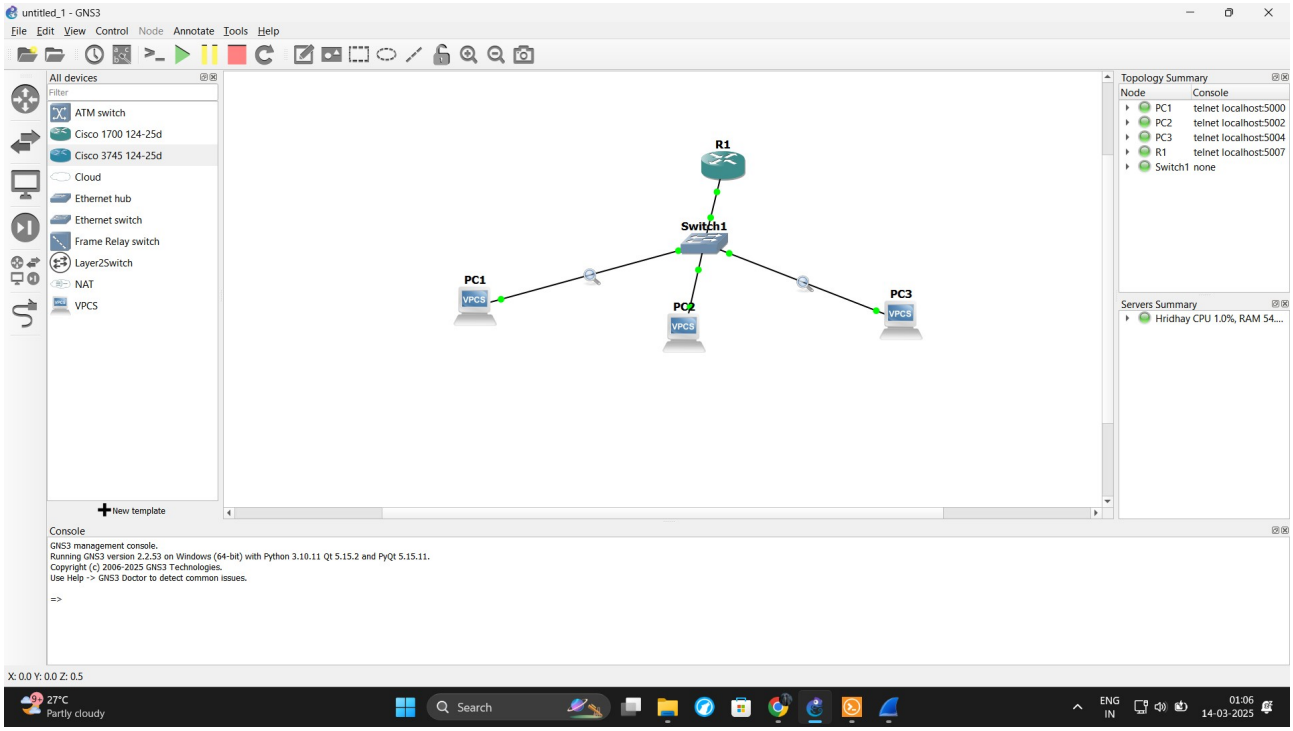
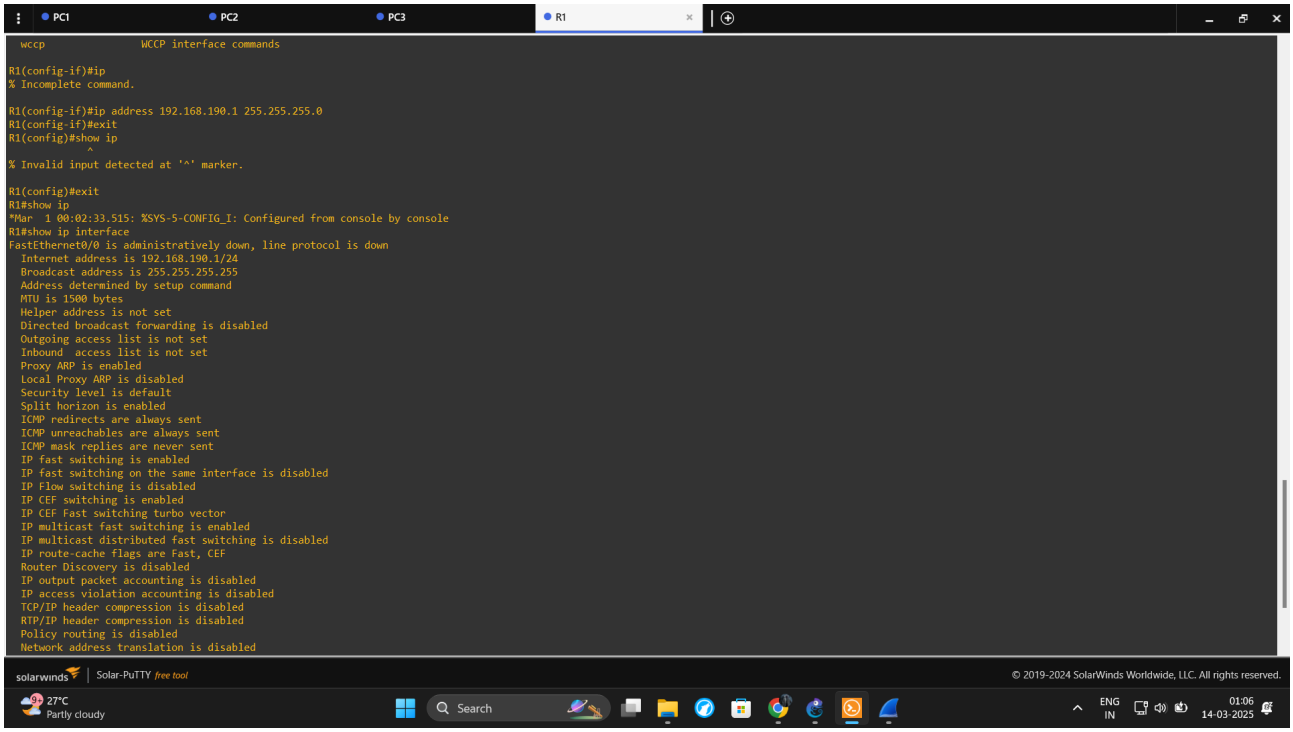
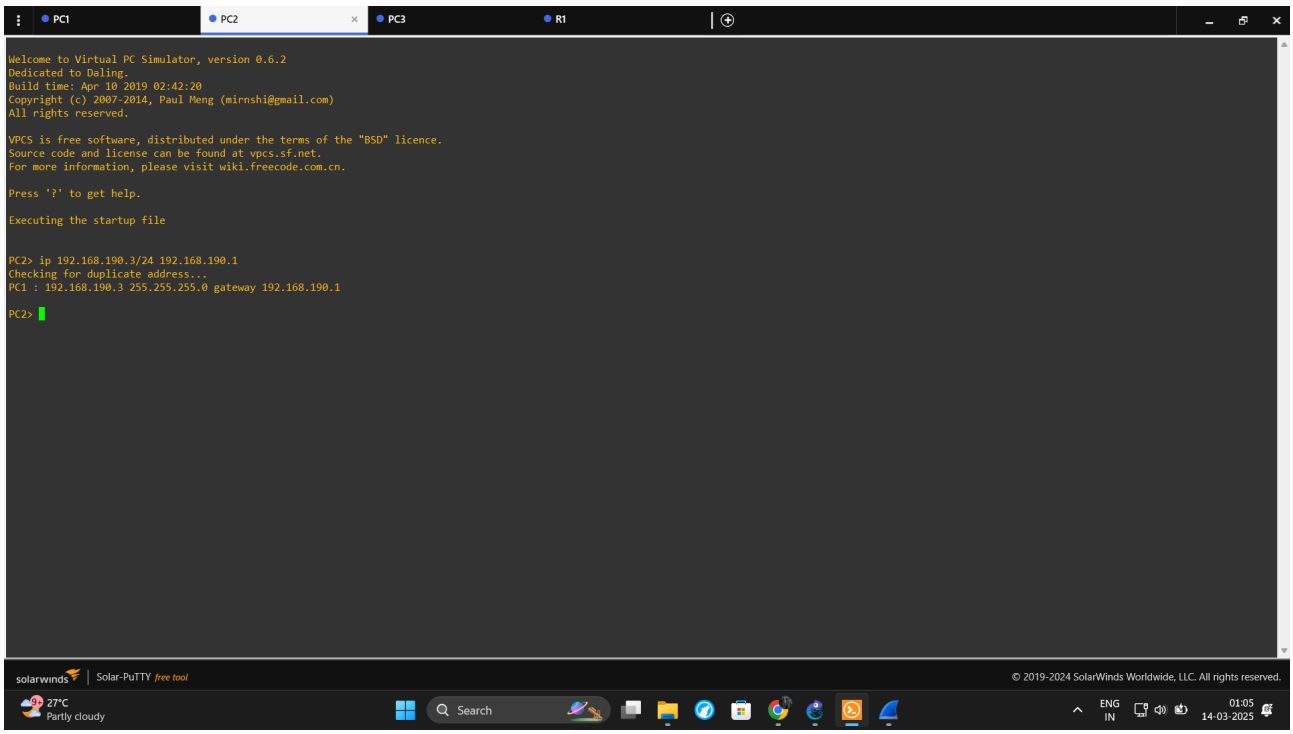
