

PRACTICUM COMPUTER NETWORKS

MODUL 3

COMPUTER NETWORKS



By :

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INFORMATION TECHNOLOGY

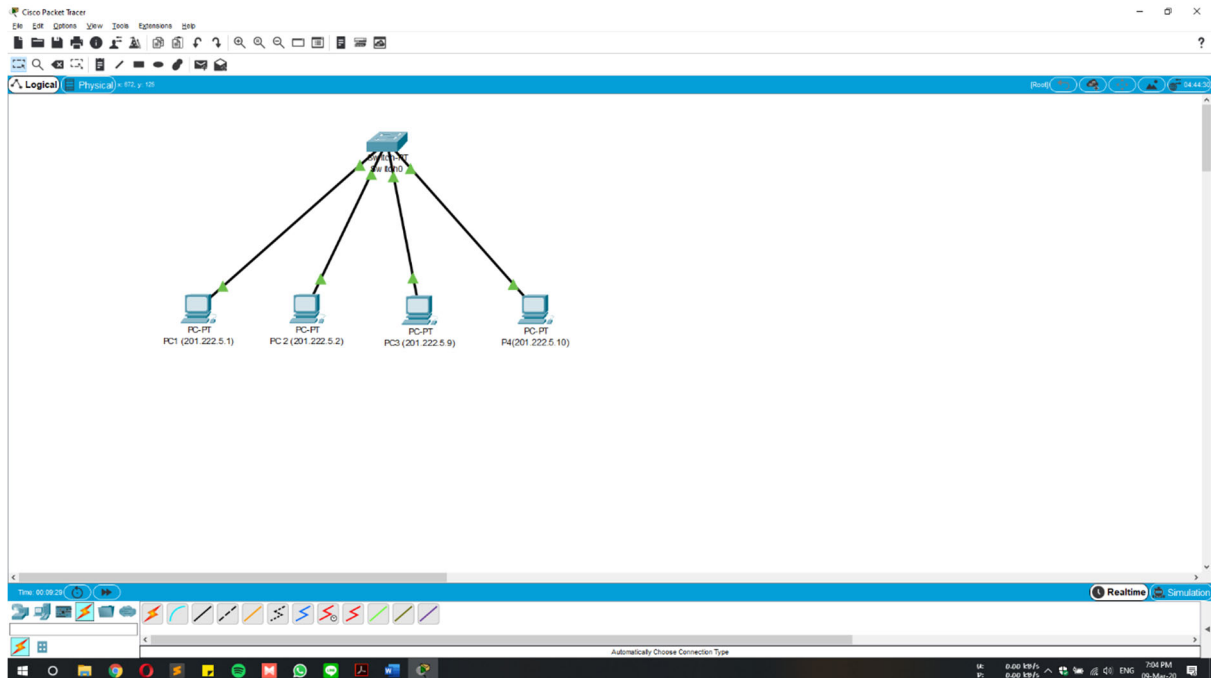
FACULTY OF COMMUNICATION AND INFORMATICS

MUHAMMADIYAH UNIVERSITY OF SURAKARTA

#Latian

#1

Design the network connection like below!



