FTP Service

Summary

The e-government framework adopts Net of Jakarta Commons [Conveniently provide the FTP function of implementing basic internet protocol at the simple client side] as open source.

Net of Jakarta Commons is network utility collection.

It should be noted that there is a violation against object-oriented rule in part since what is supported at Net of Jakarta Commons aims to access protocol basically rather than high-dimensional abstract by implementing the basic Internet Protocol of simple client side.

Definition of FTP

FTP refers to the File Transfer Protocol.
FTP is the standard protocol to exchange files between computers in the internet and is the simplest way for such exchange.
Like HTTP that transfers web page and related files that can be displayed at screen and SMTP that delivers e-mail, FTP is also one of TCP/IP application protocol of Internet.
FTP is used in the process of moving the web page files from the computer of author to the server so that anyone can view web page files.
In addition, it is widely used in downloading files or programs from other servers to our own computer.
From the viewpoint of user, FTP can be used using simple commands or commercial program can be used, which provide graphic user interface.
In general, web browser uses FTP to download the program selected from web page.
Update task can be performed including deletion of files at the server using FTP, renaming or moving, copying.
An FTP server should be logged on but it enables to easily access the files published to all people using anonymous FTP.
FTP is included in series of program that accompanies TCP/IP in general.

Description

Jakarta Commons Net

Following are the protocols supported by Jakarta Commons Net project(http://commons.apache.org/net/).

- FTP/FTPS
- NNTP
- SMTP
- POP3
- Telnet
- TFTP
- Finger
- Whois
- rexec/rcmd/rlogin
- Time (rdate) and Daytime
- Echo
- Discard
- NTP/SNTP

Flow of org.apache.commons.net.ftp will be briefly explained.

First of all, logical flowchart was configured briefly.

1. Create FTP Client
2. Connect the FTP Server
3. Check whether response is normal.
4. Log in to FTP Server

5. Access and perform several tasks (list, get, put....etc.)
6. Log out from FTP Server
7. FTP Server disconnect

Following is the example of viewing the list by connecting to FTP.

Example of Use

```
private static FileInputStream inputStream;

public static void main(String[] args) {

        FTPClient client = null;

        // Account Login
        try {
                client = new FTPClient();

                // Set default encoding to euc-kr due to Korean file name.
                client.setControlEncoding("euc-kr");

                // Test server information
                logger.info("Commons NET FTP Client Test Program");
                logger.info("Start GO");

                // Access to Novell TEST server
                client.connect("ftp.novell.com");
                logger.info("Connected to |||||||||||||||||||||...........");

                // Terminate if the response code is abnormal
                int reply = client.getReplyCode();
                if (!FTPReply.isPositiveCompletion(reply)) {
                        client.disconnect();
                        logger.info("FTP server refused connection");

                } else {
                        logger.info(client.getReplyString());

                        // Set timeout
                        client.setSoTimeout(10000);
                        // Login
                        client.login("anonymous", "anonymous");
                        logger.info("anonymous login success...");


                        // Process various information(Put / Get / Append, etc.)


                        client.logout();
                }

        } catch (Exception e) {
                logger.info("failed to log in relevant ftp.");
                e.printStackTrace();
                System.exit(-1);
        } finally {
                if(client != null && client.isConnected()){
                        try {
                                client.disconnect();
                        }catch(IOException ioe) {
                                ioe.printStackTrace();
                        }
```

```
                    }
          }
}
```

View File List

```
FTPFile[] ftpfiles = client.listFiles("/");

if(ftpfiles != null ){
          for (int i = 0; i < ftpfiles.length; i++) {
                    FTPFile file = ftpfiles[i];
                    logger.info(file.toString()); // File Information
                    logger.info(file.getName()); // File Name
                    logger.info(file.getSize()); // File Size
          }
}
```

File Download (get)

```
File get_file = new File("c:\\temp\\test.jpg");
FileOutputStream outputstream = new FileOutputStream(get_file);
boolean result = client.retrieveFile("/public/test.jpg", outputstream);

outputstream.close();
```

File Upload (put)

```
File put_file = new File("c:\\temp\\test.jpg");
inputStream = new FileInputStream(put_file);
boolean result = client.storeFile("/public/test.jpg", inputStream);

inputStream.close();
```

File Upload (append)

```
File append_file = new File("c:\\temp\\test.jpg");
inputStream = new FileInputStream(append_file);
boolean result = client.appendFile("/public/test.jpg", inputStream);

inputStream.close();
```

Rename File (rename)

```
boolean result = client.rename("/public/before change.jpg", "/public/after change.jpg");
```

Delete File (delete)

```
boolean result = client.deleteFile("/public/file to delete.jpg");
```

Create Dircetory

```
boolean result = client.makeDirectory("/public/test");
```

Enter OS Commands

```
client.sendCommand(FTPCommand.MAKE_DIRECTORY,"/public/test");
```

SET File and Transfer Status

- File Type : FTP.BINARY_FILE_TYPE,, FTP.ASCII_FILE_TYPE, setting

- File Transfer Type : FTP.STREAM_TRANSFER_MODE, COMPRESSED_TRANSFER_MODE setting

```
/* File Type*/

client.setFileType(FTP.BINARY_FILE_TYPE);

/* File Transfer Type */

client.setFileTransferMode(FTP.COMPRESSED_TRANSFER_MODE);
```

Reference

Jakarta Commons Net

Commons Net 2.0 API