

Exp No: 7

Date:

MODEL CLOUD ENVIRONMENT USING CLOUDSIM

AIM:

To model the cloud environment using cloud sim tools.

PROCEDURE:

1. Download latest Coudsim from the releases (<https://github.com/Cloudslab/cloudsim>)
2. Unzip the downloaded source code .zip (or) .tar.gz
3. Make sure Maven and Java is installed
4. Navigate to the extracted cloudsims-<version> directory and build "mvn clean install"
5. After successful build, navigate to modules/cloudsim-examples
6. Run the example using maven.

OUTPUT:

```
jerinbs@macbookair:~/Documents/REC-LAB/210701095-CS19741-CC/cloudsim/cloudsim-7.0 SCROLL: 0/56
jerinbs@macbookair ~/Documents/REC-LAB/210701095-CS19741-CC/cloudsim/cloudsim-7.0 <main>
$ tree . -L 3
.
├── README.md
├── changelog.md
├── cloudsim7.uml
├── custom_log.properties
├── documentation
│   ├── pom.xml
│   └── src
│       └── main
├── modules
│   ├── cloudsim
│   │   ├── pom.xml
│   │   ├── src
│   │   └── target
│   └── cloudsim-examples
│       ├── pom.xml
│       ├── src
│       └── target
└── topology.brite
    └── pom.xml

11 directories, 9 files
jerinbs@macbookair ~/Documents/REC-LAB/210701095-CS19741-CC/cloudsim/cloudsim-7.0 <main>
$ java -version
java version "22.0.1" 2024-04-16
Java(TM) SE Runtime Environment (build 22.0.1+8-16)
Java HotSpot(TM) 64-Bit Server VM (build 22.0.1+8-16, mixed mode, sharing)
jerinbs@macbookair ~/Documents/REC-LAB/210701095-CS19741-CC/cloudsim/cloudsim-7.0 <main>
$ mvn -v
Apache Maven 3.9.9 (8e8579a9e76f7d015ee5ec7bfc9d97d260186937)
Maven home: /opt/homebrew/Cellar/maven/3.9.9/libexec
Java version: 23.0.1, vendor: Homebrew, runtime: /opt/homebrew/Cellar/openjdk/23.0.1/libexec/openjdk.jdk/Contents/Home
Default locale: en_IN, platform encoding: UTF-8
OS name: "mac os x", version: "15.1", arch: "aarch64", family: "mac"
jerinbs@macbookair ~/Documents/REC-LAB/210701095-CS19741-CC/cloudsim/cloudsim-7.0 <main>
$
```

```

jerinbs@macbookair ~/Documents/REC-LAB/210701095-CS19741-CC/cloudsim/cloudsim-7.0 <main>
$ mvn clean install
[INFO] Scanning for projects...
[INFO]
[INFO] Reactor Build Order:
[INFO]
[INFO] cloudsim-package [pom]
[INFO] cloudsim [jar]
[INFO] cloudsim-examples [jar]
[INFO]
[INFO] -----< org.cloudbus.cloudsim:cloudsim-package >-----
[INFO] Building cloudsim-package 7.0.0-alpha [1/3]
[INFO] from pom.xml
[INFO] -----[ pom ]-----
[INFO] Installing /Users/jerinbs/Documents/REC-LAB/210701095-CS19741-CC/cloudsim/cloudsim-7.0/pom.xml to /Users/jerinbs/.m2/repository/org/cloudbus/cloudsim/cloudsim-package/7.0.0-alpha/cloudsim-package-7.0.0-alpha.pom
[INFO]
[INFO] -----< org.cloudbus.cloudsim:cloudsim >-----
[INFO] Building cloudsim 7.0.0-alpha [2/3]
[INFO] from modules/cloudsim/pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] -----
[INFO] T E S T S
[INFO] -----
[INFO] Running org.cloudbus.cloudsim.HostDynamicWorkloadTest
[INFO] Tests run: 6, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.064 s -- in org.cloudbus.cloudsim.HostDynamicWorkloadTest
[INFO] Running org.cloudbus.cloudsim.power.PowerHostTest
[INFO] Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0 s -- in org.cloudbus.cloudsim.power.PowerHostTest
[INFO] Running org.cloudbus.cloudsim.power.models.PowerModelSqrtTest
[WARNING] Tests run: 5, Failures: 0, Errors: 0, Skipped: 1, Time elapsed: 0 s -- in org.cloudbus.cloudsim.power.models.PowerModelSqrtTest
[INFO] Running org.cloudbus.cloudsim.power.models.PowerModelSpecPowerIbmX3550XeonX5675Test
[INFO] Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0 s -- in org.cloudbus.cloudsim.power.models.PowerModelSpecPowerIbmX3550XeonX5675Test
[INFO] Running org.cloudbus.cloudsim.power.models.PowerModelSquareTest
[WARNING] Tests run: 5, Failures: 0, Errors: 0, Skipped: 1, Time elapsed: 0.001 s -- in org.cloudbus.cloudsim.power.models.PowerModelSquareTest
[INFO] Running org.cloudbus.cloudsim.power.models.PowerModelCubicTest
[WARNING] Tests run: 5, Failures: 0, Errors: 0, Skipped: 1, Time elapsed: 0 s -- in org.cloudbus.cloudsim.power.models.PowerModelCubicTest
[INFO] Running org.cloudbus.cloudsim.power.models.PowerModelLinearTest
[WARNING] Tests run: 5, Failures: 0, Errors: 0, Skipped: 1, Time elapsed: 0 s -- in org.cloudbus.cloudsim.power.models.PowerModelLinearTest
[INFO] Running org.cloudbus.cloudsim.power.PowerSelectionPolicyMaximumCorrelationTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.030 s -- in org.cloudbus.cloudsim.power.PowerSelectionPolicyMaximumCorrelationTest
[WARNING] Tests run: 5, Failures: 0, Errors: 0, Skipped: 1, Time elapsed: 0 s -- in org.cloudbus.cloudsim.HostTest
[INFO] Running org.cloudbus.cloudsim.UtilizationModelStochasticTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0 s -- in org.cloudbus.cloudsim.UtilizationModelStochasticTest
[INFO]
[INFO] Results:
[INFO]
[WARNING] Tests run: 135, Failures: 0, Errors: 0, Skipped: 5
[INFO] -----< org.cloudbus.cloudsim:cloudsim-examples >-----
[INFO] Building cloudsim-examples 7.0.0-alpha [3/3]
[INFO] from modules/cloudsim-examples/pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] -----
[INFO] Reactor Summary for cloudsim-package 7.0.0-alpha:
[INFO]
[INFO] cloudsim-package ..... SUCCESS [ 1.643 s]
[INFO] cloudsim ..... SUCCESS [ 15.155 s]
[INFO] cloudsim-examples ..... SUCCESS [ 6.440 s]
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 23.324 s
[INFO] Finished at: 2024-11-17T15:01:36+05:30
[INFO]

