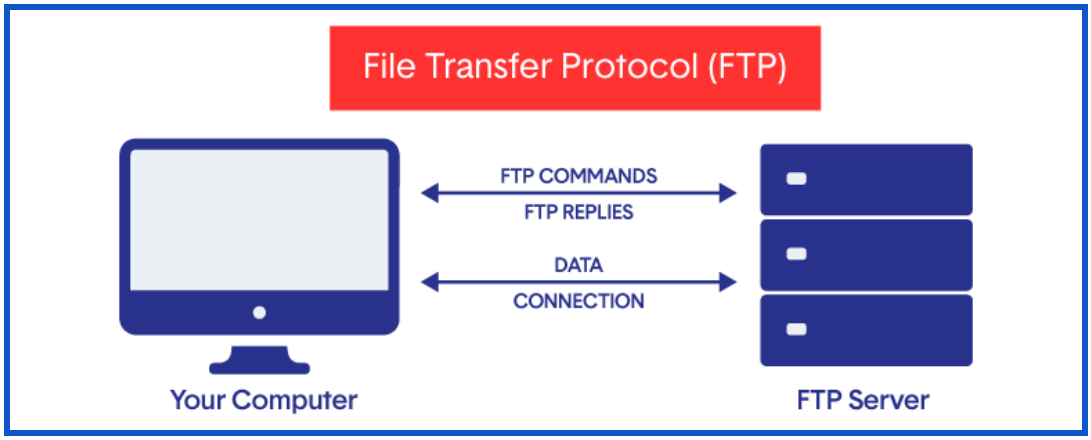
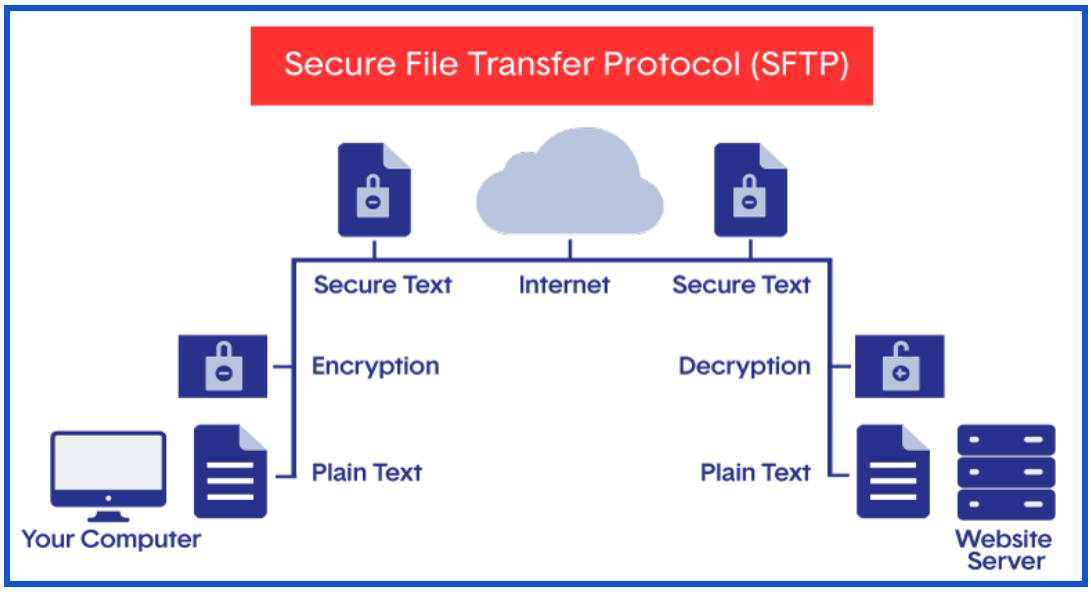
Wireshark HW 2.0 Analyzing FTP PacketsV(

OVERVIEW

File Transfer Protocol (FTP) is a protocol, or set of rules, used to exchange files over the Internet using an FTP client program. You can copy or move files from a server to a client (laptop, smartphone, etc.), and upload or transfer files from a client to a server. However, using this method is not secure. So your user name, password, and files are not encrypted, which can be intercepted by a threat actor. Instead, other protocols are used, such as **SFTP (FTP over SSH)** and **FTPS (FTP over SSL)** since it is secure and the information is not in plain text.

