SYBASE®

Overview Guide

Enterprise Connect™ Data Access

15.0

[Microsoft Windows, Linux, and UNIX]

Contents

About This Book

Audience

This book is intended for customers who have purchased Enterprise Connect™ Data Access (ECDA).

How to use this book

See	For
Chapter 1, "Enterprise Connect Data Access"	• A description of Enterprise Connect Data Access (ECDA) • Descriptions of: • ECDA Options • Client and target ODBC drivers • Adaptive Server® Enterprise with Component Integration Services (ASE/CIS) • Software Developer's Kit (SDK) • A description of related products and options
Chapter 2, "ECDA Option for ODBC"	A description of the ECDA Option for ODBC
Chapter 3, "ECDA Option for Oracle"	A description of the Option for Oracle
Chapter 4, "Sample Solutions"	Sample solutions using ECDA components

Related documents

See your product documentation for detailed descriptions of how to install and use ECDA Options.

Other sources of information

Use the Sybase® Getting Started CD, the SyBooks™ CD, and the Sybase Product Manuals Web site to learn more about your product:

• The Getting Started CD contains release bulletins and installation guides in PDF format, and may also contain other documents or updated information not included on the SyBooks CD. It is included with your software. To read or print documents on the Getting Started CD, you need Adobe Acrobat Reader, which you can download at no charge from the Adobe Web site using a link provided on the CD.

- The SyBooks CD contains product manuals and is included with your software. The Eclipse-based SyBooks browser allows you to access the manuals in an easy-to-use, HTML-based format.

  Some documentation may be provided in PDF format, which you can access through the PDF directory on the SyBooks CD. To read or print the PDF files, you need Adobe Acrobat Reader.

  Refer to the *SyBooks Installation Guide* on the Getting Started CD, or the *README.txt* file on the SyBooks CD for instructions on installing and starting SyBooks.

- The Sybase Product Manuals Web site is an online version of the SyBooks CD that you can access using a standard Web browser. In addition to product manuals, you will find links to EBFs/Maintenance, Technical Documents, Case Management, Solved Cases, newsgroups, and the Sybase Developer Network.

  To access the Sybase Product Manuals Web site, go to Product Manuals at http://www.sybase.com/support/manuals/.

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1 Point your Web browser to Technical Documents at http://www.sybase.com/support/techdocs/.

2 Select Products from the navigation bar on the left.

3 Select a product name from the product list and click Go.

4 Select the Certification Report filter, specify a time frame, and click Go.

5 Click a Certification Report title to display the report.

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1 Point your Web browser to Technical Documents at http://www.sybase.com/support/techdocs/.

2 Click MySybase and create a MySybase profile.

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❖ **Finding the latest information on EBFs and software maintenance**

1 Point your Web browser to the Sybase Support Page at http://www.sybase.com/support.

2 Select EBFs/Maintenance. If prompted, enter your MySybase user name and password.

3 Select a product.

4 Specify a time frame and click Go. A list of EBF/Maintenance releases is displayed.

Padlock icons indicate that you do not have download authorization for certain EBF/Maintenance releases because you are not registered as a Technical Support Contact. If you have not registered, but have valid information provided by your Sybase representative or through your support contract, click Edit Roles to add the "Technical Support Contact" role to your MySybase profile.

5 Click the Info icon to display the EBF/Maintenance report, or click the product description to download the software.

Accessibility features

This document is available in an HTML version that is specialized for accessibility. You can navigate the HTML with an adaptive technology such as a screen reader, or view it with a screen enlarger.

The DirectConnect Manager component of Enterprise Connect Data Access 15.0 and the HTML documentation have been tested for compliance with U.S. government Section 508 Accessibility requirements. Documents that comply with Section 508 generally also meet non-U.S. accessibility guidelines, such as the World Wide Web Consortium (W3C) guidelines for Web sites.

Note You might need to configure your accessibility tool for optimal use. Some screen readers pronounce text based on its case; for example, they pronounce ALL UPPERCASE TEXT as initials, and Mixed Case Text as words. You might find it helpful to configure your tool to announce syntax conventions. Consult the documentation for your tool.

For information about how Sybase supports accessibility, see Sybase Accessibility at http://www.sybase.com/accessibility. The Sybase Accessibility site includes links to information on Section 508 and W3C standards.

If you need help   Each Sybase installation that has purchased a support contract has one or more designated people who are authorized to contact Sybase Technical Support. If you cannot resolve a problem using the manuals or online help, please have the designated person contact Sybase Technical Support or the Sybase subsidiary in your area.

CHAPTER 1   Enterprise Connect Data Access

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In ECDA 15.0, the ECDA Option for DB2 UDB and the ECDA Option for Microsoft SQL Server have been merged into the ECDA Option for ODBC.

