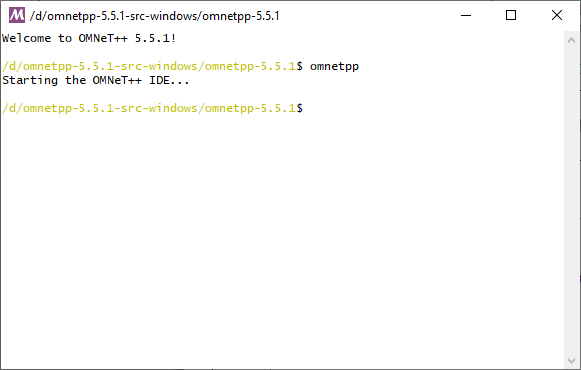
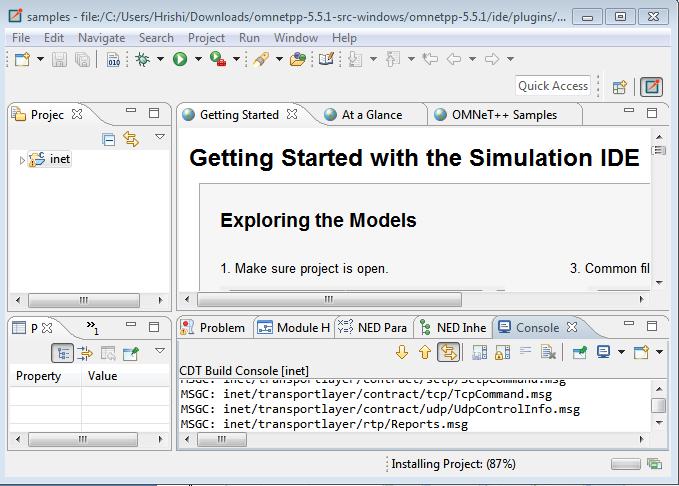
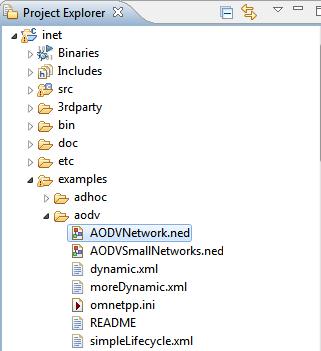
**PRACTICAL NO: 6**

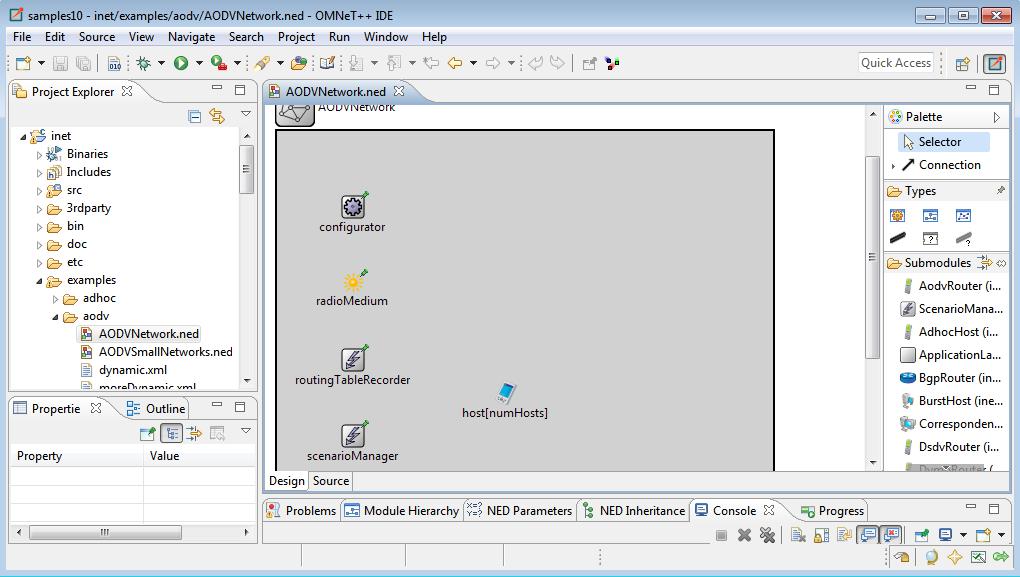
**AIM:** Create MANET simulation for AODVUU Network.

