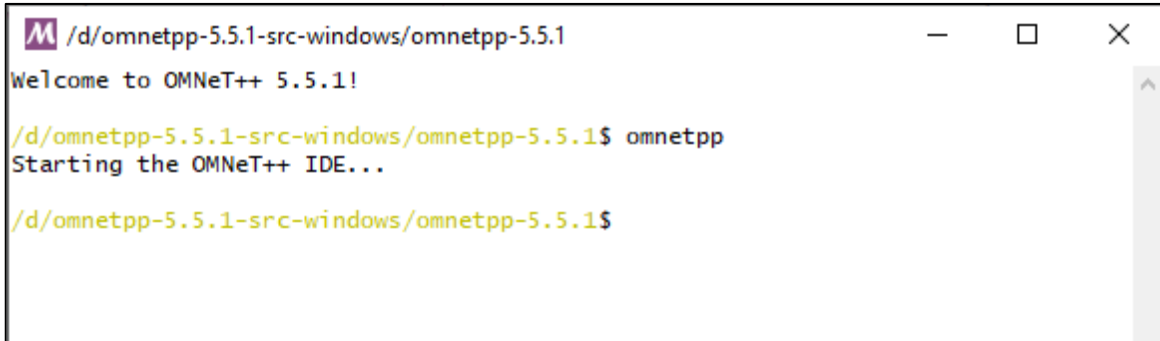


PRACTICAL NO: 6

AIM: Create MANET simulation for AODVUU Network.

Step 1: Go to omnetpp-5.5.1 folder in which open “mingwenv.cmd” file, we get following window. Type “omnetpp” command to open omnet++ IDE.

