

New Features Enterprise Connect™ Data Access 12.6 for Microsoft Windows and UNIX

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This document describes the new features that are available for Enterprise Connect™ Data Access (ECDA) 12.6 for Microsoft Windows and UNIX.

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1. Date and Time datatype support for ECDA for Oracle

Sybase date and time datatypes are now supported in ECDA for Oracle previously known as DirectConnect for Oracle (DCO). The following sections describe how DCO supports the new datatypes:

- Datatype mapping

2. Millisecond support for Timestamp property for ECDA for Oracle

- Incoming data
- Outgoing data

For additional information refer to the ECDA Option for Oracle *Server Administration and User's Guide*.

Datatype mapping

Oracle currently provides two date/time datatypes, Oracle DATE and Oracle TIMESTAMP:

- The Oracle DATE datatype can have both a date portion and a time portion, in which the precision of the time portion is at the seconds level. The Sybase DATE datatype maps to the existing Oracle DATE datatype.
- The Oracle TIMESTAMP datatype can have both a date portion and a time portion in which the precision of the time portion includes fractional seconds at the macro level. The Sybase TIME datatype maps to the existing Oracle TIMESTAMP datatype.

Incoming data

Cursor and dynamic statement parameter data for Sybase DATE and TIME datatypes are converted to the proper Oracle datatype. The Sybase TIME data destined for an Oracle TIMESTAMP column is converted based on the setting of the `timestamp_ms_support` parameter.

Incoming language statements with literal string data that is destined for either an Oracle DATE or TIMESTAMP column must conform to the format defined by the `date_format` and `timestamp_format` configuration settings. This implies that column data coming from a Sybase DATE column must include a default time of 12:00:00AM, in addition to the date value. The column data coming from a Sybase TIME column must include a default date of Jan 1 1900 in addition to the time value.

Incoming RPC statements with Sybase DATE or TIME literal string parameters must format the literal string.

Outgoing data

Data being retrieved from both Oracle DATE and TIMESTAMP is returned to the application as a date/time datatype.

2. Millisecond support for Timestamp property for ECDA for Oracle

Two configuration parameters, `timestamp_ms_support` and `timestamp_format`, are available to allow the DCO to insert, update, delete, and select Sybase DATETIME datatypes with the millisecond portion mapped to an Oracle TIMESTAMP column. The following sections describe the parameters and their use.

2.1 Timestamp_ms_support parameter

Specifies the value of the timestamp_ms_support parameter.

Configuration parameter timestamp_ms_support

Value 0 is off (default).
 1 is on.

2.2 Timestamp_format parameter

Specifies whether to use the timestamp_format.

Configuration parameter timestamp_format

Value *MONDDYYYY HH:MM:SSAM* (default) provides the date and time in seconds, and the milliseconds portion contains *000* (zeros).
MONDDYYYY HH:MS:SS:FFAM provides the date and time in milliseconds.

2.3 Using the new parameters

When you use the new configuration parameter timestamp_ms_support, consider the following conditions:

- When timestamp_ms_support equals 0, Sybase TIME datatype is accessible, but the millisecond portion of an Oracle TIMESTAMP contains *000* (zeros).
- When timestamp_ms_support equals 1, Sybase TIME datatype is able to insert, update, delete, or select the millisecond portion of an Oracle TIMESTAMP.

DCO 12.6
interoperates with
ASE/CIS

When DCO 12.6 interoperates with Adaptive Server® Enterprise Component Integration Services (ASE/CIS), the version of ASE/CIS must be 12.5.1 ESD#2 or later to use the timestamp_ms_support configuration option. This is due to changes that were made in ASE/CIS 12.5.1.

DCO 12.6
interoperates with
other applications

When DCO 12.6 interoperates with an application other than ASE/CIS, the timestamp_format configuration setting must include the milliseconds (*..SSXFF*) if the millisecond portion of the time is desired, and the timestamp_ms_support parameter must be equal to 1.

For additional information refer to the ECDA Option for Oracle *Server Administration and User's Guide*.

