Dt : 22/3/2025

****imp***

define JDBC driver?

=>The driver which is used to establish communication b/w java-program and database product is known as JDBC driver(Java DataBase Connectivity driver)

Types of JDBC drivers:

=>JDBC drivers are categorized into four types:

1.JDBC-ODBC bridge driver(Type-1 driver)

2.Native API driver(Type-2 driver)

3.Network protocol driver(Type-3 driver)

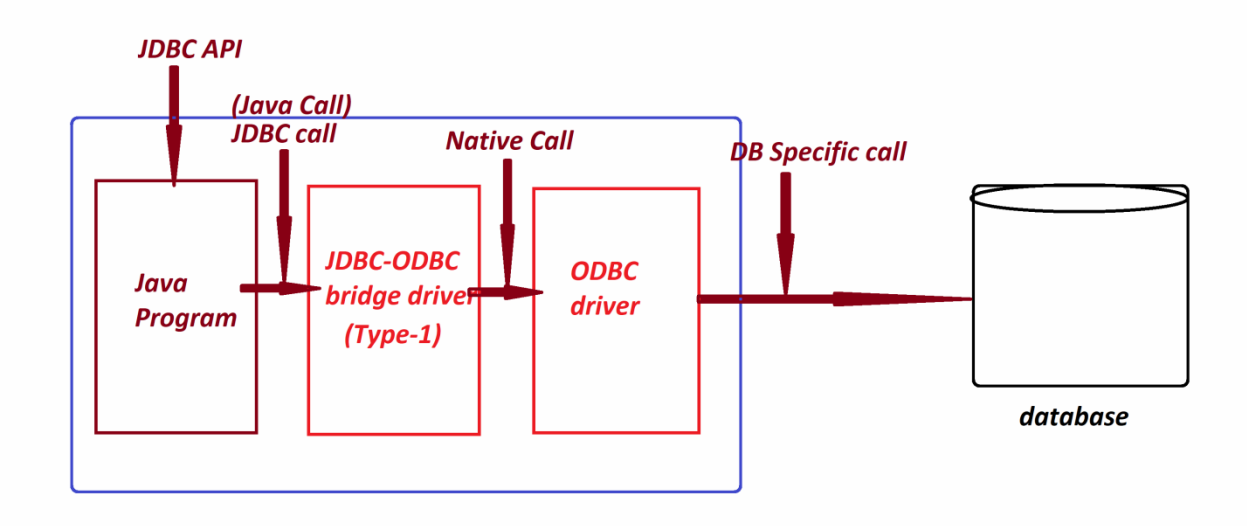
4.Thin driver(Type-4 driver)

1.JDBC-ODBC bridge driver(Type-1 driver):

=>The Type-1 driver will take the support of ODBC-driver to establish connection to Database product.

=>when we use Type-1 driver JDBC-Call is converted into Native call,and the Native Call is converted into DB Specific call for connetion.

Diagram:



DisAdvantage:

=>Type-1 driver internally uses more conversions,and which waste the execution time and degrades the performance of an application.'

Note:

=>From Java8 version(2014) onwards Type-1 driver support is not available in Java.

faq:

define ODBC driver?

=>ODBC stands for 'Open DataBase Connectivity',and this driver will support to establish connection to any type of database.