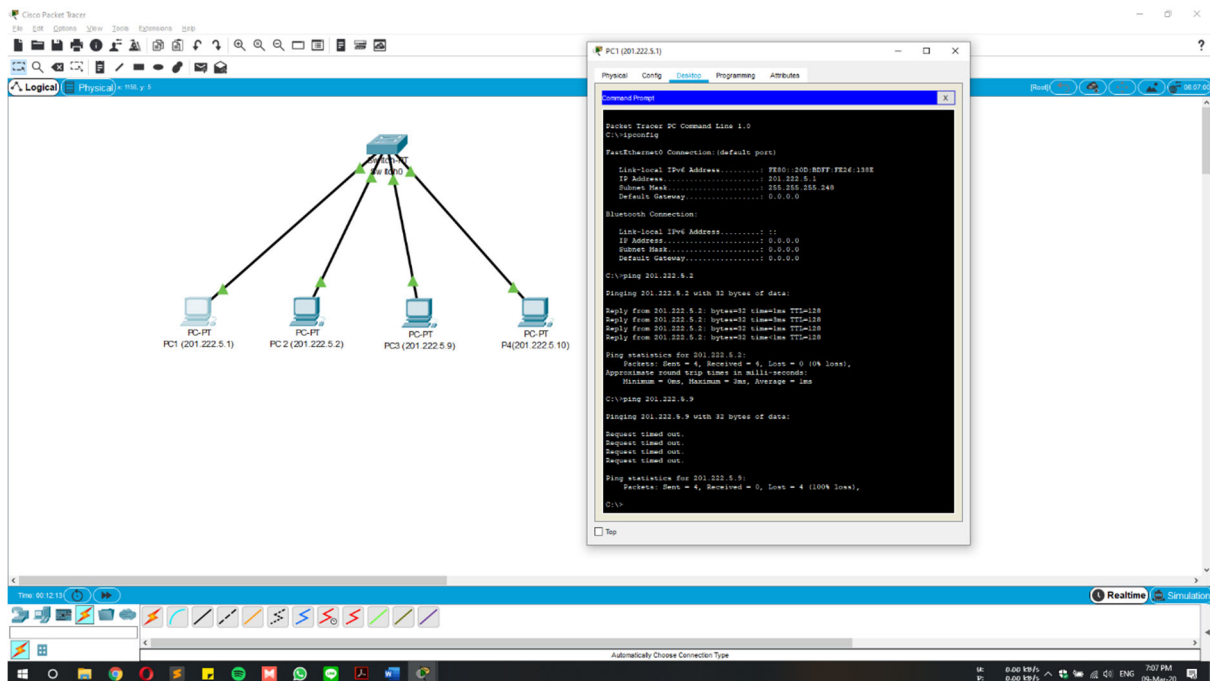
Pict 1. Network Design

Give the IP address and name pc just like table's below

PC Name	IP Address	Subnet Mask
PC1	201.222.5.1	255.255.255.248
PC2	201.222.5.2	
PC3	201.222.5.9	
PC4	201.222.5.10	

