

Enterprise Gateway with DRDA

Version 7.2x

INFORMIX®-Enterprise Gateway with DRDA® allows Informix database application users and developers to access information on IBM DB2, DB2/VM, and DB2/400 databases as transparently and easily as if they were accessing an Informix database server. DRDA is IBM's Distributed Relational Database Architecture—the standard for providing client/server connectivity among IBM relational database management systems (RDBMSs).

IBM Data to UNIX Client/Server Platforms—Direct and Transparent

INFORMIX-Enterprise Gateway with DRDA provides a UNIX-based connectivity solution for IBM relational databases that doesn't require the purchase of additional mainframe software. Transparent connectivity gives users flexible read/write access to a wealth of information that was previously available only through lengthy batch processing operations, file transfers, or cumbersome proprietary gateways. This greatly improves application development and provides more information to key strategic decision makers.

Transparent integration of IBM data enables companies to merge new, cost-effective, client/server platforms with legacy applications for their right-sizing migration plans. To facilitate this integration, distributed join capabilities let developers integrate data from multiple databases, including IBM host data. INFORMIX-Enterprise Gateway with DRDA's common user interface across databases lets developers use all the powerful Informix tools and features they're used to, even when accessing IBM data.

INFORMIX-Enterprise Gateway with DRDA provides a direct connection to IBM RDBMSs without the need for additional mainframe software. Other database vendors rely on multiple pieces of proprietary client and mainframe

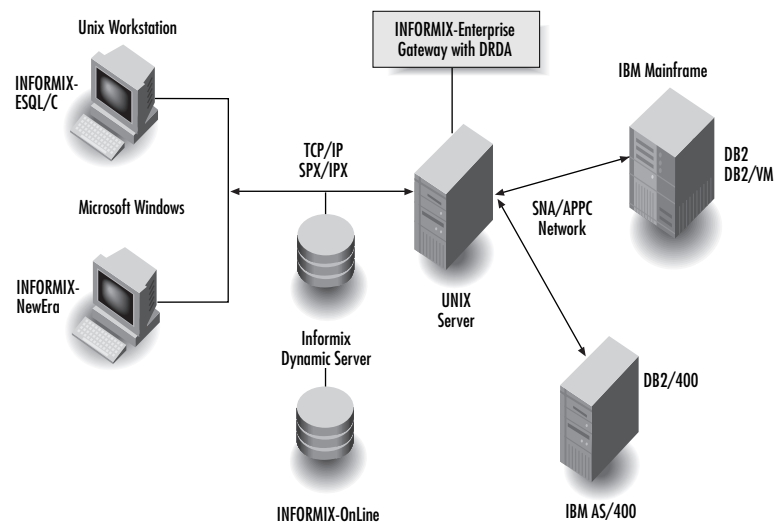
software to connect their remote client applications to mainframe RDBMSs. They use proprietary mainframe software that must pass SQL requests through a CICS transaction monitor to reach an IBM RDBMS such as DB2, adding costs and degrading system performance.

For even greater flexibility, developers who need to access IBM data can use simplified and more productive application development tools based on UNIX, Macintosh, Microsoft Windows, or OS/2 environments. In

addition, applications written or ported to INFORMIX-Enterprise Gateway with DRDA can run against Informix Dynamic Server™ or INFORMIX-SE if data is moved off a DB2, DB2/VM, or DB2/400 SQL database.

IBM's DRDA Specifications

INFORMIX-Enterprise Gateway with DRDA is based on IBM's DRDA specifications. It is the standard for providing client/server connectivity among IBM RDBMSs that run in heterogeneous



Informix users and developers can access information on IBM systems, such as DB2, DB/VM, and DB2/400 databases, directly and transparently through INFORMIX-Gateway with DRDA. In addition, data can be distributed between IBM host databases and Informix databases, and application users can transparently view the data as part of one continuous database.

environments supporting structured query language (SQL) as the standard application interface. IBM has built DRDA support directly into the latest releases of its RDBMS family, so users are always assured that INFORMIX-Enterprise Gateway *with DRDA* can be easily connected to existing IBM databases.

