

Figure 1bad command line arguments

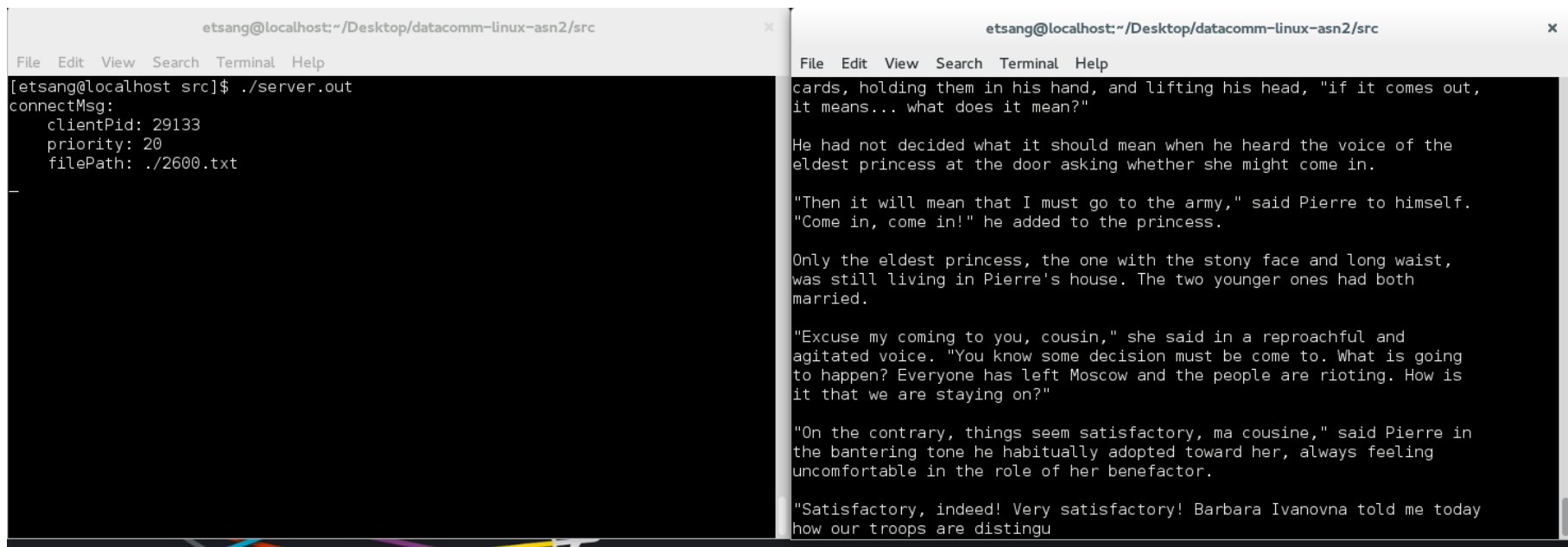


Figure 2it works with good command line arguments

etsang@localhost:~/Desktop/datacomm-linux-asn2/src

File Edit View Search Terminal Help

[etsang@localhost src]\$./server.out
connectMsg:
 clientPid: 29201
 priority: 20
 filePath: ./2600.txt
^C[etsang@localhost src]\$ _

etsang@localhost:~/Desktop/datacomm-linux-asn2/src

File Edit View Search Terminal Help

msg_rcv failed: 22
merriest, and mosn an old dressing gown.

Moscow society, from the old women down to the children, received Pierre
like a long-expected guest whose place was always ready awaiting him.
For Moscow society Pierre was the nicest, kindest, most intellectual,
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Figure 3[ctrl+c] on server causes issue on client

The image displays two side-by-side terminal windows. The left window, titled 'etsang@localhost:~/Desktop/datacomm-linux-asn2/src', shows a command prompt where the user has executed './server.out'. The output indicates a successful connection with the following details: clientPid: 29250, priority: 20, and filePath: ./2600.txt. The prompt then returns to the user. The right window, titled 'etsang@localhost:~/Desktop/datacomm-linux-asn2/src', shows the content of the file '2600.txt'. It begins with a quote from Natasha in 'Anna Karenina', followed by the chapter title 'CHAPTER XIII', and then a paragraph of text about Nicholas and the countess, which is partially cut off at the bottom of the window.

```
etsang@localhost:~/Desktop/datacomm-linux-asn2/src
File Edit View Search Terminal Help

[etsang@localhost src]$ ./server.out
connectMsg:
  clientPid: 29250
  priority: 20
  filePath: ./2600.txt
^C[etsang@localhost src]$ _
```

```
etsang@localhost:~/Desktop/datacomm-linux-asn2/src
File Edit View Search Terminal Help

"After that, I could not make out what there was; something blue and
red..."

"Sonya! When will he come back? When shall I see him! O, God, how afraid
I am for him and for myself and about everything!..." Natasha began, and
without replying to Sonya's words of comfort she got into bed, and long
after her candle was out lay open-eyed and motionless, gazing at the
moonlight through the frosty windowpanes.

CHAPTER XIII

Soon after the Christmas holidays Nicholas told his mother of his love
for Sonya and of his firm resolve to marry her. The countess, who had
long noticed what was going on between them and was expecting this
msg_recv failed: 22
declaration, listened to him in silence and then told after the Christmas holidays
  Nicholas told his mother of his love
for Sonya and of his firm resolve to marry her. The countess, who had
long noticed what was going on between them and was expecting this
declaration, listened to him in silence and then told[etsang@localhost src]$
```

