National College of Ireland

Configuration Manual

MSc Research Project
MSC Cyber Security

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MSc Project Submission Sheet

School of Computing

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Lecturer:	Michael Pantridge
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Configuration Manual

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1 Introduction

This configuration manual outlines the basic requirements and setup for implementing our innovative distributed storage system, which integrates fog computing with traditional cloud storage. The system addresses key limitations of conventional cloud storage such as privacy, latency, and data availability.

2 System Specification

HARDWARE & SOFTWARE REQUIREMENTS:

HARDWARE REQUIREMENTS:

- System : Pentium IV 2.4 GHz.
- Hard Disk : 500 GB.
- Ram : 8 GB
- (Any desktop / Laptop system with above configuration or higher level)

SOFTWARE REQUIREMENTS:

- Operating system : Windows 8 / 10
- Coding Language : Java (Jdk 1.7)
- Web Technology : Servlet, JSP
- Web Server : TomCAT 6.0
- IDE : Eclipse Galileo
- Database : My-SQL 5.0
- UGI for DB : SQLyog
- JDBC Connection : Type 4 Driver

3 Software Installation

Java (JDK 1.7)

- **Download**:
- Visit the Oracle Java SE 7 archive download page.

- Choose the appropriate installer based on your system (32-bit or 64-bit).
- Accept the license agreement and download the installer.
- **Install**:
- Run the downloaded installer.
- Follow the installation prompts, choosing the default installation directory.
- Disable the public JRE during installation.
- **Configure JDK 7**:
- The JDK installation directory should be the value of the environment variable JAVA_HOME.
- Change the Path variable to make sure that %JAVA_HOME%\bin is included.(CodeNotFound, 2017)

Eclipse Galileo IDE

- **Download**: Go to the Eclipse Downloads page.(*Eclipse IDE for Java Developers | Eclipse Packages*, no date)
- **Install**: Unzip the downloaded file and run eclipse.exe.

Apache Tomcat 6.0

- **Download**: Get Tomcat 6.0 from the Apache Tomcat Archive.
- **Install**: Unzip the downloaded file to a directory. Configure the server in Eclipse by adding Tomcat in Servers view.

MySQL 5.0

- **Download**: Visit the MySQL Archives.
- **Install**: Launch the installation and adhere to the prompts displayed on the screen. A root password should be set during setup.

SQLyog

- **Download**: Go to the SQLyog website.
- **Install**: Run the installer and follow the instructions. Connect to your MySQL database using the root password.

JDBC Driver

- **Download**: Obtain the JDBC driver (e.g., mysql-connector-java-5.1.48.jar) from the MySQL Connector/J page.
- **Add to Project**: Include in the Project: When you right-click your project in Eclipse, choose Build Path > Configure Build Path, and then select the Libraries tab to add the JDBC JAR file.

3.1 Setting Up Your Development Environment

Setting Up Eclipse

- Workspace Configuration: Open Eclipse and set your workspace directory.
- To create a Web Project: Go to the File > New > Project. And Select Web > Dynamic Web Project. Enter project name and configure Tomcat as the target runtime.

Configuring Tomcat Server

- Add Server: In the Servers view, right-click and select New > Server. Choose Tomcat v6.0 Server and configure it to point to the directory where Tomcat was installed.
- Deploy Project: Right-click your project, select Run As > Run on Server.

Database Configuration

- MySQL Database Setup: Open SQLyog and connect to your MySQL server. Create a new database and tables as required.
- JDBC Connection: Use the following code to establish a connection:
  Class.forName("com.mysql.cj.jdbc.Driver");
  Connection conn = DriverManager.getConnection("jdbc:mysql://localhost:3306/yourdatabase", "username", "password");

Web Technologies (Servlet & JSP)

- Servlet: Create a servlet by extending HttpServlet. Map the servlet in web.xml or using annotations.
- JSP: Create JSP files in the WebContent directory. Use JSTL for dynamic content and database interactions.

Using DriveHQ for Cloud Storage

- Sign Up: Create an account on DriveHQ.
- Upload Files: Use the DriveHQ web interface to upload your files.
- Accessing Files: Integrate DriveHQ storage into your application using their API for seamless cloud storage access.

Steps to Link FTP to DriveHQ

1. **Configure FTP Client**
   Open your FTP client and configure with:
   - Host: ftp.drivehq.com
   - Port: 21
   - Protocol: FTP
   - Encryption: Plain FTP
   - Logon Type: Normal
   - User: Your DriveHQ username
   - Password: Your DriveHQ password

2. Test FTP Connection

Connect to ensure you can browse and upload/download files.

3. Integrate FTP with Your Application

Use Apache Commons Net library in your Java project.
Add the library to your project dependencies.

4. Java Code Example

Sample code to connect, upload, and download files:

```
import org.apache.commons.net.ftp.FTP;
import org.apache.commons.net.ftp.FTPClient;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.IOException;

public class DriveHQFTPExample {
    public static void main(String[] args) {
        String server = "ftp.drivehq.com";
        int port = 21;
        String user = "your-username";
        String pass = "your-password";

        FTPClient ftpClient = new FTPClient();
        try {
            ftpClient.connect(server, port);
            ftpClient.login(user, pass);
            ftpClient.enterLocalPassiveMode();
            ftpClient.setFileType(FTP.BINARY_FILE_TYPE);

            // Uploading a file
            try (FileInputStream inputStream = new
FileInputStream("path/to/local/file.txt")) {
                ftpClient.storeFile("/remote/path/file.txt", inputStream);
            }

            // Downloading a file
            try (FileOutputStream outputStream = new
FileOutputStream("path/to/local/file2.txt")) {
                ftpClient.retrieveFile("/remote/path/file2.txt", outputStream);
            }

            ftpClient.logout();
            ftpClient.disconnect();

        } catch (IOException ex) {
            ex.printStackTrace();
        }
    }
}
```

5. Deploy and Test Your Application
Run your application to ensure successful file upload and download with DriveHQ.