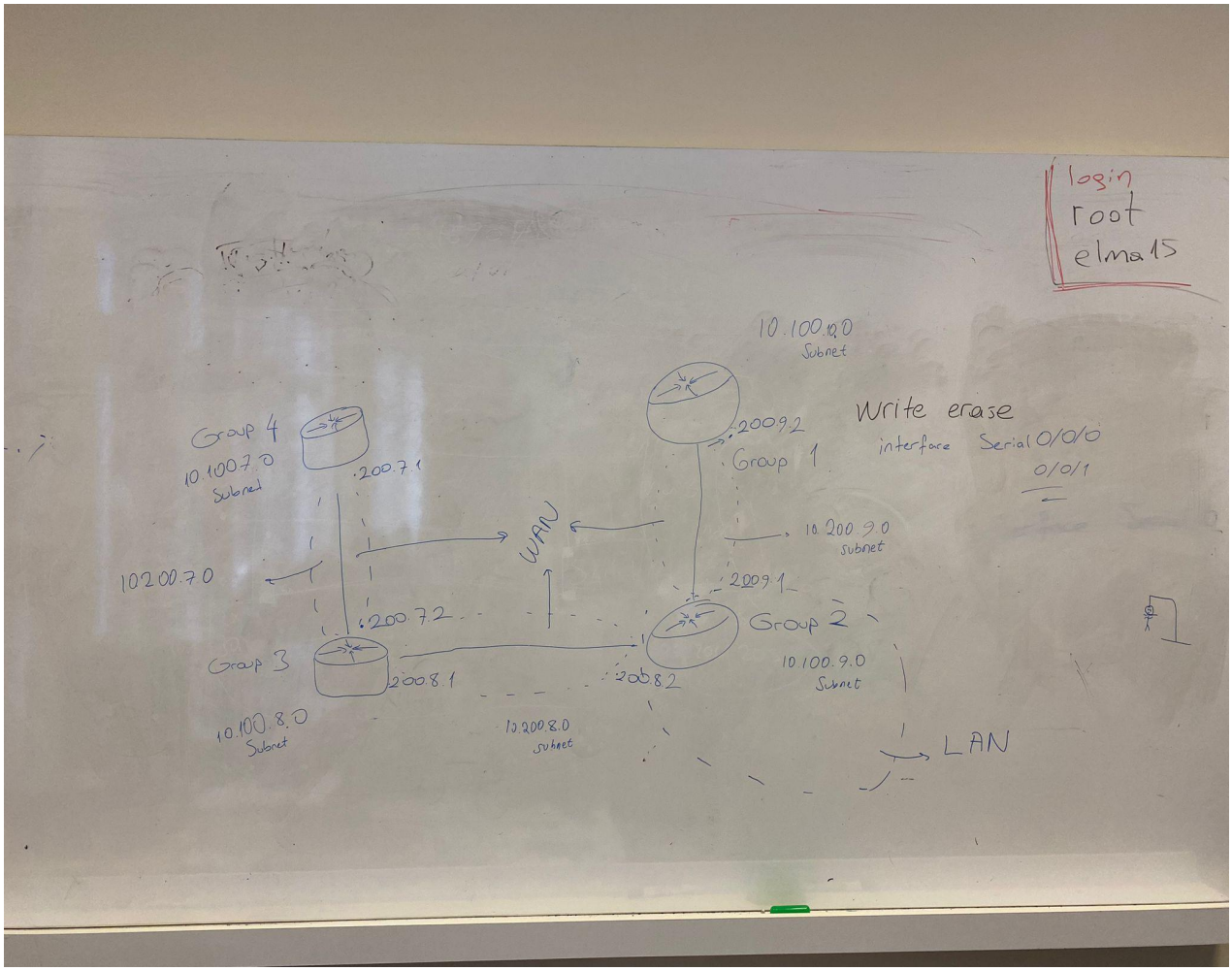
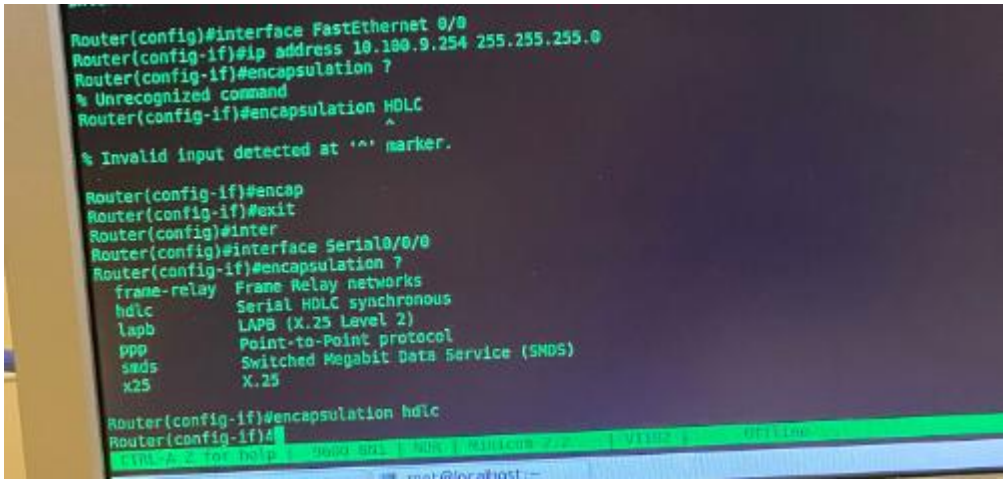
Group Number: 10, 41
Name/Surname of Members: Javid Guliyev, Halil Bülke, Ahmet Eren Akbaş, Yiğit Emir İşıkçı
Student Number of Members:2200356863, 21945944, 21945757, 2200356028