Figure 4[ctrl+c] on server no longer makes client go crazy

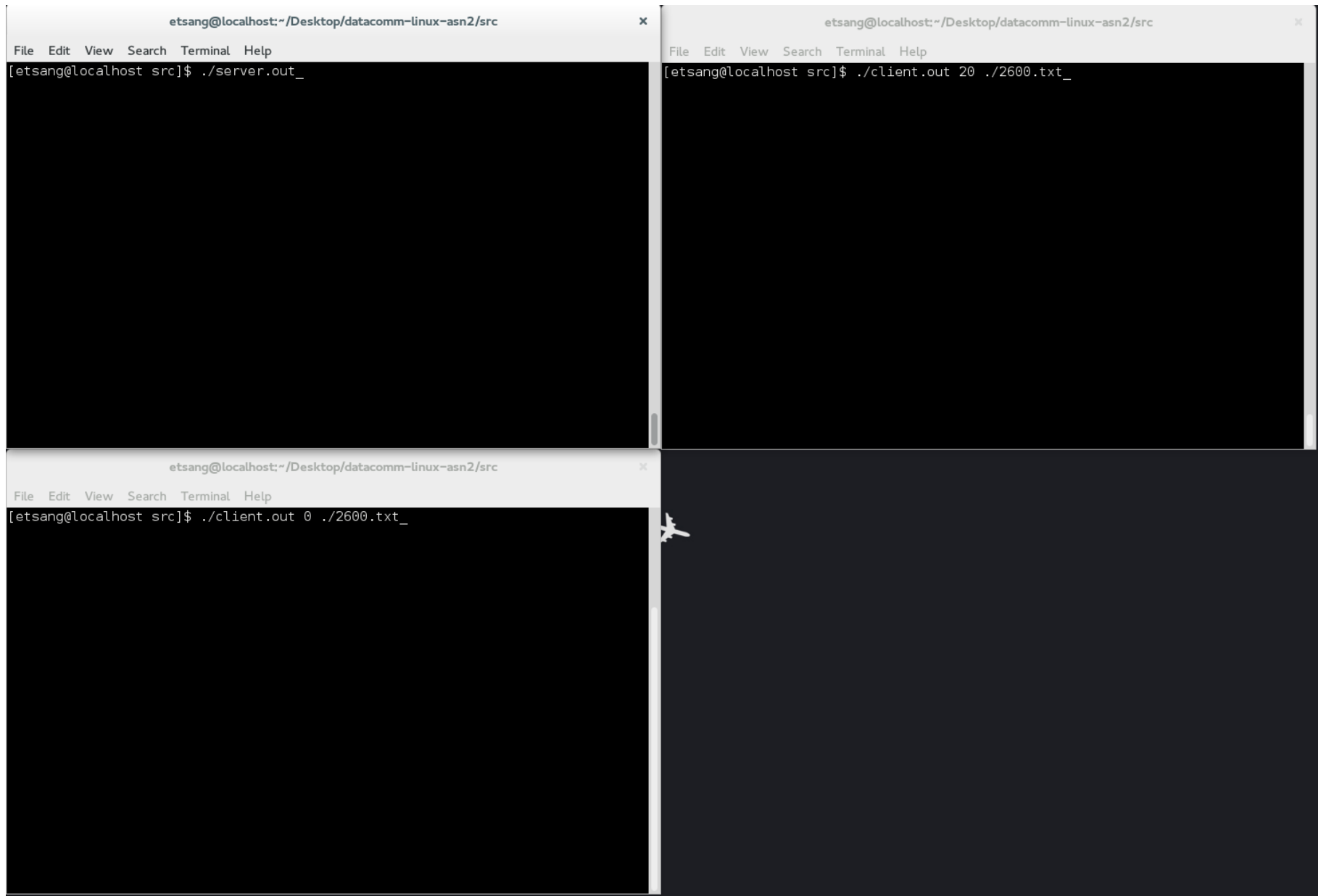


Figure 7before priority test

```
etsang@localhost:~/Desktop/datacomm-linux-asn2/src
File Edit View Search Terminal Help
[etsang@localhost src]$ ./server.out
connectMsg:
  clientPid: 29377
  priority: 20
  filePath: ./2600.txt
connectMsg:
  clientPid: 29380
  priority: 0
  filePath: ./2600.txt
_
```

```
etsang@localhost:~/Desktop/datacomm-linux-asn2/src
File Edit View Search Terminal Help
generally incomprehensible to us, is but a manifestation of His infinite
love for His creatures. Perhaps, I often think, she was too angelically
innocent to have the strength to perform all a mother's duties. As a
young wife she was irreproachable; perhaps she could not have been so as
a mother. As it is, not only has she left us, and particularly Prince
Andrew, with the purest regrets and memories, but probably she will
there receive a place I dare not hope for myself. But not to speak of
her alone, that early and terrible death has had the most beneficent
influence on me and on my brother in spite of all our grief. Then, at
the moment of our loss, these thoughts could not occur to me; I should
then have dismissed them with horror, but now they are very clear and
certain. I write all this to you, dear friend, only to convince you of