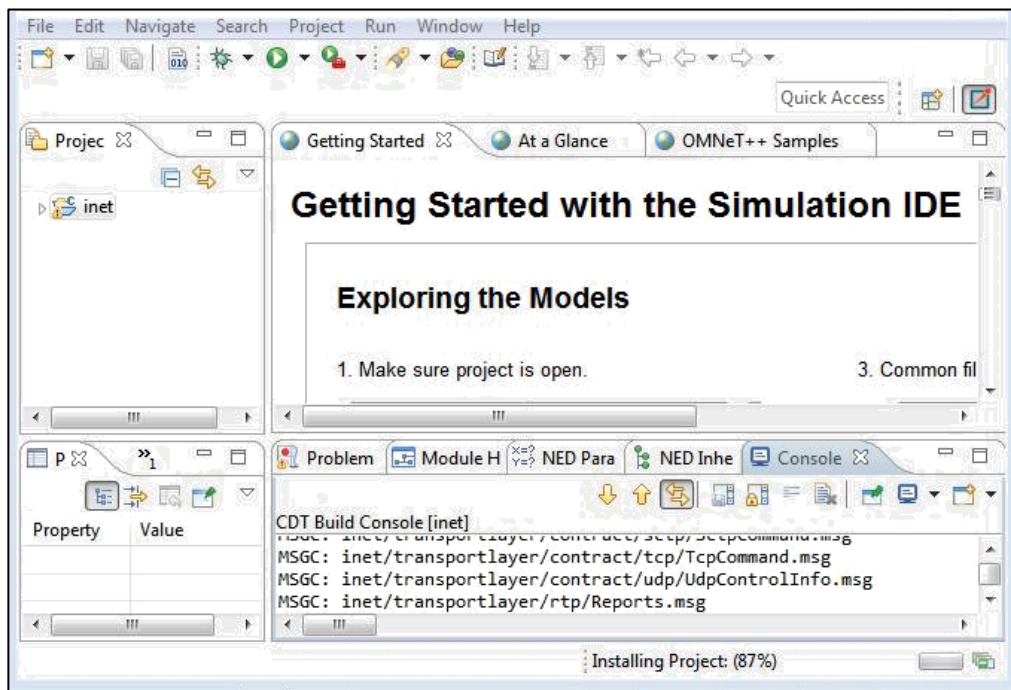


```
M /d/omnetpp-5.5.1-src-windows/omnetpp-5.5.1
Welcome to OMNeT++ 5.5.1!

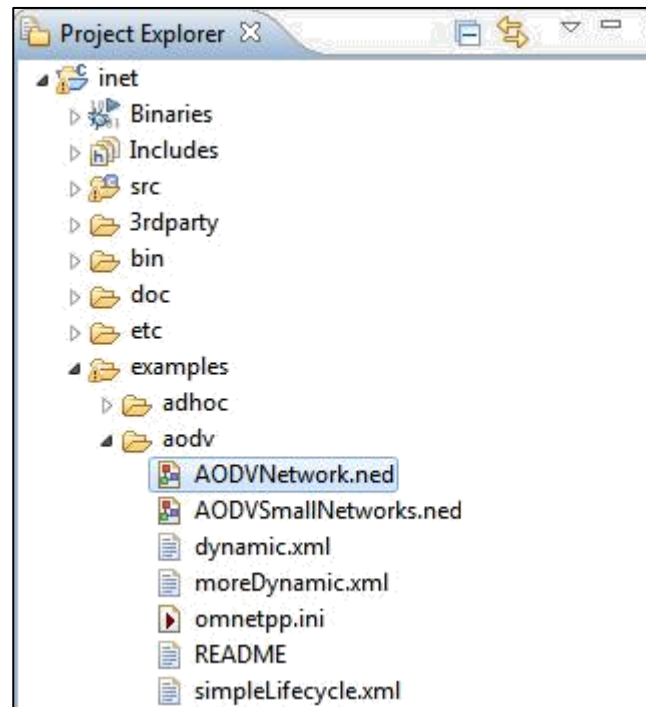
/d/omnetpp-5.5.1-src-windows/omnetpp-5.5.1$ omnetpp
Starting the OMNeT++ IDE...

/d/omnetpp-5.5.1-src-windows/omnetpp-5.5.1$
```