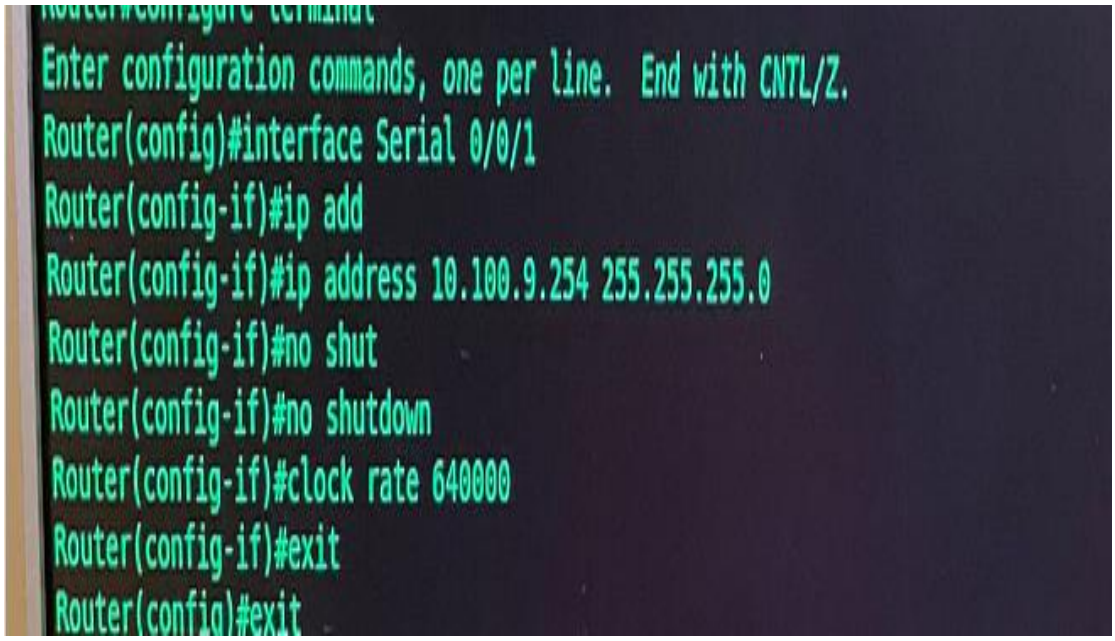
Lab10 Static Routing

EXPERIMENT STEPS

Configuring interfaces



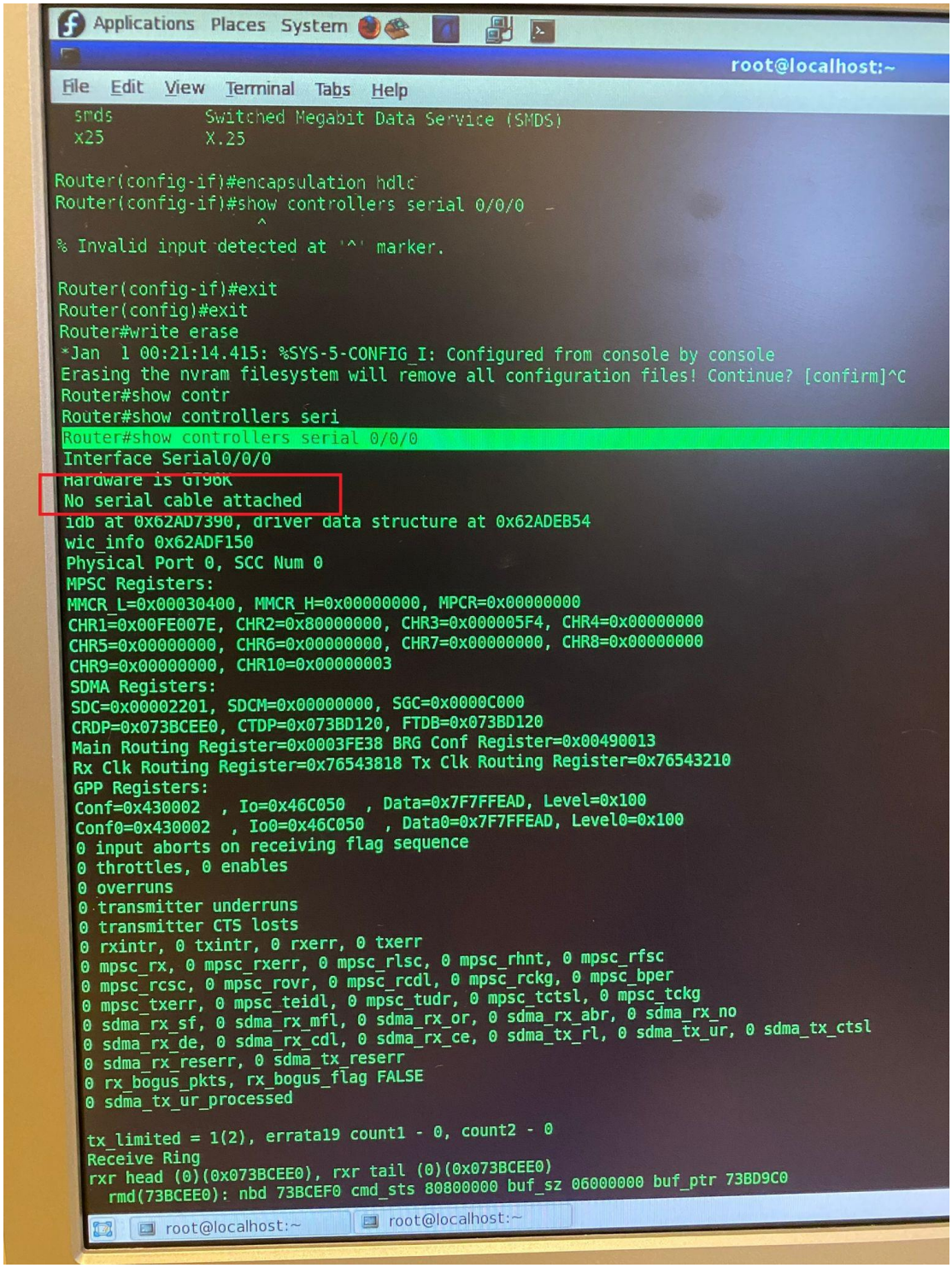


