

Three.cc

```
/* -*- Mode:C++; c-file-style:"gnu"; indent-tabs-mode:nil; -*- */
/*
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 * Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
 */

#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"
#include "ns3/mobility-module.h"

using namespace ns3;

NS_LOG_COMPONENT_DEFINE ("FirstScriptExample");

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

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

    NodeContainer nodes;
    nodes.Create (3);

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

    NetDeviceContainer devices;
    devices = pointToPoint.Install (nodes.Get(0), nodes.Get(1));
    NetDeviceContainer devices1;
    devices1 = pointToPoint.Install (nodes.Get(2), nodes.Get(1));

    InternetStackHelper stack;
    stack.Install (nodes);
```

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

```
Ipv4AddressHelper address1;  
address1.SetBase ("10.1.2.0", "255.255.255.0");  
Ipv4InterfaceContainer interfaces = address.Assign (devices);  
Ipv4InterfaceContainer interfaces1 = address1.Assign (devices1);  
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 (1));  
echoClient.SetAttribute ("Interval", TimeValue (Seconds (1.0)));  
echoClient.SetAttribute ("PacketSize", UIntegerValue (1024));  
UdpEchoClientHelper echoClient1 (interfaces1.GetAddress (1), 9);
```

```
echoClient1.SetAttribute ("MaxPackets", UIntegerValue (1));  
echoClient1.SetAttribute ("Interval", TimeValue (Seconds (1.0)));  
echoClient1.SetAttribute ("PacketSize", UIntegerValue (1024));
```

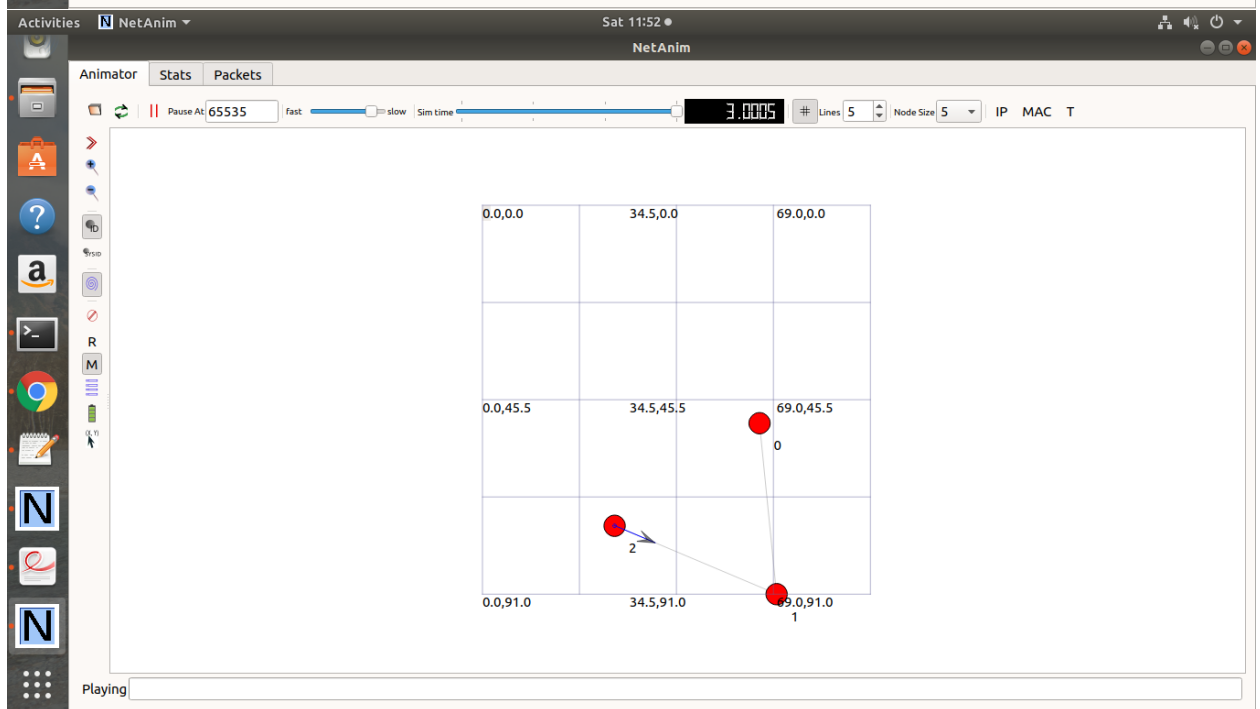
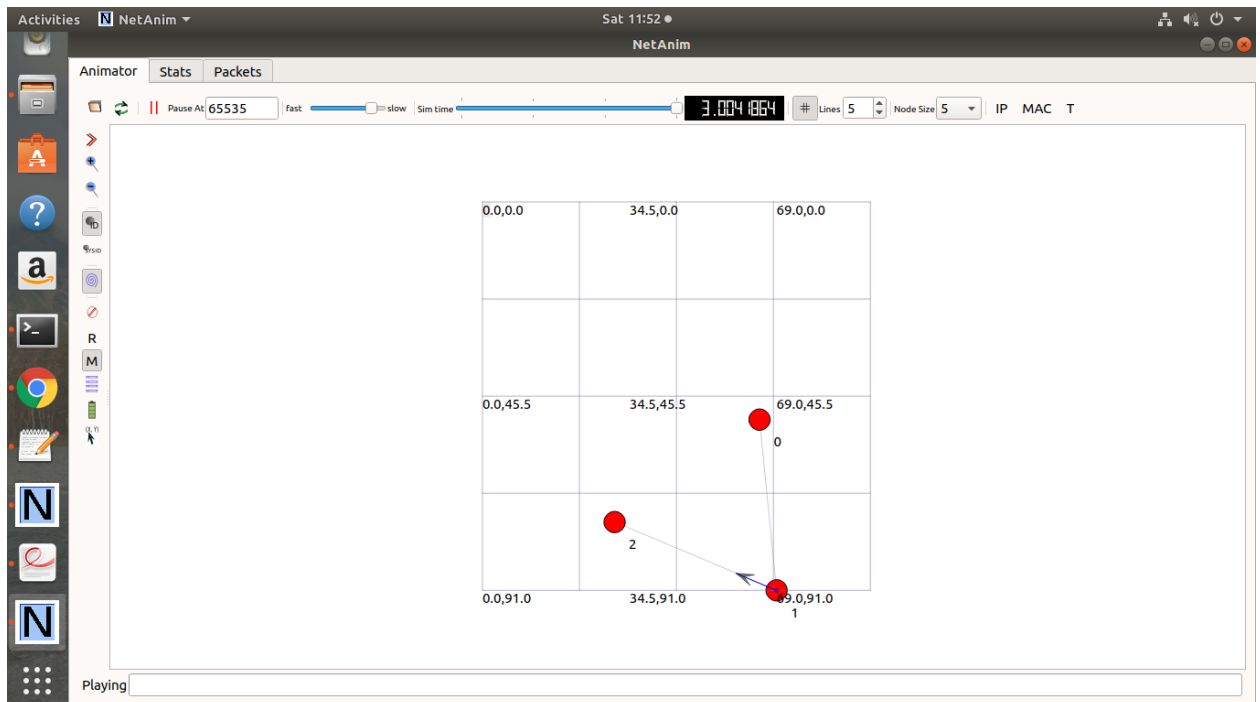
```
ApplicationContainer clientApps = echoClient.Install (nodes.Get (0));  
clientApps.Start (Seconds (2.0));  
clientApps.Stop (Seconds (10.0));
```

