

DbVisualizer对接FusionInsight

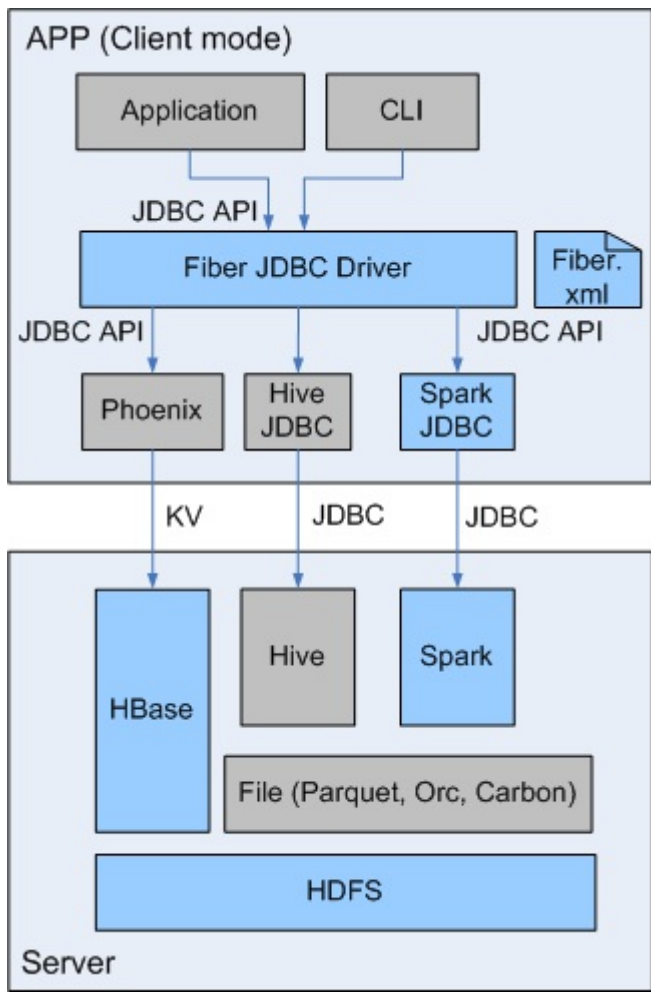
适用场景

DbVisualizer 9.5.7 <-> FusionInsight HD V100R002C60U20

说明

SQL开发工具，如DbVisualizer、DBeaver、Squirrel是数据库开发的常用选择，虽然这些工具大多不提供原生Hive、SparkSQL、Phoenix的支持，但是通过它们支持的自定义JDBC的能力，我们可以与FusionInsight提供的Fiber组件的JDBC接口进行对接，实现这Hive、SparkSQL、Phoenix组件的统一SQL查询。

- Fiber架构图



本文介绍了DbVisualizer与FusionInsight的Fiber对接的操作步骤

DbVisualizer安装

- DbVisualizer9.5.7需要jdk1.8，下载安装jdk1.8，配置环境变量。
- 参考FusionInsight产品文档安装FusionInsight客户端，位置 `/opt/hadoopclient`
- 修改C:\Windows\System32\drivers\etc\hosts文件，加入FusionInsight集群信息

```
162.1.93.101 162-1-93-101
162.1.93.102 162-1-93-102
162.1.93.103 162-1-93-103
```

- 在本地PC机上新建一个目录，将FusionInsight客户端下的fiber客户端文件夹Fiber拷贝至本地，例如C:\Fiber。
- 参考FusionInsight产品文档创建用户test，并赋予足够的权限，下载test的keytab文件user.keytab，拷贝到 `C:\Fiber\conf` 文件夹下。
- 将FusionInsight客户端下jaas.conf文件和krb5.conf拷贝到 `C:\Fiber\conf` 目录下，文档内容如下，principal和keytab按实际填写：

```
Client {
  com.sun.security.auth.module.Krb5LoginModule required
```

```
useKeyTab=true
keyTab="C:\\Fiber\\conf\\user.keytab"
principal="test"
useTicketCache=false
storeKey=true
debug=true;
};
```

- 修改fiber.xml文件配置，位置 **C:\\Fiber\\conf\\fiber.xml**

Hive的JDBC连接

```
<jdbc>
  <identify>hive</identify>
  <describe>hive jdbc configuration</describe>
  <driverClass>org.apache.hive.jdbc.HiveDriver</driverClass>
  <securityClass>com.huawei.fiber.DefaultAuthenticationCallback</securityClass>
  <classPath>C:\\Fiber\\Hive\\config;C:\\Fiber\\Hive\\Beeline\\lib;C:\\Fiber\\Hive\\Beeline\\conf</classPath>

  <jdbcUrl>jdbc:hive2://162.1.93.103:24002,162.1.93.102:24002,162.1.93.101:24002/;serviceDiscoveryMode=zooKeeper;zooKeeperNamespace=hiveserver2;sasl.qop=auth-conf;auth=KERBEROS;principal=hive/hadoop.hadoop.com@HADOOP.COM;user.principal=test;user.keytab=C:/Fiber/conf/user.keytab</jdbcUrl>

  <properties>
    <property>
      <name>java.security.krb5.conf</name>
      <value>C:\\Fiber\\conf\\krb5.conf</value>
    </property>
    <property>
      <name>java.security.auth.login.config</name>
      <value>C:\\Fiber\\conf\\jaas.conf</value>
    </property>
    <property>
      <name>zookeeper.server.principal</name>
      <value>zookeeper/hadoop.hadoop.com</value>
    </property>
    <property>
      <name>zookeeper.kinit</name>
      <value>C:\\Program Files (x86)\\Java\\jdk1.8.0_112\\jre\\bin\\kinit.exe</value>
    </property>
  </properties>
</jdbc>
```

Spark的JDBC连接

```
<jdbc>
  <identify>spark</identify>
  <describe>spark jdbc configuration</describe>
  <driverClass>org.apache.hive.jdbc.HiveDriver</driverClass>
  <securityClass>com.huawei.fiber.DefaultAuthenticationCallback</securityClass>
  <classPath>C:\\Fiber\\Spark\\spark\\conf;C:\\Fiber\\Spark\\spark\\lib</classPath>
  <jdbcUrl>jdbc:hive2://ha-cluster/default;saslQop=auth-conf;auth=KERBEROS;principal=spark/hadoop.hadoop.com@HADOOP.COM;user.principal=test;user.keytab=C:/Fiber/conf/user.keytab</jdbcUrl>

  <properties>
    <property>
      <name>java.security.krb5.conf</name>
      <value>C:\\Fiber\\conf\\krb5.conf</value>
    </property>
    <property>
      <name>java.security.auth.login.config</name>
      <value>C:\\Fiber\\conf\\jaas.conf</value>
    </property>
    <property>
      <name>zookeeper.server.principal</name>
      <value>zookeeper/hadoop.hadoop.com</value>
    </property>
    <property>
      <name>zookeeper.kinit</name>
      <value>C:\\Program Files (x86)\\Java\\jdk1.8.0_112\\jre\\bin\\kinit.exe</value>
    </property>
  </properties>
</jdbc>
```

Phoenix的JDBC连接，需要增加属性 **hbase.myclient.keytab** 和 **hbase.myclient.principal**

```
<jdbc>
  <identify>phoenix</identify>
  <describe>phoenix jdbc configuration</describe>
  <driverClass>org.apache.phoenix.jdbc.PhoenixDriver</driverClass>
  <securityClass>com.huawei.fiber.DefaultAuthenticationCallback</securityClass>
```

```

<classPath>C:\\Fiber\\HBase\\hbase\\lib;C:\\Fiber\\HBase\\hbase\\conf</classPath>
<jdbcUrl>jdbc:phoenix:162.1.93.101,162.1.93.102,162.1.93.103:24002:/hbase</jdbcUrl>
<properties>
  <property>
    <name>java.security.krb5.conf</name>
    <value>C:\\Fiber\\conf\\krb5.conf</value>
  </property>
  <property>
    <name>java.security.auth.login.config</name>
    <value>C:\\Fiber\\conf\\jaas.conf</value>
  </property>
  <property>
    <name>hbase.myclient.keytab</name>
    <value>C:\\Fiber\\conf\\user.keytab</value>
  </property>
  <property>
    <name>hbase.myclient.principal</name>
    <value>test</value>
  </property>
  <property>
    <name>zookeeper.server.principal</name>
    <value>zookeeper/hadoop.hadoop.com</value>
  </property>
  <property>
    <name>zookeeper.kinit</name>
    <value>C:\\Program Files (x86)\\Java\\jdk1.8.0_112\\jre\\bin\\kinit.exe</value>
  </property>
</properties>
</jdbc>

```

- 将Hive、Spark、Phoenix的JDBC配置中classPath中的文件拷贝至Fiber文件夹中。

本地磁盘 (C:) ▾ Fiber ▾

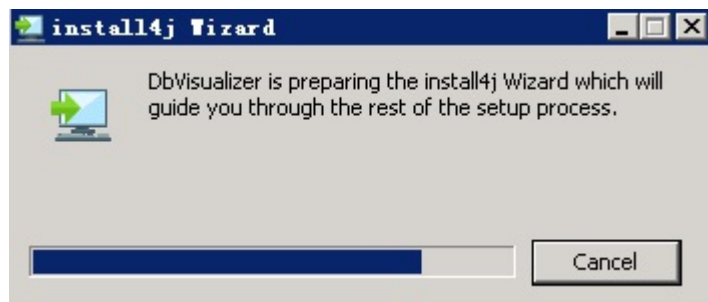
文件夹

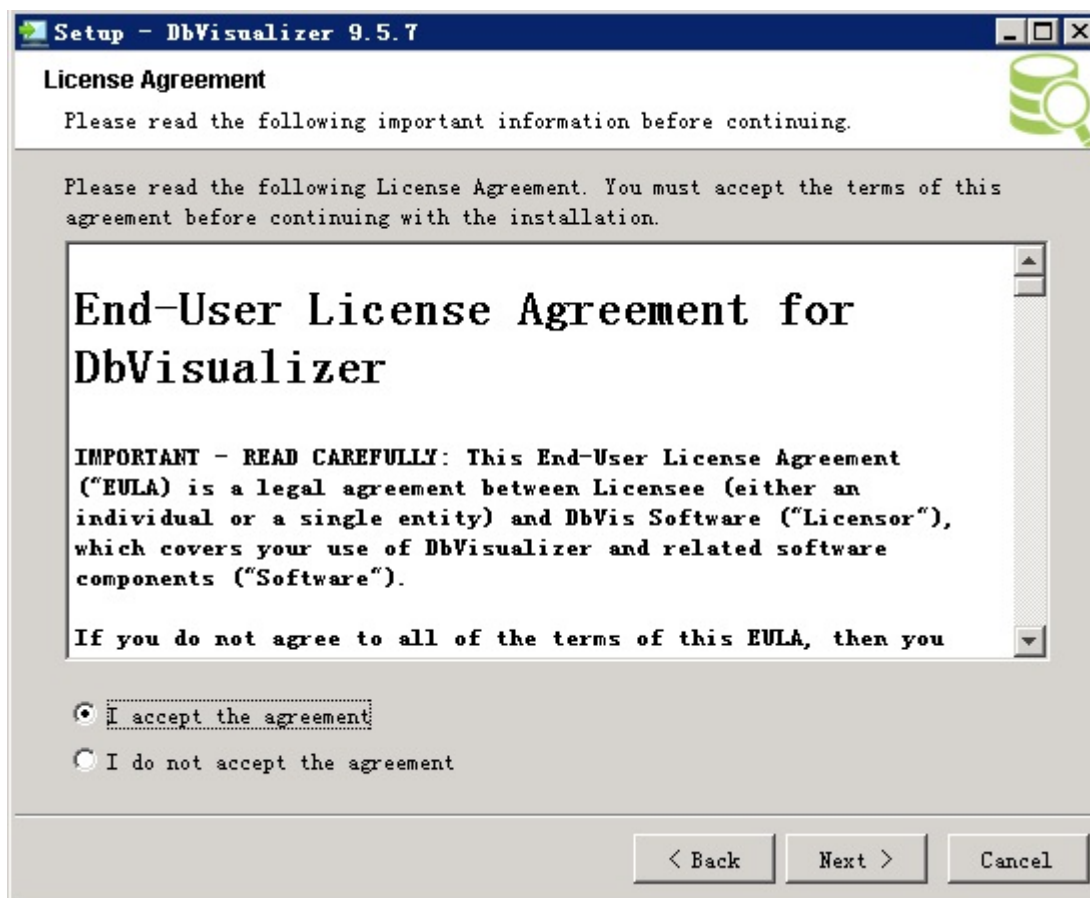
名称 ▲	修改日期	类型
 bin	2017/6/22 14:57	文件夹
 conf	2017/6/22 20:07	文件夹
 HBase	2017/6/22 20:24	文件夹
 Hive	2017/6/22 15:07	文件夹
 lib	2017/6/22 14:57	文件夹
 Spark	2017/6/22 20:21	文件夹
 component_env	2017/5/20 16:05	文件