Table 1. IP Address and Subnet Mask

Try to PING PC1 to PC2 and also PC 3

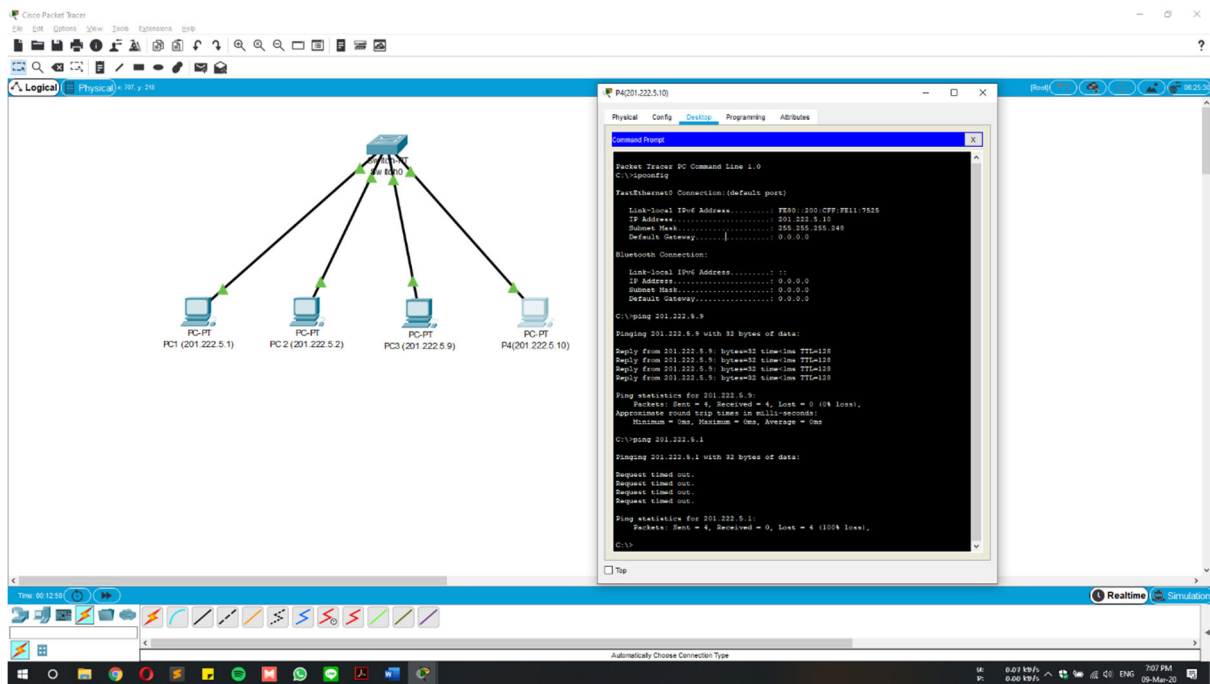


Pict 2. PING PC1 to PC2, PC3

In cmd “PING PC1 to PC2” it worked cause the address network was capable and also included in the calculation between subnet mask and IP (201.222.5.1) but if PC1 PING into PC3 (201.222.5.9) it wont work cause there is an hostmax attempted (Look at pict below)

Address:	201.222.5.1	11001001.11011110.00000101.00000000
Netmask:	255.255.255.248 = 29	11111111.11111111.11111111.11111111
Wildcard:	0.0.0.7	00000000.00000000.00000000.00000111
=>		
Network:	201.222.5.0/29	11001001.11011110.00000101.00000000 (Class C)
Broadcast:	201.222.5.7	11001001.11011110.00000101.00000111
HostMin:	201.222.5.1	11001001.11011110.00000101.00000001
HostMax:	201.222.5.6	11001001.11011110.00000101.00000110
Hosts/Net:	6	

Pict 3. Calculation of IP (201.222.5.1 into Subnet /29)



