

# Database Connectors

Micro Focus® Database Connectors are designed to simplify the transition from traditional COBOL data files to relational database management systems. Manually modifying COBOL source code to use SQL syntax is both time consuming and complex. Database Connectors solve this challenge by automatically translating the existing data file syntax within COBOL source code, into SQL instructions operating against a modern relational database. This approach removes the need for any application rewrite and delivers a bridge between RDBMS and COBOL applications—a proven approach to data modernization.

## Product Highlights

With Database Connectors, the benefits of modern RDBMS technology for COBOL applications can be achieved quickly and with minimal risk—but also on budget. Application developers continue to code using familiar COBOL data file semantics but now also leveraging reliability, accessibility and serviceability benefits associated with relational database management systems.

Database Connectors deliver automatic and transparent data access for the end user and the software developer. With this solution, developers continue utilizing familiar file-IO constructs and semantics safe in the knowledge, data is accessed and stored within a modern RDBMS platform.

## How Database Connectors Works?

The Database Connectors technology sits beneath the application layer and integrates directly with the Micro Focus COBOL runtime system, re-routing file-IO requests from a COBOL program into a relational database management system. Database Connectors use special tables within the selected RDBMS to preserve traditional data file semantics such as file sharing and record locking. In doing so, existing application behavior can be

maintained without incurring additional costs associated with application re-architecture. Furthermore, RDBMS error codes can be customized to mirror the behavior of the COBOL file handling system.

## Automatic Field Mapping

Database Connectors use data dictionaries to map COBOL data items directly to database fields. These dictionaries are also called eXtended File Descriptors (XFDs) because they're based on standard COBOL file descriptors (FDs). To generate XFDs, you specify the "CREATEXFD" directive when you compile your COBOL program. The Micro Focus compiler then generates an XFD for every data file in your program. XFDs are then used at runtime to map records and fields onto database tables and columns. XFDs can be customized using compiler directives to give complete control over field naming and data type conversions.

## Application Performance

Database Connectors use low-level RDBMS APIs to achieve the best application performance. Where application data storage has moved from local data files to a networked RDBMS, applications may expect to see a small reduction in I-O performance. Such

- Deliver the benefits of a modern RDBMS architecture without an application re-write
- Connect to Microsoft SQL Server, Oracle, IBM DB2 and other RDBMS platforms
- Preserve traditional COBOL file-IO and record locking semantics for faster application re-use (e.g., RDBMS error conditions mapped to COBOL file status)
- Use standard tables and columns for COBOL data storage and enable access using familiar tools such as Excel and Crystal Reports
- Customize default mappings between application records and fields to tables and columns with optional overrides
- Use direct RDBMS APIs to deliver optimal performance
- Achieve real-time BI and analytics for your application data
- Improve application reliability, availability and scalability through modern RDBMS technology
- Achieve faster recovery following system failure
- Support mixed-mode operations allowing selected data to remain as files, facilitating a staged approach to RDBMS adoption

**“RDBMS support is essential when we are bidding for new business. Database Connectors gave us the easiest route to achieve RDBMS integration without having to spend years and years rewriting everything.”**

**TYLER CARR**

Principal Software Engineer  
Systems & Software

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overheads can be addressed by updating performance critical sections of code to reduce access times. The Database Connectors documentation includes topics to help optimize application performance. Database Connectors also include several optional configuration parameters, such as the WHERE constraint, which can be used to limit query boundaries and defer data processing within the server.

### Key Benefits

- Take away the costly process of manually updating COBOL applications
- Save time and effort in onboarding development staff to achieve the benefits of modern RDBMS technology
- Improve application reliability, resiliency and uptime

### Key Features

- RDBMS support for Microsoft SQL Server, Oracle, IBM DB2 and other database platforms

- Automatic data file mapping from COBOL fields and records into RDBMS tables and columns
- Performance tuning options help reduce data access latency
- Configuration options allow for customization of tables and columns
- Transaction logging facilities assist with application diagnostics
- COMMIT/ROLLBACK syntax can be incorporated into the application to achieve transaction management
- Database error conditions can be overridden to mirror COBOL file status conditions

### See Also

For applications where COBOL data must remain in COBOL data files but access to the data through ODBC/JDBC enabled tools is desirable, please refer to the Micro Focus Relativity datasheet.



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## System Requirements

### Supported COBOL Products

Database Connectors are supported with the following Micro Focus COBOL products and versions:

- Net Express, Server Express or Server for COBOL 5.1 Update 14 or above
- Visual COBOL, COBOL Server 2.3 Update 2 or above

### Operating Systems

Database Connectors are typically supported on the platforms available with your Micro Focus COBOL product. Please check with Micro Focus for your supported configuration.

### Supported RDBMS

Database Connectors support these relational databases platforms:

- Oracle 11g r2, 12c r1
- Microsoft SQL Server 2008 R2, 2012, 2014, 2016
- IBM DB2 10.1, 10.5, 11.1

The *extend*<sup>®</sup> portfolio offers a similar Database Connectivity solution for ACUCOBOL applications—Acu4GL. For more information, please see the Acu4GL datasheet.