

Triển khai giao thức PAP, CHAP

Nguyễn Văn Mạnh

Mô hình mạng



Triển khai giao thức PAP

Cấu hình router NVM1

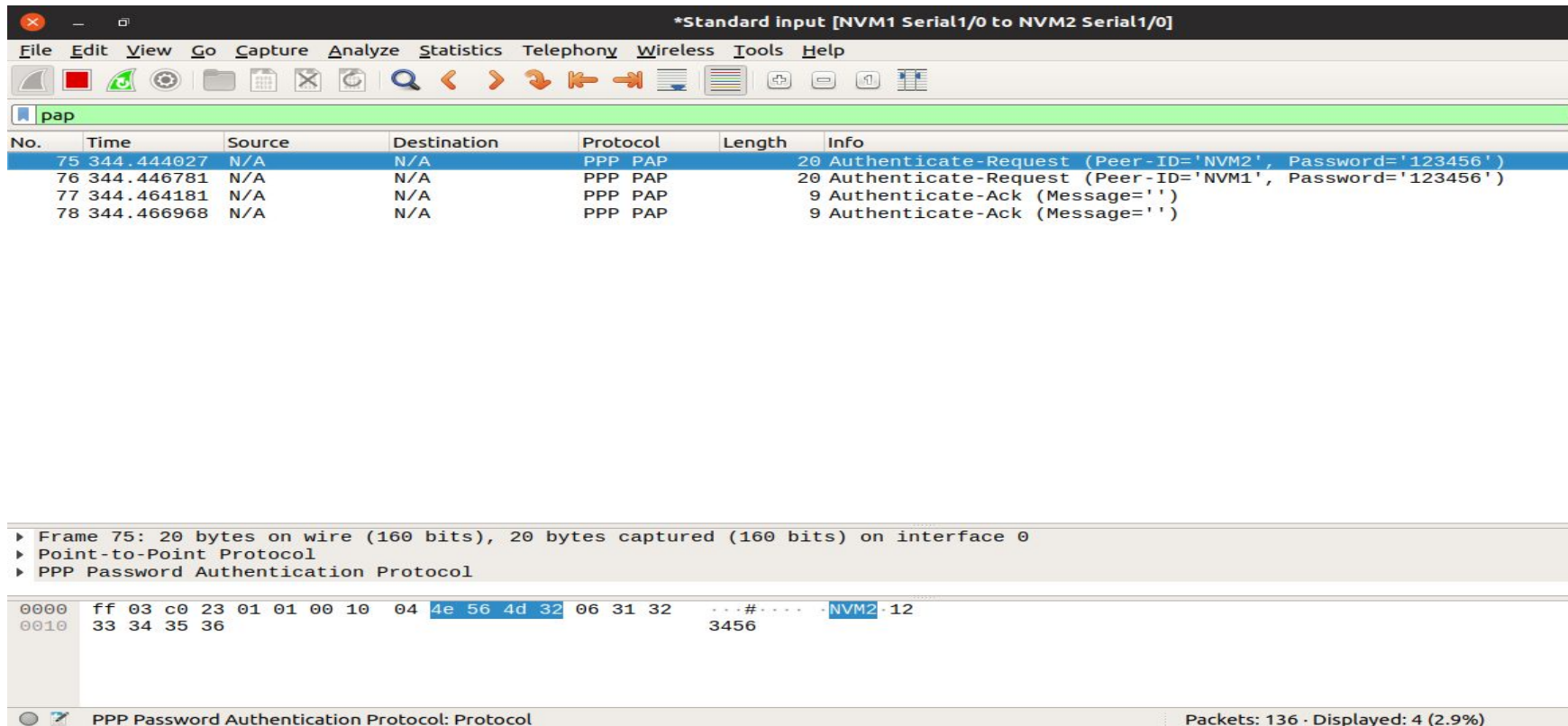
```
changed state to downNVM1#  
NVM1#configure  
Configuring from terminal, memory, or network [terminal]?  
Enter configuration commands, one per line. End with CNTL/Z.  
NVM1(config)#username NVM2 password 123456  
NVM1(config)#interface serial 1/0  
NVM1(config-if)#encapsulation ppp  
NVM1(config-if)#ppp authentication pap  
NVM1(config-if)#ppp pap sent-username NVM1 password 123456  
NVM1(config-if)#no shutdown  
NVM1(config-if)#  
*Mar  1 00:04:05.563: %LINK-3-UPDOWN: Interface Serial1/0, changed state to up  
NVM1(config-if)#
```

