



Informatica® PowerExchange
10.5.1

Release Guide

Informatica PowerExchange Release Guide

10.5.1

September 2021

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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*.

Informatica Resources

Informatica provides you with a range of product resources through the Informatica Network and other online portals. Use the resources to get the most from your Informatica products and solutions and to learn from other Informatica users and subject matter experts.

Informatica Network

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Informatica Velocity

Informatica Velocity is a collection of tips and best practices developed by Informatica Professional Services and based on real-world experiences from hundreds of data management projects. Informatica Velocity represents the collective knowledge of Informatica consultants who work with organizations around the world to plan, develop, deploy, and maintain successful data management solutions.

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To find online support resources on the Informatica Network, visit <https://network.informatica.com> and select the eSupport option.

CHAPTER 1

Summary of PowerExchange New Features and Changes

This chapter includes the following topics:

- [About This Summary, 13](#)
- [PowerExchange 10.5.1, 14](#)
- [PowerExchange 10.5, 16](#)
- [PowerExchange 10.4.1, 22](#)
- [PowerExchange 10.4.0 HotFix 1, 24](#)
- [PowerExchange 10.4.0, 26](#)
- [PowerExchange 10.2 HotFix 2, 31](#)
- [PowerExchange 10.2 HotFix 1, 33](#)
- [PowerExchange 10.2, 38](#)

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
10.5.1	September 2021
10.5	March 2021
10.4.1	June 2020
10.4.0 HotFix 1	May 2020, phase 1 (IBM i, Red Hat Linux, and z/OS), phase 2 (Windows), and phase 3 (AIX)
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

PowerExchange 10.5.1

This section lists the new features and changes in PowerExchange 10.5.1.

New Features in 10.5.1

The following table lists PowerExchange 10.5.1 features by PowerExchange component or data source:

Component or Data Source	Feature Reference
Db2 for z/OS	“DB2 Loader and IMS Netport Passphrase Support” on page 110 “%PWD Substitution Variable for Netport Jobs” on page 111
IMS	“Passphrase Support for IMS Netport Jobs” on page 116
Oracle	“Oracle LOB Support” on page 137 “Dynamic Dictionary for Oracle Sources” on page 138
SAP HANA sources	“Support for SAP HANA CDC Sources” on page 159

Parameter and Option Changes in 10.5.1

PowerExchange 10.5.1 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
IBMI_USE_DB2_SYSTEM_COLUMN_NAMES	New
OPENPOLL	New
UPDATE_USER_ACTIVITY	New
HANA CAPI_CONNECTION	New
TEMP_FILE_DIRECTORY	New

For more information, see [“DBMOVER Configuration File Statements” on page 54](#).

PowerExchange Express CDC for Oracle Configuration File

The following new and changed parameters can be specified in the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg:

Statement	New, Changed, or Deprecated
DICTIONARY	Changed - Now used by the dynamic dictionary feature. - Changed - MODE parameter - New - RETENTIONPERIOD, SNAPSHOTONCOLDSTART, and UPDATEINTERVAL parameters
OPTIONS	Changed - New SPILLFILEBUFFSZ parameter Changed - Changed MEMOPS parameter
STATESTORAGE	Changed - Now used for the Oracle dynamic dictionary feature.

For more information, see [“PowerExchange Express CDC for Oracle Configuration File” on page 139](#).

Changes to Supported Operating Systems and Data Sources in 10.5.1

PowerExchange 10.5.1 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 10.5.1:

Data Source	Version	Operating System	Bulk	CDC	Added, Dropped, or Deferred
PostgreSQL	13.x	Linux and Windows	N/A	X	Added
PostgreSQL	13.x 12.1 11.4 10.x	SUSE Linux	N/A	X	Added
SAP HANA	2.x	Linux and Windows	N/A	X	Added

PowerExchange 10.5

This section lists the new features and changes in PowerExchange 10.5.

New Features in 10.5

The following table lists PowerExchange 10.5 features by PowerExchange component or data source:

Component or Data Source	Feature Reference
CICS Transaction Server	"Support for CICS Transaction Server Version 5.6" on page 163
Db2 for Linux, UNIX, and Windows	"Support for DB2 for Linux, UNIX, and Windows Version 11.5" on page 107
IBM i	"TLS Security in a PowerExchange Network" on page 104 "PWXUGSK Utility Enhancements" on page 80 "WRKJRNLCKE - Journal Lock Table Utility" on page 81
IMS	"Updated Components in the PowerExchange ECCR CRG.LOAD Library for IMS Synchronous CDC" on page 117 "Ability to View IMS Unload Files From the DL/1 Batch Access Method Tab" on page 73 "Ability to Skip Data Rows for IMS Unload Data Sets During a Row Test" on page 72
Linux, UNIX, and Windows	"PWXUSSL Utility Enhancements" on page 81
Oracle	"Checkpointing In-flight Transactions" on page 140

Parameter and Option Changes in 10.5

PowerExchange 10.5 includes parameter and option changes.

Adabas ECCR Parameter

The following table identifies a parameter in the Adabas ECCR RUNLIB(ADAECRP1) member that has a changed default value:

Parameter	New, Changed, or Deprecated
ETID_DATE	Changed

For more information, see [“Adabas ECCR Parameter” on page 97](#).

DBMOVER Configuration File Statements

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

Statement	New, Changed, or Deprecated
ABEND_SW	Changed - Change for z/OS
CREDENTIALS_CASE	Changed
IBMI_2ND_LEVEL_HELP	New
QAQQINILIB	New - New for IBM i
LISTENER	Changed - Change for IBM i
SSL_CIPHER_LIST	Changed - Change for IBM i
SSL_CONTEXT_METHOD	Changed - Change for IBM i
SSL_REQ_CLNT_CERT	Changed - Change for IBM i
SSL_TOLERATE_UNTRUSTED_ISSUER	New - New for IBM i
SVCDUMP	New - New for z/OS

For more information, see [“DBMOVER Configuration File Statements” on page 56](#) and [“DBMOVER Configuration File Statements” on page 104](#).

DTLREXE Utility Parameters

The following table identifies new parameters for the DTLREXE utility:

Parameter	New, Changed, or Deprecated
SSLINFO	New

For more information, see [“DTLREXE Utility Parameters” on page 83](#).

DTLUCBRG Utility Parameters

The following table identifies new parameters for the DTLUCBRG utility:

Parameter	New, Changed, or Deprecated
EXCLUDE_COL	New
EXCLUDE_TYPE	New
INCLUDE_COL	New

For more information, see [“DTLUCBRG Utility Parameters” on page 83](#).

DTLURDMO Utility Parameters

The following table identifies new parameters for the DTLURDMO utility:

Parameter	New, Changed, or Deprecated
GETREGTAG	New

For more information, see [“DTLURDMO Utility Parameters” on page 84](#).

PWXUGSK Utility Parameters

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

Parameter	New, Changed, or Deprecated
PING_SSLINFO	New
PING_EPWD	Changed
PING_PWD	Changed
PING_UID	Changed

For more information, see [“PWXUGSK Utility Parameters” on page 84](#).

PWXUSSL Utility Parameters

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

Parameter	New, Changed, or Deprecated
PING_SSLINFO	New
PING_EPWD	Changed

Parameter	New, Changed, or Deprecated
PING_PWD	Changed
PING_UID	Changed

For more information, see [“PWXUSSL Utility Parameters” on page 85](#).

PowerExchange Express CDC for Oracle Configuration File

The following new statements can be specified in the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg:

Statement	New, Changed, or Deprecated
CHECKPOINT	New
STATESTORAGE	New

The DATABASE statement has the following new and deprecated parameters:

Parameter	New, Changed, or Deprecated
TDEKEYSTORE	New
TDEWALLETDIR	Deprecated
TDEWALLETPWD	Deprecated
TDEWALLETPWD	Deprecated

Note: Deprecated parameters continue to be supported for backward compatibility.

The OPTIONS statement has the following new parameters:

Parameter	New, Changed, or Deprecated
BCE_SUBSTITUTE_YEAR	New
BCE_YEAR_HANDLING	New
SPILLENCRYPTPASS	New
SPILLENCRYPTPASS	New

For more information, see [“PowerExchange Express CDC for Oracle Configuration File” on page 141](#).

Command Changes in 10.5

PowerExchange 10.5 includes command changes.

PWXUGSK Utility Commands

PowerExchange 10.5 introduces new PWXUGSK utility commands.

The following table identifies the new commands:

Command	New, Changed, or Deprecated
REPORT_ZOS_ATTLS_POLICY	New
PING_SSLINFO	New

For more information, see [“PWXUGSK Utility Commands” on page 81](#).

PWXUMAP Utility Commands

PowerExchange 10.5 introduces a new PWXUMAP utility command.

The following table identifies the new command:

Command	New, Changed, or Deprecated
MDDLDESCRIBE	New

For more information, see [“PWXUMAP Utility Commands” on page 82](#).

PWXUSSL Utility Commands

PowerExchange 10.5 introduces new PWXUSSL commands.

The following table identifies the new commands:

Command	New, Changed, or Deprecated
REPORT_ZOS_ATTLS_POLICY	New
PING_SSLINFO	New

For more information, see [“PWXUSSL Utility Commands” on page 83](#).

LISTTASK Command

The PowerExchange LISTTASK command changed in PowerExchange 10.5 to display allocated resources for each active task, including the client system, database name, and the file name or table name.

Changes to Supported Operating Systems and Data Sources in 10.5

PowerExchange 10.5 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*.

AIX Deferment

Effective in version 10.5, AIX support is deferred and is unavailable.

Deferred functionality is either not available or not supported in the current release. Informatica intends to reinstate it in an upcoming release, but might choose not to in accordance with changing market or technical circumstances.

Data Sources

The following table identifies added or dropped data source or target versions in PowerExchange 10.5:

Data Source	Version	Operating System	Bulk	CDC	Added or Dropped
CICS Transaction Server	5.6	z/OS	Not applicable - Use VSAM bulk data movement instead.	Supported - sources	Added
CICS Transaction Server	4.2	z/OS	-	-	Dropped
Db2 for Linux, UNIX, and Windows	11.5	LUW	Supported - sources and targets	Supported - sources	Added
Microsoft SQL Server	2016 2014	Windows	-	-	Dropped

Operating Systems

The following table identifies a change to supported operating system versions in PowerExchange 10.5:

Operating System	Version	Added or Dropped
Red Hat Linux	8	Added
Red Hat Linux	6.7	Dropped
SUSE Linux	15	Added
SUSE Linux	11	Dropped
Windows Server	2012 R2	Dropped

Security Change in 10.5

As of PowerExchange 10.5, Informatica recommends that you use TLS network security on IBM i machines in preference to PowerExchange alternate network security.

Alternate network security, which is described in the *PowerExchange Reference Manual*, is still supported but should be used only in exceptional circumstances. Informatica recommends that you to transition to TLS network security.

PowerExchange 10.4.1

This section lists the new features and changes in PowerExchange 10.4.1.

New Features in 10.4.1

The following table lists PowerExchange 10.4.1 features by PowerExchange component or data source:

Component or Data Source	Feature Reference
Db2 for z/OS	“Db2 for z/OS Huffman Compression Support” on page 111
IBM i installer	“IBM i Installer Improvements” on page 44
Oracle	“Staging Files for Improved CDC Performance in an ASM Environment” on page 145 “Support for Additional Oracle Versions in Amazon RDS Environments” on page 145
PowerExchange utilities	“EDMUOPTS Utility” on page 85

Parameter and Option Changes in 10.4.1

PowerExchange 10.4.1 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
IBMI_SUPPRESS_OUTPUT	New
MSQL_CAPI_CONNECTION	Changed - GUIDBRACES parameter added

For more information, see [“DBMOVER Configuration File Statements” on page 58](#).

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 - OPT=Y is the new default value

For more information, see [“Db2 for z/OS ECCR Configuration Statements in the REPL2OPT DD Data Set” on page 112.](#)

PowerExchange Express CDC for Oracle Configuration File

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

Statement	New, Changed, or Deprecated
ASMSTAGING	New

For more information, see [“PowerExchange Express CDC for Oracle Configuration File” on page 145.](#)

PWXUMAP Utility Parameters

The PWXUMAP Map List Utility adds the following new parameters:

Parameter	Scope
CPUTIMEUSED	Global
PACESIZE	Global
PROMPT	Global
USESEQUENCEFIELDS	DTLDESCRIBE command

For more information, see [“PWXUMAP Utility Parameters” on page 86.](#)

Changes to Supported Operating Systems and Data Sources in 10.4.1

PowerExchange 10.4.1 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 10.4.1:

Data Source	Version	Operating System	Bulk	CDC	Added, Dropped, or Deferred
Adabas	8.5.x	z/OS	X	X	Added
MySQL Community Edition ¹	8.0 5.7	Linux and Windows	N/A	X	Added
Oracle	19c 18c	Amazon RDS for Oracle environments	N/A	X	Added
PostgreSQL	12.1	Linux and Windows	N/A	X	Added

1. PowerExchange CDC previously supported MySQL Enterprise Edition only. PowerExchange CDC 10.4.1 adds support for MySQL Community Edition. MySQL Community Edition has been certified with the MySQL native ODBC driver, which you can download from the MySQL website.

PowerExchange IPv6 Communication with Clients

IPv6 network communication between PowerExchange and the hosts with which it communicates, such as PowerExchange Listener hosts, Informatica application services, and PowerCenter clients, have been certified.

PowerExchange 10.4.0 HotFix 1

This section lists the new features and changes in PowerExchange 10.4.0 HotFix 1.

Phased Release of PowerExchange 10.4.0 HotFix 1

PowerExchange 10.4.0 Hotfix 1 is being released in phases by platform type.

- Phase 1 includes updated code for IBM i, Linux, and z/OS.
- Phase 2 includes updated code for Windows.
- Phase 3 updated code for AIX.

Note: If the Oracle redo logs reside on Solaris, run the PowerExchange Listener and PowerExchange Logger for Linux, UNIX, and Windows on Linux to capture changes from the logs.