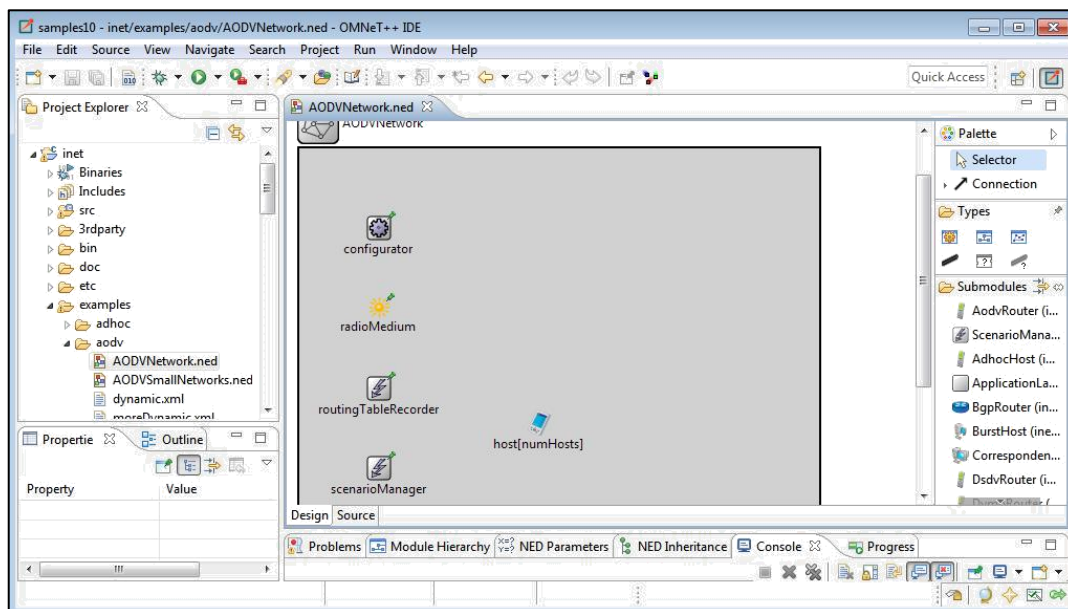
Step 2: after that command, following window will open.



