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Cloud Computing

**Assignment 2**

**Running Results:**

Starting Assignment2V2...

Initialising...

Topology file: topology.brite

Starting CloudSim version 3.0

Datacenter\_0 is starting...

Datacenter\_1 is starting...

Datacenter\_2 is starting...

Broker1 is starting...

Broker2 is starting...

Broker3 is starting...

Entities started.

0.0: Broker1: Cloud Resource List received with 3 resource(s)

0.0: Broker2: Cloud Resource List received with 3 resource(s)

0.0: Broker3: Cloud Resource List received with 3 resource(s)

0.0: Broker1: Trying to Create VM #0 in Datacenter\_0

0.0: Broker2: Trying to Create VM #0 in Datacenter\_0

0.0: Broker3: Trying to Create VM #0 in Datacenter\_0

[VmScheduler.vmCreate] Allocation of VM #0 to Host #0 failed by MIPS

[VmScheduler.vmCreate] Allocation of VM #0 to Host #0 failed by MIPS

0.1: Broker1: VM #0 has been created in Datacenter #2, Host #0

0.1: Broker1: Sending cloudlet 0 to VM #0

0.1: Broker2: Creation of VM #0 failed in Datacenter #2

0.1: Broker2: Trying to Create VM #0 in Datacenter\_1

0.1: Broker3: Creation of VM #0 failed in Datacenter #2

0.1: Broker3: Trying to Create VM #0 in Datacenter\_1

[VmScheduler.vmCreate] Allocation of VM #0 to Host #0 failed by MIPS

0.2: Broker2: VM #0 has been created in Datacenter #3, Host #0

0.2: Broker2: Sending cloudlet 0 to VM #0

0.2: Broker3: Creation of VM #0 failed in Datacenter #3

0.2: Broker3: Trying to Create VM #0 in Datacenter\_2

0.30000000000000004: Broker3: VM #0 has been created in Datacenter #4, Host #0

0.30000000000000004: Broker3: Sending cloudlet 0 to VM #0

160.1: Broker1: Cloudlet 0 received

160.1: Broker1: All Cloudlets executed. Finishing...

160.1: Broker1: Destroying VM #0

Broker1 is shutting down...

160.2: Broker2: Cloudlet 0 received

160.2: Broker2: All Cloudlets executed. Finishing...

160.2: Broker2: Destroying VM #0

Broker2 is shutting down...

160.3: Broker3: Cloudlet 0 received

160.3: Broker3: All Cloudlets executed. Finishing...

160.3: Broker3: Destroying VM #0

Broker3 is shutting down...

Simulation: No more future events

CloudInformationService: Notify all CloudSim entities for shutting down.

Datacenter\_0 is shutting down...

Datacenter\_1 is shutting down...

Datacenter\_2 is shutting down...

Broker1 is shutting down...

Broker2 is shutting down...

Broker3 is shutting down...

Simulation completed.

Simulation completed.

=============> User 5

========== OUTPUT ==========

Cloudlet ID STATUS Data center ID VM ID Time Start Time Finish Time

0 SUCCESS 2 0 160 0.1 160.1

=============> User 6

========== OUTPUT ==========

Cloudlet ID STATUS Data center ID VM ID Time Start Time Finish Time

0 SUCCESS 3 0 160 0.2 160.2

=============> User 7

========== OUTPUT ==========

Cloudlet ID STATUS Data center ID VM ID Time Start Time Finish Time

0 SUCCESS 4 0 160 0.3 160.3

Assignment2V2 finished!

**Brite Topology: (file is in GitHub too)**

Topology: ( 10 Nodes, 20 Edges )

Model (1 - RTWaxman): 5 5 5 1 2 0.15000000596046448 0.20000000298023224 1 1 10.0 1024.0

Nodes: ( 10 )

0 1 3 3 3 -1 RT\_NODE

1 0 3 3 3 -1 RT\_NODE

2 4 3 3 3 -1 RT\_NODE

3 3 1 3 3 -1 RT\_NODE

4 3 3 4 4 -1 RT\_NODE

5 5 1 4 4 -1 RT\_NODE

6 5 3 4 4 -1 RT\_NODE

7 6 3 4 4 -1 RT\_NODE

8 5 4 4 4 -1 RT\_NODE

9 3 5 5 5 -1 RT\_NODE

Edges: ( 20 )

0 2 0 3.0 1.1 10.0 -1 -1 E\_RT U

1 2 1 4.0 2.1 10.0 -1 -1 E\_RT U

2 3 0 2.8284271247461903 3.9 10.0 -1 -1 E\_RT U

3 3 1 3.605551275463989 4.1 10.0 -1 -1 E\_RT U

4 4 3 2.0 5.0 10.0 -1 -1 E\_RT U

5 4 2 1.0 4.0 10.0 -1 -1 E\_RT U

6 0 4 2.0 3.0 10.0 -1 -1 E\_RT U

7 1 4 3.0 4.1 10.0 -1 -1 E\_RT U

8 5 4 2.8284271247461903 3.0 10.0 -1 -1 E\_RT U

9 5 2 1.0 3.5 10.0 -1 -1 E\_RT U

10 5 7 1.0 4.5 10.0 -1 -1 E\_RT U

11 6 2 1.0 0.8 10.0 -1 -1 E\_RT U

12 6 7 1.0 1.1 10.0 -1 -1 E\_RT U

13 6 8 0.8 2.110.0 -1 -1 E\_RT U

14 7 8 1.8 2.5 10.0 -1 -1 E\_RT U

15 7 2 2.0 4.0 10.0 -1 -1 E\_RT U

16 8 4 1.8 4.0 10.0 -1 -1 E\_RT U

17 8 9 1.8 4.4 10.0 -1 -1 E\_RT U

18 9 0 2.8284271247461903 7.1 10.0 -1 -1 E\_RT U

19 9 2 1.8 3.8 10.0 -1 -1 E\_RT U

**Analysis/Explanation of the Running Results:**

The finish times are off by 0.1 second. This is because each data center started 0.1 seconds from the predecessor. Data center id 2 start time was 0.1 second, data center 3 was 0.2 second, and data center 4 was 0.3 second. Each completed in the same amount of time because they had one host each and ran three cloudlets of three users (one for each) with network topology on them.

When this error occurred: Allocation of VM #0 to Host #0 failed by MIPS; This could be explained if the MIPS capacity requested is not higher than the capacity of the available Host Pes.

The beginning time stamps are the brokers receiving the resources. At the 0.1 mark, that is when they are trying to create the data center and VM. It is also trying to add the cloudlet to VM.

I am unsure why this error occurs: 0.1: Broker3: Creation of VM #0 failed in Datacenter #2; This happens twice.

At 0.2 they are trying to create another data center and send a cloudlet to a VM.

At 0.3, no issues arise, and all the cloudlets are executed and finish.

Per the status, the status for all three users (user 5,6, 7) is SUCCESS.

**Source Code URL:** <https://github.com/clincol2/CCAssignmment2>