Cấu hình router NVM2

```
changed state to down
NVM2#configure
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
NVM2(config)#username NVM1 password 123456
NVM2(config)#interface serial 1/0
NVM2(config-if)#ppp authentication pap
                        ^
% Invalid input detected at '^' marker.

NVM2(config-if)#encapsulation ppp
NVM2(config-if)#ppp authentication pap
NVM2(config-if)#ppp pap sent-username NVM2 password 123456
NVM2(config-if)#no shutdown
NVM2(config-if)#
*Mar  1 00:17:44.319: %LINK-3-UPDOWN: Interface Serial1/0, changed state to up
NVM2(config-if)#
*Mar  1 00:17:45.387: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/0,
changed state to up
NVM2(config-if)#
```

Dùng wireshark để bắt gói tin



Wireshark interface showing a packet capture on a serial interface. The packet list displays four packets:

No.	Time	Source	Destination	Protocol	Length	Info
75	344.444027	N/A	N/A	PPP PAP	20	Authenticate-Request (Peer-ID='NVM2', Password='123456')
76	344.446781	N/A	N/A	PPP PAP	20	Authenticate-Request (Peer-ID='NVM1', Password='123456')
77	344.464181	N/A	N/A	PPP PAP	9	Authenticate-Ack (Message='')
78	344.466968	N/A	N/A	PPP PAP	9	Authenticate-Ack (Message='')

The packet details pane shows the structure of the first packet (Frame 75):

- Frame 75: 20 bytes on wire (160 bits), 20 bytes captured (160 bits) on interface 0
- Point-to-Point Protocol
- PPP Password Authentication Protocol

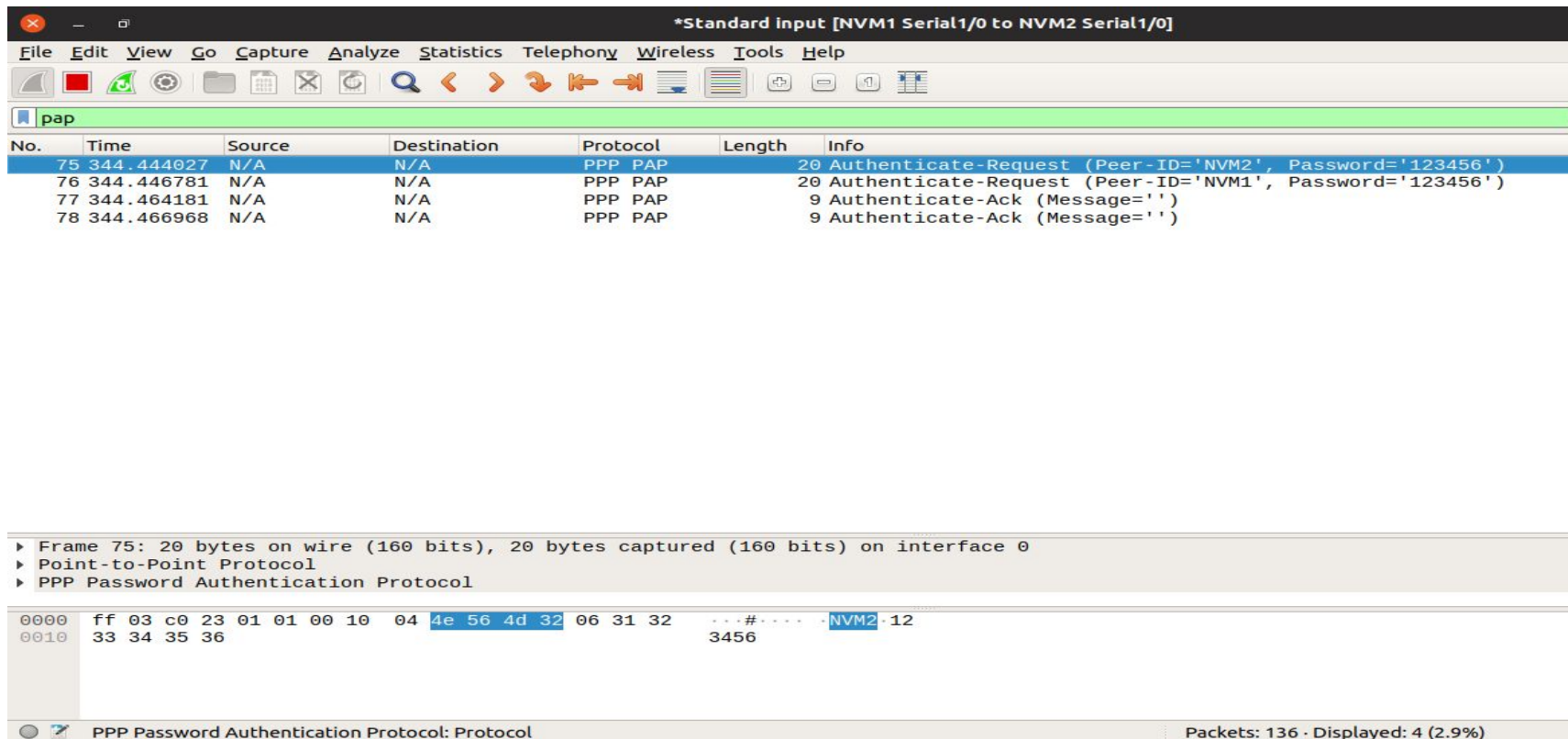
The packet bytes pane shows the raw data in hexadecimal and ASCII:

```
0000 ff 03 c0 23 01 01 00 10 04 4e 56 4d 32 06 31 32 ...#....NVM2.12
0010 33 34 35 36 3456
```