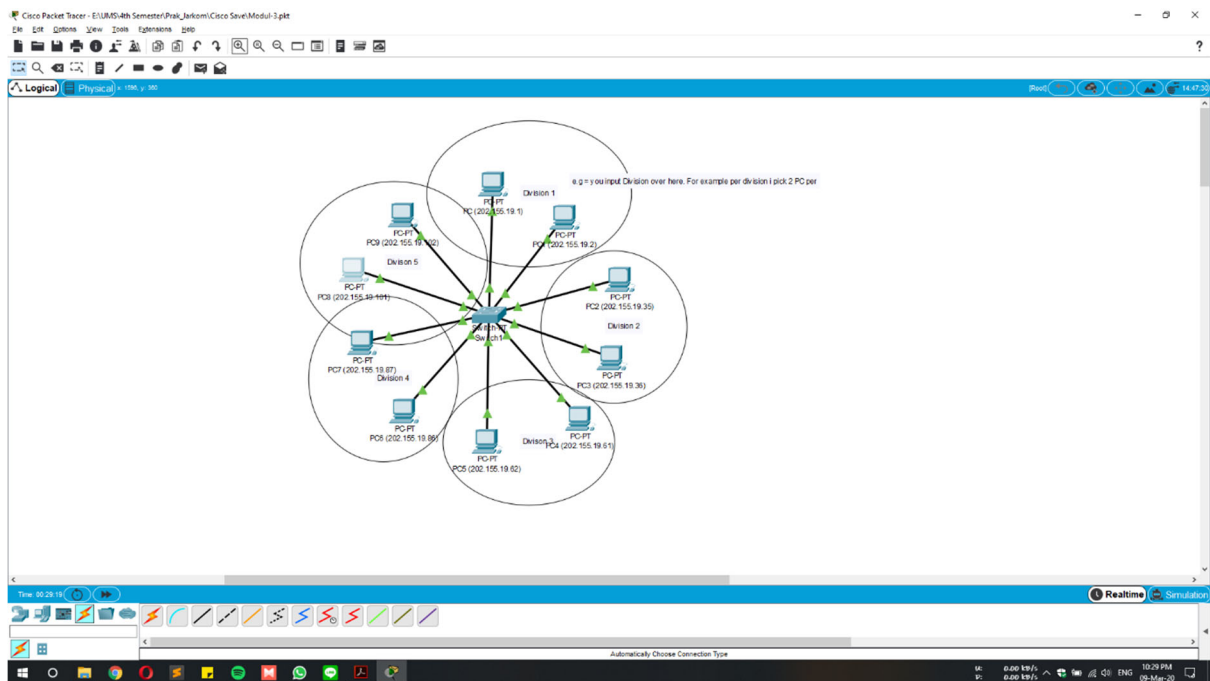
Pict 4. PING PC4 to PC3 and PC1

Where the PC4 is gonna PING into PC3 it will work cause they'all in the same host but if PC4 PING into PC1 it wont work. (look at the calculation below)

Address:	201.222.5.9	11001001.11011110.00000101.00001 001
Netmask:	255.255.255.248 = 29	11111111.11111111.11111111.11111 000
Wildcard:	0.0.0.7	00000000.00000000.00000000.00000 111
=>		
Network:	201.222.5.8/29	11001001.11011110.00000101.00001 000 (Class C)
Broadcast:	201.222.5.15	11001001.11011110.00000101.00001 111
HostMin:	201.222.5.9	11001001.11011110.00000101.00001 001
HostMax:	201.222.5.14	11001001.11011110.00000101.00001 110
Hosts/Net:	6	

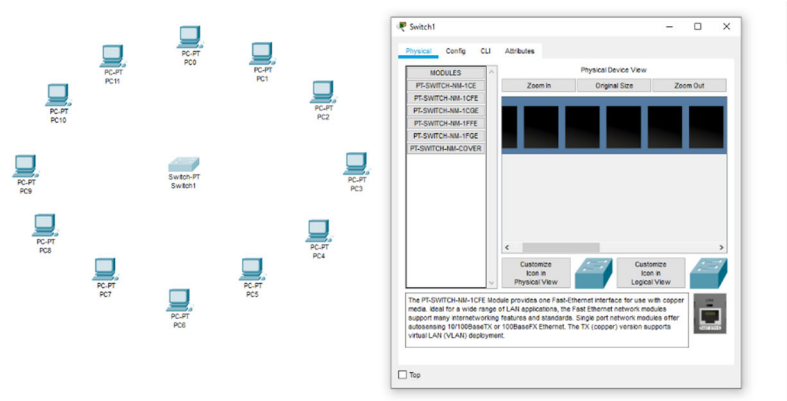
Pict 5. Calculation of IP (201.222.5.9) into Subnet /29

#Tugas



Pict 6.a the design network.

Perdivision up to 25 Computers, default subnet /24. 255.255.255.0



Pict 6. Change the module in Switch that still closed into PT-SWITCH-NM-1CFE.

Address:	202.155.19.1	11001010.10011011.00010011 .00000001
Netmask:	255.255.255.0 = 24	11111111.11111111.11111111 .00000000
Wildcard:	0.0.0.255	00000000.00000000.00000000 .11111111
=>		
Network:	202.155.19.0/24	11001010.10011011.00010011 .00000000 (Class C)
Broadcast:	202.155.19.255	11001010.10011011.00010011 .11111111
HostMin:	202.155.19.1	11001010.10011011.00010011 .00000001
HostMax:	202.155.19.254	11001010.10011011.00010011 .11111110
Hosts/Net:	254	