New Features in 10.4.0 HotFix 1

The following table lists PowerExchange 10.4.0 HotFix 1 features by PowerExchange component or data source:

Component or Data Source	Feature Reference
Microsoft SQL Server	"Support for Microsoft SQL Server 2019" on page 125 "Adding ODBC Parameters for Connecting to a Microsoft SQL Server Source Database" on page 125
MySQL	"Adding ODBC Parameters for Connecting to a MySQL Source Database" on page 130
Oracle	"Toleration Support for Oracle 19c CDC Sources" on page 146
PostgreSQL	"Adding ODBC Parameters for Connecting to a PostgreSQL Source Database" on page 154

Parameter and Option Changes in 10.4.0 HotFix 1

PowerExchange 10.4.0 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
ODBC_CONN_PARAMS	New statement
UDB_CAPI_CONNECTION	Changed - LIMITRESCAN and LOGBUFSIZE parameters added

For more information, see ["DBMOVER Configuration File Statements" on page 59](#).

Changes to Supported Operating Systems and Data Sources in 10.4.0 HotFix 1

PowerExchange 10.4.0 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 10.4.0 HotFix 1:

Data Source	Version	Operating System	Bulk	CDC	Added, Dropped, or Deferred
Microsoft SQL Server	2019	Windows	Supported - sources and targets	Supported - sources	Added
Oracle	19c	AIX, Linux, and Windows	Not supported	Supported - sources	Added

1. PowerExchange Express CDC for Oracle adds toleration support for Oracle 19.c. *Toleration support* means that PowerExchange can capture data from Oracle 19c sources but does not support any of the new features introduced in Oracle 19c that the source database uses.

If the Oracle 19c redo logs reside on Solaris, you can run the PowerExchange Listener and PowerExchange Logger on Linux to capture changes from the logs.

Operating Systems

The following table identifies a change to supported operating system versions in PowerExchange 10.4.0 HotFix 1:

Operating System	Version	Added or Dropped
z/OS	2.4	Added

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 118 "Getting Source DBD Information from the IMS Catalog" on page 118

Component or Data Source	Feature Reference
PostgreSQL sources	“Support for PostgreSQL CDC Sources” on page 155
PowerExchange Utilities	“PWXUMAP Utility” on page 87 “PWXUCCLPRT Utility” on page 87 “DTLURDMO Utility Enhancements” on page 87

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
IMBSBDS	New
LU00FILE	New
MSQL CAPI_CONNECTION	Changed - LOCKAVOIDANCE parameter change
MYSQL CAPI_CONNECTION	Changed - MYSQLBINLOG parameter change
NODE	Changed - Trailing [YIN] parameter deprecated
PG CAPI_CONNECTION	New
SSL_REQ_CLNT_CERT	Changed - Default behavior change

For more information, see [“DBMOVER Configuration File Statements” on page 61](#).

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 [“DTLREXE Utility Parameters” on page 88](#).

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 [“DTLUCBRG Utility Parameters” on page 88](#).

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 89](#).

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 76](#).

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 147](#).

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

Data Source	Version	Operating System	Bulk	CDC	Added, Dropped, or Deferred
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	18c ¹	Linux, UNIX, or Windows	Toleration support - sources and targets	Toleration support - sources	Added
Oracle	12c R1 11g R2	Linux, UNIX, or Windows	-	-	Dropped
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 18c sources but does not support any of the new features introduced in Oracle 18c 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 164
MySQL sources	"Catalog of MySQL Source Table Definitions" on page 131

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 46

DBMOVER Configuration File Statements

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

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

For more information, see [“DBMOVER Configuration File Statements” on page 63](#).

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 49](#).

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 69

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 98 “pwxcmd Commands for the Adabas ECCR” on page 99
CICS Transaction Server	“Support for CICS Transaction Server Version 5.4” on page 164
Datacom	“Support for Datacom Version 15.1” on page 101 “pwxcmd Commands for the Datacom Table-Based ECCR” on page 102
IDMS	“pwxcmd Commands for the IDMS ECCR” on page 115
IMS	“Support for IMS Version 15” on page 121 “Updated Components in the PowerExchange ECCR CRG.LOAD Library for IMS Synchronous CDC” on page 121 “pwxcmd Commands for the IMS Log-Based ECCR” on page 122
Microsoft SQL Server	“Support for Microsoft SQL Server 2017” on page 126
Monitoring and tuning	“Generating Reports from SMF Statistics Records” on page 77
MySQL sources	“Support for MySQL CDC Sources” on page 133
Oracle	“PowerExchange Express CDC for Oracle Support for Amazon RDS for Oracle Sources” on page 149 “Toleration Support for Oracle 12c R2 Sources” on page 150
PowerExchange Client for PowerCenter	“Time-based Restart Points for CDC Sessions That Retrieve Data from the Logger” on page 50
PowerExchange Logger for Linux, UNIX, and Windows	“Time-based Restart Points for CDC Sessions That Retrieve Data from the Logger” on page 50
PowerExchange utilities	“Data Map Creation Utility Enhancement” on page 91 “DTLUCBRG Utility Generates Before-Image and Change-Indicator Columns” on page 92 “DTLUCBRG Utility Generates Capture Registrations for MySQL Sources” on page 92 “PWXUCGRP Utility for Reporting the Capture Registrations in the CCT File” on page 92 “PWXUGSK Utility for Reporting SSL Information” on page 93

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 YIN parameter
SVCNODE	Changed - Supports pwxcmd commands for PowerExchange ECCRs
UOWC CAPI_CONNECTION	Changed - New CUOWS parameter

For more information, see [“DBMOVER Configuration File Statements” on page 64](#).

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 Express CDC for Oracle Configuration File” on page 150](#).

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 Condense Configuration Parameters” on page 53](#).

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 47

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 51](#).

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 166](#).

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 93](#).

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 99](#), [“pwxcmd Commands for the Datacom Table-Based ECCR” on page 102](#), [“pwxcmd Commands for the IDMS ECCR” on page 115](#), and [“pwxcmd Commands for the IMS Log-Based ECCR” on page 122](#).

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 95](#).

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	12c 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 12c R2 (12.2). PowerExchange Oracle CDC with LogMiner does not support 12c R2. *Toleration support* means that PowerExchange can capture data from Oracle 12c R2 sources but does not support any of the Oracle 12c 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 12c 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 112 "Support for Image Copy Data Sources That Include Inline LOB Columns" on page 113 "Support for LOBs in DB2 for z/OS CDC Sources" on page 113
IMS	"Updated Components in the PowerExchange ECCR CRG.LOAD Library for IMS Synchronous CDC" on page 122
Microsoft SQL Server	"Microsoft SQL Server NTLM and Active Directory Authentication for Access to SQL Server Sources" on page 127
Monitoring and tuning	"Improvements to SMF Statistics Records and Documentation" on page 78

Component or Data Source	Feature Reference
Oracle	"Reporting DDL Operations on Registered Oracle Source Tables" on page 151
PowerExchange Navigator	"PowerExchange Navigator Overrides for the DBMOVER Configuration File and PowerExchange License Key File" on page 74

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 66](#).

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 151](#).

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 114](#).

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 51](#).

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 167](#).

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 96](#).

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 75

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 165
IMS	"Support for IMS Command Code A" on page 123
Microsoft SQL Server	"Ability to Change the Registration Status from History to Active When the Database Is Not Active" on page 128 "Improved Handling of Capture Registration Deletions" on page 128

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 12c sources indicates that Express CDC works with Oracle 12c Release 1 but does not work with Oracle 12c 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.

CHAPTER 2

PowerExchange Installation and Upgrade

This chapter includes the following topics:

- [PowerExchange 10.5.1 - New Features and Changes for Installation and Upgrade, 43](#)
- [PowerExchange 10.4.1 - New Features and Changes for Installation and Upgrade, 43](#)
- [PowerExchange 10.4.0 - New Features and Changes for Installation and Upgrade, 44](#)

PowerExchange 10.5.1 - New Features and Changes for Installation and Upgrade

This section describes the PowerExchange 10.5.1 new features and changes that are related to PowerExchange installation and upgrade.

Upgrade Consideration for IBM i

After you upgrade PowerExchange on IBM i but before you start the PowerExchange Listener, you must update objects such as the configuration source file and data files for compatibility with the current release.

Issue the following command to update the objects for compatibility with the current release:

```
CRTDTLENVF DTLLIB(DTLLIB) DATALIB(DATALIB)
```

For more information, see the "Upgrade Considerations" appendix in the *PowerExchange Installation and Upgrade Guide*.

PowerExchange 10.4.1 - New Features and Changes for Installation and Upgrade

This section describes the PowerExchange 10.4.1 new features and changes that are related to PowerExchange installation and upgrade.

New Features in 10.4.1

PowerExchange 10.4.1 introduces the following new feature that is related to PowerExchange installation and upgrade:

IBM i Installer Improvements

The IBM i Installer interface includes the following new features:

- The **File** menu provides options that let you open or save a file that contains installation parameters. You can use this file to migrate the installation to other IBM i systems.
- The **Tools** menu provides options that let you generate an encrypted password and view the installation log files.

For more information, see the "Installing and Upgrading PowerExchange on IBM i" chapter in the *PowerExchange Installation and Upgrade Guide*.

Behavior Changes in 10.4.1

PowerExchange 10.4.1 introduces the following behavior change that is related to installation and upgrade:

IBM i Installer Changed Behavior

At the end of the installation process, the IBM i Installer now displays one of the following types of messages:

- If the installation succeeds, a message that includes options to save the configuration parameters specified for the installation and to save the installation log file.
- If the installation fails, a message that shows the CRTPWXENV command that the installer generates and the error that caused the installation to fail. You can copy the information in this message to send to Informatica Global Customer Support.

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).

CHAPTER 3

PowerExchange Agent

This chapter includes the following topics:

- [PowerExchange 10.2 HotFix 2 - New Features and Changes for the PowerExchange Agent, 46](#)
- [PowerExchange 10.2 HotFix 1 - New Features and Changes for the PowerExchange Agent, 47](#)

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 10.5.1 - New Features and Changes for the PowerExchange Client for PowerCenter, 48](#)
- [PowerCenter 10.2 HotFix 2 - New Features and Changes for the PowerExchange Client for PowerCenter, 49](#)
- [PowerCenter 10.2 HotFix 1 - New Features and Changes for the PowerExchange Client for PowerCenter, 49](#)
- [PowerCenter 10.2 - New Features and Changes for the PowerExchange Client for PowerCenter, 51](#)

PowerCenter 10.5.1 - New Features and Changes for the PowerExchange Client for PowerCenter

New Features in 10.5.1

PowerExchange 10.5.1 introduces the following new features for PWXPC:

Sample Template for the PM_RECOVERY Table

The `recovery_template.sql` file is a template for creating target PM_RECOVERY recovery tables for relational databases. It contains general requirements for target support for CDC transactions when writing to relational databases.

You can configure the template for target support for PowerCenter, Informatica Intelligent Cloud Services (IICS), and PowerExchange Cloud Data Integration (CDI).

The installation process copies the `recovery_template.sql` file to the root installation directory for the Linux, UNIX, and Windows installers. Review and customize the SQL syntax to ensure support for the target database.

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

Recovery Table Scripts

You can run the following scripts to create the recovery tables in the target database.

Script	Database
create_schema_inf.sql	Informix
create_schema_neoview.sql	Neoview
create_schema_netz.sql	Netezza
create_schema_syb.sql	Sybase
create_schema_ter.sql	Teradata
create_schema_tpt.sql	Teradata PT

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

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 a 128-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*.

CHAPTER 5

PowerExchange Condense

This chapter includes the following topic:

- [PowerExchange 10.2 HotFix 1 - New Features and Changes for PowerExchange Condense, 53](#)

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*.

CHAPTER 6

PowerExchange Listener

This chapter includes the following topics:

- [PowerExchange 10.5.1 - New Features and Changes for the PowerExchange Listener, 54](#)
- [PowerExchange 10.5 - New Features and Changes for the PowerExchange Listener, 56](#)
- [PowerExchange 10.4.1 - New Features and Changes for the PowerExchange Listener, 58](#)
- [PowerExchange 10.4.0 HotFix 1 - New Features and Changes for the PowerExchange Listener, 59](#)
- [PowerExchange 10.4.0 - New Features and Changes for the PowerExchange Listener, 61](#)
- [PowerExchange 10.2 HotFix 2 - New Features and Changes for the PowerExchange Listener, 62](#)
- [PowerExchange 10.2 HotFix 1 - New Features and Changes for the PowerExchange Listener, 64](#)
- [PowerExchange 10.2 - New Features and Changes for the PowerExchange Listener, 66](#)

PowerExchange 10.5.1 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.5.1 new features and changes that are related to the PowerExchange Listener.

Parameter and Option Changes in 10.5.1

PowerExchange 10.5.1 introduces the following changes to DBMOVER configuration statements:

DBMOVER Configuration File Statements

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

HANA CAPI_CONNECTION

New. Connects to an SAP HANA source for CDC processing. Syntax is:

```
CAPI_CONNECTION=(NAME=capi_connection_name
[,DLLTRACE=trace_id]
,TYPE=(HANA
,SERVER=[server_name|ip_address]:port
,DATABASE=database_name
[,BUFFERSIZE=bytes]
[,FETCHSIZE=records]
[,LOGCLEAR=days]
[,ONDATATRUNC=[WARN|FAIL]]
[,SSL=[Y|N]]
```

```

        [,TIMEOUT=milliseconds]
        [,VMOPTS=options]
    [,VMOPTSDEL=delimiter_character])
)

```

IBMI_USE_DB2_SYSTEM_COLUMN_NAMES

New. Controls whether to use Db2 system column names when performing PowerExchange database row tests and PowerExchange CDC registrations.

This statement pertains to PowerExchange Navigator personal metadata, CDC database row tests, and PowerExchange CDC registrations in the PowerExchange Navigator and the DTLUCBRG utility. It also pertains to PowerCenter Db2 for i, CDC source and target imports, and PowerCenter CDC workflows.

Valid values are:

- **Y.** Use Db2 system column names. When you specify Y, the system column name is displayed for CDC row tests and PowerExchange capture registrations in the PowerExchange Navigator and DTLUCBRG utility.
- **N.** Use long column names. Do not use Db2 system column names.

Default is N.

OPENPOLL=*number*

New. Adjusts the wait time when the PowerExchange Listener encounters tape mount delays on z/OS. Use this statement to relieve constraints on other workflows when the availability of tape data sets or devices cannot be guaranteed.

PowerExchange uses this value in conjunction with the POLLTIME value to calculate a time limit that determines how long the PowerExchange Listener waits for an open request on a tape data set before canceling the request and ending the task.