Step 3: Go to project Explorer > inet > examples > aodv and open AODVNetwork.ned file.



AODVNetwork.ned:



Coding:**AODVNetwork.ned:**

```
package inet.examples.aodv;
import inet.common.scenario.ScenarioManager;
import inet.networklayer.configurator.ipv4.Ipv4NetworkConfigurator; import
inet.networklayer.ipv4.RoutingTableRecorder; import inet.node.aodv.AodvRouter;
import inet.physicallayer.unitdisk.UnitDiskRadioMedium;
network AODVNetwork
{
parameters:
int numHosts;
@display("bgb=650,650");
submodules:
radioMedium: UnitDiskRadioMedium {
parameters:
@display("p=100,200;is=s");
}
configurator: Ipv4NetworkConfigurator {
parameters:
config = xml("<config><interface hosts='*' address='145.236.x.x'
netmask='255.255.0.0'/></config>");
@display("p=100,100;is=s");
}
routingTableRecorder: RoutingTableRecorder {
parameters:
@display("p=100,300;is=s");
}
scenarioManager: ScenarioManager {
parameters:
script = default(xml("<scenario/>"));
@display("p=100,400;is=s");
}
host[numHosts]: AodvRouter {
parameters:
@display("i=device/pocketpc_s;r=.,#707070");
}
connections allowunconnected:
}
```

Omnetpp.ini:

```

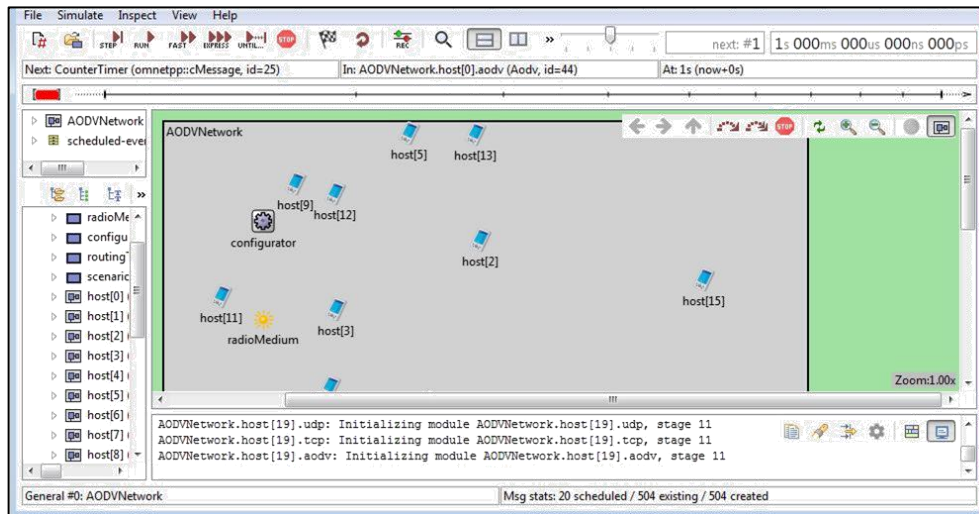
[General]
network = AODVNetwork
#record-eventlog = true
num-rngs = 3
debug-on-errors = true
**.mobility.rng-0 = 1
**.wlan[*].mac.rng-0 = 2
# channel physical parameters
**.wlan[*].typename = "AckingWirelessInterface"
**.wlan[*].bitrate = 2Mbps
**.wlan[*].mac.headerLength = 20B
**.wlan[*].radio.typename = "UnitDiskRadio"
**.wlan[*].radio.transmitter.headerLength = 96b
**.wlan[*].radio.transmitter.communicationRange = 250m
**.wlan[*].radio.transmitter.interferenceRange = 0m
**.wlan[*].radio.transmitter.detectionRange = 0m
**.wlan[*].radio.receiver.ignoreInterference = true
*.numHosts = 20
# mobility
**.host[*].mobility.typename = "StationaryMobility"
**.mobility.constraintAreaMinZ = 0m
**.mobility.constraintAreaMaxZ = 0m
**.mobility.constraintAreaMinX = 0m
**.mobility.constraintAreaMinY = 0m
**.mobility.constraintAreaMaxX = 600m
**.mobility.constraintAreaMaxY = 600m
ping app (host[0] pinged by others) *.host[0].numApps = 1 *.host[0].app[0].typename =
"PingApp" *.host[0].app[0].startTime = uniform(1s,5s) *.host[0].app[0].printPing = true
nic settings
**.wlan[*].bitrate = 2Mbps
**.wlan[*].mgmt.frameCapacity = 10
**.wlan[*].mac.retryLimit = 7
# lifecycle
**.hasStatus = true
[Config Static]
description = routing without mobility
*.host[*].wlan[*].radio.transmitter.communicationRange = 250m *.host[0].app[0].destAddr =
"host[1](ipv4)" [Config IPv4SlowMobility]
description = two fixed communicating nodes with low speed mobile nodes extends = Static
# mobility
**.aodv.activeRouteTimeout = 3s
**.host[2..20].mobility.typename = "MassMobility" **.host[0].mobility.typename =
"StationaryMobility" *.host[1].mobility.typename = "StationaryMobility"
**.host[*].mobility.changeInterval = normal(5s, 0.1s) **.host[*].mobility.angleDelta =
normal(0deg, 30deg) **.host[*].mobility.speed = normal(2mps, 0.01mps)