FTP vs. SFTP



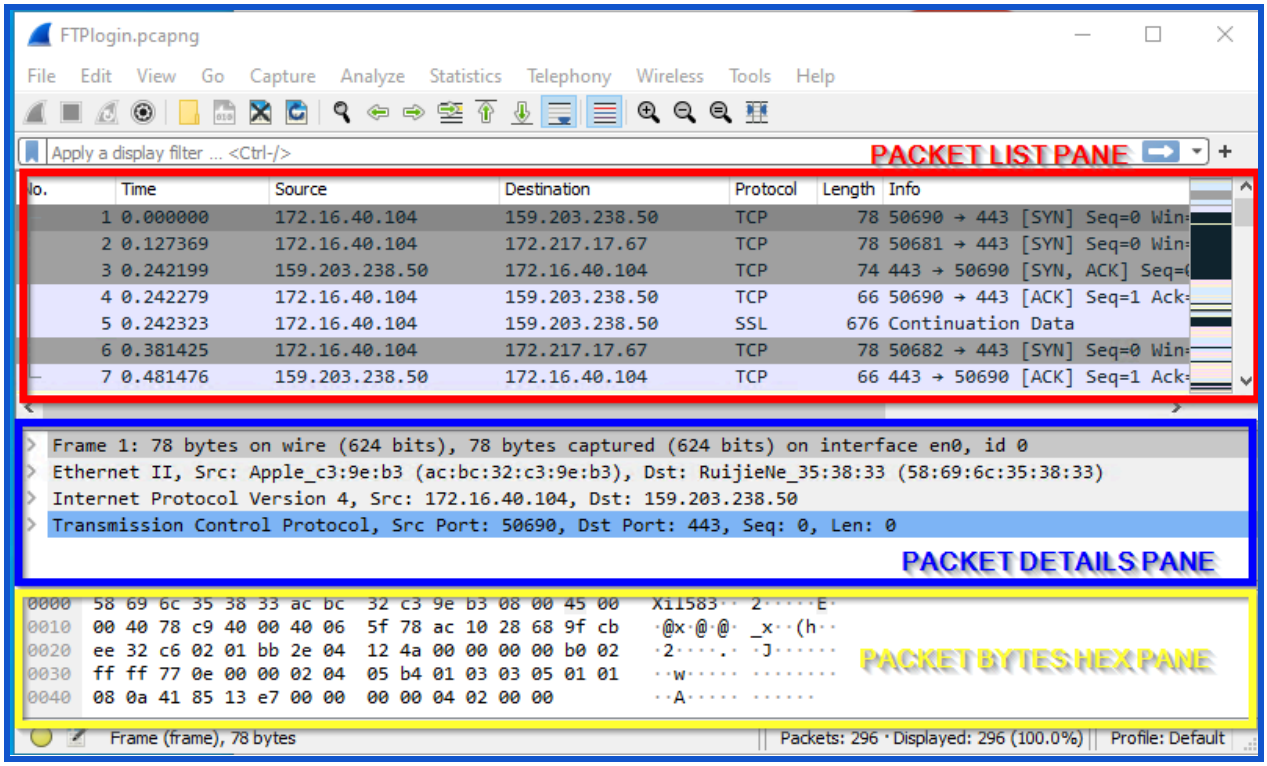


SCENARIO

At work, Sam has just been assigned a project. Recently, there was some activity on the company's network that was sent over FTP protocol. Knowing that this network is unsafe, it is Sam's job to discover exactly what delicate information was put at risk and then explain this information to the employees so they can keep their information safe moving forward.

OBJECTIVE

In this lab will take a closer look at the project Sam has been assigned. And use Wireshark to examine what was sent over FTP.



