**CN-Simulation**

Code:second.cc

#include "ns3/core-module.h"

#include "ns3/network-module.h"

#include "ns3/internet-module.h"

#include "ns3/point-to-point-module.h"

#include "ns3/csma-module.h"

#include "ns3/applications-module.h"

#include "ns3/ipv4-global-routing-helper.h"

#include "ns3/netanim-module.h"

using namespace ns3;

int main ()

{

LogComponentEnable ("UdpEchoClientApplication", LOG\_LEVEL\_INFO);

LogComponentEnable ("UdpEchoServerApplication", LOG\_LEVEL\_INFO);

std::string animFile="second.xml";

NodeContainer p2pNodes;

p2pNodes.Create (2);

NodeContainer csmaNodes;

csmaNodes.Add (p2pNodes.Get (1));

csmaNodes.Create (3);

PointToPointHelper pointToPoint;

pointToPoint.SetDeviceAttribute ("DataRate", StringValue ("5Mbps"));

pointToPoint.SetChannelAttribute ("Delay", StringValue ("2ms"));

NetDeviceContainer p2pDevices;

p2pDevices = pointToPoint.Install (p2pNodes);

CsmaHelper csma;

csma.SetChannelAttribute ("DataRate", StringValue ("100Mbps"));

csma.SetChannelAttribute ("Delay", StringValue ("2ms"));

NetDeviceContainer csmaDevices;

csmaDevices = csma.Install (csmaNodes);

InternetStackHelper stack;

stack.Install (p2pNodes.Get (0));

stack.Install (csmaNodes);

Ipv4AddressHelper address;

address.SetBase ("10.1.1.0", "255.255.255.0");

Ipv4InterfaceContainer p2pInterfaces = address.Assign (p2pDevices);

address.SetBase ("10.1.2.0", "255.255.255.0");

Ipv4InterfaceContainer csmaInterfaces = address.Assign (csmaDevices);

UdpEchoServerHelper echoServer (9);

ApplicationContainer serverApps = echoServer.Install (csmaNodes.Get (3));

serverApps.Start (Seconds (1.0));

serverApps.Stop (Seconds (10.0));

UdpEchoClientHelper echoClient (csmaInterfaces.GetAddress (3), 9);

echoClient.SetAttribute ("MaxPackets", UintegerValue (1));

echoClient.SetAttribute ("Interval", TimeValue (Seconds (1.0)));

echoClient.SetAttribute ("PacketSize", UintegerValue (1024));

ApplicationContainer clientApps = echoClient.Install (p2pNodes.Get (0));

clientApps.Start (Seconds (2.0));

clientApps.Stop (Seconds (10.0));

Ipv4GlobalRoutingHelper::PopulateRoutingTables ();

AnimationInterface anim(animFile);

anim.SetConstantPosition(p2pNodes.Get(0),1.0,2.0);

anim.SetConstantPosition(csmaNodes.Get(0),45.0,60.0);

anim.SetConstantPosition(csmaNodes.Get(1),55.0,60.0);

anim.SetConstantPosition(csmaNodes.Get(2),65.0,60.0);

anim.SetConstantPosition(csmaNodes.Get(3),75.0,60.0);

AsciiTraceHelper ascii;

pointToPoint.EnableAsciiAll(ascii.CreateFileStream("second.tr"));

csma.EnableAsciiAll(ascii.CreateFileStream("second1.tr"));

Simulator::Run ();

Simulator::Destroy ();

return 0;

}

Output:

