

WORKSHOP PEMROGRAMAN JARINGAN

MODUL 12 & 13

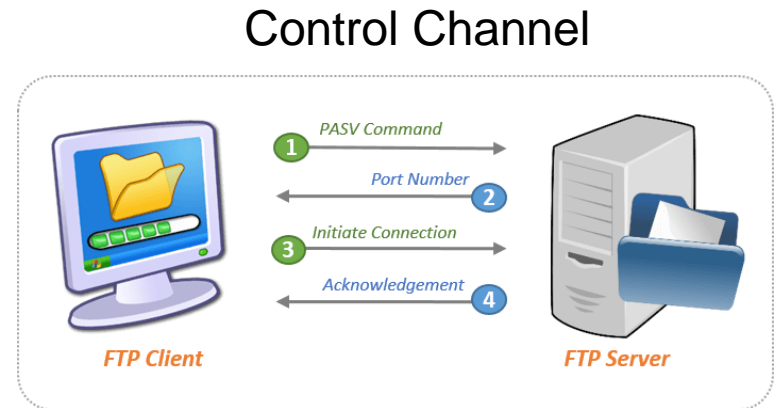
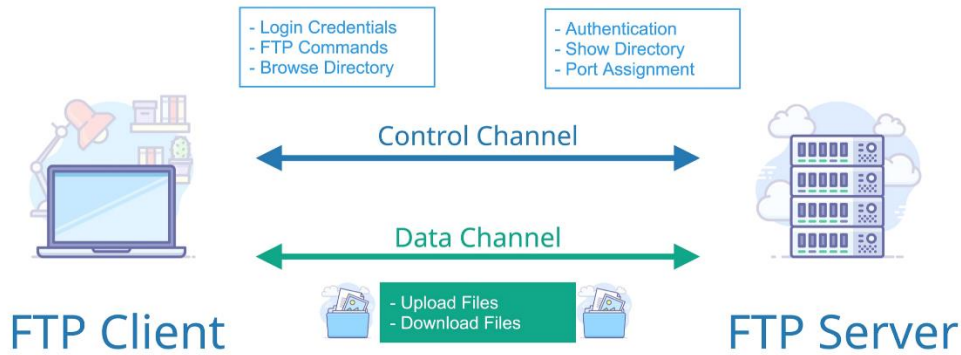
(FTP & REMOTE AKSES)

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TOPIK PEMBAHASAN

- FTP (modul 12)
- TELNET (modul 13)
- SSH (modul 13)

FTP Server



- FTP server bekerja pada port 21.
- Terdapat 2 bagian yaitu: control channel (4 tahapan) dan data channel.

Browse data dari FTP Server

- Hasil listing 5.1

```
$ python 5_1_list_files_on_ftp_server.py
File list at ftp.ed.ac.uk:
drwxr-xr-x  4 1005      bin           4096 Oct 11  1999 EMWAC
drwxr-xr-x 13 31763    netserve     4096 May  5  2010 EdLAN
drwxrwxr-x  4 6267      6268         4096 Oct 11  1999 ITFMP
drwxr-xr-x  4 1407      bin           4096 Oct 11  1999 JIPS
drwxr-xr-x  2 root       bin           4096 Oct 11  1999 Mac
drwxr-xr-x  2 10420    7525         4096 Oct  7  2003 PaedTBI
drwxr-xr-x  2 jaw       bin           4096 Oct 11  1999 Printing
drwxr-xr-x  3 root       bin           4096 Oct 11  1999 Student_Societies
drwxr-xr-x  6 root       bin           4096 Feb 19  2014 Unix
drwxr-xr-x  2 root       bin           4096 Oct 11  2016 Unix1
drwxr-xr-x  2 1109      bin           4096 Oct 19  2016 Unix2
drwxr-xr-x  2 2022      bin           4096 Oct 11  1999 X.400
drwxr-xr-x  2 20076    bin           4096 Feb 17  2000 atoz
drwxr-xr-x  2 1403      bin           4096 Aug  9  2001 bill
drwxr-xr-x  2 4414      bin           4096 Oct 11  1999 cartonet
drwxr-xr-x  2 1115      bin           4096 Oct 11  1999 courses
drwxr-xr-x  2 10498    bin           4096 Oct 11  1999 esit04
```