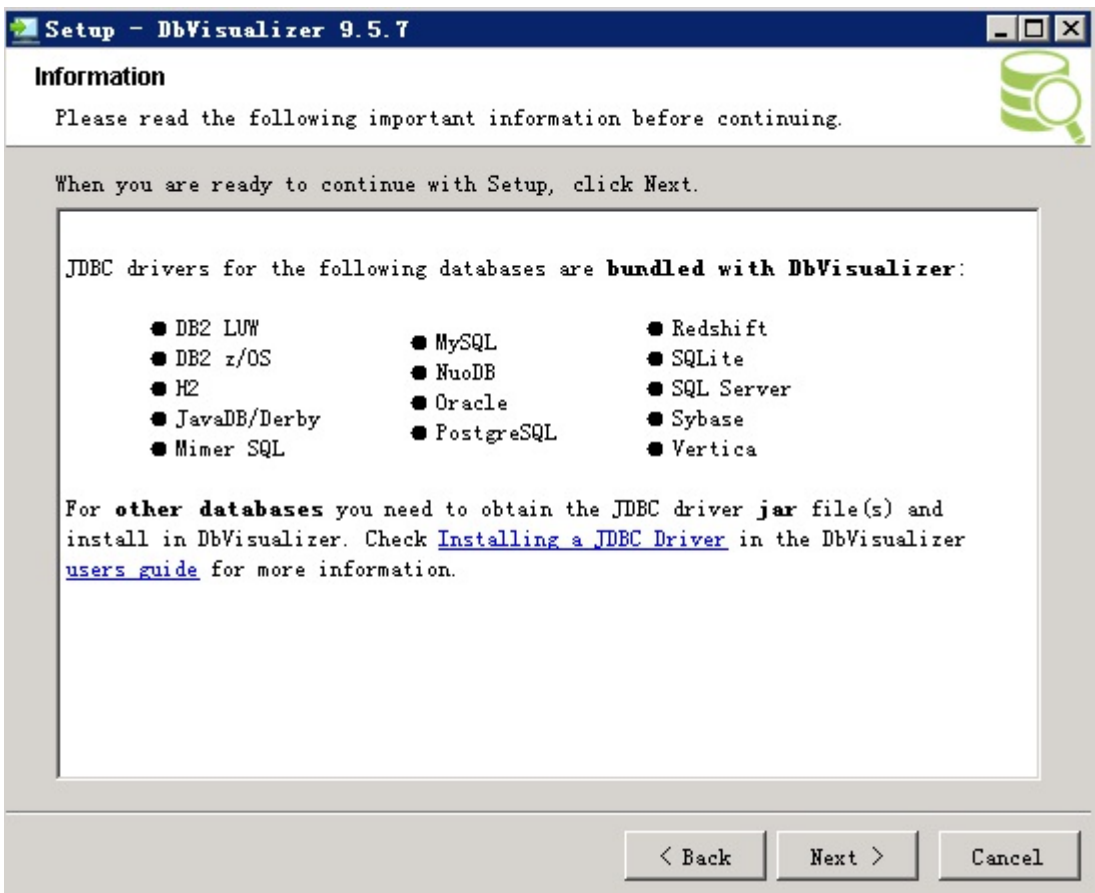
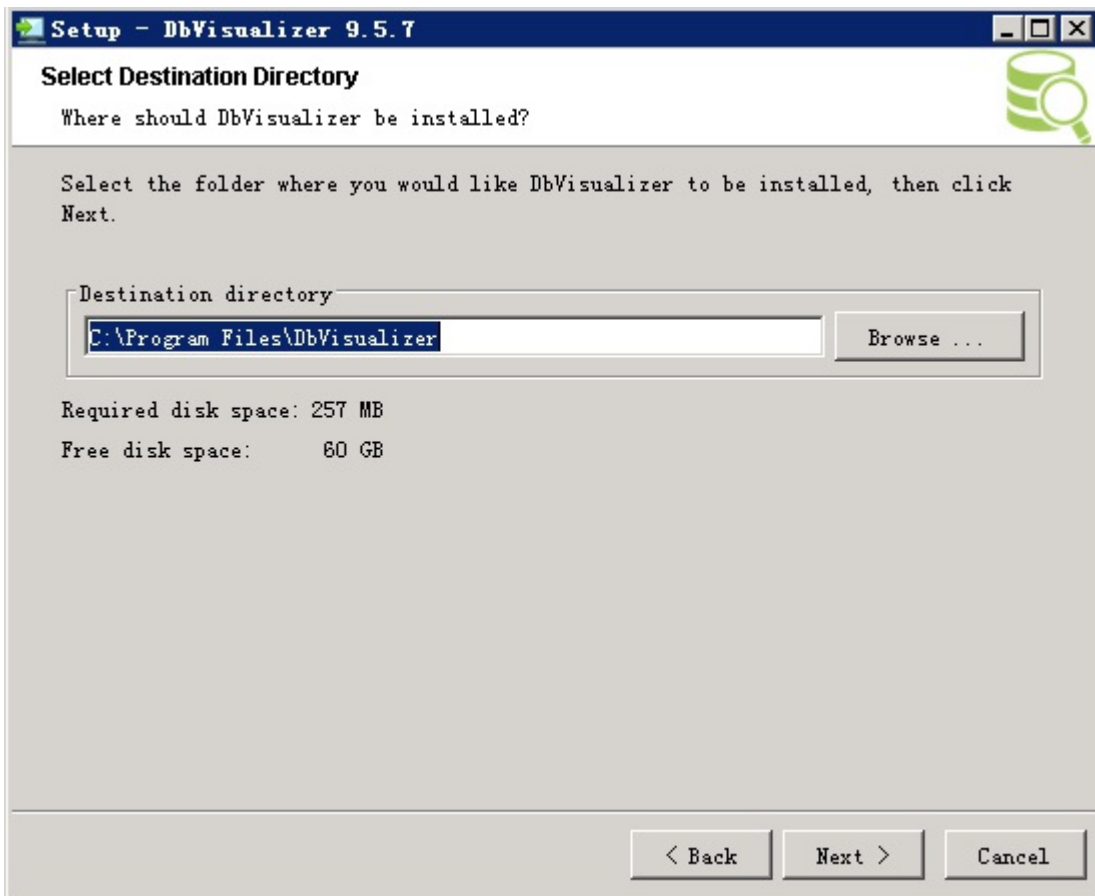
- 下载DbVisualizer，地址：<http://www.dbvis.com/download/>，下载软件dbvis_windows-x64_9_5_7_jre.exe

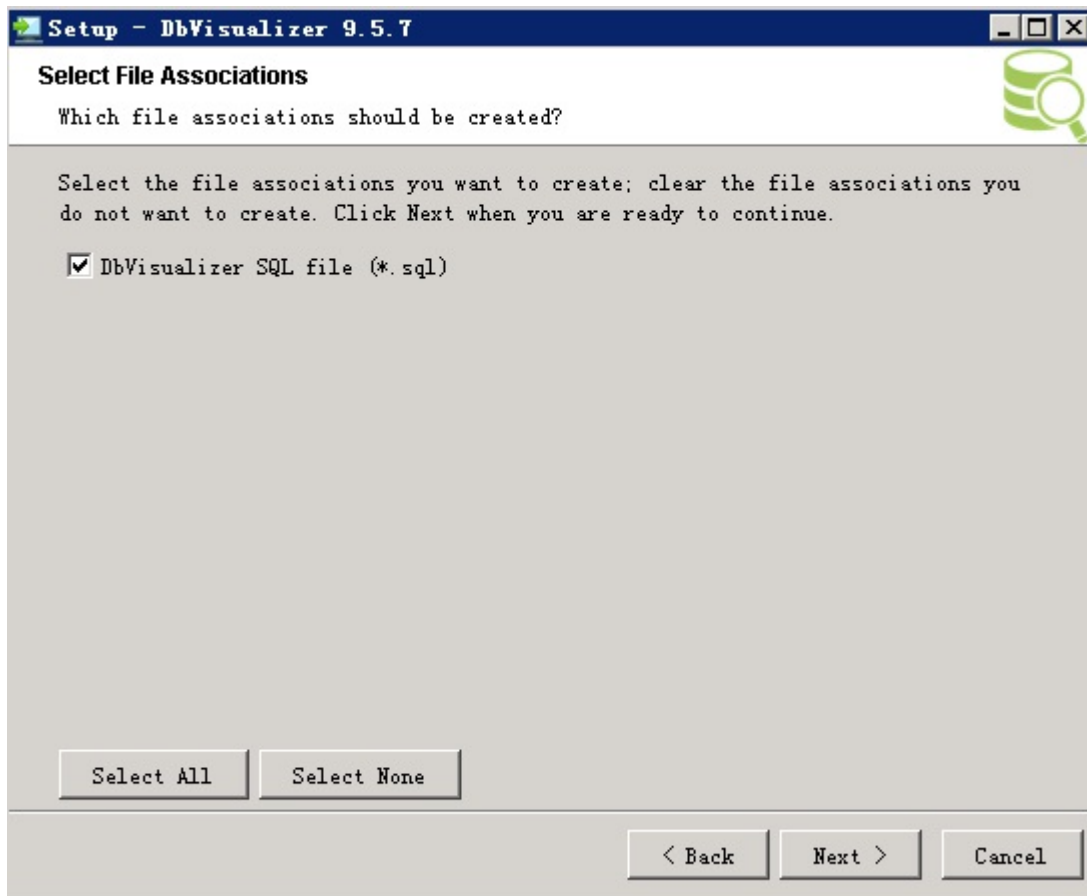
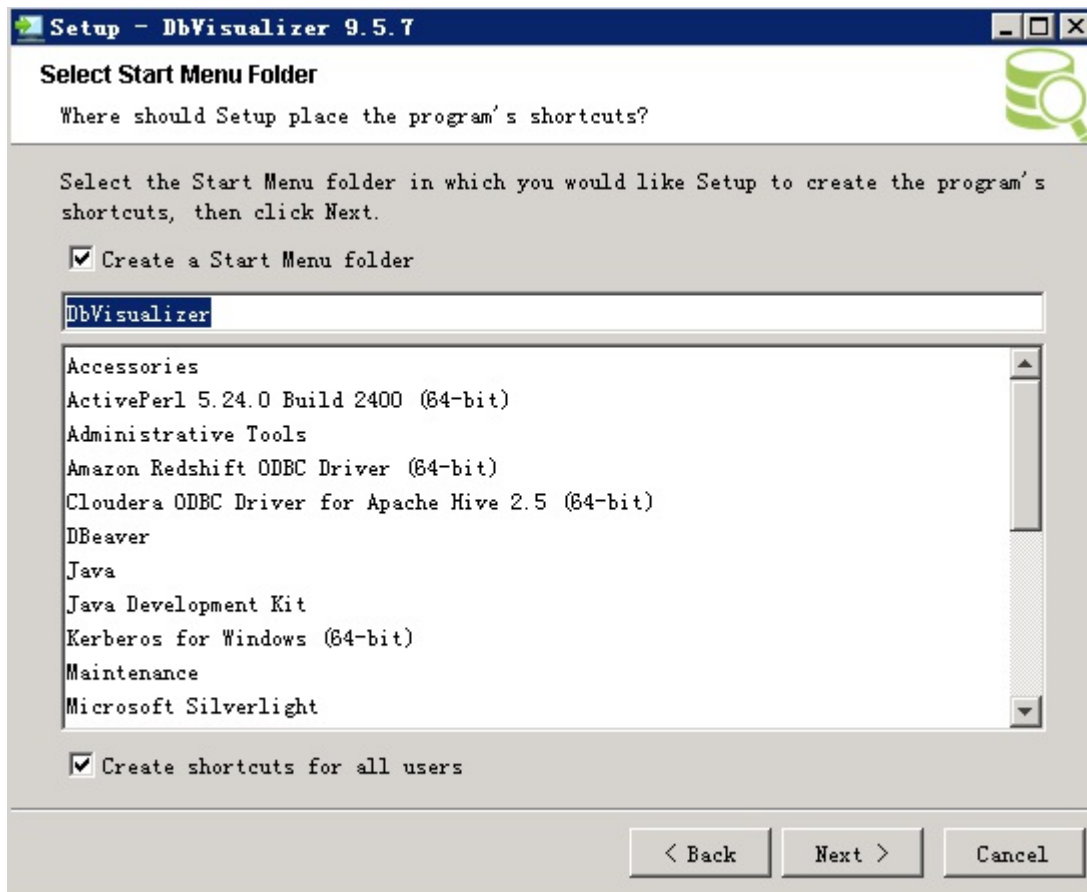
Platform & Installer Type		Without Java VM	With Java VM
	Windows 32-bit (setup installer)	Download (40 MB)	Download (75 MB)
	Windows 32-bit (zip archive)	Download (70 MB)	
	Windows 64-bit (setup installer)	Download (40 MB)	Download (78 MB)
	Windows 64-bit (zip archive)	Download (70 MB)	
	Mac OS X (setup installer)	Download (40 MB)	Download (77 MB)
	Mac OS X (tar.gz archive)	Download (70 MB)	
	Linux (setup installer)	Download (39 MB)	
	Linux (RPM archive)	Download (69 MB)	