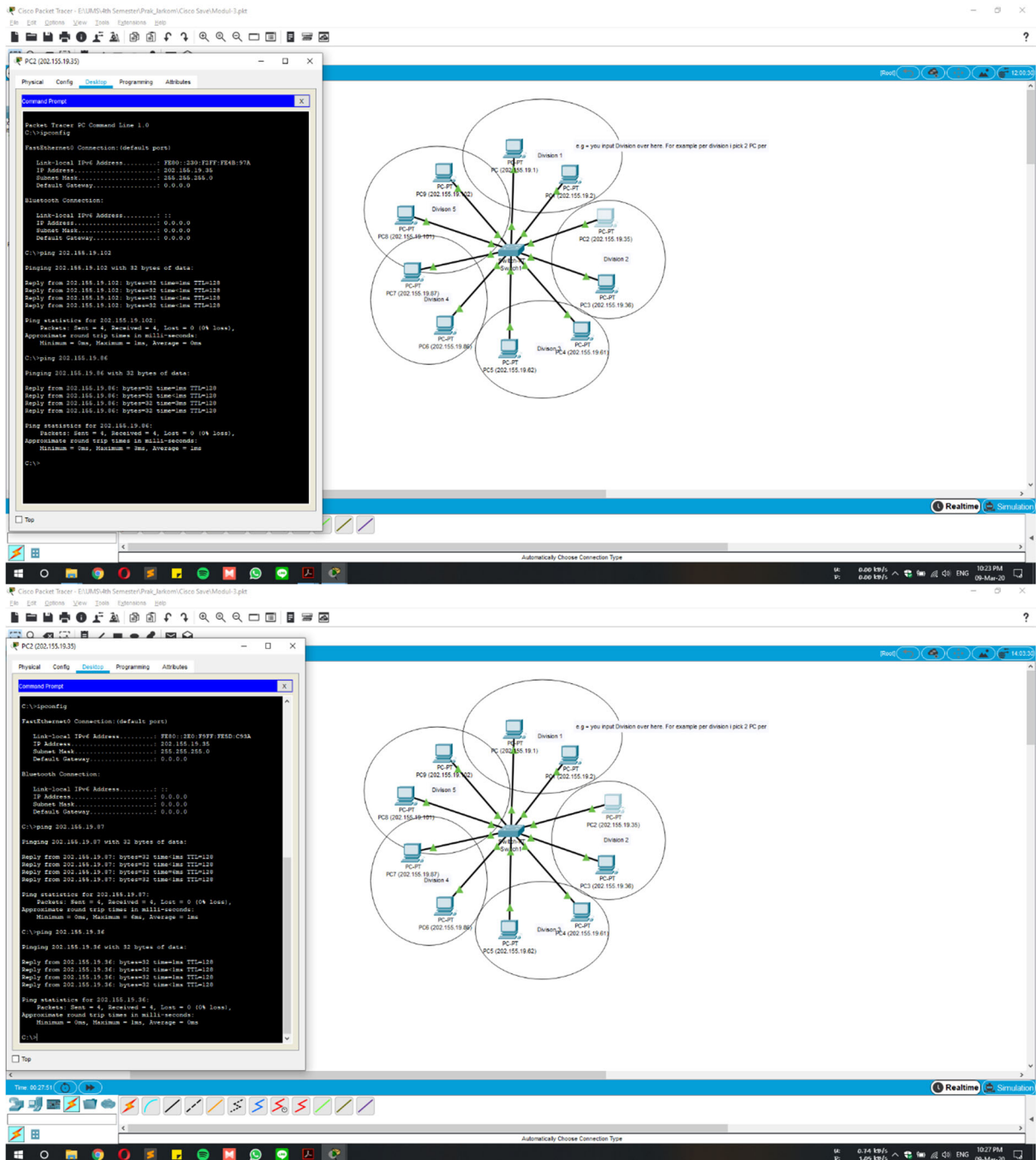
Pict 7. Calculation from IP 202.155.19.1/24

There are usable-host up to 254. From IP Address 202.155.19.1 – 202.155.19.254

It almost works in charms and it was never wont work at all, because the host in the subnet has the biggest part in order to keep connecting between the all PC in the division

#Per Division has up to 25 PC and for the example I took just only 2 PC per division and it works like a charm.

