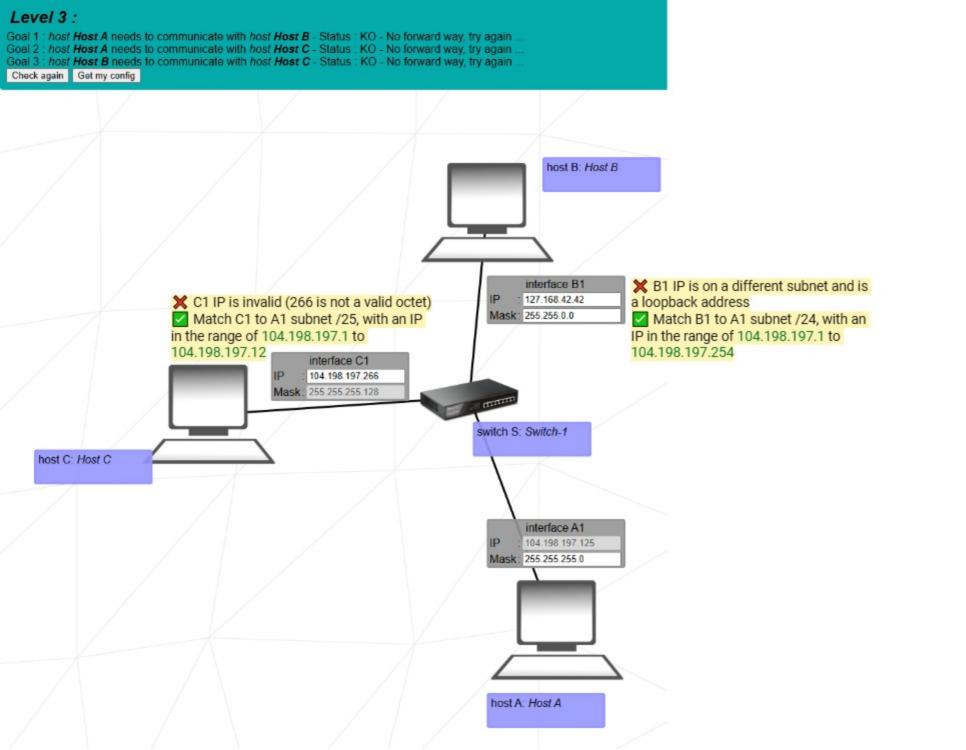
Level 1: Goal 1: host my PC needs to communicate with host my little brother's computer - Status: KO - No forward way, try again . Goal 2: host my Mac needs to communicate with host my little sister's computer - Status: KO - No forward way, try again ... Check again Get my config host B: my little brother's computer host D: my little sister's computer X IP (211.190.321.42) is invalid because 321 is not a valid octet interface B1 interface D1 104.98.23.12 211.190.321.42 Mask: 255.255.255.0 Mask: 255.255.0.0 assign an IP in the same subnet as C1 (valid range: 211.191.210.1 -211.191.210.254) X IP (104.93.23.350) is invalid because the last octet must be between 0 and 255 interface C1 interface A1 104.93.23.350 211.191.210.75 Mask: 255.255.255.0 Mask: 255.255.0.0 assign an IP in the same subnet as B1 (104.98.23.0/21), valid range: 104.98.23.1 - 104.98.23.254 host A: my PC host C: my Mac

Level 2: Goal 1: host Computer B needs to communicate with host Computer A - Status: KO - No forward way, try again ... Goal 1: host Computer D needs to communicate with host Computer C - Status: KO - No forward way, try again. Check again Get my config host B: Computer B host D: Computer D interface B1 interface D1 192.168.111.222 127.0.0.4 Mask: 255.255.255.32 Mask: /30 X B1 must be in the same subnet as A1 Mask /30 = 4 IPs (2 usable) B1 mask to 255.255.255.224 X C1and D1 IPs are invalid and can't communicate between two devices (127.0.0.x is used for loopback) ✓ Use something as simple as 10.0.0.1 and 10.0.0.2 interface A1 interface C1 for IP addresses 192.168.111.1 127.0.0.1 Mask: 255.255.255.224 Mask: 255.255.255.252 X A1 IP must be in same /27 subnet as B1 ✓ A1 IP to range 192.168.111.193 – 192.168.111.221 host A: Computer A host C: Computer C