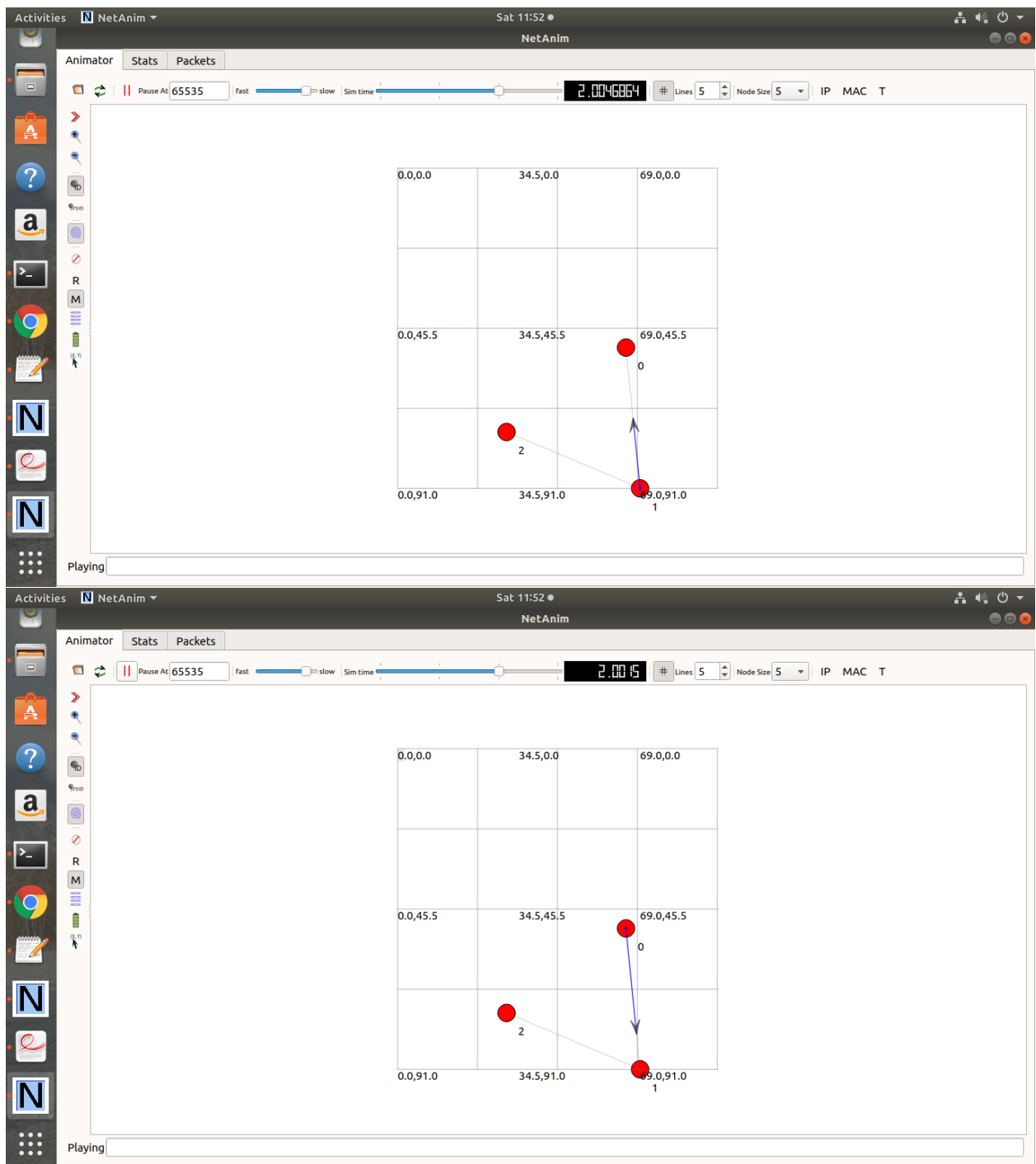
```
ApplicationContainer clientApps1 = echoClient1.Install (nodes.Get (2));  
clientApps1.Start (Seconds (3.0));  
clientApps1.Stop (Seconds (10.0));
```

```
AnimationInterface anim ("threenodes_144.xml");
```

