Linnéuniversitetet
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Report

Assignment 3

1DV701

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Semester: Spring 2020
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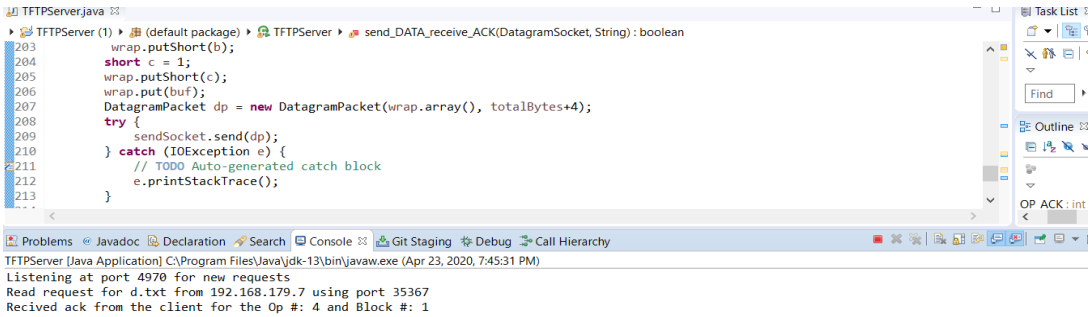
Contents

1 Problem 1

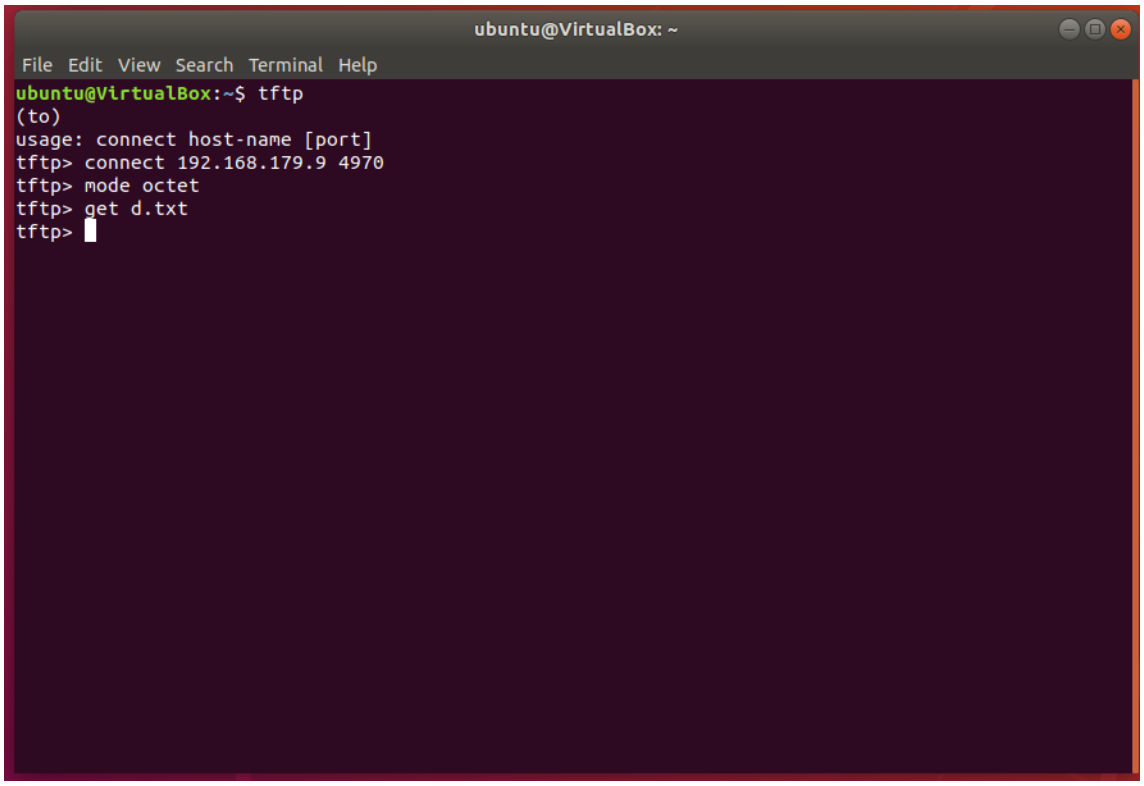
The following screenshots show the TFTP server on my windows laptop and build in client on ubuntu on my virtual machine.

