

## Assignment 6 NetProg CWM

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Repository Link:

<https://github.com/MrJimbo2002/CWM-ProgNets/tree/main/assignment>

What I have done is to make a firewall operating to only allowing white list packet transmitting. To make it more realistic applicable, I added a register based counter to set up a maximum quota in case the white list packet becomes “unsafe” for the sudden increase of transmission rate.

Fig 1 shows the white list packets under the quota as below.

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
2	0.001221231	192.168.10.2	192.168.10.1	UDP	60	26214 → 26209 [BAD UDP LENGTH 28018 > IP PAYLOAD LENGTH] Len=28018
3	0.00124969	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
4	0.001835261	192.168.10.2	192.168.10.1	UDP	60	26228 → 26209 [BAD UDP LENGTH 30066 > IP PAYLOAD LENGTH] Len=30066
5	0.116173916	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
6	0.117047681	192.168.10.2	192.168.10.1	UDP	60	27753 → 25976 [BAD UDP LENGTH 30053 > IP PAYLOAD LENGTH] Len=30045
7	0.196173627	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
8	0.197199723	192.168.10.2	192.168.10.1	UDP	60	27247 → 27246 [BAD UDP LENGTH 25466 > IP PAYLOAD LENGTH] Len=25458
9	0.260347288	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
10	0.261290777	192.168.10.2	192.168.10.1	UDP	60	31093 → 28786 [BAD UDP LENGTH 25453 > IP PAYLOAD LENGTH] Len=25445
11	0.324330561	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
12	0.325281469	192.168.10.2	192.168.10.1	UDP	60	30832 → 30809 [BAD UDP LENGTH 30572 > IP PAYLOAD LENGTH] Len=30564
13	0.380297796	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
14	0.381249370	192.168.10.2	192.168.10.1	UDP	60	26479 → 29538 [BAD UDP LENGTH 31343 > IP PAYLOAD LENGTH] Len=31335
15	0.434943286	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
16	0.435912122	192.168.10.2	192.168.10.1	QUAKEW...	60	Server to Client Game
17	0.492251063	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
18	0.493226808	192.168.10.2	192.168.10.1	UDP	60	29284 → 26722 [BAD UDP LENGTH 26728 > IP PAYLOAD LENGTH] Len=26720
19	0.580808743	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
20	0.581172151	192.168.10.2	192.168.10.1	UDP	60	25713 → 27506 [BAD UDP LENGTH 29802 > IP PAYLOAD LENGTH] Len=29794
21	0.630372573	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
22	0.632746445	192.168.10.2	192.168.10.1	UDP	60	29284 → 25698 [BAD UDP LENGTH 26223 > IP PAYLOAD LENGTH] Len=26215
23	0.780241335	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
24	0.781131855	192.168.10.2	192.168.10.1	UDP	60	26732 → 26477 [BAD UDP LENGTH 29027 > IP PAYLOAD LENGTH] Len=29019
25	0.789545989	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
26	0.791461822	192.168.10.2	192.168.10.1	UDP	60	29793 → 28023 [BAD UDP LENGTH 30322 > IP PAYLOAD LENGTH] Len=30314
27	0.832138310	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
28	0.833026633	192.168.10.2	192.168.10.1	UDP	60	29848 → 27507 [BAD UDP LENGTH 29814 > IP PAYLOAD LENGTH] Len=29806
29	0.896356756	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22

Fig 1

Fig 2 shows the white list packets exceeding the limiting quota.