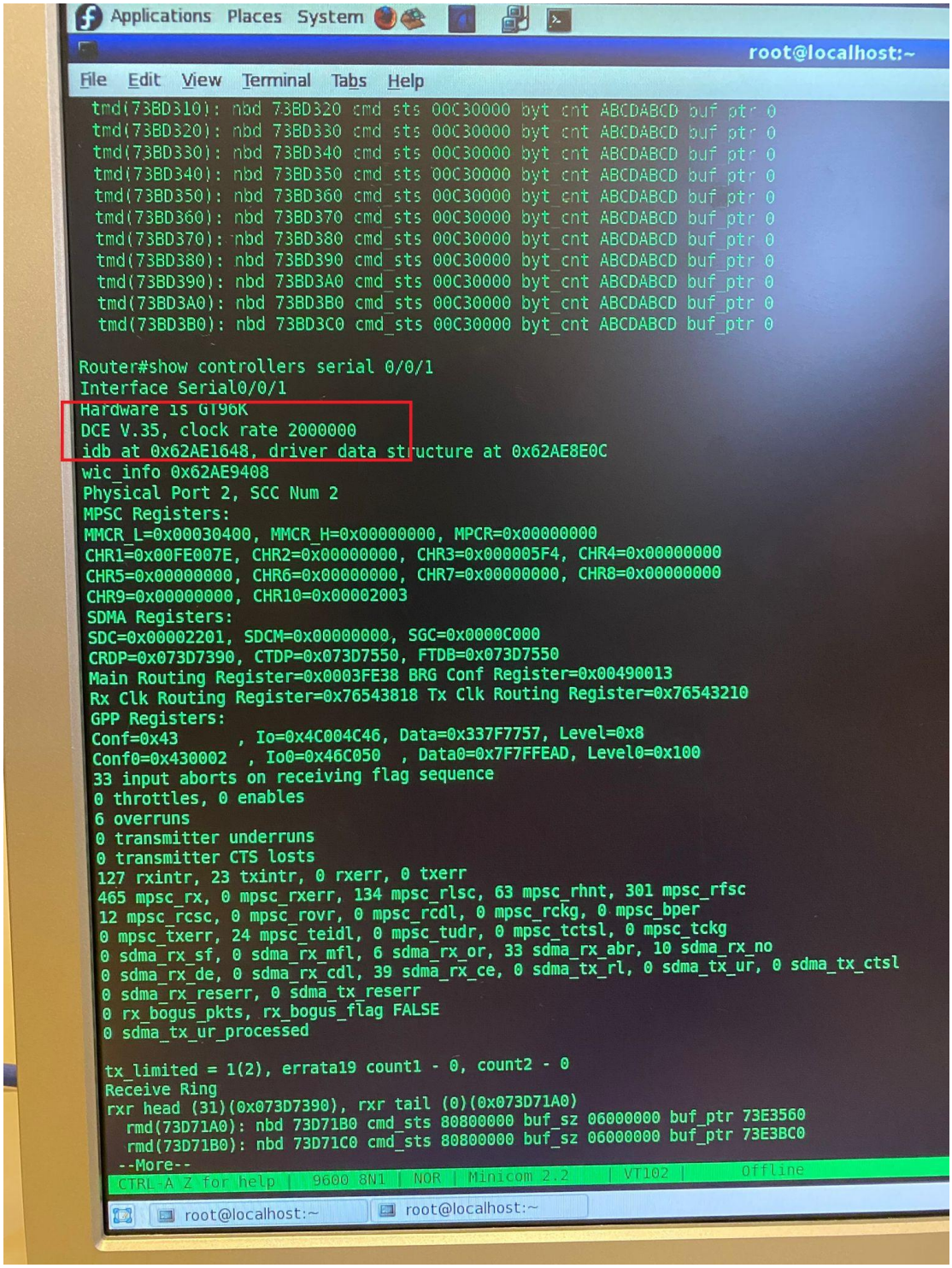


We set IP address of the interface. Then we configured HDLC communication protocol for serial interfaces.