Steps

Download this file and double-click it to open it in Wireshark: FTPlogin.pcapng

Submission Process

Complete and answer the following questions and activities below. Submit an edited version of this document with the appended answers.

In the image above, we can see 7 packets in the **Packet List Pane**.

- How many different computers are involved in these packets?

Three

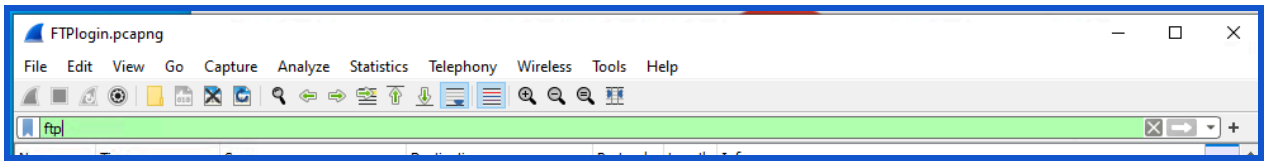
- How can you tell?

By looking at the IP addresses

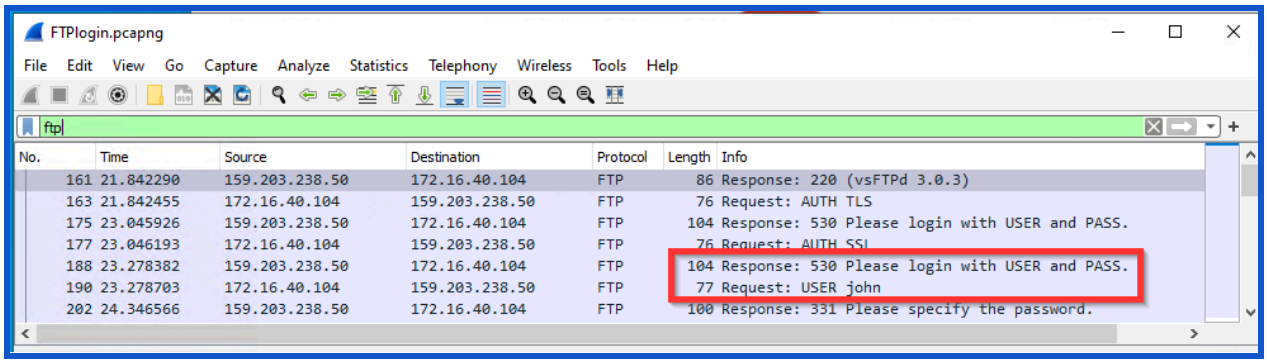
The FTP protocol that Sam's colleagues use is a very unsafe protocol because it sends information over the network without encryption (known as plain or clear text). To find out who used this protocol, we will analyze the PCAP file to find their username and password.

Follow the steps below to find this information:

1. In Wireshark, at the top, in the "Apply a display filter" box, type ftp and press the "Enter" key. Wireshark filters the packets, showing only the packets that use File Transfer Protocol (FTP).



2. On the right side, under the **"Info"** column, you can see the login process for a user named "john".



John's Password

Now that we know the username “John” by looking in the info category of these packets.

- Can you find the Password too?