The value represents the number of passes through the PowerExchange Listener polling loop. To calculate the time limit, the OPENPOLL value is multiplied by the POLLTIME value. For example, if you set OPENPOLL to 60 and POLLTIME to 1000 milliseconds, the time limit is approximately 60000 milliseconds, or 1 minute.

The range for the OPENPOLL value is 5 through 10000.

Default is 0, which causes no requests to be canceled.

SVCNODE

Changed. The SVCNODE statement specifies the TCP/IP port on which a PowerExchange process listens for commands. You can now include up to 30 SVCNODE statements in a DBMOVER configuration file.

TEMP_FILE_DIRECTORY

New. Specifies an alternate location for the temporary files that PowerExchange creates if the TMP or TMPDIR environment variables on Windows, UNIX, or Linux are not specified. Valid values are a path and directory name on the server where the dbmover.cfg file resides.

UPDATE_USER_ACTIVITY = {Y|N}

New. Controls whether the LAST-ACCESS date in RACF is updated when a user connects to a PowerExchange Listener on z/OS. For the LAST-ACCESS dates to be updated, you must configure the SECURITY=(2,x) and UPDATE_USER_ACTIVITY=Y statements in the DBMOVER configuration file.

Valid values are:

- **Y.** Update the LAST-ACCESS date in the RACF database when a connection is made to a PowerExchange Listener on z/OS. You can view the LAST-ACCESS date in RACF LISTUSER output.

- **N.** Do not update the LAST-ACCESS date in RACF for PowerExchange Listener connections.

Default is N.

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

PowerExchange 10.5 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.5 new features and changes that are related to the PowerExchange Listener.

Parameter and Option Changes in 10.5

PowerExchange 10.5 introduces the following changes to DBMOVER configuration statements:

DBMOVER Configuration File Statements

The DBMOVER configuration file contains the following new, changed, and dropped statements:

ABEND_SW={N|Y}

Changed. Option Y was changed to print the PowerExchange call stack by using CEE3DMP and the control areas at the time of the abend. Use this option to bypass IBM or third-party abend diagnostic tools. This option is for z/OS only.

CREDENTIALS_CASE={A|D|S}

Changed. PowerExchange handling of mixed-case passwords under option A changed. On IBM i or z/OS, PowerExchange now processes and passes user IDs and passwords to the operating system for authentication, as follows:

1. PowerExchange converts the user ID to uppercase.
2. PowerExchange checks whether the operating system is configured to handle mixed-case passwords.
 - If the operating system is configured to handle mixed-case passwords, PowerExchange keeps the password case as is.
 - If the operating system is not configured to handle mixed-case passwords, PowerExchange converts the password to uppercase. On z/OS, if the password is longer than eight characters, which indicates it is a passphrase, PowerExchange keeps the case in which the password was entered.

IBMI_2ND_LEVEL_HELP={Y|N}

New. Controls whether IBM i second-level help information is included in PowerExchange messages that report operating system or API errors. The second-level help provides additional information, such as a reason or reason code, to help diagnose the error.

LISTENER

Changed. To use TLS networking for IBM i, you can specify SSL in tenth comma position. When you use TLS networking, the send and receive sizes in the sixth and seventh comma positions of the LISTENER statement must be set to a value that does not exceed 16384.

QQAQINILIB=library_name

New. Specify the library name that contains the QQAQINI query options file. If you do not specify this statement, PowerExchange uses the default library specified for the IBM i system.

Note: In PowerCenter, you can override the QQAQINILIB setting in the DBMORDER configuration file by entering QQAQINILIB=library_name in the **PWX Override** connection attribute for the Db2 for i connection.

SSL_CIPHER_LIST=cipher_list

Changed. On IBM i, you can specify ciphers by using four hexadecimal digits.

SSL_CONTEXT_METHOD=context_method

Changed. You can now use this statement to enable TLS networking for IBM i.

Note: The TLSV1_3 protocol is not currently supported by PowerExchange. Informatica recommends that you use the TLSV1_2 protocol on all machine types, including IBM i. Avoid using TLSV1_1 and TLSV1.

On IBM i:

- **TLSV1** is allowed on IBM i 5.2.
- **TLSV1_1** is allowed on IBM i 5.2.
- **TLSV1_2** is allowed on IBM i 5.2, 5.3, and 5.4 and is the recommended choice.

If you do not specify SSL_CONTEXT_METHOD, the default is that the system accepts connection requests for all protocols that the IBM i release supports.

Note: Informatica recommends specifying protocol TLSV1_2 on all machine types. The TLSV1_3 protocol is currently not supported by PowerExchange.

SSL_REQ_CLNT_CERT={N|Y}

Changed. The SSL_REQ_CLNT_CERT statement controls whether a PowerExchange server uses an SSL certificate to authenticate the identity of a PowerExchange client. You can now use this statement on IBM i. Valid values are:

- **Y.** Use the GSK session type of SERVER SESSION WITH CLIENT AUTHORITY. The X509 subject certificate from the client machine is validated against the trusted Certificate Authorities (CAs) on the IBM i server.
- **N.** Use GSK session type of SERVER SESSION. The client machine subject certificates are not requested or validated.

Default is Y for PowerExchange servers on IBM i.

SSL_TOLERATE_UNTRUSTED_ISSUER={N|Y}

New. For use on IBM i systems, to control whether to continue or stop processing after a certificate error 6000 has been reported. Valid values are:

- **Y.** Continue processing after a certificate error 6000 has been reported. A certificate error 6000 occurs when the SSL_REQ_CLNT_CERT statement is set to Y and the partner CA is not present among the trusted CAs on the IBM i machine.
- **N.** Stop processing and do not accept the connection after certificate error 6000 has been reported.

SVCDUMP={N|Y}

New. On z/OS, controls whether PowerExchange generates an SVCDUMP at the point of an abend.

The following statements can no longer appear in the DBMORDER configuration file:

- REPOS_CONNECT
- REPOS_DEFAULT_CONNECTION

- REPOS_ENABLE
- RPX_DIR

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

PowerExchange 10.4.1 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.4.1 new features and changes that are related to the PowerExchange Listener.

Parameter and Option Changes in 10.4.1

PowerExchange 10.4.1 introduces the following changes to DBMOVER configuration statements:

DBMOVER Configuration File Statements

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

IBMI_SUPPRESS_OUTPUT={Y,N}

New. Controls whether PowerExchange suppresses spool file creation on an IBM i system.

- **N.** Create spool files.
- **Y.** Suppress spool files.

Default is N.

MSQL_CAPI_CONNECTION

Changed. This statement contains the following new parameter:

GUIDBRACES={Y,N}

Optional. Controls whether PowerExchange retains or removes braces { } around GUID values in data captured from registered SQL Server columns that have the uniqueidentifier datatype. If the PowerCenter session writes data to SQL Server target uniqueidentifier columns, set this parameter to N to remove the braces. Otherwise, the session will encounter writer errors.

Options are:

- **N.** Remove braces.
- **Y.** Retain braces.

Default is Y.

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

PowerExchange 10.4.0 HotFix 1 - New Features and Changes for the PowerExchange Listener

This section describes the PowerExchange 10.4.0 HotFix 1 new features and changes that are related to the PowerExchange Listener.

Parameter and Option Changes in 10.4.0 HotFix 1

PowerExchange 10.4.0 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:

ODBC_CONN_PARAMS

New. Specifies DataDirect ODBC parameters to add to connection strings that are used to connect to Microsoft SQL Server, MySQL, or PostgreSQL sources on the servers you identify. These additional parameters are used for change data capture and for creating, deleting, or modifying capture registrations from the PowerExchange Navigator or DTLUCBRG utility. Syntax is:

```
ODBC_CONN_PARAMS=(DBTYPE={MSQL|MYSQL|PG}  
,SERVER=server_pattern[,port_pattern]  
,ADDL_PARAMS=parameter1,parameter2,...  
)
```

Parameter descriptions:

DBTYPE

Specifies the type of source database for which to specify additional DataDirect ODBC connection parameters. This value must match the TYPE parameter value in the CAPI_CONNECTION statement for the source. Options are:

- **MSQL.** For Microsoft SQL Server sources.
- **MYSQL.** For MySQL sources.
- **PG.** For PostgreSQL sources.

No default is provided.

SERVER=*server_pattern*[,*port_pattern*]

Identifies the database server or servers for which to use the additional ODBC parameters for connecting to the source database. Optionally, you can include a port number or port number pattern.

To specify a server or port pattern, include the asterisk (*) wildcard, which represents zero or more characters, or the question mark (?) wildcard, which represents a single character. Separate the server and port values with a comma.

ADDL_PARAMS

Specifies one or more ODBC parameters to add to the connection string that is sent to the DataDirect driver for connecting to the source. These parameters are used on the servers that match the server name pattern and have an available port that matches the port pattern.

Specify parameters that your DataDirect driver supports in `odbc.ini` files. For more information, see the DataDirect documentation for your driver type. However, do *not* use any of the following ODBC parameters that are not supported by this DBMOVER statement:

- For Microsoft SQL Server sources: DRIVER, HOST, PORT, DB, AM, DOMAIN, UID, and PWD
- For MySQL sources: DRIVER, HOST, PORT, DB, UID, and PWD
- For PostgreSQL sources: DRIVER, HOST, PORT, DB, UID, and PWD

No validation is performed on the ODBC parameters you add. Verify that your parameter entries are valid.

UDB CAPI_CONNECTION

Changed. Two new optional parameters have been added to this statement. Syntax is:

```
CAPI_CONNECTION=(NAME=capi_connection_name
                  ,TYPE=(UDB
                        [,LIMITRESCAN={N|Y}]
                        [,LOGBUFSIZE={kilobytes}[,kilobytes]
                        ...))
```

Parameter descriptions:

LIMITRESCAN={*Y*|*N*}

Optional. When PowerExchange change capture processing encounters a compressed record for a source table in the Db2 log, controls whether PowerExchange scans the log for records from propagatable tables up to an internally set limit or continues scanning until the buffer is full or until the end-of-log (EOL). Use this parameter to avoid excessive scanning of the log, which can result in PowerExchange capture timeouts and degraded performance.

- **Y.** Limits PowerExchange scanning of log records for change capture. This option is recommended to avoid potential PowerExchange capture timeouts and failures.
- **N.** Allows PowerExchange scanning of log records to continue until the buffer is full or until the end-of-log (EOL). In this case, PowerExchange capture processing might end abnormally with a timeout error. This problem is more likely to occur when source tables have a low volume change activity.

Default is N.

LOGBUFSIZE=[*kilobytes_normal*][,*kilobytes_filtered*]

Optional. The buffer sizes, in kilobytes, that the PowerExchange capture process uses for reading Db2 log records in normal-read mode and filtered-read mode. In *filtered-read* mode, PowerExchange scans for compressed records from propagatable tables. You can specify a buffer size for one or both log read modes.

For the first normal-read buffer size, if you enter 0 or do not specify a value, 128 KB is used by default. For the second filtered-read buffer size, if you enter 0 or do not specify a value, the first normal-read buffer size is used by default for filtered read operations.

Note: If you set the PowerExchange `capdl_bufsize` environment variable at the direction of Informatica Global Customer Support, the environment variable value overrides the buffer sizes in the LOGBUFSIZE parameter.

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

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 155](#).

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 134](#).

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 a 128-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*.

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, 69](#)
- [PowerExchange 10.2 HotFix 1 - New Features and Changes for the PowerExchange Logger, 69](#)

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.

CHAPTER 8

PowerExchange Navigator

This chapter includes the following topics:

- [PowerExchange 10.5 - New Features and Changes for the PowerExchange Navigator, 72](#)
- [PowerExchange 10.4.1 - New Features and Changes for the PowerExchange Navigator, 73](#)
- [PowerExchange 10.2 - New Features and Changes for the PowerExchange Navigator, 74](#)

PowerExchange 10.5 - New Features and Changes for the PowerExchange Navigator

PowerExchange 10.5 includes the following new features and changes that are related to the PowerExchange Navigator.

New Features for 10.5

PowerExchange 10.5 introduces the following new features for the PowerExchange Navigator.

Ability to Skip Data Rows for IMS Unload Data Sets During a Row Test

You can now specify the number of initial rows of data to skip when performing a row test that fetches data for IMS unload data sets.

Use the following field in the **Database Row Test** dialog box:

Skip First *n* Rows

New for IMSUNLD . Indicates the number of initial rows of data to skip when the row test fetches data for display. If you are performing a row test on a large file, you can use this option to have the row test skip to a specific point in the file before displaying data. This option can help you diagnose problems in large files faster because only the data of potential interest is returned for analysis.

For this existing option to be available for IMS unload files, select **IMSUNLD** in the **DB Type** list when you configure the row test.

Valid values are 0 to 99999. Default is 0, which causes no rows to be skipped.

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

Ability to View IMS Unload Files From the DL/1 Batch Access Method Tab

From the Data Map Properties **DL/1 Batch Access Method** tab, you can view an IMS unload file by specifying the IMS unload file name in the **IMS Unload Dataset** field and clicking **View File**. If the **Skip First n Records** field contains a value, PowerExchange skips the specified initial number of records.

For more information, see the "Data Map Properties" chapter in the *PowerExchange Navigator User Guide*.

Parameter and Option Changes for 10.5

PowerExchange 10.5 changes the length of the NAME parameter on capture registrations defined in the PowerExchange Navigator.

Capture Registration Name Lengths

The PowerExchange Navigator now supports an extended length for capture registration names for Linux, UNIX, and Windows sources.

You can specify a user-defined name for the capture registration, with the following format:

- For z/OS and IBM i sources, the name must be from one to eight lowercase alphanumeric characters long and must begin with a letter.
- For Linux, UNIX, and Windows sources, the name must be from one to 13 lowercase alphanumeric characters long and must begin with a letter.

PowerExchange 10.4.1 - New Features and Changes for the PowerExchange Navigator

PowerExchange 10.4.1 includes the following new features and changes that are related to the PowerExchange Navigator.

New Features

PowerExchange 10.4.1 introduces the following new features for the PowerExchange Navigator.

CheckNumData Function

You can associate the new CheckNumData function with a user-defined field to enable a calling program to check whether a field with the data type of CHAR, NUMCHAR, ZONED, or PACKED contains valid numeric characters. If the program finds invalid data, it can take additional action. CheckNumData performs a function similar to the data checking options in the data map properties. However, CheckNumData applies data checking to a single field rather than to the entire data map. You can use CheckNumData to validate numeric data fields before conversion processing by another function such as CopyData.

