

1.

The FTP commands that the user has used:

USER Administrator

PASS napier

SYST

FEAT

PWD

TYPE

PASV

LIST

CWD

STOR

RETR

2.

The FTP codes that have been returned:

220	Service ready for new user
331	User name okay, need password
230	User logged in, proceed
215	Name system type
211	System status, or system help reply
257	PATHNAME created
200	Command okay
227	Entering Passive Mode
125	Data connection already open; transfer starting
226	Closing data connection
250	Requested file action okay, completed

3. What is the username and password for the access to the FTP server:

User name: Administrator

Password: napier

4. What is the name of the file which is uploaded:

111.png

5. What is the name of the file which is downloaded:

manual.txt

6. Using the filter of `ftp.request.command=="LIST"`, determine the first packet number which performs a "LIST":

Packet No.21

7. In performing in the list of the files on the FTP server, which TCP port is used on the server for the transfer:

1078, 1080, 1081

8. From the final "LIST" command, which are the files on the server?

```
03-11-13 11:25PM          64 1.docx\r\n
03-11-13 10:35PM       347 manual.txt\r\n
```

1.docx and manual.txt

9. What does the filter `ftp.response.code==227` identify in terms of the ports that are used for the transfer:

Response arg: Entering Passive Mode (192,168,47,134,4,54).

PASV port = $4 * 256 + 54 = 1078$

10. Include all terminal output in your Lab6_answers.pdf, showing that you were able to execute the commands listed above and download both versions of the file.

```
linz9@DESKTOP-723ITC3:/mnt/c/Users/Zhaolong/Desktop/netprog/lab6$ ftp ftp.cdc.gov
Connected to ftp.cdc.gov.
220 Microsoft FTP Service
Name (ftp.cdc.gov:linz9): anonymous
331 Anonymous access allowed, send identity (e-mail name) as password.
Password:
230 User logged in.
Remote system type is Windows_NT.
```

```
ftp> passive
Passive mode on.
ftp> ls
227 Entering Passive Mode (198,246,117,106,250,159).
125 Data connection already open; Transfer starting.
-rwxrwxrwx  1 owner    group           128 May  9  1995 .change.dir
-rwxrwxrwx  1 owner    group           107 May  9  1995 .message
drwxrwxrwx  1 owner    group            0 Sep  8 12:54 pub
-rwxrwxrwx  1 owner    group          1428 May 13  1999 Readme
-rwxrwxrwx  1 owner    group           383 May 13  1999 Siteinfo
drwxrwxrwx  1 owner    group            0 May 20  2010 w3c
-rwxrwxrwx  1 owner    group           202 Sep 22  1998 welcome.msg
226 Transfer complete.
ftp> cd pub
250 CWD command successful.
ftp> cd FOIAREQ
250 CWD command successful.
ftp> get 177001-508.pdf 177001-508-ascii.pdf
local: 177001-508-ascii.pdf remote: 177001-508.pdf
227 Entering Passive Mode (198,246,117,106,250,162).
125 Data connection already open; Transfer starting.
WARNING! 429 bare linefeeds received in ASCII mode
File may not have transferred correctly.
226 Transfer complete.
84054 bytes received in 0.17 secs (481.6457 kB/s)
```

```
ftp> binary
200 Type set to I.
ftp> get 177001-508.pdf 177001-508-bin.pdf
```

```
ftp> get 177001-508.pdf 177001-508-bin.pdf
local: 177001-508-bin.pdf remote: 177001-508.pdf
227 Entering Passive Mode (198,246,117,106,250,167).
125 Data connection already open; Transfer starting.
226 Transfer complete.
84054 bytes received in 0.17 secs (495.5117 kB/s)
```

11. Open both downloaded PDF files in a PDF viewer and compare (try looking at the image in the upper left of the first page). note: Acrobat/Firefox will probably fail to open the ASCII version, but Edge, Chrome and Safari will open it just fine. Explain why the two files are different (if they are), or why ascii vs binary mode didn't matter. Also state your operating system, since this can affect your results.

The image in the upper left of the first page in 177001-508-ascii.pdf is slightly distorted. Using the ls -l we can find that the 177001-508-ascii.pdf is only 83961 bytes.

```
linz9@DESKTOP-723ITC3:/mnt/c/Users/Zhaolong/Desktop/netprog/lab6$ ls -l
total 348
-rwxrwxrwx 1 linz9 linz9 83961 Oct 29 21:01 177001-508-ascii.pdf
-rwxrwxrwx 1 linz9 linz9 84054 Oct 29 21:03 177001-508-bin.pdf
```

The remote system is Windows_NT, which uses CRLF, while WSL uses LF. Therefore, if we use the ascii mode, all CRs will be removed from the original file including the CRs in the image that are necessary to render the image correctly.