Program

```
FTP_SERVER_URL = 'ftp.ed.ac.uk'
```

FTP Server

```
import ftplib
from ftplib import FTP

def test_ftp_connection(path, username, email):
    #Open ftp connection
    ftp = ftplib.FTP(path, username, email)
    #List the files in the /pub directory
    ftp.cwd("/pub")
    print ("File list at %s:" %path)
    files = ftp.dir()
    print (files)

    ftp.quit()

if __name__ == '__main__':
    test_ftp_connection(path=FTP_SERVER_URL, username='anonymous',
                        email='nobody@nourl.com',
                        )
```

FTP Control Channel

FTP Data Channel

Upload data ke FTP Server

Connecting to Port 21

ftp localhost



FTP Client



FTP Server

vsftpd

Edit `/etc/vsftpd.conf`
Agar bisa upload file:

`write_enable=YES`

Restart:

`/etc/init.d/vsftpd restart`

- Sistem komunikasi client-server pada ftp
- Tambahkan user utk akses ke ftp server: `#adduser zenhadi`
- Install FTP server: `# apt-get install vsftpd`
- Untuk mengetest: `# ftp localhost`
- Hasil listing 5.2

```
$ python 5_2_upload_file_to_ftp_server.py
```

```
Enter your FTP password:
```

```
Connecting to FTP server: localhost
```

```
Login to FTP server: user=faruq
```

```
Uploaded file: readme.txt
```

```
$ cat /home/faruq/readme.txt
```

```
This file describes what to do with the .bz2 files you see elsewhere on  
this site (ftp.kernel.org).
```

Program

```
LOCAL_FILE = 'readme.txt'
```

Jika gagal (code 553), bisa diganti file lain: LOCAL_FILE = 'data'
Create terlebih dahulu file tersebut

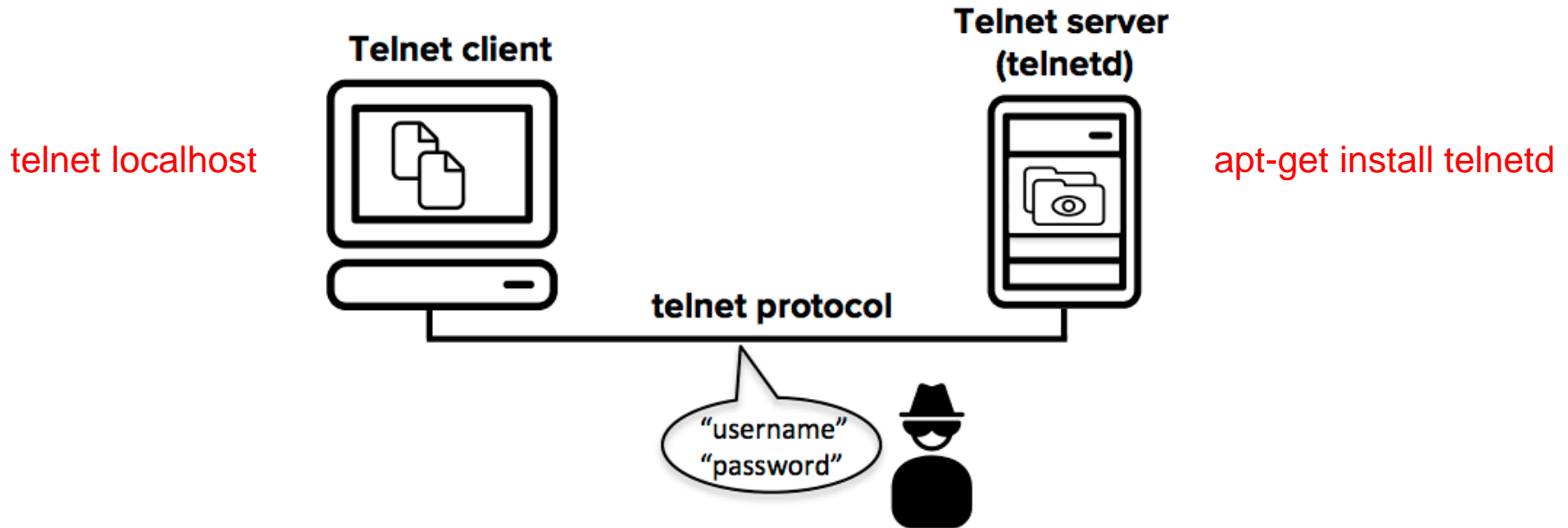
```
def ftp_upload(ftp_server, username, password, file_name):
    print ("Connecting to FTP server: %s" %ftp_server)
    ftp = ftplib.FTP(ftp_server)
    print ("Login to FTP server: user=%s" %username)
    ftp.login(username, password)
    ext = os.path.splitext(file_name)[1]
    if ext in (".txt", ".htm", ".html"):
        ftp.storlines("STOR " + file_name, open(file_name))
    else:
        ftp.storbinary("STOR " + file_name, open(file_name, "rb"), 1024)
    print ("Uploaded file: %s" %file_name)

if __name__ == '__main__':
    parser = argparse.ArgumentParser(description='FTP Server Upload Example')
    parser.add_argument('--ftp-server', action="store", dest="ftp_server",
default=LOCAL_FTP_SERVER)
    parser.add_argument('--file-name', action="store", dest="file_name", default=LOCAL_FILE)
    parser.add_argument('--username', action="store", dest="username", default=getpass.getuser())
    given_args = parser.parse_args()
    ftp_server, file_name, username = given_args.ftp_server, given_args.file_name,
given_args.username
    password = getpass.getpass(prompt="Enter you FTP password: ")
    username = 'zenhadi'
    ftp_upload(ftp_server, username, password, file_name)
```

```
ftplib.error_perm: 550 Permission denied.
```