For more information, see the "PowerExchange Functions for User-Defined Fields" appendix in the *PowerExchange Navigator User Guide*.

Changed Behavior

PowerExchange 10.4.1 introduces the following changed behavior for the PowerExchange Navigator.

Enhanced Datatype Validation for Selected Functions

To ensure that source field datatypes are compatible with target field datatypes, PowerExchange 10.4.1 provides improved datatype validation for the following PowerExchange functions, which you can use in expressions associated with user-defined fields in data maps:

- Concat
- LTrim
- RTrim
- Split

For example, a character datatype cannot be mapped to a numeric datatype.

For more information, see the "PowerExchange Functions for User-Defined Fields" appendix in the *PowerExchange Navigator User Guide*.

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 configuration 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: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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.

CHAPTER 9

PowerExchange Monitoring and Tuning

This chapter includes the following topics:

- [PowerExchange 10.4.0 - New Features and Changes for Monitoring and Tuning, 76](#)
- [PowerExchange 10.2 HotFix 1 - New Features and Changes for Monitoring and Tuning, 77](#)
- [PowerExchange 10.2 - New Features and Changes for Monitoring and Tuning, 77](#)

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 (RSNRCODE), 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 Manual*.

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*.

CHAPTER 10

PowerExchange Utilities

This chapter includes the following topics:

- [PowerExchange 10.5.1 - New Features and Changes for PowerExchange Utilities, 79](#)
- [PowerExchange 10.5 - New Features and Changes for PowerExchange Utilities, 80](#)
- [PowerExchange 10.4.1 - New Features and Changes for PowerExchange Utilities, 85](#)
- [PowerExchange 10.4.0 - New Features and Changes for PowerExchange Utilities, 86](#)
- [PowerExchange 10.2 HotFix 2 - New Features and Changes for PowerExchange Utilities, 90](#)
- [PowerExchange 10.2 HotFix 1 - New Features and Changes for PowerExchange Utilities, 91](#)
- [PowerExchange 10.2 - New Features and Changes for PowerExchange Utilities, 95](#)

PowerExchange 10.5.1 - New Features and Changes for PowerExchange Utilities

This section describes PowerExchange 10.5.1 new features and changes that are related to PowerExchange utilities.

Parameter and Option Changes in 10.5.1

PowerExchange 10.5.1 introduces new parameters for the DTLUCBRG utility.

DTLUCBRG Utility Parameters

PowerExchange 10.5.1 includes the following new parameters for the DTLUCBRG utility:

HANOPTS

Parameters for SAP HANA sources. To use these parameters, the DBTYPE parameter must be set to HAN in the input parameter file. Otherwise, the DTLUCBRG utility issues an error message.

Syntax:

```
HANOPTS=(DBSERVER=database_server, [FULLAUDIT={Y|N}])
```

Subparameters:

DBSERVER

Required. The name of the database server. You can optionally include a port number for the server in the following format:

```
DBSERVER="database_server,port_number"
```

In this case, the double-quotation marks are required.

No default is provided.

DBNAME

Required. The name of the database that contains the tables from which changes are captured. Default is From Datamap.

FULLAUDIT

Optional. indicates whether the utility processes the change data with full audit enabled. The full audit feature creates a shadow table for changes to the SAP HANA table for which it is enabled.

- If STATUS is set to Y, full audit is enabled.
- If STATUS is set to N, full audit is disabled.

Default is N.

PowerExchange 10.5 - New Features and Changes for PowerExchange Utilities

This section describes PowerExchange 10.5 new features and changes that are related to PowerExchange utilities.

New Features in 10.5

PowerExchange 10.5 introduces the following new features for PowerExchange utilities:

PWXUGSK Utility Enhancements

The PWXUGSK utility includes the following reporting enhancements:

- You can now specify the REPORT_ZOS_ATTLS_POLICY command to generate a report of the z/OS AT-TLS rules.
- The error codes report was expanded to include more error codes.
- The ciphers report now distinguishes which ciphers belong to each protocol and clarifies how IBM i and z/OS cipher names match to equivalent OpenSSL cipher names.

For more information, see the "PWXUGSK - SSL Reporting Utility for z/OS" chapter in the *PowerExchange Utilities Guide*.

PWXUSSL Utility Enhancements

The PWXUSSL utility includes the following reporting enhancements:

- You can now specify the REPORT_ZOS_ATTLS_POLICY command on Windows to generate a report of the z/OS AT-TLS rules. You must perform an ASCII FTP of the relevant policy file to Windows before using it as input to the PWXUSSL utility.
- The ciphers report now distinguishes which ciphers belong to each protocol and clarifies how IBM i and z/OS cipher names match to equivalent OpenSSL cipher names.
- The cipher strength attribute is no longer reported because it was withdrawn by OpenSSL.
- You can now specify the PING command ping_sslinfo parameter to generate a report of secure connection attributes from both the client side and server side of the connection.

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

WRKJRNLCKE - Journal Lock Table Utility

You can use the WRKJRNLCKE utility on an IBM i system where PowerExchange is installed to list journal entries that PowerExchange has locked.

When a PowerExchange task on IBM i ends abnormally or if a task is forced to end before it completes, locked journal entries might not be released. This utility allows you to view orphaned journal entries and optionally delete those entries that are no longer associated with active PowerExchange jobs.

The utility runs on IBM i systems. The user who runs the utility must have *JOBCTL special authority on the IBM i system where the journal entries reside.

For more information, see the "WRKJRNLCKE - Journal Lock Table Utility" chapter in the *PowerExchange Utilities Guide*.

Command Changes in 10.5

PowerExchange 10.5 introduces new commands for the PWXUGSK utility and the PWXUSSL utility.

PWXUGSK Utility Commands

The PWXUGSK utility adds the new REPORT_ZOS_ATTLS_POLICY command for generating a formatted report of the z/OS AT-TLS rules.

The new command is supported on z/OS.

REPORT_ZOS_ATTLS_POLICY

New. Produces a formatted report of the z/OS AT-TLS rules. The utility ignores statements in the policy file if it does not recognize the syntax. The utility also limits the input from the policy file to the following types:

- TTLSCipherParms
- TTLSConnectionAction
- TTLSConnectionAdvancedParms
- TTLSEnvironmentAction
- TTLSEnvironmentAdvancedParms
- TTLSGroupAction

- TTLSKeyringParms
- TTLSRule
- PortRange

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

PWXUMAP Utility Commands

The PWXUMAP utility adds the new MDDTLDESCRIBE command to report metadata, similar to DTLDESCRIBE metadata, for data maps, schemas, tables, columns, or files. If the report output is large, you can filter it by access method and by one or more schema, map, table, or file name masks. The report output is written to a text file on Windows, which is useful for diagnosing problems.

The command runs on Windows.

Syntax:

```
PWXUMAP COMMAND=MDDTLDESCRIBE
TYPE={MD}
OUTPUT_FILE=file_name
LOCATION={node_name|local}
MDDESCRIBETYPE=metadata_type
[UID=user_name]
[PWD=password|EPWD=encrypted_password]
[AMLIST=access_method_code]
[FILEMASK=file_name_mask**]
[MAPMASK=map_name_mask]
[PACESIZE=n]
[RETLOGINFOMSG={Y|N}]
[SCHEMAMASK=schema_name_mask]
[TABLEMASK=table_name_mask]
```

The syntax includes both global parameters and command-specific parameters.

New command-specific parameters:

FILEMASK=file-name mask**

New. Use a file-name mask, or pattern, to filter files or partitioned data set members when the MDDESCRIBETYPE value is set to MDFILES or MDMEMBERS. In the pattern, use the asterisk (*) wildcard to represent last part of the file names. For files on z/OS, end the pattern with two asterisk (**) wildcards.

MDDESCRIBETYPE=metadata_type

New. The type of metadata to include in the report. Select one of the following options:

- **ALL.** Include all types of metadata except the MDFILES and MDMEMBERS types.
- **MDFILES.** Include metadata for files.
- **MDIMPORT.** Include metadata for schemas, data maps, tables or records, and columns containing additional map information.
- **MDMAPS.** Include metadata for schemas and data maps, in two-level hierarchical format.
- **MDMEMBERS.** Include metadata for members of partitioned data sets on z/OS.
- **MDOBJECTINFO.** Include metadata for schemas, data maps, tables, and columns, in four-level hierarchical format.
- **MDSCHEMAS.** Include metadata for schemas in a list.
- **MDSCHEMAINFO.** Include metadata for schemas, data maps, and tables, in three-level hierarchical format.

No default is provided.

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

PWXUSSL Utility Commands

The PWXUSSL utility adds the new REPORT_ZOS_ATTLS_POLICY command for generating formatted report of the z/OS AT-TLS rules.

The new command is supported on Windows.

REPORT_ZOS_ATTLS_POLICY

New. The command produces a formatted report of the z/OS AT-TLS rules. You must perform an ASCII FTP of the relevant policy file to download it to Windows before using it as input to the PWXUSSL utility.

The utility ignores statements in the policy file if it does not recognize the syntax. The utility also limits the input from the policy file to the following types:

- TTLSCipherParms
- TTLSConnectionAction
- TTLSConnectionAdvancedParms
- TTLSEnvironmentAction
- TTLSEnvironmentAdvancedParms
- TTLSGroupAction
- TTLSKeyringParms
- TTLSRule
- PortRange

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

Parameter and Option Changes in 10.5

PowerExchange 10.5 introduces new parameters for the DTLUCBRG utility.

DTLREXE Utility Parameters

PowerExchange 10.5 includes the following new parameter for the DTLREXE utility:

SSLINFO

New. Generate a report of secure connection attributes from both the client side and server side of the connection.

For more information, see the "DTLREXE - Remote Execution Utility" chapter in the *PowerExchange Utilities Guide*.

DTLUCBRG Utility Parameters

PowerExchange 10.5 includes the following new parameters for the DTLUCBRG utility:

EXCLUDE_COL=*column_name*

A column name or name pattern for excluding columns from the capture registrations you are creating for source tables. To define a name pattern that can identify multiple columns, include the asterisk (*)

wildcard anywhere within the name, for example, tx*custid. This value is matched against column names in a case-insensitive manner.

You can repeat this parameter multiple times to specify multiple name values. If you specify the EXCLUDE_COL parameter, do not also define the INCLUDE_COL parameter. These parameters are mutually exclusive.

EXCLUDE_TYPE=*data_type*

A column data type to use for excluding columns from the capture registrations you are creating for source tables. All columns that have the specified data type will be excluded from the registrations. You might want to use this parameter to exclude data types that PowerExchange does not support or to satisfy certain site-specific requirements.

This value is matched against column data types in a case-insensitive manner. For example, the values *clob* and *CLOB* would have the same result. You can repeat this parameter multiple times to specify multiple data types.

INCLUDE_COL=*column_name*

A column name or name pattern for including columns in the capture registrations you are creating for source tables. To define a name pattern that can identify multiple columns, include the asterisk (*) wildcard anywhere within the name, for example, tx*custid. This value is matched against column names in a case-insensitive manner.

You can repeat this parameter multiple times to specify multiple name values. If you specify the INCLUDE_COL parameter, do not also define the EXCLUDE_COL parameter. These parameters are mutually exclusive.

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

DTLURDMO Utility Parameters

PowerExchange 10.5 includes the following new parameter for the DTLURDMO utility:

GETREGTAG

New. The GETREGTAG statement for XM_COPY specifies the target registration from which to get the registration tag. If you defined BI/CI fields in extraction maps and do not want to re-create them manually after using REG_COPY with CREATEXMAP=Y, you can get the correct registration tag from the registration that was copied to the target.

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

PWXUGSK Utility Parameters

PowerExchange 10.5 includes the following new and changed parameters for the PWXUGSK utility:

PING_SSLINFO=Y|N

New for IBM i. Specify Y to generate a report of secure connection attributes from both the client side and server side of the connection. Default is PING_SSLINFO=N.

PING_EPWD=encrypted_password

Changed. An encrypted password associated with the user name specified by PING_UID. Specify either a password or an encrypted password to decrypt the certificate files on the remote node.

PING_PWD=password

Changed. The password associated with the user name specified by PING_UID. Specify either a password or an encrypted password to decrypt the certificate files on the remote node.

PING_UID=user_name

Changed. A user name that can be used to establish the secure connection.

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

PWXUSSL Utility Parameters

PowerExchange 10.5 includes the following new and changed parameters for the PWXUSSL utility:

PING_SSLINFO=Y|N

New for Linux, UNIX, and Windows. Specify Y to generate a report of secure connection attributes from both the client side and server side of the connection. Default is PING_SSLINFO=N.

PING_EPWD=encrypted_password

Changed. An encrypted password associated with the user name specified by PING_UID. Specify either a password or an encrypted password to decrypt the certificate files on the remote node.

PING_PWD=password

Changed. The password associated with the user name specified by PING_UID. Specify either a password or an encrypted password to decrypt the certificate files on the remote node.

PING_UID=user_name

Changed. A user name that can be used to establish the secure connection. The user must have the authority to view SSL certificates on the remote node specified by PING_LOCATION.

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

PowerExchange 10.4.1 - New Features and Changes for PowerExchange Utilities

This section describes PowerExchange 10.4.1 new features and changes that are related to PowerExchange utilities.

New Features in 10.4.1

PowerExchange 10.4.1 introduces the following new PowerExchange utility:

EDMUOPTS Utility

You can use the new EDMUOPTS utility to get information about the z/OS components of PowerExchange CDC.

The EDMUOPTS utility generates reports about the contents of the PowerExchange EDMSDIR and EDMUOPTS modules. These modules are created during installation based on your entries in the z/OS Installation Assistant. The EDMUOPTS module contains settings that PowerExchange uses to control the PowerExchange Logger for z/OS and its archiving process. The EDMSDIR module is used by the PowerExchange Agent and stores parameters for the Agent and CDC components.

Informatica Global Customer Support might ask you to run this utility to determine which options are in use for CDC components. Also, you might want to run the utility to record the current options before making

changes to the EDMSDIR and EDMUOPTS modules or to print the options in effect for documentation purposes.

For more information, see the "EDMUOPTS - Service Aid Utility" chapter in the *PowerExchange Utilities Guide*.