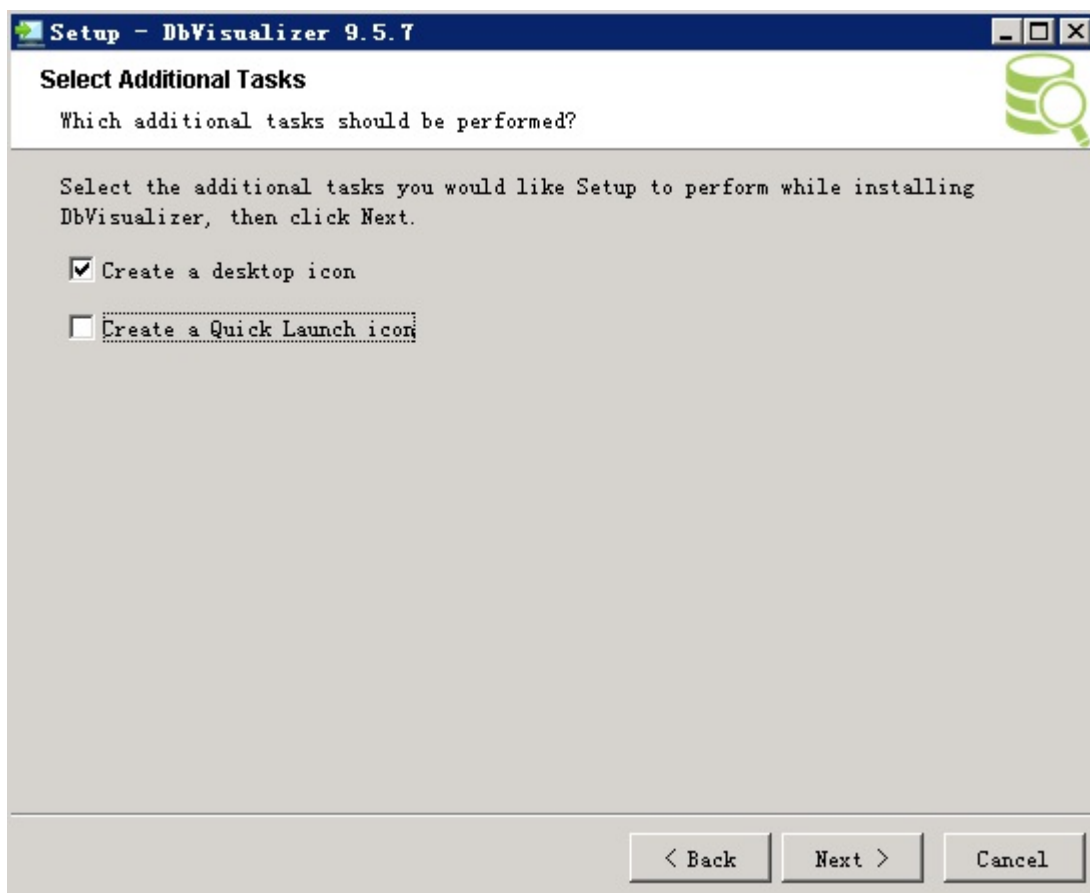
- 双击dbvis_windows-x64_9_5_7_jre.exe安装







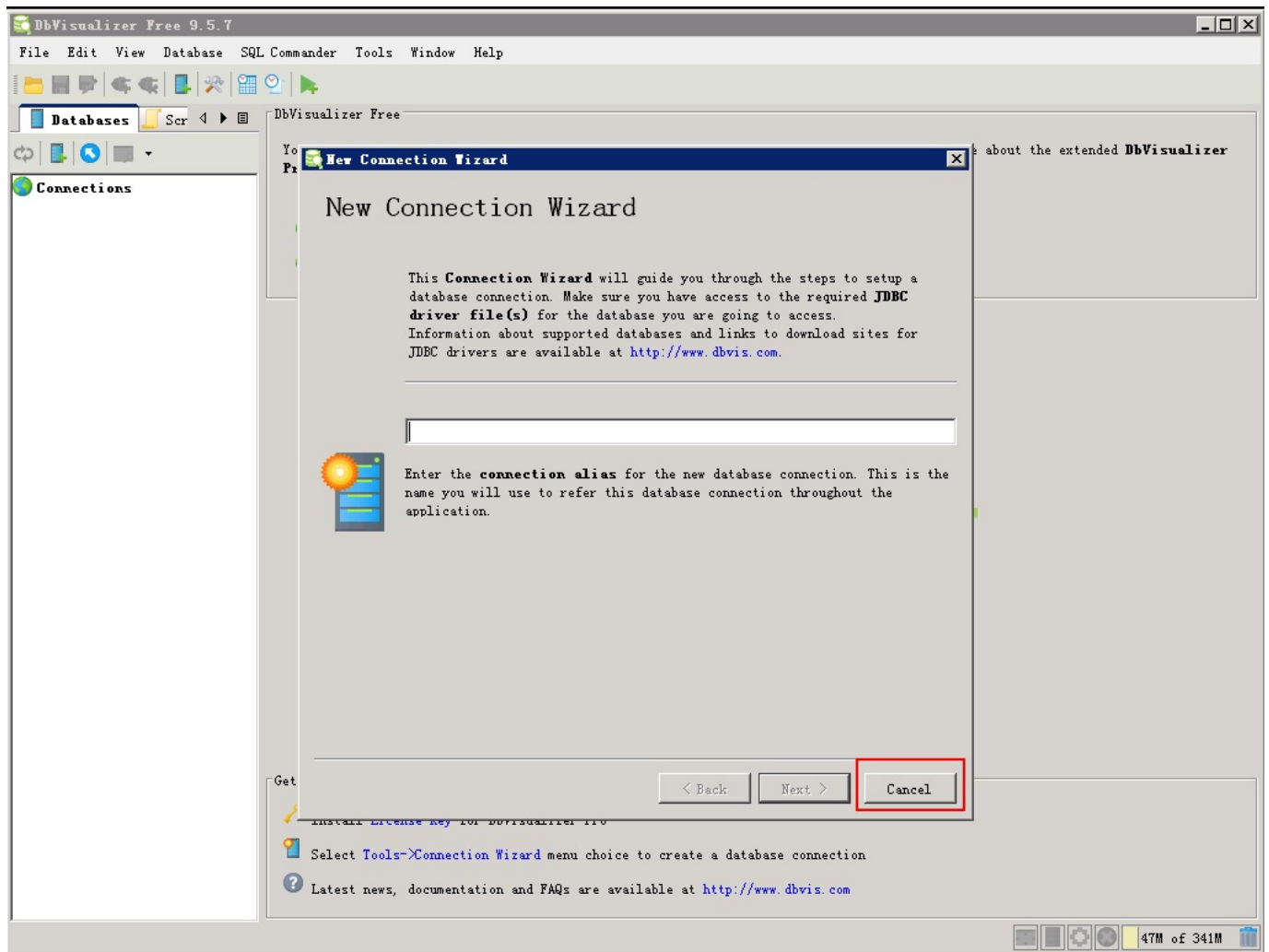




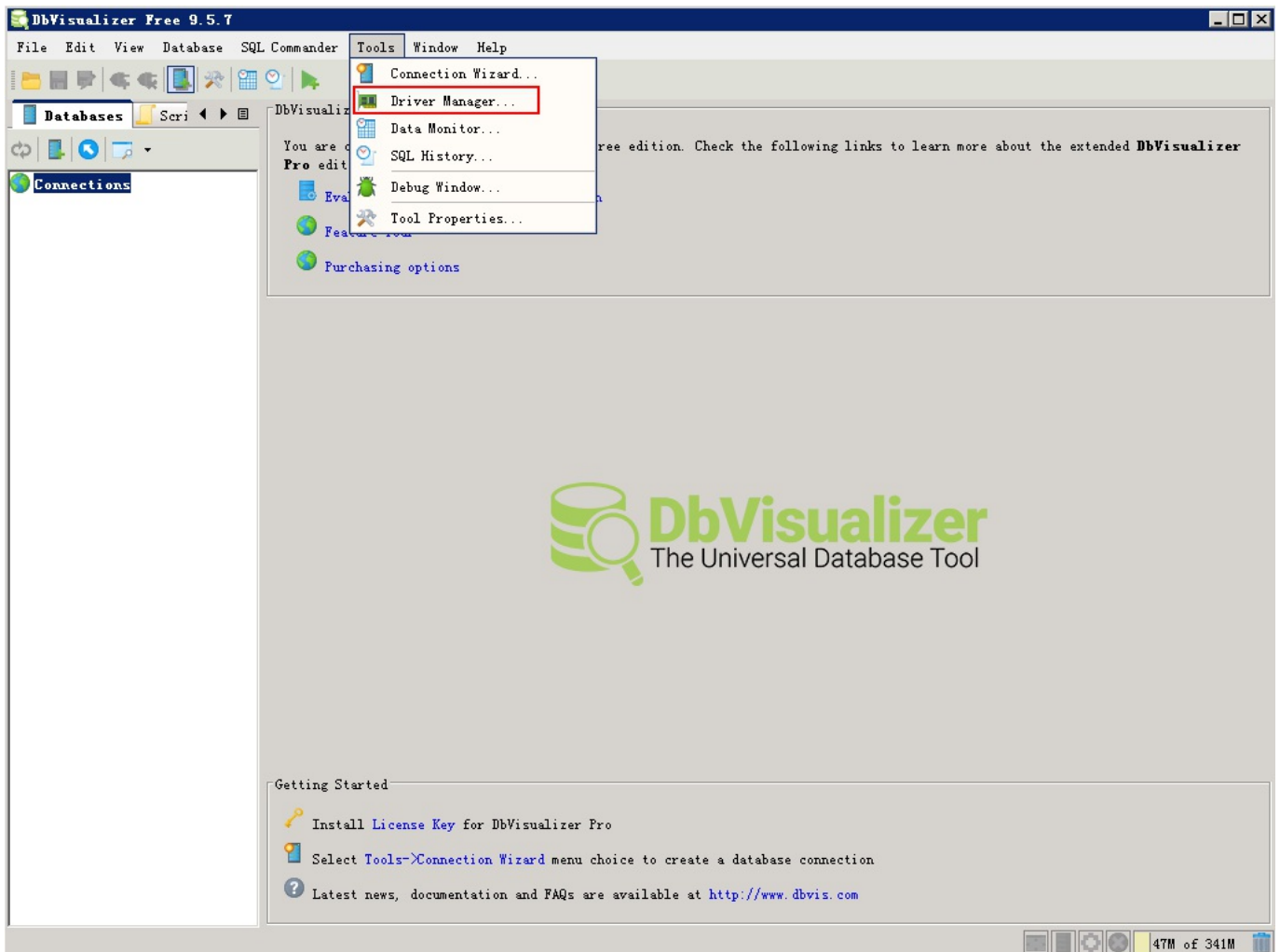
DbVisualizer连接Fiber

配置DbVisualizer通过Fiber连接FusionInsight的Hive、Spark、Phoenix组件。

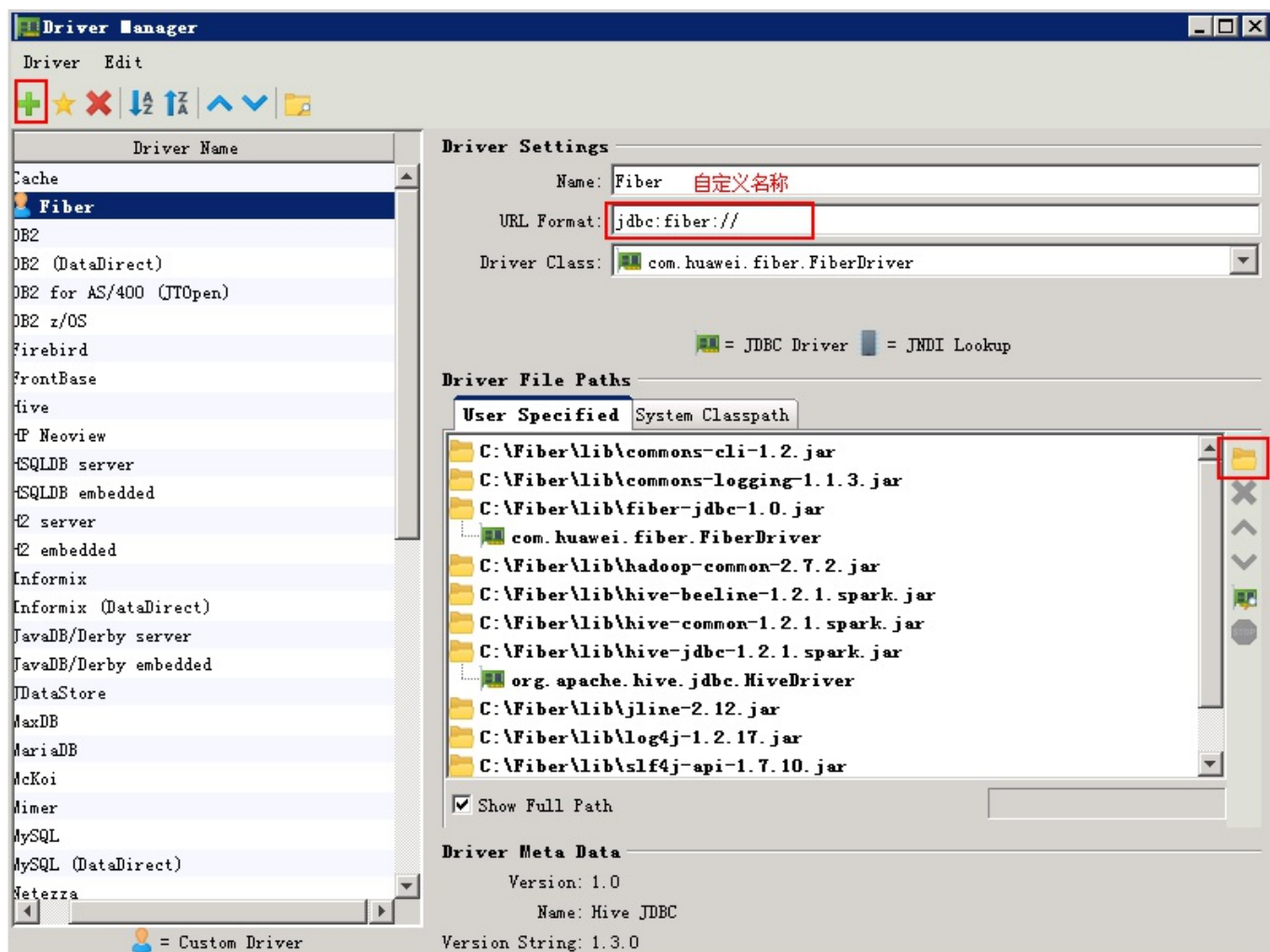
- 打开DbVisualizer9.5.7，点击 **Cancel**



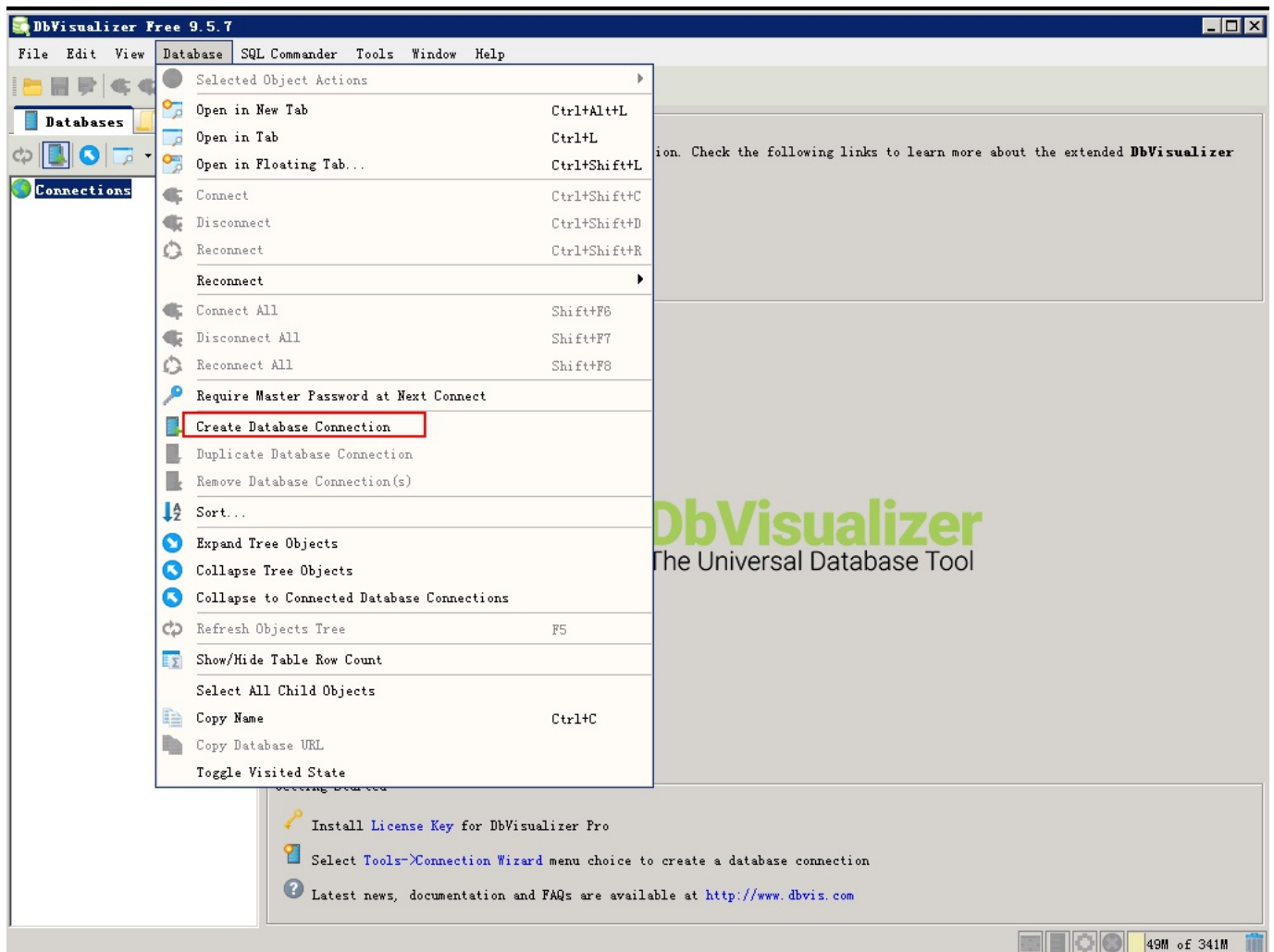
- 菜单栏选择 ToolsDriver Manager



- 新建driver
 - Name: Fiber(自定义)
 - URL Format: jdbc:fiber://
 - User Specified: 将C:\Fiber\lib\下所有的jar包加入