Yes

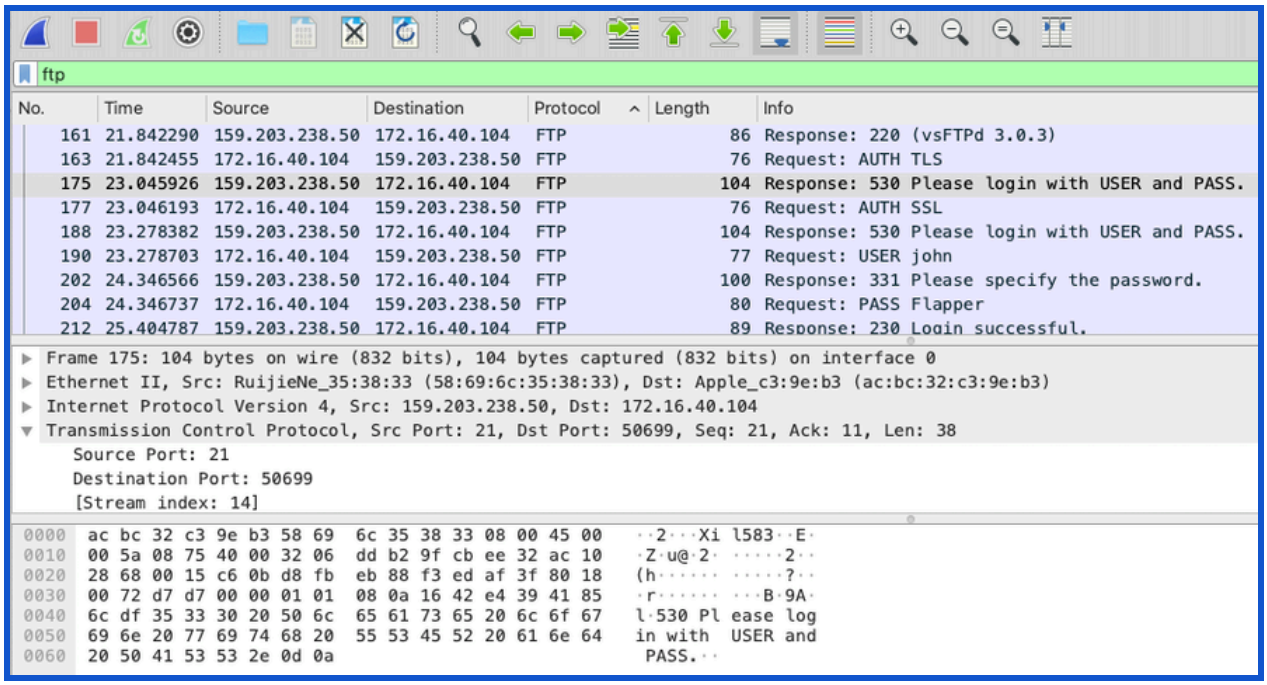
- What is John’s password ?

Flapper

Explain, in your own words, why someone should not use an **FTP Server**

FTP was not built to be secure. It is generally considered to be an insecure protocol because it relies on clear-text usernames and passwords for authentication and does not use encryption. Data sent via FTP is vulnerable to sniffing, spoofing, and brute force attacks, among other basic attack methods.