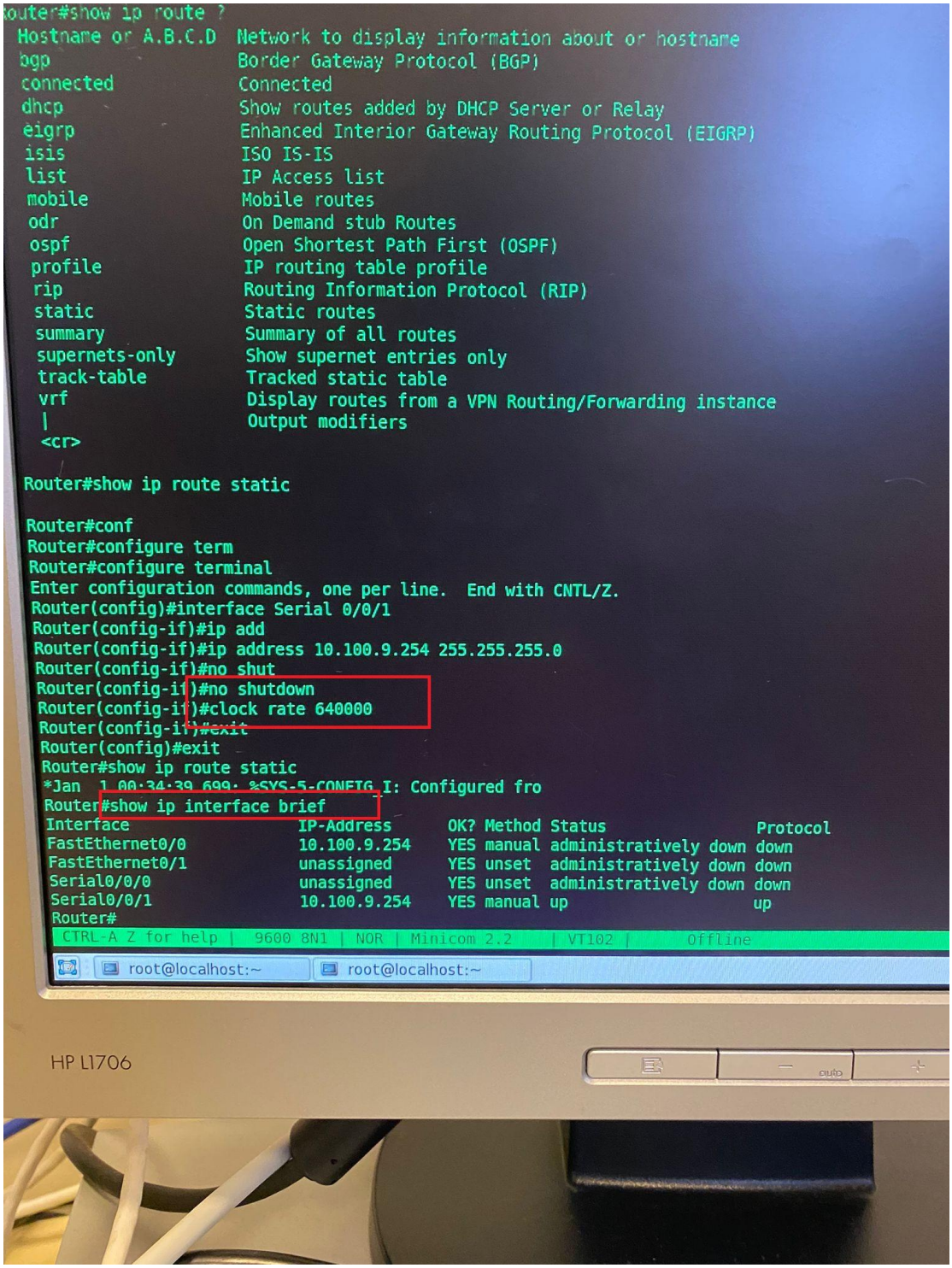
router_1# show controllers serial 0/0/<port number>

We needed to find out serial cable property that is attached to your routers serial interface whether DCE or no cable.