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

```
student@cse3lab3-24:/etc/ns-allinone-3.28/ns-3.28$ sudo ./waf --run threenodes_144
Waf: Entering directory '/etc/ns-allinone-3.28/ns-3.28/build'
[2315/2714] Compiling examples/cse3-144/threenodes_144.cc
[2654/2714] Linking build/examples/cse3-144/ns3.28-threenodes_144-debug
Waf: Leaving directory '/etc/ns-allinone-3.28/ns-3.28/build'
Build commands will be stored in build/compile_commands.json
'build' finished successfully (3.754s)
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:2 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
AnimationInterface WARNING:Node:2 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 10.1.2.2 port 9
At time 3.00369s server received 1024 bytes from 10.1.2.1 port 49153
At time 3.00369s server sent 1024 bytes to 10.1.2.1 port 49153
At time 3.00737s client received 1024 bytes from 10.1.2.2 port 9
student@cse3lab3-24:/etc/ns-allinone-3.28/ns-3.28$ cd ..
student@cse3lab3-24:/etc/ns-allinone-3.28$ cd netanim-3.108/
student@cse3lab3-24:/etc/ns-allinone-3.28/netanim-3.108$ ./NetAnim
Gtk-Message: 11:43:37.490: GtkDialog mapped without a transient parent. This is discouraged.
```





Two.cc

```
/* -*- Mode:C++; c-file-style:"gnu"; indent-tabs-mode:nil; -*- */
/*
```

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```

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* along with this program; if not, write to the Free Software
* Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
*/

```

```

#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"
#include "ns3/mobility-module.h"

```

```
using namespace ns3;
```

```
NS_LOG_COMPONENT_DEFINE ("FirstScriptExample");
```

```

int
main (int argc, char *argv[])
{
    CommandLine cmd;
    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 (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 (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));
```

```
AnimationInterface anim ("twonode.xml");
anim.SetConstantPosition (nodes.Get(0),0,5);
anim.SetConstantPosition (nodes.Get(1),10,5);
    Simulator::Run ();
    Simulator::Destroy ();
    return 0;
}
```

```
student@cse1ab3-24:/etc/ns-allinone-3.28$ cd ns-3.28/
student@cse1ab3-24:/etc/ns-allinone-3.28/ns-3.28$ sudo ./waf --run twonodes_144
waf: Entering directory '/etc/ns-allinone-3.28/ns-3.28/build'
waf: Leaving directory '/etc/ns-allinone-3.28/ns-3.28/build'
Build commands will be stored in build/compile_commands.json
'build' finished successfully (1.318s)
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
student@cse1ab3-24:/etc/ns-allinone-3.28/ns-3.28$
```

