



NS2: Adding Malicious Node to AODV

NS2: How to add new routing protocol

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## NS2: simple method to analyze traces

by [ELMO](#) on JANUARY 16, 2010 · [7 COMMENTS](#)

Today I am going to show a simple perl code to analyze NS2 trace file as an example of AODV routing protocol. As you know when you run simulation, NS2 generates a trace file like sometrace.tr. It will give a lot of information about your simulation result. Not knowing how to analyze this file it is useless to run NS2 simulator. In this topic we will learn how to compute delivery ratio and message overhead.

First go to your **home** directory and create **bin** directory there. We will create trace file here so that we can access it from anywhere we want.

```
1 cd ~
2 mkdir bin
3 cd bin
```

Download **analyze.pl** file, which is attached to the post, to the bin directory. I will explain main points of the code. Following code opens a file to write simulation results.

```
1 $ofile="simulation_result.csv";
2 open OUT, ">$ofile" or die "$0 cannot open output file $ofile: $!";
```

Usually in trace file each line is started with some letter like r, s, D, N. Each of the letters has meaning. For detailed meaning of the letter refer to the [NS Manual Page](#). And following perl code extracts lines which start with "s", which means sent packets. It maybe : control packets (AODV), data packets (cbr). We are only interested in packets those are sent by routers (RTR). If you enable MAC trace, the packets sent or received by MAC layer is also shown.

```
1 if (/^s/){
2     if (/^s.*AODV/) {
3         $aodvSent++;
4         if (/^s.*REQUEST/) {
5             $aodvSendRequest++;
6         }
7         elsif (/^s.*REPLY/) {
8             $aodvSendReply++;
9         }
10    }
11    elsif (/^s.*AGT/) {
12        $dataSent++;
13    }
14 }
15 }
```

REQUEST – AODV Route Request (RREQ) packets

REPLY – AODV Route Reply (RREP) packets;

AGT – Packets those are sent by agent such as cbr, udp, tcp;

And following code counts packet received by each function.

```
1 elsif (/^r/){
2     if (/^r.*AODV/) {
3         $aodvRecv++;
4         if (/^r.*REQUEST/) {
5             $aodvRecvRequest++;
6         }
7     }
8 }
```

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```

7         elseif (/^r.*REPLY/) {
8             $aadvRecvReply++;
9         }
10     }
11     elseif (/^r.*AGT/) {
12         $dataRecv++;
13     }
14 }
15
16 }
```

Finally packets which are dropped are counted using following code :

```

1 elseif (/^D/) {
2     if (/^D.*AODV/) {
3         if (/^D.*REQUEST/) {
4             $aadvDropRequest++;
5         }
6         elseif (/^D.*REPLY/) {
7             $aadvDropReply++;
8         }
9     }
10 }
11 if (/^D.*RTR/) {
12     $routerDrop++;
13 }
14 }
```

Now we will analyze example file. In [this post](#) I have written about simulating WSN with AODV protocol, download it and do following. ( I am assuming you have already put analyze.pl file into your bin directory). Here is full source code to the analyze file : [analyze.pl](#). More trace analyzer code is available in the [this archive](#).

```

1 ns aadv_802_15_4.tcl
2 cat trace-aadv-802-15-4.tr | analyze.pl
```

The result would something like this :



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## 7 Responses to *ns2: simple method to analyze traces*



**meera** says:

March 3, 2010 at 12:26 pm

sorry,but i couldn't download your analyze.pl file.  
will you mail it to me?



**smartnode** says:

March 4, 2010 at 7:53 pm

I don't know you could not download, but link is still available. Try again...



**chandramohan** says:

March 16, 2010 at 1:24 am

i always got router drop=0 for the analyze.pl file. why is it so? could u plz help me how to you got the above result.



**smartnode** says:

March 20, 2010 at 1:00 am

Maybe I'll need your code. Upload somewhere and give me a link..

**Ashwin Pertiq** says:



April 2, 2010 at 3:18 am

Sir I want to know which particular node is misbehaving and the path followed by a particular packet with their sequence number.

Can I analyze the same.

Let me know



**ramesh** says:

April 8, 2010 at 9:35 am

Sir, How can i know the ttl value of packet on destination. does log file maintains it, if so, how can i get it



**kanna** says:

April 20, 2010 at 5:47 pm

am a student doing PG computer science in India.

i have studied your paper titled "A Reverse AODV Routing Protocol in Ad Hoc Mobile Networks" in that redundant route request messages are eliminated using broadcast ID.

I am using Directed Diffusion routing for my project. is it possible to avoid the multiple interest requests for a node?.

if possible where can i change in the diffusion.cc file

this is urgent sir

help me

thanks in advance



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