024344 U=000000000000 D=000000024336
C=000000004004 Total=000000052684
PWX-37136    CurrFileOpened : 2015-08-11 13:20:39 I=000000024344 U=000000000000 D=000000024336
C=000000004004 Total=000000052684
PWX-37137     Active Cycle  : 2015-08-11 13:21:01 I=000000024344 U=000000000000 D=000000024336
C=000000004004 Total=000000052684
```

The DG command or pwxcmd displaystatus -tp groups command prints the following statistics for each PowerExchange Logger group definition:

```
PWX-26011 Command handler received command "DG"
PWX-37138   Grp: dtld004 Regs=1 IUD=000000000000 C=000000000000 Unflushed=000000000000
PWX-37138   Grp: dtld003 Regs=2 IUD=000000000470 C=000000000028 Unflushed=000000000000
PWX-37138   Grp: dtld002 Regs=2 IUD=000000003276 C=000000000196 Unflushed=000000000000
```

If no PowerExchange Logger group definitions exist, the DG or pwxcmd displaystatus -tp groups command prints the following statistics, as if all registrations were in one group:

```
PWX-26011 Command handler received command "DG"
PWX-37138   Grp: c:\pwx\capture/condenseO Regs=5 IUD=000000032292 C=000000001931 Unflushed=000000034223
PWX-37139     FirstRec=2015-05-22 13:59:10.603648  Open file=c:\pwx\capture/
condenseO.CND.CP150707.T1816001
PWX-37140     BeginSeq =000000009DE6000000000000000088D800000000 BeginRstrt
=D4C9C7D340400000000037DA00000000
PWX-37141     LastSeq  =00000158743800000000000000158728600000000
PWX-37142     CommitSeq=000001589B240000000000000001589B2400000000
CommitRstrt=D4C9C7D340400000000037DA00000000
```

Also, you can configure the PowerExchange Logger to print monitoring statistics at a specific interval by including the optional *interval* subparameter in the STATS parameter in the pwxccl.cfg file. In this case, the PowerExchange Logger displays an abbreviated form of the DL command output on screen to avoid flooding the screen with messages over time. For example:

```
PWX-37132    Controller: (981/983/1849) KB    Command Handler: (0/0/34) KB    Writer: (5127/5147/5181)
KB
PWX-37135   Status  7144              Totals  I=000000024344 U=000000000000 D=000000024336
C=000000004004 Total=000000052684
PWX-37136    CurrFileOpened : 2015-08-11 13:20:39 I=000000024344 U=000000000000 D=000000024336
C=000000004004 Total=000000052684
PWX-37137     Active Cycle  : 2015-08-11 13:21:01 I=000000024344 U=000000000000 D=000000024336
C=000000004004 Total=000000052684
```

For more information, see the "Monitoring CDC Sessions" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows* and the "PowerExchange Logger for Linux, UNIX, and Windows Commands" chapter in the *PowerExchange Command Reference*.

CHAPTER 10

PowerExchange Utilities

This chapter includes the following topics:

PowerExchange 10.4.0 - New Features and Changes for PowerExchange Utilities

This section describes PowerExchange 10.4.0 new features and changes that are related to PowerExchange utilities.

New Features in 10.4.0

PowerExchange 10.4.0 introduces the following new features for PowerExchange utilities:

DTLURDMO Utility Enhancements

The DTLURDMO utility includes the following performance and reporting enhancements:

- You can now specify an alternative input data set, file, or directory for the capture registrations, data maps, and extraction maps on the source node.
- You can now direct a DTLURDMO report to a standard output location or to a separate file.
- You can now model selection scenarios by using the TESTMODE control statement. This statement now functions in the same way for all copy statements.
- Report format and content has been updated to improve report usability and legibility.
- Use the new TESTMODE statement to run the utility in test mode. In this mode, the utility tests the selections and exclusions for copy operations without making any updates or changes to the target. To test rename or other copy processing, continue to use the VALIDATE statement, which performs all functions of the utility except for writing the copied maps or registrations to the target destination.

- The VALIDATE statement can now be used to model selection scenarios and to modify in-memory changes to the selected maps and registrations without committing the changes to the output files. This control statement now functions in the same way for all copy statements.

For more information, see the "DTLURDMO - Data Map Utility" chapter in the *PowerExchange Utilities Guide*.

PWXUCCLPRT Utility

You can use the PWXUCCLPRT utility to read PowerExchange Logger for Linux, UNIX, and Windows logs and print a summary of the log content to the PowerExchange log.

Optionally, you can use this utility to perform the following tasks:

- Write the PowerExchange Logger for Linux, UNIX, and Windows log header or commit restart tokens to a comma-delimited file.
- Write the PowerExchange Logger for Linux, UNIX, and Windows records to a file in hexadecimal format.

The utility runs on Linux, UNIX, or Windows systems.

For more information, see the "PWXUCCLPRT - Print Log Summary Utility" chapter in the *PowerExchange Utilities Guide*.

PWXUMAP Utility

You can use the PWXUMAP utility to generate reports that list PowerExchange CDC extraction maps and bulk data maps.

You might use the utility to list data and extraction maps prior to running the DTLURDMO utility to copy maps from one PowerExchange system to another, so that you can verify that all extraction and data maps have been moved. Informatica Global Customer Support might request that you use the PWXUMAP utility to provide a snapshot of extraction or data maps on your system.

The utility runs on Windows systems.

You can use the utility to produce the following reports:

- Data map list
- Schema list
- Map lines in comma-delimited format
- Summary or detailed report of the currently loaded runtime map

The PWXUMAP command syntax and parameters depend on the type of operation you want to perform.

For more information, see the "PWXUMAP - Map List Utility" chapter in the *PowerExchange Utilities Guide*.

Parameter and Option Changes in 10.4.0

PowerExchange 10.4.0 introduces new and changed parameters for the DTLUCBRG utility.

DTLREXE Utility Parameters

In PowerExchange 10.4.0, the following new optional parameter is added for the DELETE, PING, SUBMIT, and SYSTEM control statements of the DTLREXE utility:

config=*dbmover_override_file*

   New. The DBMOVER configuration file that you want the DTLREXE utility to use, when you do not want to use the default DBMOVER file or the DBMOVER file that is set in the PWX_CONFIG environment variable.

This parameter is used only when you run DTLREXE on Linux, UNIX, and Windows. This parameter is ignored on IBM i or z/OS.

DTLUCBRG Utility Parameters

PowerExchange 10.4.0 includes the following new and changed parameters for the DTLUCBRG utility.

TABLE=*schema.table_name*

Changed. For relational source databases, the schema name and table name can now each be up to 128 characters in length. Previously, the combined *schema.table_name* value could be no longer than 128 characters.

VSMOPTS=(FNAME=*file_name*)

New. For VSAM sources, use this parameter to specify the name of the VSAM data set.

For more information, see the *PowerExchange Utilities Guide*.

DTLURDMO Utility Statements and Parameters

The DTLURDMO utility includes the following new or changed control statements and parameters in 10.4.0:

Statement	Parameters	Description
INPUT	*data_set_name* *file_name* *folder_name*	*New*. The INPUT statement specifies an alternative input data set, file, or directory for the input maps or registrations on the source node.The INPUT statement can specify one of the following options: - For DM_COPY or XM_COPY commands, a VSAM KSDS data set if the source node is on z/OS, a partitioned file if the source node is on IBM i, or a directory if the source node is on Linux, UNIX, or Windows. - For REG_COPY commands, a CCT file name.
NOTIMESTAMPS	-	*New*. Specify the NOTIMESTAMPS statement to suppress time stamps in the report output. This statement is primarily used for testing purposes. It suppresses the time stamp on the first line of the output, so reports run at different times can be more easily compared.
REG_COPY FASTLOAD	-	*New*. Use the FASTLOAD statement with REG_COPY to improve performance when DTLURDMO is the only operation updating the CCT file.
REPORTDEST	LOG STDERR STDOUT *file_name*	*New*. The REPORTDEST statement specifies a destination for the reports that you generate with the utility. You can use this statement to send the report to a standard output location or to a separate file on the computer where the utility runs.

Statement	Parameters	Description
TESTMODE	-	*Changed*. Use the TESTMODE statement to model selection scenarios without making in-memory changes or updating the output files. This control statement now functions the same for all copy statements.
VALIDATE	-	*Changed*. Use the VALIDATE statement to model selection scenarios and modify in-memory changes to the selected maps and registrations without committing the changes to the output files. This control statement now functions the same for all copy statements.

For more information, see the "DTLURDMO - Data Map Utility" chapter in the *PowerExchange Utilities Guide*.

Behavior Change in 10.4.0

PowerExchange 10.4.0 introduces the following behavior change for the DTLUCBRG and DTLURDMO utilities.

REGION Size for DTLURDMO and DTLUCBRG

In PowerExchange 10.4.0, if you run the DTLURDMO or DTLUCBRG utilities on z/OS, specify a REGION size of at least 64M.

Changes to the architecture of these utilities require additional memory to process the utility functions. If you have existing DTLUCBRG or DTLURDMO jobs, make sure the REGION size is set to 64M or larger before you run the jobs.

PowerExchange 10.2 HotFix 2 - New Features and Changes for PowerExchange Utilities

This section describes PowerExchange 10.2 HotFix 2 new features and changes that are related to PowerExchange utilities.

New Features in 10.2 HotFix 2

PowerExchange 10.2 HotFix 2 introduces the following new features for PowerExchange utilities:

PWXCATMY Utility for the Catalog of MySQL Source Table Definitions

The new PWXCATMY utility creates, prepares, and manages the catalog tables that PowerExchange requires for MySQL sources. The utility also reports information from the catalog.

The catalog stores source table definitions. When PowerExchange detects DDL changes of CDC interest to registered source tables, PowerExchange updates the source table definitions in the catalog with the

changes. This feature helps avoid errors when PowerExchange reads change data from DDL-updated source tables.

The utility runs on supported Linux or Windows systems.

Use the utility to perform the following types of catalog-related operations:

- Create the catalog tables, PWXCatTables and PWXCatUpdates, in the MySQL source database or in another local or remote MySQL database.

- Show the DDL statements for creating the catalog tables.

- Verify that the catalog tables exist and have the correct format.

- Create a point-in-time snapshot of the MySQL source table definitions and record the snapshot definitions in the catalog. You must take an initial snapshot of all tables from which change data is captured prior to starting change data capture.

- Remove, or unregister, source table definitions from the catalog.

- List the source table names for which table definitions exist in the catalog.

- Dump the source table definitions that are recorded in the catalog.

- Drop the catalog tables.

The PWXCATMY command syntax and parameters depend on the type of operation you want to perform.

For more information, see the "PWXCATMY - MySQL Catalog Utility" chapter in the *PowerExchange Utilities Guide*.

PowerExchange 10.2 HotFix 1 - New Features and Changes for PowerExchange Utilities

This section describes PowerExchange 10.2 HotFix 1 new features and changes that are related to PowerExchange utilities.

New Features in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following new features for PowerExchange utilities:

Data Map Creation Utility Enhancement

The Data Map Creation utility, createdatamaps, can now filter columns in data maps based on column name. To apply column name filters, include the filterColumnGroup and filter elements in the control file. These elements are defined by the **FilterColumnGroup** and **Filter** complex types, respectively, in the schema file.

FilterColumnGroup Complex Type

> The FilterColumnGroup complex type defines filtering criteria for a table or set of tables. The FilterColumnGroup complex type includes the following element:
> **Filter**
>
>> Defines the filter criteria.
>>
>> Type = Filter
>>
>> Cardinality = 0 to 1

Filter Complex Type

The Filter complex type defines the filtering criteria for columns and optionally for tables. The Filter complex type includes the following elements:

columnName

Column name to be filtered.

The columName element accepts asterisks (*) and question marks (?) as wildcard characters. An asterisk represents one or more matching characters. A question mark represents a single matching character.

Type = string, length = 1 to 128

Default = FILLER*

Cardinality = 0 to 1

exclude

Whether to include or exclude column names that match the criteria.

Type = boolean

Default = true

Cardinality = 0 to 1

tableName

Name of table to which the criteria apply. If tableName is not specified, the filter criteria apply to all tables.

Type = string, length = 1 to 128

Cardinality = 0 to 1

For more information, see the "createdatamaps - Data Map Creation Utility" chapter in the *PowerExchange Utilities Guide*.

DTLUCBRG Utility Generates Capture Registrations for MySQL Sources

The DTLUCBRG utility can now generate capture registrations and extraction maps in batch for MySQL CDC source tables.

When you define parameters in the dtlucbrg.txt file, you must set the DBTYPE parameter to MYS and specify the MYSOPTS parameter with the DBSERVER subparameter.

For more information, see the "DTLUCBRG - Batch Registration Utility" chapter in the *PowerExchange Utilities Guide*.

DTLUCBRG Utility Generates Before-Image and Change-Indicator Columns

The DTLUCBRG utility can now generate before-image and change-indicator columns for the data columns in extraction maps.

You must specify the new CREATEBICI parameter for the utility.

For more information, see the "DTLUCBRG - Batch Registration Utility" chapter in the *PowerExchange Utilities Guide*.

PWXUCGRP Utility for Reporting the Capture Registrations in the CCT File

The new PWXUCGRP utility prints reports about the capture registrations that are recorded in the CCT file. The utility runs on Linux, UNIX, or Windows.

This utility includes parameters that you can use to control the report output in the following ways:

- Filter report output by database type, registration status, or user-defined registration name.
- Sort report output by user-defined capture registration name, registration name tag, or schema and table name.
- Control the level of detail in the report. The report can include a single line, several lines of summary information, or detailed column-level information for each capture registration.

For more information, see the "PWXUCRGP - Capture Registration Print Utility" chapter in the *PowerExchange Utilities Guide*.

PWXUGSK Utility for Reporting SSL Information

The new PWXUGSK utility generates reports that contain SSL information for a PowerExchange Listener on z/OS. The utility runs on z/OS.

The utility includes the following commands:

- PING. Verifies that the following items to ensure that connection to the remote PowerExchange Listener can succeed:
  - The specified user ID has the authority to view security certificates for the PowerExchange Listener on z/OS.
  - The certificates are current and valid.
  - The AT-TLS rules can intercept inbound requests, remove the TLS information, and send TCP/IP packets to the PowerExchange Listener.
- REPORT_CERTIFICATES. Prints a report of certificate information from a RACF keyring or SAF database.
- REPORT_CIPHERS. Prints a report of the cipher suites that are available for a specific user.
- REPORT_ERROR_CODES. Prints a report that lists error codes that were returned from the z/OS system during an attempt to establish a secure connection to the PowerExchange Listener on z/OS. These errors are also written to messages in the TCP/IP JES message log.

For more information, see the "PWXUSSL - PowerExchange SSL Reporting Utility" chapter in the *PowerExchange Utilities Guide*.

Parameter and Option Changes in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces new and changed parameters for the DTLUCBRG utility.

DTLUCBRG Utility Parameters

In PowerExchange 10.2 HotFix 1, the following DTLUCBRG utility parameters are new or changed:

CREATEBICI

> *New*. Controls whether the DTLUCBRG utility generates a before-image (BI) column, change-indicator (CI) column, or both for data columns in extraction maps. This parameter applies to all extraction maps that the utility creates. If you specify multiple tables by using a table-name mask, the CREATEBICI keywords apply to all of the tables that match the mask.

Syntax:

```
CREATEBICI=(COLUMNS={PKFK|ALL|FILE}, MAXCOLS={number_of_columns|500}, EXTINFO={BI|CI|
BICI}, INPUT_FN=input_file_name, OUTPUT_FN=output_file_name, ERROR_FN=error_file_name)
```

Subparameters:

- **COLUMNS**. Indicates the columns in the extraction map for which the utility generates BI columns, CI columns, or both types of columns, as indicated by the EXTINFO keyword. Options are:

    - **PKFK**. Generate BI and CI columns for primary-key and foreign-key columns.

    - **ALL**. Generate BI and CI columns for all selected columns in the extraction map.

    - **FILE**. Generate BI and CI columns for columns that are defined in the table schema in the utility input file.

    No default is provided.

- **MAXCOLS**. Specifies the maximum number of columns for which the utility generates BI and CI columns in the extraction map. Valid values are 10 through 32000. Default is 500.
  How you set this keyword depends on the COLUMNS setting. Use the following guidelines:

    - If COLUMNS=FILE, the MAXCOLS value must be equal to or greater than the number of entries in the input file.

    - If COLUMNS=ALL, the MAXCOLS value must be equal to or greater than the largest number of columns for a registered table.

    - If COLUMNS=PKFK, the MAXCOLS value must be equal to or greater than the number of primary and foreign keys in the largest registered table.

- **EXTINFO**. Specifies the type or types of metadata columns to generate in the extraction maps. Options are:

    - **BI**. Before-image columns.

    - **CI**. Change-indicator columns.

    - **BICI**. Both BI and CI columns.

    Default is BICI.

    Note: In some cases, the BI or CI column cannot be created. For example, the utility cannot create a BI column for DB2 z/OS LOB columns in extraction maps. If you try to create a BI column for DB2 for z/OS LOB columns, the request is ignored and a warning message is written to the output file.

- **INPUT_FN**. On Linux, Unix, and Windows, specifies an input file that contains the column names for the BI and CI columns when the COLUMNS keyword is set to **FILE**. On z/OS, this keyword accepts only **Y** or **N**. If **Y** is specified, the utility uses default, preallocated data sets.

- **OUTPUT_FN**. On Linux, Unix, and Windows, specifies the name of the output file that contains log information about the BI and CI columns created in the extraction maps. On z/OS, this keyword accepts only **Y** or **N**. If **Y** is specified, the utility uses default, preallocated data sets.

- **ERROR_FN**. On Linux, Unix, and Windows, specifies a file that lists the columns for which BI and CI columns failed to be generated in the extraction maps. On z/OS, this keyword accepts only **Y** or **N**. If **Y** is specified, the utility uses default, preallocated data sets.

Note: If both CREATEBICI and RPTCOLS=Y are specified, the utility adds BI and CI columns to the output report with the value **Y** or **N** in each of these columns.

DBID

Changed. In this parameter, you can now specify the new **MYS** option for MySQL CDC sources.

INSTANCE

Changed. In this parameter, you can now optionally enter a unique, user-defined instance identifier for the MySQL database server when DBID=MYS. Maximum length is seven characters. This identifier is used to identify a set of registrations for tables in the database on the MySQL server. This identifier is also incorporated into the names of the extraction maps that the utility creates. If you use the PowerExchange Logger for Linux, UNIX, and Windows, ensure that this instance identifier matches the DBID parameter value in the Logger configuration file. If you do not enter this instance value, PowerExchange generates a unique instance identifier that is composed of all or part of the database name followed by a 3-digit number if a number is required to make the identifier unique.

MYSOPTS

New. This parameter and subparameter have been added for MySQL CDC sources.

Syntax:

