

Port_21 Interfaces (FTP Session Sequence Diagram)

Internet		FTP Client PC				EventHelix.com/EventStudio 2.5	
DNS	FTP Server		FTP Client			Console	
Port 53	Port 20	Port 21	1030	1175	5001	5002	User

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This sequence diagram was generated with EventStudio 2.5 (<http://www.EventHelix.com/EventStudio>).

Here we explore the sequence of interactions in a typical FTP (File Transfer Protocol) session. The example here illustrates the use of multiple TCP connections by FTP. We will cover how FTP establishes a telnet TCP connection (TCP Port 21) to control the overall flow of the FTP transfer. Then we examine the use of TCP Port 21 for establishing TCP connections for directory transfer and file retrieval.

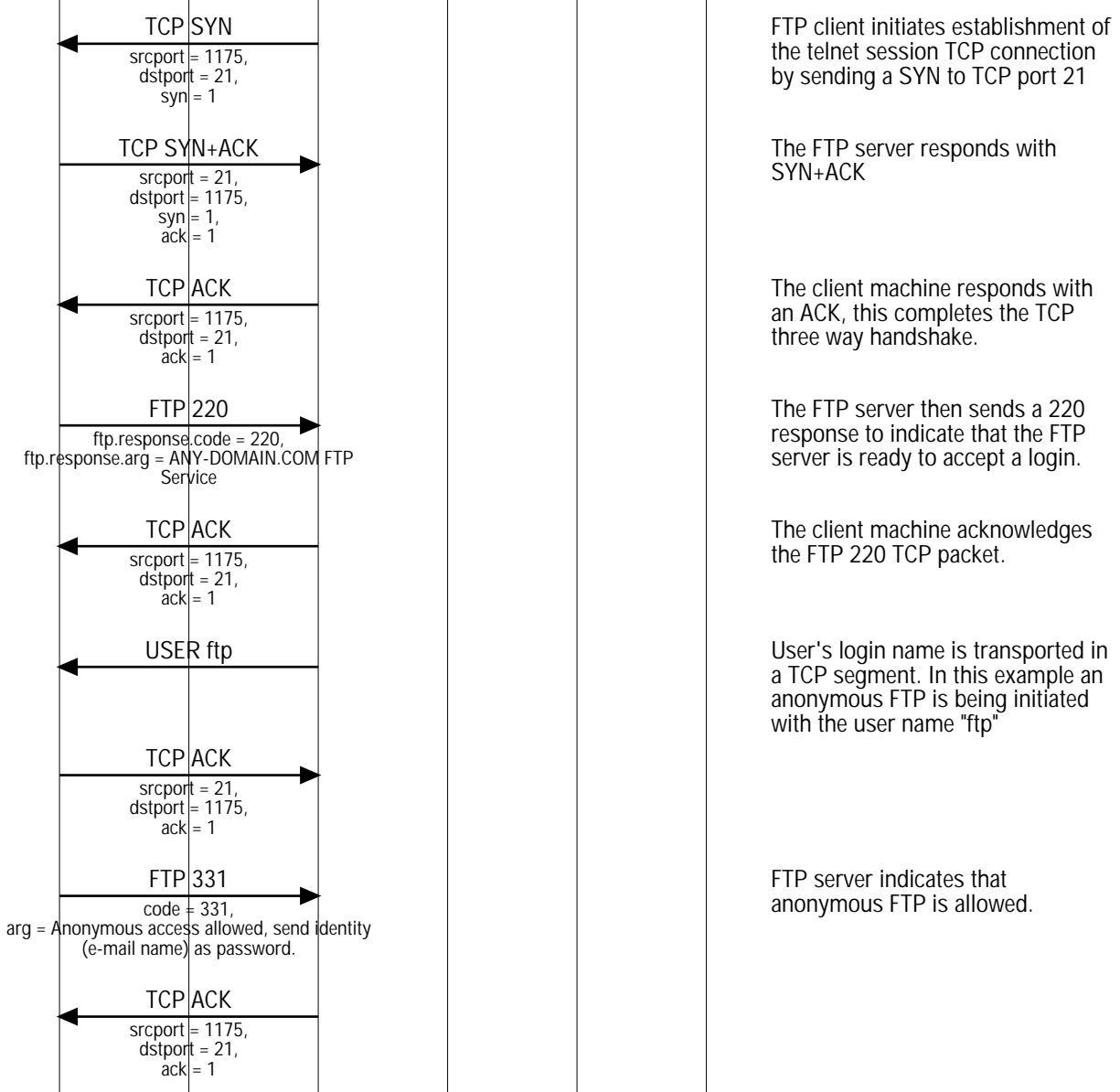
The complete sequence diagram can be divided into the following steps:

- DNS Query to obtain the IP address for the FTP Server
- FTP Telnet connection setup and login. (USER and PASS commands)
- Obtaining a directory listing (PORT and LIST command)
- Changing directory (CWD command)
- Downloading a file using FTP get (PORT and RETR command)

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DNS Query to obtain the IP address for the FTP Server.

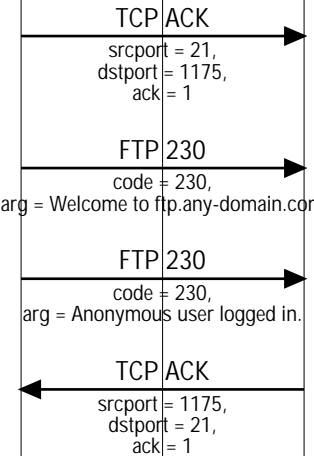
FTP Telnet connection setup and login. (USER and PASS commands).



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PASS abc@any-domain.com



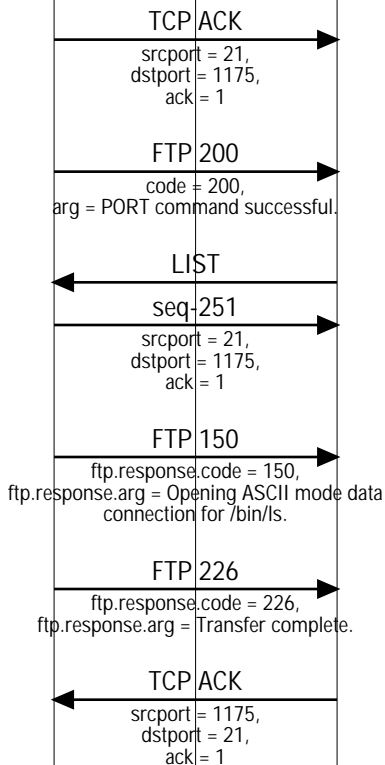
User enters his or her e-mail address as the password. This password is being transported by this TCP segment.

Welcome message after login.

User login notification.

Obtaining a directory listing (PORT and LIST command).

PORT 192.168.0.2 Port 5001



FTP client provides port number information.

FTP server positively acknowledges the PORT command.

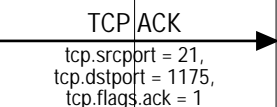
User requests a directory listing.

FTP server notifies the client that it is about to transfer the requested listing.

The directory listing completion is signaled by this TCP segment.

Changing directory (CWD command).

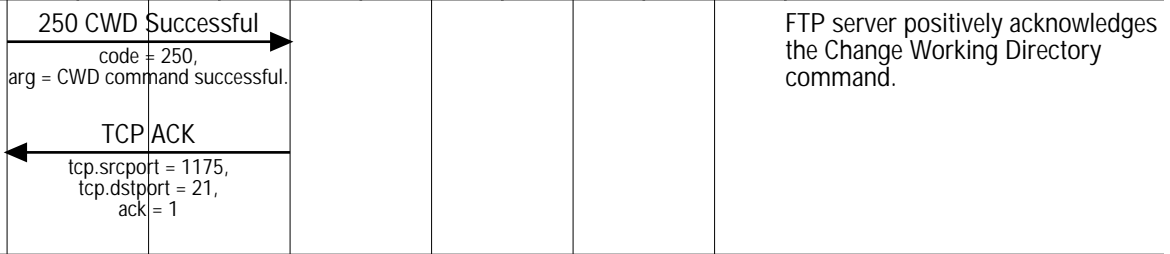
CWD <directory-name>



User issues the change working directory command.