In the first screenshot, it shows that the server successfully read the client request and sent the data that is requested.

In the second screenshot, it shows the client successfully received the file it requested.



TFTP Server Screenshot



TFTP Client Screenshot

1.1 Discussion

The first socket is only to receive connections from the clients and it will always be ready for new connections.
The sendSocket is a thread and for each client, the main thread will assign a new thread with sendSocket for that client. Therefore the server can serve concurrent clients without a problem.

2 Problem 2

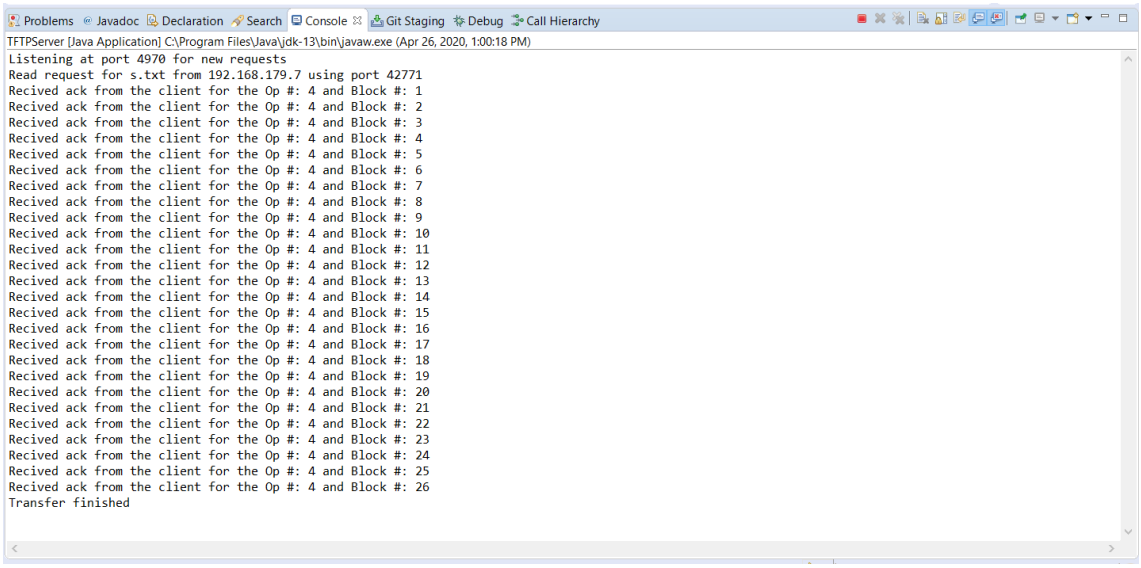
In the following screenshots, the server receives both read and write requests from the client and the file size is bigger than 516 bytes in both cases.

The first screenshot shows what happens when the client sends a read request for a file larger than 516 bytes, the server sends all data and Ack packets for each data packet.

