과제 **04** 수행보고서

정보통신공학전공

200301582
김 성 태

ubuntu

과제 수행 목적 & 과제 내용

- SimTL 분석 모듈 추가
  - CSMA/SD 디코더 개발
  - 요약 파일에 발착신 MAC 주소 추가
  - 감시한 프레임에 대해 CSMA/CD 프로토콜을 분석하여 해당 파일에 기입 .
  - SimTL 의 수행결과를 Wireshark 와 비교하여 제대로 개발되었는지를 확인 .

주요 모듈 설명

```
if(p_option->eflag) {          // eflag 를 확인
for(j = 0; j < ETH_ALEN; j++) {
fprintf(fd_tmp, "%X", ep->ether_dhost[j]);
if(j != 5) {
fprintf(fd_tmp, " : ");
} }
for(j = 0; j < ETH_ALEN; j++) {
fprintf(fd_tmp, "%X", ep->ether_shost[j]);
if(j != 5) {
fprintf(fd_tmp, " : ");
} }
fprintf(fd_tmp, "\n\tether_type -> %x\n",
ntohs(ep->ether_type));
}
```

- 옵션 확인 후
- 해당 필드에 맞는 정보를 알맞게 뿌려준다 .
- ether_type 필드는 네트워크 바이트 순서 (Network Byte Order) 로 되어있으므로 유의 해야 한다 .
- 네트워크 순서는 빅 - 인디언 (Big-Endian) 방식이다 .
- 이를 ntohs() 함수를 통해 리틀 - 인디언 (Little-Endian) 순서로 바꾸어 주어 나타낸다 .

ubuntu

실행화면

pchero@MyNote: ~/Desktop/Study/REPORT/profe.kimtj/Internet_Engineering/04/SimTL/test

파일(F) 편집(E) 보기(V) 터미널(T) 탭(B) 도움말(H)

pchero@MyNote: ~/Desktop/Study/REPORT/pr... | 2008.4.28_2:22:51.381718 = (/tmp/SimTL) -... | ethernet.h = (/usr/include/net) - VIM | pchero@MyNote: ~/Desktop

```
8: /tmp/SimTL/2008.4.28_2:19:50.81792   0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74 IP:: 192.168.10.110----->2
10.125.213.93 Version:4 Header_Length:5 Service:0 Total_Length:52
9: /tmp/SimTL/2008.4.28_2:19:50.83000   0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74 IP:: 192.168.10.110----->2
10.125.213.93 Version:4 Header_Length:5 Service:0 Total_Length:52
Do you want a Save? [Y/n] :n
pchero@MyNote:~/Desktop/Study/REPORT/profe.kimtj/Internet_Engineering/04/SimTL$ sudo ./SimTL_beta "src host 192.168.10.110 and
 tcp port 80" -i eth0 -c 10 -e -p
device = eth0
0: /tmp/SimTL/2008.4.28_2:22:51.381718  0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74 IP:: 192.168.10.110----->2
22.231.51.49 Version:4 Header_Length:5 Service:0 Total_Length:52
1: /tmp/SimTL/2008.4.28_2:22:59.867867  0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74 IP:: 192.168.10.110----->2
22.231.51.49 Version:4 Header_Length:5 Service:0 Total_Length:52
2: /tmp/SimTL/2008.4.28_2:25:3.108556   0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74 IP:: 192.168.10.110----->2
11.115.116.100 Version:4 Header_Length:5 Service:0 Total_Length:60
3: /tmp/SimTL/2008.4.28_2:25:3.122666   0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74 IP:: 192.168.10.110----->2
11.115.116.100 Version:4 Header_Length:5 Service:0 Total_Length:52
4: /tmp/SimTL/2008.4.28_2:25:3.122845   0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74 IP:: 192.168.10.110----->2
11.115.116.100 Version:4 Header_Length:5 Service:0 Total_Length:614
5: /tmp/SimTL/2008.4.28_2:25:3.137560   0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74 IP:: 192.168.10.110----->2
11.115.116.100 Version:4 Header_Length:5 Service:0 Total_Length:52
6: /tmp/SimTL/2008.4.28_2:25:46.99751   0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74 IP:: 192.168.10.110----->2
22.122.237.240 Version:4 Header_Length:5 Service:0 Total_Length:60
7: /tmp/SimTL/2008.4.28_2:25:46.109488  0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74 IP:: 192.168.10.110----->2
22.122.237.240 Version:4 Header_Length:5 Service:0 Total_Length:40
8: /tmp/SimTL/2008.4.28_2:25:46.141018  0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74 IP:: 192.168.10.110----->2
22.122.237.240 Version:4 Header_Length:5 Service:0 Total_Length:527
9: /tmp/SimTL/2008.4.28_2:25:46.182517  0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74 IP:: 192.168.10.110----->2
22.122.237.240 Version:4 Header_Length:5 Service:0 Total_Length:40
Do you want a Save? [Y/n] :y
Type the save path.
Dir : ./test
/bin/cp -f /tmp/SimTL/* ./testpchero@MyNote:~/Desktop/Study/REPORT/profe.kimtj/Internet_Engineering/04/SimTL$ cd test/
pchero@MyNote:~/Desktop/Study/REPORT/profe.kimtj/Internet_Engineering/04/SimTL/test$ ls
2008.4.28_1:42:15.788407  2008.4.28_1:42:15.843384  2008.4.28_1:42:15.876475  2008.4.28_2:25:3.108556  2008.4.28_2:25:46.109488  traceManager
2008.4.28_1:42:15.796190  2008.4.28_1:42:15.844536  2008.4.28_1:42:16.19682   2008.4.28_2:25:3.122666  2008.4.28_2:25:46.141018
2008.4.28_1:42:15.833033  2008.4.28_1:42:15.858884  2008.4.28_2:22:51.381718  2008.4.28_2:25:3.122845  2008.4.28_2:25:46.182517
2008.4.28_1:42:15.834254  2008.4.28_1:42:15.859243  2008.4.28_2:22:59.867867  2008.4.28_2:25:3.137560  2008.4.28_2:25:46.99751
pchero@MyNote:~/Desktop/Study/REPORT/profe.kimtj/Internet_Engineering/04/SimTL/test$
```