PPP Password Authentication Protocol: Protocol

Packets: 136 · Displayed: 4 (2.9%)

Dùng wireshark để bắt gói tin



Wireshark interface showing a packet capture on a serial interface. The packet list displays four packets:

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The packet details pane shows the structure of the first packet (Frame 75):

- Frame 75: 20 bytes on wire (160 bits), 20 bytes captured (160 bits) on interface 0
- Point-to-Point Protocol
- PPP Password Authentication Protocol

The packet bytes pane shows the raw data:

```
0000 ff 03 c0 23 01 01 00 10 04 4e 56 4d 32 06 31 32 ...#... -NVM2-12
0010 33 34 35 36 3456
```

PPP Password Authentication Protocol: Protocol

Packets: 136 · Displayed: 4 (2.9%)

Dữ liệu được hiển thị ở bản rõ

```
▶ Frame 75: 20 bytes on wire (160 bits), 20 bytes captured (160 bits) on interface 0
▼ Point-to-Point Protocol
    Address: 0xff
    Control: 0x03
    Protocol: Password Authentication Protocol (0xc023)
▼ PPP Password Authentication Protocol
    Code: Authenticate-Request (1)
    Identifier: 1
    Length: 16
    ▼ Data
        Peer-ID-Length: 4
        Peer-ID: NVM2
        Password-Length: 6
        Password: 123456
```


Triển khai giao thức CHAP

Cấu hình router NVM1

```
NVM1#configure
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
NVM1(config)#username NVM2 password 123456
NVM1(config)#interface serial 1/0
NVM1(config-if)#encapsulation ppp
NVM1(config-if)#ppp authentication chap
NVM1(config-if)#ppp chap hostname NVM1
NVM1(config-if)#ppp chap password 123456
NVM1(config-if)#no shutdown
NVM1(config-if)#
*Mar  1 00:01:50.607: %LINK-3-UPDOWN: Interface Serial1/0, changed state to up
NVM1(config-if)#
```

Cấu hình router NVM2

```
NVM2#configure
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
NVM2(config)#username NVM1 password 123456
NVM2(config)#interface serial 1/0
NVM2(config-if)#encapsulation ppp
NVM2(config-if)#ppp authentication chap
NVM2(config-if)#ppp chap hostname NVM2
NVM2(config-if)#ppp chap password 123456
NVM2(config-if)#no shutdown
NVM2(config-if)#
*Mar  1 00:03:43.163: %LINK-3-UPDOWN: Interface Serial1/0, changed state to up
NVM2(config-if)#
*Mar  1 00:03:44.227: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/0,
changed state to up
NVM2(config-if)#
```