 - Driver Class: 加入jar包后选择com.huawei.fiber.FiberDriver



菜单栏 Database -> Create Database Connection



选择 Use Wizard

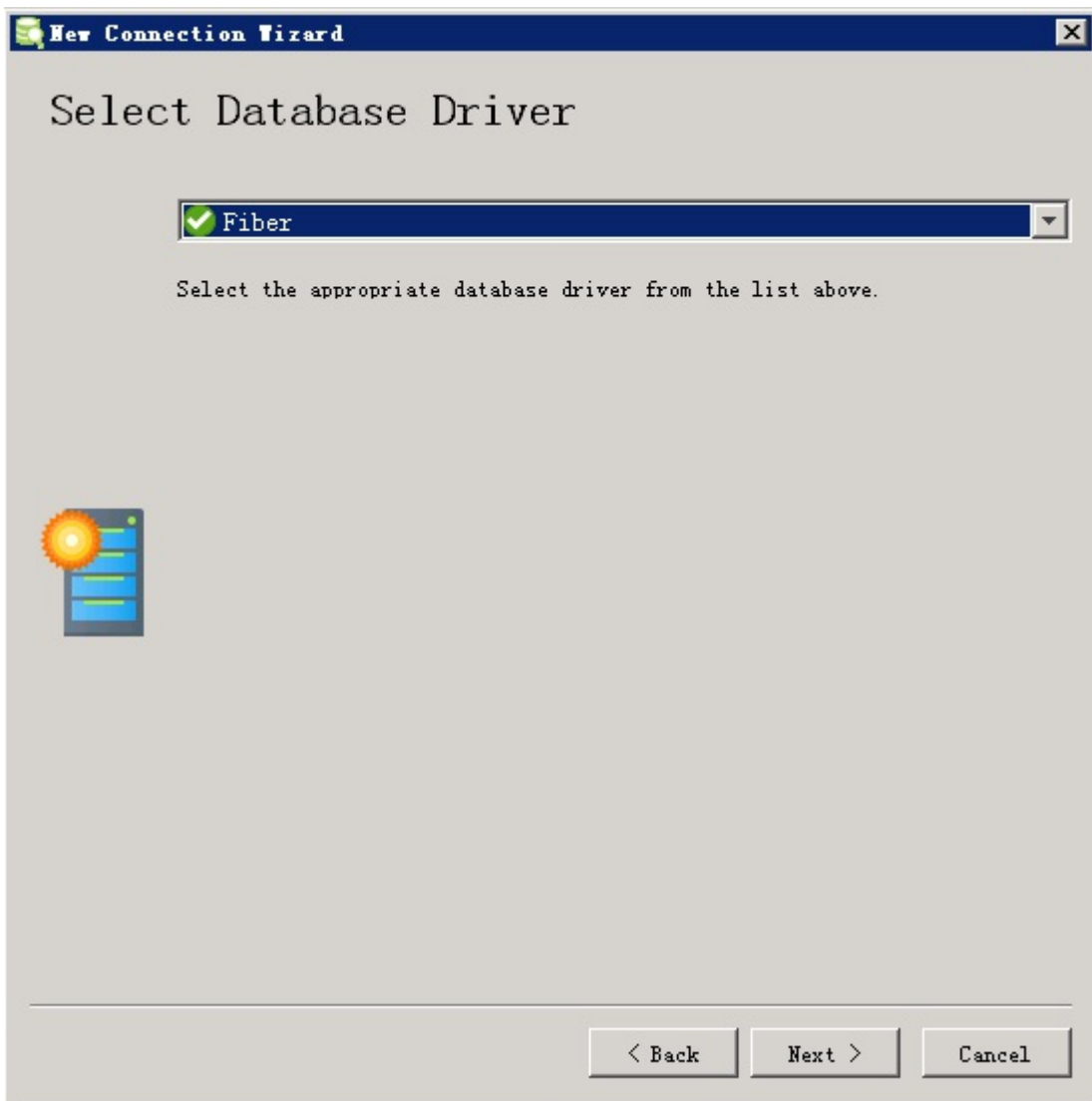


{width="4.2in" height="1.4in"}

自定义连接名称，例如Fiber



选择Driver Fiber



填写URL: jdbc:fiber://

New Connection Wizard

Fiber

Fiber

Connection

Notes

Database

Settings Format Database URL

Database URL jdbc:fiber://

Authentication

Database Userid

Database Password

Options

Auto Commit ☒

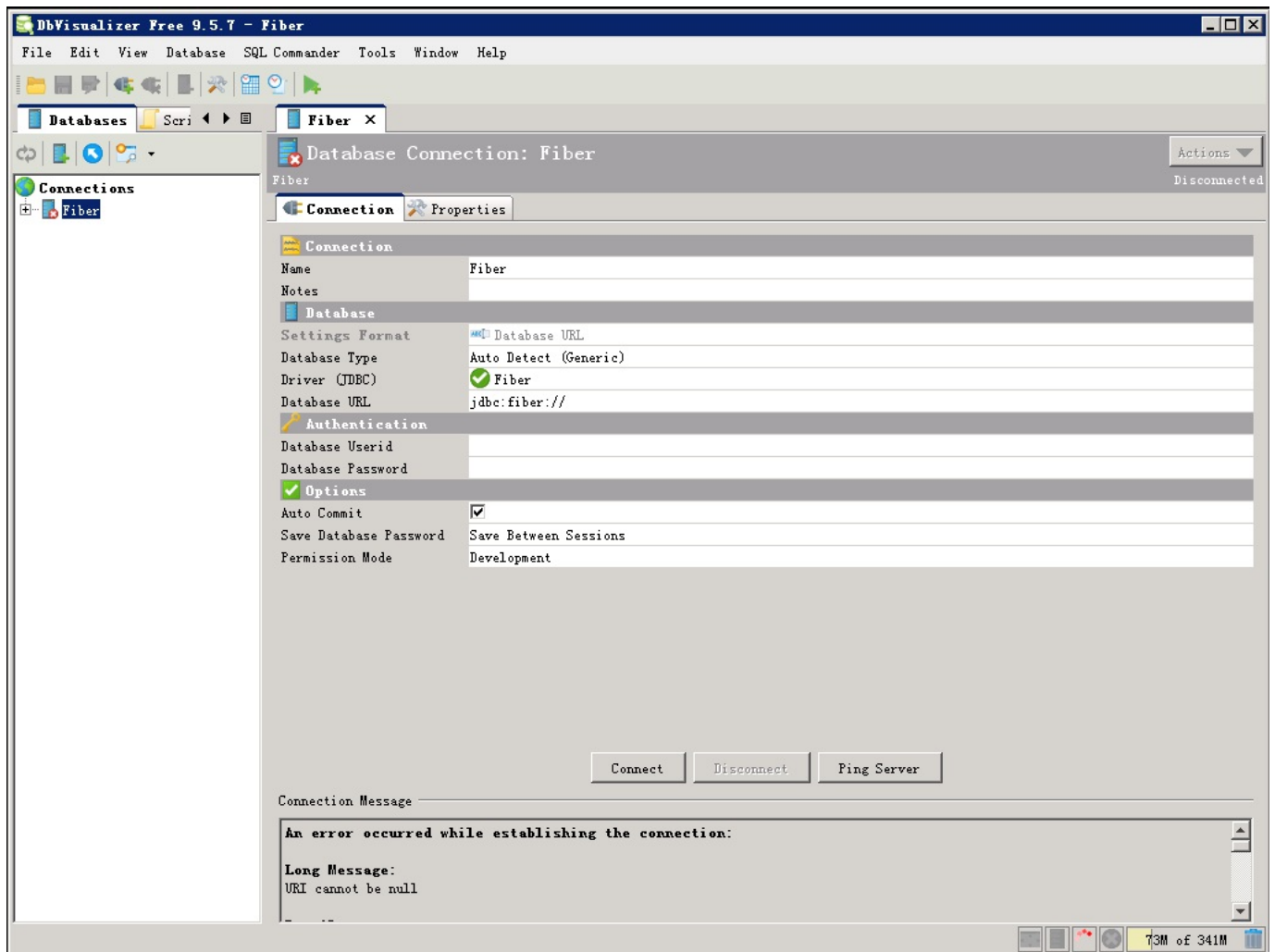
Save Database Password Save Between Sessions