3. New installer for ECDA options

A new installation program called InstallShield now installs ECDA options for version 12.6. InstallShield, which is Java-based and uses XML input, unloads and installs all Sybase components including the ODBC drivers and DirectConnect Manager using a consistent installation interface across all platforms. It creates the target directory (if necessary) and unloads all of the selected components. The ECDA install/uninstall programs use InstallShield MultiPlatform 5 IDE.

For installation information refer to the ECDA *Installation Guide* for your platform.

ECDA platforms

InstallShield is supported for ECDA products on each of the following platforms: Windows 2000/2003, HP, Solaris, AIX, and Linux (for ECDA for Oracle only). InstallShield does not require user configuration at installation time, and the Uninstall process using InstallShield is created at runtime. When installation completes, the ECDA has the minimum configuration required to function independently.

ECDA options

InstallShield installs and supports the following ECDA products:

- ECDA option for DB2 UDB (DirectConnect for DB2 UDB)
- ECDA option for Informix (DirectConnect for Informix)
- ECDA option for Microsoft SQL Server (DirectConnect for Microsoft SQL Server)
- ECDA option for ODBC (DirectConnect Anywhere)
- ECDA option for Oracle (DirectConnect for Oracle)

Note Starting with version 12.6, ECDA option for AS/400, previously called DirectConnect for AS/400, is not supported.

4. DirectConnect Manager

DirectConnect Manager, the DirectConnect plug-in for Sybase Central is compatible with the version of Sybase Central 4.x currently in use by ASE and Replication Server. Additional upgrades include:

- DirectConnect Manager help screens now work with Sybase Central 4.x.
- DirectConnect Manager is compliant with US Government Section 508 standards for accessibility.

- DirectConnect Manager supports DirectConnect for Oracle.
- DirectConnect Manager can now be installed on all ECDA server platforms: Microsoft Windows, Linux, and Unix.
- DirectConnect Manager is compatible with the latest available versions of Open Client, Open Server, and jConnect.

5. New architecture

The ECDA new architecture which applies to Microsoft SQL server, DB2 UDB, Informix, and ODBC options, DirectConnect was transformed into an efficient, single-process, Shared Memory Multiprocessor (SMP) -compatible architecture.

The single-process architecture allows conversion to Open Server SMP, which uses native threads for each connection. This improvement allows the client workload to be scheduled on multiple processors.

Products affected

The new architecture will be implemented for the following ECDA products:

- ECDA option for DB2 UDB (DirectConnect for DB2 UDB)
- ECDA option for Microsoft SQL Server (DirectConnect for Microsoft SQL Server)
- ECDA option for Informix (DirectConnect for Informix)
- ECDA option for ODBC (DirectConnect Anywhere)

6. Shared Memory Multiprocessor (SMP)

DirectConnect 12.6 uses Open Server preemptive scheduling that uses native operating system threads. The operating system controls context switches that result in:

- Frequent context switches for improved time slicing
- More efficient CPU usage
- Higher throughput and greater scalability

Products affected

SMPOS is implemented for the following ECDA products:

- ECDA option for DB2 UDB (DirectConnect for DRDA)
- ECDA option for Microsoft SQL Server (DirectConnect for Microsoft SQL Server)

7. Code page translation for ODBC-based products

- ECDA option for Informix (DirectConnect for Informix)
- ECDA option for ODBC (DirectConnect Anywhere)

Note ECDA option for Oracle (DirectConnect for Oracle) was converted to SMPOS in the 12.5 release.

7. Code page translation for ODBC-based products

The ODBC drivers have been updated to incorporate code page translation within their normal data processing. DirectConnect uses this new functionality to simplify code page translation.

For Open DataBase Connectivity (ODBC)-based products, code page translation can take place in two locations:

- Between DirectConnect and the target database
- Between the client and DirectConnect

The ODBC drivers have been updated to incorporate code page translation within the driver's normal data processing. DirectConnect uses this functionality to simplify code page translation.