Parameter and Option Changes in 10.4.1

PowerExchange 10.4.1 introduces new and changed parameters for the PWXUMAP utility.

PWXUMAP Utility Parameters

In PowerExchange 10.4.1, the PWXUMAP utility added the following optional global parameters:

CPUTIMEUSED={Y|N}

Whether the report heading includes the amount of CPU time that it took to run the report. Default is N.

PACESIZE=*n*

The number of messages to display at a time, from 0 to 100. For example, if you use the DTLDESCRIBE command, you can set PACESIZE=100 to make the progress display easier to read in the command window. If you encounter an error, set PACESIZE=1 to display the output one line at a time until the failure occurs, making it easier to find the point of failure. Set PACESIZE=0 to display the output as it occurs, without pausing. Default is 0.

PROMPT={Y|N}

If the PACESIZE parameter specifies a non-zero value, the PROMPT parameter determines whether to issue a user prompt to continue the progress display after each incremental set of messages. If you specify PROMPT=Y, you must respond to each prompt to advance the progress display. Default is N.

Also, for DTLDESCRIBE command, the PWXUMAP utility added the following optional parameter:

USESEQUENCEFIELDS={Y|N}

Specifies whether to use sequence fields in the source metadata. Set this parameter to Y if the data or extraction maps include multiple-record writes to IMS or sequential VSAM sources. Default is N.

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

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	<i>data_set_name</i> <i>file_name</i> <i>folder_name</i>	<i>New.</i> 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: <ul style="list-style-type: none"> - 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	-	<i>New.</i> 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	-	<i>New.</i> Use the FASTLOAD statement with REG_COPY to improve performance when DTLURDMO is the only operation updating the CCT file.
REPORTDEST	LOG STDERR STDOUT <i>file_name</i>	<i>New.</i> 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.
TESTMODE	-	<i>Changed.</i> 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	-	<i>Changed.</i> 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 `columnName` 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: <ul style="list-style-type: none">- 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*.

CHAPTER 11

PowerExchange for Adabas

This chapter includes the following topics:

- [PowerExchange 10.5 - New Features and Changes for Adabas, 97](#)
- [PowerExchange 10.4.1 - New Features and Changes for Adabas, 98](#)
- [PowerExchange 10.2 HotFix 1 - New Features and Changes for Adabas, 98](#)

PowerExchange 10.5 - New Features and Changes for Adabas

This section describes PowerExchange 10.5 new features and changes that are related to Adabas sources.

Parameter and Option Changes in 10.5

PowerExchange 10.5 changes an Adabas configuration parameter in the RUNLIB(ADAECRP1) member.

Adabas ECCR Parameter

The default value for the the following Adabas ECCR parameter in the RUNLIB(ADAECRP1) member has changed:

ETID_DATE={Y|N}

The default value for this parameter changed from N to Y.

Options:

- **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 commit file. If the ADASEL utility writes ETID values in hexadecimal timestamp format or in the ADASEL-generated internal format to the PLOG files, use this option to prevent a large number of outstanding UOWs, spill file allocation errors, and session failures.

- **N.** The ECCR replaces ETID values that begin with x'40' entirely with x'40' values when writing ETID values to the temporary PowerExchange commit file. If the ADASEL utility produces ETID timestamp values as all x'40' values in the expanded PLOG files, this behavior is acceptable because 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. However, if the ADASEL-expanded PLOG files contain ETID values in hexadecimal timestamp format or in ADASEL-generated internal format, UOWs might remain open, causing numerous spill files, spill file allocation errors, and CDC session failures.

For more information, see the "Adabas Change Data Capture" chapter of the *PowerExchange CDC Guide for z/OS*.

PowerExchange 10.4.1 - New Features and Changes for Adabas

This section describes PowerExchange 10.4.1 new features and changes that are related to Adabas sources or targets.

New Features in 10.4.1

PowerExchange 10.4.1 introduces the following new feature for Adabas data sources:

Support for Adabas Version 8.5.x

PowerExchange 10.4.1 adds support for Adabas 8.5.x on z/OS for CDC and bulk data movement sessions. The PowerExchange Adabas ECCR has been certified with the Adabas 8.5.x PLOG format.

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 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*.

CHAPTER 12

PowerExchange for CA Datacom

This chapter includes the following topic:

- [PowerExchange 10.2 HotFix 1 - New Features and Changes for Datacom, 101](#)

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*.

CHAPTER 13

PowerExchange for DB2 for i

This chapter includes the following topics:

- [PowerExchange 10.5 - New Features and Changes for Db2 for i, 103](#)
- [PowerExchange 10.4.0 - New Features and Changes for Db2 for i, 105](#)
- [PowerExchange 10.2 HotFix 1 - New Features and Changes for Db2 for i, 106](#)

PowerExchange 10.5 - New Features and Changes for Db2 for i

This section describes PowerExchange 10.5 changes that are related to Db2 for i (formerly i5/OS) data sources or targets.

New Features in 10.5

PowerExchange 10.5 introduces the following new feature for Db2 for i sources:

Support for Extended Relative Record Number Values

To store extended relative record number (RRN) values, PowerExchange 10.5 generates column DTL__CAPXERRN instead of DTL__CAPXRRN when creating extract maps for Db2 for i tables. The large RRN values can then be propagated to the target tables.

If you are upgrading to PowerExchange 10.5 and you want to use the new DTL__CAPXERRN column, you must create a new extraction map and import it into PowerCenter. Existing extraction maps that have the DTL__CAPXRRN column name are still supported.

If you run the DTLUCBRG or DTLURDMO utility, you might need to import the new extraction map to get the correct definition:

- DTLUCBRG creates an extraction map by using the new DTL__CAPXERRN column name.
- DTLURDMO uses the new DTL__CAPXERRN column name if CREATEXMAPS is specified on the REG_COPY statement. If XM_COPY is used to copy an extraction map, the RRN column in the existing extraction map is copied. For an extraction map created with a release of PowerExchange before 10.5, this is the DTL__CAPXRRN column. For an extraction map created with PowerExchange 10.5, this is the DTL__CAPXERRN column.

For more information, see the "Introduction to Change Data Extraction" chapter in the *PowerExchange CDC Guide for i5/OS*.

TLS Security in a PowerExchange Network

You can configure a PowerExchange listener to use TLS network security when accepting connections from Linux, UNIX, and Windows client processes by using TLS protocol TLSV1_2, which is the default.

Network packets are encrypted using the IBM i GSK functions. Optionally, the listener can validate the x509 subject certificate on the client process.

Informatica recommends that you use TLS security instead of the PowerExchange Alternate Network.

Parameter and Option Changes in 10.5

PowerExchange 10.5 introduces a new statement in the DBMOVER configuration file.

DBMOVER Configuration File Statements

PowerExchange 10.5 introduces new and changed statements in the DBMOVER configuration file.

The following statement is for optional use:

QQAQINILIB=library_name

New. Specify the library name that contains the QQAQINI query options file. If you do not specify this statement, PowerExchange uses the default library specified for the IBM i system.

Note: In PowerCenter, you can override the QQAQINILIB setting in the DBMOVER configuration file by entering QQAQINILIB=library_name in the **PWX Override** connection attribute for the Db2 for i connection.

The following new and changed statements are for enabling TLS networking for IBM i:

LISTENER

Changed. To use TLS networking for IBM i, you can specify SSL in tenth comma position. When you use TLS networking, the send and receive sizes in the sixth and seventh comma positions of the LISTENER statement must be set to a value that does not exceed 16384.

SSL_CONTEXT_METHOD

Changed. As of PowerExchange 10.5, you can use the SSL_CONTEXT_METHOD statement to enable TLS networking for IBM i.

Note: Informatica recommends avoiding the use of protocols TLSV1_1 and TLSV1, and specifying protocol TLSV1_2 on all machine types. The TLSV1_3 protocol is not currently supported by PowerExchange.

On IBM i:

- **TLSV1** is allowed on V5R2.
- **TLSV1_1** is allowed on V5R2.
- **TLSV1_2** is allowed on V5R2, V5R3, and V5R4 and is the recommended choice.

If SSL_CONTEXT_METHOD is not specified then the default is that the system will accept a connection request for all protocols supported by the IBM i release.

Note: Informatica recommends specifying protocol TLSV1_2 on all machine types. The TLSV1_3 protocol is currently not supported by PowerExchange.

SSL_CIPHER_LIST

Changed. As of PowerExchange 10.5 on IBM i, you can specify ciphers by using four hexadecimal digits.

SSL_REQ_CLNT_CERT

Changed. As of PowerExchange 10.5, you can use the SSL_REQ_CLNT_CERT statement on IBM i. Valid values are:

- **Y.** The GSK session type is SERVER SESSION WITH CLIENT AUTHORITY. The X509 subject certificate from the client machine is validated against the trusted Certificate Authorities (CAs) on the IBM i server.
- **N.** The GSK session type is SERVER SESSION. The client machine subject certificates are not requested or validated.

SSL_TOLERATE_UNTRUSTED_ISSUER

New. PowerExchange 10.5 introduces the SSL_TOLERATE_UNTRUSTED_ISSUER statement for use on IBM i only. Valid values are:

- **Y.** Continue processing after a certificate error 6000 has been reported. A certificate error 6000 occurs when SSL_REQ_CLNT_CERT=Y and the partner CA is not present among the trusted CAs on the IBM i machine.
- **N.** After certificate error 6000 has been reported, the connection is not accepted.

Default is N.

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

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*.

CHAPTER 14

PowerExchange for DB2 for Linux, UNIX, and Windows

This chapter includes the following topics:

- [PowerExchange 10.5 - New Features and Changes for DB2 for Linux, UNIX, and Windows, 107](#)
- [PowerExchange 10.4.0 HotFix 1 - New Features and Changes for DB2 for Linux, UNIX, and Windows, 108](#)
- [PowerExchange 10.2 - New Features and Changes for DB2 for Linux, UNIX, and Windows, 109](#)

PowerExchange 10.5 - New Features and Changes for DB2 for Linux, UNIX, and Windows

This section describes PowerExchange 10.5 new features and changes that are related to DB2 for Linux, UNIX, and Windows data sources or targets.

New Features in 10.5

PowerExchange 10.5 introduces the following new feature for DB2 for Linux, UNIX, and Windows sources:

Support for DB2 for Linux, UNIX, and Windows Version 11.5

PowerExchange 10.5 adds support for Db2 for Linux, UNIX, and Windows (LUW) Version 11.5 on supported AIX, Linux, and Windows operating systems. For bulk data movement, PowerExchange supports Db2 11.5 sources and targets. For CDC, PowerExchange supports Db2 11.5 sources.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

Behavior Changes in 10.5

PowerExchange 10.5 introduces the following required user authority change for Db2 for Linux, UNIX, and Windows access.

Required User Authority

To read change data from Db2 logs, the user ID that you specify for database access must have SYSADM or DBADM authority.

As of PowerExchange 10.5, if the user has SYSADM authority, ensure that the user also has SELECT, INSERT, UPDATE, and DELETE permissions to the PowerExchange capture catalog in the source database. You can use the GRANT DATAACCESS statement to grant these permissions on the database to the user.

For more information, see the "Db2 CDC on Linux, UNIX, or Windows" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

PowerExchange 10.4.0 HotFix 1 - New Features and Changes for DB2 for Linux, UNIX, and Windows

This section describes PowerExchange 10.4.0 HotFix 1 new features and changes that are related to DB2 for Linux, UNIX, and Windows data sources or targets.

Parameter and Option Changes in 10.4.0 HotFix 1

PowerExchange 10.4.0 HotFix 1 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 parameters:

LIMITRESCAN={Y|N}

Optional. When PowerExchange change capture processing encounters a compressed record for a source table in the Db2 log, controls whether PowerExchange scans the log for records from propagatable tables up to an internally set limit or continues scanning until the buffer is full or until the end-of-log (EOL). Use this parameter to avoid excessive scanning of the log, which can result in PowerExchange capture timeouts and degraded performance.

- **Y.** Limits PowerExchange scanning of log records for change capture. This option is recommended to avoid potential PowerExchange capture timeouts and failures.
- **N.** Allows PowerExchange scanning of log records to continue until the buffer is full or until the end-of-log (EOL). In this case, PowerExchange capture processing might end abnormally with a timeout error. This problem is more likely to occur when source tables have a low volume change activity.

Default is N.

LOGBUFSIZE=[kilobytes_normal],[kilobytes_filtered]

Optional. The buffer sizes, in kilobytes, that the PowerExchange capture process uses for reading Db2 log records in normal-read mode and filtered-read mode. In *filtered-read* mode, PowerExchange scans for compressed records from propagatable tables. You can specify a buffer size for one or both log read modes.

For the first normal-read buffer size, if you enter 0 or do not specify a value, 128 KB is used by default. For the second filtered-read buffer size, if you enter 0 or do not specify a value, the first normal-read buffer size is used by default for filtered read operations.

Note: If you set the PowerExchange `capdl_bufsize` environment variable at the direction of Informatica Global Customer Support, the environment variable value overrides the buffer sizes in the `LOGBUFSIZE` parameter.

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

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 `CAPL_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*.

CHAPTER 15

PowerExchange for DB2 for z/OS

This chapter includes the following topics:

- [PowerExchange 10.5.1 - New Features and Changes for DB2 for z/OS, 110](#)
- [PowerExchange 10.4.1 - New Features and Changes for DB2 for z/OS, 111](#)
- [PowerExchange 10.2 - New Features and Changes for DB2 for z/OS, 112](#)

PowerExchange 10.5.1 - New Features and Changes for DB2 for z/OS

This section describes PowerExchange 10.5.1 changes that are related to DB2 for z/OS data sources.

New Features in 10.5.1

PowerExchange 10.5.1 introduces the following new feature for Db2 for z/OS data sources:

DB2 Loader and IMS Netport Passphrase Support

As of version 10.5.1, you can configure IMS netport jobs and PowerCenter Db2 Loader connections with a user ID and a long passphrase. Before this enhancement, PowerExchange restricted the password to eight bytes or less.

You must modify the JCL templates to adhere to the following rule:

The `PASSWORD=%PWD` specification must start at column 4 and it must be on a JCL line by itself within the JOB statement at the beginning of the template JCL.

Note: This rule applies to the JCL templates in the RUNLIB data set including DB2LDJCL, DB2LDJCP, IDMSMJCL, and IDMSMJCX.