the Gospel truth which has become for me a principle of life: not a
single hair of our heads will fall without His will. And His will is
governed only by infinite love for us, and so whatever befalls us is for
our good.

You ask whether we shall spend next winter in Moscow. In spite of my
wish to see you, I do not think so and do not want to do so. You will be
surprised to hear that the reason for this is Buonaparte! The case is
this: my father's health is growing noticeably worse, he cannot stand
any contradiction and is becoming irritable. This irritability is, as
you know, chiefly directed to political questions. He cannot endure the
notion that Buonaparte is negotiating on equal terms with a_
```

```
etsang@localhost:~/Desktop/datacomm-linux-asn2/src
File Edit View Search Terminal Help
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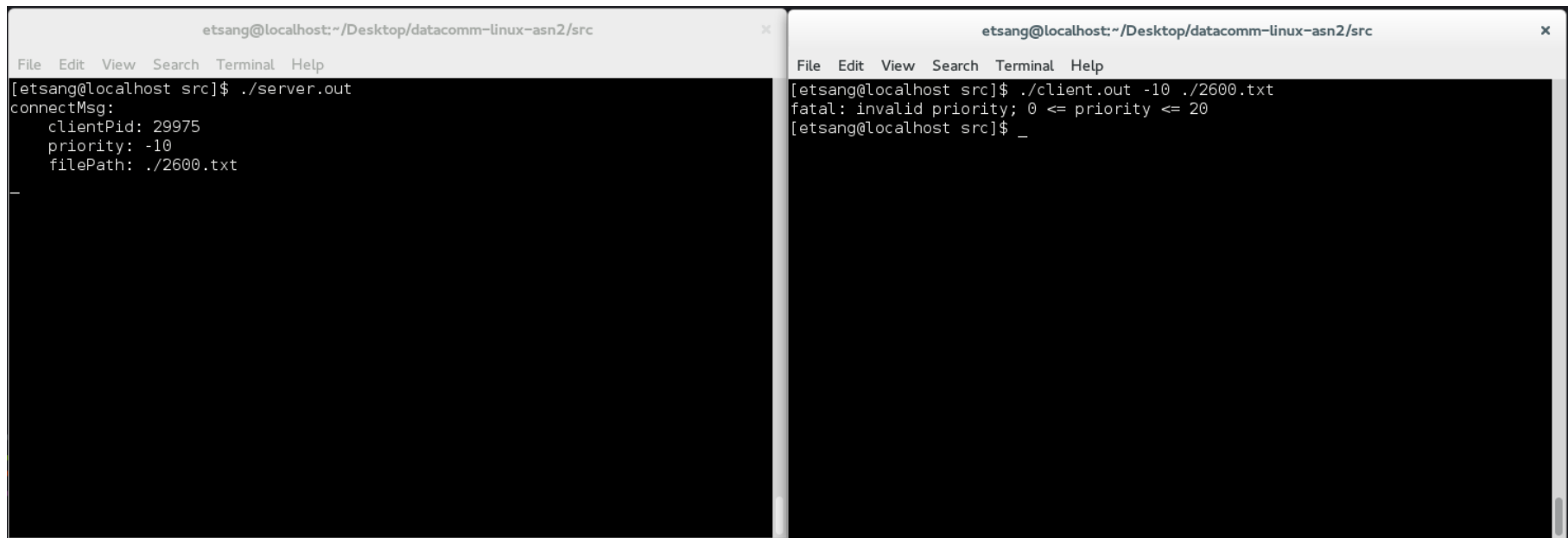
Most people start at our Web site which has the main PG search facility:

http://www.gutenberg.org

This Web site includes information about Project Gutenberg-tm, including
how to make donations to the Project Gutenberg Literary Archive
Foundation, how to help produce our new eBooks, and how to subscribe to
our email newsletter to hear about new eBooks.
[etsang@localhost src]$ _
```

