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| CODE |

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\*File : p6.tcl

\*Description : Simulate simple ESS and with transmitting nodes in wire-less LAN by simulation and determine the performance with respect to transmission of packets.

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\*Tools : NS2, nam, awk

\*Date : 27 September 2013

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if {$argc != 1} {

error "Command: ns <ScriptName.tcl> <Number\_of\_Nodes>"

exit 0

}

#Define the simulation options

set val(chan) Channel/WirelessChannel

set val(prop) Propagation/TwoRayGround

set val(ant) Antenna/OmniAntenna

set val(ll) LL

set val(ifq) Queue/DropTail/PriQueue

set val(ifqlen) 50

set val(netif) Phy/WirelessPhy

set val(mac) Mac/802\_11

set val(rp) AODV

set val(nn) [lindex $argv 0]

set opt(x) 750

set opt(y) 750

set val(stop) 100

set ns [new Simulator]

set trfd [open Wireless.tr w]

set namfd [open Wireless.nam w]

$ns trace-all $trfd

$ns namtrace-all-wireless $namfd $opt(x) $opt(y)

set topo [new Topography]

$topo load\_flatgrid $opt(x) $opt(y)

set god\_ [create-god $val(nn)]

#Configure the nodes

$ns node-config -adhocRouting $val(rp) \

-llType $val(ll) \

-macType $val(mac) \

-ifqType $val(ifq) \

-channelType $val(chan) \

-propType $val(prop) \

-antType $val(ant) \

-ifqLen $val(ifqlen) \

-phyType $val(netif) \

-topoInstance $topo \

-agentTrace ON \

-routerTrace ON \

-macTrace OFF \

-movementTrace OFF

for {set i 0} {$i < $val(nn)} {incr i} {

set n($i) [$ns node]

}

#Randomly placing the nodes

for {set i 0} {$i < $val(nn)} {incr i} {

set XX [expr rand()\*750]

set YY [expr rand()\*750]

$n($i) set X\_ $XX

$n($i) set Y\_ $YY

}

for {set i 0} {$i < $val(nn)} {incr i} {

$ns initial\_node\_pos $n($i) 30

}

set tcp1 [new Agent/TCP]

$ns attach-agent $n(1) $tcp1

set ftp1 [new Application/FTP]

$ftp1 attach-agent $tcp1

set sink1 [new Agent/TCPSink]

$ns attach-agent $n(3) $sink1

$ns connect $tcp1 $sink1

$ns at 0.0 "destination"

proc destination {} {

global ns val n

set now [$ns now]

set time 5.0

for {set i 0} {$i < $val(nn)} {incr i} {

set XX [expr rand()\*750]

set YY [expr rand()\*750]

$ns at [expr $now + $time] "$n($i) setdest $XX $YY 20.0"

}

$ns at [expr $now + $time] "destination"

}

#tell nodes when the simulation ends

for {set i 0} {$i < $val(nn)} {incr i} {

$ns at $val(stop) "$n($i) reset"

}

$ns at 5.0 "$ftp1 start"

$ns at $val(stop) "$ns nam-end-wireless $val(stop)"

$ns at $val(stop) "stop"

proc stop {} {

global ns trfd namfd

close $trfd

close $namfd

exec nam Wireless.nam &

exec awk -f 6.awk Wireless.tr &

exit 0

}

$ns run

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\*File : p6.awk

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BEGIN{

PacketRcvd=0;

Throughput=0.0;

}

{

if(($1=="r")&&($3=="\_3\_")&&($4=="AGT")&&($7=="tcp")&&($8>1000))

{

PacketRcvd++;

}

}

END {

Throughput=((PacketRcvd\*1000\*8)/(95.0\*1000000));

printf "the throughput is:%f\n",Throughput;

}

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| --- |
| **OUTPUT** |

