

# 1、存储引擎

--完整的建表语句

```
CREATE TABLE `t_user` (  
  `id` int(11) NOT NULL,  
  `username` varchar(255) DEFAULT NULL,  
  `password` varchar(255) DEFAULT NULL,  
  PRIMARY KEY (`id`)  
) ENGINE=InnoDB DEFAULT CHARSET=utf8
```

--注意: MySQL当中, 标识符是可以带单引号括起来的, 但这步通用, 最好别用

从上面语句可以看出, MySQL默认使用的存储引擎是InnoDB方式, 默认采用字符集是UTF-8

存储引擎这个名字只在MySQL中有, Oracle中也有对应的机制, 但不叫这个名字, 只是叫表存储方式

MySQL有很多存储引擎, 不同的存储引擎就是不同的表的存储方式, 它们都有各自的优缺点, 要合适的选择存储引擎

--查看当前MySQL版本支持的存储引擎

```
show engines \G;
```

```
mysql> show engines \G;      --9个
```

```
***** 1. row *****
```

Engine: InnoDB

Support: DEFAULT

Comment: Supports transactions, row-level locking, and foreign keys

Transactions: YES

XA: YES

Savepoints: YES

```
***** 2. row *****
```

Engine: MRG\_MYISAM

Support: YES

Comment: Collection of identical MyISAM tables

Transactions: NO

XA: NO

Savepoints: NO

```
***** 3. row *****
```

Engine: MEMORY

Support: YES

Comment: Hash based, stored in memory, useful for temporary tables

Transactions: NO

XA: NO

Savepoints: NO

```
***** 4. row *****
```

Engine: BLACKHOLE

Support: YES

Comment: /dev/null storage engine (anything you write to it disappears)

Transactions: NO

XA: NO

Savepoints: NO

```
***** 5. row *****
```

Engine: MyISAM

Support: YES

Comment: MyISAM storage engine

Transactions: NO

```

        XA: NO
    Savepoints: NO
***** 6. row *****
        Engine: CSV
        Support: YES
        Comment: CSV storage engine
Transactions: NO
        XA: NO
    Savepoints: NO
***** 7. row *****
        Engine: ARCHIVE
        Support: YES
        Comment: Archive storage engine
Transactions: NO
        XA: NO
    Savepoints: NO
***** 8. row *****
        Engine: PERFORMANCE_SCHEMA
        Support: YES
        Comment: Performance Schema
Transactions: NO
        XA: NO
    Savepoints: NO
***** 9. row *****
        Engine: FEDERATED
        Support: NO
        Comment: Federated MySQL storage engine
Transactions: NULL
        XA: NULL
    Savepoints: NULL
9 rows in set (1.70 sec)

```

## 2、MyISAM存储引擎

```

Engine: MyISAM
  Support: YES
  Comment: MyISAM storage engine
Transactions: NO          --这里是NO说明不支持事务
        XA: NO
    Savepoints: NO
--MyISAM是MySQL最常用的存储引擎，但它不是默认存储引擎
这种存储方式采用三个文件来存储一张表：
    表名.frm文件(存储表格式或者说表结构的文件，frm表form格式)
    表名.MYD文件(存储表中数据的文件，D表data)
    表名.MYI文件(存储表中索引的文件，I表Index)
优点：可被压缩节省空间，可以转换为只读表，提高检索效率，不可以修改

```

## 3、InnoDB存储引擎

```
***** 1. row *****
Engine: InnoDB
Support: DEFAULT
Comment: Supports transactions, row-level locking, and foreign keys
Transactions: YES          --支持事务，这是优点
XA: YES
Savepoints: YES
--这种存储引擎，数据的安全得到保障
优点：支持事务、行级锁、外键等
其存储方式：
表的结构存储在表名.frm文件中
数据存储在tablespace的空间中（逻辑概念），无法被压缩，也无法被转换成只读
在MySQL服务器奔溃后提供自动恢复机制
```

## 4、MEMORY存储引擎

```
***** 3. row *****
Engine: MEMORY
Support: YES
Comment: Hash based, stored in memory, useful for temporary tables
Transactions: NO
XA: NO
Savepoints: NO
--缺点：
不支持事务，数据容易丢失。因为表中所有的数据和索引都是存储在内存当中
--优点：查询速度最快
以前叫做HEPA引擎
```