Permission Mode Development

Ping Server

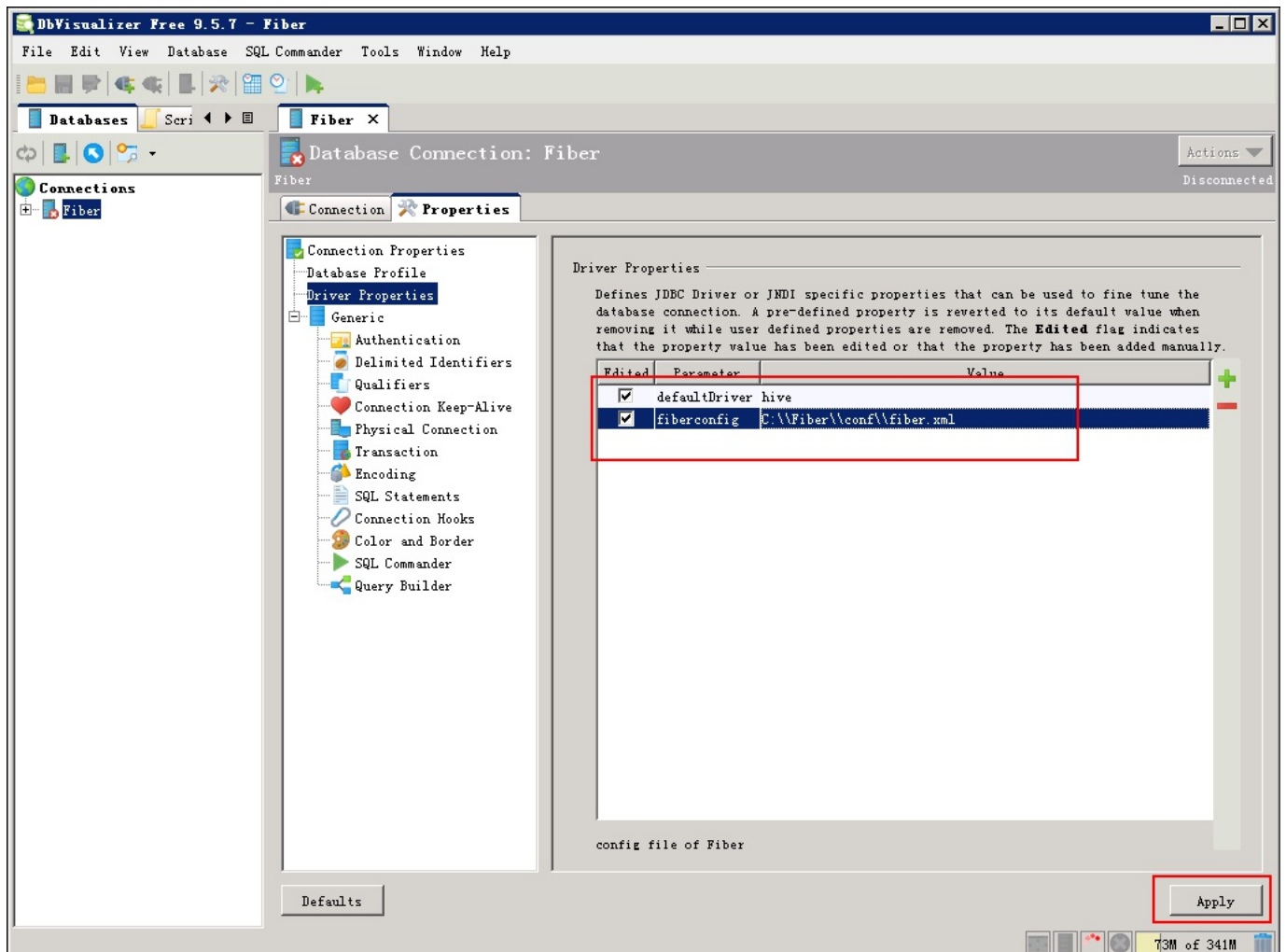
< Back Finish Cancel

点击 **Finish**

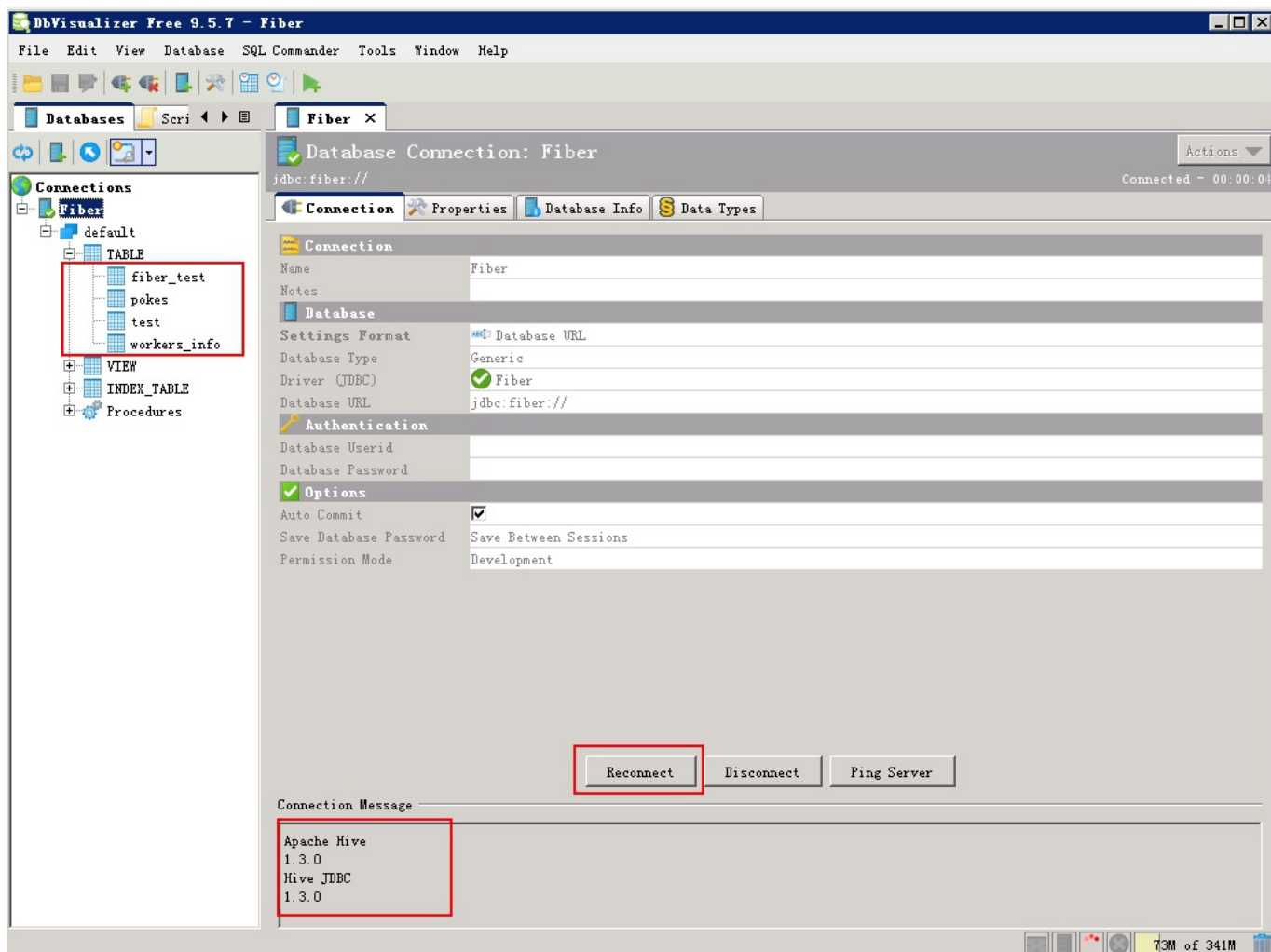


查询Hive表数据

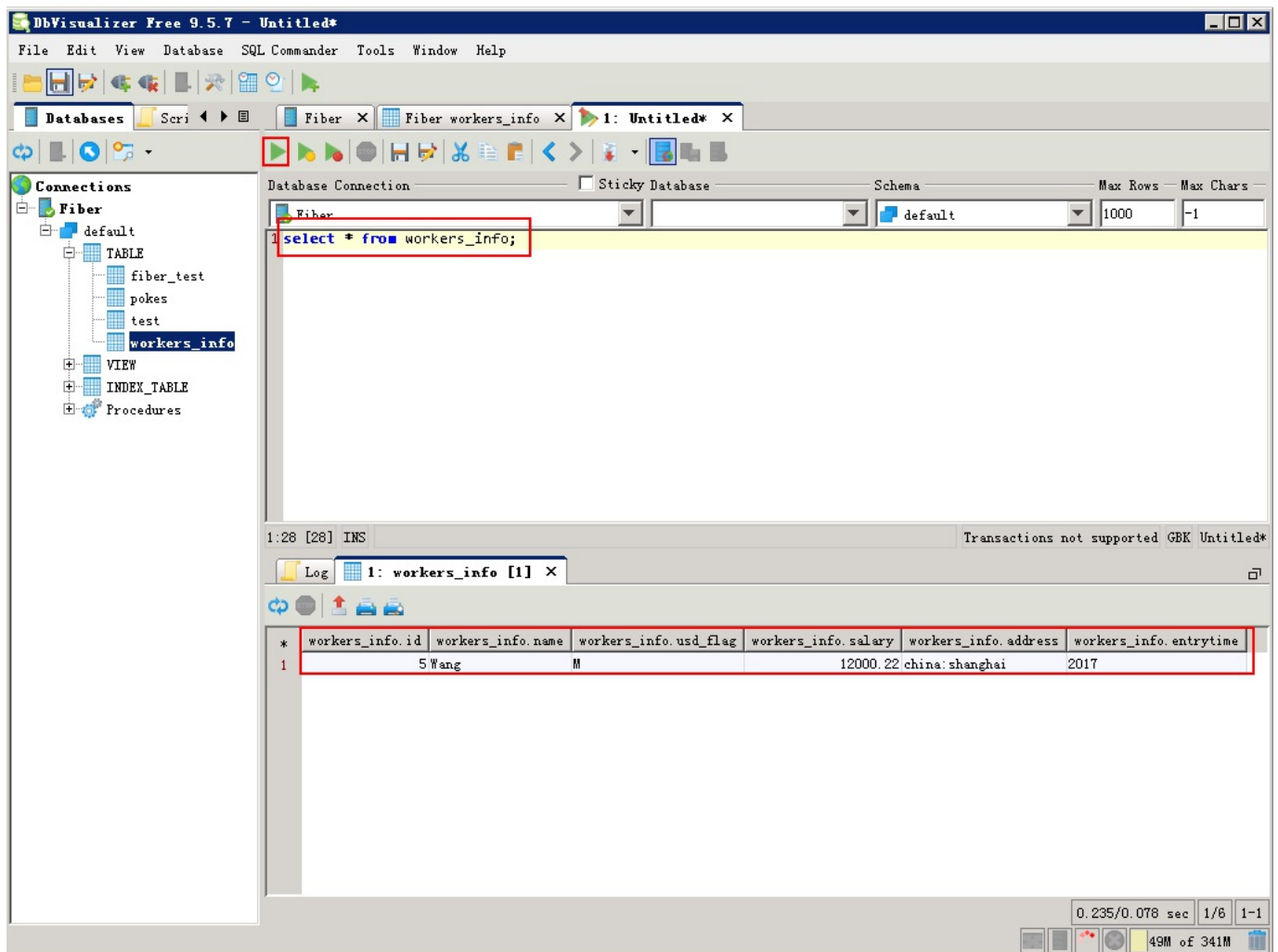
- 打开 **Properties** 面板，填写defaultDriver和fiberconfig属性，点击 **Apply** 。