Jika error dengan user root, bisa diganti user lain

TELNET Application



- Remote akses dengan telnet pada port 23
- Username dan password akan dikirim plain text sehingga mudah diamati oleh hacker.

Program

```
def run_telnet_session():
```

```
    user = input("Enter your remote account: ")
    # Comment out the above line and uncomment
    # the below line for Python 2.7.
    # user = raw_input("Enter your remote account: ")
```

```
    password = getpass.getpass()
```

```
    session = telnetlib.Telnet(HOST)
```

Telnet connection (control channel)

```
    session.read_until(b"login: ")
```

```
    session.write(user.encode('ascii') + b"\n")
```

Akses remote server

```
    if password:
```

```
        session.read_until(b"Password: ")
```

```
        session.write(password.encode('ascii') + b"\n")
```

```
    session.write(b"ls\n")
```

```
    session.write(b"exit\n")
```

```
    print (session.read_all())
```

Hasil

```
if __name__ == '__main__':
    run_telnet_session()
```

```
$ python 6_1_execute_remote_telnet_cmd.py
```

```
Enter your remote account: pradeeban
```

```
Password:
```

```
ls
```

```
exit
```

```
Last login: Tue Jun  6 22:39:44 CEST 2017 from localhost on pts/20
```

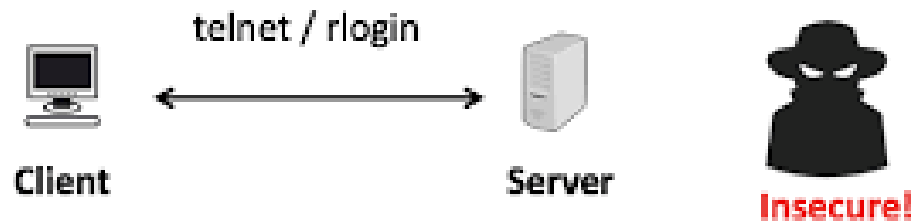
```
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.8.0-53-generic x86_64)
```

```
* Documentation: https://help.ubuntu.com
```

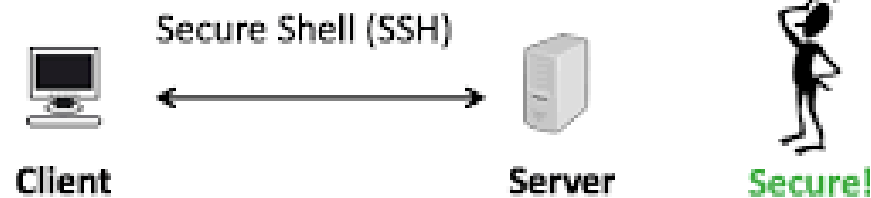
```
* Management: https://landscape.canonical.com
```

```
* Support: https://ubuntu.com/advantage
```

SSH Application



ssh
zenhadi@localhost



pip3 install paramiko
apt-get install ssh

- Remote akses dengan ssh pada port 22
- Username dan password akan dikirim secara aman sehingga tidak mudah diamati oleh hacker.
- Silahkan dicoba listing 6.2

Percobaan

- Cobalah listing 5.1 untuk browse data dari FTP server
- Cobalah listing 5.2 untuk upload file ke FTP Server
- Cobalah listing 6.1 untuk akses remote server
- Buatlah analisa, kesimpulan dari semua percobaan dan tugas