

Embedded MySQL

Jim Winstead

MySQL, Inc.

jimw@mysql.com

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Embedding MySQL

- What does it mean to “embed” MySQL?



Server Embedding

- Server under Application Control



Deep Embedding

- No Server: libmysqld



Platform Embedding

- Can really be either Server Embedding or Deep Embedding



Licensing



Footprint

- Code: Less than 2MB
- Disk: Depends on data
- Memory: Depends on tuning, but at least



Security

- Platform Embedding: Simple
- Deep Embedding: Tricky
- Server Embedding: Hard



libmysqld: just like libmysql

- just need to make sure you call:
 - `mysql_library_init(int argc, char *argv, char *groups)`
 - `mysql_library_end()`



Undocumented Options

- `mysql_options()`
 - `MYSQL_OPT_USE_REMOTE_CONNECTION`
 - `MYSQL_OPT_USE_EMBEDDED_CONNECTION`
 - `MYSQL_OPT_GUESS_CONNECTION`
 - `MYSQL_SET_CLIENT_IP`



Limitations

- Access control not included by default (but can be enabled)
- No replication or binary logging
- No external connections



Problems

- 4.1: Query cache is broken! (Patch pending.)
- 5.0: Stored procedures are broken!



Connector/MXJ

- Platforms: Microsoft Windows (x86), Sun Solaris (Sparc), Linux (x86)



POJO

```
import com.mysql.management.MysqldResource;
```

```
public void startMySQL() {  
    File baseDir = new File(ourAppDir, "mysql");  
    MysqldResource = new MysqldResource(baseDir);  
    Map options = new HashMap();  
    options.put("port", "3336");  
    String threadName = "OurApp MySQL";  
    MysqldResource.start(threadName, options);  
}
```

```
public java.sql.Connection getConnection() throws Exception {  
    String db = "test";  
    String url = "jdbc:mysql://localhost:3336/" + db;  
    String userName = "root";  
    String password = "";  
    Class.forName(com.mysql.jdbc.Driver.class.getName());  
    return DriverManager.getConnection(url, userName, password);  
}
```



SocketFactory

```
import com.mysql.management.driverlaunched.ServerLauncherSocketFactory;  
  
String url = "jdbc:mysql://" + hostColonPort + "/"  
            + "?"  
            + "socketFactory="  
            + ServerLauncherSocketFactory.class.getName() ;  
            + "&"  
            + "cacheServerConfiguration=true"  
            + "&"  
            + "useLocalSessionState=true"  
            + "&"  
            + "serverbasedir=/opt/myapp/db"  
            + "&"  
            + "server.datadir=/mnt/bigdisk/myapp/data";
```



JMX MBean

- Read README.TXT in the distribution



**Questions?
Feedback?**



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