Between
DirectConnect and the
target database

The ODBC driver uses the server-platform-configured code page value as its client code page. Depending on the platform, Windows or UNIX, the server-platform-configured code page value can be found as follows:

- For Windows, in the Windows registry ACP value. To locate the value, use the registry editor called `regedit` to navigate through the registry tree to `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\NLS\CodePage`. On the right panel, scroll to the ACP value.
- For UNIX, it is the `IANAAppCodePage` property value.

DirectConnect is an Open Server API and relies on Open Server for datatype conversion. Upon connection to the target, the ODBC driver queries the target database for its code page and compares the value to the server-platform-configured code page. If the values are not equal, the ODBC driver translates from the server-platform-code page to the target code page. If the values are equal, the ODBC driver does not perform any translation.

Between the client and DirectConnect

For proper code page translation, the DirectConnect code page identified by Open Server must match the server-platform-configured code page value. The *locales.dat* platform configuration identifies the Open Server code page. Configure the *locales.dat* default for the appropriate platform. Open Server handles code page conversion as follows:

- If the client code page matches the Open Server code page no conversion is performed by Open Server.
- If the client code page does not match the Open Server code page, Open Server performs the conversion.

The DirectConnect server configuration property called `OSCodeSetConvert` determines whether DirectConnect enables Open Server to perform code page translation between the client and the ODBC driver. The following are the two values for the new `OSCodeSetConvert` property:

- Yes indicates that DirectConnect performs code page translation.
- No indicates that DirectConnect will not perform any code page translation.

Access server properties no longer available

With the introduction of the new server configuration property `OSCodeSetConvert` and the new functionality of the ODBC driver, the following access service properties are no longer available:

- `UseClientCharset`
- `DefaultClientCodeset`
- `DefaultTargetCodeset`

For additional information for the `OSCodeSetConvert` property, refer to the ECDA and Mainframe Connect *Server Administration Guide* for DirectConnect.

8. Creating a DirectConnect server as a Windows service

For Windows, a procedure that allows you to run a DirectConnect server as a Windows service is available for the 12.6 release. It can be found in the ECDA and Mainframe Connect *Server Administration Guide* for DirectConnect.

9. Express transfer now supported on all platforms

To improve performance of bulk data transfers between data sources, Sybase now has a bulk copy transfer called “express transfer,” which transfers data faster than bulk copy transfer by using ODBC array-processing APIs. Because the new express transfer feature uses the same syntax as the DirectConnect bulk copy transfer, you can use express transfer without modifying your applications.

Availability

This new feature is available on all UNIX and Microsoft Windows platforms for the following DirectConnect products:

- ECDA option for DB2 UDB
- ECDA option for Informix
- ECDA option for Microsoft SQL Server
- ECDA option for ODBC

To use express transfer, you need one of these products and an ODBC driver from another DirectConnect or ASE product. For example, to transfer data between Microsoft SQL Server and ASE, you need DirectConnect for Microsoft SQL Server and an ASE ODBC driver.

For additional information, refer to Chapter 7, “Understanding the Transfer Process” and Chapter 8 “Using Bulk Copy Transfer and Express Transfer,” of the ECDA Options *User’s Guide for Access Services*.

10. Features added following the ECDA 12.5 release

The following list of features were added with EBFs after the initial ECDA 12.5 release and are included in the ECDA 12.6 release. For information regarding any of the identified features, refer to the *New Features 12.5* document at <http://sybooks.sybase.com/onlinebooks/group-ecda/dcg1250e>.

- ANSI outer join support
- CLOB and BLOB certification
- DataDirect back-end drivers updated
- DirectConnect configuration for ASE/CIS
- DRDA access to AS/400 using TCP/IP
- Express transfer (for Windows only)
- Improved CIS interoperability with DB2 CLOB/BLOB datatypes

- Informix wire protocol driver support
- Log and trace file enhancements
- Multiple result sets returned
- New server configuration property (OSCodeSetConversion)
- Post-installation configurator tool (DCConfig)
- Revised AddServer, DCStart, DCDirector, and DC_SYBASE scripts
- Rollback of transfer batches
- RPC output parameters support
- Service library load control
- Target database expanded support
- Windows program database files for debugging