Parameter and Option Changes in 10.5.1

PowerExchange 10.5.1 introduces the following changes to DB2 for z/OS parameters.

%PWD Substitution Variable for Netport Jobs

PowerExchange 10.5.1 introduces the following change to the substitution variables for netport jobs.

The %PWD substitution variable is the password of the user ID that connected to the PowerExchange Listener, which at security level 2 is different from the user ID and password credentials used to start the PowerExchange Listener job.

As of version 10.5.1, the maximum length of the password of the user that connected to the PowerExchange Listener has expanded from 8 characters to 68 characters to support passphrases. This change affects PowerExchange Listeners running at security level 2.

If the password is greater than eight bytes, it is a passphrase. To adhere to z/OS JCL restrictions, PowerExchange processes passphrases as follows:

- If the passphrase contains a space, it is enclosed with the single quote character.
- If the single quote character occurs inside the passphrase, it is repeated.

For more information, see the *PowerExchange Bulk Data Movement Guide*.

PowerExchange 10.4.1 - New Features and Changes for DB2 for z/OS

This section describes PowerExchange 10.4.1 changes that are related to DB2 for z/OS data sources.

New Features in 10.4.1

PowerExchange 10.4.1 introduces the following new feature for Db2 for z/OS data sources:

Db2 for z/OS Huffman Compression Support

PowerExchange adds support for Db2 Huffman compression of image-copy sources for bulk data movement.

IBM introduced Huffman compression hardware support on z14 mainframes for compressed table spaces in Db2 Version 12 at function level 504. Db2 Huffman compression can help reduce disk space and I/O costs. PowerExchange 10.4.1 includes support for Huffman-compressed image copies through hardware and software on pre-z14 systems.

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 10.4.1

PowerExchange 10.4.1 introduces the following changes to DB2 for z/OS parameters.

Db2 for z/OS ECCR Configuration Statements in the REPL2OPT DD Data Set

PowerExchange 10.4.1 introduces the following change to a 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:

IFI306 [OPT={N|Y|F}] ...

Optional. Controls the Db2 ECCR interaction with the Db2 instrumentation facility interface (IFI). The default value for the OPT parameter has changed.

OPT

Specifies how the Db2 ECCR reads the Db2 log.

Valid values are:

- **Y**. Recommended. Returns CDC records from the Db2 log.
- **N**. Returns all records from the Db2 log.
- **F**. Returns CDC records from the log and filters them by registered tables.

New default is Y.

For more information, see the "DB2 for z/OS Change Data Capture" chapter in the *PowerExchange CDC Guide for z/OS*.

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*.

CHAPTER 16

PowerExchange for CA IDMS

This chapter includes the following topic:

- [PowerExchange 10.2 HotFix 1 - New Features and Changes for IDMS, 115](#)

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*.

CHAPTER 17

PowerExchange for IMS

This chapter includes the following topics:

- [PowerExchange 10.5.1 - New Features and Changes for IMS, 116](#)
- [PowerExchange 10.5 - New Features and Changes for IMS, 117](#)
- [PowerExchange 10.4.0 - New Features and Changes for IMS, 117](#)
- [PowerExchange 10.2 HotFix 2 - New Features and Changes for IMS, 120](#)
- [PowerExchange 10.2 HotFix 1 - New Features and Changes for IMS, 121](#)
- [PowerExchange 10.2 - New Features and Changes for IMS, 122](#)

PowerExchange 10.5.1 - New Features and Changes for IMS

This section describes PowerExchange 10.5.1 new features and changes that are related to IMS data sources or targets.

New Features in 10.5.1

PowerExchange 10.5.1 introduces the following new features for IMS data sources:

Passphrase Support for IMS Netport Jobs

You can configure IMS netport jobs with a user ID and a long passphrase up to 60 characters in length. Previously, PowerExchange restricted the password to 8 bytes or less.

Passphrases cannot contain apostrophes.

You must modify the JCL templates to ensure that the `PASSWORD=%PWD` specification starts at column four and is on a JCL line by itself within the JOB statement. The JOB statement is typically on line three of the template JCL.

Note: This rule applies to the JCL templates in the RUNLIB data set, including DB2LDJCL, DB2LDJCP, IDMSMJCL, and IDMSMJCX.

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

PowerExchange 10.5 - New Features and Changes for IMS

This section describes PowerExchange 10.5 new features and changes that are related to IMS data sources or targets.

New Features in 10.5

PowerExchange 10.5 introduces the following new features for IMS data sources:

Updated Components in the PowerExchange ECCR CRG.LOAD Library for IMS Synchronous CDC

PowerExchange 10.5 contains components of the BMC Software CHANGE RECORDING FACILITY and BMC AMI Database Integrity for IMS products. PowerExchange provides the latest available version of these components.

Note: These components are also part of some other BMC Software products such as BMC AMI Fast Path Online Restructure for IMS (formerly Fast Path Online Restructure/EP), BMC AMI Online Reorg for IMS (formerly BMC MAXM Reorg/Online for IMS), and CONCURRENT REORG.

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, you must 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*.

Also, note that the current PowerExchange version has been certified with the following BMC product versions, which provide the CRG code:

- CHANGE RECORDING FACILITY: Version 5.1.00 Level 2101
- BMC AMI Database Integrity for IMS: Version 5.1.00 Level 2101
- BMC AMI Fast Path Online Restructure for IMS: Version 4.1.00 Level 2101

If you use a product version earlier than the certified version, consider upgrading the product to the certified version.

- 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 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.

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 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.

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 IMSxxx.SDFSRESL.RESLIB library and the DFS3CATQ macro in the IMSxxx.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:

IMBSBDS=(*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 *h/q.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 10.2 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 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 10.2 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.

CHAPTER 18

PowerExchange for Microsoft SQL Server

This chapter includes the following topics:

- [PowerExchange 10.4.1 - New Features and Changes for SQL Server, 124](#)
- [PowerExchange 10.4.0 HotFix 1 - New Features and Changes for SQL Server, 125](#)
- [PowerExchange 10.4.0 - New Features and Changes for SQL Server, 125](#)
- [PowerExchange 10.2 HotFix 1 - New Features and Changes for SQL Server, 126](#)
- [PowerExchange 10.2 - New Features and Changes for SQL Server, 126](#)

PowerExchange 10.4.1 - New Features and Changes for SQL Server

This section describes PowerExchange 10.4.1 new features and changes that are related to Microsoft SQL Server data sources or targets.

Parameter and Option Changes in 10.4.1

PowerExchange 10.4.1 introduces the following parameter and option changes for SQL Server sources.

DBMOVE Configuration File

The new GUIDBRACES parameter has been added to the MSQL CAPI_CONNECTION statement in the dbmover.cfg configuration file.

GUIDBRACES={Y|N}

Optional. Controls whether PowerExchange retains or removes braces { } around GUID values in data captured from registered SQL Server columns that have the uniqueidentifier datatype. If the PowerCenter session will write the data to SQL Server target uniqueidentifier columns, set this parameter to N to remove the braces. Otherwise, the session will encounter writer errors.

- **N.** Remove braces.
- **Y.** Retain braces.

Default is Y.

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

PowerExchange 10.4.0 HotFix 1 - New Features and Changes for SQL Server

This section describes PowerExchange 10.4.0 HotFix 1 new features and changes that are related to Microsoft SQL Server data sources or targets.

New Features in 10.4.0 HotFix 1

PowerExchange 10.4.0 HotFix 1 introduces the following new feature for SQL Server CDC:

Support for Microsoft SQL Server 2019

PowerExchange 10.4.0 HotFix 1 adds support for Microsoft SQL Server 2019 on Windows.

For bulk data movement, PowerExchange supports SQL Server 2019 sources and targets. For CDC, PowerExchange supports SQL Server 2019 sources.

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>.

Adding ODBC Parameters for Connecting to a Microsoft SQL Server Source Database

PowerExchange uses the DataDirect ODBC driver for SQL Server to connect to Microsoft SQL Server source databases. You can define the ODBC_CONN_PARAMS statement in the dbmover.cfg file if you want to add ODBC parameters to the connection strings that are used on the servers you specify for the following processing:

- Change data capture
- Creating, deleting, or modifying capture registrations from the PowerExchange Navigator or DBLUCBRG utility

For example, you might need to add ODBC parameters if your site policies require database connections to use SSL encryption, specific cryptographic protocols, or self-signed or third-party signed SSL certificates.

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

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.

DBMOVE 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 "DBMOVE 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*.

CHAPTER 19

PowerExchange for MySQL

This chapter includes the following topics:

- [PowerExchange 10.4.1 - New Features and Changes for MySQL, 129](#)
- [PowerExchange 10.4.0 HotFix 1 - New Features and Changes for MySQL, 129](#)
- [PowerExchange 10.4.0 - New Features and Changes for MySQL, 130](#)
- [PowerExchange 10.2 HotFix 2 - New Features and Changes for MySQL, 131](#)
- [PowerExchange 10.2 HotFix 1 - New Features and Changes for MySQL, 133](#)

PowerExchange 10.4.1 - New Features and Changes for MySQL

This section describes PowerExchange 10.4.1 changes that are related to MySQL sources.

New Features in 10.4.1

PowerExchange 10.4.1 introduces the following new feature for MySQL sources:

Support for MySQL Community Edition

PowerExchange 10.4.1 adds CDC support for MySQL Community Edition 5.7 and 8.0 sources on Red Hat Linux and Windows.

MySQL Community Edition has been certified with the MySQL native ODBC driver, which is not shipped with PowerExchange CDC. You can download the driver from the MySQL website.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

PowerExchange 10.4.0 HotFix 1 - New Features and Changes for MySQL

This section describes PowerExchange 10.4.0 HotFix 1 changes that are related to MySQL sources.

New Features in 10.4.0 HotFix 1

PowerExchange 10.4.0 HotFix 1 introduces the following new feature for MySQL sources:

Adding ODBC Parameters for Connecting to a MySQL Source Database

PowerExchange uses the DataDirect ODBC driver for MySQL to connect to a MySQL source database. You can define the ODBC_CONN_PARAMS statement in the dbmover.cfg file if you want to add ODBC parameters to the connection strings that are used on the servers you specify for the following processing:

- Change data capture
- Creating, deleting, or modifying capture registrations from the PowerExchange Navigator or DBLUCBRG utility

For example, you might need to add ODBC parameters if your site policies require database connections to use SSL encryption, specific cryptographic protocols, or self-signed or third-party signed SSL certificates.

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

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]
                        [,ONDATA TRUNC={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 10.5.1 - New Features and Changes for Oracle, 137](#)
- [PowerExchange 10.5 - New Features and Changes for Oracle, 140](#)
- [PowerExchange 10.4.1 - New Features and Changes for Oracle, 145](#)
- [PowerExchange 10.4.0 HotFix 1 - New Features and Changes for Oracle, 146](#)
- [PowerExchange 10.4.0 - New Features and Changes for Oracle, 147](#)
- [PowerExchange 10.2 HotFix 1 - New Features and Changes for Oracle, 148](#)
- [PowerExchange 10.2 - New Features and Changes for Oracle, 151](#)

PowerExchange 10.5.1 - New Features and Changes for Oracle

This section describes PowerExchange 10.5.1 new features and changes that are related to Oracle data sources or targets.

New Features in 10.5.1

PowerExchange 10.5.1 introduces new features for Oracle.

Oracle LOB Support

For Oracle source tables, PowerExchange can process change data from BLOB, CLOB, and NCLOB columns. The maximum row size that PowerExchange can process is 8 MB.

For tables with BLOB or CLOB datatypes that are defined with the Oracle attribute ENABLE STORAGE IN ROW, PowerExchange delivers up to 3964 bytes of the data to PowerCenter workflows that use a PowerExchange CDC Oracle connection. In Oracle, when the ENABLE STORAGE IN ROW attribute is enabled, LOB data can be stored either fully inline in the row or out-of-line in the LOB file space. Oracle does not store partial LOB data in a row.

You can use the PowerExchange-generated `DTL__ST_job_columnname` column with a PowerCenter Expression transformation and unconnected Lookup transformation to retrieve all of the LOB data from BLOB and CLOB columns. The session can then send all of the LOB data to a target.

Note: Oracle has a maximum column size of 4000 bytes. For LOBs stored in-row, the column contains a 20-byte LOB locator, a 16-byte LOB node, and data, for a maximum of 3694 bytes. For CLOB data, this data is

stored using a double-byte character set, even if the column character set is single byte, which reduces the maximum size to 1847 characters.

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 Performance Considerations

PowerExchange Express CDC for Oracle processing of large transactions can degrade performance.

If CDC performance becomes degraded when the configured maximum redo log records in the MEMOPS parameter is exhausted and PowerExchange Express CDC for Oracle creates spill files to free up resources, perform the following steps:

1. Ensure that the storage used for spill files is not the root cause of the performance degradation. Performance might be severely degraded if slow network storage is used for the spill files.
2. Modify the SPILLMAX and SPILLFILEBUFFSZ parameters in the OPTIONS statement.
 - SPILLMAX=2097151. Reduce the number of spill files to improve efficiency.
 - SPILLFILEBUFFSZ=1024. Increase the file buffering for spill files to decrease physical I/O.
3. If the previous steps do not improve performance, consider increasing the MEMOPS parameter value in the OPTIONS statement of the PowerExchange Express CDC for Oracle configuration file to a level that is sufficient to process the change data volume in memory.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

Dynamic Dictionary for Oracle Sources

PowerExchange Express CDC for Oracle supports a dynamic dictionary based on a snapshot of the Oracle catalog to accommodate DDL changes to source tables and table partitions for restart processing. With the dynamic dictionary, Express CDC can update dictionary information in memory for the source tables of CDC interest when DDL changes are committed. The changes, along with the SCN and sequence number, are persisted to an external stage table or file system that records all changes of interest.

Use a dynamic dictionary in environments where DDL changes to source tables are likely to occur. If you use a static dictionary in this type of environment, data loss or corruption can occur after a CDC restart if tables were reorganized or renamed, tables or partitions were dropped, or table columns were added, dropped, or altered. By using a dynamic dictionary, you can avoid data loss and corruption after a restart.