Note For migration information, see the ECDA 15.0 *Release Bulletin*s.

In addition, the ECDA Option for Informix is no longer available. As such, there are two options for ECDA 15.0:

- ECDA Option for ODBC
- ECDA Option for Oracle

What is Enterprise Connect Data Access?

ECDA is an integrated set of software applications and connectivity tools that allows you to access data within a heterogeneous database environment. ECDA gives you the ability to access a variety of LAN-based, non-Sybase data sources, as well as mainframe data sources. It consists of components that provide transparent data access within an enterprise, including access to servers housed on zSeries, iSeries, UNIX, Linux, and Microsoft Windows platforms.

Note Mainframe Connect™, a suite of products you can purchase separately, allows you to access and integrate mainframe data and applications. For more information, see the Mainframe Connect *Overview Guide*.

With ECDA, you can maintain a corporate view of distributed operations, even when distributed business units run on a variety of hardware and database management system (DBMS) platforms. Because ECDA is database-independent middleware, it allows LAN-based clients to see a consistent picture of enterprise data, no matter what the data source.

ECDA components allow applications to interact with non-Sybase DBMSs, such as DB2 UDB, Microsoft SQL Server, and Oracle, as well as Sybase DBMSs, including Adaptive Server Enterprise (ASE), Adaptive Server Anywhere, and Sybase® IQ.

Specifically, The DirectConnect™ server component of ECDA works as a gateway to support ASE and Replication Server® interoperability with various non-Sybase databases.

Sybase Central plug-ins

Sybase Central™ is a graphical tool that provides a common interface for managing Sybase products. Each server product is managed by a service provider "plug-in" that operates in parallel with other service providers in the Sybase Central framework.

Sybase Central displays a visual representation of servers and provides a point-and-click interface for choosing options.

ECDA provides these Sybase Central plug-ins:

• ASE plug-in, which allows you to manage and monitor ASE installations. This plug-in also allows you to set up proxy tables with ASE/CIS for access to remote, non-Sybase data sources.

- DirectConnect server plug-in (DirectConnect Manager), which allows you to manage DirectConnect servers locally or remotely throughout your business environment.

Enterprise Connect Data Access capabilities

ECDA provides transparent access to a variety of data sources for ASE. The DirectConnect server and other components of ECDA are also included with Replication Server Options, Mirror Activator™, and Data Integration Suite Replication, in each case providing Replication Server the capability to replicate to heterogeneous databases including DB2 UDB, Oracle and Microsoft SQL Server.

ECDA offers these capabilities:

- Transparent access

- Interoperability

- Data management

Transparent access

With ECDA, you can:

- Create developer, application, and user interfaces that let developers, applications, and users work with familiar tools—no matter how your business enterprise changes or what new technologies are added.

- Access information on remote, heterogeneous data servers as if it were from a single source.

- Connect to DB2 UDB, Microsoft SQL Server, and Oracle using the appropriate ECDA Option, either directly or in conjunction with Adaptive Server Enterprise/Component Integration Services (ASE/CIS), or Replication Server.

- Connect to other ODBC-compliant databases using ECDA Option for ODBC and an appropriate ODBC driver, either directly or in conjunction with ASE/CIS or Replication Server.

Interoperability

ECDA interoperates with other Sybase products and product suites, such as ASE, Replication Server, Sybase® IQ, and Data Integration Suite. With ECDA, these products can access non-Sybase data.

ECDA also supports a variety of client interfaces, including:

*   Client applications written either in Java using jConnect™ for JDBC™, or in C/C++ using Open Client™ libraries

*   Open Server™ applications

*   JDBC applications

Data management

Because ECDA helps you manage your enterprise data, you can:

*   Share data efficiently throughout your organization by moving it in bulk form between data sources using the ECDA Option for ODBC transfer feature or the ASE select into statement.

*   Manage ECDA services and Sybase components using the Sybase Central graphical user interface (GUI).

ECDA components

ECDA includes:

*   ECDA Options, which contain DirectConnect servers that work with ASE and Replication Server to provide access to DB2 UDB, Microsoft SQL Server, and Oracle databases, as well as to other ODBC-compliant databases

*   Client and target ODBC drivers

*   ASE, with a restricted license for Component Integration Services (CIS) for a single view of distributed and heterogeneous data sources

*   Software Developer's Kit (SDK), with which you can create custom client applications and use drivers to connect your existing applications to ECDA

ECDA Options

There are two options in ECDA:

- ECDA Option for ODBC
- ECDA Option for Oracle

Through DirectConnect servers, the ECDA Options provide basic connectivity to non-Sybase data sources. In particular, they provide data access, transaction management, and remote systems management through DirectConnect Manager.

