

CLab 1

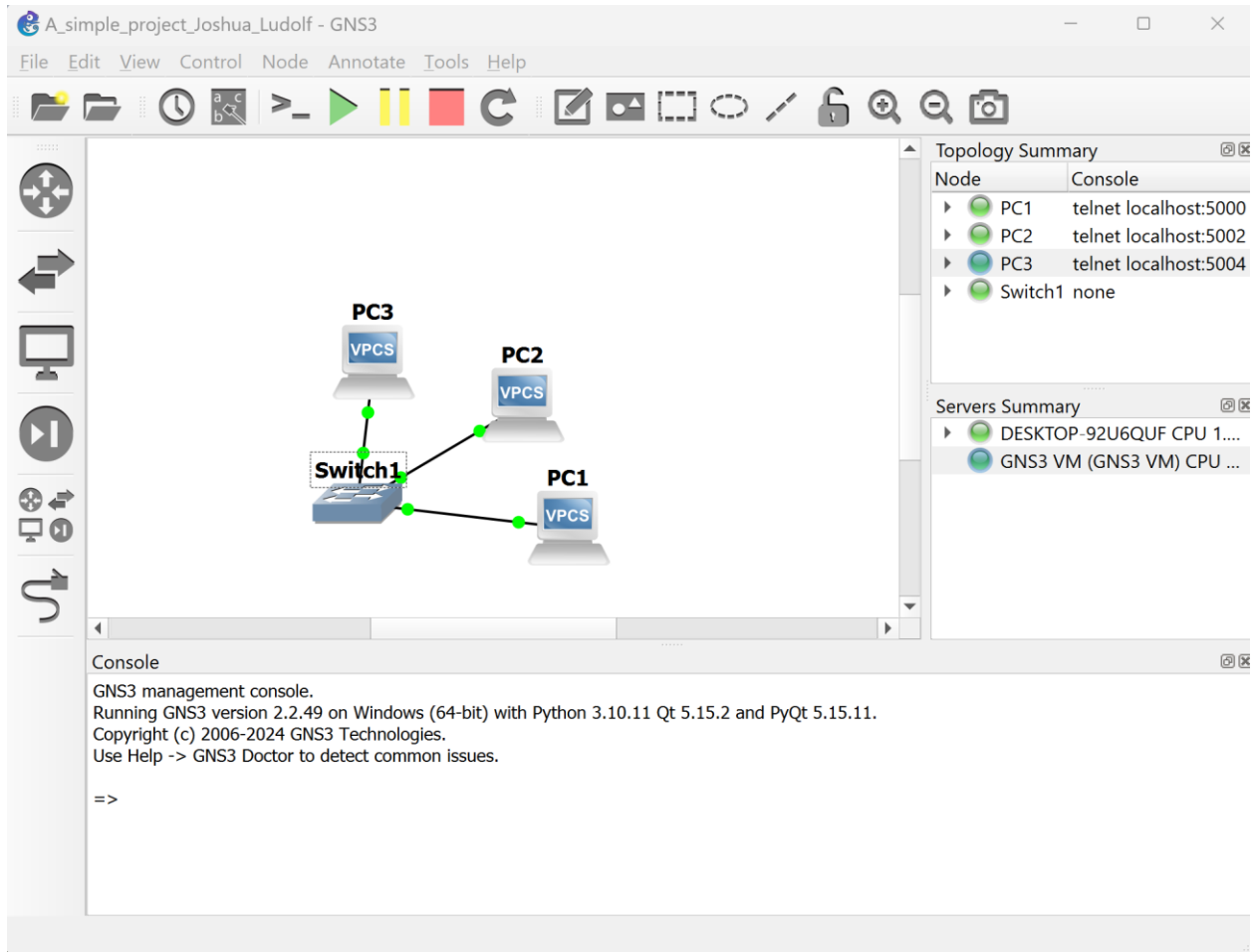
CSCI 4406

Computer Networks

Joshua Ludolf

For installation:

1. I read and accepted the license terms.
2. I went with default start menu folder.
3. I selected GNS3 Desktop and GNS3 VM.
4. I went with default install location.
5. I selected virtual box as my GNS3 VM.
6. I selected to opt out of the free \$200 value tool.
7. I unzipped the GNS3 VM Folder and imported it into virtual box.



A_simple_project_Joshua_Ludolf - GNS3

File Edit View Control Node Annotate Tools Help

```
graph LR; PC2[PC2 VPCS] --- R1((R1)); R1 --- PC1[PC1 VPCS];
```

Topology Summary

Node	Console
PC1	telnet localhost:5000
PC2	telnet localhost:5002
e0...	
R1	telnet 192.168.56.101:5...

Servers Summary

DESKTOP-92U6QUF CPU 1....
GNS3 VM (GNS3 VM) CPU ...

Console

GNS3 management console.
Running GNS3 version 2.2.49 on Windows (64-bit) with Python 3.10.11 Qt 5.15.2 and PyQt 5.15.11.
Copyright (c) 2006-2024 GNS3 Technologies.
Use Help -> GNS3 Doctor to detect common issues.