```

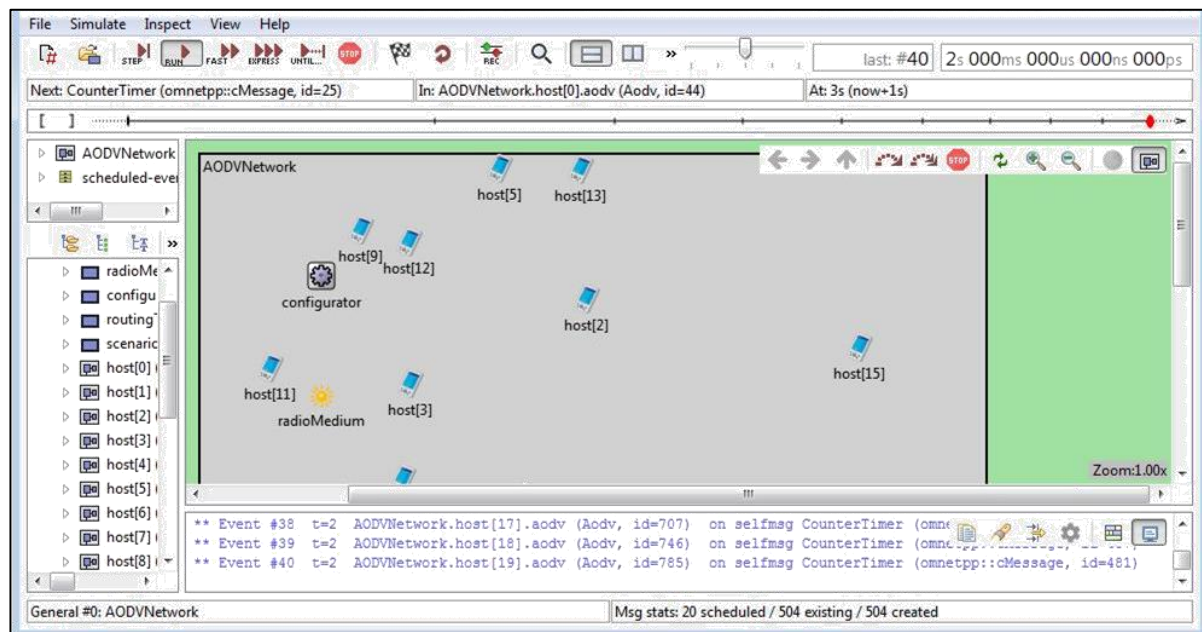
```
**host[1].mobility.initialX = 600m **host[1].mobility.initialY = 600m [Config
IPv4ModerateFastMobility]
description = two fixed communicating nodes with moderate speed mobile nodes extends =
IPv4SlowMobility
# mobility
**.aodv.activeRouteTimeout = 2s
**.host[*].mobility.speed = normal(8mps, 0.01mps)
[Config IPv4FastMobility]
description = two fixed communicating nodes with high speed mobile nodes extends =
IPv4SlowMobility
# mobility
**.aodv.activeRouteTimeout = 1s
**.host[*].mobility.speed = normal(15mps, 0.01mps)
[Config Dynamic]
description = one node is shut down and restarted trigger route changes extends = Static
*.host[*].hasStatus = true
*.scenarioManager.script = xmldoc("dynamic.xml")
[Config MoreDynamic]
description = some nodes are shut down trigger route changes extends = Static
*.host[*].hasStatus = true
*.scenarioManager.script = xmldoc("moreDynamic.xml")
[Config SimpleRREQ]
description = demonstrates a single RREQ-RREP exchange network = SimpleRREQ
# nic settings
**.wlan[*].radio.transmitter.communicationRange = 240m
**.sender.numApps = 1
**.sender.app[0].typename = "PingApp"
**.sender.app[0].startTime = uniform(1s,5s)
**.sender.app[0].printPing = true
**.sender.app[0].destAddr = "receiver(ipv4)"
[Config SimpleRREQ2]
description = demonstrates a single RREQ-RREP exchange with two intermediate nodes
extends = SimpleRREQ
network = SimpleRREQ2
[Config SimpleLifecycle]
description = demonstrates AODV's RERR mechanism when a node shuts down extends =
SimpleRREQ2
*.scenarioManager.script = xmldoc("simpleLifecycle.xml")
[Config ShortestPath]
description = demonstrates that AODV chooses the shorter path
network = ShortestPath
extends = SimpleRREQ
```