- 打开 **Connection** 面板，点击 **Connect** 按钮，可以在左侧看到hive数据表。

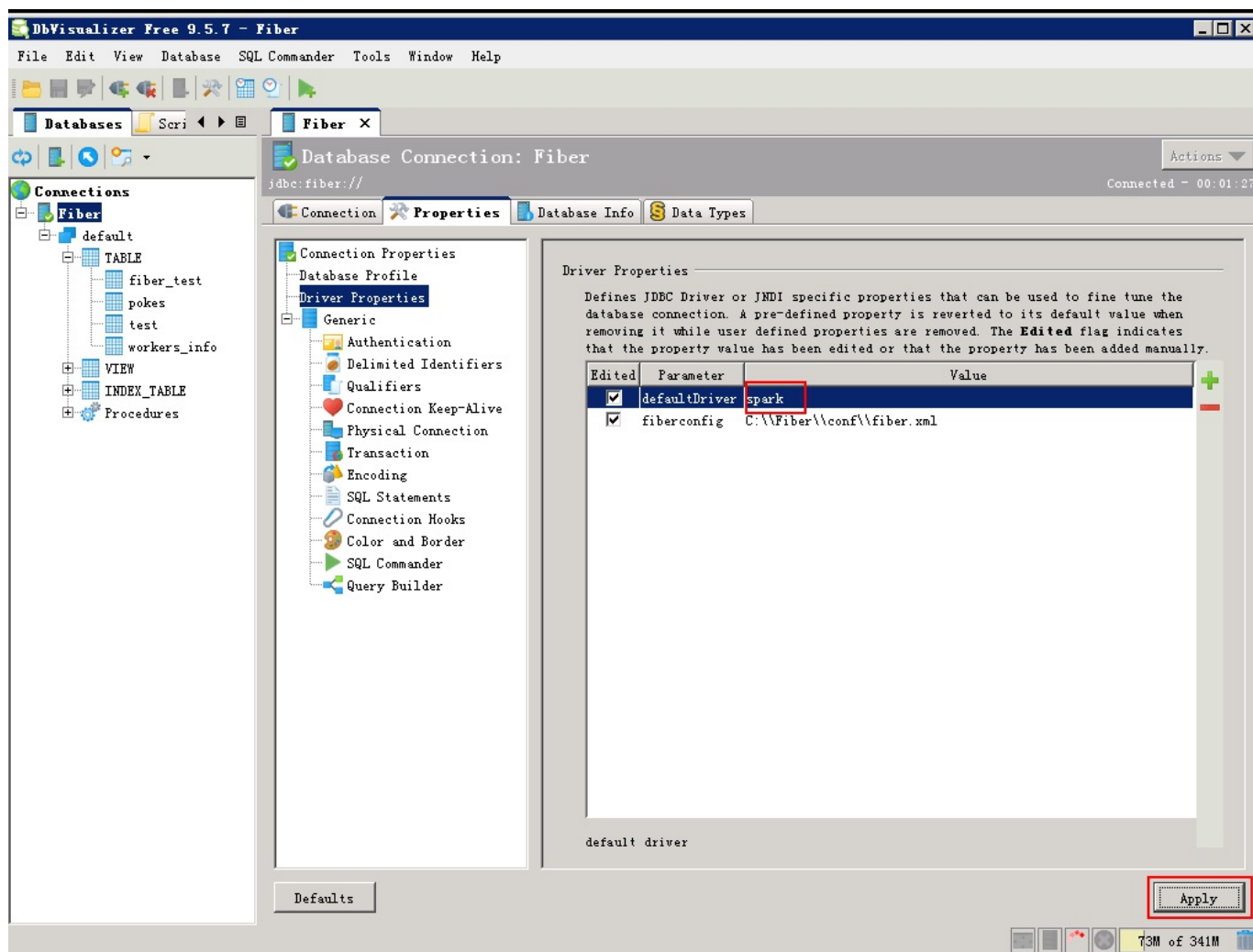


- 菜单栏选择 **File -> New SQL Commander**，编辑SQL，点击 **执行** 按钮，查看查询结果。

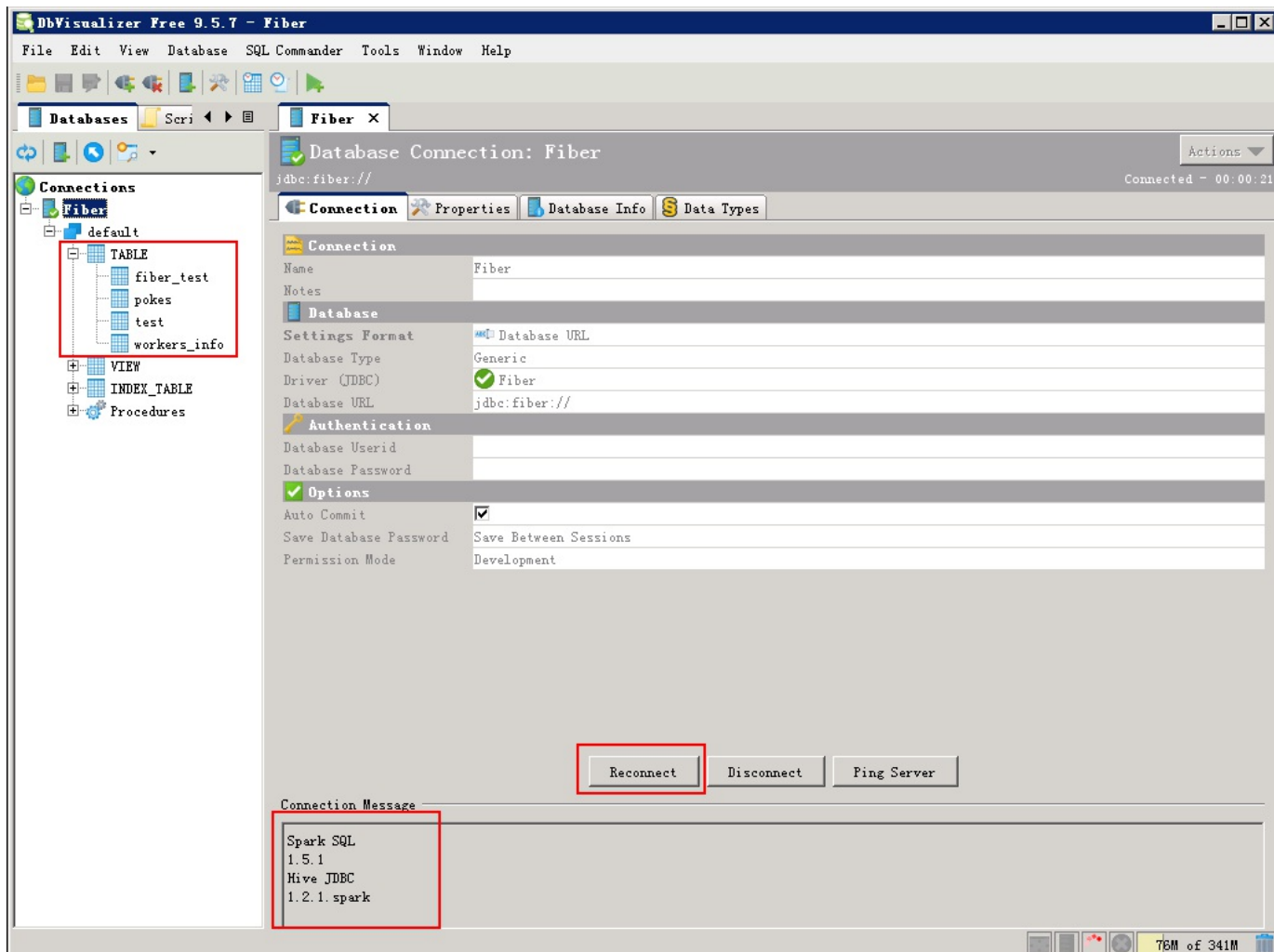


查询SparkSQL中的数据

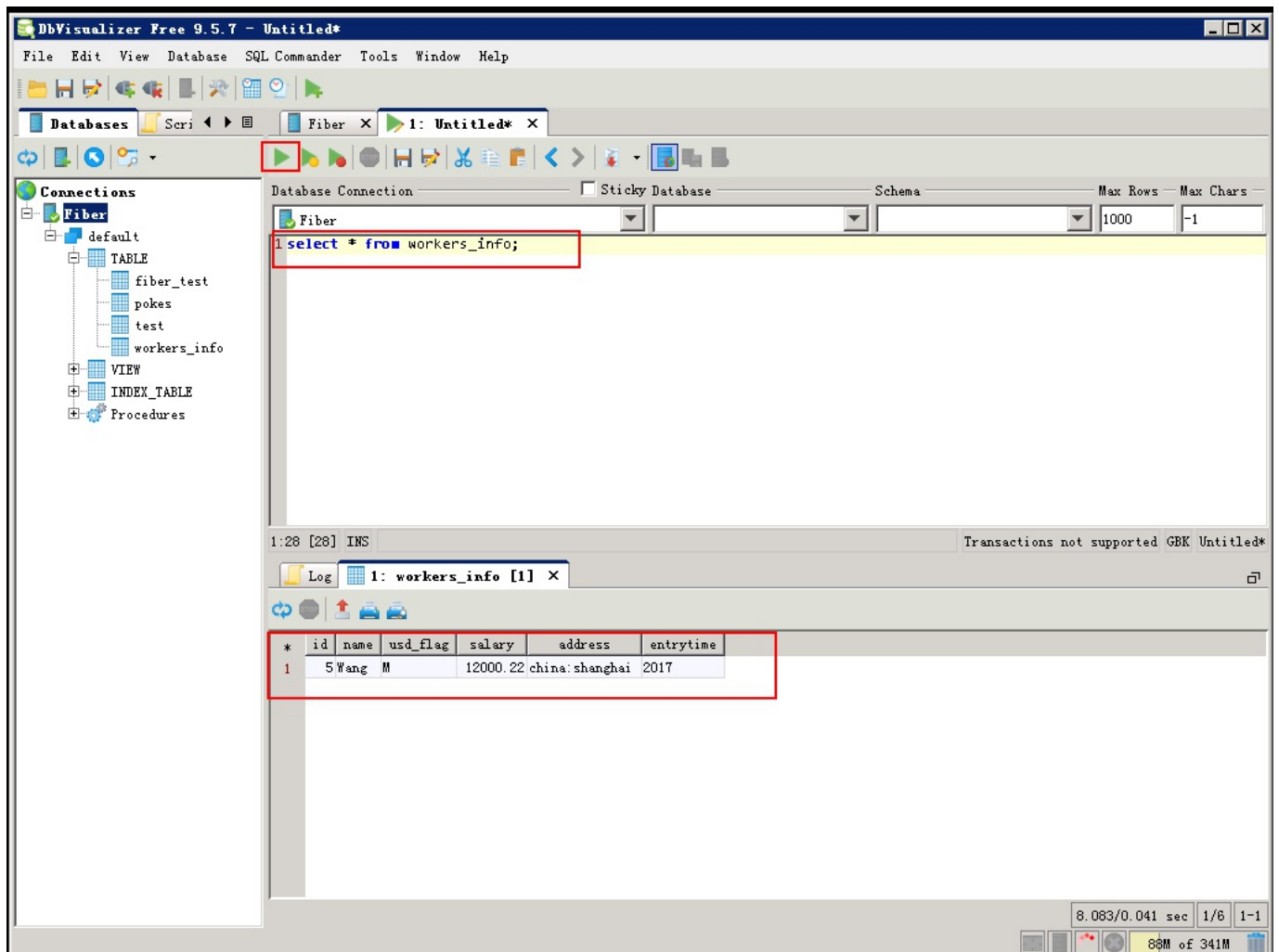
- 将defaultDriver切换为spark: 将 **Properties** 中的defaultDriver值改为spark, 点击 **Apply** 。