=>

```
PC1 PC2 R1
SETUP: new interface FastEthernet2/0 placed in "shutdown" state
SETUP: new interface FastEthernet2/1 placed in "shutdown" state
SETUP: new interface GigabitEthernet3/0 placed in "shutdown" state
% Crashinfo may not be recovered at bootflash:crashinfo
% This file system device reports an error:16.999: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/0, changed
state to up
*Aug 29 23:25:16.999: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/1, changed state to up
*Aug 29 23:25:16.999: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet3/0, changed state to up
*Aug 29 23:25:17.315: %SYS-5-CONFIG_I: Configured from memory by console
*Aug 29 23:25:17.955: %SYS-5-RESTART: System restarted --
Cisco IOS Software, 7200 Software (C7200-ADVENTERPRISEK9-M), Version 15.2(4)M7, RELEASE SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2014 by Cisco Systems, Inc.
Compiled Thu 25-Sep-14 10:36 by prod_rel_team
*Aug 29 23:25:17.995: %SNMP-5-COLDSTART: SNMP agent on host R1 is undergoing a cold start
*Aug 29 23:25:18.035: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
*Aug 29 23:25:18.035: %CRYPTO-6-GDOI_ON_OFF: GDOI is OFF
*Aug 29 23:25:18.151: %LINK-5-CHANGED: Interface POS1/0, changed state to administratively down
*Aug 29 23:25:19.319: %LINK-5-CHANGED: Interface FastEthernet0/0, changed state to administratively down
*Aug 29 23:25:19.339: %LINK-5-CHANGED: Interface FastEthernet2/0, changed state to administratively down
*Aug 29 23:25:19.351: %LINK-5-CHANGED: Interface FastEthernet2/1, changed state to administratively down
*Aug 29 23:25:19.363: %LINK-5-CHANGED: Interface GigabitEthernet3/0, changed state to administratively down
*Aug 29 23:25:20.319: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to down
*Aug 29 23:25:20.339: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/0, changed state to down
*Aug 29 23:25:20.351: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/1, changed state to down
*Aug 29 23:25:20.363: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet3/0, changed state to down
R1#
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface f0/0
R1(config-if)#ip address 10.1.1.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#end
R1#
*Aug 29 23:28:06.307: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
R1#
*Aug 29 23:28:07.139: %SYS-5-CONFIG_I: Configured from console by console
*Aug 29 23:28:07.307: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R1#
```

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```
PC1 PC2 R1
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R1#
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface f1/0
^
% Invalid input detected at '^' marker.
R1(config)#
```

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```
PC1 PC2 R1
R1(config-if)#no shutdown
R1(config-if)#end
R1#
*Aug 29 23:28:06.307: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
R1#
*Aug 29 23:28:07.139: %SYS-5-CONFIG_I: Configured from console by console
*Aug 29 23:28:07.307: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R1#
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface f1/0
      ^
% Invalid input detected at '^' marker.

R1(config)#interface f2/0
R1(config-if)#ip address 10.1.1.3 255.255.0
% Incomplete command.

R1(config-if)#ip address 10.1.1.3 255.255.255.0
% 10.1.1.0 overlaps with FastEthernet0/0
% 10.1.1.0 overlaps with FastEthernet0/0
R1(config-if)#no shutdown
% 10.1.1.0 overlaps with FastEthernet0/0
FastEthernet2/0: incorrect IP address assignment
R1(config-if)#end
R1#
*Aug 29 23:31:35.571: %SYS-5-CONFIG_I: Configured from console by console
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface f2/0
R1(config-if)#ip address 10.1.2.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#end
R1#
*Aug 29 23:33:06.927: %SYS-5-CONFIG_I: Configured from console by console
R1#
*Aug 29 23:33:06.947: %LINK-3-UPDOWN: Interface FastEthernet2/0, changed state to up
*Aug 29 23:33:07.947: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/0, changed state to up
R1#
```

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⋮ PC1 PC2 R1 + - □ ×

```
Welcome to Virtual PC Simulator, version 0.8.3
Dedicated to Daling.
Build time: Sep  9 2023 11:15:00
Copyright (c) 2007-2015, 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

PC1> dhcp
DDD
Can't find dhcp server

PC1> ip 10.1.1.30 255.255.255.0 10.1.1.3
Checking for duplicate address...
PC1 : 10.1.1.30 255.255.255.0 gateway 10.1.1.3

PC1> save
Saving startup configuration to startup.vpc
. done

PC1> 
```

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```

Welcome to Virtual PC Simulator, version 0.8.3
Dedicated to Daling.
Build time: Sep  9 2023 11:15:00
Copyright (c) 2007-2015, 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> dhcp
DDD
Can't find dhcp server

PC2> ip 10.1.1.40 255.255.255.0 10.1.1.3
Checking for duplicate address...
PC2 : 10.1.1.40 255.255.255.0 gateway 10.1.1.3

PC2> pingall 10.1.1.30
Bad command: "pingall 10.1.1.30". Use ? for help.