Applications Places System
root@localhost:~
File Edit View Terminal Tabs Help
smds Switched Megabit Data Service (SMDS)
x25 X.25
Router(config-if)#encapsulation hdlc
Router(config-if)#show controllers serial 0/0/0
^
% Invalid input detected at '^' marker.
Router(config-if)#exit
Router(config)#exit
Router#write erase
*Jan 1 00:21:14.415: %SYS-5-CONFIG_I: Configured from console by console
Erasing the nvram filesystem will remove all configuration files! Continue? [confirm]^C
Router#show contr
Router#show controllers seri
Router#show controllers serial 0/0/0
Interface Serial0/0/0
Hardware is GT96K
No serial cable attached
idb at 0x62AD7390, driver data structure at 0x62ADEB54
wic_info 0x62ADF150
Physical Port 0, SCC Num 0
MPSC Registers:
MMCR_L=0x00030400, MMCR_H=0x00000000, MPCR=0x00000000
CHR1=0x00FE007E, CHR2=0x80000000, CHR3=0x000005F4, CHR4=0x00000000
CHR5=0x00000000, CHR6=0x00000000, CHR7=0x00000000, CHR8=0x00000000
CHR9=0x00000000, CHR10=0x00000003
SDMA Registers:
SDC=0x00002201, SDCM=0x00000000, SGC=0x0000C000
CRDP=0x073BCEE0, CTDP=0x073BD120, FTDB=0x073BD120
Main Routing Register=0x0003FE38 BRG Conf Register=0x00490013
Rx Clk Routing Register=0x76543818 Tx Clk Routing Register=0x76543210
GPP Registers:
Conf=0x430002 , Io=0x46C050 , Data=0x7F7FFEAD, Level=0x100
Conf0=0x430002 , Io0=0x46C050 , Data0=0x7F7FFEAD, Level0=0x100
0 input aborts on receiving flag sequence
0 throttles, 0 enables
0 overruns
0 transmitter underruns
0 transmitter CTS losts
0 rxintr, 0 txintr, 0 rxerr, 0 txerr
0 mpsc_rx, 0 mpsc_rxerr, 0 mpsc_rlsc, 0 mpsc_rhnt, 0 mpsc_rfsc
0 mpsc_rcsc, 0 mpsc_rovr, 0 mpsc_rcdl, 0 mpsc_rckg, 0 mpsc_bper
0 mpsc_txerr, 0 mpsc_teidl, 0 mpsc_tudr, 0 mpsc_tctsl, 0 mpsc_tckg
0 sdma_rx_sf, 0 sdma_rx_mfl, 0 sdma_rx_or, 0 sdma_rx_abr, 0 sdma_rx_no
0 sdma_rx_de, 0 sdma_rx_cdl, 0 sdma_rx_ce, 0 sdma_tx_rl, 0 sdma_tx_ur, 0 sdma_tx_ctsl
0 sdma_rx_reserr, 0 sdma_tx_reserr
0 rx_bogus_pkts, rx_bogus_flag FALSE
0 sdma_tx_ur_processed
tx_limited = 1(2), errata19 count1 - 0, count2 - 0
Receive Ring
rxr head (0)(0x073BCEE0), rxr tail (0)(0x073BCEE0)
rmd(73BCEE0): nbd 73BCEF0 cmd_sts 80800000 buf_sz 06000000 buf_ptr 73BD9C0
root@localhost:~
root@localhost:~