DirectConnect servers provide connectivity between clients located throughout the enterprise and enterprise data servers. You can combine DirectConnect servers with ASE or Replication Server to can access, move, and replicate data in a heterogeneous environment.

Note DirectConnect servers are discussed in more detail in Chapter 2, "ECDA Option for ODBC" and Chapter 3, "ECDA Option for Oracle."

Client and target ODBC drivers

ECDA Option for ODBC requires ODBC drivers to provide connectivity to the client and to the target database.

Client

Sybase ships an ODBC driver with ECDA to provide ODBC connectivity to ASE/CIS. The same driver can also be used for connectivity to Mainframe Connect. See the Mainframe Connect *Overview Guide* for more information.

Target database

Sybase no longer ships ODBC drivers for non-Sybase databases. Instead, you obtain the necessary ODBC drivers for DB2 UDB and Microsoft SQL Server.

Note For the ECDA Option for Oracle, native Oracle OCI connectivity *is* provided.

Adaptive Server Enterprise with Component Integration Services (ASE/CIS)

ASE is provided with ECDA for the CIS functionality. With ASE/CIS your client applications can view and change data on multiple, heterogeneous data servers as if it were single-source data. ASE/CIS performs datatype transformations and enables heterogeneous joins.

Note When included in ECDA, the ASE/CIS license does not include support for local data storage within ASE. If you have purchased a full ASE license with the CIS option, you are licensed for local data storage within ASE.

ASE/CIS allows users to access both Sybase and non-Sybase databases on different servers. These external data sources include host data files and tables, views, and remote procedure calls (RPCs) in database systems such as ASE, Oracle, Microsoft SQL Server, and DB2 UDB.

Using ASE/CIS, you can:

- Access tables and views that reside on remote servers as if they were local objects.

- Perform joins between tables in multiple remote, heterogeneous servers. For example, it is possible to join tables between an Oracle DBMS and DB2 UDB, and between tables in multiple DB2 UDB database servers.

- Create stored procedures that work with distributed heterogeneous data.

- Transfer the contents of one table into a new table on any supported remote server using a select into statement.

- Provide applications, such as PowerBuilder®, Microsoft Access, and DataEase, with transparent access to heterogeneous data.

- Maintain referential integrity across heterogeneous data sources.

- Access native remote server capabilities using the Component Integration Services passthrough mode.

- Map RPCs into proxy table structures and perform operations on them as though they were local tables.

Software Developer's Kit

Software Developer's Kit (SDK) is a set of libraries and utilities for developing client applications. It includes the following components:

Open Client

Open Client provides the interfaces that client applications, third-party products, and other Sybase products need to communicate with ASE and Open Server applications. Open Client provides runtime libraries and additional tools you need to develop custom client applications. Open Client network services support specific protocols such as TCP/IP.

Open Client Embedded SQL™/C

With this precompiler you can embed ASE Transact-SQL statements into C-language applications.

Open Client Embedded SQL/COBOL

With this precompiler you can embed ASE Transact-SQL statements into COBOL-language applications.

jConnect for JDBC

The jConnect for JDBC driver from Sybase provides native access to all Sybase database products and servers based on Open Server.

Language modules

You can provide system messages and datetime formats to help you localize your applications. The default installation includes:

- U.S. English language module

- Unicode UTF-8 encoding (utf8)

- IBM code page 850 (cp850)

- IBM code page 437 (cp437)

- ISO 8859-1 (iso_1)

- Hewlett-Packard Roman 8 (roman8) character sets

Note SDK licenses are included as part of ASE.

Related products and options

There are several related Sybase data integration products and options you can purchase separately that extend the capabilities of your system:

- Sybase Replication Server

- Sybase Replication Server Options

- Sybase Data Integration Suite Replication

- Mainframe Connect

- Replication Agent for DB2 UDB

- Open Server

Sybase Replication Server

Replication Server is an Open Server application that maintains replicated data in multiple databases while ensuring the integrity and consistency of the data. It provides client applications with local data access, thereby reducing the load on the network and centralized computer systems.

Replication Server supports heterogeneous data servers. You can build a replication system from existing databases and applications and, as your enterprise grows and changes, you can add data servers and Replication Servers to accommodate your evolving business needs.

See the Sybase Replication Server documentation for more information about Replication Server.

Sybase Replication Server Options

If you already own Sybase Replication Server, you can purchase one or more Sybase Replication Server Options. These options are sets of products packaged together to give you unidirectional or bidirectional replication between ASE and non-ASE databases using Sybase Replication Agents and ECDA.

Three options are available on Microsoft Windows or UNIX platforms:

- Replication Server Option for Oracle, which provides replication to and from Oracle databases

- Replication Server Option for Microsoft SQL Server, which provides replication to and from Microsoft SQL Server databases

- Replication Server Option for IBM DB2 UDB, which provides replication to and from IBM DB2 UDB

See the Sybase Replication Server Options *Overview Guide* for more information about the options available for purchase with Sybase Replication Server.