IBM's DRDA specifies the rules for allocating and retaining systems network architecture (SNA) advanced program-to-program communication (APPC) sessions between an Informix application requester (client) and an IBM application server (database server).

Standards Adherence

Informix has based its gateway product on IBM's DRDA architecture to further enhance its commitment to providing industry-standard, open systems solutions. INFORMIX-Enterprise Gateway *with DRDA* conforms to the first level of DRDA support: Remote-Unit-of-Work. This allows Informix applications to act as remote clients to IBM database servers.

In addition, as the DRDA specification evolves, INFORMIX-Enterprise Gateway will evolve, to protect your investment over time. For example, INFORMIX-Enterprise Gateway *with DRDA* 7.2 includes enhanced standard features support, including X/Open schema, which has been added to the *gwdba* facility. (*gwdba* assists in maintaining and installing the gateway, and coordinates user IDs and passwords.) This capability enables users to install the X/Open information schemata as views of the system catalogs on the IBM host database. Since the X/Open information schema is a specification defined by X/Open and the SQL Access Group, application developers can use the schema to build even more portable applications than before.

How INFORMIX-Enterprise Gateway with DRDA Works

INFORMIX-Enterprise Gateway *with DRDA* is completely transparent to end users. It acts as a translator, providing read-and-write access to IBM data from UNIX- or Windows-based applications. Conceptually, the gateway looks like an Informix database server to the application and to users—and like a DRDA client application to an IBM database. Informix or third-party tools that can access an Informix database can now access IBM's DB2, DB2/VM, or DB2/400 SQL databases, even without an Informix server.

INFORMIX-Enterprise Gateway *with DRDA* acts as a translator between an Informix client and an IBM database server, preparing and supervising network connections between the two. Processing SQL requests from clients takes place in three distinct steps:

1. The gateway translates SQL requests received from an Informix-based application into the DRDA format and protocol. After converting different datatypes (numeric and character) into the appropriate DRDA format, the original SQL request is passed directly to an IBM DRDA RDBMS.
2. The IBM RDBMS processes the request and sends the results and/or status codes (such as SQL errors) back to the gateway.
3. The gateway translates the DRDA results into a format and protocol appropriate for Informix client applications, performs any additional data conversions needed, and passes the results and/or status codes to the requesting application.

Connection Management

After an Informix application starts, it determines the location of the requested database. The gateway process starts if the data is located on a DB2, DB2/VM, or DB2/400 SQL database server. If

the data is located on a UNIX server, INFORMIX-Enterprise Gateway *with DRDA* is not activated. This is all transparent to the end user or application.

Once the gateway process is started, the gateway establishes a communication link (session) to a specified IBM database, using APPC over an SNA network. INFORMIX-Enterprise Gateway *with DRDA* must be installed on a UNIX machine supporting APPC.

The client application can reside either on the same machine that runs INFORMIX-Enterprise Gateway *with DRDA* or on a client to that machine, communicating with the gateway through client/server facilities, such as INFORMIX-Connect or Informix Dynamic Server communication facilities using the TCP/IP or SPX/IPX network protocols.

Informix's client/server facilities allow communication between an Informix database server on a host machine and an Informix application or development tool on a client computer. This capability is provided over different network protocols and between heterogeneous operating systems and hardware platforms.

Distributed Join Capability

INFORMIX-Enterprise Gateway's distributed join capability enables users to integrate data from Informix and IBM databases. This advanced integration allows users to update data within one but not both databases. When accessing multiple databases, developers can use powerful Informix tools such as INFORMIX-NewEra™, and INFORMIX-ESQL/C.