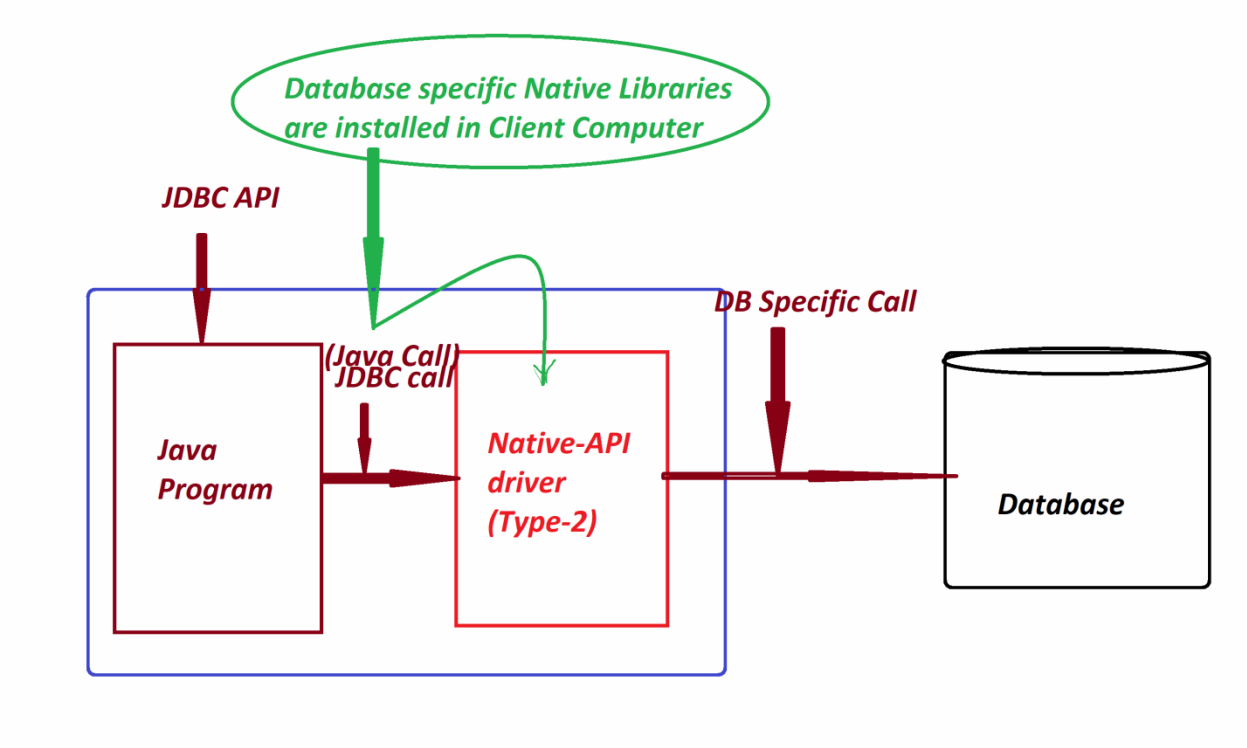
=>This ODBC driver is PlatForm dependent driver,because which internally uses C/C++ codes.

2.Native API driver(Type-2 driver):

=>Type-2 driver will take the support of 'Database related Native Libraries' to establish Connection to database product.

=>To Use Type-2 driver,the Client Computer must be installed with Database related Native libraries.

Diagram:



DisAdvantage:

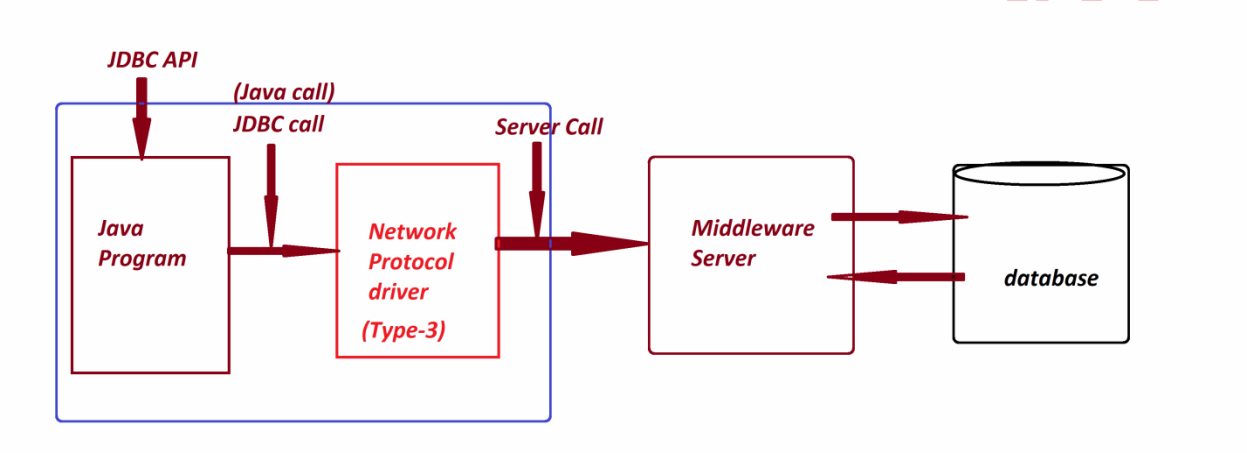
=>when we construct application with Type-2 driver,then the application will become Database dependent and which is not preferable in realtime.

3.Network protocol driver(Type-3 driver):

=>Type-3 driver will take the support of Intermediate MiddleWare server to establish connection to database product.

=>In this process Middleware Servers will hold database related connection code.

Diagram:



DisAdvantage:

=>when we want to use Type-3 driver,we have to make Network settings in ClientComputer and the Network components are involved in execution process and degrades the performance of an application.(Execution time increases)

****imp***

4.Thin driver(Type-4 driver):