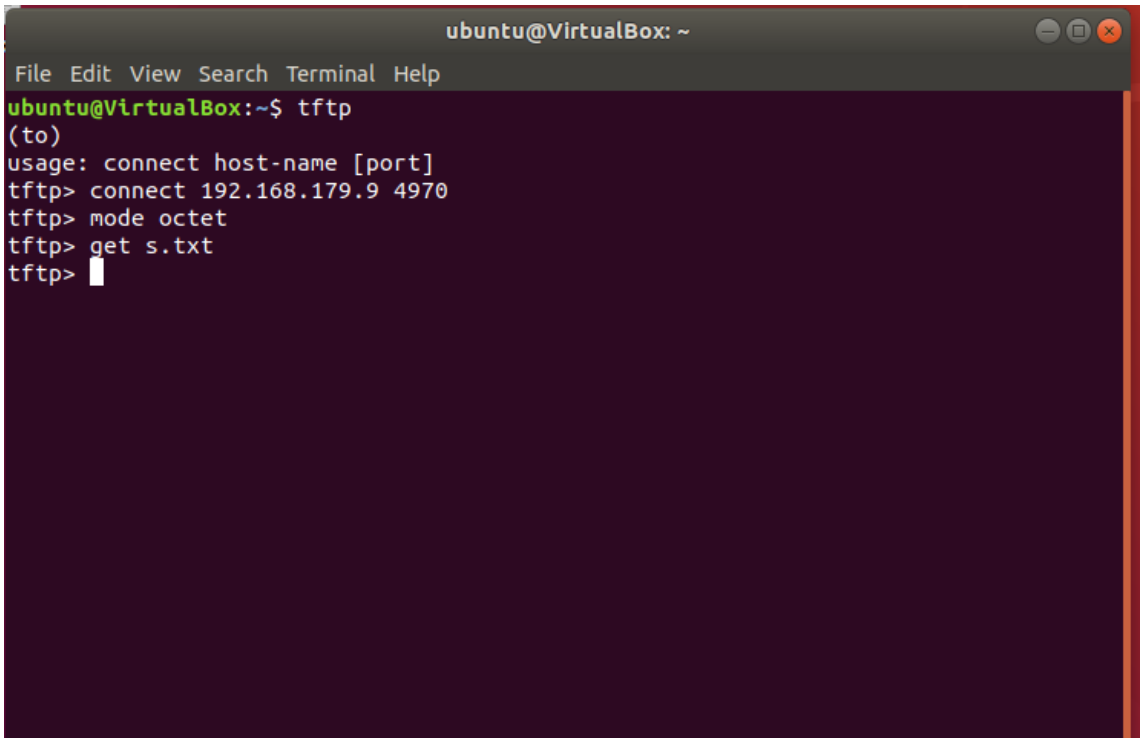
The second screenshot shows that the client received the file successfully

The third screenshot shows a write request from the client for a file larger than 516 bytes and the server received data packets and sent Ack packets for each data packets.

The fourth screenshot shows the client successfully made a writ request.