실행화면 - 요약파일

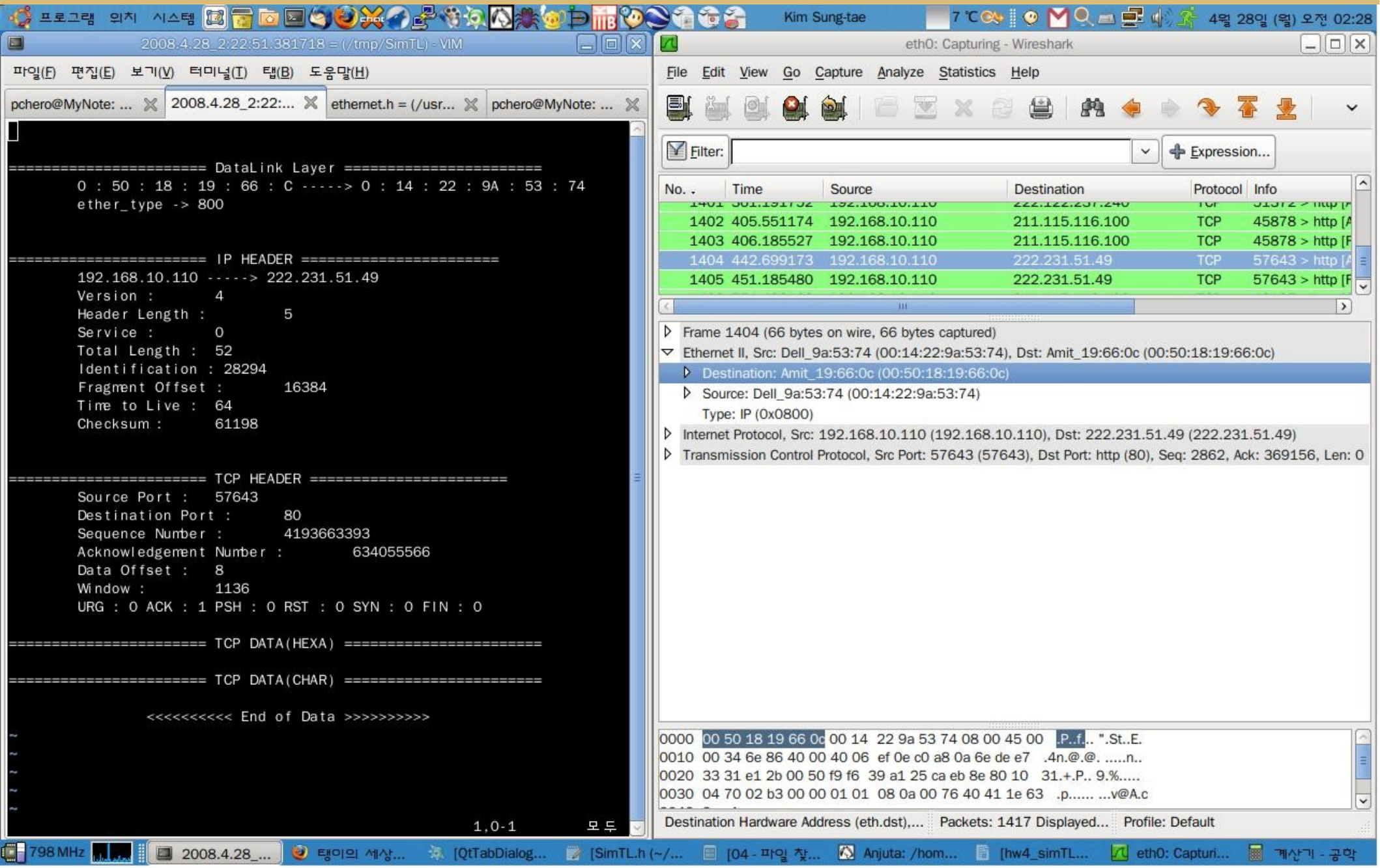
pchero@MyNote: /tmp/SimTL

파일(F) 편집(E) 보기(V) 터미널(T) 탭(B) 도움말(H)

pchero@MyNote: ~/Desktop/Study/REPORT/pr... | pchero@MyNote: /tmp/SimTL | ethernet.h = (/usr/include/net) - VIM | pchero@MyNote: ~/Desktop

```
pchero@MyNote:/tmp/SimTL$ cat
2008.4.28_2:22:51.381718  2008.4.28_2:25:3.108556   2008.4.28_2:25:3.122845   2008.4.28_2:25:46.109488  2008.4.28_2:25:46.182517  traceManager
2008.4.28_2:22:59.867867  2008.4.28_2:25:3.122666   2008.4.28_2:25:3.137560   2008.4.28_2:25:46.141018  2008.4.28_2:25:46.99751
pchero@MyNote:/tmp/SimTL$ cat traceManager
1: /tmp/SimTL/2008.4.28_2:22:51.381718  0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74
        ether_type -> 800
 IP:: 192.168.10.110----->222.231.51.49 Version:4 Header_Length:5 Service:0 Total_Length:52
2: /tmp/SimTL/2008.4.28_2:22:59.867867  0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74
        ether_type -> 800
 IP:: 192.168.10.110----->222.231.51.49 Version:4 Header_Length:5 Service:0 Total_Length:52
3: /tmp/SimTL/2008.4.28_2:25:3.108556   0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74
        ether_type -> 800
 IP:: 192.168.10.110----->211.115.116.100 Version:4 Header_Length:5 Service:0 Total_Length:60
4: /tmp/SimTL/2008.4.28_2:25:3.122666   0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74
        ether_type -> 800
 IP:: 192.168.10.110----->211.115.116.100 Version:4 Header_Length:5 Service:0 Total_Length:52
5: /tmp/SimTL/2008.4.28_2:25:3.122845   0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74
        ether_type -> 800