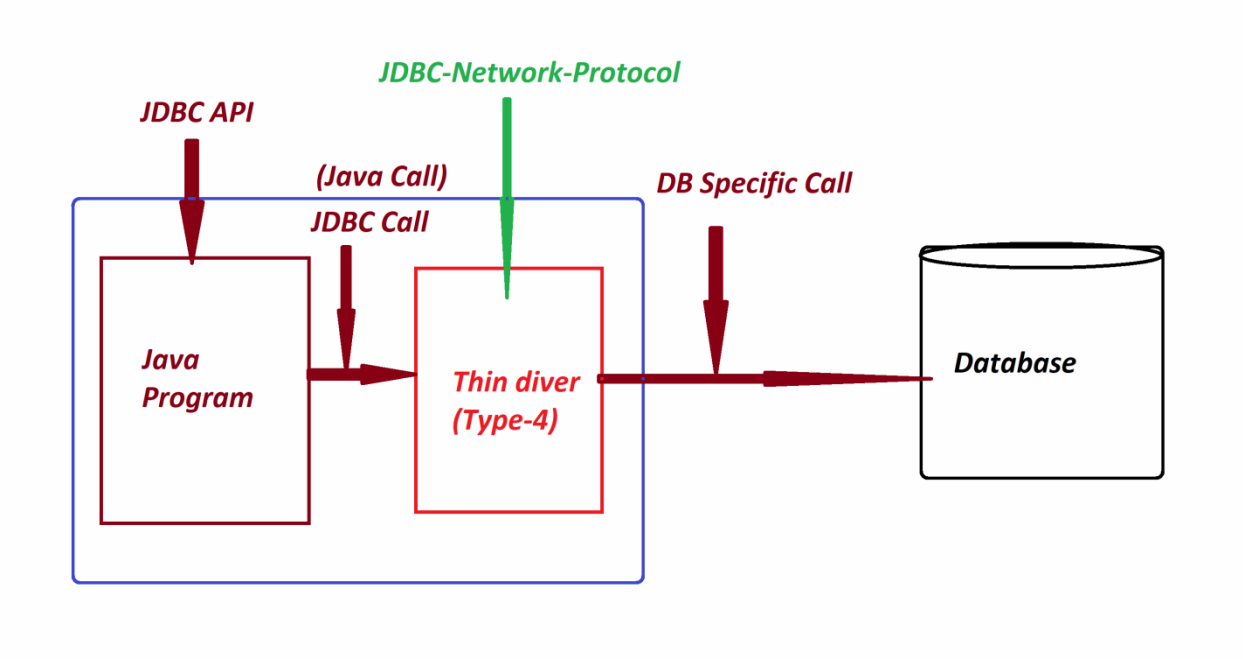
=>Type-4 driver will take the support of Database(JDBC)-Network-protocol to establish connection to database product.

=>Type-4 driver is pure java-driver.

=>Type-4 driver is PlatForm independent driver.

=>Type-4 driver is high performance driver

Diagram:



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faq:

define Serialization process?

=>The process of converting Object-state into stream is known as Serialization process.

=>To perform Serialization process the class must be implemented from 'java.io.Serializable' interface.

faq:

wt is the advantage of Serialization process?

=>Through Serialization process we can make Objects available in the form of Stream and can be moved on the network from one location to another location.

faq:

define DeSerialization process?

=>The process of converting Stream into Object-state is known as DeSerialization process.

**imp*

Types of Objects:

=>Based on Serialization process the Objects are categorized into two types:

(a)Serializable Objects

(b)NonSerializable Objects

(a)Serializable Objects:

=>The Objects which are generated from implementation classes of Serializable interface are known as Serializable Objects.

Ex:

All CoreJava Objects

(b)NonSerializable Objects:

=>The Objects which are generated from Non-Implementation classes of Serializable interface are known as NonSerializable Objects.

Ex:

All JDBC Objects

**imp*

Java PlatForms:

=>Java PlatForms are categorized into the following:

1.JavaSE

2.JavaEE

3.JavaME

4.JavaFX

1.JavaSE:

=>JavaSE stands for 'Java Standard Edition' and which provide environment to conctruct NonServer Applications or Stand-Alone-Applications.

Ex:

CoreJava + JDBC

2.JavaEE:

=>JavaEE satnds for 'Java Enterprise Edition' and which provide environment to construct Server based Applications.

Ex:

Servlet

JSP

WebServices

faq:

define Server based Applications?

=>The applications which are executed in server environment are known as Server Applications

or Server based Applications.

=>These Server based applications are categorized into two types:

(a)Web Applications

(b)Enterprise Applications

(a)Web Applications:

=>The applications which are constructed using Servlet-JSP and available in 3-tier architecture are known as Web Applications.

(b)Enterprise Applications:

=>The applications which are executed in distributed environment and depending on the features like 'Security','Load Balancing' and 'Clustering' are known as Enterprise Applications or Enterprise Distributed Applications.

=>These Enterprise Applications are available in n-tier architecture.

3.JavaME:

=>JavaME stands for 'Java Micro Edition' and which provide environment to construct applications related to Machine and Mobile.

=>JavaME can also be called as Java Machine Edition or Java Mibile Edition.

4.JavaFX:

=>JavaFX introduced by Java8 version and which provide environment to develop rich UI Application.