```

```

jerinbs@macbookair ~/Documents/REC-LAB/210701095-CS19741-CC/cloudsim/cloudsim-7.0/modules/cloudsim-examples <main>
$ mvn exec:java -Dexec.mainClass="org.cloudbus.cloudsim.examples.CloudSimExample1"

Starting CloudSimExample1...
Initialising...
Starting CloudSim version 7.0
0.0: Datacenter_0 is starting...
0.0: Broker is starting...
Entities started.
0.0: Broker: Cloud Resource List received with 1 datacenter(s)
0.0: Broker: Trying to Create Vm #0 in Datacenter_0
0.0: Datacenter_0.vmAllocator: .vmAllocator]: Vm #0 has been allocated to Host #0
0.01: Broker: Vm #0 has been created in Datacenter #2, Host #0
0.01: Broker: Sending Cloudlet #0 to Vm #0
400.01: Broker: Cloudlet #0 return received
400.01: Broker: The number of finished Cloudlets is:1
400.01: Broker: All Cloudlets executed. Finishing...
400.01: Broker: Destroying Vm #0
400.01: Broker is shutting down...
400.01: Simulation: No more future events
400.01: CloudInformationService is shutting down...
400.01: CloudInformationService: Notify all CloudSim entities for shutting down.
400.01: Datacenter_0 is shutting down...
400.01: Broker is shutting down...
Simulation completed.
Simulation completed.

===== OUTPUT =====
Cloudlet ID   STATUS   Data center ID   VM ID   Time   Start Time   Finish Time
0            SUCCESS   2                0       400    0.01         400.01
CloudSimExample1 finished!
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 2.363 s
[INFO] Finished at: 2024-11-17T15:03:06+05:30
[INFO] -----

```

RESULT:

Thus a basic cloudsim example is successfully executed.