#Attachment for PING notification



Cisco Packet Tracer - E:\UMD\4th Semester\Prak_Jackson\Cisco Save\Modul-3.pt

Physical Config Cisco Programming Attributes

PC2 (202.155.19.100)

Command Prompt

```

Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection (default port)
Link-local IPv6 Address . . . . . FE80::201:42FF:FE34:7E3
IP Address. . . . . 202.155.19.102
Subnet Mask . . . . . 255.255.255.0
Default Gateway . . . . . 0.0.0.0

Bluetooth Connection:
Link-local IPv6 Address . . . . .
IP Address. . . . . 0.0.0.0
Subnet Mask . . . . . 0.0.0.0
Default Gateway . . . . . 0.0.0.0

C:\>ping 202.155.19.1

Pinging 202.155.19.1 with 32 bytes of data:
Reply from 202.155.19.1: bytes=32 time=1ms TTL=128
Reply from 202.155.19.1: bytes=32 time=1ms TTL=128
Reply from 202.155.19.1: bytes=32 time=1ms TTL=128
Reply from 202.155.19.1: bytes=32 time=1ms TTL=128

Ping statistics for 202.155.19.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>

```

Diagram showing a central switch connected to five divisions (1-5), each containing two PCs. The PCs are labeled with their IP addresses (e.g., PC1 (202.155.19.1), PC2 (202.155.19.2), etc.). A note indicates: "e.g. = you input Division over here. For example per division 1 pick 2 PC per".

Time: 00:29:06 Realtime Simulation

Automatically Choose Connection Type

W: 0.00 KB/s V: 0.00 KB/s 10:29 PM 09-Mar-20

Cisco Packet Tracer - E:\UMD\4th Semester\Prak_Jackson\Cisco Save\Modul-3.pt

Physical Config Cisco Programming Attributes

PC (202.155.19.1)

Command Prompt

```

Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection (default port)
Link-local IPv6 Address . . . . . FE80::201:42FF:FE37:3C08
IP Address. . . . . 202.155.19.1
Subnet Mask . . . . . 255.255.255.0
Default Gateway . . . . . 0.0.0.0

Bluetooth Connection:
Link-local IPv6 Address . . . . .
IP Address. . . . . 0.0.0.0
Subnet Mask . . . . . 0.0.0.0
Default Gateway . . . . . 0.0.0.0

C:\>ping 202.155.19.2

Pinging 202.155.19.2 with 32 bytes of data:
Reply from 202.155.19.2: bytes=32 time=1ms TTL=128
Reply from 202.155.19.2: bytes=32 time=1ms TTL=128
Reply from 202.155.19.2: bytes=32 time=1ms TTL=128
Reply from 202.155.19.2: bytes=32 time=1ms TTL=128

Ping statistics for 202.155.19.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 202.155.19.102

Pinging 202.155.19.102 with 32 bytes of data:
Reply from 202.155.19.102: bytes=32 time=1ms TTL=128
Reply from 202.155.19.102: bytes=32 time=1ms TTL=128
Reply from 202.155.19.102: bytes=32 time=1ms TTL=128
Reply from 202.155.19.102: bytes=32 time=1ms TTL=128

Ping statistics for 202.155.19.102:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>

```

Diagram showing a central switch connected to five divisions (1-5), each containing two PCs. The PCs are labeled with their IP addresses (e.g., PC1 (202.155.19.1), PC2 (202.155.19.2), etc.). A note indicates: "e.g. = you input Division over here. For example per division 1 pick 2 PC per".

Time: 00:29:06 Realtime Simulation

Automatically Choose Connection Type

W: 0.55 KB/s V: 0.00 KB/s 10:29 PM 09-Mar-20