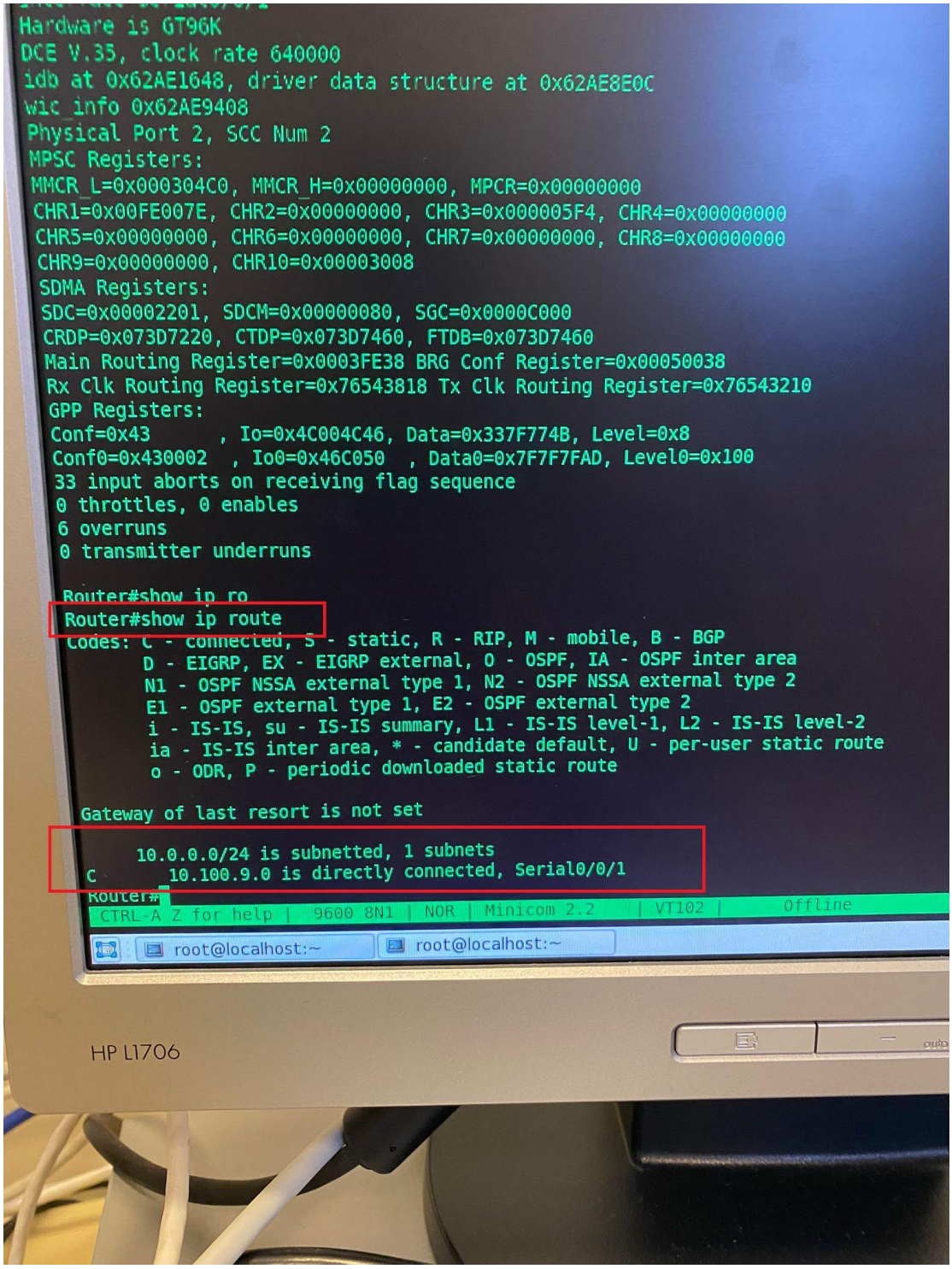


As we can visualize, DCE V.35 is attached to Serial 0/0/1. There is no cable attached to Serial 0/0/0 .



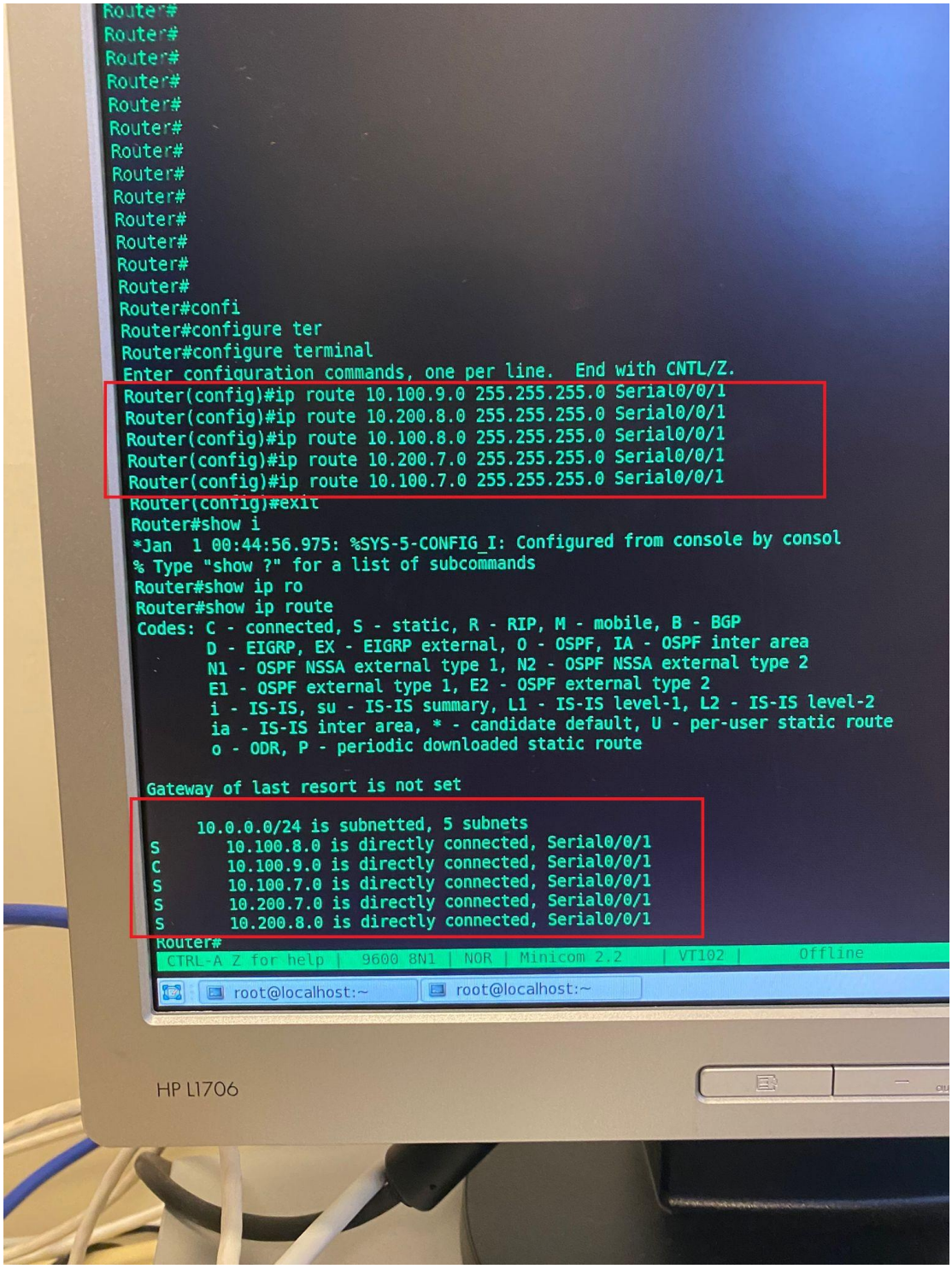
Clock generation is carried out over the corresponding V35 connection's clock output when **clock rate 6400** command is used. An interface is placed in the active state with **no shutdown** command. At the end part of the picture picture, we can see that IP address is connected with Serial 0/0/1 and Status is up.

