



EXPERIMENT - 4

Computer Networks Lab

Aim

Write a program in NS3 to connect 2 nodes.

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4C7

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Aim:

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Source Code:

```
#include "ns3/core-module.h"
#include "ns3/network-module.h"
#include "ns3/internet-module.h"
#include "ns3/point-to-point-module.h"
#include "ns3/applications-module.h"

// Default Network Topology
//
//      10.1.1.0
// n0 ----- n1
//      point-to-point
//

using namespace ns3;

NS_LOG_COMPONENT_DEFINE ("FirstScriptExample");

int
main (int argc, char *argv[])
{
    CommandLine cmd (__FILE__);
    cmd.Parse (argc, argv);

    Time::SetResolution (Time::NS);
    LogComponentEnable ("UdpEchoClientApplication", LOG_LEVEL_INFO);
    LogComponentEnable ("UdpEchoServerApplication", LOG_LEVEL_INFO);

    NodeContainer nodes;
    nodes.Create (2);

    PointToPointHelper pointToPoint;
    pointToPoint.SetDeviceAttribute ("DataRate", StringValue ("5Mbps"));
    pointToPoint.SetChannelAttribute ("Delay", StringValue ("2ms"));

    NetDeviceContainer devices;
```

```

devices = pointToPoint.Install (nodes);

InternetStackHelper stack;
stack.Install (nodes);

Ipv4AddressHelper address;
address.SetBase ("10.1.1.0", "255.255.255.0");

Ipv4InterfaceContainer interfaces = address.Assign (devices);

UdpEchoServerHelper echoServer (5);

ApplicationContainer serverApps = echoServer.Install (nodes.Get (1));
serverApps.Start (Seconds (1.0));
serverApps.Stop (Seconds (10.0));

UdpEchoClientHelper echoClient (interfaces.GetAddress (1), 5);
echoClient.SetAttribute ("MaxPackets", UIntegerValue (1));
echoClient.SetAttribute ("Interval", TimeValue (Seconds (1.0)));
echoClient.SetAttribute ("PacketSize", UIntegerValue (1024));

ApplicationContainer clientApps = echoClient.Install (nodes.Get (0));
clientApps.Start (Seconds (2.0));
clientApps.Stop (Seconds (10.0));

Simulator::Run ();
Simulator::Destroy ();
return 0;
}

```

Output:

```

reeha@Reeha:~/networkEng/ns-allinone-3.35/ns-3.35$ ./waf --run first
Waf: Entering directory `/home/reeha/networkEng/ns-allinone-3.35/ns-3.35/build'
Waf: Leaving directory `/home/reeha/networkEng/ns-allinone-3.35/ns-3.35/build'
Build commands will be stored in build/compile_commands.json
'build' finished successfully (4.490s)
At time +2s client sent 1024 bytes to 10.1.1.2 port 5
At time +2.00369s server received 1024 bytes from 10.1.1.1 port 49153
At time +2.00369s server sent 1024 bytes to 10.1.1.1 port 49153
At time +2.00737s client received 1024 bytes from 10.1.1.2 port 5
reeha@Reeha:~/networkEng/ns-allinone-3.35/ns-3.35$ █

```