

CN-Simulation

Code: first.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/applications-module.h'
#include 'ns3/netanim-module.h'

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);
std::string animFile='first.xml';
```

```
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 (9);
```

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

```
serverApps.Stop (Seconds (10.0));
```

```
UdpEchoClientHelper echoClient (interfaces.GetAddress (1), 9);
```

```
echoClient.SetAttribute ('MaxPackets', UIntegerValue (10));
```

```
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));
```

```
AnimationInterface anim(animFile);
```

```
anim.SetConstantPosition(nodes.Get(0),1.0,2.0);
```

```
anim.SetConstantPosition(nodes.Get(1),45.0,60.0);
```

```
AsciiTraceHelper ascii;
```

```
pointToPoint.EnableAsciiAll(ascii.CreateFileStream('first.tr'));
```

```
Simulator::Run ();
```

```
Simulator::Destroy ();
```

```
return 0;
```

```
}
```

Output:

```
Waf: Leaving directory '/home/student/ns-allinone-3.33/ns-3.33/build'
Build commands will be stored in build/compile_commands.json
'build' finished successfully (3.272s)
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
At time +2s client sent 1024 bytes to 10.1.1.2 port 9
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 9
At time +3s client sent 1024 bytes to 10.1.1.2 port 9
At time +3.00369s server received 1024 bytes from 10.1.1.1 port 49153
At time +3.00369s server sent 1024 bytes to 10.1.1.1 port 49153
At time +3.00737s client received 1024 bytes from 10.1.1.2 port 9
At time +4s client sent 1024 bytes to 10.1.1.2 port 9
At time +4.00369s server received 1024 bytes from 10.1.1.1 port 49153
At time +4.00369s server sent 1024 bytes to 10.1.1.1 port 49153
At time +4.00737s client received 1024 bytes from 10.1.1.2 port 9
At time +5s client sent 1024 bytes to 10.1.1.2 port 9
At time +5.00369s server received 1024 bytes from 10.1.1.1 port 49153
At time +5.00369s server sent 1024 bytes to 10.1.1.1 port 49153
At time +5.00737s client received 1024 bytes from 10.1.1.2 port 9
At time +6s client sent 1024 bytes to 10.1.1.2 port 9
At time +6.00369s server received 1024 bytes from 10.1.1.1 port 49153
At time +6.00369s server sent 1024 bytes to 10.1.1.1 port 49153
At time +6.00737s client received 1024 bytes from 10.1.1.2 port 9
At time +7s client sent 1024 bytes to 10.1.1.2 port 9
At time +7.00369s server received 1024 bytes from 10.1.1.1 port 49153
At time +7.00369s server sent 1024 bytes to 10.1.1.1 port 49153
At time +7.00737s client received 1024 bytes from 10.1.1.2 port 9
At time +8s client sent 1024 bytes to 10.1.1.2 port 9
At time +8.00369s server received 1024 bytes from 10.1.1.1 port 49153
At time +8.00369s server sent 1024 bytes to 10.1.1.1 port 49153
At time +8.00737s client received 1024 bytes from 10.1.1.2 port 9
At time +9s client sent 1024 bytes to 10.1.1.2 port 9
At time +9.00369s server received 1024 bytes from 10.1.1.1 port 49153
At time +9.00369s server sent 1024 bytes to 10.1.1.1 port 49153
At time +9.00737s client received 1024 bytes from 10.1.1.2 port 9
```