JDBC ODBC Bridge Driver

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Why do we need a Database Driver

We can't directly talk to the database server

Drivers convert JDBC calls to Database specific calls

For every database, we need a driver.

JDBC - ODBC

JDBC

ODBC

JDBC Definition

- JDBC: Java Database Connectivity
- It provides a standard library for Java programs to connect to a database and send it commands using SQL
- It generalizes common database access functions into a set of common classes and methods
- Abstracts vendor specific details into a code library making the connectivity to multiple databases transparent to user

ODBC

- Open Database Connectivity (ODBC)
- A standard database access method developed by the SQL Access group in 1992.
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- The goal of ODBC is to make it possible to access any data from any application, regardless of which database management system (DBMS) is handling the data.
- ODBC manages this by inserting a middle layer, called a database driver , between an application and the DBMS.
- The purpose of this layer is to translate the application's data queries into commands that the DBMS understands.

Types of JDBC Drivers

4 types of JDBC drivers

Thin Driver

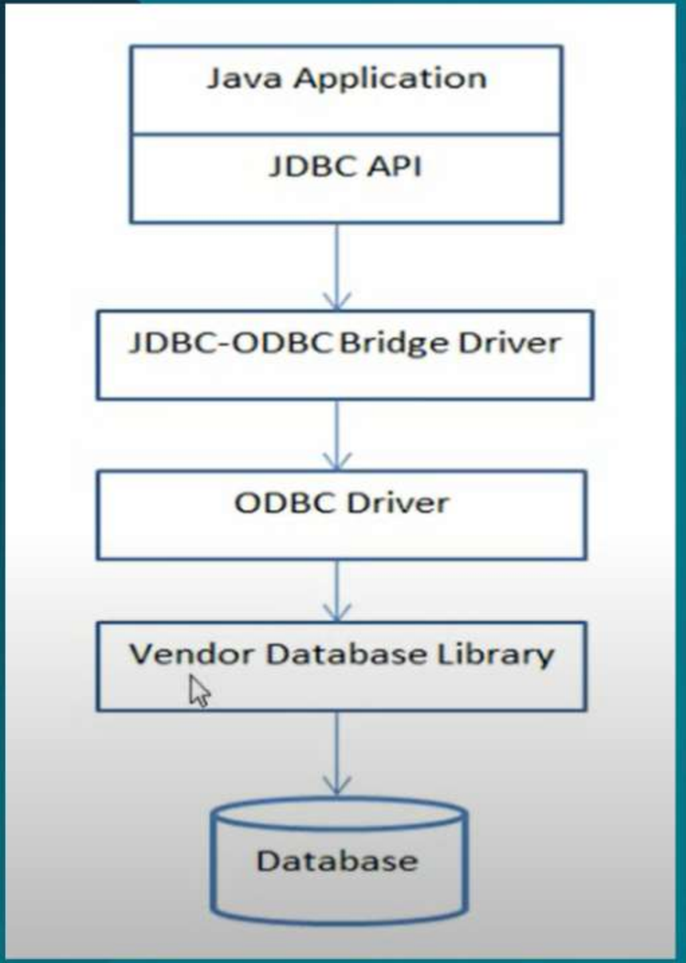
Network protocal driver

Native API driver

JDBC ODBC bridge driver