**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.

**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]

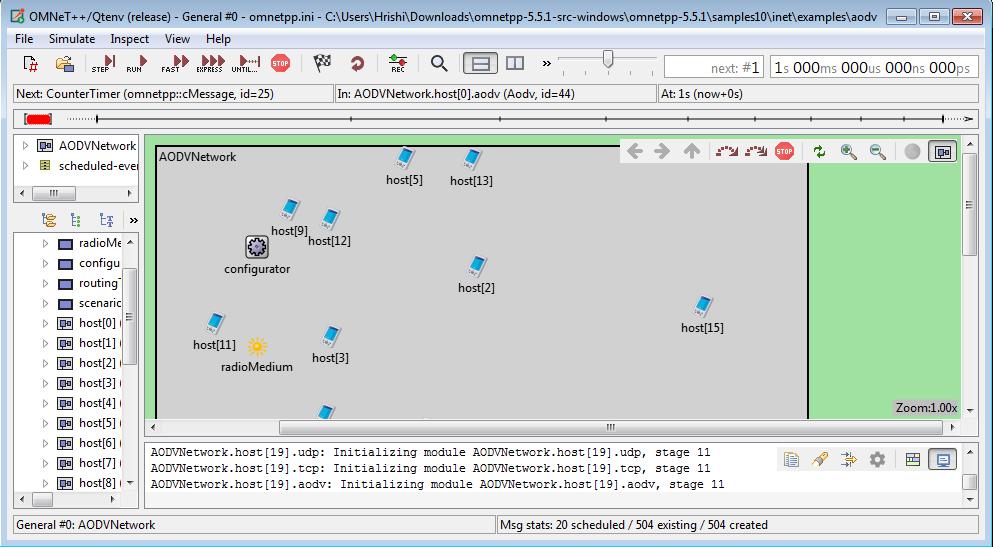
description = demonstrates that AODV chooses the shorter path

network = ShortestPath

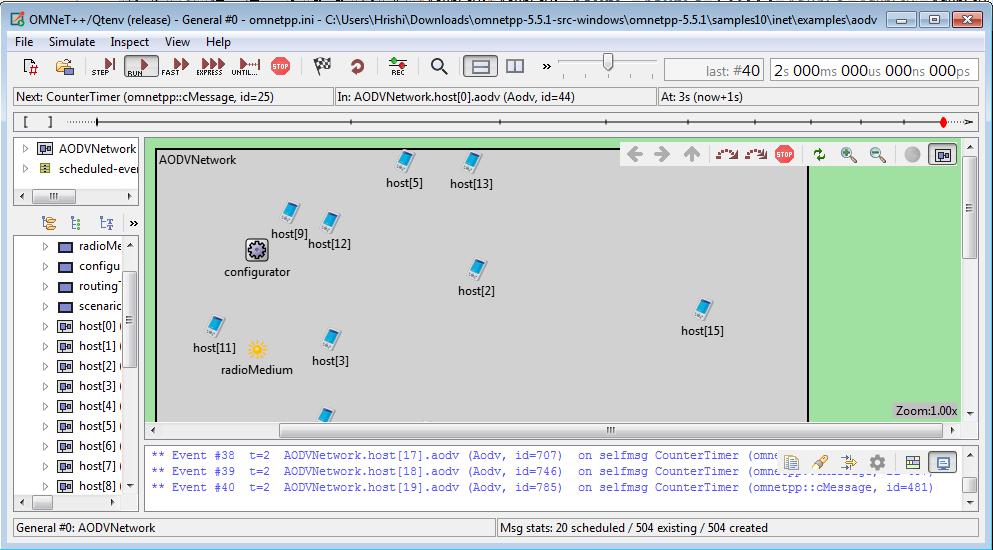
extends = SimpleRREQ

**Step 4:** Click on Run button.

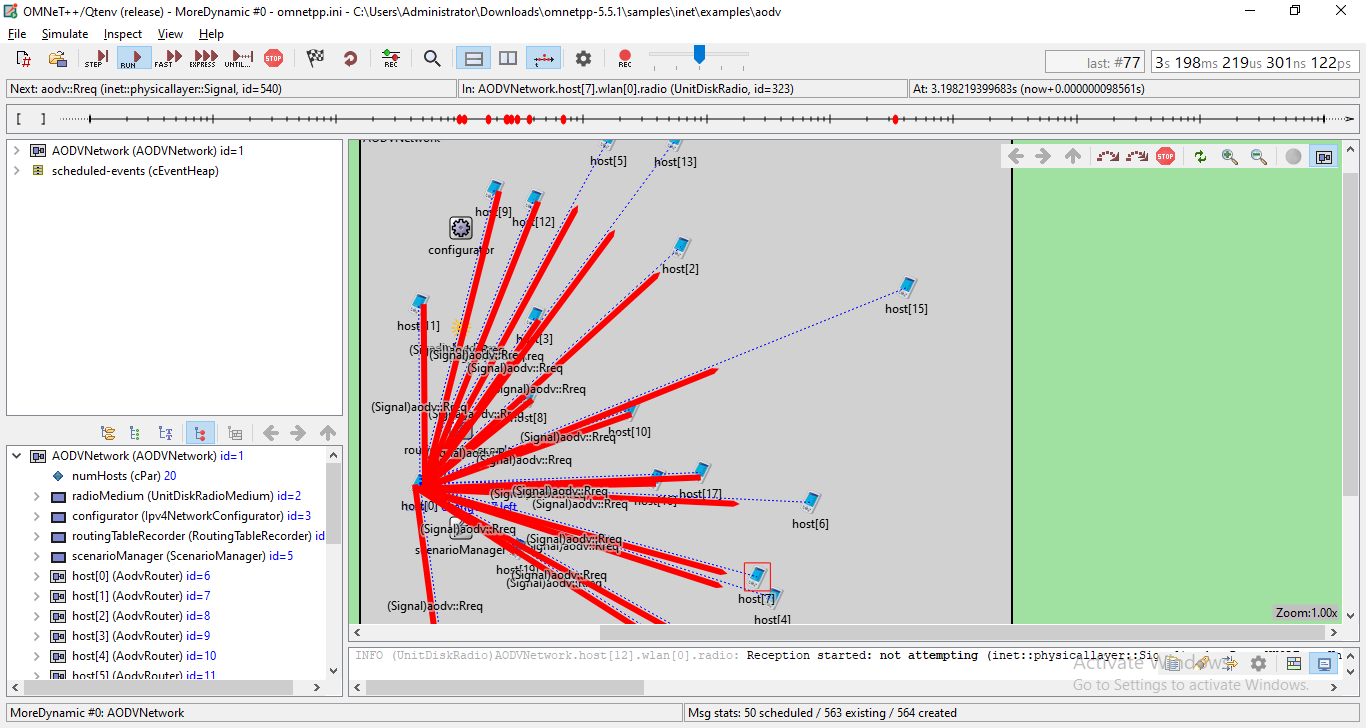
**Step 5:** After that following window will open.