Sybase Data Integration Suite Replication

Sybase Data Integration (DI) Suite combines key data integration techniques, including data federation, replication, real-time events, search, and ETL, with integrated tools for development and administration.

The Replication component is the data distribution and data synchronization component of DI Suite. It replicates transactional data and synchronizes operational data across heterogeneous databases in your enterprise.

See the Sybase Data Integration Suite *Overview Guide* for more information about DI Suite Replication.

Mainframe Connect

Mainframe Connect provides a product suite that provides access to *and integration of* mainframe data and applications. Mainframe Connect allows you to write applications that access mainframe data and allow the mainframe to act as a client to other Sybase servers. For more information about linking LAN-based and mainframe data using Mainframe Connect, see the Mainframe Connect *Overview Guide*.

Replication Agent for DB2 UDB

Replication Agent™ for DB2 UDB allows you to replicate transactions from a DB2 UDB primary database on the mainframe (zSeries). For more information about replicating data from DB2 UDB, see the Replication Agent for DB2 UDB documentation set.

Open Server

Open Server provides the libraries, tools, and interfaces you need to create a custom server application. Open Server consists of a programming interfaces component and a network services component. For more information about Open Server components, see the Open Server documentation.

With Open Server, you can:

*   Create an application for any type of server

- Create applications that perform calculations, provide access to real-time data, or interface with e-mail applications

- Communicate directly with Sybase and non-Sybase protocols

ECDA and Replication Server are Open Server applications.

CHAPTER 2 **ECDA Option for ODBC**

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Introduction

ECDA Option for ODBC is Open Server-based software that supports Client-Library™ and Open Database Connectivity (ODBC) application programming interfaces (APIs). A local area network (LAN)-based middleware server, it provides access to non-Sybase data and applications and basic connectivity to ODBC-accessible data sources.

ECDA Option for ODBC serves as a fundamental building block for highly-scalable database middleware applications. In addition, ECDA Option for ODBC can be used with other Sybase products, such as Adaptive Server Enterprise/Component Integrated Services (ASE/CIS), Data Integration (DI) Suite, Replication Server, and Replication Server Options.

Note For access to additional databases such as Microsoft SQL Server, DB2 UDB, and others, you must obtain and install the necessary ODBC driver separately, on the same server as ECDA Option for ODBC, and configure ECDA Option for ODBC to use that ODBC driver for access to the database. It is important when working with non-Sybase provided, third-party ODBC drivers to carefully integrate and test them to be sure they meet your needs.

Components

ECDA Option for ODBC consists of a server and one or more access service libraries, which have specific sets of configuration properties. The server provides the framework in which the service libraries operate. Each access service library accesses data from a particular target database, such as DB2 UDB, Microsoft SQL Server, and Oracle.

The ECDA Option for ODBC consists of:

- DirectConnect server
- Service libraries
- Access services
- DirectConnect Manager

DirectConnect server

The DirectConnect server provides management and support functions for DirectConnect service libraries, such as:

- Routing client connections to the appropriate access service based on user ID, requesting application, and access service name
- Providing a single log file and a trace file for access services
- Logging server, access service, and client messages
- Tracing server, access service, and client events
- Providing configuration management of all installed services

Service libraries

There are two types of service libraries that reside on the DirectConnect server:

- Access service library, a set of configuration properties that describes how all of its access services will function
- Administrative service library, which provides specific administrative services for all service libraries, including writing to logs and allowing remote configuration of access services (for example, through DirectConnect Manager).

Access services

An access service is the client connection point for a DirectConnect server. It contains specific sets of configuration properties relating to the target to be accessed. You must define at least one access service for every service library.

Access services allow clients to access data from a specific target. Each access service is a specific set of configuration properties that:

- Transforms SQL

- Converts datatypes

- Supports remote procedure calls (RPCs)

- Transfers data between the target database and other servers accessible through Open Client

- Supports Catalog Stored Procedures (CSPs) and system stored procedures

An access service is the named pairing of an access service library and a set of specific configuration properties. Clients connect to access services by the access service name. Within each access service library, a collection of configuration properties define how each access service behaves.

DirectConnect Manager

DirectConnect Manager is a Sybase Central plug-in application that allows you to configure and manage Sybase DirectConnect servers interactively from a client machine. It runs on Windows and UNIX platforms. DirectConnect Manager connects to a DirectConnect server and communicates with it through an application programming interface (API) rather than by manipulating the configuration files directly. It displays a consolidated view of all DirectConnect servers across your enterprise.

Note DirectConnect Manager is installed separately from ECDA Option for ODBC.