 IP:: 192.168.10.110----->211.115.116.100 Version:4 Header_Length:5 Service:0 Total_Length:614
6: /tmp/SimTL/2008.4.28_2:25:3.137560   0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74
        ether_type -> 800
 IP:: 192.168.10.110----->211.115.116.100 Version:4 Header_Length:5 Service:0 Total_Length:52
7: /tmp/SimTL/2008.4.28_2:25:46.99751   0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74
        ether_type -> 800
 IP:: 192.168.10.110----->222.122.237.240 Version:4 Header_Length:5 Service:0 Total_Length:60
8: /tmp/SimTL/2008.4.28_2:25:46.109488  0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74
        ether_type -> 800
 IP:: 192.168.10.110----->222.122.237.240 Version:4 Header_Length:5 Service:0 Total_Length:40
9: /tmp/SimTL/2008.4.28_2:25:46.141018  0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74
        ether_type -> 800
 IP:: 192.168.10.110----->222.122.237.240 Version:4 Header_Length:5 Service:0 Total_Length:527
10: /tmp/SimTL/2008.4.28_2:25:46.182517 0 : 50 : 18 : 19 : 66 : C -----> 0 : 14 : 22 : 9A : 53 : 74
        ether_type -> 800
 IP:: 192.168.10.110----->222.122.237.240 Version:4 Header_Length:5 Service:0 Total_Length:40
pchero@MyNote:/tmp/SimTL$
```

실행화면 – Wireshark 비교



참고

- http://kldp.org
  - 한국 리눅스 문서 프로젝트
- http://wiki.kldp.org/wiki.php/DocbookSgml/Libpcap-KLDP#COMPILE
  - pcap_library 에 관련된 kldpwiki 사이트
- http://www.tcpdump.org/tcpdump_man.html
  - Tcpdump 매뉴얼
- http://blog.naver.com/pjfile?Redirect=Log&logNo=40012816089
  - Getopt() 함수에 관한 설명이 나와있는 곳 .
- http://www.joinc.co.kr
  - C 프로그래밍에 관한 참고자료가 풍부한 곳 .

끝

감사합니다 .

ubuntu