

# Mano

FEB 10 2011

## Finding Node Position, Velocity and Speed in NS2.34

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My post on calculating node position and energy would have benefitted you in your work in ns2. In this article I would explain the use of three predefined functions in MobileNode.cc to access a node's position, velocity and speed dynamically. As usual my work is on AODV protocol.

1. Add *mobilenode.h* header in *aodv.h*

```
#include<mobilenode.h>
```

2. In protected scope declare the variables you would be using to store the node parameters.

<see step5 in this post (<http://getch.wordpress.com/2011/02/08/obtaining-node-position-and-energy-dynamically-in-ns2/>)>

```
double xpos;
```

```
double ypos;
```

```
double zval;
```

```
int node_speed;
```

```
MobileNode *iNode;
```

3. In *aodv.cc* initialize the declared variables.

```
xpos = 0.0;
```

```
ypos = 0.0;
```

```
zval = 0.0;
```

```
node_speed = 0;
```

```
MobileNode *iNode;
```

4. Finally access the required functions from mobilenode.h. I am accessing those functions from AODV::forward() function

```
/**This code retrieves node position*****/
```

```
iNode = (MobileNode*) (Node::get_node_by_address(index));
```

```
((MobileNode *) iNode)->getLoc(&xpos,&ypos,&zpos);
```

```
printf("Position of %d, X=%f, Y=%f, Z=%f \n ", index, xpos, ypos, zpos);
```

```
/**This code retrieves the nodes velocity*****/
```

```
iNode = (MobileNode*) (Node::get_node_by_address(index));
```

```
((MobileNode *) iNode)->getVelo(&xpos, &ypos, &zpos);
```

```
printf("Velocity of %d, X=%f, Y=%f, Z=%f \n", index, xpos, ypos, zpos);
```

```
/**This code retrieves the nodes speed*****/
```

```
iNode = (MobileNode*) (Node::get_node_by_address(index));
```

```
node_speed = ((MobileNode *) iNode)->speed();
```

```
printf("Velocity of %d, Speed=%d \n", index, node_speed);
```

Remember to **make clean**; **make all** after any such changes to aodv.cc or aodv.h

After all these steps are done, execute **simple-wireless.tcl** found at **~/ns-allinone-2.34/ns-2.34/tcl/ex** with the protocol mentioned in it changed from DSDV to **AODV**. The result would be displayed on the terminal whenever AODV::forward() is invoked(in this case).

If you find any discrepancies in this post, please feel free to drop me a mail at [micman.manoj@hotmail.com](mailto:micman.manoj@hotmail.com). By doing so, You would be saving the valuable time of many researchers.

#### A Personal Appeal From This Blogger

There are more than hundred IEEE research papers that have used NS2 for their research work, but the codes available online dont equal the proposed findings. This is because of the over conservative nature of the researchers. If only they could open up their minds and provide guidance to beginner researchers, the quality of simulation that is taking place would be very nice. So I humbly appeal that researchers "open out their code" or provide an outline on "how to get

tasks done in NS2. Blogging and appropriately tagging on NS2 tasks would answer hundreds of queries that remain unanswered in the ns forums. So help us "not to reinvent the wheel".  
**Start Blogging! Start Sharing!**  
-- ManojKumar.A

[\(http://getch.wordpress.com/2010/12/30/cognitive-radio-network-simulator-installation/blogger\\_appeal/\)](http://getch.wordpress.com/2010/12/30/cognitive-radio-network-simulator-installation/blogger_appeal/)

By ManojKumar • Posted in [Network Simulator\(ns\)](#) • Tagged [gnu gpl](#), [mobilenode](#), [node position](#), [node speed](#), [node velocity](#), [ns2](#), [ns2.34](#)

## 10 comments on “Finding Node Position, Velocity and Speed in NS2.34”

**asad**

**MARCH 28, 2011 @ 7:16 AM**

Hi,

I am making these changes in aodv.cc and aodv.h to find nodes position and speed but nothing is appearing on the screen, I am using make clean and make all.

Could you please guide me regarding this problem.

Thanks in advance

Regards

Asad

**Mustafa Bani Khalaf**

**APRIL 17, 2011 @ 9:27 PM**

Thanks for your great efforts.

Could you please tell us how we can add these information to Hello packet?.

Regards

Mustafa

**pinki**

**JUNE 3, 2011 @ 1:11 PM**

hi

I have done all the changes given by u including make clean and make all but i can't see the speed on the screen.

Kindly help

**siwar**

**OCTOBER 20, 2011 @ 2:41 AM**

Hello,

i tried to execute this example in order to get the position node but without success.

i did not get the results in the terminal...

thanks in advance for your help.  
siwar

**rajkumar.k**

**FEBRUARY 8, 2012 @ 6:20 PM**

can u help me regarding to my project :fast detection of replica node attack in mobile sensor network using sequential probability ratio test

rh:9486075037

**sushil**

**FEBRUARY 9, 2012 @ 12:26 PM**

after making the above changes in the files i am getting this error

/aodv/aodv.h:291: error: expected unqualified-id before '/' token  
make: \*\*\* [aodv/aodv\_logs.o] Error 1  
pleas help  
sushil

**Preethi**

**MARCH 6, 2012 @ 3:06 PM**

I am doing my M .E project in coopreative caching in MANET . Could you please help me in implementing this.

**jothi**

**MARCH 29, 2012 @ 12:24 AM**

your code is very useful for me to get the node energy and speed dynamically.  
but it prints the energy and speed of the node through which the packet have been transferred.  
For my project,i need to get the energy and speed of all node( i.e number of node that we have specified )dynamically.  
plz help me.how can i get the energy and speed of all the node dynamically.

THANKS IN ADVANCE

**Hridya Krishna**

**APRIL 3, 2012 @ 9:55 PM**

Hello,  
Can u help for calculating node position and enrgy for dsdv and aomdv also?

**Yohannes**

**OCTOBER 12, 2012 @ 2:49 PM**

Hello! It is nice to share us! However when I put all codes in aodv.h and aodv.cc accordingly and make clean and make all an error which says 'get\_node\_by\_adress' is not a member of 'Node'.What shall I do? By the way I am using ns-2.35.  
Thank You

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