DirectConnect Manager provides the capability to:

- Perform all of its management functions remotely: you do not need physical access to the DirectConnect server machine or directory.

- Provide management services to multiple servers at the same time, including the ability to copy access service configurations from one server to another.

- Manage DirectConnect servers on multiple platforms.

- Change configuration properties of DirectConnect servers, service libraries, and services.

- Create and copy services by copying an existing service and giving it a unique name.

- Designate a new server using DCDirector (ECDA Option for ODBC only).

- Start and stop existing servers using DCDirector (ECDA Option for ODBC only).

- Start, stop, and delete services remotely.

- Test the availability of all your data sources.

- Retrieve a DirectConnect server log file or a subset of the log, and view log file messages.

- Update DirectConnect server connection information.

- View the status of a service and data source.

The interface provided by DirectConnect Manager allows you to easily configure and manage all of the data access services directly from your Windows or UNIX platform. As a result, you greatly increase your ability to respond and manage a distributed environment.

Architecture

ECDA Option for ODBC is a Symmetric Multiprocessing (SMP) Sybase Open Server application that uses an Open Server thread for each incoming client connection. It communicates with ASE using the server class *direct_connect*.

In ECDA Option for ODBC, the DirectConnect server provides the framework in which the service libraries operate. Within the service libraries, each access service accesses data from a particular target, such as DB2 UDB, Microsoft SQL Server, and ODBC-accessible databases.

These rules define the relationship between an access service library and an access service:

- A single access service library can support multiple access services.

- Each access service has one configuration set and is always associated with a specific access service library.

- All access services within a given access service library share the same configuration properties.

- You can assign different configuration property values to different access services within an access service library.

When a client connects, the access service logs in to the target database, using the client user ID and password, plus the ODBC-configured data source name (DSN).

Figure 2-1 shows the relationship of the access service library with components of the client workstation, LAN, ODBC driver, and target database.

Figure 2-1: ECDA Option for ODBC architecture
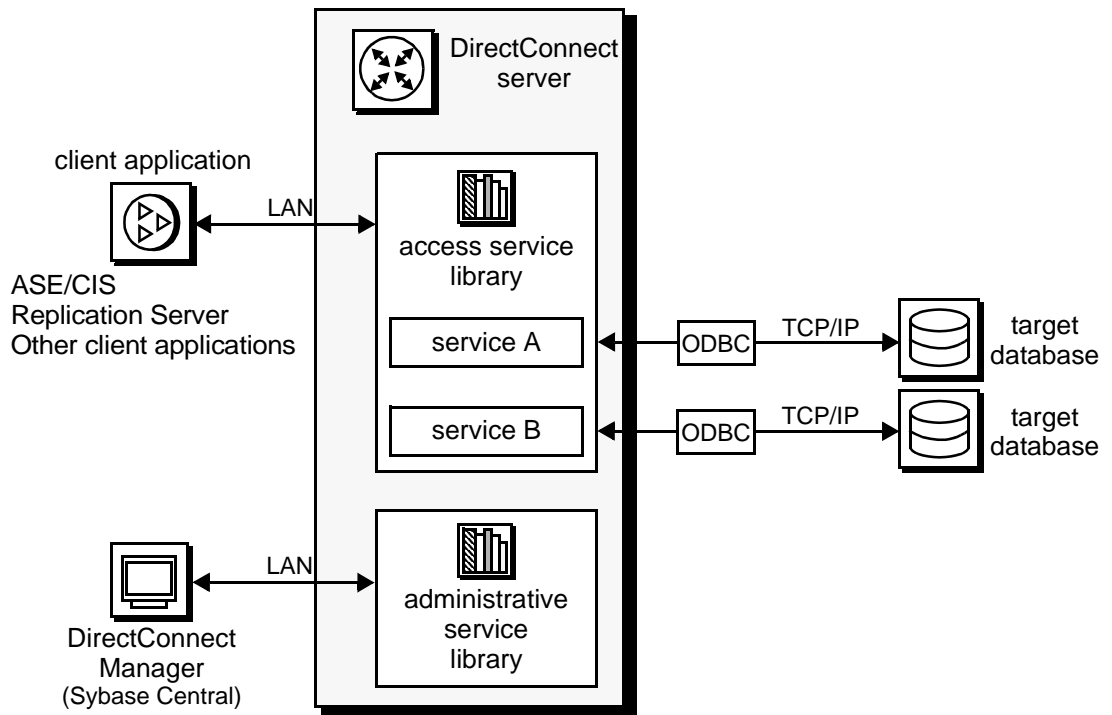
As shown, the request from a client application goes over the LAN to the DirectConnect server. The access service routes the request through the ODBC driver to the target and accesses data from the database. DirectConnect Manager accesses the administrative service library to manage the DirectConnect server and provide a view of the servers, service libraries, and services.