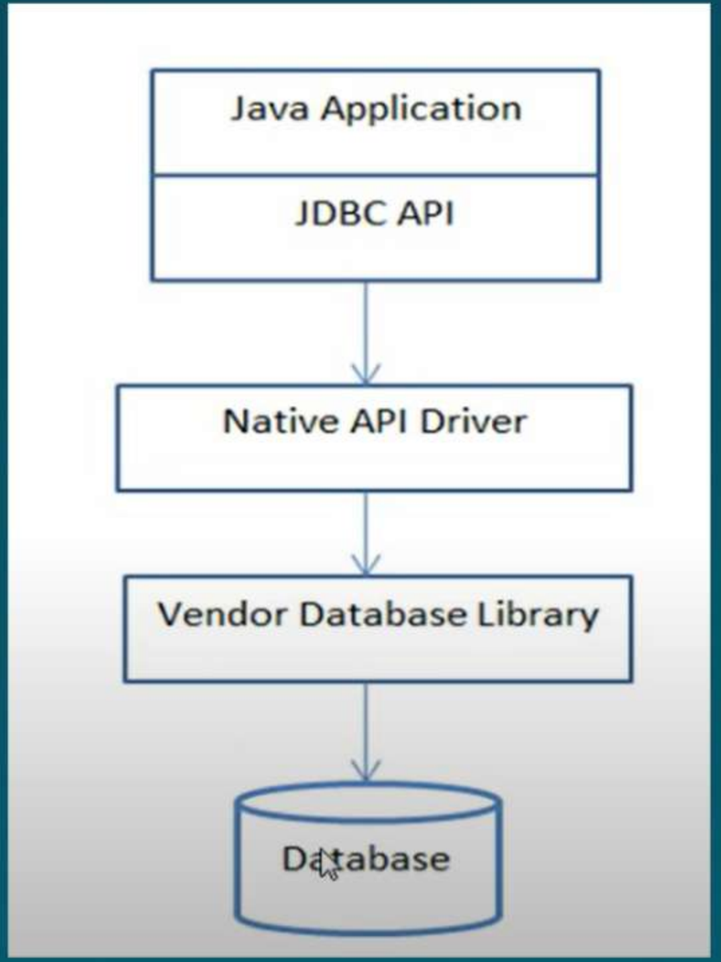
JDBC ODBC bridge driver

- Converts JDBC calls to ODBC calls
- ODBC driver will converts the calls into native calls of database API
- This native calls converts the calls into vendor specific database
- This is the slowest of all drivers because it has the maximum layers of communication

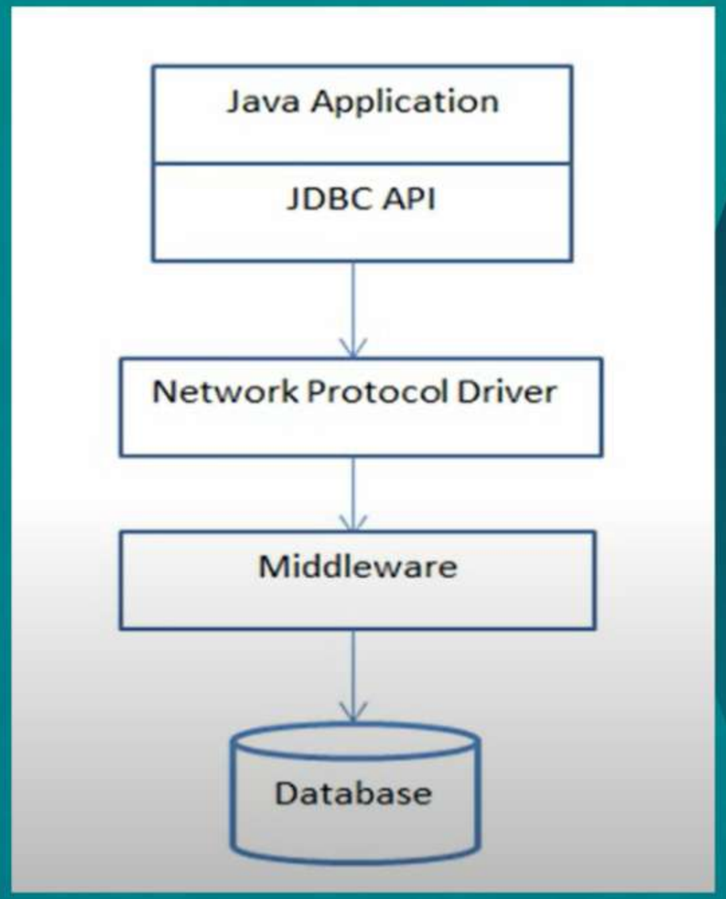


Native API Driver

- Type II driver communicates directly with native API
- Converts JDBC calls to native calls of the database API
- It make use of local native libraries to communicate with database
- Vendor specific Call Level Interface(CLI) installed locally are used by this type driver
- It is dependent on the existence of a native API for a database



Network protocal driver



- Type III driver make calls to a middleware component running on another server
- Middleware server then makes calls to the database using database-specific protocol
- The program sends JDBC call through the JDBC driver to the middle tier
- Type III Driver, uses the CLI(Call Level Interface) libraries locates in a remote server

Thin Driver

- This type of driver is the highest performance driver and is used for databases such as Oracle, IBM, and Sybase.
- It can be used directly on platform with a JVM
- Most efficient since requests only go through one layer
- Simplest to deploy since no additional libraries or middle-ware