1.

CPU performance measurement command:

sysbench --test=cpu --cpu-max-prime=10000 --num-thead=4 run

Memory performance measurement command:

sysbench --test=memory --num-threds=4 --memory-total-size=10G --memory-poer=write --memory-scope=global run

Size	CPU performance -- Events per sceond	Memory performance -- transfer speed MB/s
m4.large	1394.49	6432.91
m4.xlarge	3081.47	10240.00

* Region: US East (N. Virginia)

Measurement Analysis:

We can see from the result that the performance of CPU and memory increase commensurate with the increase of the number of ECUs and memory resource.

2.

1)

Type	CPU bandwidth(Mbps)	Average RTT(ms)
t2.micro - t2.micro	993	1.144
t2.micro - m4.large	573	0.852
t2.micro - m4.xlarge	10240	0.415
m4.large - m4.large	566	0.184
m4.large - m4.lxarge	574	0.690
m4.xlarge - m4.xlarge	1065	1.246

2)

Windo Size	TCP bandwidth(Mbps)
128K	739
256K	949
512K	954

3)

Number of Clients	Client1 TCP bandwidth(Mbps)	Client2 TCP bandwidth(Mbps)	Client3 TCP bandwidth(Mbps)
2	526	468	N/A
3	262	249	496

Number of Clients	Client1 Average RTT(ms)	Client2 Average RTT(ms)	Client3 Average RTT(ms)
2	0.320	0.860	N/A
3	0.349	0.859	1.222

*Note: server: t2micro client1: m4.large client2: m4.xlarge client3: t2micro

4)

Time(HKT)	TCP bandwidth(Mbps)	Average RTT(ms)
Moring(~10:00am)	976	0.571
Afternoon(~4:00pm)	993	1.144
Evening(~10:00pm)	953	0.938

5)

1. Under the same instance type, t2,micro and m4.xlarge are performance better than m4.large, under the different instance type, network performance well when set t2.micro as server and m4.xlarge as client.
2. The TCP bandwidth are similar when window size is equal to 256K and 512K, but it decreased apparently when window size is equal to 128K.
3. The average RTT are not change with the increase of clients numbers, but the TCP bandwidth are decrease commensurate with the increase of the number of clients.
4. The TCP bandwidth are almost the same in different time, but the average RTT in the morning is obviously less than in the afternoon and evening.