CHAPTER 3   ECDA Option for Oracle

Introduction

ECDA Option for Oracle provides Open Client™ access to Oracle databases. It operates in conjunction with the Component Integration Services feature of Adaptive Server Enterprise called ASE/CIS or as a standalone gateway.

When used with ASE, ECDA Option for Oracle transforms the Transact-SQL generated by ASE to Oracle's native SQL. ECDA Option for Oracle also handles datatype mapping between Sybase datatypes and Oracle datatypes. ECDA Option for Oracle provides many of the features of a distributed database system when used in combination with ASE. This combination enables location transparency, distributed query optimization, copy transparency, transaction transparency, and distributed joins.

When used with ASE, you can join Oracle tables with ASE, DB2, or other tables. Access to these objects through ASE is transparent to the application. ECDA Option for Oracle is used with ASE/CIS to support full, two-phase commit transaction management.

When used with Replication Server, the ECDA Option for Oracle allows you to replicate data into Oracle tables.

Components

The ECDA Option for ODBC consists of:

• DirectConnect server

• DirectConnect Manager

DirectConnect server

The DirectConnect server component of ECDA Option for Oracle is an all-encompassing server; there is only one process and binary, dcoracle. The DirectConnect server accepts connections, routes them to the appropriately configured service, which ultimately is sent the appropriate Oracle database for processing.

DirectConnect Manager

DirectConnect Manager is a Sybase Central plug-in application that allows you to configure and manage Sybase DirectConnect servers interactively from a client machine. It runs on Windows and UNIX platforms. DirectConnect Manager connects to a DirectConnect server and communicates with it through an application programming interface (API) rather than by manipulating the configuration files directly. It displays a consolidated view of all DirectConnect servers across your enterprise.

Note DirectConnect Manager is installed separately from ECDA Option for Oracle.

 DirectConnect Manager provides the capability to:

• Perform all of its management functions remotely: you do not need physical access to the DirectConnect server machine or directory.

• Provide management services to multiple servers at the same time.

• Manage DirectConnect servers on multiple platforms.

• Change configuration properties of DirectConnect servers.

• Test the availability of all your DirectConnect servers data sources.

The interface provided by DirectConnect Manager allows you to easily configure and manage all of the data access services directly from your Windows or UNIX platform. As a result, you greatly increase your ability to respond and manage a distributed environment.

Architecture

ECDA Option for Oracle is built using the client/server paradigm. It is a Sybase Open Server application that provides the flexibility of a number of concurrent client connections that can be configured.

ECDA Option for Oracle:

- Is a Symmetric Multiprocessing (SMP) Sybase Open Server application that uses an Open Server thread for each incoming client connection.

- Uses the DirectConnect server to route the incoming client connection to the correct service based on the service name and has one Oracle process for each DirectConnect server.

- Does not have a service library but can have multiple services and each service is configured to connect to a different Oracle database. In addition, the DirectConnect server performs SQL transformation and some data translation based on the configuration of the service.

- Accesses Oracle databases using the Oracle Call Interface (OCI) application programming interface (API). The OCI allows the ECDA Option for Oracle the ability to manipulate data in an Oracle database.

- Communicates with ASE using the server class *direct_connect*.

Figure 3-1 shows how ECDA Option for Oracle works with ASE, Replication Server, and other APIs.

Figure 3-1: ECDA Option for Oracle Architecture
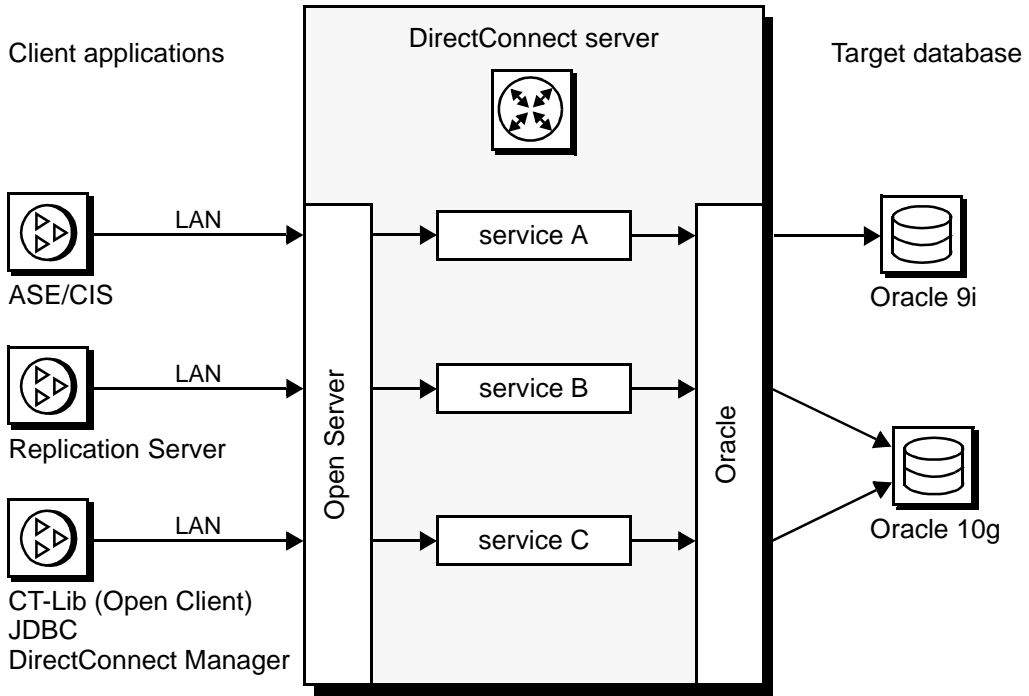
As shown in Figure 3-1, the request from a client uses a TCP/IP LAN connection to the DirectConnect server. Based on the incoming server name, the DirectConnect server routes the connection using OCI to the proper Oracle database depending on the configuration properties.