Dùng Wireshark bắt các gói tin giữa 2 router

Wireshark interface showing captured packets for the 'chap' filter. The packet list displays several PPP CHAP packets, with packet 64 highlighted in blue. The packet details pane shows the structure of packet 64, which is a PPP Challenge Handshake Authentication Protocol (CHAP) packet, specifically a Challenge (1) with Identifier 2 and Length 25. The data field shows the challenge value: 7e8b957519a6db913fec287017ae16e7, Name: NVM2. The packet bytes pane shows the raw data in hexadecimal and ASCII.

No.	Time	Source	Destination	Protocol	Length	Info
63	140.255681	N/A	N/A	PPP CHAP	29	Challenge (NAME='NVM1', VALUE=0xb15fdbee26dcf16dff73dd2b279f87db)
64	140.266066	N/A	N/A	PPP CHAP	29	Challenge (NAME='NVM2', VALUE=0x7e8b957519a6db913fec287017ae16e7)
65	140.266095	N/A	N/A	PPP CHAP	29	Response (NAME='NVM2', VALUE=0xc3729c8827d232fec4238bea9ba9fb53)
66	140.275833	N/A	N/A	PPP CHAP	29	Response (NAME='NVM1', VALUE=0x88ab2aadb284d1a96035d8ffbb8d71e7)
67	140.275900	N/A	N/A	PPP CHAP	8	Success (MESSAGE='')
68	140.286260	N/A	N/A	PPP CHAP	8	Success (MESSAGE='')

Frame 64: 29 bytes on wire (232 bits), 29 bytes captured (232 bits) on interface 0

Point-to-Point Protocol

PPP Challenge Handshake Authentication Protocol

- Code: Challenge (1)
- Identifier: 2
- Length: 25
- Data
 - Value Size: 16
 - Value: 7e8b957519a6db913fec287017ae16e7
 - Name: NVM2

0000 ff 03 c2 23 01 02 00 19 10 7e 8b 95 75 19 a6 db ...#... ~...u...
0010 91 3f ec 28 70 17 ae 16 e7 4e 56 4d 32 ...?.(p... NVM2

wireshark_-_20190302142724_jgYYC2.pcapng

Packets: 126 · Displayed: 6 (4.8%)

Thu được mật khẩu đã được mã hóa

chap

No.	Time	Source	Destination	Protocol	Length	Info
63	140.255681	N/A	N/A	PPP CHAP	29	Challenge (NAME='NVM1', VALUE=0xb15fdbee26dcf16dff73dd2b279f87db)
64	140.266066	N/A	N/A	PPP CHAP	29	Challenge (NAME='NVM2', VALUE=0x7e8b957519a6db913fec287017ae16e7)
65	140.266095	N/A	N/A	PPP CHAP	29	Response (NAME='NVM2', VALUE=0xc3729c8827d232fec4238bea9ba9fb53)
66	140.275833	N/A	N/A	PPP CHAP	29	Response (NAME='NVM1', VALUE=0x00a02aadb284d1a90035081f006d71e7)
67	140.275900	N/A	N/A	PPP CHAP	8	Success (MESSAGE='')
68	140.286260	N/A	N/A	PPP CHAP	8	Success (MESSAGE='')

▶ Frame 65: 29 bytes on wire (232 bits), 29 bytes captured (232 bits) on interface 0

▶ Point-to-Point Protocol

▼ PPP Challenge Handshake Authentication Protocol

Code: Response (2)

Identifier: 2

Length: 25

▼ Data

Value Size: 16

Value: c3729c8827d232fec4238bea9ba9fb53

Name: NVM2

0000 ff 03 c2 23 02 02 00 19 10 c3 72 9c 88 27 d2 32 ...#.... ..r...'.2

0010 fe c4 23 8b ea 9b a9 fb 53 4e 56 4d 32 ...#..... SNVM2

wireshark_-_20190302142724_jgYYC2.pcapng

Packets: 133 · Displayed: 6 (4.5%)

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