Configuring routings



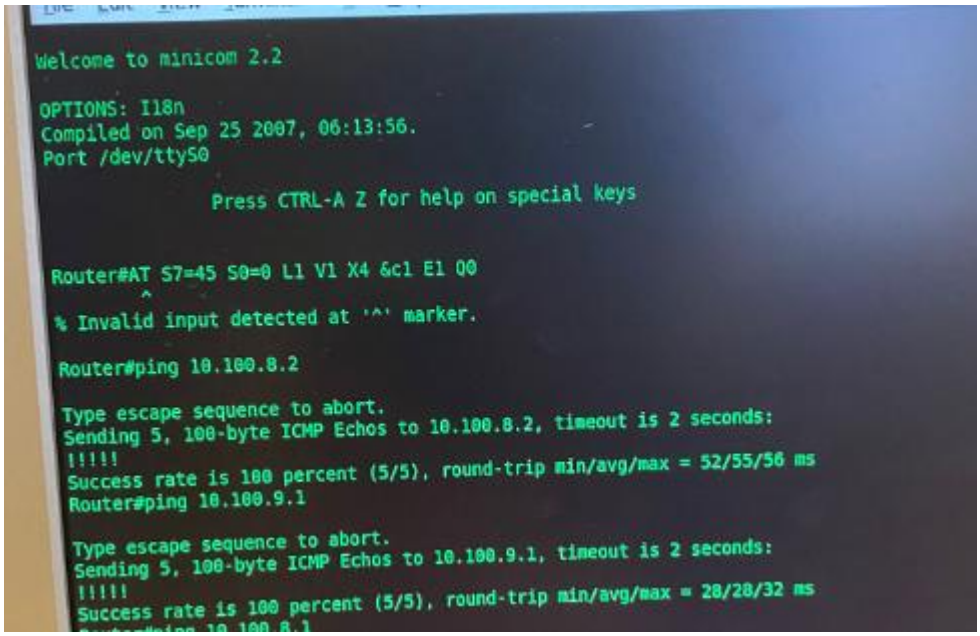
When we execute the command **show ip route** , there is routing table and codes of the letter's meaning which gives us knowledge about the connections, routing protocol and etc. 10.100.9.0 is directly connected to Serial 0/0/1 which is shown with C sign at the table.

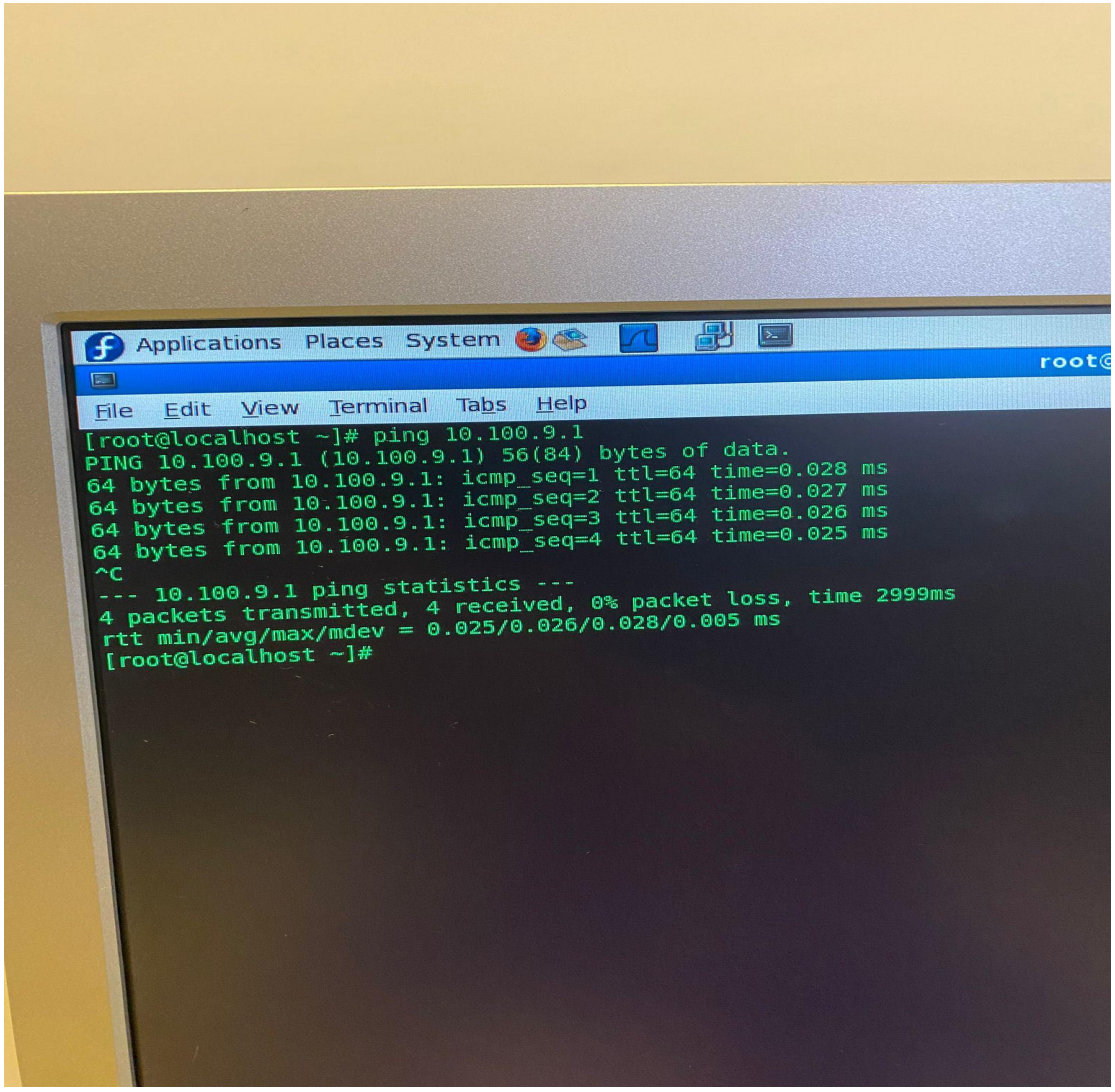
ip route <destination network> <dest netmask> <gateway>/<nexthop IP>