Sample Solutions

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This chapter describes sample solutions to business problems using ECDA components and other Sybase products and product suites. Although there are many ways your site can use ECDA to access data, the scenarios in this section provide some high-level examples of the solutions that ECDA provides.

Transparent access to local heterogeneous data stores

Profile
An insurance company has an application that processes claims and requires data from two sources: a DB2 UDB for iSeries database and an Oracle database. The company uses ECDA Option for ODBC to retrieve data from the DB2 UDB for iSeries database and ECDA Option for Oracle to retrieve data from the Oracle database. This eases administration and eliminates the need for changes to the claims application.

Sybase components
To retrieve the data without the application (or the user) being aware of the specific data location, the insurance company uses these three components in ECDA:

- ASE/CIS

- ECDA Option for ODBC (with the IBM DB2 UDB ODBC driver)

- ECDA Option for Oracle

Sample scenario
Figure 4-1 illustrates this sample scenario.

Figure 4-1: Transparent access to local heterogeneous data stores
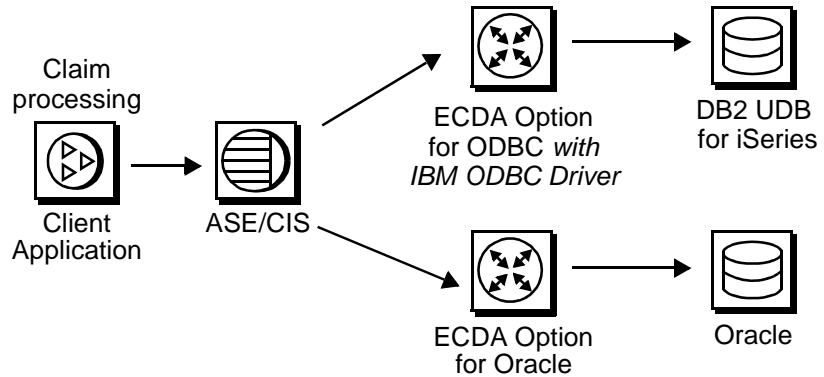
In Figure 4-1, the client application sends a request through ASE/CIS and ECDA Option for ODBC to a DB2 UDB for iSeries database, which returns data or a message to the client. It also sends a request through ASE/CIS and ECDA Option for Oracle to an Oracle database, which returns data or a message to the client.

For descriptions of specific ECDA components used in the sample scenarios, see "ECDA components" on page 4.

Access to distributed data sources

Profile

A securities company requires an immediate customer profile when the broker receives a call from the customer. The broker client application immediately brings up the customer profile based on the telephone number of the caller. This data is stored in the Oracle database at the local work group's office in Memphis and is updated through ECDA Option for Oracle. Real-time feeds from outside the system are stored in DB2 UDB on a zSeries host located in New York and are accessed by ECDA Option for ODBC. Client inquiries regarding other investments and current prices need to be queried off the zSeries host and displayed within the broker client application

Sybase components

To set up transparent access to heterogeneous data stores, the securities company uses these two components in ECDA:

• Sybase ECDA Option for Oracle

• Sybase ECDA Option for ODBC, with an IBM DB2 UDB ODBC driver

This combination of components gives the securities company access to heterogeneous data stores.

Sample scenario   Figure 4-2 illustrates this sample scenario.