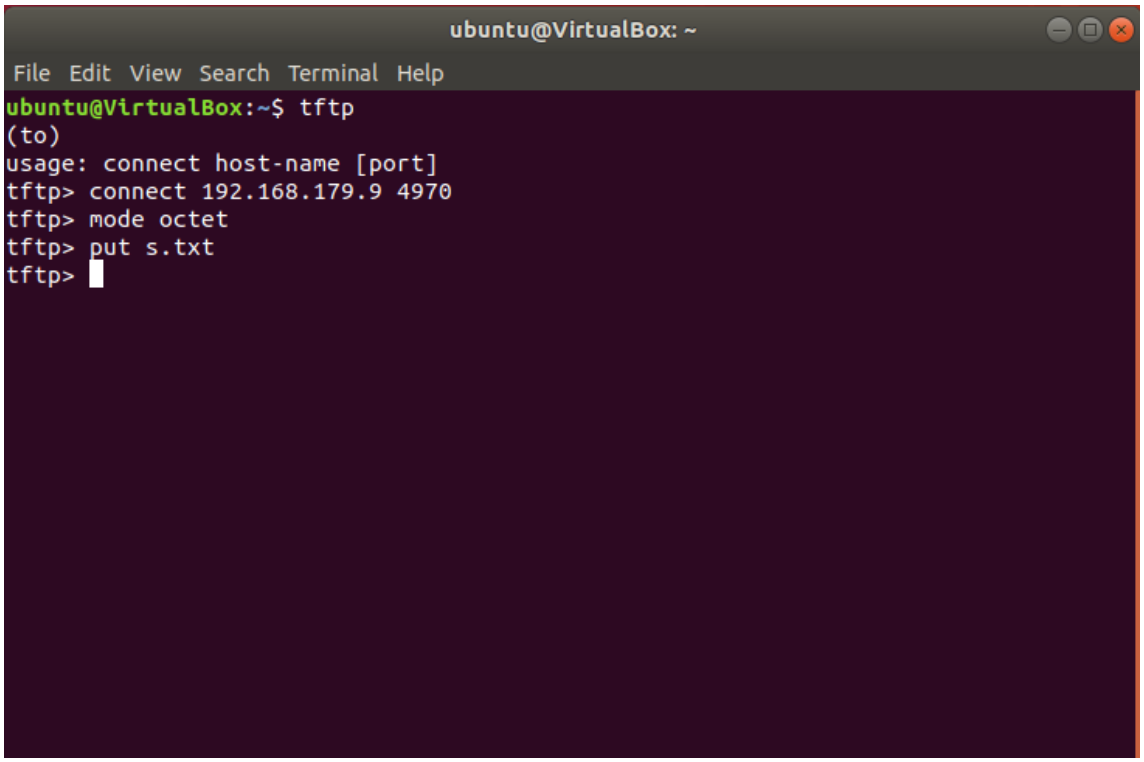


TFTP Server Read Request



TFTP Client Read Request

TFTP Server Write Request



TFTP Client Write Request

2.1 Discussion

I tested timeout and retransmission by setting the setSoTimeout to 1 millisecond, by doing that retransmission happened.

2.2 VG 1

Place your screenshots here

2.2.1 Discussion

3 Problem 3

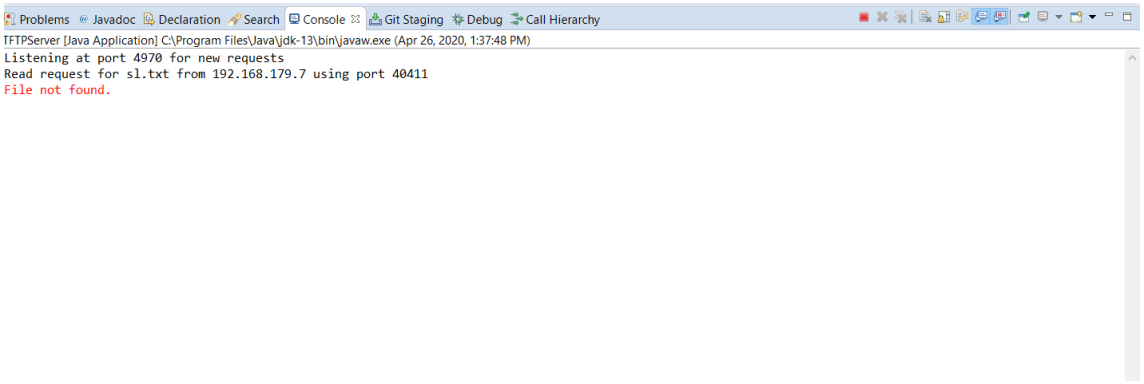
Error Code 0 Not defined, see error message (if any):

I used this error code to happen when the client sends an invalid request to the server
The following screenshot shows the implementation of the error code.