- 打开Connection面板，点击 **Reconnect**，连接成功，可以看到SparkSQL中的数据表。

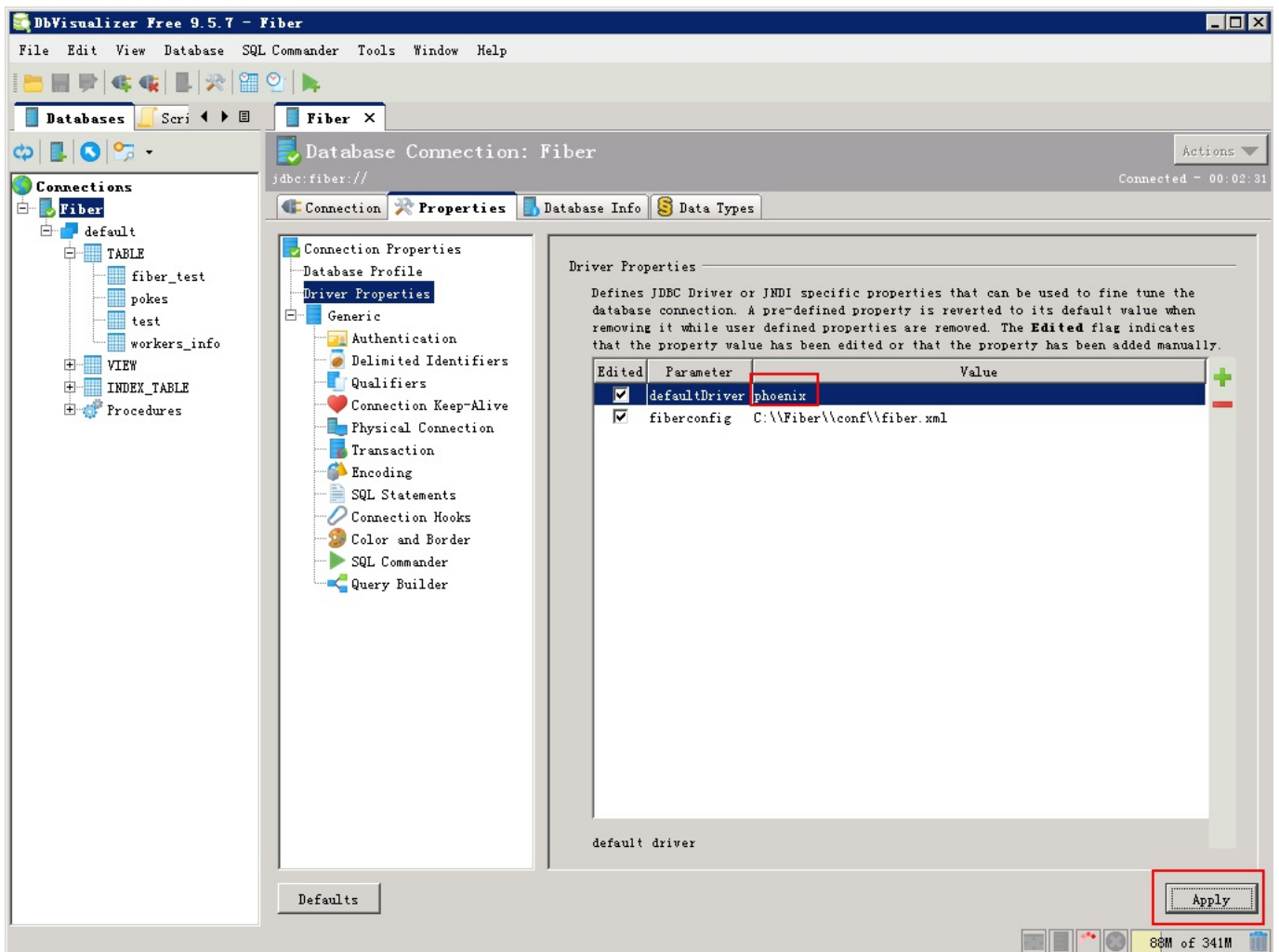


- 菜单栏选择 **File -> New SQL Commander**，编辑SQL，点击 **执行** 按钮，查看查询结果。

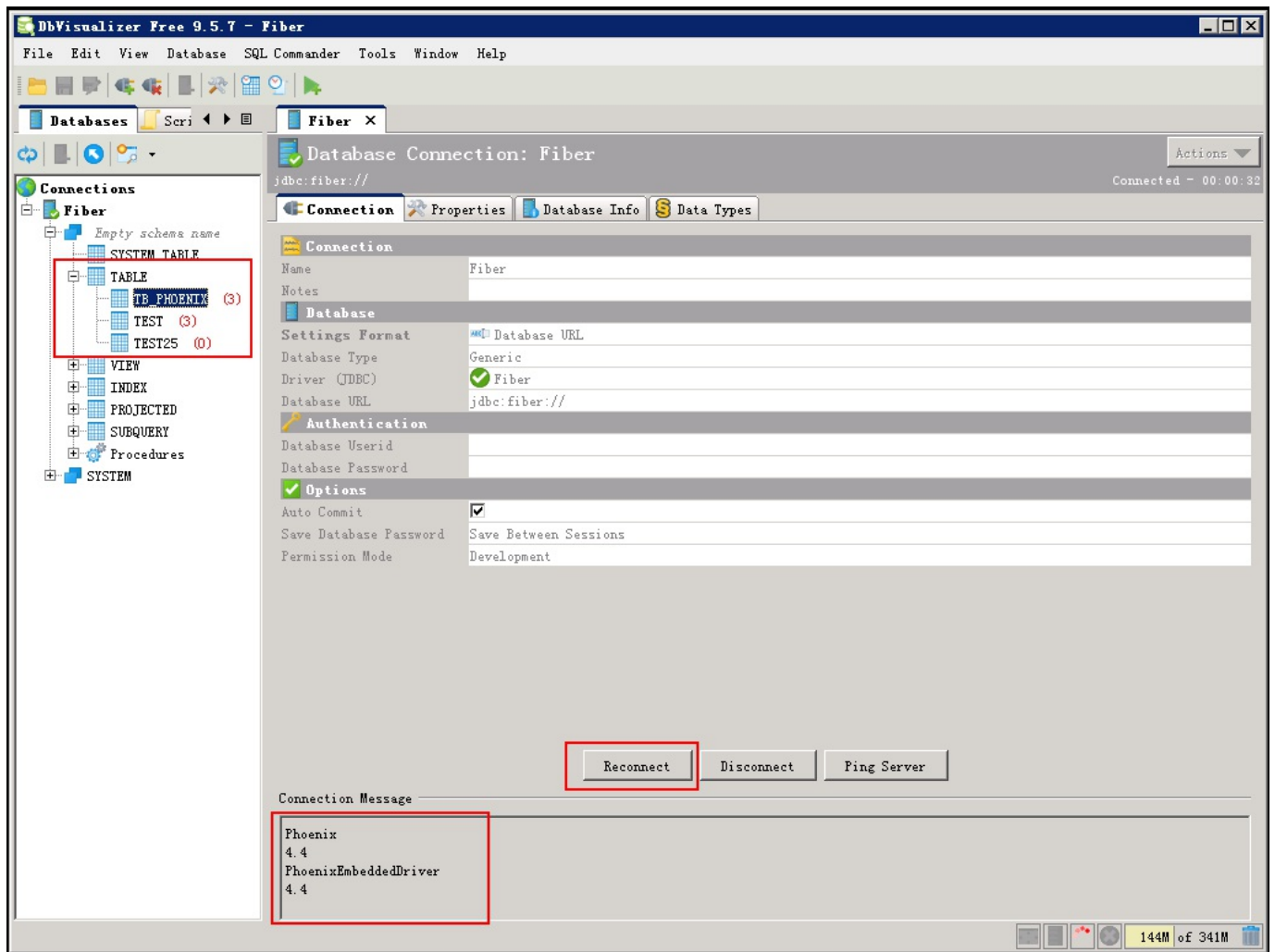


查询Phoenix中的数据

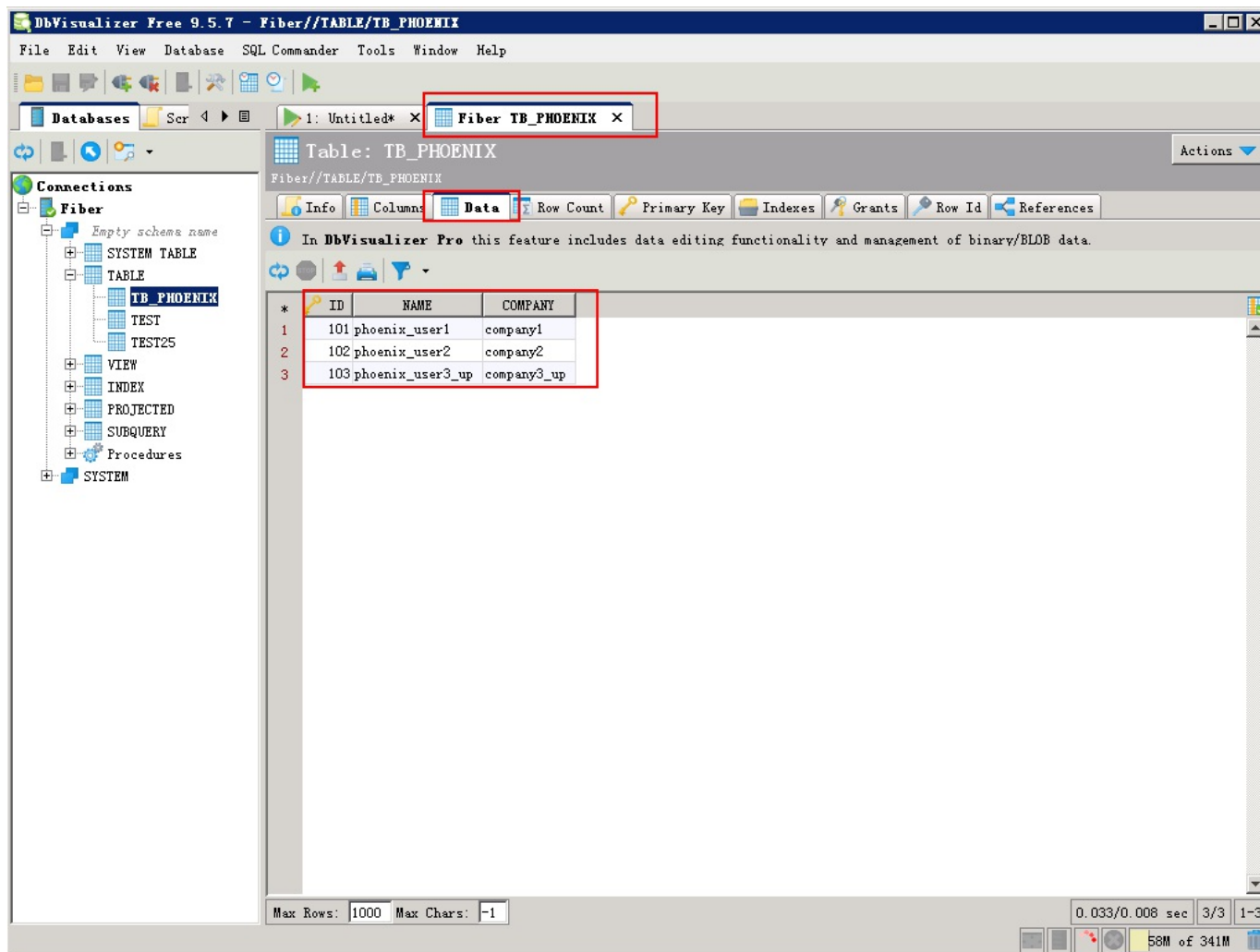
- 将defaultDriver切换为phoenix，将 **Properties** 中的defaultDriver值改为phoenix，点击 **Apply**。



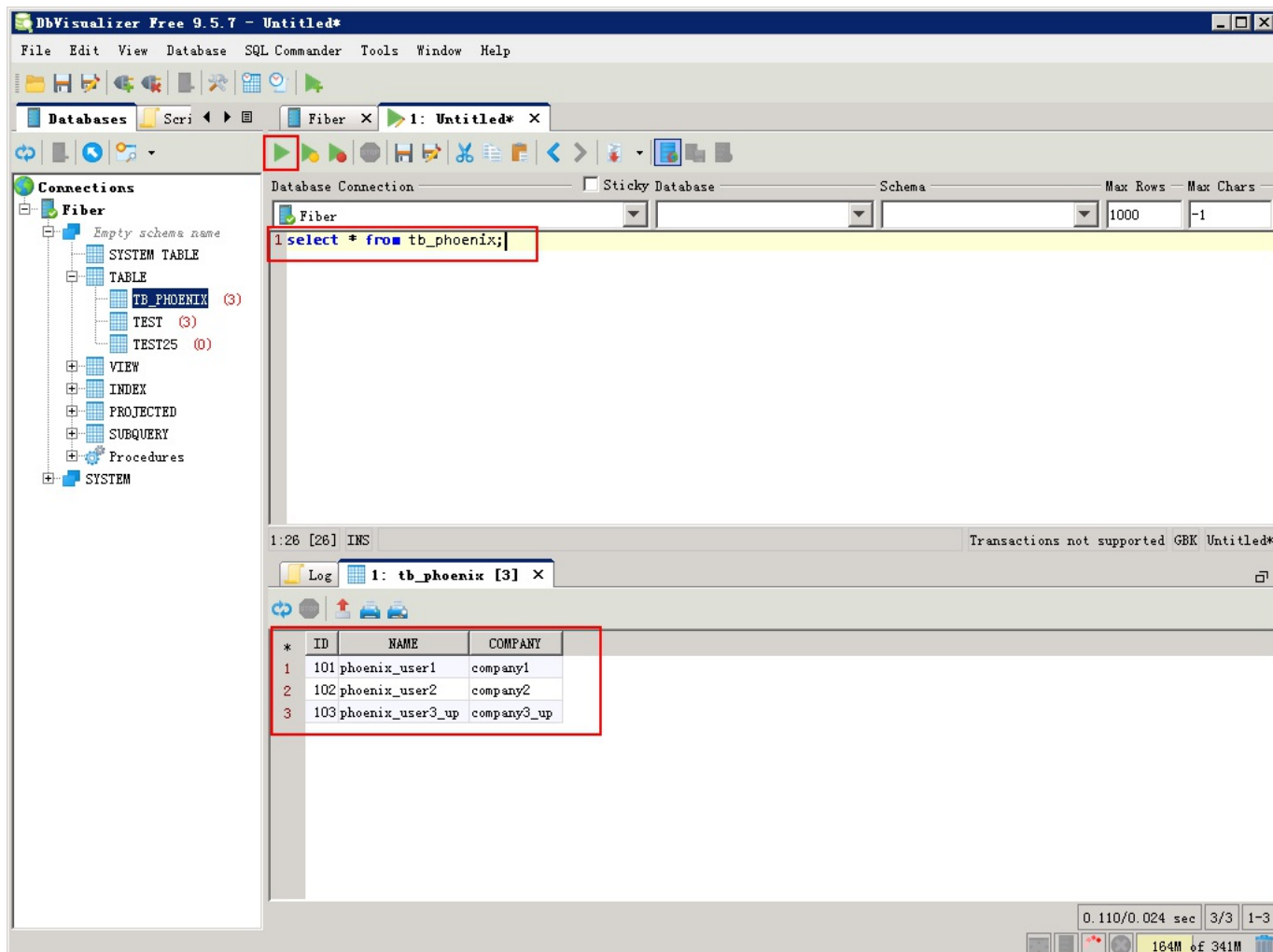
- 打开 **Connection** 面板, 点击 **Reconnect**, 连接成功, 可以看到phoenix数据表