Figure 4-2: Access to distributed data sources
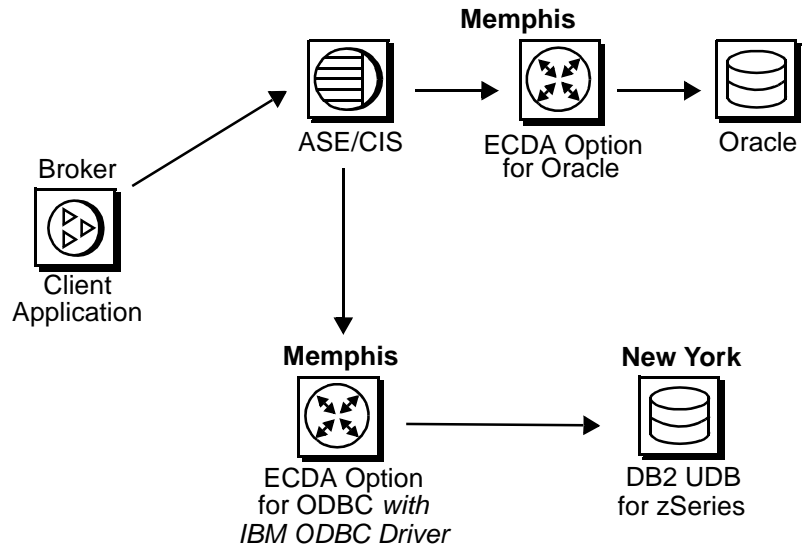
In Figure 4-2, the client application sends a request through ASE/CIS and ECDA Option for Oracle to an oracle database, which returns data or a message to the client. It also sends a request through ASE/CIS and ECDA Option for ODBC to a DB2 UDB for zSeries database, which returns data or a message to the client.

For descriptions of specific ECDA components used in the sample scenarios, see "ECDA components" on page 4.

# Integrating systems of two companies

Profile   A Paris retail company has just acquired another company in New York. It needs to integrate its Oracle data with the DB2 UDB for UNIX data of the acquired company as quickly as possible to share information such as customer profiles and orders. The company needs to capture data changes and replicate them to other systems where they can be incorporated without having to re-code existing applications.

Sybase components

To set up bidirectional, enterprise-wide replication, the retail company uses these five components, which are available with Sybase Data Integration Suite Replication:

- ECDA Option for ODBC (to be used with an IBM ODBC Driver)
- ECDA Option for Oracle
- Sybase Replication Agent for Oracle
- Replication Agent for DB2 UDB
- Replication Server

Sample scenario

Figure 4-3 illustrates the sample scenario which integrates Oracle data with DB2 UDB for UNIX data.

Figure 4-3: Bidirectional, enterprise-wide replication
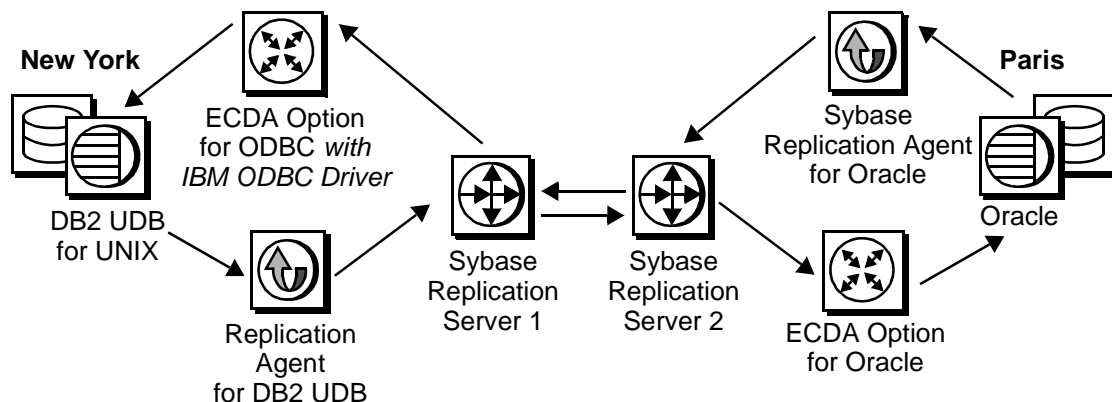
In Figure 4-3, data stored in a DB2 UDB database for UNIX is sent through Replication Agent for DB2 UDB to Replication Server 1 and Replication Server 2, which replicate the information into Oracle through ECDA Option for Oracle to the Oracle database. Data from the Oracle database is then sent through Replication Agent for Oracle to Replication Server 2 and Replication Server 1, which replicate the information into DB2 UDB through ECDA Option for Oracle using an IBM ODBC driver to the DB2 UDB for UNIX database.

For descriptions of specific ECDA components used in the sample scenarios, see "ECDA components" on page 4.

For more information about Replication Agent for DB2 UDB, Replication Server, and Replication Server Options, see "Related products and options" on page 7.

For more information about the DI Suite Replication component, see the Sybase Data Integration Suite *Overview Guide*.