***Wireless Security Network***

***Practical 04***

***Aim:***Create simple Adhoc network.

***Description:***

Steps:

1. open inet/examples/
2. Right click on adhoc -create new folder as SimpleAdhoc.
3. Right click on your newly created folder and select NED file. Give name as Net1.
4. click on new manages mobility wireless network wizard.
5. then configure
6. then click on finish.
7. below is the code that will be available in source part of net1.ned once configured.  
     
   package inet.examples.adhoc.SimpleAdhoc;

// numOfHosts: 5

import inet.networklayer.autorouting.ipv4.IPv4NetworkConfigurator;

import inet.nodes.inet.WirelessHost;

import inet.nodes.wireless.AccessPoint;

import inet.world.radio.ChannelControl;

network Net1

{

parameters:

int numOfHosts;

submodules:

host[numOfHosts]: WirelessHost

{

@display(&quot;r=,,#707070&quot;);

}

ap: AccessPoint

{

@display(&quot;p=213,174;r=,,#707070&quot;);

}

channelControl: ChannelControl

{

numChannels = 2;

@display(&quot;p=61,46&quot;);

}

configurator: IPv4NetworkConfigurator

{

@display(&quot;p=140,50&quot;);

}

}

1. On design part you will find components appearing according to the code as the above snapshot.
2. Same as do this in omnetpp.ini file :  
     
   Source code for omnetpp.ini:

[General]

network = Net1

\*.numOfHosts = 5

#debug-on-errors = true

tkenv-plugin-path = ../../../etc/plugins

\*\*.constraintAreaMinX = 0m

\*\*.constraintAreaMinY = 0m

\*\*.constraintAreaMinZ = 0m

\*\*.constraintAreaMaxX = 600m

\*\*.constraintAreaMaxY = 400m

\*\*.constraintAreaMaxZ = 0m

\*\*.debug = true

\*\*.coreDebug = false

\*\*.host\*.\*\*.channelNumber = 0

# channel physical parameters

\*.channelControl.carrierFrequency = 2.4GHz

\*.channelControl.pMax = 2.0mW

\*.channelControl.sat = -110dBm

\*.channelControl.alpha = 2

# mobility

\*\*.host\*.mobilityType = &quot;MassMobility&quot;

\*\*.host\*.mobility.initFromDisplayString = false

\*\*.host\*.mobility.changeInterval = truncnormal(2s, 0.5s)

\*\*.host\*.mobility.changeAngleBy = normal(0deg, 30deg)

\*\*.host\*.mobility.speed = truncnormal(20mps, 8mps)

\*\*.host\*.mobility.updateInterval = 100ms

# ping app (host[0] pinged by others)

\*.host[0].numPingApps = 0

\*.host[\*].numPingApps = 2

\*.host[\*].pingApp[\*].destAddr = &quot;host[0]&quot;

\*\*.pingApp[0].startTime = uniform(1s,5s)

\*\*.pingApp[1].startTime = 5s+uniform(1s,5s)

\*\*.pingApp[\*].printPing = true

# nic settings

\*\*.wlan[\*].bitrate = 2Mbps

\*\*.wlan[\*].mgmt.frameCapacity = 10

\*\*.wlan[\*].mac.address = &quot;auto&quot;

\*\*.wlan[\*].mac.maxQueueSize = 14

\*\*.wlan[\*].mac.rtsThresholdBytes = 3000B

\*\*.wlan[\*].mac.retryLimit = 7

\*\*.wlan[\*].mac.cwMinData = 7

\*\*.wlan[\*].radio.transmitterPower = 2mW

\*\*.wlan[\*].radio.thermalNoise = -110dBm

\*\*.wlan[\*].radio.sensitivity = -85dBm

\*\*.wlan[\*].radio.pathLossAlpha = 2

\*\*.wlan[\*].radio.snirThreshold = 4dB

[Config Ping1]

description = &quot;host1 pinging host0&quot;

[Config Ping2] # \_\_interactive\_\_

description = &quot;n hosts&quot;

# leave numHosts undefined here

\*\*.mobility.constraintAreaMinZ = 0m

\*\*.mobility.constraintAreaMaxZ = 0m

\*\*.mobility.constraintAreaMinX = 0m

\*\*.mobility.constraintAreaMinY = 0m

\*\*.mobility.constraintAreaMaxX = 600m

\*\*.mobility.constraintAreaMaxY = 400m

\*\*.debug = false

\*\*.coreDebug = false

\*\*.channelNumber = 0

# channel physical parameters

\*.channelControl.carrierFrequency = 2.4GHz

\*.channelControl.pMax = 20.0mW

\*.channelControl.sat = -110dBm

\*.channelControl.alpha = 2

# mobility

\*\*.host[\*].mobilityType = &quot;MassMobility&quot;

\*\*.host[\*].mobility.changeInterval = truncnormal(2s, 0.5s)

\*\*.host[\*].mobility.changeAngleBy = normal(0deg, 30deg)

\*\*.host[\*].mobility.speed = truncnormal(20mps, 8mps)

\*\*.host[\*].mobility.updateInterval = 100ms

# nic settings

\*\*.bitrate = 2Mbps

\*\*.mac.address = &quot;auto&quot;

\*\*.mac.maxQueueSize = 14

\*\*.mac.rtsThresholdBytes = 3000B

\*\*.wlan[\*].mac.retryLimit = 7

\*\*.wlan[\*].mac.cwMinData = 7

\*\*.wlan[\*].mac.cwMinMulticast = 31

\*\*.radio.transmitterPower = 20.0mW

\*\*.radio.carrierFrequency = 2.4GHz

\*\*.radio.thermalNoise = -110dBm

\*\*.radio.sensitivity = -85dBm

\*\*.radio.pathLossAlpha = 2

\*\*.radio.snirThreshold = 4dB

# relay unit configuration

\*\*.relayUnitType = &quot;MACRelayUnitNP&quot;

\*\*.relayUnit.addressTableSize = 100

\*\*.relayUnit.agingTime = 120s

\*\*.relayUnit.bufferSize = 1MiB

\*\*.relayUnit.highWatermark = 512KiB

\*\*.relayUnit.pauseUnits = 300 # pause for 300\*512 bit (19200 byte) time

\*\*.relayUnit.addressTableFile = &quot;&quot;

\*\*.relayUnit.numCPUs = 2

\*\*.relayUnit.processingTime = 2us

1. EXECUTION:

Now try to execute by right click on ned file Run as-1-Omnet++ simulation.

***Screenshots:***