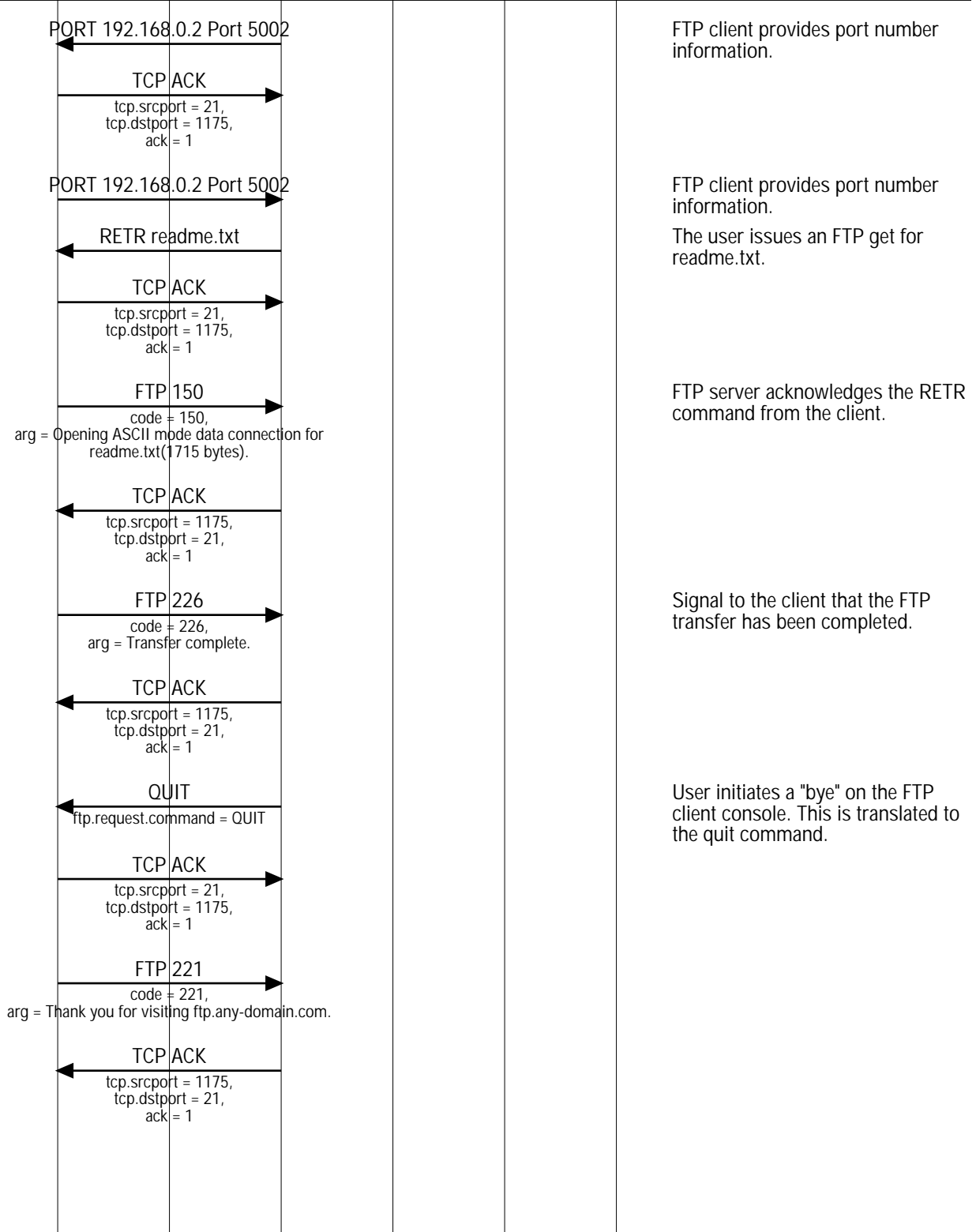
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FTP server positively acknowledges the Change Working Directory command.

Downloading a file using FTP get (PORT and RETR command).



FTP client provides port number information.

FTP client provides port number information. The user issues an FTP get for readme.txt.

FTP server acknowledges the RETR command from the client.

Signal to the client that the FTP transfer has been completed.

User initiates a "bye" on the FTP client console. This is translated to the quit command.

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TCP FIN

tcp.srcport = 21,
tcp.dstport = 1175,
ack = 1,
fin = 1

TCP connection release initiated.