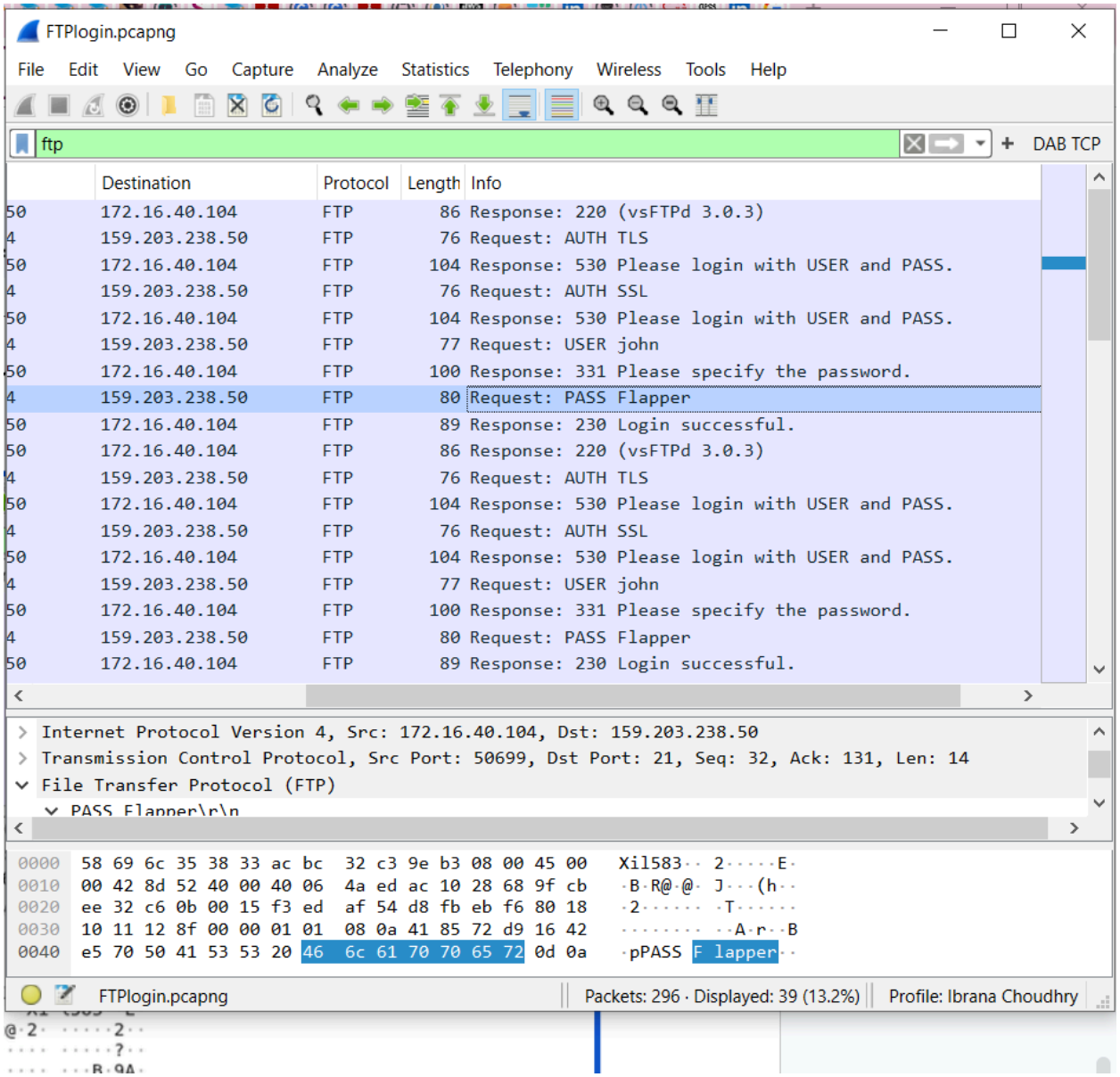
Sam can perform a packet capture to notice that someone used FTP to log into a server to upload and download several files. Knowing how insecure this protocol is, Sam decided to identify who performed this action so they could provide them with feedback on proper cybersecurity procedures and rules. Use the image below to respond to the question regarding this issue.



FTP, like all other protocols, has a port number that belongs to it. A port number identifies the process or service running on a system.

Using the image above, identify the port number for the FTP protocol:

21


FTPlogin.pcapng
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
ftp
DAB TCP
Destination Protocol Length Info
50 172.16.40.104 FTP 86 Response: 220 (vsFTPd 3.0.3)
4 159.203.238.50 FTP 76 Request: AUTH TLS
50 172.16.40.104 FTP 104 Response: 530 Please login with USER and PASS.
4 159.203.238.50 FTP 76 Request: AUTH SSL
50 172.16.40.104 FTP 104 Response: 530 Please login with USER and PASS.
4 159.203.238.50 FTP 77 Request: USER john
50 172.16.40.104 FTP 100 Response: 331 Please specify the password.
4 159.203.238.50 FTP 80 Request: PASS Flapper
50 172.16.40.104 FTP 89 Response: 230 Login successful.
50 172.16.40.104 FTP 86 Response: 220 (vsFTPd 3.0.3)
4 159.203.238.50 FTP 76 Request: AUTH TLS
50 172.16.40.104 FTP 104 Response: 530 Please login with USER and PASS.
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50 172.16.40.104 FTP 100 Response: 331 Please specify the password.
4 159.203.238.50 FTP 80 Request: PASS Flapper
50 172.16.40.104 FTP 89 Response: 230 Login successful.
Internet Protocol Version 4, Src: 172.16.40.104, Dst: 159.203.238.50
Transmission Control Protocol, Src Port: 50699, Dst Port: 21, Seq: 32, Ack: 131, Len: 14
File Transfer Protocol (FTP)
PASS Flapper\r\n
0000 58 69 6c 35 38 33 ac bc 32 c3 9e b3 08 00 45 00 Xil583·· 2·····E·
0010 00 42 8d 52 40 00 40 06 4a ed ac 10 28 68 9f cb ·B·R@·@· J···(h··
0020 ee 32 c6 0b 00 15 f3 ed af 54 d8 fb eb f6 80 18 ·2····· ·T·····
0030 10 11 12 8f 00 00 01 01 08 0a 41 85 72 d9 16 42 ····· ··A·r··B
0040 e5 70 50 41 53 53 20 46 6c 61 70 70 65 72 0d 0a ·pPASS F lapper··
FTPlogin.pcapng
Packets: 296 · Displayed: 39 (13.2%)
Profile: Ibrana Choudhry