To use a dynamic dictionary use, perform the following high-level implementation steps:

1. Configure the PowerExchange Express CDC configuration file.
You must define the DICTONARY and STATESTORAGE statements. In the DICTONARY statement, set the MODE parameter to DYNAMIC.
2. Ensure that an initial snapshot of the Oracle catalog populates the state table or file that will store the dynamic dictionary information.
The initial snapshot is automatically created when PowerExchange Express CDC first initializes after dynamic dictionary configuration .
3. Warm start PowerExchange Express CDC or cold start the PowerExchange Logger. PowerExchange Express CDC loads the in-memory dictionary from the external state storage during initialization of the warm start or cold start.
After initialization, when the latest commit SCN has caught up to the dictionary base SCN, all new DDL operations on tables of CDC interest are recorded in the state storage when they are committed

For more information about the dynamic dictionary, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

Parameter and Option Changes in 10.5.1

PowerExchange 10.5.1 introduces the following changes to PowerExchange for Oracle configuration parameters:

PowerExchange Express CDC for Oracle Configuration File

PowerExchange 10.5.1 includes the following new or changed parameters in the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg.

DICTIONARY statement

Changed. The DICTIONARY statement contains the following changed and new parameters for the dynamic dictionary:

MODE={STATIC|DYNAMIC}

Changed. Specify the new DYNAMIC option to enable the dynamic dictionary feature. The dynamic dictionary can avoid data loss and corruption after a restart, which can otherwise occur when a static dictionary is used. For more information, see [“Dynamic Dictionary for Oracle Sources” on page 138](#). The default value is STATIC.

RETENTIONPERIOD

New. When MODE=DYNAMIC, optionally specify the period, in hours, to retain data in the dynamic data dictionary. Operations are rolled up into the data dictionary base snapshot at Express CDC initialization and once every 24 hours thereafter until this retention period elapses. Valid values are 1 through 744. The default value is 168 hours (or 1 week).

SNAPSHOTONCOLDSTART

New. When MODE=DYNAMIC, optionally set this parameter to Y if you want to force a snapshot of the database to be taken of the current Oracle catalog when a PowerExchange Logger cold start is requested. The default value is N, which causes no snapshot to be taken.

Note: If you use the default value of N and cold start the PowerExchange Logger when data exists in the dynamic dictionary and the cold start restart point SCN is greater than the dynamic dictionary SCN, the cold start uses the dictionary SCN as the restart point. This behavior ensures that the dictionary contains any changes that occur in the gap between the restart points.

UPDATEINTERVAL

New. When MODE=DYNAMIC, optionally specify the interval, in minutes, that must elapse before PowerExchange Express CDC advances the SCN value in the data dictionary, during a period when no DDL changes of interest are occurring for a data source. When a restart occurs, PowerExchange Express CDC uses the data dictionary restart SCN when calculating how far back in the redo logs to start processing change records so that no DDL changes of interest are missed.

Valid values are 1 through 1440. The default value is 0, which causes the RSTRADV parameter value in the OPTIONS statement to be used.

OPTIONS statement

Changed. The OPTIONS statement contains the following new and changed parameters:

MEMOPS

Changed. Default is the greater of 5120 or the number of RAC members * 2 * 1024. For example, if you have three RAC members, the default is 6144. Previously, the default was 5120.

SPILLFILEBUFFSZ=kilobytes

New. The block buffer, in kilobytes, that is allocated for spill file I/O. Increase this value to reduce physical I/O and improve performance, if an increase in memory usage is acceptable.

Valid values are 0 through 1024. Default is 0, which causes the operating system to allocate the block buffer when the first write operation occurs. The size of the buffer then depends on the operating system.

STATESTORAGE statement

Changed. Configures state table or file system storage for DDL change information from the in-memory dynamic dictionary for tables of CDC interest. Previously, this statement covered state storage only for checkpoint information.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

PowerExchange 10.5 - New Features and Changes for Oracle

This section describes PowerExchange 10.5 new features and changes that are related to Oracle data sources or targets.

New Features in 10.5

PowerExchange 10.5 introduces new features for Oracle.

Checkpointing In-flight Transactions

Checkpointing periodically persists the state of in-flight transactions to disk or tables.

Important: In PowerExchange 10.5, support for checkpointing requires EBF01.

If a PowerExchange Express capture process stops and is then warm started, PowerExchange Express CDC uses the checkpoint information to resume the processing of outstanding transactions from the last recorded checkpoint. By using a checkpoint, Express CDC avoids time-consuming reprocessing of large amounts of redo log to rebuild the state of all transactions that were active when the process stopped.

You can store state information for in-flight transactions in file-system files or in three Oracle tables. For file-based storage, ensure that the user ID under which Express CDC runs is granted the appropriate permissions to create the files. For table-based storage, ensure that the database user has the appropriate permissions to create and update the tables. You can manually create the tables or allow Express CDC to automatically create them. The first initialization of a CDC process after checkpointing is enabled causes Express CDC to automatically create the tables if they do not already exist. If you need to manually create the tables, use the DDL statements that are documented in the *PowerExchange CDC Guide for Linux, UNIX, and Windows* to ensure the schema is correct.

To configure checkpointing, you must specify the CHECKPOINT statement and STATESTORAGE statement in the PowerExchange Express CDC configuration file. Optionally, if you want to encrypt the spill files that contain checkpointed data, you can optionally set the SPILLENCRYPTPASS or SPILLENCRYPTPASS parameter in the OPTIONS statement.

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 10.5

PowerExchange 10.5 introduces the following changes to PowerExchange for Oracle configuration parameters:

PowerExchange Express CDC for Oracle Configuration File

PowerExchange 10.5 introduces new statements and parameters in the PowerExchange Express CDC for Oracle configuration file, pwxorad.cfg.

CHECKPOINT statement

New. Enables PowerExchange Express CDC for Oracle to write checkpoints for in-flight transactions during CDC processing. Then, if a CDC process terminates and you warm start it, PowerExchange can rebuild any long running transactions and resume processing from the last checkpoint, without having to reprocess large amounts of redo log.

Syntax is:

```
CHECKPOINT
  [CHKPTINTERVAL=minutes]
  [COMPLETEDEVENTSAGE=minutes]
  [COMPLETEDEVENTSDIR=directory]
  [MAXCHKPTSIZE=kilobytes]
  [RETENTIONPERIOD=minutes]
  [MINCHKPTSTOKEEP=number_of_checkpoints]
  [EXCEPTIONS=(REJECT|TOLERATE)]
;
```

Parameters are:

CHKPTINTERVAL

The interval, in minutes, that must elapse between taking checkpoints. Valid values are 1 through 1440. The default value is 5 minutes.

COMPLETEDEVENTSAGE

The interval, in minutes, that must elapse before a transaction with active operations can be forced to spill to disk. Only transactions that are spilled to disk can be checkpointed.

Valid values are 0 through 1440. A value of 0 means never force a transaction with active operations to spill to disk for checkpointing. The default value is 30.

COMPLETEDEVENTSDIR

The file system directory to which spilled active transaction data is copied during checkpoint processing.

If the COMPLETEDEVENTSAGE parameter value is greater than 0, you must specify either this COMPLETEDEVENTSDIR parameter or the BASEDIRECTORY parameter in the STATESTORAGE statement. The default value is the BASEDIRECTORY value.

EXCEPTIONS

Controls whether to tolerate missing spill file data or to reject this type of exception. Tolerate this exception only if you can allow some data loss rather than regress the restart point. Options are REJECT and TOLERATE. Default is REJECT.

MAXCHKPTSIZE

The maximum amount of data, in kilobytes, that can be forced to spill to disk during a single checkpoint. You can use this parameter to block very large transactions from forcibly spilling to

disk, which might improve performance during large batch processing. Valid values are 1 through 1024*1024 (or 1 GB). The default value is 50*1024 (or 50 MB).

MINCHKPTSTOKEEP

The minimum number of checkpoints to keep. The default value is 3.

RETENTIONPERIOD

The period, in minutes, for which checkpoint data is retained. Valid values are 0 through 44640. The default value is 10080 (1 week).

DATABASE statement

Changed. The DATABASE statement contains the following new parameter:

TDEKEystore

New. If the Oracle source uses Transparent Data Encryption (TDE) to encrypt source tablespaces, provide the location of the keystore that contains the encryption key required for the encryption and decryption of data. The keystore can be located in Automatic Storage Management (ASM), a file, or a hardware security module (HSM). Depending on the type of store, enter this parameter in one of the following ways:

- For an ASM store, the syntax is:

```
TDEKEystore=(TYPE=(ASM, WALLETDIR=path/directory, {PWD|EPWD}=wallet_password,
[ASM_CONNECT_STRING=string,ASM_PASSWORD=asm_password,ASM_USERID=asm_userid,ASM
_ASSYSASM=Y]))
```

Where:

- TYPE must be the store type of ASM.
- WALLETDIR is the fully qualified path to the ASM wallet.
- {PWD|EPWD} is the password or encrypted password that is required to access the ASM wallet.
- ASM_CONNECT_STRING is the Oracle connection string, defined in TNS, that the PowerExchange Express CDC log reader uses to connect to the ASM instance.
- ASM_PASSWORD is a password for the user specified in the ASM_USERID parameter, which is used to connect to the ASM instance.
- ASM_USERID is an Oracle user ID that the PowerExchange Express CDC log reader uses to connect to the ASM instance, which has SYSDBA or SYSASM authority.
- ASM_ASSYSASM must be set to Y to have the PowerExchange Express CDC log reader to use a user ID that has SYSASM authority to connect to the ASM instance.

Note: If you do not define ASM_CONNECT_STRING in the TDEKEystore parameter, you must define the ASM connection parameters in the READER statement.

- For a file store, the syntax is:

```
TDEKEystore=(TYPE=(FILE, WALLETDIR=path/directory, [PWD|EPWD]=password))
```

Where:

- TYPE must be the store type of FILE.
- WALLETDIR is the fully qualified path to the file system wallet. PowerExchange Express CDC will not attempt to extract the path from the database.
- {PWD|EPWD} is the password or encrypted password that is required to access the wallet.

- For an HSM store, the syntax is:

```
TDEKEystore=(TYPE=(HSM, HSMCLIENTLIB=path\module, [PWD|EPWD]=password))
```

Where:

- HSMCLIENTLIB is the fully qualified path and module name of the HSM client library. For information about setting up access to an HSM device or server, see the HSM vendor documentation. PowerExchange Express CDC uses the standard PKCS #11 interface to access HSM keys.
- {PWD|EPWD} is the password or encrypted password that is required to access the HSM device.

If you define multiple TDEKEYSTORE parameters, PowerExchange Express CDC searches them for the master key in the order in which they are defined.

Note: The TDEWALLETDIR, TDEWALLETPWD, and TDEWALLETEPWD parameters are deprecated.

OPTIONS statement

Changed. The OPTIONS statement contains the following new parameters:

BCE_SUBSTITUTE_YEAR=year

New. Specifies the substitute year value to use when the BCE_YEAR_HANDLING parameter is set to SUBSTITUTE. Valid values are 1 to 9999.

BCE_YEAR_HANDLING = {IGNORESIGN|SUBSTITUTE|PRE1040|FAIL}

New. Indicates how to handle a negative year in Before the Common Era (BCE) dates. Options:

- IGNORESIGN. Capture the year as a positive value.
- SUBSTITUTE. Substitute the year with the value specified in the BCE_SUBSTITUTE_YEAR parameter. If you specify BCE_YEAR_HANDLING=SUBSTITUTE you must specify a value for BCE_SUBSTITUTE_YEAR.
- PRE1040. Revert to the old behavior of reporting a negative value (-CCYY) as a positive value (YY00).
- FAIL. Report BCE dates as errors in message PWX-36200 and shut down the PowerExchange Logger for Linux, UNIX, and Windows.

Default is IGNORESIGN.

SPILLENCRYPTPASS=encrypted_passphrase

New. An encrypted passphrase that enables spill file encryption. PowerExchange writes transactions to spill files when it does not have sufficient memory to store them. You can optionally encrypt the spill files to protect sensitive data by setting either this parameter or the SPILLENCRYPTPASS parameter. The maximum passphrase length is 1024 bytes. No default value is provided.

SPILLENCRYPTPASS=passphrase

New. A passphrase that enables spill file encryption. PowerExchange writes transactions to spill files when it does not have sufficient memory to store them. You can optionally encrypt the spill files to protect sensitive data by setting either this parameter or the SPILLENCRYPTPASS parameter. The maximum passphrase length is 1024 bytes. No default value is provided.

STATESTORAGE statement

New. Defines the type of storage for state information and the connection string and credentials used for accessing this storage. For PowerExchange Express CDC checkpointing, the state information consists of the state of in-flight transactions at the time a CDC process terminates. After a restart, this information is used to resume CDC processing from the last checkpoint, without having to reprocess lots of logs.

Syntax is:

```
STATESTORAGE
  STORETYPE={Directory|Table}
  BASEDIRECTORY="path\\directory"
  [CONNECT_STRING=connect_string]
  [PREFIX=collection_id]
  [TABLEOWNER=userid]
  [USERID=user_ID]
  [PASSWORD=password]
  [EPWD=encrypted_password]
;
```

Parameters are:

STORETYPE

Required. The type of storage for state information. You can use a relational table or a file system directory. Options are Directory or Table. No default value is provided.

BASEDIRECTORY

Required. The base directory under which subdirectories that contain files or tables with state information are generated. Specify this parameter if the STORETYPE parameter is set to **Directory** or if you plan to enable checkpointing.

Note: For table-based checkpoint storage, you must specify either this BASEDIRECTORY parameter or the COMPLETEDEVENTSDIR parameter in the CHECKPOINT statement. Express CDC will copy the checkpointed spill files to this directory.

CONNECT_STRING

A connect string that is used to connect to the Oracle database where the state tables are created. The default value is the CONNECT_STRING value in the DATABASE statement.

PREFIX

A unique prefix for the names of the files or tables where state information is stored. Specify this prefix only if you want to override the default value, which is the collection ID specified in the ORACOLL parameter in the ORAD CAPI_CONNECTION statement. The ORACOLL parameter supplies a unique value for each Express CDC instance that is running. If you use the optional PREFIX parameter, ensure that it also provides a unique value for the Oracle instance.

TABLEOWNER

The owner of the state tables. The default value is the USERID value in this statement, if specified, or the USERID value in the DATABASE statement.

USERID

A database user ID for accessing the state tables. The default value is the USERID value in the DATABASE statement.

PASSWORD

A password, which is used in conjunction with the user ID, to provide credentials for accessing the state tables. The default value is the PASSWORD value in the DATABASE statement.