Figure 8

priority 0 finishes first, as expected



```
etsang@localhost:~/Desktop/datacomm-linux-asn2/src
File Edit View Search Terminal Help
[etsang@localhost src]$ ./server.out
connectMsg:
  clientPid: 29975
  priority: -10
  filePath: ./2600.txt
_
```

```
etsang@localhost:~/Desktop/datacomm-linux-asn2/src
File Edit View Search Terminal Help
[etsang@localhost src]$ ./client.out -10 ./2600.txt
fatal: invalid priority; 0 <= priority <= 20
[etsang@localhost src]$ _
```

Figure 9priority error checking is fixed

Test #	Test procedure / description	Expected Outcome	Actual Outcome & Remarks	Pass / Fail
0	1. Start the server with <code>"./server.out"</code> 2. Start the client with <code>"./client.out"</code>	Server & client should start	Same as expected; I forgot to provide command line arguments to the client...the usage message reminded me	Pass; figure 1
1	1. Start the server with <code>"./server.out"</code> 2. Start the client with <code>"./client.out 20 ./2600.txt"</code>	Server and client should start, and the contents of 2600.txt should scroll on the screen	Same as expected	Pass; figure 2
2	1. Start the server with <code>"./server.out"</code> 2. Start the client with <code>"./client.out 20 ./2600.txt"</code> 3. do [ctrl+c] on the server	Server and client should start, and the contents of 2600.txt should scroll on the screen When [ctrl+c] is pressed, the client should exit, and so should the server	Server ended, and removed its message queue, but client kept printing the last message it got over and over again; see bug 0	Fail; figure 3
3	Same as above	Same as above	Same as expected	Pass; figure 4
4	1. Start the server with <code>"./server.out"</code> 2. Start the client with <code>"./client.out 20 ./2600.txt"</code> 3. do [ctrl+c] on the client	Server and client should start, and the contents of 2600.txt should scroll on the screen When [ctrl+c] is pressed, the client should exit, but the server should not.	Same as expected, but i found a bug; see bug 1	Yes; figure 5
5	Procedure from bug 1	Second client should display text scrolling when executed	Same as expected	Yes; figure 6
6	1. Start the server with <code>"./server.out"</code> 2. Start the client with <code>"./client.out 20 ./2600.txt"</code> 3. Start the another client with <code>"./client.out"</code>	The client process started with priority 20 should finish later even though it was started first	Same as expected	Yes; figure 7 & 8

Test #	Test procedure / description	Expected Outcome	Actual Outcome & Remarks	Pass / Fail
	0 ./2600.txt"			
7	1. Start the server with "./server.out" 2. Start the client with "./client.out 20 ./2600.txt" 3. Start the another client with "./client.out - 20 ./2600.txt"	The client process started with priority -20 should finish first even though it was started last	Got an unexpected "permission denied" message; see bug 3	Fail
8	Same as test 7	The client process should print out that the priority range should only be between 0 or 20, inclusive	Same as expected	Pass; figure 9

Bug #	Steps to reproduce & effect	Cause	How it was resolved	Solved
0	<u>Procedures</u> Test 2 <u>Effect</u> Test 2	When reading from the message queue, I didn't check if it succeeds or not. so the loop just keeps printing the last received message over and over again.	Added error checking to the message receive call, and break out of the loop if an error occurs.	Yes; test 3
1	<u>Procedures</u> 1. Start the server with "../server.out" 2. Start the client with "../client.out 20 ../2600.txt" 3. do [ctrl+c] on the client 4. Start another client with "../client.out 20 ../2600.txt" <u>Effect</u> The second client process doesn't print anything onto the screen	The server process locks up, because the session processes fill up the message queue, and then nothing can be written into the message queue since there is no client to read from it.	Session processes communicate their PID to the client processes, so when the client terminates unexpectedly, they signal the session to clear the message queue, and terminate as well.	Yes; test 5
2	<u>Procedures</u> Test 7 <u>Effect</u> Test 7	User starting the processes didn't have the priority to give such high priorities.	Added validation of priority input, so it could only range from 0 to 20 instead of -20 to 20.	Yes; test 6 & test 8