PC2> ping 10.1.1.30
host (10.1.1.30) not reachable

PC2> save
Saving startup configuration to startup.vpc
. done

PC2> 
```

```

Aug 13 2019 07:13:11 RT-MEINER-02-01-DHCP-01 line protocol on interface FastEthernet2/0 changed state to up
R1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

 10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C       10.1.1.0/24 is directly connected, FastEthernet0/0
L       10.1.1.1/32 is directly connected, FastEthernet0/0
C       10.1.2.0/24 is directly connected, FastEthernet2/0
L       10.1.2.1/32 is directly connected, FastEthernet2/0
R1# 
```



```
PC1> show ip

NAME       : PC1[1]
IP/MASK    : 10.1.1.30/24
GATEWAY    : 10.1.1.3
DNS        :
MAC        : 00:50:79:66:68:00
LPORT      : 20008
RHOST:PORT : 127.0.0.1:20009
MTU        : 1500
```

```
PC2> show ip

NAME       : PC2[1]
IP/MASK    : 10.1.1.40/24
GATEWAY    : 10.1.1.3
DNS        :
MAC        : 00:50:79:66:68:01
LPORT      : 20010
RHOST:PORT : 127.0.0.1:20011
MTU        : 1500
```

```
R1#show ip interface brief

Interface      IP-Address      OK? Method Status      Protocol
FastEthernet0/0 10.1.1.1        YES manual up          up
POS1/0         unassigned      YES unset   administratively down down
FastEthernet2/0 10.1.2.1        YES manual up          up
FastEthernet2/1 unassigned      YES unset   administratively down down
GigabitEthernet3/0 unassigned      YES unset   administratively down down
R1#
```

```
PC1> ip 192.168.1.30 255.255.255.0 gateway 192.168.1.2
Checking for duplicate address...
PC1 : 192.168.1.30 255.255.255.0 gateway 192.168.1.2

PC1> show ip

NAME       : PC1[1]
IP/MASK     : 192.168.1.30/24
GATEWAY     : 192.168.1.2
DNS         :
MAC         : 00:50:79:66:68:00
LPORT      : 20002
RHOST:PORT  : 127.0.0.1:20003
MTU         : 1500

PC1> ping 192.168.1.2

84 bytes from 192.168.1.2 icmp_seq=1 ttl=255 time=10.205 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=255 time=10.954 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=255 time=3.970 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=255 time=5.243 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=255 time=8.036 ms

PC1> ping 102.168.100.40

*192.168.1.2 icmp_seq=1 ttl=255 time=5.016 ms (ICMP type:3, code:1, Destination host unreachable)
*192.168.1.2 icmp_seq=2 ttl=255 time=5.728 ms (ICMP type:3, code:1, Destination host unreachable)
*192.168.1.2 icmp_seq=3 ttl=255 time=9.924 ms (ICMP type:3, code:1, Destination host unreachable)
*192.168.1.2 icmp_seq=4 ttl=255 time=18.641 ms (ICMP type:3, code:1, Destination host unreachable)
*192.168.1.2 icmp_seq=5 ttl=255 time=5.732 ms (ICMP type:3, code:1, Destination host unreachable)

PC1> █
```

```
ip 192.168.100.40 255.255.255.0 gateway 192.168.100.1
Checking for duplicate address...
PC2 : 192.168.100.40 255.255.255.0 gateway 192.168.100.1

PC2> show ip

NAME       : PC2[1]
IP/MASK    : 192.168.100.40/24
GATEWAY    : 192.168.100.1
DNS        :
MAC        : 00:50:79:66:68:01
LPORT      : 20004
RHOST:PORT : 127.0.0.1:20005
MTU        : 1500

PC2> ping 192.168.100.1

84 bytes from 192.168.100.1 icmp_seq=1 ttl=255 time=18.391 ms
84 bytes from 192.168.100.1 icmp_seq=2 ttl=255 time=13.956 ms
84 bytes from 192.168.100.1 icmp_seq=3 ttl=255 time=11.481 ms
84 bytes from 192.168.100.1 icmp_seq=4 ttl=255 time=11.111 ms
84 bytes from 192.168.100.1 icmp_seq=5 ttl=255 time=2.749 ms

PC2> ping 192.168.1.30

84 bytes from 192.168.1.30 icmp_seq=1 ttl=63 time=39.552 ms
84 bytes from 192.168.1.30 icmp_seq=2 ttl=63 time=18.803 ms
84 bytes from 192.168.1.30 icmp_seq=3 ttl=63 time=31.089 ms
84 bytes from 192.168.1.30 icmp_seq=4 ttl=63 time=13.442 ms
84 bytes from 192.168.1.30 icmp_seq=5 ttl=63 time=17.283 ms

PC2> 
```