EPWD

An encrypted password, which is used in conjunction with the user ID, to provide credentials for accessing the state tables. The default value is the EPWD value in the DATABASE statement.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

PowerExchange 10.4.1 - New Features and Changes for Oracle

This section describes PowerExchange 10.4.1 new features and changes that are related to Oracle data sources or targets.

New Features in 10.4.1

PowerExchange 10.4.1 introduces a new feature for Oracle.

Staging Files for Improved CDC Performance in an ASM Environment

If the Oracle active and archived redo logs from which PowerExchange Express CDC for Oracle captures change data are in an ASM environment, you can optionally write chunks of Oracle redo log to a staging file. This feature improves CDC performance, increases data throughput, and reduces ASM CPU usage, without having to implement Oracle dual logging outside of ASM.

PowerExchange Express CDC uses one staging file for each active Oracle redo log thread.

To enable the use of staging files, perform the following actions:

1. Create a staging directory on the machine where the ASM instance to which PowerExchange Express CDC connects resides.
2. Configure the ASMSTAGING statement in the PowerExchange Express CDC for Oracle configuration file, `pwxorad.cfg`, to point to the staging directory.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

Support for Additional Oracle Versions in Amazon RDS Environments

PowerExchange 10.4.1 is certified with Oracle 18c and 19c sources in an Amazon RDS for Oracle environment.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

Parameter and Option Changes in 10.4.1

PowerExchange 10.4.1 introduces the following changes to PowerExchange for Oracle configuration parameters:

PowerExchange Express CDC for Oracle Configuration File

PowerExchange 10.4.1 introduces a new statement in the PowerExchange Express CDC for Oracle configuration file, `pwxorad.cfg`.

ASMSTAGING statement

New. Enables PowerExchange Express CDC to use staging files in an ASM environment to hold chunks of redo log for CDC processing. You can optionally use staging files to improve CDC performance, increase data throughput, and reduce ASM CPU usage, without having to implement Oracle dual logging outside of ASM. When enabled, ASM generates one staging file for each active redo log thread.

Syntax:

```
ASMSTAGING
  STAGINGDIR="/path/directory"
  [LOCALDIR="/localmountpoint/directory"]
  [TARGETSIZE={50|number}]
;
```

Parameters descriptions:

STAGINGDIR

Required. The path to the directory that you created for staging files on the machine where the ASM instance to which PowerExchange connects resides. Enclose this value in double-quotation marks ("), for example:

```
"/oracle/staging"
```

To optimize ASM data throughput, ensure that the staging directory is on a fast storage device that is local to the ASM instance.

If PowerExchange Express CDC for Oracle is remotely accessing the staging directory, ensure the directory is in NFS storage or another type of shared storage.

LOCALDIR

Optional. The local NFS mount point for the staging directory. Specify this value only if it is different from the STAGINGDIR path. Enclose the value in double-quotation marks ("), for example:

```
"/localmountpoint/staging"
```

TARGETSIZE

Optional. The maximum size, in megabytes, of any chunk of redo log to be copied to the staging file. This value also determines the maximum file size.

For more information, see the "Express CDC for Oracle" chapter in the *PowerExchange CDC Guide for Linux, UNIX, and Windows*.

PowerExchange 10.4.0 HotFix 1 - New Features and Changes for Oracle

This section describes PowerExchange 10.4.0 HotFix 1 new features and changes that are related to Oracle data sources or targets.

New Features in 10.4.0 HotFix 1

PowerExchange 10.4.0 HotFix 1 introduces a new feature for Oracle.

Toleration Support for Oracle 19c CDC Sources

PowerExchange Express CDC for Oracle adds toleration support for Oracle 19c sources on Red Hat Linux.

Toleration support means that PowerExchange can capture data from Oracle 19c sources but does not support any of the Oracle new features introduced in 19c that the source database uses.

Note: CDC support for Oracle 19c sources on AIX, Solaris, and Windows will be added in subsequent releases of 10.4.0 HotFix 1 to be phased across platforms.

If the Oracle redo logs reside on AIX, Solaris, or Windows, you can run the PowerExchange Listener and PowerExchange Logger on Linux to capture changes from the logs

Beginning with Oracle 19c, PowerExchange capture processing of indexed-organized tables (IOTs) in 4 KB tablespaces might result in change data loss or corruption. Do not try to capture change data from Oracle 19c IOTs in 4 KB tablespaces.

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*.

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, `pxxorad.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_online_log_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 12c R2 (12.2). PowerExchange Oracle CDC with LogMiner does not support 12c R2.

Toleration support means that PowerExchange can capture data from Oracle 12c R2 sources but does not support any of the Oracle 12c 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 12c 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_Dyyyymmdd_Thhmmss.MBRnode_sequence#.rpt
```

- For non-RAC systems:

```
PWX_ORL_DDL_Dyyyymmdd_Thhmmss.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_Dyyyymmdd_Thhmmss.MBRnode_sequence#.rpt
```

- For non-RAC systems:

```
PWX_ORL_DDL_Dyyyymmdd_Thhmmss.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*.

CHAPTER 21

PowerExchange for PostgreSQL

This chapter includes the following topics:

- [PowerExchange 10.5.1 - New Features and Changes for PostgreSQL, 153](#)
- [PowerExchange 10.4.1 - New Features and Changes for PostgreSQL, 153](#)
- [PowerExchange 10.4.0 HotFix 1 - New Features and Changes for PostgreSQL, 154](#)
- [PowerExchange 10.4.0 - New Features and Changes for PostgreSQL, 154](#)

PowerExchange 10.5.1 - New Features and Changes for PostgreSQL

This section describes PowerExchange 10.5.1 changes that are related to PostgreSQL sources.

New Features in 10.5.1

PowerExchange 10.5.1 introduces support for PostgreSQL sources.

Support for PostgreSQL 13.x

PowerExchange 10.5.1 adds CDC support for PostgreSQL 13.x source tables on Red Hat Linux and Windows.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

PowerExchange 10.4.1 - New Features and Changes for PostgreSQL

This section describes PowerExchange 10.4.1 changes that are related to PostgreSQL sources.

New Features in 10.4.1

PowerExchange 10.4.1 introduces support for PostgreSQL sources.

Support for PostgreSQL 12.1

PowerExchange 10.4.1 adds CDC support for PostgreSQL 12.1 source tables on Red Hat Linux and Windows.

For more information, see the "Installation Planning" chapter in the *PowerExchange Installation and Upgrade Guide*.

PowerExchange 10.4.0 HotFix 1 - New Features and Changes for PostgreSQL

This section describes PowerExchange 10.4.0 HotFix 1 changes that are related to PostgreSQL sources.

New Features in 10.4.0 HotFix 1

PowerExchange 10.4.0 HotFix 1 introduces support for PostgreSQL sources.

Adding ODBC Parameters for Connecting to a PostgreSQL Source Database

PowerExchange uses the DataDirect ODBC driver for PostgreSQL to connect to PostgreSQL source databases. You can define the ODBC_CONN_PARAMS statement in the dbmover.cfg file if you want to add ODBC parameters to the connection strings that are used on the servers you specify for the following processing:

- Change data capture
- Creating, deleting, or modifying capture registrations from the PowerExchange Navigator or DBLUCBRG utility

For example, you might need to add ODBC parameters if your site policies require database connections to use SSL encryption, specific cryptographic protocols, or self-signed or third-party signed SSL certificates.

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

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]
                        [,ONDATA TRUNC={WARN|FAIL}]
                        [,ONTABLE TRUNC={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 SAP HANA

This chapter includes the following topic:

- [PowerExchange 10.5.1 - New Features and Changes for SAP HANA, 159](#)

PowerExchange 10.5.1 - New Features and Changes for SAP HANA

This section describes PowerExchange 10.5.1 changes that are related to SAP HANA sources.

New Features in 10.5.1

PowerExchange 10.5.1 introduces support for SAP HANA sources.

Support for SAP HANA CDC Sources

PowerExchange 10.5.1 adds support for change data capture (CDC) from SAP HANA version 2.x source tables on Linux or Windows.

PowerExchange CDC for SAP HANA captures inserts, updates, and deletes from SAP HANA tables on Windows or Linux. Because SAP HANA does not provide direct access to its log files, the capture process uses triggers on source tables to determine when to capture change data. Most SAP HANA datatypes are supported.

The PowerExchange Navigator can optionally create scripts for the PKLOG and PROCESSED log tables and trigger DDL when you create capture registrations for the source tables. If you do not use the Navigator to create the tables, PowerExchange creates the log tables and triggers when the extraction process runs. Each registered SAP HANA source table must have a primary key.

The triggers write insert, update, and delete changes to the PKLOG transaction log table. These changes are read in table order and are then available for extraction to PowerCenter CDC sessions or PowerExchange CDC Publisher. PowerExchange provides only after-image records for SAP HANA CDC.

To prepare SAP HANA source for CDC, perform the following tasks:

- Create a SAP HANA user for CDC that can read the data dictionary views, including TABLES, and create objects in the user's own schema. .
- Grant the SAP HANA CDC user INSERT permission on their schema to the target database and SELECT permission to the user on the source database schema and tables.

- When PowerExchange for SAP HANA CDC starts, it uses the SAP HANA CDC user ID to connect to the source database and checks for the PKLOG and PROCESSED tables. If these tables do not exist, PowerExchange creates them using the SAP HANA user's schema. If you prefer, you can connect to the database with the SAP HANA CDC user ID and create the tables manually.

To configure PowerExchange for SAP HANA sources, specify the new HANA 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 SAP HANA sources.

Also, PowerExchange requires an ODBC driver and a JDBC driver for SAP HANA to retrieve source metadata from the SAP HANA 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 10.5.1

PowerExchange 10.5.1 introduces new parameters for SAP HANA CDC.

DBMOVER Configuration File

The DBMOVER configuration file can now include the new HANA CAPI_CONNECTION statement for SAP HANA CDC sources.

Syntax:

```
CAPI_CONNECTION=(NAME=capi_connection_name
                  [,DLLTRACE=trace_id]
                  ,TYPE=(HANA
                        ,SERVER=[server_name|ip_address]:port
                        ,DATABASE=database_name
                        [,BUFFERSIZE=bytes]
                        [,FETCHSIZE=records]
                        [,LOGCLEAR=days]
                        [,ONDATA TRUNC=[WARN|FAIL]]
                        [,SSL=[Y|N]]
                        [,TIMEOUT=milliseconds]
                        [,VMOPTS=options]
                        [,VMOPTSDEL=delimiter_character])
                  )
```

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=(HANA, ...)

Required. The type of CAPI_CONNECTION statement. For SAP HANA sources, this value must be HANA.

SERVER=[server_name|ip_address]:port

Required. The server name or IP address of the database server that contains the source tables.

The default port is 39015. If you use a different port number, you must specify the port in the SERVER parameter.

DATABASE=*database_name*

Required. The name of the SAP HANA database that contains the source tables for change data capture.

BUFFERSIZE =*bytes*

Optional. The maximum size of the buffer for CDC records retrieved from the SAP HANA source. When the maximum buffer size is reached, PowerExchange flushes the buffer and commits changes to the log tables. Valid values are 64000 (64 KB) to 4000000 (4 MB).

Default is 64000.

FETCHSIZE=*records*

Optional. The maximum number of records that can be returned from the SAP HANA source to the buffer at a time. Valid values are 100 to 10000.

Default is 1000.

LOGCLEAR=*days*

Optional. The time interval in days after which PowerExchange purges the PKLOG table entries. Valid values are 0 to 366. A value of 0 means that the PKLOG table entries are not purged.

Default is 14.

ONDATATRUNC=[*WARN|FAIL*]

Optional. Indicates whether PowerExchange issues a warning message and continues processing or ends abnormally when it encounters a column where data would be truncated. Valid values are WARN or FAIL.

Default is FAIL.

SSL=[*Y|N*]

Optional. Whether the connection to the SAP HANA source uses the SSL/TLS protocol. This parameter only affects connections that use the JDBC driver. Connections that use an ODBC driver on must specify the secure connection in the odbc.ini file.

Default is N.

TIMEOUT=*milliseconds*

Optional. The time interval in milliseconds after which the change cycle ends if PowerExchange does not receive a response from the source table. Valid values are 1000 to 60000.

Default is 10000.

VMOPTS=*option;option;...*

Optional. A set of one or more Java Virtual Machine (JVM) options, separated by semicolons. You can specify up to 20 options.

Default is a placeholder semicolon (;).

VMOPTSDEL=*character*

Optional. Changes the separator character for the VMOPTS parameter. Valid values are any separator character on the system where the options will be overridden.

Default is a semicolon (;).

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

CHAPTER 23

PowerExchange for VSAM and Flat Files

This chapter includes the following topics:

- [PowerExchange 10.5 - New Features and Changes for VSAM and Flat Files, 163](#)
- [PowerExchange 10.2 HotFix 2 - New Features and Changes for VSAM and Flat Files, 164](#)
- [PowerExchange 10.2 HotFix 1 - New Features and Changes for VSAM and Flat Files, 164](#)
- [PowerExchange 10.2 - New Features and Changes for VSAM and Flat Files, 165](#)

PowerExchange 10.5 - New Features and Changes for VSAM and Flat Files

This section describes PowerExchange 10.5 new features and changes that are related to VSAM and sequential or flat file data sources or targets.

New Features in 10.5

PowerExchange 10.5 introduces the following new feature for CICS Transaction Server data sources:

Support for CICS Transaction Server Version 5.6

PowerExchange 10.5 adds CDC support for CICS Transaction Server (CICS TS) version 5.6. PowerExchange can capture changes that CICS TS 5.6 transactions make to VSAM data sets.

The PowerExchange SAMPLIB library contains the new member #CICSV73 for defining the CICS/VSAM ECCR programs and transaction to CICS TS. Because the definition of the CICS/VSAM ECCR programs and transaction changed, you must restart the CICS region after upgrading to PowerExchange 10.5.

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 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 EDMKOV RD 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*.

CHAPTER 24

PowerExchange ODBC

This chapter includes the following topics:

- [PowerExchange 10.2 HotFix 1 - New Features and Changes for ODBC, 166](#)
- [PowerExchange 10.2 - New Features and Changes for ODBC, 166](#)

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 a 128-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 parameter in the odbc.ini file on Linux or UNIX or in the PowerExchange Data Source wizard on Windows.

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