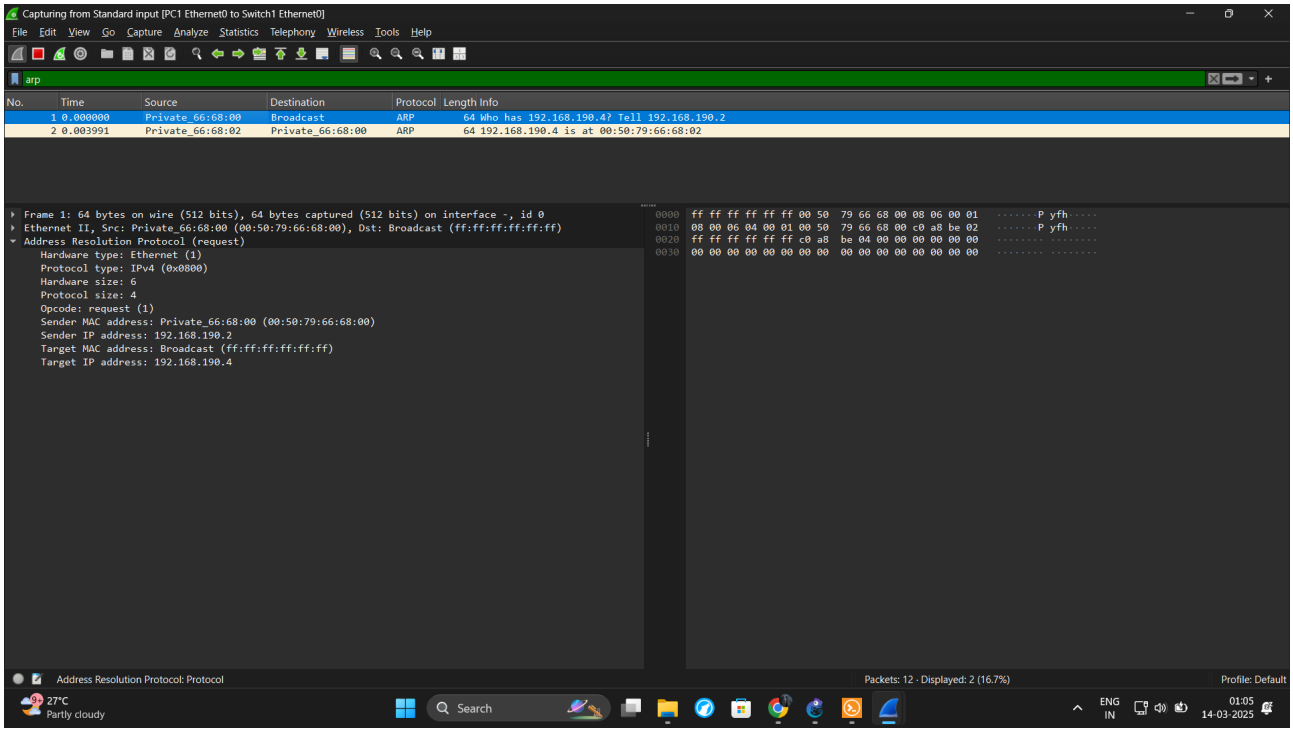
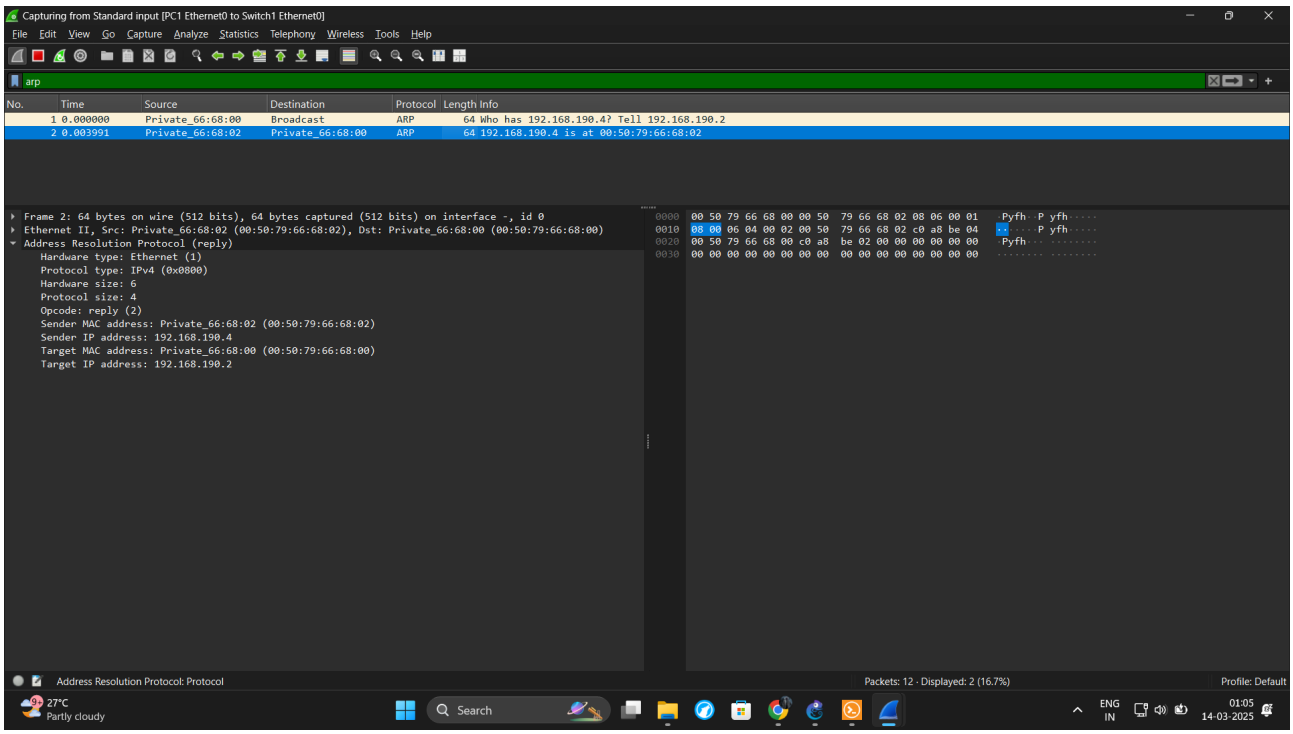
Address Resolution Protocol (ARP) is a network protocol that maps ip address of the destination device in a network to its corresponding MAC address. This ensures that the data link layer will forward packets to the destination using the MAC addrss. If destination is not in the network it will forward to the default gateway using the MAC address of the gateway.