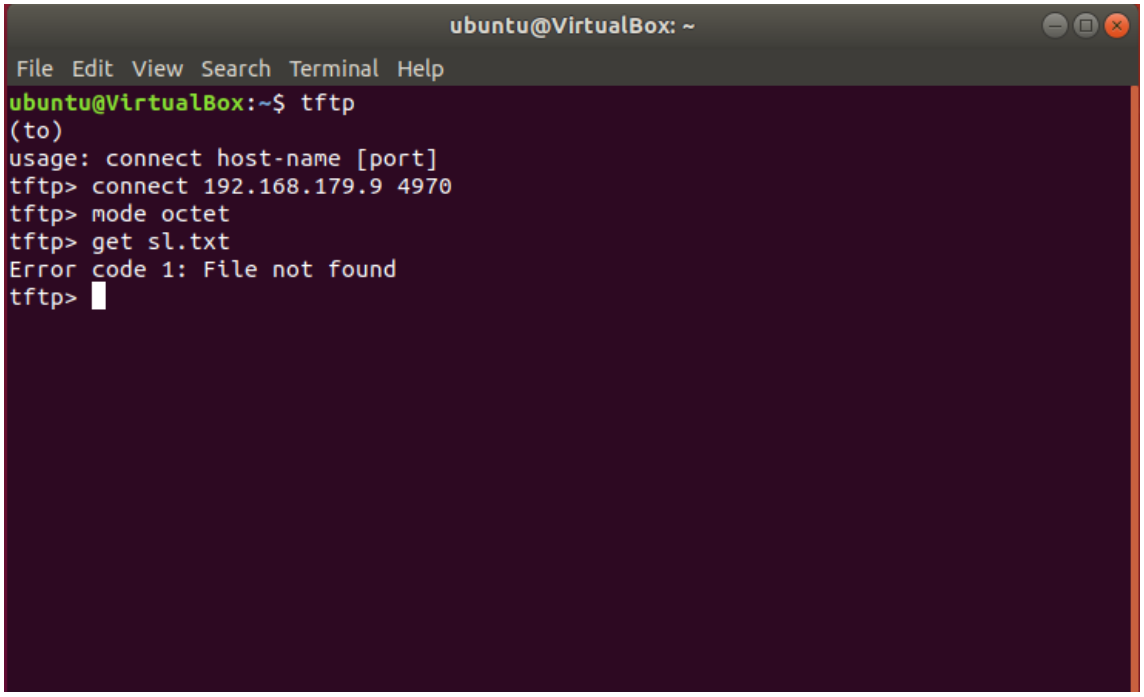
```
private void HandleRQ(DatagramSocket sendSocket, String requestedFile, int opcode)
{
    if(opcode == OP_RRQ)
    {
        // See "TFTP Formats" in TFTP specification for the DATA and ACK packet contents

        boolean result = send_DATA_receive_ACK(sendSocket, requestedFile);


    }
    else if (opcode == OP_WRQ)
    {

        boolean result = receive_DATA_send_ACK(sendSocket, requestedFile);

    }
    else
    {
        System.err.println("Invalid request. Sending an error packet.");
        // See "TFTP Formats" in TFTP specification for the ERROR packet contents
        String err = "Not defined, not valid request";
        send_ERR(sendSocket, 0, err);
        return;
    }
}
```

Error Code 1 File Not Found:

The following screenshots show that the client tries to make a read request for a file that not exist the server responds with an error packet of opcode 1.



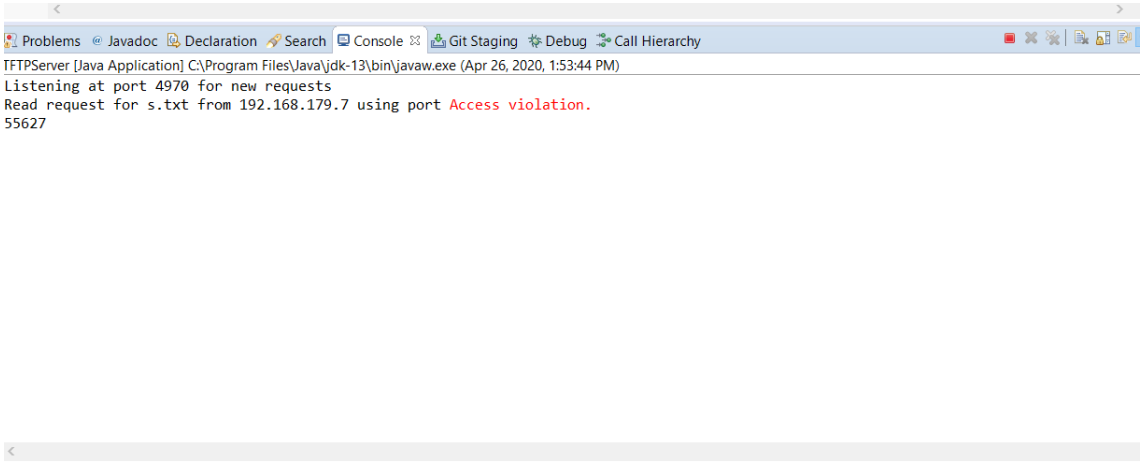
TFTP Server Sending Error Packet File Not Found