No.	Time	Source	Destination	Protocol	Length	Info
145	5.020084055	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
146	5.081069391	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
147	5.140248968	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
148	5.196317858	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
149	5.256248662	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
150	5.320087499	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
151	5.389808672	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
152	5.471218860	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
153	5.524058813	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
154	5.592315536	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
155	5.652637181	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
156	5.708982751	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
157	5.776097070	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
158	5.836220584	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
159	5.888331986	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
160	5.956327117	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
161	6.019435614	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
162	6.088040335	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
163	6.152076487	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
164	6.216872575	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
165	6.268094925	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
166	6.324253619	192.168.10.1	192.168.10.2	UDP	64	5000 → 1024 Len=22
167	33.880873576	192.168.10.5	192.168.10.6	UDP	64	5000 → 1024 Len=22
168	33.936309593	192.168.10.5	192.168.10.6	UDP	64	5000 → 1024 Len=22
169	33.984352446	192.168.10.5	192.168.10.6	UDP	64	5000 → 1024 Len=22
170	34.052161305	192.168.10.5	192.168.10.6	UDP	64	5000 → 1024 Len=22
171	34.104307839	192.168.10.5	192.168.10.6	UDP	64	5000 → 1024 Len=22
172	34.168162049	192.168.10.5	192.168.10.6	UDP	64	5000 → 1024 Len=22
173	34.256325014	192.168.10.5	192.168.10.6	UDP	64	5000 → 1024 Len=22

Fig 2

Fig 3 illustrates all packets being blocked outside the firewall for the non-white list packet tracking.

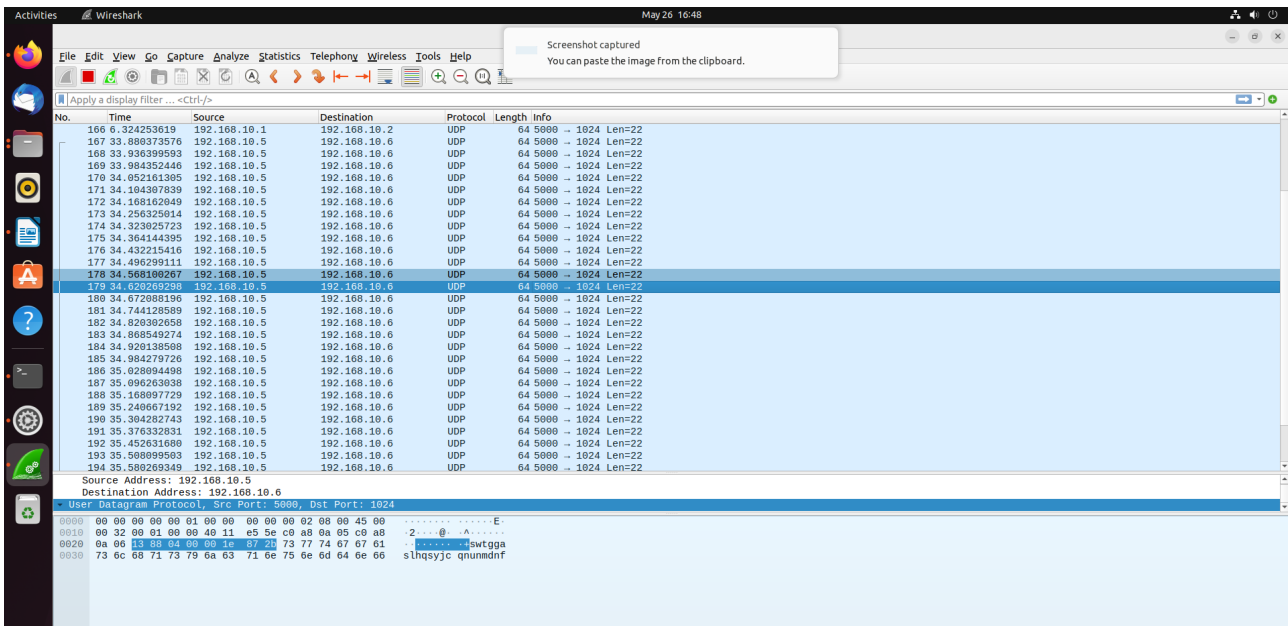


Fig 3

The Pi interface corresponds to the Switch-Limit-Interface to add the following white list packet information.