```
MYSOPTS=(DBSERVER="{database_server_name|localhost}[{,port_number|3306}]")
```

Subparameter:

- **DBSERVER**. Enter the server name or IP address of the MySQL server where the source database is located. If the MySQL server is on the local host where the Navigator runs, you can enter **localhost**. Optionally, you can append the port number if you use a port other than the default port of 3306, for example, `DBSERVER=localhost,3456`.

For more information, see the "DTLUCBRG - Batch Registration Utility" chapter of the *PowerExchange Utilities Guide*.

Command Changes in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces new commands for the PWXUSSL utility.

PWXUSSL Utility New Commands

The PWXUSSL utility has been enhanced to include a PING command and other new commands for generating additional types of reports.

The following new commands are supported:

- CONVERT_CERT_PKCS12_PEM. Converts a PKCS12DER format certificate file to the PEM format for use on a Linux, Unix, or Windows machine.

- PING. Verifies the following items:

  - A PowerExchange user has the authority to view security certificates for a PowerExchange Listener on Linux, Unix, or Windows.

  - The certificates are current and valid.

  - The TCP/IP packets can be sent to the PowerExchange Listener.

- REPORT_CODES. Generates a report that lists return codes from an attempt to establish a secure connection between a PowerExchange Listener and client.

- REPORT_CONFIG. Generates a report that describes the PowerExchange Listener and client SSL configuration. You can use this report to troubleshoot any issues associated with the PowerExchange DBMOVER configuration files.

- REPORT_ERROR_CODES. Generates a report that lists error codes returned from OpenSSL processing during an attempt to establish a secure connection between a PowerExchange Listener and client. You can use the report to diagnose errors.

For more information, see the "PWXUSSL - PowerExchange SSL Reporting Utility" chapter in the *PowerExchange Utilities Guide*.

PowerExchange 10.2 - New Features and Changes for PowerExchange Utilities

This section describes PowerExchange 10.2 new features and changes that are related to PowerExchange utilities.

Parameter and Option Changes in 10.2

PowerExchange 10.2 introduces new parameters for the DTLUTSK utility.

DTLUTSK Utility Parameter

You can specify the following new DTLUTSK utility parameter:

Parameter	Description
NODETYPE	When CMD=LISTLOCATIONS, specify one of the following node types: - **N**. Default. List locations that are defined in NODE statements in the DBMOVER configuration file. - **A**. List locations that are defined in NODE or SVCNODE statements in the DBMOVER configuration file. - **S**. List locations that are defined in SVCNODE statements in the DBMOVER configuration file.

For more information, see the "DTLUTSK - Task Control Utility" chapter in the *PowerExchange Utilities Guide*.

PowerExchange 10.1.1 - New Features and Changes for PowerExchange Utilities

This section describes PowerExchange 10.1.1 new features and changes that are related to PowerExchange utilities.

New Features in 10.1.1

PowerExchange 10.1.1 introduces the following new features for PowerExchange utilities:

Enhancement to the Data Map Creation Utility

PowerExchange introduces an enhancement to the data map creation utility. You can now include the following element in a control file for IMS, sequential data set, and VSAM data sources.

decimalPointIsComma

> Defines whether a comma represents a decimal point character in fields that contain noninteger numbers. Set this value to match the value of the DECPOINT statement in the DBMOVER configuration file.
>
> Type = boolean
>
> Default = false
>
> Cardinality = 0 to 1

For more information, see the "createdatamaps - Data Map Creation Utility" chapter in the *PowerExchange Utilities Guide*.

PowerExchange 10.1 - New Features and Changes for PowerExchange Utilities

This section describes PowerExchange 10.1 new features and changes that are related to PowerExchange utilities.

New Features in 10.1

PowerExchange 10.1 introduces the following new features for PowerExchange utilities.

Enhancements to the Data Map Creation Utility

For sequential and VSAM data sources on z/OS, when you configure the data map creation utility to find record ID (RID) fields, you can configure the following new elements in the control file:

- excludeUnmatchedRecords element. Creates data map records only for those layouts that match all of the data records that have a given RID value.

  By default, the utility preserves the original behavior. That is, the utility defines one record and one table in the data map for each layout that the copybook defines, up to the maximum number that the maxRedefines element specifies. For each layout that matches all of the data records that have a given RID value, the utility assigns an RID value to the record in the data map.

- fieldOffset element. Specifies the byte offset of the RID in a data record. This feature is useful if you know the location of this field in the copybook.

  By default, the utility preserves the original behavior. That is, if you configure the utility to find RID fields, the utility determines the location of the RID field.

- matchFieldWidth element. Specifes that the FieldWidth element defines the exact byte width of the RID field instead of the maximum number of bytes. This feature is useful when you know the exact width of this field.

  By default, the utility preserves the original behavior. That is, the fieldWidth value that you define represents the maximum number of bytes in the RID field.

For more information, see the "createdatamaps - Data Map Creation Utility" chapter in the *PowerExchange Utilities Guide*.

PowerExchange 10.0 - New Features and Changes for PowerExchange Utilities

This section describes PowerExchange 10.0 new features and changes that are related to PowerExchange utilities.

New Features in 10.0

PowerExchange 10.0 introduces the following new features for PowerExchange utilities.

Enhancements to the Data Map Creation Utility

PowerExchange 10.0 provides the following enhancements to the data map creation utility:

- For sequential and VSAM data sources on z/OS, you can configure the control file to find record ID (RID) fields. This feature is useful if the COBOL copybook includes REDEFINE statements or multiple 01-level records and includes one or more RID fields that identify the record layout of each data record. The utility reads the COBOL copybook and the data files that you specify in the control file to find likely RID fields and the data values that they contain. For each valid record layout, the utility creates a table and a record in the data map and assigns a data value to the RID field.

- You can configure the control file so that the utility skips the number of initial records that you specify when it reads the data file.

To configure these features, you can include the following new elements in the control file:

cacheConfig

Controls the data cache on disk. The utility downloads data records from the z/OS system and saves them to a temporary disk cache to process them. You can define the cacheConfig element at a global level but not at a data map instance level.

The CacheConfig element includes the following elements:

cachePath

Specifies the full path to the folder for temporary working files. The cache path is written to the message log.

flushDataMode

Specifies when to flush the cache of the data records that were downloaded from the z/OS system.

Valid values:

- e - Flush the cache when the createdatamaps utility finishes.
- d - Flush the cache after each data map is created.

The default value of "e" allows data to be shared by multiple data map generations during one createdatamaps session.

findRecordIds

Controls whether the utility finds RID fields. You can specify findRecordIds at the global or data map instance level.

ridConfig

Defines parameters for finding RID fields. It includes following elements:

readRecordLimit

    Maximum number of data records to read from each data file.

recordTypeLimit

    Maximum number of record types in the data file.

fieldWidth

    Maximum width, in bytes, of an RID field.

skipRecordCount

    Specifies the number of initial records that the utility skips when it reads the data file.

For more information, see the "createdatamaps - Data Map Creation Utility" chapter in the *PowerExchange Utilities Guide*.

CHAPTER 11

PowerExchange for Adabas

This chapter includes the following topics:

PowerExchange 10.2 HotFix 1 - New Features and Changes for Adabas

This section describes PowerExchange 10.2 HotFix 1 new features and changes that are related to Adabas sources or targets.

New Features in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following new feature for Adabas data sources:

Support for Adabas Version 8.4.*x*

PowerExchange 10.2 HotFix 1 adds support for Adabas 8.4.*x* on z/OS for CDC and bulk data movement sessions.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide* and the Product Availability Matrix at
https://network.informatica.com/community/informatica-network/product-availability-matrices.

Command Changes in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces pwxcmd command support for the Adabas ECCR.

pwxcmd Commands for the Adabas ECCR

PowerExchange 10.2 HotFix 1 introduces pwxcmd commands for the Adabas ECCR. You can issue these commands from a Linux, Unix, or Windows instance of PowerExchange to control or monitor an Adabas ECCR on z/OS.

The following table describes the pwxcmd commands for the Adabas ECCR:

Command	Description
pwxcmd close	Stops ECCR processing. When you restart the ECCR, it resumes processing the log from the point where it stopped. No changes are lost.
pwxcmd displaystats	Displays monitoring statistics for the ECCR.
pwxcmd displaytrace	Displays the status of active trace functions for the ECCR.
pwxcmd traceoff	Turns off trace functions for the ECCR.
pwxcmd traceon	Turns on trace functions for the ECCR.

Note: You must run the Adabas ECCR with the ADA82 parameter to issue the pwxcmd commands. If the ADA82 parameter is not included in the Adabas ECCR JCL, the command handler does not start.

For more information about the pwxcmd commands, see the *PowerExchange Command Reference*.

Parameter and Option Changes in 10.2.0 HotFix 1

PowerExchange 10.2.0 HotFix 1 introduces a Adabas-specific configuration parameter in the DBMOVER configuration file.

DBMOVER Configuration File Statement

You can specify the following new statement in the DBMOVER configuration member:

ADABAS_MU_SEARCH={Y|N}

New. Enables PowerExchange to include Adabas multiple-value fields in SQL search and selection operations. A multiple-value field is a single field that occurs a variable number of times in a record. The MU field name is prefixed with a $ symbol and is allowed in searches. The MU field must be an Adabas descriptor field. It appears as type MU in an Adabas record description. Options are:

- **Y**. PowerExchange uses multiple-value Adabas descriptor fields in searches. If you specify a multiple-value field in a WHERE clause of an SQL SELECT statement, PowerExchange scans the field for values specified in the search.

- **N**. PowerExchange will not include Adabas multiple-value fields in searches.

Default is N.

Note: If you set the ADABAS_MU_SEARCH statement to Y, make sure that the ADAOPT statement is also set to Y to use L3 commands to read records from file in logical sequence by descriptor value. If the search cannot be optimized, and there are OR criteria in the SQL, the search will fail.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.1.1 - New Features and Changes for Adabas

This section describes PowerExchange 10.1.1 new features and changes that are related to Adabas sources or targets.

New Features in 10.1.1

PowerExchange 10.1.1 introduces the following new feature for Adabas data sources:

Support for Adabas Cipher Codes

PowerExchange provides bulk data movement support for Adabas databases that are encrypted with a cipher code.

To enable support for Adabas cipher codes, perform the following actions:

- Write a user exit program in Assembler or C that returns a result set with the information that PowerExchange requires to perform the decryption.
- Include the START_UP_USER_EXIT statement in the DBMOVER configuration file on the PowerExchange Listener machine. This statement identifies the user exit program and programming language.

PowerExchange calls the user exit program each time the PowerExchange Listener starts or shuts down. At Listener startup, the exit program provides information for accessing one or more Adabas databases that are protected by an Adabas cipher code. At Listener shutdown, the exit program cleans up resources that the exit program allocated or used.

The storage area that the user exit program provides contains the following comma-separated fields:

- ADA. Required. Identifies the source type to which the user exit program applies. ADA is the only supported value.
- DBID=*nnn*. Optional. The database ID of a database that is protected by an Adabas cipher code. If DBID is not specified or is equal to 0, the cipher code applies to all DBIDs.
- FILENUM=*nnn*. Optional. The file number of an Adabas file that is protected by an Adabas cipher code. If FILENUM is not specified or is equal to 0, the cipher code applies to all FILENUM numbers.
- ActionFlag=*n*. Required. The type of action that the user exit performs. A value of 1 indicates the decryption of data by using an Adabas cipher code.
- ActionValue=*cipher_code*. Required. An Adabas cipher code of up to eight numeric digits.

For more information, see the "Adabas Bulk Data Movement" chapter in the *PowerExchange Bulk Data Movement Guide*.

PowerExchange 10.1 - New Features and Changes for Adabas

This section describes PowerExchange 10.1 new features and changes that are related to Adabas sources or targets.

Parameter and Option Changes in 10.1

PowerExchange 10.1 includes a new parameter for the Adabas ECCR.

Adabas ECCR Parameter

You can now specify the following optional parameter in the RUNLIB(ADAECRP1) member:

ETID_DATE={N|Y}

Controls whether the Adabas ECCR entirely replaces values that start with x'40' in the ETID field in ADASEL-expanded PLOG files with all x'40' values when writing the ETID values to the temporary PowerExchange file that stores commit information for source UOWs. The x'40' values represent blank spaces.

In the ADASEL-expanded PLOG files, the ETID userid can be expressed as either an actual user ID or a timestamp value. The ADASEL utility can produce ETID timestamp values in hexadecimal timestamp format, for example, x'400015321F404040', or replace timestamp values entirely with x'40' values, for example, x'4040404040404040'.

With Adabas versions earlier than 8.3, the PowerExchange ECCR always sets the ETID timestamp values to all x'40' values if the ETID values begin with x'40'. This behavior is the default behavior.

Beginning with Adabas version 8.3, the ADASEL utility writes internally generated values that begin with x'40' to the ETID field in the PLOG records, unless the user application provides a specific user ID in the call to Adabas. You can use this parameter to prevent the ECCR from writing the internally generated values as all x'40' values.

If the ADASEL-expanded PLOG files contain ETID values in hexadecimal timestamp format or in ADASEL-generated internal format and the ECCR replaces these values with all x'40' values, the ECCR will not be able match the change records from the PLOGs to the commit records. In this case, UOWs might remain open, causing the PowerExchange Logger for z/OS to generate many spill files. Also, spill file allocation errors and CDC session failures might occur. Use this parameter to allow the ECCR to read the ETID values "as is" from the PLOGs so that these errors can be avoided.

Valid values:

- **N**. The ECCR replaces ETID values that begin with x'40' entirely with x'40' values when writing these ETID values to the temporary PowerExchange commit file. This behavior is acceptable if the ADASEL utility produces ETID timestamp values as all x'40' values in the expanded PLOG files. The ECCR can still match the change records in PLOG files with the commit records in the PowerExchange commit file to determine where UOW commits occur.

- **Y**. The ECCR does not replace ETID values that begin with x'40' entirely with x'40' values when writing these ETID values to the temporary PowerExchange commit file. The ECCR writes the values exactly as read from the expanded PLOG files to the PowerExchange commit file. Use this option if the ADASEL utility writes ETID values in hexadecimal timestamp format or in the ADASEL-generated internal format to the PLOG files. In these cases, this option can prevent a large number of outstanding UOWs, spill file allocation errors, and session failures.

Default is N.

For more information, see the "Adabas Change Data Capture" chapter of the *PowerExchange CDC Guide for z/OS*.

This parameter is also available in 9.6.1 HotFix 4. It is not available in 10.0.

PowerExchange 10.0 - New Features and Changes for Adabas

This section describes PowerExchange 10.0 new features and changes that are related to Adabas sources or targets.

New Features in 10.0

PowerExchange 10.0 introduces the following new feature for Adabas data sources:

Adabas Version 8.3.*x* Support

PowerExchange 10.0 adds support for Adabas 8.3.*x* on z/OS for CDC and bulk data movement sessions.

Support for Adabas sources on Linux, UNIX, and Windows and for Adabas unload files on z/OS as sources is deprecated.

For more information, see "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide* and the Product Availability Matrix at http://mysupport.informatica.com.

CHAPTER 12

PowerExchange for CA Datacom

This chapter includes the following topics:

PowerExchange 10.2 HotFix 1 - New Features and Changes for Datacom

This section describes PowerExchange 10.2 HotFix 1 changes that are related to Datacom sources or targets.

New Features in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following new features for Datacom data sources and targets:

Support for Datacom Version 15.1

PowerExchange 10.2 HotFix 1 adds support for CA Datacom Version 15.1 on z/OS for CDC and bulk data movement sessions.

For more information, see "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide* and the Product Availability Matrix at
https://network.informatica.com/community/informatica-network/product-availability-matrices.

Command Changes in 10.2 Hotfix 1

PowerExchange 10.2 HotFix 1 introduces pwxcmd command support for the Datacom table-based ECCR.

pwxcmd Commands for the Datacom Table-Based ECCR

PowerExchange 10.2 HotFix 1 introduces pwxcmd commands for the Datacom table-based ECCR. You can issue these commands from a Linux, Unix, or Windows instance of PowerExchange to control or monitor a Datacom table-based ECCR on z/OS.

The following table describes the pwxcmd commands for the Datacom ECCR:

Command	Description
pwxcmd close	Stops ECCR processing. When you restart the ECCR, it resumes processing the log from the point where it stopped. No changes are lost.
pwxcmd displaystats	Displays monitoring statistics for the ECCR.
pwxcmd displaytrace	Displays the status of active trace functions for the ECCR.
pwxcmd traceoff	Turns trace functions off for the ECCR.
pwxcmd traceon	Turns trace functions on for the ECCR.

For more information about the pwxcmd commands, see the *PowerExchange Command Reference*.

PowerExchange 10.0 - New Features and Changes for Datacom

This section describes PowerExchange 10.0 changes that are related to Datacom sources or targets.

New Features in 10.0

PowerExchange 10.0 introduces the following new features for Datacom data sources and targets:

Datacom Version 15 Support

PowerExchange 10.0 adds support for CA Datacom Version 15 on z/OS for CDC and bulk data movement sessions.

Support for Datacom Version 11 is deprecated.

For more information, see "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide* and the Product Availability Matrix at http://mysupport.informatica.com.

CHAPTER 13

PowerExchange for DB2 for i

This chapter includes the following topics:

PowerExchange 10.4.0 - New Features and Changes for Db2 for i

This section describes PowerExchange 10.4.0 changes that are related to Db2 for i (formerly i5/OS) data sources or targets.

New Features in 10.4.0

PowerExchange 10.4.0 introduces the following new feature for Db2 for i sources:

Support for DB2 for i Version 7.4

PowerExchange 10.4.0 adds support for DB2 for i Version 7.4. For bulk data movement, PowerExchange supports DB2 for i 7.4 sources and targets. For CDC, PowerExchange supports DB2 for i 7.4 sources.

PowerExchange 10.4.0 drops support for DB2 for i Version 7.1.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

PowerExchange 10.2 HotFix 1 - New Features and Changes for Db2 for i

This section describes PowerExchange 10.2 HotFix 1 changes that are related to Db2 for i (formerly i5/OS) data sources or targets.

Parameter and Option Changes in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces a change to a statement in the DBMOVER configuration member.

DBMOVER Configuration Member Parameter

PowerExchange 10.2 HotFix 1 adds an option for a parameter in the AS4J CAPI_CONNECTION statement in the DBMOVER configuration member.

The following optional parameter can specify the new P option:

LIBASUSER={N|Y|M|P}

> *Changed*. Specify the P option if you want PowerExchange to write the name of the program that made a DML change to the DTL__CAPXUSER field of the change record.
>
> The default value of N is retained.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.1.1 - New Features and Changes for DB2 for i5/OS

This section describes PowerExchange 10.1.1 changes that are related to DB2 for i5/OS data sources and targets.

New Features in 10.1.1

PowerExchange 10.1.1 introduces the following new feature for DB2 for i5/OS data sources:

DB2 for i5/OS Version 7.3 Support

PowerExchange 10.1.1 adds support for DB2 for i5/OS Version 7.3. For bulk data movement, PowerExchange supports DB2 for i5/OS 7.3 sources and targets. For CDC, PowerExchange supports DB2 for i5/OS 7.3 sources.

DB2 for i5/OS 7.3 introduced system-period temporal tables. A system-period temporal table stores the current versions of data rows and uses an associated history table to store prior versions of rows that were updated or deleted. PowerExchange supports these tables for bulk data movement and CDC. However, if a system-period temporal table contains hidden columns, when you create a capture registration for the table in the PowerExchange Navigator, do not select the hidden columns for change capture. If you include the hidden columns in the registration, PowerExchange extraction processing will end abnormally. For more information about system-period temporal tables, see the IBM i 7.3 database administration documentation.

PowerExchange 10.1.1 drops support for DB2 for i5/OS Version 6.1.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

PowerExchange 10.1 - New Features and Changes for DB2 for i5/OS

This section describes PowerExchange 10.1 changes that are related to DB2 for i5/OS data sources.

New Features in 10.1

PowerExchange 10.1 introduces the following new feature for DB2 for i5/OS data sources:

Generating SQL Statements for Re-creating Source or Target Objects for Troubleshooting

PowerExchange now provides a command that generates SQL statements for re-creating SQL source or target objects in a PowerExchange for DB2 for i5/OS environment. The command is intended to produce SQL statements that Informatica Global Customer Support can use for troubleshooting bulk data movement or CDC problems.

To generate the SQL statements for an i5/OS SQL object, enter the RTVSQLSTMT command from the i5/OS system where PowerExchange is installed. The PowerExchange *dtllib* library must be in the current library list for the i5/OS job. The RTVSQLSTMT command prompts you for a series of parameters that control what SQL statements are generated. The RTVSQLSTMT command validates your entries to reduce the risk of errors

Important: At any point, you can display Help information in the i5/OS Console to see field descriptions, command examples, and the authorities that are required to run the command.

For more information, see the *PowerExchange Bulk Data Movement Guide* or *PowerExchange CDC Guide for i5/OS*.

PowerExchange 10.0 - New Features and Changes for DB2 for i5/OS

This section describes PowerExchange 10.0 changes that are related to DB2 for i5/OS data sources.

New Features in 10.0

PowerExchange 10.0 introduces the following new feature for DB2 for i5/OS data sources:

Support for LOB Datatypes

Effective in 10.0, PowerExchange supports LOB datatypes in DB2 for i5/OS source tables in bulk data movement sessions. LOB datatypes include BLOB, CLOB, and DBCLOB.

The following restrictions apply to tables that includes LOB columns:

- You cannot access the data by using an NRDB SEQ data map or a DB2 data map.
- You cannot perform an insert into a target table that contains LOB columns.

CHAPTER 14

PowerExchange for DB2 for Linux, UNIX, and Windows

This chapter includes the following topics:

PowerExchange 10.2 - New Features and Changes for DB2 for Linux, UNIX, and Windows

This section describes PowerExchange 10.2 new features and changes that are related to DB2 for Linux, UNIX, and Windows data sources or targets.

Parameter and Option Changes in 10.2

PowerExchange 10.2 introduces the following changes to DB2 for Linux, UNIX, and Windows parameters.

DBMOVER Configuration File Statement

In the UDB CAPI_CONNECTION statement in the dbmover.cfg configuration file, you can now specify the following new optional parameter:

AGEOUTPERIOD=*minutes*

> *New*. The AGEOUTPERIOD parameter specifies the age, in minutes, at which an outstanding DB2 UOW that has no change records of CDC interest will be removed from the calculation of the CDC restart point. The age is calculated as the difference between the start time of the outstanding UOW and the current time. Use this parameter to prevent CDC failures that can occur if you shut down and then restart capture processing for a DB2 source while the transaction is outstanding. After the restart, the DB2 transaction log in which the outstanding UOW started might not be available, causing the PowerExchange DB2 read process to fail.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.1.1 - New Features and Changes for DB2 for Linux, UNIX, and Windows

This section describes PowerExchange 10.1.1 new features and changes that are related to DB2 for Linux, UNIX, and Windows data sources or targets.

New Features in 10.1.1

PowerExchange 10.1.1 introduces the following new feature for DB2 for Linux, UNIX, and Windows sources:

Support for DB2 for Linux, UNIX, and Windows Version 11.1

PowerExchange 10.1.1 adds support for DB2 for Linux, UNIX, and Windows Version 11.1 on Linux, UNIX, and Windows operating systems, except Solaris. For bulk data movement, PowerExchange 10.1.1 supports DB2 11.1 sources and targets. For CDC, PowerExchange 10.1.1 supports DB2 11.1 sources.

PowerExchange does not support DB2 11.1 on Solaris because IBM does not support DB2 11.1 on this platform.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

CHAPTER 15

PowerExchange for DB2 for z/OS

This chapter includes the following topics:

PowerExchange 10.2 - New Features and Changes for DB2 for z/OS

This section describes PowerExchange 10.2 changes that are related to DB2 for z/OS data sources.

New Features in 10.2

PowerExchange 10.2 introduces the following new features for DB2 for z/OS data sources:

DB2 12 for z/OS Support

PowerExchange adds support for DB2 12 for z/OS for bulk data movement sources and targets and CDC data sources.

If you are migrating a DB2 CDC data source to DB2 12, you do not need to upgrade the DB2 for z/OS ECCR capture directory tables. No changes have been made to the structure of these tables since DB2 11.

Before you migrate, check the DB2 DSN6SPRM RESTRICT_ALT_COL_FOR_DCC parameter setting. PowerExchange reports this setting in message PWXEDM177155I in the ECCR output. How this parameter is set determines whether you will need to cold start the ECCR during the DB2 migration, as follows:

- If the RESTRICT_ALT_COL_FOR_DCC parameter is set to NO, the ECCR will be able to process all DB2 log data that was generated during the DB2 catalog upgrade process and update the contents of the ECCR capture directory tables. A cold start is not required.

- If the RESTRICT_ALT_COL_FOR_DCC parameter is set to YES, the first time you start the ECCR after migrating to DB2 12.1.100, you must perform a cold start. In a data sharing environment, you might need to cold start the ECCR an additional time, depending on where the ECCR runs:

  - When the first member of the data sharing group is migrated to DB2 12.1.100, cold start the ECCR, regardless of where the ECCR runs.

  - If the ECCR runs on another member of the data sharing group, when that member is migrated to DB2 12.1.100, cold start of the ECCR again.

A cold start of the ECCR is *not* required after you migrate any other member in the data sharing group.

Note: When you upgrade from DB2 12.1.100 to 12.1.500, no ECCR cold start or other special action is required.

No special operational considerations apply to PowerExchange bulk data movement in a DB2 12 environment.

For more information, see the *PowerExchange Installation and Upgrade Guide* and the "DB2 for z/OS Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

Support for Image Copy Data Sources That Include Inline LOB Columns

PowerExchange adds support for DB2 for z/OS image copy data sources that include inline LOB columns.

PowerExchange does not support DB2 for z/OS image copy data sources that include externally stored LOB columns.

For more information, see the "DB2 for z/OS Bulk Data Movement" chapter in the *PowerExchange Bulk Data Movement Guide*.

Support for LOBs in DB2 for z/OS CDC Sources

For DB2 for z/OS source tables, PowerExchange can process change data from BLOB, CLOB, and DBCLOB columns, provided that the row size does not exceed 8 MB. PowerExchange reads the LOB data from the PowerExchange Logger log files instead of directly from the DB2 transaction logs.

PowerExchange CDC processing of LOB data depends on whether the data is stored fully inline in the base table space, as follows:

- When BLOB, CLOB, or DBCLOB data is stored fully inline, the row size in the base table space is limited by the maximum DB2 page size of 32 KB. The DB2 ECCR can capture LOB data up to the inline length, provided that this length does not exceed the 32-KB page size limit minus the size of the DB2 control fields and the size of the columns. PowerExchange delivers the inline LOB data to PowerCenter workflows that use a DB2zOS CDC application connection.

- When CLOB (including DBCLOB) data is stored fully or partially in an auxiliary table space, you can use the new generated DTL__ST column in the extraction map to determine if the CLOB data in the PowerExchange Logger log files is complete or incomplete. If the CLOB data is incomplete, you can use an Expression transformation and unconnected Lookup transformation in the PowerCenter workflow to retrieve all of the current CLOB data from the DB2 source table so that all of this data can be delivered to the target. Informatica recommends that you use a single target because the use of multiple targets can cause updates to be applied in the wrong sequence.

  Note: When a Lookup transformation is used to retrieve CLOB data, the before images of rows that contain the CLOB data are not available for an UPDATE or DELETE operation. However, the after images of rows that contain the CLOB data are available for an UPDATE or INSERT operation.

- When BLOB data is stored fully or partially in an auxiliary table space, PowerCenter cannot retrieve all of the BLOB data because of limitations related to using binary ports in Lookup transformations. In this case, contact Global Customer Support to determine if a custom solution is available.

For more information, see the "DB2 for z/OS Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

Parameter and Option Changes in 10.2

PowerExchange 10.2 introduces the following changes to DB2 for z/OS parameters.

DB2 ECCR Configuration Statements in the REPL2OPT DD Data Set

PowerExchange includes a changed configuration statement in the data set or RUNLIB member that is allocated by the REPL2OPT DD statement in the DB2 for z/OS ECCR JCL. This statement is optional.

IFI306 … [NDWAIT={*nnnn*|300}]

> *Changed*. You can now optionally include the NDWAIT parameter in the IFI306 statement. This parameter specifies the interval, in hundredths of a second, that the ECCR waits for DB2 to return change data before sending another request to IFI to retrieve change data from the DB2 logs. Valid values are 1-9999. Default is 300.

For more information, see the "DB2 for z/OS Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

PowerExchange 10.1.1 HotFix 1 - New Features and Changes for DB2 for z/OS

This section describes PowerExchange 10.1.1 HotFix 1 changes that are related to DB2 for z/OS data sources.

New Features in 10.1.1 HotFix 1

PowerExchange 10.1.1 HotFix 1 introduces the following new feature for DB2 for z/OS data sources:

DB2 12 for z/OS Support

PowerExchange adds support for DB2 12 for z/OS for bulk data movement sources and targets and CDC data sources.

If you are migrating a DB2 CDC data source to DB2 12, you do not need to upgrade the DB2 for z/OS ECCR capture directory tables. No changes have been made to the structure of these tables since DB2 11.

Before you migrate, check the DB2 DSN6SPRM RESTRICT_ALT_COL_FOR_DCC parameter setting. PowerExchange reports this setting in message PWXEDM177155I in the ECCR output. How this parameter is set determines whether you will need to cold start the ECCR during the DB2 migration, as follows:

- If the RESTRICT_ALT_COL_FOR_DCC parameter is set to NO, the ECCR will be able to process all DB2 log data that was generated during the DB2 catalog upgrade process and update the contents of the ECCR capture directory tables. A cold start is not required.

- If the RESTRICT_ALT_COL_FOR_DCC parameter is set to YES, the first time you start the ECCR after migrating to DB2 12.1.100, you must perform a cold start. In a data sharing environment, you might need to cold start the ECCR an additional time, depending on where the ECCR runs:
  - When the first member of the data sharing group is migrated to DB2 12.1.100, cold start the ECCR, regardless of where the ECCR runs.
  - If the ECCR runs on another member of the data sharing group, when that member is migrated to DB2 12.1.100, cold start of the ECCR again.

A cold start of the ECCR is *not* required after you migrate any other member in the data sharing group.

Note: When you upgrade from DB2 12.1.100 to 12.1.500, no ECCR cold start or other special action is required.

No special operational considerations apply to PowerExchange bulk data movement in a DB2 12 environment.

For more information, see the *PowerExchange Installation and Upgrade Guide* and the "DB2 for z/OS Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

Parameter and Option Changes in 10.1.1 HotFix 1

PowerExchange 10.1.1 HotFix 1 introduces the following changes to DB2 for z/OS parameters.

DB2 ECCR Configuration Statements in the REPL2OPT DD Data Set

PowerExchange includes a changed configuration statement in the data set or RUNLIB member that is allocated by the REPL2OPT DD statement in the DB2 for z/OS ECCR JCL. This statement is optional.

IFI306 … [NDWAIT={*nnnn*|300}]

Changed. You can now optionally include the NDWAIT parameter in the IFI306 statement. This parameter specifies the interval, in hundredths of a second, that the ECCR waits for DB2 to return change data before sending another request to IFI to retrieve change data from the DB2 logs. Valid values are 1-9999. Default is 300.

For more information, see the "DB2 for z/OS Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

PowerExchange 10.1.1 - New Features and Changes for DB2 for z/OS

This section describes PowerExchange 10.1.1 changes that are related to DB2 for z/OS data sources.

New Features in 10.1.1

PowerExchange 10.1.1 introduces the following new feature for DB2 for z/OS data sources:

Support for LOB Datatypes in DB2 for z/OS Data Maps

PowerExchange introduces support for LOB datatypes in DB2 for z/OS data maps. LOB datatypes include BLOB, CLOB, and DBCLOB.

In the PowerExchange Navigator, you can define a data map for a DB2 for z/OS data source that includes LOB columns. After you define the data map, you can perform a database row test on the table, and you can include the table as a source in a PowerCenter bulk data movement session.

Because DB2 is a relational database, a DB2 data map is not required for PowerExchange to access DB2 tables. However, in certain cases, defining a data map allows you to process the data in a way that is not otherwise possible. For example, if a CHAR column contains multiple packed decimal fields, you can define a DB2 data map to split data in the CHAR column into separate columns with the correct datatype for the content.

The maximum length of a DB2 row with LOB columns that you can define in a data map or include in a PowerExchange bulk data movement operation is 8 MB.

In a bulk data movement session, PowerExchange already provides support for LOB columns in DB2 data sources for which a data map is not defined.

For more information, see the "Data Maps for Specific Data Sources" chapter in the *PowerExchange Navigator User Guide*.

Parameter and Option Changes in 10.1.1

PowerExchange 10.1.1 introduces the following changes to DB2 for z/OS parameters.

DB2 ECCR Configuration Statement in the REPL2OPT DD Data Set

PowerExchange 10.1.1 introduces the new SHOWGENERATED configuration statement in the data set or RUNLIB member that is allocated by the REPL2OPT DD statement in the DB2 for z/OS ECCR JCL. This statement is optional and has no parameters.

SHOWGENERATED

> Include this statement if you want the ECCR to list internally generated control statements in its output. If you have many capture registrations, the SHOWGENERATED statement can substantially increase the amount of ECCR output that is written to the EDMMSG data set. By default, the internally generated control statements are suppressed because they are not needed for normal operation. However, if you need them for debugging purposes, include this SHOWGENERATED statement.

For more information, see the "DB2 for z/OS Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

Command Changes in 10.1.1

PowerExchange 10.1.1 introduces a change to a DB2 for z/OS ECCR command.

DB2 for z/OS ECCR DISPLAY Command

When you issue a DB2 for z/OS ECCR DISPLAY command, the ECCR now displays detail-level statistics in the PWXEDM177085I message only for source tables for which it has received DML changes from DB2. The PWXEDM177085I and PWXEDM177084I statistics messages are written to the EDMMSG data set.

To list detail-level statistics for every source table, including those with no change activity, you can include the new ALL parameter in the DISPLAY command. Use the following syntax:

```
DISPLAY,ALL
DISPLAY,ST,ALL
DISPLAY,SQ,ALL
```

Note: Because ST is the default parameter for the DISPLAY command, DISPLAY,ALL and DISPLAY,ST,ALL are equivalent.

Parameter description:

ALL

Prints the SQ or ST detail-level statistics in message PWXEDM177085I for every source table, even those tables for which the ECCR has received no DML changes. If you omit the ALL parameter, the ECCR prints the detail-level statistics only for the source tables for which the ECCR received at least one DML change. If you specify the ALL parameter without the SQ or ST parameter, the ALL parameter applies to the ST detail-level statistics.

Example DISPLAY,ST output:

```
PWXEDM177084I ABCDSNB  capture statistics at 2016-09-06 21.30.29
DB2 Log Location  000000000007AE9460B6.0000.0000
DB2 Log Timestamp 2016-09-06 21.30.17
Current Delay=        sec   Average Delay=            sec
DB2 Log records        REC_TOT      REC_INTV REC_PSEC
                        13             0         0
EDM Messages         MSG_TOT      MSG_INTV MSG_PSEC
                        2            0        0
PWXEDM177085I Detail level statistics follow
     MSG_TOT      MSG_INTV MSG_PSEC  TABLE_NAME
        1            0        0  ABCOOK1.TSTP1
        1            0        0  ABCOOK1.SVT@ALL
```

Example DISPLAY,ST,ALL output:

```
PWXEDM177084I ABCDSNB  capture statistics at 2016-09-06 21.31.05
DB2 Log Location  000000000007AE9460EA.0000.0000
DB2 Log Timestamp 2016-09-06 21.30.17
Current Delay=        sec   Average Delay=            sec
DB2 Log records        REC_TOT      REC_INTV REC_PSEC
                        13             0         0
EDM Messages         MSG_TOT      MSG_INTV MSG_PSEC
                        2            0        0
PWXEDM177085I Detail level statistics follow
   MSG_TOT      MSG_INTV MSG_PSEC  TABLE_NAME
      0            0        0  ABCOOK1.V11TAB
      0            0        0  ABCOOK1.TSTP3
      0            0        0  ABCOOK1.TSTP2
      1            0        0  ABCOOK1.TSTP1
      0            0        0  ABCOOK1.SVT@SCC
      1            0        0  ABCOOK1.SVT@ALL
      0            0        0  ABCOOK1.RRF1
      0            0        0  ABCOOK1.P750612
      0            0        0  ABCOOK1.P707951D
      0            0        0  ABCOOK1.P707951C
      0            0        0  ABCOOK1.P707951B
      0            0        0  ABCOOK1.P707951A
      0            0        0  ABCOOK1.COMP11112222333344445555666677778888999990000COMP
      0            0        0  ABCOOK1.QAALLTYPES_DMAP
```

For more information, see the "DB2 for z/OS ECCR Commands" chapter in the *PowerExchange Command Reference*.

Behavior Changes in 10.1.1

PowerExchange 10.1.1 introduces the following behavior changes for DB2 for z/OS data sources:

Installation Change for DB2 for z/OS CDC

During an installation or upgrade, PowerExchange now uses the DB2BINDB and DB2SGENB members in the RUNLIB library to bind the DB2 plan and packages and to upgrade the capture directory tables for all supported versions of DB2 for z/OS CDC sources.

Previously, PowerExchange used the DB2BIND and DB2 DB2SGEN8 members for DB2 sources earlier than Version 11 by default. For DB2 11 and later sources, you had to select the **DB2 V11+** option on the **DB2 CDC Parameters** page of the **z/OS Installation Assistant** to use the DB2BINDB and DB2GENB members, which are required for these later versions.

Now, when you run the jobs that bind the DB2 plan during an installation or upgrade, PowerExchange automatically uses the DB2BINDB and DB2GENB members for all supported DB2 or z/OS versions. Because the **DB2 V11+** option is no longer necessary to distinguish among bind members, it has been removed from the z/OS Installation Assistant. This change helps simplify the installation and upgrade process.

For more information, see the "Installing and Upgrading PowerExchange on z/OS" chapter in the *PowerExchange Installation and Upgrade Guide*.

Improved Support of FlashCopy Image Copies as Sources

PowerExchange introduces improved support of DB2 for z/OS FlashCopy image copies as sources. You can use a FlashCopy image copy as a data source in a bulk data movement session even if the FlashCopy image copy is for a compressed table space that has not undergone a reorganization.

For more information, see the "DB2 for z/OS Bulk Data Movement" chapter in the *PowerExchange Bulk Data Movement Guide*.

PowerExchange 10.1 - New Features and Changes for DB2 for z/OS

This section describes PowerExchange 10.1 changes that are related to DB2 for z/OS data sources.

New Features in 10.1

PowerExchange 10.1 introduces the following new feature for DB2 for z/OS data sources:

Improved Support of DB2 for z/OS Image Copies as Sources

PowerExchange introduces the following improvements to its support of DB2 for z/OS image copies as sources:

- If you use zIIP processing, PowerExchange can dispatch an array of compressed rows to the zIIP processor for expansion. The **Array Size** connection attribute controls the number of rows that are dispatched. In most cases, use the default array size of 25 for optimal efficiency.

- PowerExchange supports offload processing for DB2 for z/OS image copy sources in a bulk data movement session. When you use bulk data offload processing, PowerExchange moves column-level processing and source data filtering to the PowerCenter Integration Service machine that runs the bulk data movement session. To enable offload processing for a DB2 for z/OS image copy data source, select **Filter After** for the **Offload Processing** connection attribute.

- You can use a FlashCopy image copy as a data source in a bulk data movement session.

  Restriction: The image copy must not be for a compressed table space that has not undergone at least one reorganization.

For more information, see the "DB2 for z/OS Bulk Data Movement" chapter in the *PowerExchange Bulk Data Movement Guide*.

Parameter and Option Changes in 10.1

PowerExchange 10.1 introduces the following changes to DB2 for z/OS parameters.

DB2 ECCR Configuration Statements in the REPL2OPT DD Data Set

PowerExchange 10.1 introduces the following changes to configuration statements in the data set or RUNLIB member that is allocated by the REPL2OPT DD statement in the DB2 ECCR JCL:

IFI306 [OPT={N|Y|F}

Changed. The OPT keyword has a new valid value of F. Set OPT=F to use DB2 object filtering to reduce the volume of change records that DB2 passes to the ECCR. DB2 object filtering is supported in DB2 Version 11 and in DB2 Version 10 with IBM APAR PM90568. The DB2 IFI 306 READS routine uses a list of table spaces to deliver only the change data for the tables in those table spaces. If the list of tracked table spaces changes, the ECCR initiates REFRESH processing to use the updated list. With the setting of F, the ECCR cannot capture inserts for DB2 QUIESCE operations from the DB2 catalog table SYSCOPY. The default value for OPT is still N.

SKIPURDML *eccr_description_of_urid*

Optional. Causes the ECCR to skip operations in a specific DB2 unit of recovery (UR). Use this statement to have the ECCR skip change records from a problematic area of the log. The *urid* value is the ECCR description of the DB2 URID, which consists of 20 hexadecimal characters, a period, and four ending hexadecimal characters. For example:

```
SKIPURDML 000000000004AB60DEC0.0000
```

Important: Use this statement only at the direction of Informatica Global Customer Support.

You can specify up to 255 SKIPURDML statements in the REPL2OPT DD data set.

If you specify this parameter, the ECCR issues messages PWXEDM177230I and PWXEDM!77231W to describe the UR and each log record that is skipped.

For more information, see the "DB2 for z/OS Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

These statements and parameters are also available in 9.6.1 HotFix 4. They are not available in 10.0.

PowerExchange 10.0 - New Features and Changes for DB2 for z/OS

This section describes PowerExchange 10.0 changes that are related to DB2 for z/OS data sources.

New Features in 10.0

PowerExchange 10.0 introduces the following new feature for DB2 for z/OS data sources:

Support for LOB Datatypes

Effective in 10.0, PowerExchange supports LOB datatypes in DB2 for z/OS source tables in bulk data movement sessions. LOB datatypes include BLOB, CLOB, and DBCLOB.

The following restrictions apply to tables that includes LOB columns:

- You cannot access the data by using a DB2 data map.

- You cannot use an image copy or unload file as a data source.

- You cannot perform an insert into a target table that contains LOB columns.

Behavior Changes in 10.0

PowerExchange 10.0 introduces the following behavior change for DB2 for z/OS data sources:

DB2 for z/OS ECCR Changed Behavior

The DB2 for z/OS ECCR no longer uses the TCAPTABLEPART capture directory table. The members for the capture directory tables in the SAMPLIB library and the DB2BIND and DB2BINDB members in the RUNLIB library have been updated. When you perform a full installation or an upgrade installation on z/OS, the appropriate updated members are used. After you upgrade from a previous release, you can delete the TCAPTABLEPART table and its index whenever you are certain that you do not need to fall back to the previous release.

Also, the ECCR no longer bypasses VSAM table space files that have been migrated off disk or are unavailable because of RACF policies. Now, the ECCR forces the recall of the table space files. If security rules prevent access to these files, the ECCR ends.

For more information about the capture directory tables, see the "DB2 for z/OS Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

CHAPTER 16

PowerExchange for CA IDMS

This chapter includes the following topics:

PowerExchange 10.2 HotFix 1 - New Features and Changes for IDMS

This section describes PowerExchange 10.2 HotFix 1 changes that are related to IDMS data sources..

Command Changes for 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces pwxcmd command support for the IDMS ECCR.

pwxcmd Commands for the IDMS ECCR

PowerExchange 10.2 HotFix 1 introduces pwxcmd commands for the IDMS ECCR. You can issue these commands from a Linux, Unix, or Windows instance of PowerExchange to control or monitor an IDMS ECCR on z/OS.

The following table describes the pwxcmd commands for the IDMS ECCR:

Command	Description
pwxcmd close	Stops ECCR processing. When you restart the ECCR, it resumes processing the log from the point where it stopped. No changes are lost.
pwxcmd displaystats	Displays monitoring statistics for the ECCR.
pwxcmd displaytrace	Displays the status of active trace functions for the ECCR.
pwxcmd traceoff	Turns trace functions off for the ECCR.
pwxcmd traceon	Turns trace functions on for the ECCR.

For more information about the pwxcmd commands, see the *PowerExchange Command Reference*.

PowerExchange 10.0 - New Features and Changes for IDMS

This section describes PowerExchange 10.0 new features and changes that are related to IDMS sources or targets.

New Features in 10.0

PowerExchange 10.0 introduces new features for IDMS data sources and targets.

IDMS Version 19 Support

PowerExchange 10.0 adds support for CA IDMS Version 19 on z/OS for CDC and bulk data movement sessions.

For more information, see "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide* and the Product Availability Matrix at http://mysupport.informatica.com.

CHAPTER 17

PowerExchange for IMS

This chapter includes the following topics:

PowerExchange 10.4.0 - New Features and Changes for IMS

This section describes PowerExchange 10.4.0 new features and changes that are related to IMS data sources or targets.

New Features in 10.4.0

PowerExchange 10.4.0 introduces the following new features for IMS data sources:

Updated Components in the PowerExchange ECCR CRG.LOAD Library for IMS Synchronous CDC

PowerExchange 10.4.0 updates the PowerExchange CRG.LOAD library for IMS synchronous CDC to provide the latest available version of the BMC Software CHANGE RECORDING FACILITY, DATABASE INTEGRITY PLUS, or Fast Path Online Restructure/EP components.

You can use either the CRG software that PowerExchange delivers or one of these BMC Software products, which include the CRG code.

Important: If you have a supported version of one of the BMC Software products, Informatica recommends that you use the BMC Software product instead of the CRG software.

- If you use one of the BMC Software products, ensure that the product meets the minimum version that PowerExchange requires for IMS synchronous CDC, as described in the "IMS Synchronous Change Data Capture" chapter of the *PowerExchange CDC Guide for z/OS*.

Note: For IMS 15, PowerExchange 10.4.0 requires the following minimum versions of the BMC Software products:

- CHANGE RECORDING FACILITY: Version 5.1.00 Level 1907 with BMC fix BQQ4590
- DATABASE INTEGRITY PLUS: Version 5.1.00 Level 1907 with BMC fix BQQ4590
- Fast Path Online Restructure/EP: Version 4.1.00 Level 1907 with BMC fix BQQ4590

If you use an earlier product version, upgrade to the supported minimum version or later.

- If you use the CRG software, after you upgrade PowerExchange, run the CRGUMOD or CRGCLINK job in the *hlq*.SAMPLIB library again to install DBRC modifications. Otherwise, events such as abends might cause change capture to fail in the DLIODDC*x* module when the IMS synchronous ECCR tries to capture changes for a source segment. After you run the CRGUMOD or CRGCLINK job, restart the IMS control region.

Getting Source DBD Information from the IMS Catalog

PowerExchange requires access to IMS database definitions (DBDs) in source format for creating data maps in the PowerExchange Navigator. PowerExchange also requires DBD information in DBGEN format for creating capture registrations in the PowerExchange Navigator and for performing IMS unload processing. You can configure PowerExchange to access DBD information directly from the IMS catalog instead from the DBDLIB library.

When properly configured, PowerExchange can transparently get DBD information for IMS source objects from the IMS catalog by using the following IMS tools:

- **IMS catalog API**. This API consists of the DFS3CATQ assembly program in the IMS*xxx*.SDFSRESL.RESLIB library and the DFS3CATQ macro in the IMS*xxx*.SDFSMAC library. The API gets DBD information in DBGEN format from the IMS catalog when you create capture registrations for IMS log-based or synchronous CDC sources in the PowerExchange Navigator or perform IMS unload processing. PowerExchange requires the high-level qualifier of the bootstrap data set if the IMS control region is not running or if you are using an IMS version earlier than IMS 15.

- **IMS Catalog Library Builder Utility, DFS3LU00**. The utility gets DBD information in source format from the IMS catalog and writes this DBD information to a PDSE that you pre-allocated. When you create data maps in the PowerExchange Navigator, PowerExchange retrieves the source metadata from the PDSE. After the metadata is imported to the Navigator machine for data map creation, PowerExchange deletes the information from the PDSE so that no PDSE maintenance is required.

Use of the IMS catalog is optional in PowerExchange and IMS. However, certain IMS functionality, such as database versioning and the management of run-time application control blocks requires the IMS catalog. For more information see the IBM IMS documentation.

For PowerExchange to use the IMS catalog API to get metadata for IMS sources, provide the high-level qualifier of the bootstrap data set in the IMSBSDS statement in the DBMOVER configuration file.

For PowerExchange to use the IMS Catalog Library Builder Utility, DFS3LU00, to retrieve DBD information from the IMS catalog, perform the following configuration tasks:

1. Allocate a partitioned data set extended (PDSE) to hold output from the IMS Catalog Library Builder Utility, DFS3LU00.
2. Customize the PowerExchange Listener JCL or PROC to specify the DD statements required for IMS catalog use.
3. In the DBMOVER configuration member on the PowerExchange Listener machine, define the following statements:
   - IMSID. You must specify an *ims_ssid* value that matches the *ims_ssid* in the IMSBSDS statement.
   - IMSBSDS. Make sure the *ims_ssid* in this statement matches the *ims_ssid* in the IMSID statement.

- LU00FILE. Enter the name of the PDSE that you created to store DBD output from the IMS Catalog Library Builder Utility, DFS3LU00.

4. When you add data maps for IMS source objects in the PowerExchange Navigator, be sure to configure the following fields:

   - On the **Name** page, select **Import Record Definitions**.

   - On the **DL/1 Batch Access Method** page, enter an IMS SSID value that matches the *ims_ssid* value that you specified in the IMSBSDS statement in the DBMOVER configuration file.

   - On the **Import Copybook - Source Details** page, select **Remote** under **Source** and select **DBD** in the **Type** field.

   - On the **Import Copybook - Remote DBD Details** page, in the **File Name** field, enter the name of a PDS along with the DBD member name that you want to look for in the IMS catalog.

For more information, see the "IMS Bulk Data Movement" chapter in the *PowerExchange Bulk Data Movement Guide* and the "IMS Log-Based Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

Parameter and Option Changes in 10.4.0

PowerExchange 10.4.0 provides new DBMOVER statements for IMS sources.

DBMOVER Configuration File Statements

The DBMOVER configuration file includes the following new statements for IMS sources:

IMSBSDS=(*ims_ssid* ,*bootstrap_hlq*[,*search_preference*])

New. Identifies the high-level qualifier of the IMS bootstrap data set, which is required to retrieve database descriptor (DBD) information in DBGEN format from the IMS catalog when you are using an IMS version earlier than IMS 15 or when the IMS control region is not running. This statement also indicates the order in which PowerExchange searches locations, such as the IMS catalog and IMS DBDLIB library, for DBD information for source objects.

Specify this statement if you want PowerExchange to retrieve DBD information from the IMS catalog for creating data maps or capture registrations from the PowerExchange Navigator or for IMS unload processing.

In this statement, the *search_preference* is one of the following options:

- **D**. First search the DBDLIB library and then search the IMS catalog, if available.

- **C**. First search the IMS catalog and then search the DBDLIB library.

- **O**. Search the IMS catalog only.

If you do not specify an option, PowerExchange searches only the DBDLIB library by default and does not use the IMS catalog.

LU00FILE=*pdse_name*

New. Specifies the partitioned data set extended (PDSE) that you allocated to hold DBD output from the IMS Catalog Library Builder Utility, DFS3LU00. This statement is required to retrieve DBD information in source format from the IMS catalog for use in creating data maps.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.2 HotFix 2 - New Features and Changes for IMS

This section describes PowerExchange 10.2 HotFix 2 new features and changes that are related to IMS data sources or targets.

Command Changes for 10.2 HotFix 2

PowerExchange 10.2 HotFix 2 introduces a command for the IMS log-based ECCR.

New Command for the IMS Log-Based ECCR

PowerExchange 10.2 HotFix 2 introduces the new LIST MPART command for the IMS log-based ECCR.

The LIST MPART command lists the active IMS multiple-part records that the IMS log-based ECCR is processing, including information about the first part of each record that has been read and the total number of parts read.

Syntax:

```
F eccr_task_name,LIST MPART
```

Example Output:

When the ECCR is in the middle of processing two multiple-part records, the command returns the following messages:

```
PWX-07856 IMS MPART Records active=2
PWX-07857  1. DSN=ABCDEF1.C2435723.SLDS.D334.T1923172.VC6
PWX-07858     MPART (Rectoken,STCK)=(C9D4E2E440404040042D359E00000000,D54F76B95B944547)
PWX-07859     First part (STCK,LSN)=(D54F76B95B94450A,A6BC9039). Parts read=1
PWX-07857  2. DSN=ABCDEF1.C2435723.SLDS.D338.T1538545.VCF
PWX-07858     MPART (Rectoken,STCK)=(C9D4E2E440404040044F150300000000,D55448EFD1237047)
PWX-07859     First part (STCK,LSN)=(D55448EFD1237006,AB5E1CA7). Parts read=1
```

- Message PWX-07856 identifies the number of multiple-part records that the ECCR is processing.

- Messages PWX-7857, PWX-7858, and PWX-7859 are issued for each multiple-part record that the ECCR is in the middle of processing.

For more information about this command, see the "IMS Log-Based ECCR Commands" chapter in the *PowerExchange Command Reference*.

PowerExchange 10.2 HotFix 1 - New Features and Changes for IMS

This section describes PowerExchange 10.2 HotFix 1 new features and changes that are related to IMS data sources or targets.

New Features in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following new features for IMS data sources:

Support for IMS Version 15

PowerExchange 10.2 HotFix 1 adds support for IMS Version 15 for IMS log-based CDC, synchronous CDC, and bulk data movement sessions.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide* and the "IMS Synchronous Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*. Also, see the Product Availability Matrix at
https://network.informatica.com/community/informatica-network/product-availability-matrices.

Updated Components in the PowerExchange ECCR CRG.LOAD Library for IMS Synchronous CDC

The PowerExchange 10.2 HotFix 1 updates the PowerExchange CRG.LOAD library for IMS synchronous CDC to provide the latest available version of the BMC Software CHANGE RECORDING FACILITY and DATABASE INTEGRITY PLUS components.

If you use the CRG software, after you upgrade PowerExchange, run the CRGUMOD or CRGCLINK job in the *hlq*.SAMPLIB library again to install DBRC modifications. Otherwise, events such as abends might cause change capture to fail in the DLIODDC*x* module when the IMS synchronous ECCR tries to capture changes for a source segment. After you run the CRGUMOD or CRGCLINK job, restart the IMS control region.

Important: If you have a supported version of the BMC Software CHANGE RECORDING FACILITY, DATABASE INTEGRITY PLUS, or Fast Path Online Restructure/EP product, use the BMC Software product instead of the CRG software. In this case, you do not need to run the CRGUMOD or CRGCLINK job. Ensure that the BMC Software product version matches or is later than the minimum BMC version that PowerExchange 10.2 HotFix 1 supports for your IMS version.

Command Changes for 10.2 HotFix1

PowerExchange 10.2 HotFix 1 introduces pwxcmd command support for the IMS ECCR.

pwxcmd Commands for the IMS Log-Based ECCR

PowerExchange 10.2 HotFix 1 introduces pwxcmd commands for the IMS log-based ECCR. You can issue these commands from a Linux, Unix, or Windows instance of PowerExchange to control or monitor an IMS log-based ECCR on z/OS.

The following table describes the pwxcmd commands for the IMS log-based ECCR:

Command	Description
pwxcmd close	Stops ECCR processing. When you restart the ECCR, it resumes processing the log from the point where it stopped. No changes are lost.
pwxcmd displaystats	Displays monitoring statistics for the ECCR.
pwxcmd displaytrace	Displays the status of active trace functions for the ECCR.
pwxcmd traceoff	Turns trace functions off for the ECCR.
pwxcmd traceon	Turns trace functions on for the ECCR.

For more information about the pwxcmd commands, see the *PowerExchange Command Reference*.

PowerExchange 10.2 - New Features and Changes for IMS

This section describes PowerExchange 10.2 new features and changes that are related to IMS data sources or targets.

New Features in 10.2

PowerExchange 10.2 introduces the following new features for IMS data sources:

Updated Components in the PowerExchange ECCR CRG.LOAD Library for IMS Synchronous CDC

The PowerExchange 10.2 version includes patch P802235, which updates the PowerExchange CRG.LOAD library for IMS synchronous CDC to provide the latest available version of the BMC Software CHANGE RECORDING FACILITY and DATABASE INTEGRITY PLUS components.

If you use the CRG software, after you upgrade PowerExchange, run the CRGUMOD or CRGCLINK job in the *hlq*.SAMPLIB library again to install DBRC modifications. Otherwise, events such as abends might cause change capture to fail in the DLIODDC*x* module when the IMS synchronous ECCR tries to capture changes for a source segment. After you run the CRGUMOD or CRGCLINK job, restart the IMS control region.

Important: If you have a supported version of the BMC Software CHANGE RECORDING FACILITY, DATABASE INTEGRITY PLUS, or Fast Path Online Restructure/EP product, use the BMC Software product instead of the CRG software. In this case, you do not need to run the CRGUMOD or CRGCLINK job. Ensure that the BMC Software product version matches or is later than the minimum BMC version that PowerExchange 10.2 supports for your IMS version.

Behavior Changes in 10.2

PowerExchange 10.2 introduces the following behavior change for IMS data targets:

Support for IMS Command Code A

PowerExchange now uses IMS command code A to improve the performance of PowerCenter sessions that write to IMS 11 and later target databases that use ODBA, BMP, or DL/I batch access. The use of command code A also reduces overhead and CPU usage on the IMS system. This change applies to PowerCenter bulk and CDC sessions that use a PWX NRDB Batch application connection to connect to an IMS target. For this feature to function properly, you must apply the APARs that are documented for your IMS version in the "Installation Planning" chapter of the *PowerExchange 10.2 Installation and Upgrade Guide*.

Prior to this change, when the session ran, IMS wrote a checkpoint after every commit for an Update, lookup, or other operation that required IMS to reset its position to the beginning of the database. Also, the session ignored the **Commit Interval** session property. The excessive checkpointing degraded performance and increased resource usage.

PowerExchange 10.1 - New Features and Changes for IMS

This section describes PowerExchange 10.1 new features and changes that are related to IMS data sources or targets.

New Features in 10.1

PowerExchange 10.1 introduces the following new features for IMS data sources:

IMS Version 14 Support

PowerExchange 10.1 adds IMS Version 14 support for IMS log-based CDC, synchronous CDC, and bulk data movement sessions.

PowerExchange 10.1 drops support for IMS version 9.1.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

Updated Components in the PowerExchange 10.1 ECCR CRG.LOAD Library for IMS Synchronous CDC

PowerExchange 10.1 includes patch P717217, which updates the PowerExchange CRG.LOAD library for IMS synchronous CDC to provide the latest available version of the BMC Software CHANGE RECORDING FACILITY and DATABASE INTEGRITY PLUS components.

Note: PowerExchange 9.6.1 HotFix 4 also includes patch P717217.

If you use the CRG software, after you upgrade to 10.1 from PowerExchange 10.0 or PowerExchange 9.6.1 HotFix 3 or earlier, run the CRGUMOD or CRGCLINK job in the *hlq*.SAMPLIB library again to install DBRC modifications. Otherwise, events such as abends might cause change capture to fail in the DLIODDCx module when the IMS synchronous ECCR tries to capture changes for a source segment. After you run the CRGUMOD or CRGCLINK job, restart the IMS control region.

Important: If you have a supported version of the BMC Software CHANGE RECORDING FACILITY, DATABASE INTEGRITY PLUS, or Fast Path Online Restructure/EP product, use the BMC Software product instead of the CRG software. In this case, you do not need to run the CRGUMOD or CRGCLINK job. Ensure that the BMC Software product version matches or is later than the minimum BMC version that PowerExchange 10.1 supports for your IMS version.

Parameter and Option Changes in 10.1

PowerExchange 10.1 includes a new parameter for a DBMOVER statement.

DBMOVER Configuration File Statements

The DBMOVER configuration file includes the following new and changed statements:

LRAP CAPI_CONNECTION

    The following new optional parameter can be specified in the LRAP CAPI_CONNECTION statement:

UIDFMTIMS={UID|PSB|ALL}

> *New*. For IMS synchronous CDC data sources, controls the type of value that PowerExchange uses to populate the generated DTL__CAPXUSER column in each change record. Options are:
>
> - **UID**. Returns the user ID of the user who made the IMS change.
>
> - **PSB**. Returns the IMS program specification block (PSB) name.
>
> - **ALL**. Returns both the user ID and PSB name in the format *userid:psbname*.
>
> Default is UID.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.0 - New Features and Changes for IMS

This section describes PowerExchange 10.0 new features and changes that are related to IMS data sources or targets.

New Features in 10.0

PowerExchange 10.0 introduces the following new features for IMS data sources:

Updated Components in the PowerExchange 10.0 ECCR CRG.LOAD Library for IMS Synchronous CDC

If you upgrade to 10.0 from an earlier release that does not include EDP patch P699028, the PowerExchange CRG.LOAD library for IMS synchronous CDC does not contain the latest available version of the BMC Software CHANGE RECORDING FACILITY and DATABASE INTEGRITY PLUS components.

If you use the CRG software, after you upgrade to 10.0, run the CRGUMOD or CRGCLINK job in the *hlq*.SAMPLIB library again to install DBRC modifications. Otherwise, events such as abends might cause change capture to fail in the DLIODDCx module when the IMS synchronous ECCR tries to capture changes for a source segment. After you run the CRGUMOD or CRGCLINK job, restart the IMS control region.

Important: If you have a supported version of the BMC Software CHANGE RECORDING FACILITY, DATABASE INTEGRITY PLUS, or Fast Path Online Restructure/EP product, use the BMC Software product instead of the CRG software. In this case, you do not need to run the CRGUMOD or CRGCLINK job. Ensure that the BMC Software product version matches or is later than the minimum BMC version that PowerExchange 10.0 supports for your IMS version.

CHAPTER 18

PowerExchange for Microsoft SQL Server

This chapter includes the following topics:

PowerExchange 10.4.0 - New Features and Changes for SQL Server

This section describes PowerExchange 10.4.0 new features and changes that are related to Microsoft SQL Server data sources or targets.

Parameter and Option Changes in 10.4.0

PowerExchange 10.4.0 introduces the following parameter and option changes for SQL Server sources.

DBMOVER Configuration File

In the MSQL CAPI_CONNECTION statement in the dbmover.cfg configuration file, the optional LOCKAVOIDANCE parameter has been renamed to SQLNOLOCK to comply with the maximum name length of 12 characters. The purpose, behavior, and values of this parameter remain the same.

If you currently use the LOCKAVOIDANCE parameter, edit the dbmover.cfg file to change the parameter name to SQLNOLOCK to avoid potential errors.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.2 HotFix 1 - New Features and Changes for SQL Server

This section describes PowerExchange 10.2 HotFix 1 new features and changes that are related to Microsoft SQL Server data sources or targets.

New Features in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following new features for SQL Server CDC:

Support for Microsoft SQL Server 2017

PowerExchange 10.2 HotFix 1 adds support for Microsoft SQL Server 2017 on Windows.

For bulk data movement, PowerExchange supports SQL Server 2017 sources and targets. For CDC, PowerExchange supports SQL Server 2017 sources.

SQL Server 2008 is no longer supported.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide* and the Product Availability Matrix at
https://network.informatica.com/community/informatica-network/product-availability-matrices.

PowerExchange 10.2 - New Features and Changes for SQL Server

This section describes PowerExchange 10.2 new features and changes that are related to Microsoft SQL Server data sources or targets.

New Features in 10.2

PowerExchange 10.2 introduces the following new features for SQL Server CDC:

Microsoft SQL Server NTLM and Active Directory Authentication for Access to SQL Server Sources

You can use Microsoft SQL Server NTLM and Active Directory authentication to control PowerExchange access to SQL Server sources for CDC and database row tests.

When you create the registration group or perform a database row test, you must enter the user ID in the format *domain\user_name* and a valid password.

For more information, see the "Registration Groups and Capture Registrations" and "Database Row Test" chapters in the *PowerExchange Navigator User Guide*.

Parameter and Option Changes in 10.2

PowerExchange 10.2 introduces the following parameter and option changes for SQL Server sources.

DBMOVER Configuration File Statement

In the MSQL CAPI_CONNECTION statement in the dbmover.cfg configuration file, you can now specify the following new optional parameters:

LOCKAVOIDANCE={N|Y}

New. Controls whether PowerExchange SELECT statements use the NOLOCK hint when querying the SQL Server distribution database for change data. The NOLOCK hint can avoid lock contention with SQL Server utilities but might cause PowerExchange to miss some change records. Options are:

- **N**. PowerExchange SELECT queries that retrieve data from the distribution database do not use the NOLOCK hint. If locks are held on some change records, PowerExchange queries cannot retrieve the data until the locks are released. With this setting, PowerExchange queries might take longer to complete. However, no changes are skipped and data integrity is preserved. Use this option only when the MULTIPUB parameter is set to Y.

- **Y**. PowerExchange SQL SELECT queries that retrieve data from the distribution database use the NOLOCK hint. Use this option only when the MULTIPUB parameter is set to N. If the MULTIPUB parameter is set to Y, SQL Server might use allocation order scans to retrieve data for PowerExchange queries, which can result in missed change data and data corruption.

  Tip: Instead of using LOCKAVOIDANCE=Y, Informatica recommends that you set the isolation level for the distribution database to READ_COMMITTED_SNAPSHOT ON to avoid data integrity problems.

  Default is **N** if MULTIPUB is set to Y, or **Y** if MULTIPUB is set to N.

RECONNTRIES={*number*|12}

New. For Microsoft SQL Server sources, specifies the maximum number of times that PowerExchange tries to reconnect to the Microsoft SQL Server database after the connection is dropped. Use this parameter in conjunction with the RECONNWAIT parameter if you get the following ODBC connection error and want to improve connection resiliency:

```
PWX-15790 ODBC driver for Microsoft SQL Server returned error [08S01][Informatica]
[ODBC SQL Server Wire Protocol driver]Unexpected Network Error. ErrNum = 10054.
```

Valid values are 0 or any positive number. A value of 0 results in no connection retries. Default is 12.

RECONNWAIT={*seconds*|5}

New. For Microsoft SQL Server sources, specifies the number of seconds that PowerExchange waits before any attempt to reconnect to a Microsoft SQL Server database after the connection has been dropped. Use this parameter in conjunction with the RECONNTRIES parameter if you get the PWX-15790 message for an ODBC driver error and want to improve connection resiliency.

Valid values are 0 through 3600. A value of 0 results in no waiting between connection retries. Default is 5.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

Behavior Changes in 10.2

PowerExchange 10.2 introduces the following behavior change for SQL Server data sources:

Improved Handling of Capture Registration Deletions

Previously, when you tried to delete a capture registration for a SQL Server source, the PowerExchange Navigator failed to delete the registration with error message PWX-15700 because the registration entry in the CCT file could not be deleted.

Now, when you confirm the deletion of a Microsoft SQL Server registration in the PowerExchange Navigator, PowerExchange attempts to delete the SQL Server article associated with the registered table from the publication database. If PowerExchange cannot delete the SQL Server article for any reason, an error is displayed and an additional message box prompts you to confirm the registration deletion again. If you click **Yes** to confirm the deletion, you must manually delete the associated SQL Server article.

For more information, see the chapter "Registration Groups and Capture Registrations" in the *PowerExchange Navigator User Guide*.

Ability to Change the Registration Status from History to Active When the Database Is Not Active

Previously, the PowerExchange Navigator did not allow you to change the status of a SQL Server capture registration from **Active** to **History** if the database was inactive, absent, or invalid.

Now, when you try to change the status of a SQL Server capture registration in this situation, PowerExchange displays confirmation message PWX-01984. If you click **Yes** to confirm the status change, you must then manually remove the SQL Server article that is associated with the registered table from the publication database.

For more information, see message PWX-01984 in the *PowerExchange Message Reference Volume 1*.

PowerExchange 10.1.1 HotFix 1 - New Features and Changes for SQL Server

This section describes PowerExchange 10.1.1 HotFix 1 new features and changes that are related to Microsoft SQL Server data sources or targets.

Parameter and Option Changes in 10.1.1 HotFix 1

PowerExchange 10.1.1 HotFix 1 introduces the following parameter and option changes for SQL Server sources.

DBMOVER Configuration File Statements

The DBMOVER configuration file includes the following changed statement:

CAPI_CONNECTION=(NAME=*capi_connection_name*,TYPE=(MSQL,...[LOCKAVOIDANCE= {N|Y}]))

New. The LOCKAVOIDANCE parameter in the MSQL CAPI_CONNECTION statement controls whether PowerExchange SELECT statements use the NOLOCK hint when querying the SQL Server distribution database for change data. The NOLOCK hint can avoid lock contention with SQL Server utilities but might cause PowerExchange to miss some change records. Options are:

- **N**. PowerExchange SELECT queries that retrieve data from the distribution database do not use the NOLOCK hint. If locks are held on some change records, PowerExchange queries cannot retrieve the data until the locks are released. With this setting, PowerExchange queries might take longer to complete. However, no changes are skipped and data integrity is preserved. Use this option only when the MULTIPUB parameter is set to Y.

- **Y**. PowerExchange SQL SELECT queries that retrieve data from the distribution database use the NOLOCK hint. Use this option only when the MULTIPUB parameter is set to N. If the MULTIPUB parameter is set to Y, SQL Server might use allocation order scans to retrieve data for PowerExchange queries, which can result in missed change data and data corruption.

  Tip: Instead of using LOCKAVOIDANCE=Y, Informatica recommends that you set the isolation level for the distribution database to READ_COMMITTED_SNAPSHOT ON to avoid data integrity problems.

  Default is **N** if MULTIPUB is set to Y, or **Y** if MULTIPUB is set to N.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.1.1 - New Features and Changes for SQL Server

This section describes PowerExchange 10.1.1 new features and changes that are related to Microsoft SQL Server data sources or targets.

New Features in 10.1.1

PowerExchange 10.1.1 introduces the following new features for SQL Server CDC:

Support for SQL Server Always On Availability Groups

PowerExchange 10.1.1 can capture changes that are written to an availability database in a SQL Server Always On Availability Group. An Availability Group consists of primary and secondary replica databases on multiple nodes in a Windows Server Failover Clustering (WSFC) cluster. Only the following configuration has been tested and certified for PowerExchange CDC:

- The distribution database is installed on a node outside of the Always On Availability Group cluster, which is consistent with SQL Server requirements.

- PowerExchange is installed on a node outside of the Always On Availability Group cluster.

- When you create a registration group for the SQL Server Always On Availability Group source, you specify the Availability Group listener name in the **Database Server** field.

Note: If you need to use another configuration, contact Informatica Global Customer Support. Informatica will try to accommodate your request.

After CDC processing is running, If the primary database fails over to a secondary replica database on another node, PowerExchange can continue to capture change data from the distribution database without data loss.

SQL Server CDC with a PowerExchange Listener on Linux

In a PowerExchange CDC environment with Microsoft SQL Server sources, you can now run the PowerExchange Listener on a Linux system. The PowerExchange Listener uses the DataDirect ODBC driver that PowerExchange supplies to connect to the SQL Server system.

If you run the PowerExchange Listener on a Linux system, configure the following DBMOVER statements:

- In the DBMOVER configuration file on the Linux system where the PowerExchange Listener runs, define a MSQL CAPI CONNECTION statement that provides connection information for the SQL Server source distribution database.
- In the DBMOVER configuration files on the PowerCenter Integration Service machine and the PowerExchange Navigator system, define a NODE statement that points to the PowerExchange Listener system.

Alternatively, you can still run the PowerExchange Listener on a Windows system. You cannot run the PowerExchange Listener on a UNIX system.

For more information, see the "Microsoft SQL Server CDC" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

Support for Microsoft SQL Server 2016

PowerExchange 10.1.1 adds support for Microsoft SQL Server 2016 sources and targets on Windows. For bulk data movement, PowerExchange supports SQL Server 2016 sources and targets. For CDC, PowerExchange supports SQL Server 2016 sources.

PowerExchange CDC captures change data only from databases that are configured for SQL Server transactional replication. Consequently, PowerExchange support of SQL Server 2016 features are limited to those that SQL Server transactional replication supports.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

PowerExchange 10.1 - New Features and Changes for SQL Server

This section describes PowerExchange 10.1 new features and changes that are related to Microsoft SQL Server data sources or targets.

New Features in 10.1

PowerExchange 10.1 introduces the following new feature for SQL Server CDC:

PowerExchange CDC No Longer Requires SQL Server Management Objects

Previously, PowerExchange CDC for Microsoft SQL Server sources required that you install the SQL Server 2008 Server Management Objects (SMO), Replication Management Objects (RMO), and some related packages, even if you used a later SQL Server version. Otherwise, you could not create or edit SQL Server

capture registrations. Effective in PowerExchange 10.1, PowerExchange no longer requires these objects and packages.

Instead, PowerExchange 10.1 uses the DataDirect ODBC driver for SQL Server. For your convenience, when you install PowerExchange, the correct DataDirect ODBC driver for SQL Server is delivered to the `PowerExchange_root_installation`\ODBC7.1\Drivers directory. No additional configuration is required.

This feature removes the need to perform a separate installation of the SQL Server 2008 SMO objects and packages and aligns PowerExchange with SQL Server 2012 deprecation of the RMO.

For more information, see the "Microsoft SQL Server CDC" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

Behavior Changes in 10.1

PowerExchange 10.1 introduces the following behavior change for SQL Server data sources:

Handling Columns Added with the NOT NULL and DEFAULT Options to a SQL Server Source Table

Previously, if you captured change data from a Microsoft SQL Server 2012 or later source, capture processing might fail with the following error message after an ADD *column_name datatype* NOT NULL DEFAULT operation occurred on a source table:

```
PWX-15748 Invalid Capture data for table schema.table_name, column column_name. Found
NULL data expected non-NULL.
```

PowerExchange processed the added columns after an Update or Delete occurred on the source, but the captured before image showed null values for the not-null columns.

In PowerExchange 10.1, PowerExchange populates the added columns in the before image with an appropriate default non-null value, which is based on the column datatype. PowerExchange then continues capture processing. You cannot change the default values that PowerExchange uses. If the use of these default values is not acceptable in your environment, you must rebuild the source table after the columns are added. Then restart CDC.

For more information, see the "Microsoft SQL Server Change Data Capture" chapter of the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

PowerExchange 10.0 - New Features and Changes for SQL Server

This section describes PowerExchange 10.0 new features and changes that are related to Microsoft SQL Server data sources or targets.

Behavior Changes in 10.0

PowerExchange 10.0 introduces the following behavior change for SQL Server data sources:

Installation of the DataDirect ODBC Driver for SQL Server

The PowerExchange installation wizard for Windows now installs the DataDirect ODBC driver for SQL Server in the `PowerExchange_root_installation\ODBC7.1\Drivers` directory.

In PowerExchange 10.0, the PowerExchange Navigator requires this driver to connect to a SQL Server source database when you create capture registrations or perform other tasks that access the source database to read data or metadata.

You still need to install the SQL Server 2008 SMO objects and packages by using the .msi files in the `PowerExchange_root_installation\packages\mssqlInstalls\2008` directory. However, you no longer need to install the SQL Server 2012 Native Client unless directed to do so by Informatica Global Customer Support.

For more information, see the "Microsoft SQL Server CDC" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

Parameter and Option Changes in 10.0

PowerExchange 10.0 introduces the following parameter and option changes for SQL Server sources.

DBMOVER Configuration File Statements

You can now specify the following new statements in the dbmover.cfg configuration file:

MSSQL_SERVER_CONNECT_TIMEOUT=*seconds*

New. Specifies the timeout interval, in seconds, for a PowerExchange Navigator, DTLUCBRG utility, or DTLURDMO utility connection to a Microsoft SQL Server Management Objects (SMO) interface to manage SQL Server publications. After this interval elapses, the connection times out with error message PWX-15700. If you receive PWX-15700 messages for a timeout error, use this statement to increase the timeout interval. Valid values are 1 to 86400. Default is 60 seconds.

MSSQL_SERVER_STATEMENT_TIMEOUT=*seconds*

New. Specifies the timeout interval, in seconds, for processing a Transact-SQL statement issued by the PowerExchange Navigator, DTLUCBRG utility, or DTLURDMO utility to the Microsoft SQL Server Management Objects (SMO) interface. After this interval elapses, processing of the Transact-SQL statement stops with error message PWX-15700. If you are receive PWX-15700 messages related to this error, use this statement to increase the timeout interval. Valid values are 1 to 86400. Default is 60 seconds.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

CHAPTER 19

PowerExchange for MySQL

This chapter includes the following topics:

PowerExchange 10.4.0 - New Features and Changes for MySQL

This section describes PowerExchange 10.4.0 changes that are related to MySQL sources.

New Features in 10.4.0

PowerExchange 10.4.0 introduces the following new feature for MySQL sources:

Support for MySQL Version 8.0

PowerExchange 10.4.0 adds CDC support for MySQL Enterprise Edition Version 8.0 source tables on Red Hat Linux or Windows operating systems.

For more information, see the *PowerExchange Installation and Upgrade Guide*.

Parameter and Option Changes in 10.4.0

PowerExchange 10.4.0 introduces new parameters for MySQL CDC.

DBMOVER Configuration File

The MYSQL CAPI_CONNECTION statement in the DBMOVER configuration file includes an enhancement to the MYSQLBINLOG parameter:

MYSQLBINLOG=_path\binlog_file_name option1 option2…_

> *Changed*. You can now optionally include any of the command-line options that the mysqlbinlog utility supports, such as the --ssl- options. PowerExchange passes the options to the utility when the CDC session runs. For information about the utility options, see the *MySQL Reference Manual*.

If any part of the MYSQLBINLOG value includes spaces, you must enclose the entire MYSQLBINLOG value in double-quotation marks ("). Furthermore, if any part of the *path/binlog_file_name* value or an option includes a space, escape that value with the backslash (\) character and also enclose the value in double-quotation marks, for example:

```
MYSQLBINLOG="\"c:\bin\test dir\mysqlbinlog.exe\" --ssl-mode required "
```

If the *path\binlog_file_name* value begins with the hyphen (-) character, the entire value is treated as a utility option, as if no *path/file_name* value was specified.

For more information, see the "DBMOVER Configuration File" chapter of the *PowerExchange Reference Manual*.

PowerExchange 10.2 HotFix 2 - New Features and Changes for MySQL

This section describes PowerExchange 10.2 HotFix 2 changes that are related to MySQL sources.

New Features in 10.2 HotFix 2

PowerExchange 10.2 HotFix 2 introduces the following new feature for MySQL CDC:

Catalog of MySQL Source Table Definitions

PowerExchange now requires a catalog in a MySQL database to store MySQL source table definitions. When PowerExchange detects a DDL change of CDC interest to a source table, PowerExchange updates the source table definition in the catalog. The catalog of updated source table definitions helps PowerExchange avoid errors when reading change data for a DDL-updated table.

PowerExchange updates the source table definitions in the catalog only for DDL change events that affect CDC. Typically, DDL changes of CDC interest are those that require you to re-create or modify the capture registrations and extraction maps for the source tables, for example, column add, drop, or rename operations and table drop or rename operations.

To prepare for catalog use, perform the following tasks:

1. Create the catalog tables, PWXCatTables and PWXCatUpdates, on a Linux or Windows system. The tables can be in the MySQL source database or in another local or remote MySQL database. Use the PWXCATMY utility.

    Note: A single catalog can record MySQL source table definitions for multiple PowerExchange registration-group instances.

2. Verify that the catalog tables have the correct format. Use the PWXCATMY utility.

3. Check that an active capture registration exists for each source table.

4. Take a snapshot of the source table definitions and record the snapshot information in the catalog. The snapshot provides the baseline table definitions that will be updated by subsequent DDL changes. Use the PWXCATMY utility.

5. In the DBMOVER configuration file, edit the MySQL CAPI_CONNECTION statement to specify the schema of the catalog tables in the CATSCHEMA parameter. Optionally, you can also specify catalog connection parameters. These parameters will be used during change capture processing.

With the PWXCATMY utility, you can perform all of the following catalog-related operations:

- Create the catalog tables.
- Show the DDL statements for creating the catalog tables.
- Create a snapshot of the source table definitions and write that information to the catalog.
- Verify that the catalog tables have the correct format.
- Remove, or *unregister*, source table definitions from the catalog.
- List the source table names for which table definitions exist in the catalog.
- Dump the source table definitions that are recorded in the catalog.
- Drop the catalog tables.

For more information about the catalog, see the *PowerExchange CDC Guide for Linux, UNIX, and Windows*. For more information about the PWXCATMY utility, see the *PowerExchange Utilities Guide*.

Parameter and Option Changes in 10.2 HotFix 2

PowerExchange 10.2 HotFix 2 introduces new parameters for MySQL CDC.

DBMOVER Configuration File

The MYSQL CAPI_CONNECTION statement in the DBMOVER configuration file can now include the following parameters in support of the new DDL-updated catalog of MySQL source table definitions:

CATSERVER=*server_name*

Optional. The name of the server that contains the DDL-updated catalog tables that store source table definitions.

Default is the MySQL source server name. You can use the default if you created the catalog tables and installed the MySQL ODBC drivers on the source server.

CATSCHEMA=*schema_name*

Required. The name of the schema for the DDL catalog tables.

CATUSERNAME=*user_name*

Optional. A user name that is used to connect to the catalog server.

Default is the MySQL source user name if the catalog tables exist on the source server.

CATEPASSWORD=*encrypted_password*

Optional. The encrypted password of the specified catalog user. Specify either CATEPASSWORD or CATPASSWORD but do not specify both parameters.

Default is the password of the MySQL source user if the catalog tables exist on the source server.

CATPASSWORD=*password*

Optional. The clear-text password of the specified catalog user. Specify either CATPASSWORD or CATEPASSWORD but do not specify both parameters.

Default is the password of the MySQL source user if the catalog tables exist on the source server.

ONTABLEDDL={WARN|WARN-UNTIL-EOL|FAIL}

> Optional. Indicates whether PowerExchange issues a warning message and continues processing or ends abnormally when it encounters a DDL record for a source that is not consistent with the source registration. Options are:
>
> - WARN. Issue a warning message and continue capture processing.
> - WARN-UNTIL-EOL. Issue a warning message and continue capture processing until the end-of-log (EOL). Then issue an error message and terminate capture processing.
> - FAIL. Issue an error message and terminate capture processing.
>
> Default is WARN-UNTIL-EOL.

For more information, see the "DBMOVER Configuration File" chapter of the *PowerExchange Reference Manual*.

PowerExchange 10.2 HotFix 1 - New Features and Changes for MySQL

This section describes PowerExchange 10.2 HotFix 1 changes that are related to MySQL sources.

New Features in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces support for MySQL sources:

Support for MySQL CDC Sources

PowerExchange 10.2 HotFix 1 adds support for change data capture from MySQL Enterprise Edition 5.7 source tables on Red Hat Linux or Windows operating systems.

PowerExchange uses the MySQL binary log reader, mysqlbinlog, to read change events for source tables from the MySQL binary log. PowerExchange and the mysqlbinlog utility must be installed on the same machine, which can be local to or remote from the database server. Use of the PowerExchange Logger for Linux, UNIX, and Windows is optional.

PowerExchange extracts change records from the change stream or Logger log files and makes the changes available to PowerCenter CDC sessions.

To capture change data for MySQL sources, you must specify the new MYSQL CAPI_CONNECTION statement in the DBMOVER configuration file. Also, create capture registrations and extraction maps for the MySQL source tables by using either the PowerExchange Navigator or DTLUCBRG utility. Both interfaces have been enhanced to support MySQL sources.

Also, verify that binary logging is enabled for the MySQL server with the following options:

```
[mysqld]
server-id=server_id
log-bin=base_name
binlog-format=row
binlog-row-image=full
```

PowerExchange uses the server-id value of 369. Also, PowerExchange requires row-based binary logging with the row image type of full.

The binary log reader reads DML and DDL events. However, DDL events that create, drop, rename, truncate, or alter the mapped source tables usually cause PowerExchange capture processing to end except in the following cases:

- If you set the ONTABLETRUNC parameter in the MYSQL CAPI_CONNECTION statement to WARN, capture processing can continue with a warning message when PowerExchange encounters a TRUNCATE TABLE event for a source table.

- If a CREATE TABLE statement creates a table that was not previously registered and you use the PowerExchange Logger, capture processing can continue with a warning.

- If an ALTER TABLE ADD COLUMN statement appends a column after all other columns, capture processing can continue.

PowerExchange supports all MySQL datatypes except spatial datatypes. The following additional restrictions apply:

- PowerExchange limits the length of data in columns that have a mediumblob, longblob, mediumtext, longtext, enum, json, set, varbinary, or varchar datatype to 98,304 bytes.

- PowerExchange converts binary json data to textual json data.

PowerExchange uses the DataDirect ODBC driver for MySQL, which is delivered in the PowerExchange installation, to retrieve source metadata from the MySQL database server.

For more information, see the *PowerExchange CDC Guide for Linux, UNIX, and Windows*, the *PowerExchange Navigator User Guide*, and *PowerExchange Utilities Guide*.

Parameter and Option Changes in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces new parameters for MySQL CDC.

DBMOVER Configuration File

The DBMOVER configuration file can now include the new MYSQL CAPI_CONNECTION statement for MySQL CDC sources.

Syntax:

```
CAPI_CONNECTION=(NAME=capi_connection_name
                [,DLLTRACE=trace_id]
                 ,TYPE=(MYSQL
                        ,SERVER={database_server|localhost}
                       [,MYSQLBINLOG=path_to_mysqlbinlog]
                       [,ONDATATRUNC={WARN|FAIL}]
                       [,ONTABLETRUNC={WARN|FAIL}]
                       [,RECONNTRIES={number|12}]
                       [,RECONNWAIT={seconds|5}]
                       [,ROWMEMMAX=bytes]
                       [,RSTRADV=seconds]
                       [,UOWREADAHEAD=minimum_transactions,maximum_transactions]
                        )
    )
```

Parameter descriptions:

NAME=*capi_connection_name*

Required. A unique user-defined name for this CAPI_CONNECTION statement.

Maximum length is eight alphanumeric characters.

DLLTRACE=*trace_ID*

Optional. The user-defined name of the TRACE statement that activates internal DLL tracing for this CAPI. Specify this parameter only at the direction of Informatica Global Customer Support.

TYPE=(MYSQL, …)

Required. The type of CAPI_CONNECTION statement. For MySQL sources, this value must be MYSQL.

SERVER={*server_name***|localhost}[,***port_number***]**

Required. The host name or IP address of the MySQL server where the MySQL source database runs. You can enter "localhost" if the MySQL server and PowerExchange Listener run locally on the same machine. Optionally, if you want the database server to listen on a port number other than the default port number of 3306, append the non-default port number to the server name.

MYSQLBINLOG=*path_to_mysqlbinlog*

Optional. If the MySQL server is not installed on the local host, specify the path to the mysqlbinlog utility in this parameter or in the PATH environment variable. PowerExchange uses the mysqlbinlog utility to read change events from the MySQL binary log.

ONDATATRUNC={WARN|FAIL}

Optional. Indicates whether PowerExchange issues a warning message and continues processing or ends abnormally when it needs to truncate data from MySQL columns that have a mediumblob, longblob, mediumtext, longtext, enum, json, set, varbinary, or varchar datatype and are longer than 98,304 bytes.

Default is FAIL.

ONTABLETRUNC={WARN|FAIL}

Optional. Indicates whether PowerExchange issues a warning message and continues processing or ends abnormally when it encounters a TRUNCATE TABLE record in the change stream.

Default is FAIL.

RECONNTRIES={*number***|12}**

Optional. The maximum number of times that PowerExchange tries to reconnect to the MySQL Server database server after detecting that the database server has shut down or a network connection to the server has been dropped. When PowerExchange and the database server run on the same machine, PowerExchange processes change records to the end-of-log and then checks whether the server is still running. If PowerExchange connects to a remote database server and the server shuts down or the network connection to the server is severed, the binary log reader connection might be dropped. In this case, you can use this parameter in conjunction with the RECONNWAIT parameter to improve connection resiliency.

Valid values are 0 or any positive number. A value of 0 results in no connection retries. Default is 12.

RECONNWAIT={*seconds***|5}**

Optional. The number of seconds that PowerExchange waits before any attempt to reconnect to a MySQL Server database server after detecting that the server has shut down or the network connection to the server has been dropped. Use this parameter in conjunction with the RECONNTRIES parameter to improve connection resiliency.

Valid values are 0 through 3600. A value of 0 results in no waiting between connection retries. Default is 5.

ROWMEMMAX=*maximum_bytes*

Optional. The maximum amount of memory, in bytes, that PowerExchange can use to store a row change from a MySQL source table. No default value is available. If no maximum value is provided, PowerExchange does not limit the memory for a captured row change.

RSTRADV=*seconds*

Optional. The time interval, in seconds, that PowerExchange waits before advancing restart and sequence tokens for a registered data source during periods when UOWs do not include any changes of interest for the data source. When the wait interval expires, PowerExchange returns the next committed "empty UOW," which includes only updated restart information.

PowerExchange resets the wait interval to 0 when one of the following events occur:

- PowerExchange completes processing a UOW that includes changes of interest.
- PowerExchange returns an empty UOW because the wait interval expired without PowerExchange receiving any changes of interest.

Valid values 0 through 86400. No default is provided. A value of 0 disables restart advance processing.

If you do not specify RSTRADV, PowerExchange does not advance restart and sequence tokens for a registered source during periods when PowerExchange receives no changes of interest. In this case, when PowerExchange warm starts, it reads all changes, including those not of interest for CDC, from the restart point.

UOWREADAHEAD=*minimum_transactions_in_queue,maximum_transactions_in_queue*

Optional. The minimum number of transactions and maximum number of transactions that control I/O on the UOW read-ahead queue that PowerExchange uses to prefetch change data. The UOW read-ahead queue is a dynamic queue of buffered transactions that are waiting to be read by the PowerExchange capture process. When the queue reaches the maximum number of transactions, the queue reader thread stops and sleeps until enough transactions have been read from the queue to return it to the maximum value.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

CHAPTER 20

PowerExchange for Oracle

This chapter includes the following topics:

PowerExchange 10.4.0 - New Features and Changes for Oracle

This section describes PowerExchange 10.4.0 new features and changes that are related to Oracle data sources or targets.

PowerExchange Oracle CDC with LogMiner Dropped

Effective in version 10.4.0, the PowerExchange Oracle CDC with LogMiner feature has been dropped.

If you need to perform PowerExchange Oracle CDC, Informatica recommends that you use PowerExchange Express CDC for Oracle.

New Features in 10.4.0

PowerExchange 10.4.0 introduces a new feature for Oracle.

Toleration Support for Oracle 18c Sources

PowerExchange bulk data movement and Express CDC for Oracle add toleration support for Oracle 18c.

Toleration support means that PowerExchange can capture data from Oracle 18c sources but does not support any of the Oracle new features introduced in 18c that the source database uses. SCN values greater than 281474976710655 are not supported.

For Amazon RDS for Oracle sources, PowerExchange Express CDC for Oracle supports only version 12.2.

For more information, see the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

Parameter and Option Changes in 10.4.0

PowerExchange 10.4.0 introduces the following changes to PowerExchange for Oracle configuration parameters:

PowerExchange Express CDC for Oracle Configuration File

PowerExchange 10.4.0 introduces new parameters for the OPTIONS and READER statements in the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg.

OPTIONS statement

The following new, optional parameter is now available:

SPILL_FILE_PREFIX

New. A file name prefix that consists of a temporary file path for the spill files. If you want to specify the directory where the spill files reside, specify the fully qualified path to the directory.

Linux or UNIX example:

```
SPILL_FILE_PREFIX="/tmp/spillfiles/"
```

Windows example:

```
SPILL_FILE_PREFIX="C:\tmp\spillfiles\xxx"
```

Default path is the TMP or TMPDIR environment variable value. If TMP or TMPDIR is not defined, the configuration uses the current directory.

READER statement

ARCHIVEDEST

New. Specifies a list of numbers from 1 to 10, separated by commas. Each number represents the n value in an Oracle LOG_ARCHIVE_DEST_n initialization parameter. If you create more than one copy of each archive log, this parameter indicates the primary and secondary log destinations from which PowerExchange Express CDC reads archived logs. You can specify up to 10 destinations. The order in which you specify the destinations in the list determines the order in which PowerExchange Express CDC searches for archive logs. PowerExchange Express CDC tries to process the first two valid logs it finds in the specified destinations. If PowerExchange cannot read the first two logs, the process terminates.

PowerExchange Express CDC uses the secondary destination when the primary destination becomes unavailable or when the logs at the primary destination are unreadable, for example, because they have been corrupted or deleted.

For example, the Oracle source database uses the Oracle parameters LOG_ARCHIVE_DEST_1, LOG_ARCHIVE_DEST_2, and LOG_ARCHIVE_DEST_3 to create copies of archived logs. If you want PowerExchange Express CDC to use LOG_ARCHIVE_DEST_2 as the primary destination and ARCHIVE_DEST_3 as the secondary destination, set ARCHIVEDEST=(2,3).

Note: Specifying one value for the ARCHIVEDEST parameter limits the resilience of the Express CDC log reader because the log reader then processes logs from only one archive log destination.

If you do not specify ARCHIVEDEST, PowerExchange Express CDC queries v$archived_log for valid logs, favoring file system logs over ASM logs for performance reasons. Specifying ARCHIVEDEST provides more control over this process. For example, if the database writes archive logs to ASM and the file system, and you do not have access to the file system logs, you can use ARCHIVEDEST to specify the ASM location only.

This parameter replaces the ARCHIVEDEST1 and ARCHIVEDEST2 parameters. ARCHIVEDEST1 and ARCHIVEDEST2 are deprecated.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

PowerExchange 10.2 HotFix 1 - New Features and Changes for Oracle

This section describes PowerExchange 10.2 HotFix 1 new features and changes that are related to Oracle data sources or targets.

New Features in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following new features for Oracle:

PowerExchange Express CDC for Oracle Support for Amazon RDS for Oracle Sources

PowerExchange Express CDC can capture change data for source tables in a cloud-based database instance that is deployed in an Amazon Relational Database Service (RDS) for Oracle environment. Express CDC reads the online and archived redo logs that are written to the ONLINELOG_DIR and ARCHIVELOG_DIR directories on the RDS file system.

Restriction: PowerExchange Express CDC cannot capture change data that was retrieved from TDE-encrypted tablespaces in an Amazon RDS for Oracle database because the Oracle wallet is not available.

For Amazon RDS limitations and requirements related to Oracle versions and operating systems and other Oracle features, see the Amazon RDS documentation.

To indicate that the a source database is in an Amazon RDS for Oracle environment, you must specify RDS=Y in the DATABASE statement of the Express CDC pwxorad.cfg configuration file.

Also, you must create the ONLINELOG_DIR and ARCHIVLOG_DIR directories on the RDS file system. Use the following exec statements:

```
exec rdsadmin.rdsadmin_master_util.create_archivelog_dir;
exec rdsadmin.rdsadmin_master_util.create_onlinelog_dir;
```

Then grant read access on these directories to the Express CDC user. Use the following statements:

```
GRANT READ ON DIRECTORY ONLINELOG_DIR to "ORACAPTL1";
GRANT READ ON DIRECTORY ARCHIVELOG_DIR to "ORACAPTL1";
```

To grant the SELECT privilege on some objects and system tables, you must log in to Amazon RDS under the master username and use the following Amazon RDS procedures:

```
begin
rdsadmin.rdsadmin_util.grant_sys_object(
p_obj_name => 'DBA_USERS',
p_grantee => 'ORACAPTL1',
p_privilege => 'SELECT',
p_grant_option => 'false');
end;
--
begin
rdsadmin.rdsadmin_util.grant_sys_object(
```

```
            p_obj_name => 'V_$PARAMETER',
            p_grantee => 'ORACAPTL1',
            p_privilege => 'SELECT');
        end;
        --
        begin
        rdsadmin.rdsadmin_util.grant_sys_object(
            p_obj_name => 'V_$SPPARAMETER',
            p_grantee => 'ORACAPTL1',
            p_privilege => 'SELECT');
        end;
        --
        begin
        rdsadmin.rdsadmin_util.grant_sys_object(
            p_obj_name => 'V_$STANDBY_LOG',
            p_grantee => 'ORACAPTL1',
            p_privilege => 'SELECT');
        end;
        --
        begin
        rdsadmin.rdsadmin_util.grant_sys_object(
            p_obj_name => 'V_$VERSION',
            p_grantee => 'ORACAPTL1',
            p_privilege => 'SELECT');
        end;
        --
        begin
        rdsadmin.rdsadmin_util.grant_sys_object(
            p_obj_name => 'INDPART$',
            p_grantee => 'ORACAPTL1',
            p_privilege => 'SELECT');
        end;
        -- To register sources and perform other tasks in the PowerExchange Navigator:
        begin
        rdsadmin.rdsadmin_util.grant_sys_object(
            p_obj_name => 'V_$PARAMETER',
            p_grantee => 'registration_user',
            p_privilege => 'SELECT');
        end;
```

Other grants and configuration tasks are the same as those for an on-premises Oracle source database.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

Toleration Support for Oracle 12c R2 Sources

PowerExchange bulk data movement and Express CDC for Oracle adds toleration support for Oracle 12*c* R2 (12.2). PowerExchange Oracle CDC with LogMiner does not support 12*c* R2.

Toleration support means that PowerExchange can capture data from Oracle 12*c* R2 sources but does not support any of the Oracle 12*c* R2 new features that the source database uses, including SCN values longer than 281474976710656 bytes. Exception: PowerExchange Express CDC can capture change data from a single pluggable database (PDB) in a container database (CDB) in an Oracle 12*c* multitenant environment.

Parameter and Option Changes in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following changes to PowerExchange for Oracle configuration parameters:

PowerExchange Express CDC for Oracle Configuration File

PowerExchange 10.2 HotFix 1 introduces a new parameter for the DATABASE statement in the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg.

DATABASE Statement

You can now specify the following optional parameter:

RDS={Y|N}

New. Indicates whether the Oracle source database is in an Amazon Service (RDS) for Oracle environment. Options are:

- **Y**. The source database instance is deployed in Amazon RDS for Oracle. PowerExchange Express CDC reads change data from the database redo logs that are in the ONLINELOG_DIR and ARCHIVELOG_DIR directories. You create these directories on the RDS file system.

- **N**. The source database instance is not deployed in Amazon RDS for Oracle.

Default is N.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

PowerExchange 10.2 - New Features and Changes for Oracle

This section describes PowerExchange 10.2 new features and changes that are related to Oracle data sources or targets.

New Features in 10.2

PowerExchange 10.2 introduces the following new features for Oracle:

Reporting DDL Operations on Registered Oracle Source Tables

You can configure PowerExchange Express CDC for Oracle to report the DDL operations that it encounters in the Oracle redo logs for Oracle source tables with active capture registrations.

To enable DDL reporting, specify the REPORTDDL=Y parameter in the OPTIONS statement of the pwxorad.cfg configuration file. This parameter is optional.

When REPORTDDL=Y is set, PowerExchange Express CDC reports all of DDL operations that it detects in the Oracle redo logs for registered tables, such as ALTER TABLE operations that add, drop, or modify a column or that add or drop a partition. Express CDC writes information for each DDL operation to a file that is generated in the directory from which Express CDC runs. The following file naming conventions are used:

- For RAC systems:

      PWX_ORL_DDL_D*yyyymmdd*_T*hhmmss*.MBR*node*_*sequence#*.rpt

- For non-RAC systems:

      PWX_ORL_DDL_D*yyyymmdd*_T*hhmmss*.*sequence#*.rpt

In these file names, the *sequence#* is a generated number that starts from 0001 and that is incremented by 1 for each new file. A new file is generated every 20 MB of DDL change records.

The following example report shows a single DDL operation:

```
--DDL found at Location : redo log position SCN 0x0000.00ff2e85.0001 (16723589) RBA
0x0007cd.000050a9.0010 (file: 1997)
-- Owner Number : 111, DDL Object 95944 Sequence 1 of total 1
-- DDL String :
alter table TSTV11.DDLTEST001 add COL04 varchar2(10) default 'xxxx'
```

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

Parameter and Option Changes in 10.2

PowerExchange 10.2 introduces the following changes to PowerExchange for Oracle configuration parameters:

PowerExchange Express CDC for Oracle Configuration File

PowerExchange 10.2 introduces a new parameter for the OPTIONS statement in the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg.

OPTIONS Statement

You can now specify the following optional parameter in the statement:

REPORTDDL={Y|N}

New. Controls whether PowerExchange Express CDC reports all of the DDL operations that it encounters in the Oracle redo logs for Oracle source tables with active capture registrations. Express CDC writes the following information for each DDL operation to a file that is generated in the directory from which Express CDC runs: the DDL statement, log position, owner number, DDL object number, and sequence number. The file naming conventions are:

- For RAC systems:

    `PWX_ORL_DDL_D`*yyyymmdd*`_T`*hhmmss*`.MBR`*node*`_sequence#.rpt`

- For non-RAC systems:

    `PWX_ORL_DDL_D`*yyyymmdd*`_T`*hhmmss*`.`*sequence#*`.rpt`

In these file names, *sequence#* is a generated number that starts from 0001 and that is incremented by 1 for each new file. A new file is generated every 20 MB of DDL change records.

Options are:

- **Y**. Generate the report of DDL operations for registered source tables.

- **N**. Do not generate the report of DDL operations.

Default is N.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

PowerExchange 10.1 - New Features and Changes for Oracle

This section describes PowerExchange 10.1 new features and changes that are related to Oracle data sources or targets.

New Features in 10.1

PowerExchange 10.1 introduces the following new features for Oracle:

PowerExchange Express CDC for Oracle Supports Oracle Direct-Path Operations

In PowerExchange 10.1, PowerExchange Express CDC for Oracle can capture direct-path operations such as direct-path INSERT operations and SQL*Loader direct-path load operations on all supported Linux, UNIX, and Windows platforms.

To enable the capture of direct-path operations, you must set the SUPPORT_DIRECT_PATH_OPS parameter to Y in the OPTIONS statement of the PowerExchange Express CDC configuration file.

Restriction: PowerExchange Express CDC cannot capture direct-path operations from source tables that use Oracle Exadata Hybrid Columnar Compression (EHCC).

For more information about CDC support of direct-path operations, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

This feature is also available in 9.6.1 HotFix 4. It is not available in 10.0.

PowerExchange Express CDC for Oracle Ability to Read Copies of Archived Redo Logs

Effective in PowerExchange 10.1, you can configure PowerExchange Express CDC for Oracle to read change records from archived redo logs that have been copied to an alternate file system.

Use this feature in the following situations:

- You do not have the authority to access the Oracle archived redo logs directly.
- The archived redo logs are written to ASM, but you do not have access to ASM.
- An aggressive archived log retention policy is in effect on the database server, which causes the archived logs to not be retained long enough.

To configure PowerExchange Express CDC to read copies of archived redo logs, set the MODE parameter to ARCHIVECOPY in the READER statement of the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg. Then specify the name of the base directory that contains the copies of the archived redo logs in the new DIR parameter. Optionally, use the new FILE parameter to filter the copies of the archived logs that reside under the base directory.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

PowerExchange Express CDC for Oracle Support for Oracle RESETLOGS Operations

Previously, PowerExchange Express CDC capture processing and the PowerExchange Logger for Linux, UNIX, and Windows ended with multiple error messages after the log reader encountered a RESETLOGS event in the archived redo logs. Effective in PowerExchange 10.1, PowerExchange Express CDC can detect a RESETLOGS event and continue capture processing across the RESETLOGS boundary in the archived redo logs.

The PowerExchange Express CDC restart token has been modified to add the resetlogs ID at the end of the token value. At initialization, PowerExchange Express CDC uses the resetlogs ID to check whether the database has undergone a RESETLOGS event. If a RESETLOGS event occurred, PowerExchange Express CDC verifies that the restart information and the last change data that was hardened to the PowerExchange

Logger log files are valid and have not been orphaned by the event. If the information is valid, PowerExchange continues capture processing.

Note: To restart a CDC session, you can still use the restart tokens of the older format, without the resetlogs ID. However, PowerExchange Express CDC then cannot check for RESETLOGS events or orphaned data. Errors might occur.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

PowerExchange Express CDC for Oracle Support for Amazon EC2 Cloud Environments

PowerExchange Express CDC can capture change from an Oracle database in an Amazon Elastic Compute Cloud (EC2) environment. The Amazon EC2 instances must run on a 64-bit Red Hat Linux server. The configuration of PowerExchange, the Oracle database, the PowerCenter Integration Service, and Informatica domain is flexible. All of these applications can run on EC2 instances in the cloud, or some of them can run on premise.

PowerExchange Express CDC requires no special configuration tasks. As usual, ensure that Express CDC can access to the Oracle archive redo logs.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

Parameter and Option Changes in 10.1

PowerExchange 10.1 introduces the following changes to PowerExchange for Oracle configuration parameters:

PowerExchange Express CDC for Oracle Configuration File

PowerExchange 10.1 introduces new parameters in the OPTIONS statement of the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg.

OPTIONS Statement

The OPTIONS statement can now include the following optional parameters:

LOGARCHIVEWAIT

New. After an Oracle online redo log starts being overwritten, the number of seconds that PowerExchange Express CDC waits for the copy of the log to become available as a new archived redo log for change data capture processing. In an Oracle Data Guard environment, if Express CDC captures change data from a physical standby database, this parameter specifies the number of seconds that Express CDC waits for the next archived redo log to be transported from the primary database to the standby database.

Valid values are 0 through 86400. Default is 30. If you use any value less than the value of the STATUSCHECKINTERVAL parameter in the READER statement, Express CDC waits for the STATUSCHECKINTERVAL period.

This parameter is also available in 9.6.1 HotFix 4. It is not available in 10.0.

PARTITION_DROP_FAIL

New. Controls whether PowerExchange Express CDC for Oracle ends with an error or continues processing when the log reader encounters an ALTER TABLE DROP PARTITION operation for a registered Oracle source table.

Options:

- **Y**. Express CDC processing ends with error message PWX-36332, which reports the log position of the DROP PARTITION operation that caused the failure.
- **N**. Express CDC ignores the DROP PARTITION operation and continues change capture processing. Message PWX-36390 reports that Express CDC encountered a DROP PARTITION operation for a source table.

Default is Y.

RETRYONKILLSESSION

New. Controls whether PowerExchange Express CDC can detect when an Oracle KILL SESSION event occurs for a specific PowerExchange connection to an Oracle source instance and then retry the connection so that the Express CDC log reader and PowerExchange Logger for Linux, UNIX, and Windows process do not end abnormally. A KILL SESSION event occurs when a user issues the following SQL statement:

```
ALTER SYSTEM KILL SESSION 'sid,serial_number' [IMMEDIATE]
```

In this statement, the variable *sid* is the session ID and the variable *serial_number* is the session serial number, as shown in the V$SESSION view.

Options:

- **N**. PowerExchange does not try to re-establish killed sessions for Express CDC processes. If a KILL SESSION event occurs, the PowerExchange Express CDC log reader and PowerExchange Logger end abnormally.
- **Y**. PowerExchange tries to re-establish killed sessions for Express CDC processes. Also set the CONNRETRYMAX parameter to a value greater than 0 to indicate the maximum number of times that PowerExchange retries the connection to the source instance.

  Tip: The RETRYONKILLSESSION, CONNRETRYMAX, and CONNRETRYWAIT parameters help improve connection resiliency.

Default is N.

Important: Before setting this parameter to Y, consult with your Oracle database administrator to ensure that no unintended consequences occur.

This parameter is also available in 9.6.1 HotFix 4. It is not available in 10.0.

SUPPORT_DIRECT_PATH_OPS

New. Controls whether Express CDC captures or ignores Oracle direct-path operations, such as direct-path INSERT operations, on registered source tables.

Options:

- **N**. Disables the capture of direct-path operations. If the log reader encounters a redo log record for a direct-path operation, Express CDC ignores the direct-path operation with an informational message and continues.
- **Y.** Enables the capture of direct-path operations.

  Note: Express CDC does not capture direct-path operations for tables that use Oracle Exadata Columnar Compression (EHCC).

Default is N.

This parameter is also available in 9.6.1 HotFix 4. It is not available in 10.0.

READER Statement

The READER statement can now include the following optional parameters:

MODE=ARCHIVECOPY

New. Allows the PowerExchange Express CDC log reader to read archived redo logs that have been copied to an alternate file system. Use this option in the following situations:

- You do not have the authority to access the Oracle archived redo logs directly.

- The archived redo logs are written to ASM, but you do not have access to ASM.

- An aggressive archived log retention policy is in effect on the database server, which might cause the archived logs to not be retained long enough.

You must implement a script to copy the archived redo logs from their primary location to the alternate location. To copy the archived logs, you can use any method that does not corrupt them, for example, FTP in binary mode. You must also specify the DIR parameter to indicate the name of base directory that the log reader scans for the copies of the archived logs. Optionally, you can use the FILE parameter to filter the copies of the archived logs that reside under the base directory.

Unlike the other MODE options, ARCHIVECOPY identifies candidate archived redo logs by scanning the file system directories. This process ignores the ARCHIVEDEST*n* parameters and does not filter candidate logs by their DELETED status in v$archived_log.

Default option is still ACTIVE.

DIR

New. When MODE parameter is set to ARCHIVECOPY, this parameter is required. It specifies the name of the base directory that PowerExchange Express CDC log reader scans for the copies of the archived redo logs to read. To filter the copies of the logs that reside under this base directory, you can also specify the FILE parameter.

FILE

New. Optional. When the MODE parameter is set to ARCHIVECOPY, you can use this parameter to specify a mask for filtering the copies of the archived redo logs that the PowerExchange Express CDC log reader reads. PowerExchange matches the mask against the subdirectories and files under the base directory that is specified in the DIR parameter. Enter a mask for the subdirectory name, log file names, or both.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

PowerExchange 10.0 - New Features and Changes for Oracle

This section describes PowerExchange 10.0 new features and changes that are related to Oracle data sources or targets.

New Features in 10.0

PowerExchange 10.0 introduces the following new features for Oracle:

PowerExchange Express CDC for Oracle Supports Oracle Index-Organized Tables

Effective in PowerExchange 10.0, PowerExchange Express CDC for Oracle can capture change data from Oracle index-organized tables (IOTs).

To capture change data from IOTs, you must grant the following privileges to the Oracle user that you defined for CDC:

```
GRANT SELECT on "SYS"."IND$" TO "ORACAPTL";
GRANT SELECT ON "SYS"."INDPART$" TO "ORACAPTL";
```

In these statements, "ORACAPTL" is the name of the CDC user.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

PowerExchange Express CDC for Oracle Supports Oracle 12*c* Multitenant Pluggable Databases

Effective in PowerExchange 10.0, PowerExchange Express CDC for Oracle can capture change data from a pluggable database (PDB) in an Oracle 12*c* multitenant container database (CDB).

PowerExchange Express CDC can capture change data from only a single PDB at a time. If you want to capture change data for another PDB in the same CDB, you must configure a separate CDC environment.

To configure change data capture from a PDB, you must perform the following tasks:

- Verify that the CDB is running in ARCHIVELOG mode.

- Enable minimal global supplemental logging for either the PDB or CDB.

- Add a PDB entry that includes the PDB service name to the tnsnames.ora file. For example:

```
PDB1234=
  (DESCRIPTION=
    (ADDRESS=(PROTOCOL=TCP)(HOST=host1)(PORT=1521))
        (CONNECT_DATA=
          (SERVER=DEDICATED)
          (SERVICE_NAME=pdb1234.informatica.com)))
```

- If you log in to CDB$ROOT as a user with the DBA role, execute the following SQL statement to switch the session to the source PDB:

```
ALTER SESSON SET CONTAINER=pdb_name
```

- After you define an Oracle user for CDC, such as "ORACAPTL1," grant the following privileges to this user:

```
GRANT CREATE SESSION TO "ORACAPTL1";
GRANT SELECT on "PUBLIC"."V$PDBS" TO "ORACAPTL1";
```

- In the dbmover.cfg configuration file on the system where change capture occurs, configure the ORACLEID statement to point to the name of the database that contains the PDB and the name of the PDB service entry in the tnsnames.ora file. For example:

```
ORACLEID=(PDB1234,ORADBNAME,tns_connection,PDB1234)
```

In this example statement:

- The first positional parameter, *collection_id*, identifies the ORACLEID statement. In this case, it is also the PDB name. This parameter cannot be empty.

- The second positional parameter, *oracle_db*, is the name of the Oracle database that contains the PDB. This parameter cannot be empty.

- The third positional parameter, *source_connect_string*, is an Oracle connection string defined in the Oracle tnsnames.ora file for connection to the database. For PDBs, this parameter cannot be empty.

- The fourth positional parameter, *capture_connect_string*, is the name of the PDB service entry in the Oracle tnsnames.ora file. For PDBs, this parameter cannot be empty.

If you move or clone the PDB for which PowerExchange Express CDC is capturing change data to another CDB, the PowerExchange Logger for Linux, UNIX, and Windows connection to the Oracle database is lost. You must cold start the PowerExchange Logger to prevent loss of change data.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

Parameter and Option Changes in 10.0

PowerExchange 10.0 introduces the following changes to PowerExchange for Oracle configuration parameters:

PowerExchange Express CDC for Oracle Configuration File

PowerExchange 10.0 introduces a new parameter in the OPTIONS statement of the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg.

OPTIONS statement

The OPTIONS statement can now include the following optional parameter:

TRUNCINVALIDCHARS

Indicates whether to detect and remove invalid multibyte characters that appear at the end of a character field in an Oracle source table. The characters are invalid because they have been truncated. If you allow these invalid characters to be passed to a PowerCenter workflow that has an Oracle target, PowerCenter might corrupt subsequent columns in the target table when running in Unicode mode.

Options are:

- **Y**. Remove invalid multibyte characters from the source data. The invalid characters are not passed to PowerCenter or applied to the target database.

- **N**. Capture the invalid multibyte characters and pass them to PowerCenter. When the PowerCenter workflow tries to write the invalid characters to the target, Oracle issues an ORA-02290 error that reports a check constraint violation on the target database. Also, PowerCenter might corrupt data in the subsequent columns in the target table.

Default is N. If you receive the ORA-02290 error in this situation, set this parameter to Y.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

C H A P T E R 2 1

PowerExchange for PostgreSQL

This chapter includes the following topic:

PowerExchange 10.4.0 - New Features and Changes for PostgreSQL

This section describes PowerExchange 10.4.0 changes that are related to PostgreSQL sources.

New Features in 10.4.0

PowerExchange 10.4.0 introduces support for PostgreSQL sources.

Support for PostgreSQL CDC Sources

PowerExchange 10.4.0 adds support for change data capture (CDC) from PostgreSQL version 10.*x* or 11.*x* source tables on Linux or Windows.

PowerExchange captures Begin, Insert, Update, Delete, Commit, and Truncate operations for source transactions. PowerExchange does not capture DDL changes other than Truncate. Also, most PostgreSQL data types are supported.

PowerExchange retrieves the changes from a PostgreSQL logical replication slot that is reserved for PowerExchange use. PowerExchange then records the changes in the *replication store table* that either PowerExchange generates during capture processing or that you manually create in the source database.

The source database must use logical replication mode. Also, each source table must have a primary key.

To prepare PostgreSQL source for CDC, perform the following tasks:

- Create a PostgreSQL user role with the LOGIN and REPLICATION attributes.
- Ensure that the PostgreSQL postgresql.conf configuration file specifies the **wal_level=logical** parameter.
- Copy the plug-in, pwx_decode.dll or pwx_decode.so, for creating the replication slot that PowerExchange uses from the PowerExchange root directory to the PostgreSQL lib directory.

To configure PowerExchange for PostgreSQL sources, specify the new PG CAPI_CONNECTION statement in the dbmover.cfg configuration file. Also, create capture registrations and extraction maps for the source tables by using either the PowerExchange Navigator or DTLUCBRG utility. Both interfaces have been enhanced to support PostgreSQL sources.

Also, PowerExchange requires the DataDirect ODBC driver for PostgreSQL to retrieve source metadata from the PostgreSQL database server. This driver is delivered as part of the PowerExchange installation. You do not need to download it.

Use of the PowerExchange Logger for Linux, UNIX, and Windows is optional.

For more information, see the *PowerExchange CDC Guide for Linux, UNIX, and Windows*, the *PowerExchange Navigator User Guide*, and *PowerExchange Utilities Guide*.

Parameter and Option Changes in 10.4.0

PowerExchange 10.4.0 introduces new parameters for PostgreSQL CDC.

DBMOVER Configuration File

The DBMOVER configuration file can now include the new PG CAPI_CONNECTION statement for PostgreSQL CDC sources.

Syntax:

```
CAPI_CONNECTION=(NAME=capi_connection_name
                 [,DLLTRACE=trace_id]
                  ,TYPE=(PG
                      ,SERVER={database_server|localhost}[,port]
                      ,DATABASE=database_name
                     [,ENABLELWM={Y|N}]
                     [,FETCHLIMIT=maximum_rows_fetched|100]
                     [,ONDATATRUNC={WARN|FAIL}]
                     [,ONTABLETRUNC={WARN|FAIL}]
                     [,RECONNTRIES={reconnection_attempts|12}]
                     [,RECONNWAIT={seconds|5}]
                     [,REPLSTORETBL=schema.table_name|public.pwx_repl}
                     [,RSTRADV=seconds]
                       )
 )
```

Parameters:

NAME=*capi_connection_name*

Required. A unique user-defined name for this CAPI_CONNECTION statement.

Maximum length is eight alphanumeric characters.

DLLTRACE=*trace_ID*

Optional. The user-defined name of the TRACE statement that activates internal DLL tracing for this CAPI. Specify this parameter only at the direction of Informatica Global Customer Support.

TYPE=(PG, …)

Required. The type of CAPI_CONNECTION statement. For PostgreSQL sources, this value must be PG.

SERVER={*host_name*|localhost}[,*port_number*]

Required. The host name or IP address of the server where the PostgreSQL source database runs. You can enter "localhost" if the database server and PowerExchange Listener run locally on the same machine.

If you want the source server to listen on a port number other than the default port, you can optionally append the port number to the server name.

DATABASE=*database_name*

Required. The name of the PostgreSQL source database on the specified server.

ENABLELWM={N|Y|

Optional. When you use the PowerExchange Logger for Linux, UNIX, and Windows, controls whether the PowerExchange consumer API (CAPI) capture process deletes data read from the replication store table after the data has been hardened to PowerExchange Logger log files. You can use this parameter to improve capture performance and to prevent the replication store table from growing too large when the PowerExchange Logger is in use.

Options are:

- **N**. Do not delete processed data from the replication store table after the data has been hardened to the PowerExchange Logger log files. With this option, the replication store table might become very large, causing CDC performance to be degraded.

- **Y**. Delete processed data from the replication store table after the data has been hardened to the PowerExchange Logger log files. After a log file switch, the PowerExchange Logger sends a low water marker (LWM) to the CAPI process to identify the last end UOW prior to the file switch. At the end of the next capture cycle, after the CAPI connection process has read to the end of the available data, the CAPI deletes all of the rows in the replication store table up to the LWM.

Default is N.

FETCHLIMIT

Optional. The maximum number of rows that can be fetched from the replication store table in response to a PowerExchange SELECT call. Valid values are 0 through 1000000. A value of 0 means no maximum limit is in effect.

Default is 100.

ONDATATRUNC={WARN|FAIL}

Optional. Indicates whether PowerExchange issues a warning message and continues processing or ends abnormally when it needs to truncate data from PostgreSQL columns that are longer than 98,304 bytes.

Default is FAIL.

ONTABLETRUNC={WARN|FAIL}

Optional. Indicates whether PowerExchange issues a warning message and continues processing or ends abnormally when it encounters a TRUNCATE TABLE record in the change stream.

Default is FAIL.

RECONNTRIES={*reconnection_attempts*|12}

Optional. The maximum number of times that PowerExchange tries to reconnect to the PostgreSQL database server after a connection is dropped while PowerExchange is retrieving data from the replication slot or reading data from the replication store table. If a connection retry is unsuccessful, PowerExchange waits for number of seconds specified in the RECONNWAIT parameter before trying to reconnect to the database server again. Use this parameter in conjunction with the RECONNWAIT parameter to improve connection resiliency.

Valid values are 0 through 2147483647. A value of 0 results in no connection retries. Default is 12.

RECONNWAIT={*seconds*|5}

Optional. The number of seconds that PowerExchange waits between attempts to reconnect to a PostgreSQL database server. Use this parameter in conjunction with the RECONNTRIES parameter to improve connection resiliency.

Valid values are 0 through 3600. A value of 0 results in no waiting between connection attempts. Default is 5.

REPLSTORETBL={*schema.table_name*|public.pwx_repl}

Optional. The name of the PowerExchange replication store table that contains the change data from the PostgreSQL logical replication slot. PowerExchange reads change data from this table.

If this value is not specified, the default name of public.pwx_repl is used.

RSTRADV=*seconds*

Optional. The time interval, in seconds, that PowerExchange waits before advancing restart and sequence tokens for a registered data source during periods when UOWs do not include any changes of interest for the data source. When the wait interval expires, PowerExchange returns the next committed "empty UOW," which includes only updated restart information.

PowerExchange resets the wait interval to 0 when one of the following events occur:

- PowerExchange finishes processing a UOW that includes changes of interest.
- PowerExchange returns an empty UOW because the wait interval expired without PowerExchange receiving any changes of interest.

Valid values 0 through 86400. No default is provided. A value of 0 disables restart advance processing.

For example, if you specify 5, PowerExchange waits 5 seconds after it completes processing the last UOW or after the previous wait interval expires. Then PowerExchange returns the next committed empty UOW that includes the updated restart information and resets the wait interval to 0.

If you do not specify RSTRADV, PowerExchange does not advance restart and sequence tokens for a registered source during periods when PowerExchange receives no changes of interest. In this case, when PowerExchange warm starts, it reads all changes, including those not of interest for CDC, from the restart point.

For more information, see the "DBMOVER Configuration File" chapter in the *PowerExchange Reference Manual*.

CHAPTER 22

PowerExchange for VSAM and Flat Files

This chapter includes the following topics:

PowerExchange 10.2 HotFix 2 - New Features and Changes for VSAM and Flat Files

This section describes PowerExchange 10.2 HotFix 2 new features and changes that are related to VSAM and sequential or flat file data sources or targets.

New Features in 10.2 HotFix 2

PowerExchange 10.2 HotFix 2 introduces the following new feature for CICS Transaction Server data sources:

Support for CICS Transaction Server Version 5.5

PowerExchange 10.2 HotFix 2 adds CDC support for CICS Transaction Server (CICS TS) version 5.5. PowerExchange can capture changes that CICS TS 5.5 transactions make to VSAM data sets.

The PowerExchange SAMPLIB library contains the new member #CICSV72 for defining the CICS/VSAM ECCR programs and transaction to CICS. Because the definition of the CICS/VSAM ECCR programs and transaction changed, you must restart the CICS region after upgrading to PowerExchange 10.2 HotFix 2.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide* and the "CICS/VSAM Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*. Also see the Product Availability Matrix at
https://network.informatica.com/community/informatica-network/product-availability-matrices.

PowerExchange 10.2 HotFix 1 - New Features and Changes for VSAM and Flat Files

This section describes PowerExchange 10.2 HotFix 1 new features and changes that are related to VSAM and sequential or flat file data sources or targets.

New Features in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces the following new feature for CICS Transaction Server data sources:

Support for CICS Transaction Server Version 5.4

PowerExchange 10.2 HotFix 1 adds CDC support for CICS Transaction Server (CICS TS) version 5.4. PowerExchange can capture changes that CICS TS 5.4 transactions make to VSAM data sets.

The PowerExchange SAMPLIB library contains the new member #CICSV71 for defining the CICS/VSAM ECCR programs and transaction to CICS. Because the definition of the CICS/VSAM ECCR programs and transaction changed, you must restart the CICS region after upgrading to PowerExchange 10.2 HotFix 1.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide* and the "CICS/VSAM Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*. Also see the Product Availability Matrix at https://network.informatica.com/community/informatica-network/product-availability-matrices.

PowerExchange 10.2 - New Features and Changes for VSAM and Flat Files

This section describes PowerExchange 10.2 new features and changes that are related to VSAM and sequential or flat file data sources or targets.

Behavior Changes in 10.2

PowerExchange 10.2 introduces the following behavior changes for CICS/VSAM CDC sources:

Improved CICS/VSAM ECCR Reporting of Data Sets with CDC Disabled

The CICS/VSAM ECCR can now report the VSAM data sets for which CDC processing has been disabled by the `CAPTURE_vsam_dataset_type=OFF` or `DSN=dataset_name,NOCAPTURE` override option in the EDMKOVRD DD statement in the CICS region startup JCL or in the data set to which the DD statement points.

You might want to disable CDC for some data sets to reduce system overhead and unnecessary message output.

The following types of output now report the data sets that are excluded from CDC processing:

- The report that is generated by the EDMC DISP command now displays **NoCapture** in the **Warn/Error** column for any listed VSAM data set for which CDC is disabled. For example:

```
EDMC DISP              PWXEDM CICS/VSAM Change Capture        Init Date: 02/22/17
ID: CT52                   Participating Files Display             Time: 23:27:53

File Name     Data set Name                              Type   Warn/Error
DFHCSD        <<EDM File Open currently in progress>>
EDMFIL01      PWX.VSAM.EDMVES01                          ESDS
EDMFIL02      PWX.VSAM.EDMVES02                          KSDS   NoCapture
EDMFIL03      PWX.VSAM.EDMVES03                          ESDS
EDMFIL05      PWX.VSAM.EDMVES05                          KSDS   NoCapture
EDMFIL06      PWX.VSAM.EDMVES06                          KSDS   NoCapture
EDMFIL07      PWX.VSAM.EDMVES07                          ESDS
EDMFIL08      PWX.VSAM.EDMVES08                          ESDS
EDMFIL09      PWX.VSAM.EDMVES09                          ESDS
EDMFIL10      PWX.VSAM.EDMVES10                          ESDS   Rcv(None)
```

- The PWXEDM176453I message now reports the registered or not registered ("excluded") VSAM data set that is associated with a file that does not participate in CDC processing. This message is issued when the CICS/VSAM ECCR checks VSAM data sets to determine if they are eligible for CDC processing. For example:

```
PWXEDM176453I Excluded file(EDMFIL02) is associated with DSN(hlq.VSAM.EDMVES02)
```

Previously, this message was issued only for registered data sets.

For more information, see the "CICS/VSAM Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

PowerExchange 10.1.1 HotFix 1 - New Features and Changes for VSAM and Flat Files

This section describes PowerExchange 10.1.1 HotFix 1 new features and changes that are related to VSAM and sequential or flat file data sources or targets.

Behavior Changes in 10.1.1 HotFix 1

PowerExchange 10.1.1 HotFix 1 introduces the following behavior changes for CICS/VSAM CDC sources:

Improved CICS/VSAM ECCR Reporting of Data Sets with CDC Disabled

The CICS/VSAM ECCR can now report the VSAM data sets for which CDC processing has been disabled by the CAPTURE_*vsam_dataset_type*=OFF or DSN=*dataset_name*,NOCAPTURE override option in the EDMKOVRD DD statement in the CICS region startup JCL or in the data set to which the DD statement points.

You might want to disable CDC for some data sets to reduce system overhead and unnecessary message output.

The following types of output now report the data sets that are excluded from CDC processing:

- The report that is generated by the EDMC DISP command now displays **NoCapture** in the **Warn/Error** column for any listed VSAM data set for which CDC is disabled. For example:

```
EDMC DISP              PWXEDM CICS/VSAM Change Capture        Init Date: 02/22/17
ID: CT52                   Participating Files Display             Time: 23:27:53
```

```
File Name      Data set Name                                  Type   Warn/Error
DFHCSD         <<EDM File Open currently in progress>>
EDMFIL01       PWX.VSAM.EDMVES01                               ESDS
EDMFIL02       PWX.VSAM.EDMVES02                               KSDS   NoCapture
EDMFIL03       PWX.VSAM.EDMVES03                               ESDS
EDMFIL05       PWX.VSAM.EDMVES05                               KSDS   NoCapture
EDMFIL06       PWX.VSAM.EDMVES06                               KSDS   NoCapture
EDMFIL07       PWX.VSAM.EDMVES07                               ESDS
EDMFIL08       PWX.VSAM.EDMVES08                               ESDS
EDMFIL09       PWX.VSAM.EDMVES09                               ESDS
EDMFIL10       PWX.VSAM.EDMVES10                               ESDS   Rcv(None)
```

- The PWXEDM176453I message now reports the registered or not registered ("excluded") VSAM data set that is associated with a file that does not participate in CDC processing. This message is issued when the CICS/VSAM ECCR checks VSAM data sets to determine if they are eligible for CDC processing. For example:

```
PWXEDM176453I Excluded file(EDMFIL02) is associated with DSN(hlq.VSAM.EDMVES02)
```

Previously, this message was issued only for registered data sets.

For more information, see the "CICS/VSAM Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

PowerExchange 10.1 - New Features and Changes for VSAM and Flat Files

This section describes PowerExchange 10.1 new features and changes that are related to VSAM and sequential or flat file data sources or targets.

New Features in 10.1

PowerExchange 10.1 introduces the following new feature for CICS Transaction Server data sources:

Support for CICS Transaction Server Version 5.3

PowerExchange 10.1 adds CDC support for CICS Transaction Server (CICS TS) version 5.3. PowerExchange can capture changes that CICS TS 5.3 transactions make to VSAM data sets.

The PowerExchange SAMPLIB library contains the new member #CICSV70 for defining the CICS/VSAM ECCR programs and transaction to CICS.

PowerExchange no longer supports CICS TS versions 3.1 and 3.2.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide* and the "CICS/VSAM Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

PowerExchange 10.0 - New Features and Changes for VSAM and Flat Files

This section describes PowerExchange 10.0 new features and changes that are related to VSAM and sequential or flat file data sources or targets.

New Features in 10.0

PowerExchange 10.0 introduces the following new features for CICS/TS, VSAM, and sequential or flat file data sources:

CICS/VSAM ECCR Support for VSAM ESDS Data Sets

Beginning in PowerExchange 10.0, the CICS/VSAM ECCR can capture change data from VSAM entry-sequenced data sets (ESDSs) in an online CICS Transaction Server (CICS TS) environment. In prior PowerExchange releases, only the Batch VSAM ECCR could capture change data from ESDSs.

The CICS/VSAM ECCR can capture change data from ESDS data sets that use both the 32-bit relative byte addressing (RBA) and 64-bit extended relative byte addressing (XRBA). However, the ECCR does not capture change data for the following types of ESDS items:

- Spanned ESDSs
- Paths defined over ESDSs
- Alternate Index (AIX) that points to an ESDS base cluster

To handle backouts for recoverable ESDS data sets that are registered for change data capture, PowerExchange requires additional exit programs at the following CICS global user exit (GLUE) points:

- **XFCBOUT**. At this GLUE point, define the PowerExchange EDMKBO*nn* exit program. This program captures the before image of each record in a recoverable ESDS that is to be backed out because of a transaction abend or syncpoint rollback.

- **XFCLDEL**. At this GLUE point, define the following exit programs:

  - An exit program that you define to mark backout records as logically deleted and to write them back to the ESDS data set. You must logically delete backout records because CICS TS does not provide a mechanism to delete individual records from an ESDS data set and VSAM does not support this action. To define this user exit program, use the sample program in the DFH$LDEL member of the CICS SAMPLIB library as a basis.

  - The PowerExchange EDMKLD*nn* exit program. This program retrieves the after image of a backout record that was logically deleted and then generates an UPDATE record that contains both the before and after images. The generated record is written to the Change Capture Log. The CICS/VSAM ECCR can then process the logically deleted record as an UPDATE to prevent transaction backout failures and the generation of numerous error messages. This program must be enabled last at the XFCLDEL exit point.

PowerExchange also requires a CICS task-related user exit (TRUE) program to capture relevant syncpoints and UOW information for each task that updates a registered data set. The ECCR uses this information to coordinate syncpoint processing with the PowerExchange Logger for MVS and to handle requirements related to CICS shutdown processing.

By default, change data capture for ESDSs is disabled. To enable change capture for ESDSs and override some default CDC options for ESDSs, specify the //EDMKOVRD DD statement or data set in the CICS startup

procedure. In the //EDMKOVRD DD statement or data set, you can enter the following CDC override options for ESDSs:

- **CAPTURE_ESDS={ON|OFF}**. You must specify ON to enable capture data capture for ESDS data sets.
- **BACKOUTRC={OVERRIDE|NOOVERRIDE}**. Controls whether to override the return codes from exit programs that run at the XFCLDEL exit point prior to the EDMKLD*nn* program.
- **ESDSFAIL={YES|NO}**. For recoverable ESDS data sets from which change data is captured, controls whether backouts are allowed to fail after a transaction abend or rollback. By default, the exit programs that you define at the XFCBOUT and XFCLDEL exit points handle the backouts as updates with before and after images so that the change can be processed during CDC.

To override any of these CDC override settings for a specific ESDS data set, use the **DSN** option with the appropriate keywords.

Also, this feature adds or enhances the following CICS/VSAM ECCR commands that are issued with the EDMC transaction code:

- **DISPLAY or DISP**. *Changed*. This command has been enhanced to display information for ESDS data sets.
- **OPTIONS or OPTS**. *New*. Displays the CDC override options that are defined in the //EDMKOVRD DD statement or data set.
- **REFRESH or REFR**. *New*. Re-reads and validates the CDC override options that are defined the //EDMKOVRD DD statement or data set.
- **RESTART or REST**. *New*. Re-initializes the CICS/VSAM ECCR in the CICS region by issuing the EDMC TERM command followed by the EDMC INIT command. Use this keyword after changing any of the CDC override options in the EDMKOVRID DD statement or data set for your changes to take effect.
- **EXITPGMS or XPGM**. *New*. Lists all of the exit programs that are defined at the CICS GLUE points and TRUE program that PowerExchange uses for CICS/VSAM CDC.

If you previously used the Batch VSAM ECCR to capture change data from ESDSs, you can optionally migrate to the CICS/VSAM ECCR.

For more information about migrating to the CICS/VSAM ECCR, the GLUE points and TRUE program, and all of the //EDMKOVRD DD override options, see the "CICS/VSAM Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

For more information about the new CICS/VSAM ECCR commands, see the "CICS/VSAM ECCR Commands" chapter in the *PowerExchange Command Reference*.

Parameter and Option Changes in 10.0

PowerExchange 10.0 introduces the following parameter and option changes that affect VSAM data sources.

CDC Override Options in the EDMKOVRD DD Data Set

You can enter the new //EDMKOVRD DD statement in the CICS startup procedure to specify CDC override options that enable or disable CICS/VSAM ECCR change data capture by VSAM data set type or for specific data sets. You can also set some options that override default processing of backout records for ESDS data sets.

Note: To enable change data capture for ESDS data sets, you must add the //EDMKOVRD DD statement with the CAPTURE_ESDS=ON option. By default, change data capture is disabled for ESDS data sets.

In the EDMKOVRD DD statement or data set, enter any of the following options:

CAPTURE_ESDS={ON|OFF}

Enables or disables change data capture for ESDS data sets. You must explicitly enter ON to enable CDC for ESDS data sets. Default is OFF.

CAPTURE_KSDS={ON|OFF}

Enables or disables change data capture for KSDS data sets. Enter OFF if you need to disable CDC for KSDS data sets. Default is ON.

CAPTURE_RRDS={ON|OFF}

Enables or disables change data capture for RRDS and VRDS data sets. Enter OFF if you need to disable CDC for RRDS and VRDS data sets. Default is ON.

CAPTURE_CMDT={ON|OFF}

Enables or disables change data capture for CICS-maintained data tables. Enter OFF if you need to disable CDC for CICS-maintained data tables. Default is ON.

BACKOUTRC={OVERRIDE|NOOVERRIDE}

For recoverable ESDS data sets, controls whether to override the return codes from any other active exit programs that are invoked at the XFCLDEL global exit point prior to the PowerExchange EDMKLD*nn* exit program for processing backouts as logical deletions. Options are:

- **OVERRIDE**. Override the return codes from any prior exit programs at the XFCLDEL global exit point with the UERCLDEL return code from the EDMKLD*nn* program.

- **NOOVERRIDE**. Percolate the return codes from any prior exit programs at the XFCLDEL global exit point. In this case, the return code of a prior exit program might supercede the return code from the EDMKLD*nn* program. With this option, the ESDSFAIL option is ignored.

ESDSFAIL={YES|NO}

For recoverable ESDS data sets from which change data is captured, controls whether backouts are allowed to fail after a transaction abend or syncpoint rollback. By default, the PowerExchange exit programs that you define at the XFCBOUT and XFCLDEL global exit points handle backouts as logical deletions with before and after images so that the change can be processed during CDC. If you capture change data from recoverable ESDS data sets, set this option to NO. If you enter ESDSFAIL=YES, backouts will fail with many error messages.

If you specified BACKOUTRC=NOOVERRIDE, this option is ignored.

DSN=*data_set_name*[,*option*]...

To enter overrides for a specific VSAM source data set, specify the fully qualified data set named followed by one or more of the following optional options:

- **{CAPTURE|NOCAPTURE}**. Enter CAPTURE to enable change data capture for the specified data set, or enter NOCAPTURE to disable change data capture for the data set. If you specify NOCAPTURE, the BACKOUTOVERRIDE and BACKOUTFAIL options are ignored.

- **{BACKOUTOVERRIDE|NOBACKOUTOVERRIDE}**. For a recoverable ESDS data set, controls whether to override the return codes from any other active exit programs that are invoked at the XFCLDEL global exit point prior to the PowerExchange EDMKLD*nn* exit program. Enter BACKOUTOVERRIDE to override the return codes from any prior exit programs with the UERCLDEL return code from the EDMKLD*nn* exit program. Enter NOBACKOUTOVERRIDE to percolate the return codes from prior exit programs. If you specify NOBACKOUTOVERRIDE, do not specify NOBACKOUTFAIL.

- **BACKOUTFAIL|NOBACKOUTFAIL}**. For a recoverable ESDS data set, controls whether backouts are allowed to fail after a transaction abend or syncpoint rollback. Enter BACKOUTFAIL to allow backouts to fail, or enter NOBACKOUTFAIL to allow the PowerExchange exit programs that you define at the XFCBOUT and XFCLDEL global exit points to handle backouts as logical deletions with before and after images and continue CDC processing.

If you enter multiple options, separate them from one another with a comma. Do not also use a space between the options. For example:

```
DSN=EDM.VSAM.ESDS4,CAPTURE,BACKOUTOVERRIDE,NOBACKOUTFAIL
```

Note: You can use the options in the DSN statement to override the CAPTURE_*vsam_source_type*, BACKOUTRC, and ESDSFAIL settings for a specific data set only.

If the CICS/VSAM ECCR is active when you set these options, issue the EDMC RESTART command to re-initialize the CICS/VSAM ECCR so that the ECCR can start using the updated CDC override options.

For more information, see the "CICS/VSAM Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

Command Changes in 10.0

PowerExchange 10.0 introduces changes to CICS/VSAM ECCR commands.

CICS/VSAM ECCR Commands

PowerExchange 10.0 introduces new and changed commands for the CICS/VSAM ECCR.

Enter the commands from the CICS terminal with the "EDMC" default CICS transaction code. Use the following syntax:

```
EDMC command_name
```

The following commands are new or changed:

DISPLAY or DISP

Changed. Now also displays the names of any open VSAM ESDS data sets that are registered for change data capture.

EXITPGMS or XPGM

New. Lists all of the user exit programs that are defined at the CICS global user exit (GLUE) points and task-related user exit (TRUE) that PowerExchange uses for CICS/VSAM CDC. If you have ESDS source data sets, you can use this list to verify that the PowerExchange exit program, EDMKLD*nn*, for handling logical deletes for ESDS backouts is listed last at the XFCLDEL exit point, as required.

OPTIONS or OPTS

New. Displays the CICS/VSAM CDC override options that are currently specified in the //EDMKOVRD DD statement in the CICS region startup JCL or in the data set to which this DD statement points.

REFRESH or REFR

New. Refreshes the display of the CICS/VSAM CDC override options that are currently specified in the //EDMKOVRD DD statement in the CICS region startup JCL or in the data set to which this DD statement points. Also validates these options and identifies any syntax errors. Use this command after you change the override options to identify any syntax errors.

RESTART or REST

New. Re-initializes the CICS/VSAM ECCR in the CICS region by issuing the EDMC TERM command followed by the EDMC INIT command. Issue this command after changing any of the CDC override options in the //EDMKOVRD DD statement in the CICS region startup JCL or in the data set to which this DD statement points so that your changes will take effect.

For more information, see the "CICS/VSAM ECCR Commands" chapter in the *PowerExchange Command Reference*.

CHAPTER 23

PowerExchange ODBC

This chapter includes the following topics:

PowerExchange 10.2 HotFix 1 - New Features and Changes for ODBC

This section describes the PowerExchange 10.2 HotFix 1 new features and changes that are related to PowerExchange ODBC.

Parameter and Option Changes in 10.2 HotFix 1

PowerExchange 10.2 HotFix 1 introduces changed parameter options for the PowerExchange ODBC driver.

USE_CATALOG_METADATA Option of the PWXOVERRIDES Parameter

PowerExchange introduces a new option for the PWXOVERRIDES parameter. You can specify the USE_CATALOG_METADATA=Y option to read metadata from the DB2 catalog during a DB2 bulk load session instead of issuing a SELECT statement. You then do not need to grant PowerExchange SELECT privileges on the table.

You can specify the PWXOVERRIDES parameter in the odbc.ini file on Linux or UNIX or in the PowerExchange Data Source wizard on Windows.

For more information, see the "Using the PowerExchange ODBC Drivers" chapter in the *PowerExchange Reference Manual*.

PowerExchange 10.2 - New Features and Changes for ODBC

This section describes the PowerExchange 10.2 new features and changes that are related to PowerExchange ODBC.

Parameter and Option Changes in 10.2

PowerExchange 10.2 introduces changed parameter options for the PowerExchange ODBC driver.

Level Property

Changed. The Level property or parameter for PowerExchange ODBC data sources has changed. This property now applies when you define a value of AES for the Option property and define a value of Y for the Encrypt property.

Enter one of the following values to indicate the encryption level:

- **1**. Use a128-bit encryption key.
- **2**. Use a 192-bit encryption key.
- **3**. Use a 256-bit encryption key.

Default is **1**.

You set the value of the Level property in either of the following places:

- On Linux or UNIX, in the LEVEL parameter in the odbc.ini file
- On Windows, in the **Level** field on the **PowerExchange Data Source** tab of the ODBC Data Source Administrator

For more information, see the "Using the PowerExchange ODBC Drivers" chapter in the *PowerExchange Reference Manual*.

Option Property

The supported values for the Option property or parameter for PowerExchange ODBC data sources have changed The following table identifies new and deprecated values:

Value	New or Deprecated
AES	New
DES	Deprecated
RC2	Deprecated

When you select Y for the Encrypt property, you must now select AES for the Option property.

Note: PowerExchange changes an Option value of DES or RC2 to AES.

You set the value of the Option property in either of the following places:

- On Linux or UNIX, in the ENCRYPT parameter in the odbc.ini file
- On Windows, in the **Encrypt** field on the **PowerExchange Data Source** tab of the ODBC Data Source Administrator

For more information, see the "Using the PowerExchange ODBC Drivers" chapter in the *PowerExchange Reference Manual*.

Array Size Option of the PWXOVERRIDES Parameter

PowerExchange introduces a change to the Array Size option of the PWXOVERRIDES parameter. The maximum value of the Array Size option has been reduced from 100000 to 5000. If you specify a value greater than 5000, PowerExchange changes the value to 5000 and issues warning message PWX-07630.

You can specify the PWXOVERRIDES paramter in the odbc.ini file on Linux or UNIX or in the PowerExchange Data Source wizard on Windows.

PowerExchange 10.0 - New Features and Changes for ODBC

This section describes the PowerExchange 10.0 new features and changes that are related to PowerExchange ODBC.

Parameter and Option Changes in 10.0

PowerExchange 10.0 introduces a changed parameter option for the PowerExchange ODBC driver.

Location Property

You can no longer specify **local** for the Location property or parameter for PowerExchange ODBC data sources on 32-bit Windows systems.

You set the location value in either of the following places:

- On Linux or UNIX, in the LOCATION parameter in the odbc.ini file

- On Windows, in the **Location** field on the **PowerExchange Data Source** tab of the ODBC Data Source Administrator

For more information, see the "Using the PowerExchange ODBC Drivers" chapter in the *PowerExchange Reference Manual*.

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