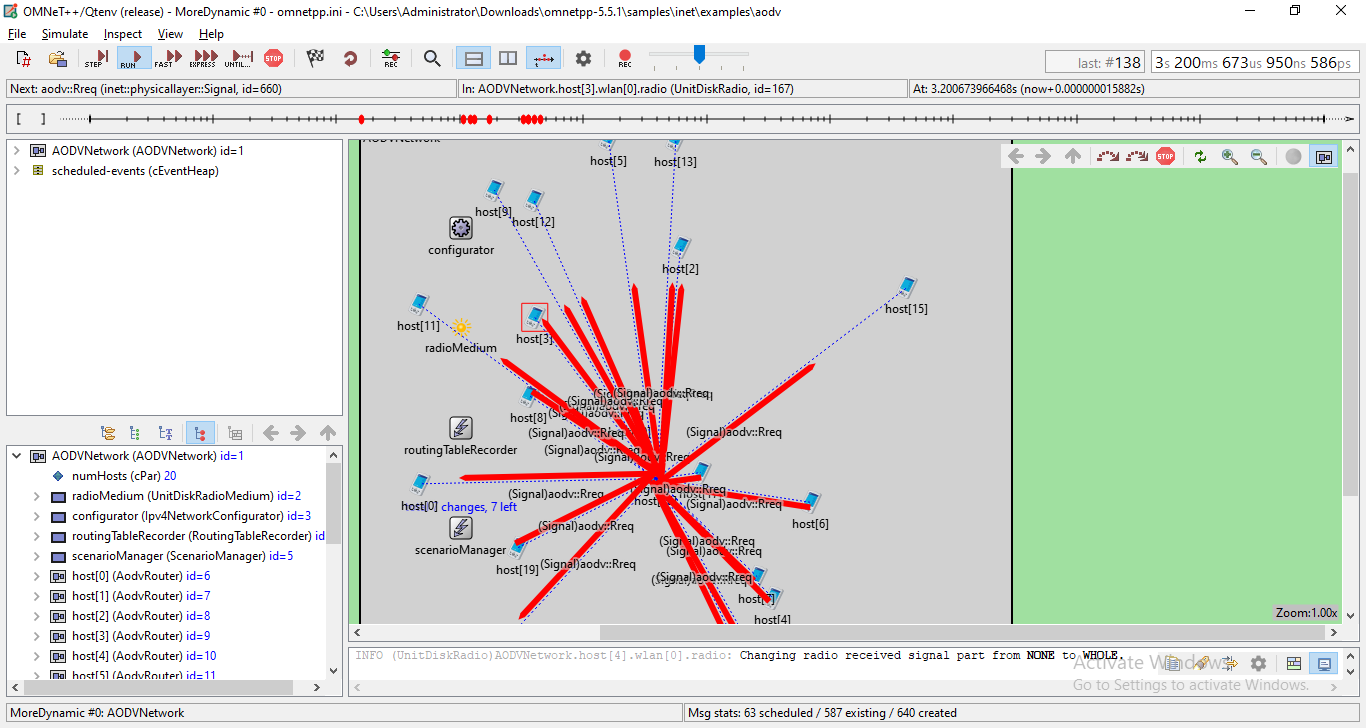


**Step 6:**Click on RUN.



**OUTPUT:**





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