PC1
PC2
PC3
R1
Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2019 02:42:20
Copyright (c) 2007-2014, Paul Meng (mirnshi@gmail.com)
All rights reserved.
VPCS is free software, distributed under the terms of the "BSD" licence.
Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.
Press '?' to get help.
Executing the startup file
PC2> ip 192.168.190.3/24 192.168.190.1
Checking for duplicate address...
PC1 : 192.168.190.3 255.255.255.0 gateway 192.168.190.1
PC2>
solarwinds
Solar-PuTTY free tool
© 2019-2024 SolarWinds Worldwide, LLC. All rights reserved.
27°C
Partly cloudy
Search
ENG
IN
01:05
14-03-2025


Capturing from Standard input [PC1 Ethernet0 to Switch1 Ethernet0]
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
arp
No. Time Source Destination Protocol Length Info
1 0.000000 Private_66:68:00 Broadcast ARP 64 Who has 192.168.190.4? Tell 192.168.190.2
2 0.003991 Private_66:68:02 Private_66:68:00 ARP 64 192.168.190.4 is at 00:50:79:66:68:02
Frame 1: 64 bytes on wire (512 bits), 64 bytes captured (512 bits) on interface -, id 0
Ethernet II, Src: Private_66:68:00 (00:50:79:66:68:00), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
Address Resolution Protocol (request)
Hardware type: Ethernet (1)
Protocol type: IPv4 (0x0800)
Hardware size: 6
Protocol size: 4
Opcode: request (1)
Sender MAC address: Private_66:68:00 (00:50:79:66:68:00)
Sender IP address: 192.168.190.2
Target MAC address: Broadcast (ff:ff:ff:ff:ff:ff)
Target IP address: 192.168.190.4
0000 ff ff ff ff ff ff 00 50 79 66 68 00 08 06 00 01 ·····P yfh·····
0010 08 00 06 04 00 01 00 50 79 66 68 00 c0 a8 be 02 ·····P yfh·····
0020 ff ff ff ff ff ff c0 a8 be 04 00 00 00 00 00 00 ····· ·····
0030 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ····· ·····
Address Resolution Protocol: Protocol
Packets: 12 · Displayed: 2 (16.7%)
Profile: Default
27°C
Partly cloudy
Search
ENG
IN
01:05
14-03-2025


Capturing from Standard input [PC1 Ethernet0 to Switch1 Ethernet0]
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
arp
No. Time Source Destination Protocol Length Info
1 0.000000 Private_66:68:00 Broadcast ARP 64 Who has 192.168.190.4? Tell 192.168.190.2
2 0.003991 Private_66:68:02 Private_66:68:00 ARP 64 192.168.190.4 is at 00:50:79:66:68:02
Frame 2: 64 bytes on wire (512 bits), 64 bytes captured (512 bits) on interface -, id 0
Ethernet II, Src: Private_66:68:02 (00:50:79:66:68:02), Dst: Private_66:68:00 (00:50:79:66:68:00)
Address Resolution Protocol (reply)
Hardware type: Ethernet (1)
Protocol type: IPv4 (0x0800)
Hardware size: 6
Protocol size: 4
Opcode: reply (2)
Sender MAC address: Private_66:68:02 (00:50:79:66:68:02)
Sender IP address: 192.168.190.4
Target MAC address: Private_66:68:00 (00:50:79:66:68:00)
Target IP address: 192.168.190.2
0000 00 50 79 66 68 00 00 50 79 66 68 02 08 06 00 01
0010 08 00 06 04 00 02 00 50 79 66 68 02 c0 a8 be 04
0020 00 50 79 66 68 00 c0 a8 be 02 00 00 00 00 00 00
0030 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address Resolution Protocol: Protocol
Packets: 12 · Displayed: 2 (16.7%)
Profile: Default
27°C
Partly cloudy
Search
ENG
IN
01:05
14-03-2025