- 查看phoenix表TB_PHOENIX中的数据。



- 菜单栏选择 **File** -> **New SQL Commander**, 编辑SQL, 点击 **执行** 按钮, 查看查询结果。



Phoenix的增加删除更新数据

Phoenix的增加删除更新数据，需要在Fiber中hbase的配置文件hbase-site.xml中加入如下参数，否则不会自动Commit

- 修改Hbase-site.xml文件，位置 `C:\Fiber\HBase\hbase\conf\hbase-site.xml`，然后重启DbVisualizer。

```
<property>
  <name>phoenix.connection.autoCommit</name>
  <value>true</value>
</property>
```

```

<value>org.apache.hadoop.hbase.regionserver.wal.SecureProtobufLogReader</value>
</property>
<property>
<name>hbase.rpc.timeout</name>
<value>60000</value>
</property>
<property>
<name>hbase.zookeeper.property.clientPort</name>
<value>2181</value>
</property>
<property>
<name>hbase.regionserver.wal.encryption</name>
<value>false</value>
</property>
<property>
<name>hbase.replication.bulkload.enabled</name>
<value>false</value>
</property>
<property>
<name>hbase.region.assignment.auto.recovery.enabled</name>
<value>true</value>
</property>
<property>
<name>hbase.filestream.cleaner.ttl.enable</name>
<value>false</value>
</property>
<property>
<name>phoenix.connection.autoCommit</name>
<value>true</value>
</property>
</configuration>

```

- Phoenix表增加数据

```

UPSERT into tb_phoenix(Id, Name,Company) values (104,'phoenix_user4','company4');
select * from tb_phoenix;

```

The screenshot shows the DbVisualizer interface. On the left, the 'Connections' pane shows a connection to 'Fiber'. The main SQL editor contains the following commands:

```

1 UPSERT into tb_phoenix(Id, Name,Company) values (104,'phoenix_user4','company4');
2 select * from tb_phoenix;

```

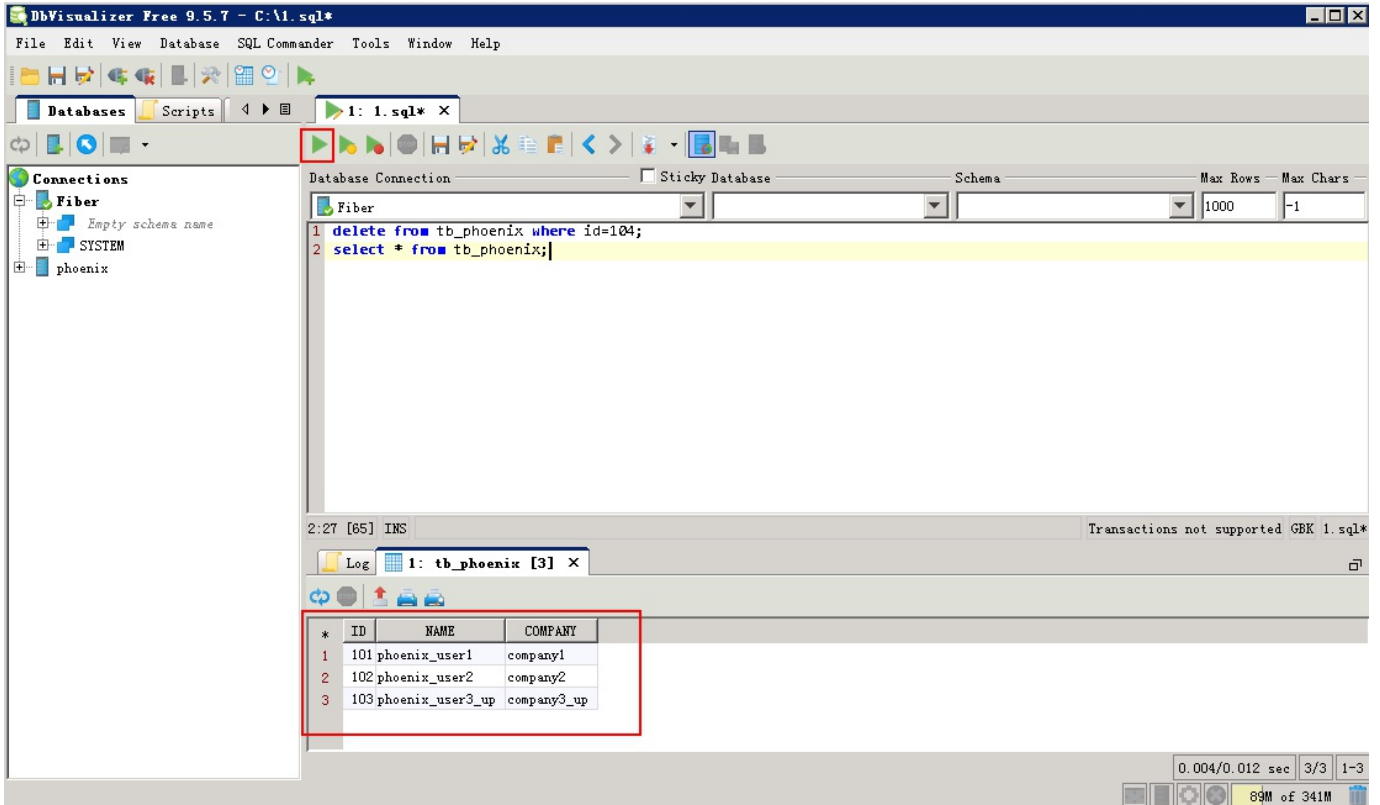
The results pane at the bottom shows the output of the second command, displaying a table with 4 rows:

ID	NAME	COMPANY
101	phoenix_user1	company1
102	phoenix_user2	company2
103	phoenix_user3_up	company3_up
104	phoenix_user4	company4

The status bar at the bottom indicates '0.004/0.008 sec' and '4/3'.

- Phoenix表删除数据

```
delete from tb_phoenix where id=104;  
select * from tb_phoenix;
```



DbVisualizer Free 9.5.7 - C:\1.sql*

File Edit View Database SQL Commander Tools Window Help

Databases Scripts 1: 1.sql* X

Database Connection: Fiber

Schema: Max Rows: 1000 Max Chars: -1

1 delete from tb_phoenix where id=104;
2 select * from tb_phoenix;

2:27 [65] INS Transactions not supported GBK 1.sql*

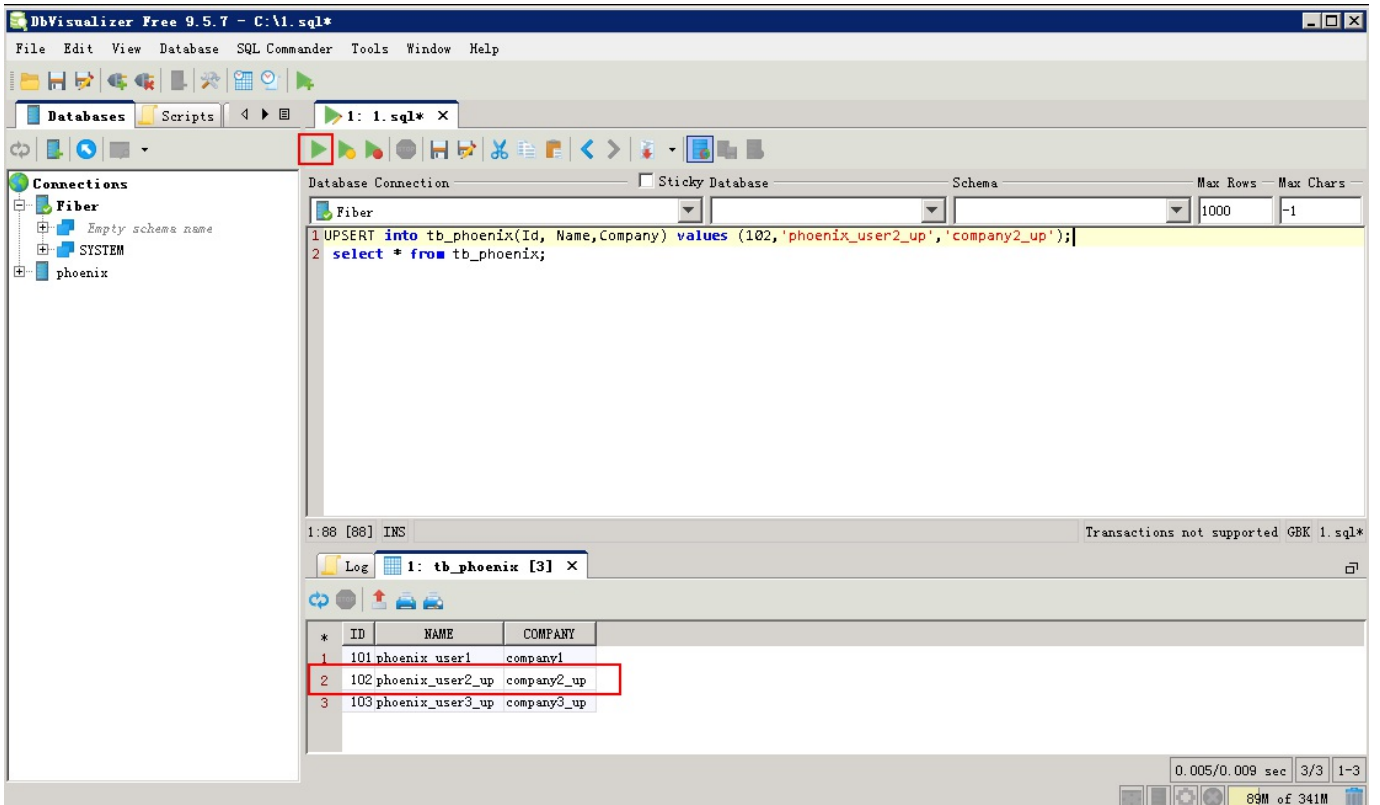
Log 1: tb_phoenix [3] X

*	ID	NAME	COMPANY
1	101	phoenix_user1	company1
2	102	phoenix_user2	company2
3	103	phoenix_user3_up	company3_up

0.004/0.012 sec 3/3 1-3
89M of 341M

- Phoenix表更新数据

```
UPSERT into tb_phoenix(Id, Name,Company) values (102,'phoenix_user2_up','company2_up');  
select * from tb_phoenix;
```



DbVisualizer Free 9.5.7 - C:\1.sql*

File Edit View Database SQL Commander Tools Window Help

Databases Scripts 1: 1.sql* X

Database Connection: Fiber

Schema: Max Rows: 1000 Max Chars: -1

1 UPSERT into tb_phoenix(Id, Name,Company) values (102,'phoenix_user2_up','company2_up');
2 select * from tb_phoenix;

1:88 [88] INS Transactions not supported GBK 1.sql*

Log 1: tb_phoenix [3] X

*	ID	NAME	COMPANY
1	101	phoenix_user1	company1
2	102	phoenix_user2_up	company2_up
3	103	phoenix_user3_up	company3_up

0.005/0.009 sec 3/3 1-3
89M of 341M