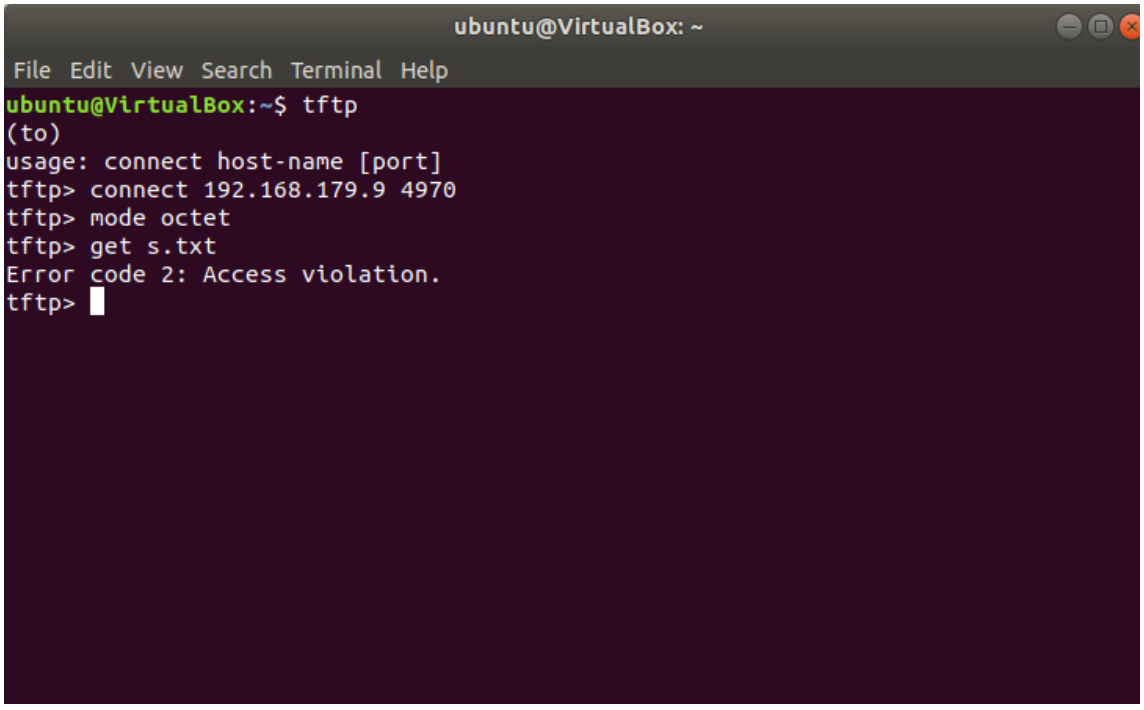
TFTP Client Receiving Error Packet File Not Found

Error Code 2 Access Violation:

The following screenshots show that the client tries to make a read request for a file that has security issues(I changed the file's permissions), and the server responds with an error packet of opcode 2.