FTPlogin.pcapng

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

ftp

DAB TCP

No.	Time	Source	Destination	Protocol	Length	Info
161	2018-05-11 03:45:…	159.203.238.50	172.16.40.104	FTP	86	Response: 220
163	2018-05-11 03:45:…	172.16.40.104	159.203.238.50	FTP	76	Request: AUTH
175	2018-05-11 03:45:…	159.203.238.50	172.16.40.104	FTP	104	Response: 530
177	2018-05-11 03:45:…	172.16.40.104	159.203.238.50	FTP	76	Request: AUTH
188	2018-05-11 03:45:…	159.203.238.50	172.16.40.104	FTP	104	Response: 530
190	2018-05-11 03:45:…	172.16.40.104	159.203.238.50	FTP	77	Request: USER
202	2018-05-11 03:45:…	159.203.238.50	172.16.40.104	FTP	100	Response: 331
204	2018-05-11 03:45:…	172.16.40.104	159.203.238.50	FTP	80	Request: PASS
212	2018-05-11 03:45:…	159.203.238.50	172.16.40.104	FTP	89	Response: 230
218	2018-05-11 03:45:…	159.203.238.50	172.16.40.104	FTP	86	Response: 220
220	2018-05-11 03:45:…	172.16.40.104	159.203.238.50	FTP	76	Request: AUTH
222	2018-05-11 03:45:…	159.203.238.50	172.16.40.104	FTP	104	Response: 530
224	2018-05-11 03:45:…	172.16.40.104	159.203.238.50	FTP	76	Request: AUTH
225	2018-05-11 03:45:…	159.203.238.50	172.16.40.104	FTP	104	Response: 530
227	2018-05-11 03:45:…	172.16.40.104	159.203.238.50	FTP	77	Request: USER
228	2018-05-11 03:45:…	159.203.238.50	172.16.40.104	FTP	100	Response: 331
230	2018-05-11 03:45:…	172.16.40.104	159.203.238.50	FTP	80	Request: PASS
232	2018-05-11 03:45:…	159.203.238.50	172.16.40.104	FTP	89	Response: 230

```
> Internet Protocol Version 4, Src: 159.203.238.50, Dst: 172.16.40.104
v Transmission Control Protocol, Src Port: 21, Dst Port: 50699, Seq: 21, Ack: 11, Len: 38
    Source Port: 21
    Destination Port: 50699
    [Stream index: 14]
  > [Conversation completeness: Complete, WITH DATA (63)]
```

```
0000  ac bc 32 c3 9e b3 58 69  6c 35 38 33 08 00 45 00   ··2···Xi l583··E·
0010  00 5a 08 75 40 00 32 06  dd b2 9f cb ee 32 ac 10   ·Z·u@·2· ·····2··
0020  28 68 00 15 c6 0b d8 fb  eb 88 f3 ed af 3f 80 18   (h······ ·····?··
```

FTPlogin.pcapng | Packets: 296 · Displayed: 39 (13.2%) | Profile: Ibrana Choudhry