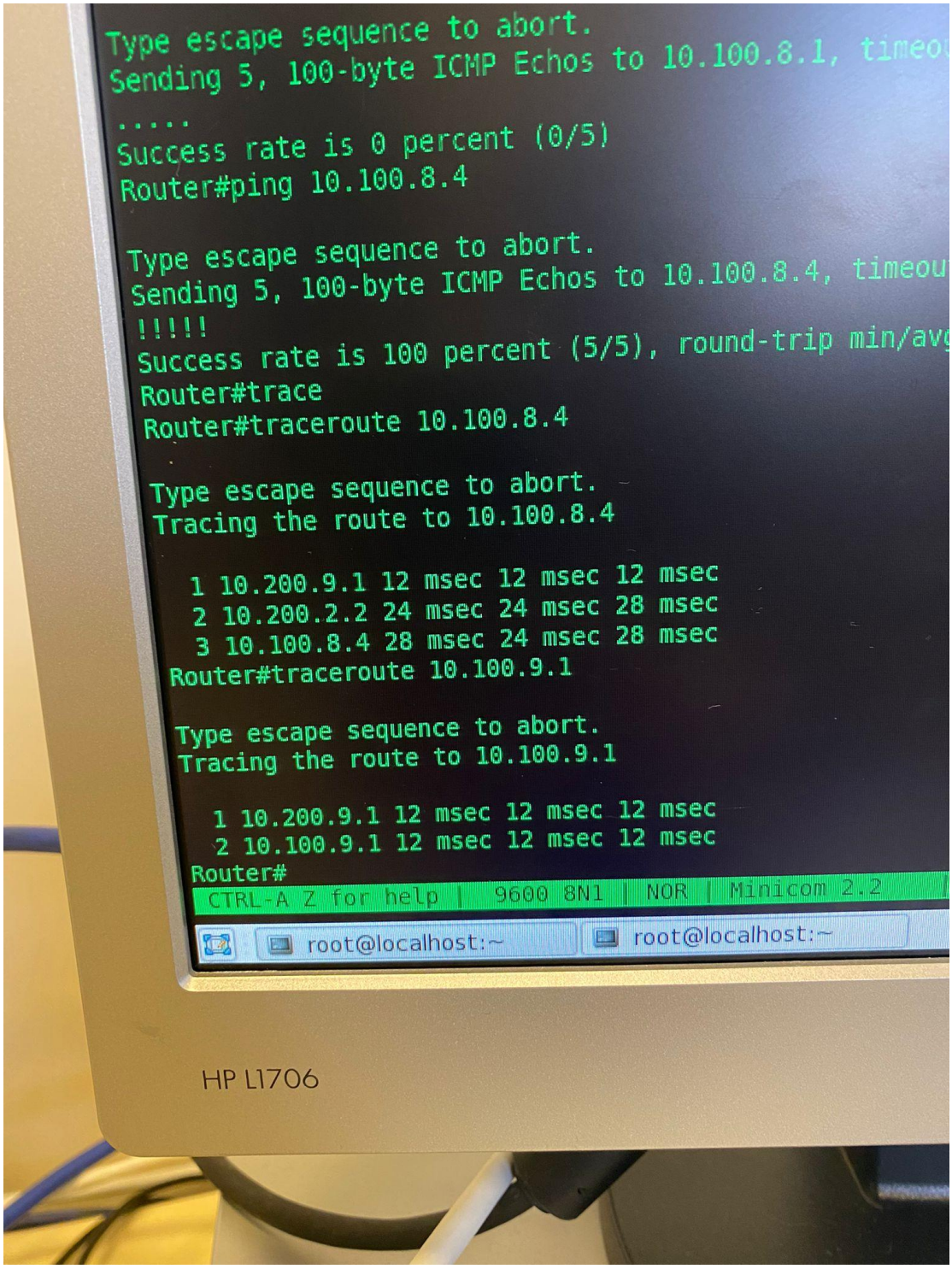


Static routing is done with networks that are not directly connected to the router. When show IP route command is executed, we can infer that four new subnets are connected to the network staticly, starting with letter S. Since 10.100.9.0 was connected directly, it starts with letter C.

Testing all connections







We are able to ping from our router to neighbors. We are also able to ping from our computer to other groups computers. There were some neighbors whom we could not successfully ping due to some issues happening with their routers and computers. When we trace the routes, there did not happen any timeout and it traced successfully as shown in the last picture in which there is no asterisk(timeout) sign. Round trip time of 10.200.9.1 was lower than others.