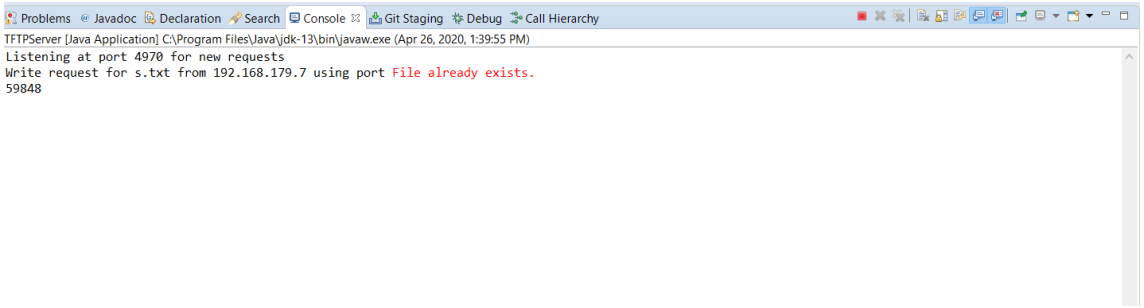
TFTP Server Sending Error Packet Access Violation



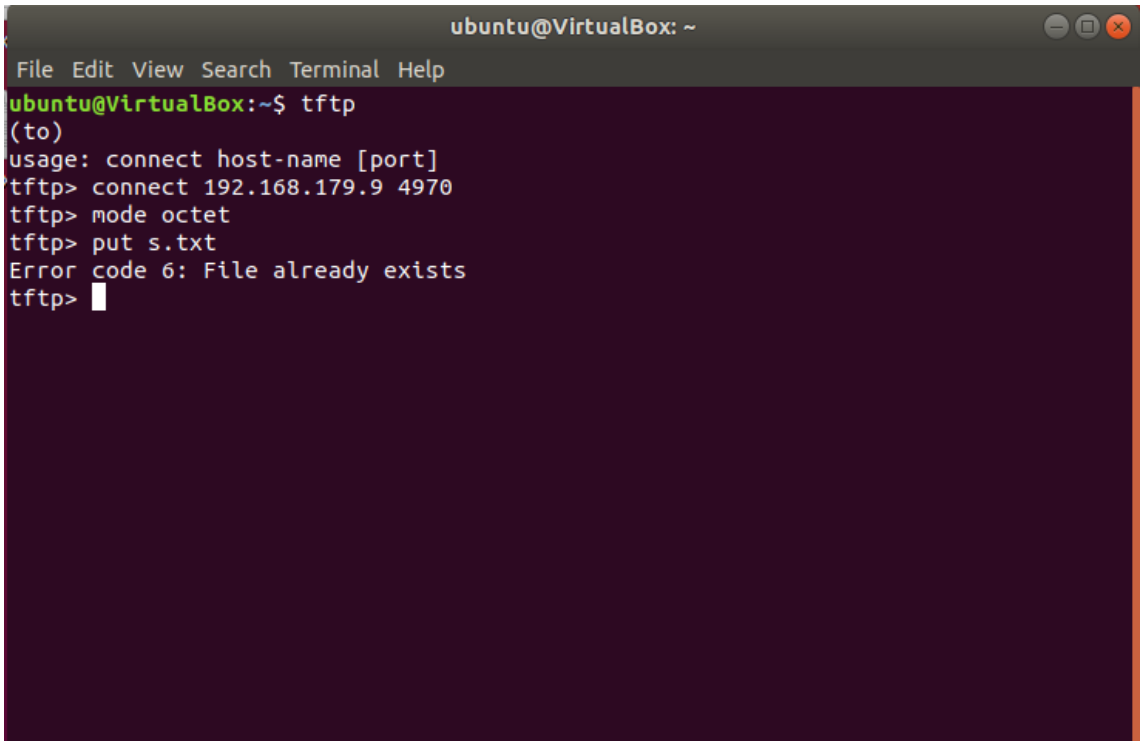
TFTP Client Receiving Error Packet Access Violation

Error Code 2 File Already Exists:

The following screenshots show that the client tries to make a write request for a file that already exists, and the server responds with an error packet of opcode 6.



TFTP Server Sending Error Packet File Already Exists



TFTP Client Receiving Error Packet File Already Exists

3.1 Discussion

3.2 VG 2

Place your screenshots here

3.2.1 Discussion