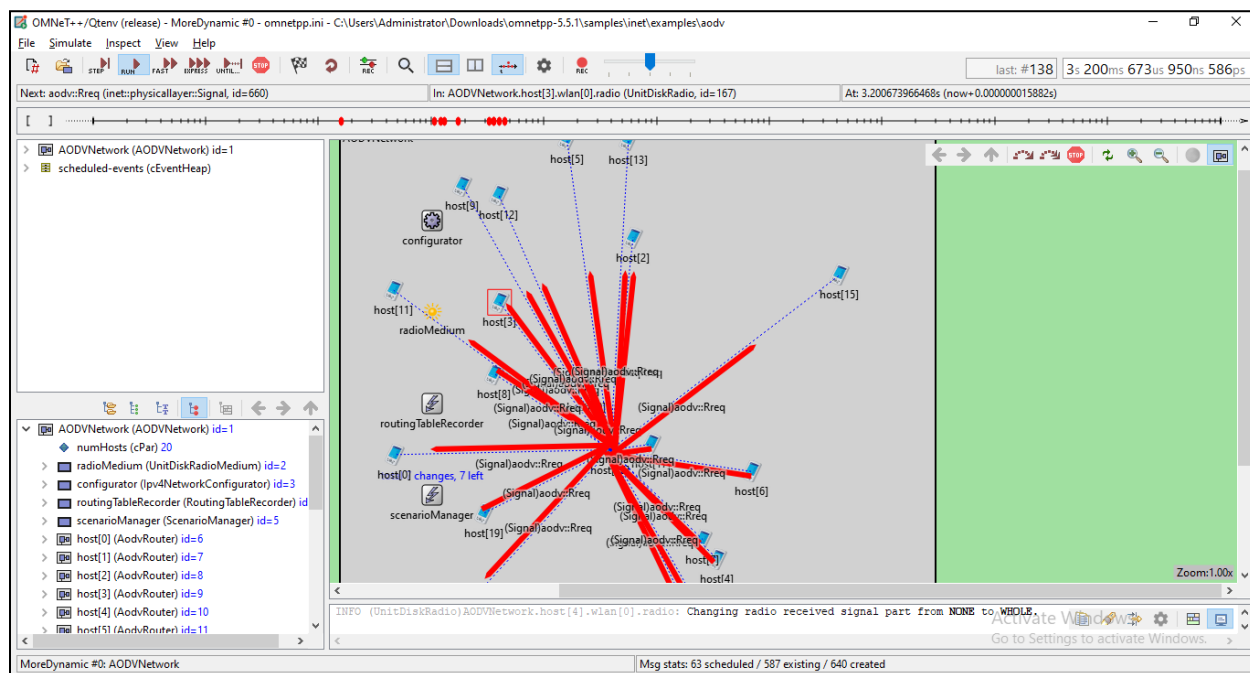
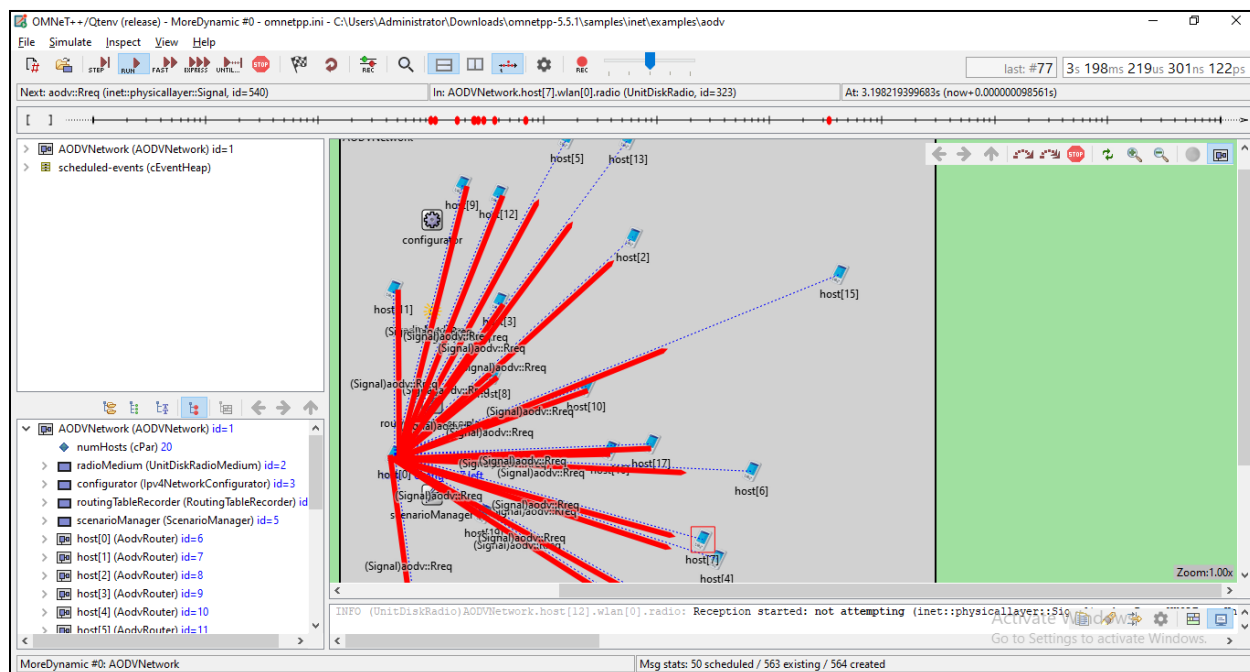
Step 4: Click on Run button.

Step 5: After that following window will open.



Step 6: Click on RUN.



OUTPUT:

Conclusion: We have learnt to MANET simulation for AODVUU Network.