Scrolling Cursor Support

For added convenience and enhanced user productivity, scrolling cursors let users move backward and forward through data sets retrieved from a database. This feature has been added to INFORMIX-Enterprise Gateway *with DRDA* 7.2 and can be used with IBM host data.

Global Language Support

INFORMIX-Enterprise Gateway features global language support (GLS), which has been added to existing native language support (NLS). Now developers who use INFORMIX-Enterprise Gateway *with DRDA* can use code sets consisting of multibyte characters for Asian languages.

System Security

INFORMIX-Enterprise Gateway *with DRDA* has a centralized password look-up facility. Only authorized users can use the gateway to access IBM databases. User authorization is provided by an IBM database administrator through an IBM security package or an IBM RDBMS.

Since UNIX user IDs and passwords differ from IBM application server passwords, INFORMIX-Enterprise Gateway *with DRDA* allows mechanisms that enable mapping between them. One such mechanism is built into the gateway *gudba* facility.

In addition, INFORMIX-Enterprise Gateway *with DRDA* enforces the use of mainframe security packages such as RACF or ACF2.

Stored Procedure Support

When used with DB2/MVS V4.1, INFORMIX Enterprise Gateway *with DRDA* can invoke DB2 stored procedures. This new functionality adds flexibility to a good data access solution: DB2 stored procedures can now transparently return values to the Informix application; they can also be used to update any MVS data source through stored procedures registered with DB2.

SQL Syntax Support

The SQL syntax supported includes the ANSI-standard SQL statements SELECT, UPDATE, INSERT, and DELETE. Data definition language (DDL) statements such as CREATE TABLE are also supported.

In addition, any extension to the ANSI SQL standard can be passed directly to the IBM host database.

Certain extensions can be processed by the gateway. This includes the scrolling cursors feature and syntax such as DECLARE CURSOR WITH HOLD. If the syntax is unrecognized by both the gateway and IBM host, an error is returned.

Administration

On systems where the SNA APPC connection has been set up, INFORMIX Gateway *with DRDA* can be installed within 15 minutes and easily configured by a DBA. Informix provides a menu-driven interface with configuration instructions as part of its gateway product. An existing IBM SNA configuration must be in place and administered by a network administrator on the IBM host.

Service Program

Informix has a service program which is included with INFORMIX-Enterprise Gateway *with DRDA*. This program provides the fastest path for configuring your multivendor environment and assures quick installation and utilization.

INFORMIX-Enterprise Gateway *with DRDA* Product Specifications

UNIX HARDWARE AND SOFTWARE REQUIREMENTS (FOR EACH GATEWAY SERVER)	
APPC (LU6.2) libraries from OEM hardware vendor	
SNA network	
Modem (SDLC) connection or token ring card	
16MB of RAM (minimum recommended)	
5MB of disk space (minimum recommended)	
IBM RDBMS REQUIREMENTS	
DB2 database server, version 2.3 or greater	
DB2/VM database server, version 3.4 or greater	
DB2/400 database server, version 2.2 or greater	
HARDWARE AND SOFTWARE REQUIREMENTS (FOR EACH CLIENT)	
Any UNIX or Microsoft Windows platform that supports Informix products	
INFORMIX PRODUCTS SUPPORTED	
Please contact your local sales office about current Informix products supported.	
Protocols Supported	Interfaces
TCP/IP	Sockets/Transport Layer Interface (TLI)
SPX/IPX	TLI

About Informix

Informix Corporation, the technology leader in enterprise database-powered solutions, based in Menlo Park, Calif., provides innovative database products that assist the world's major corporations to attain competitive advantage. Informix is widely recognized as the technology leader for corporate computing environments ranging from small workgroups to very large parallel processing applications. Informix's database server, application development tools, superior customer service, and strong partnerships enable the company to be at the forefront of major information technology solution areas including data warehousing, high performance OLTP, and Web/content management. For more information, contact the sales office nearest you or visit our Web site at www.informix.com.

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