Level 4: Goal 1: host A nice host needs to communicate with host Another host - Status: KO - No forward way, try again ... Goal 2: host A nice host needs to communicate with host My_Gate - Status: KO - No forward way, try again ... Goal 3: host Another host needs to communicate with host My_Gate - Status: KO - No reverse way, try again ... Check again Get my config host B: Another host interface B1 67.108.122.193 Mask: 255.255.0.0 ★ A1 and B1 are not on the same subnet ✓ Match B1 to A1 subnet (mask was changed to /23 interface R3 interface R1 512 addresses-, so now the range available goes from 67.108.115.244 67.108.115.91 67.108.114.1 to 67.108.115.254 Mask: 255.255.255.192 Mask: /23 switch S: Switch-1 router R: My_Gate interface R2 : 67.108.115.1 Mask: 255.255.255.128 interface A1 67.108.115.132 X A1 mask is /28 (.129 - .142), so R1 (.91) is not on that range Set A1 mask to /23 Mask: 255.255.255.240 host A: A nice host

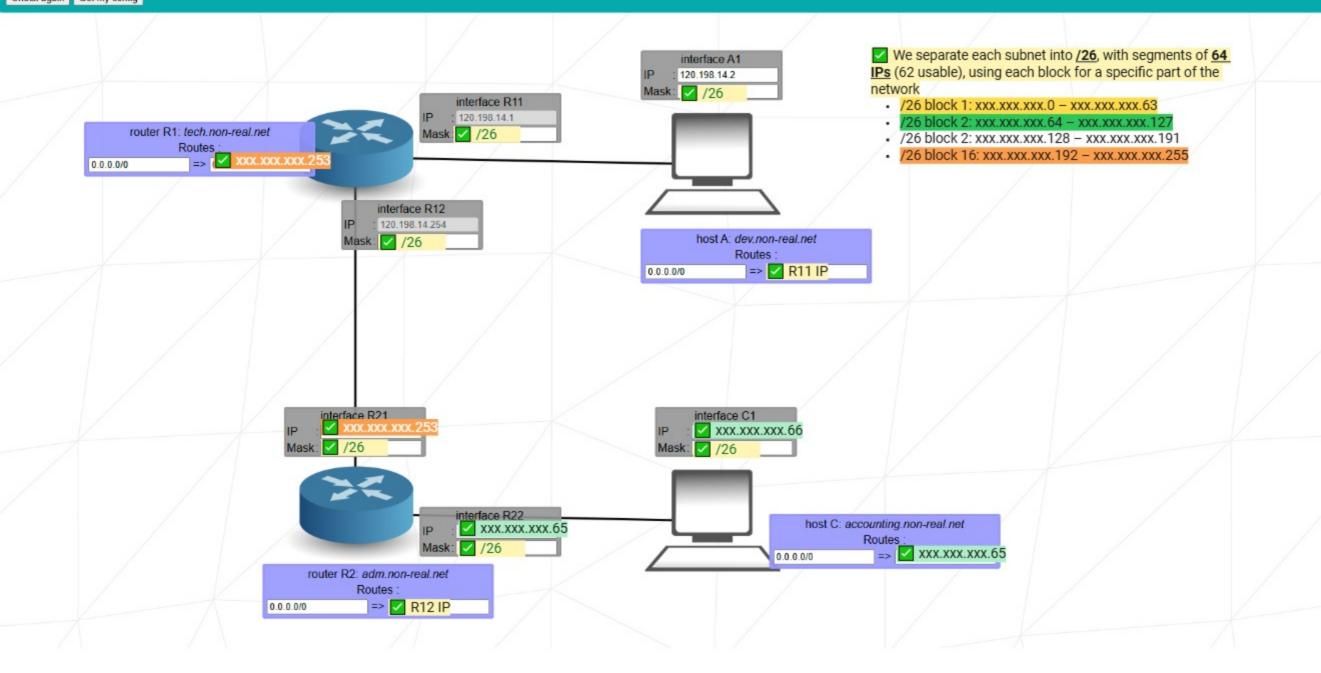
Level 5: Goal 1: host Machine A needs to communicate with host The Mighty Router - Status: KO - No forward way, try again : Goal 2: host Machine B needs to communicate with host The Mighty Router - Status: KO - No forward way, try again : Goal 3: host Machine A needs to communicate with host Machine B - Status: KO - No forward way, try again ... Check again Get my config host B: Machine B Routes: default => 192.168.0.254 changed route to 167.219.112.254 to match R2 IP ★ IP is not in the same subnet as R2 (167.219.112.254/18) ✓ change it to a valid range 167.219.64.1 – 167.219.127.254 interface B1 192.168.42.42 Mask: /30 interface R2 167.219.112.254 Mask: 255.255.192.0 router R: The Mighty Router interface R1 23.131.159.126 Mask: 255.255.255.128 ★ IP is not in the same subnet as R1 (23.131.159.126/25) ✓ change it to a valid range 23.131.159.0 – 23.131.159.127 interface A1 104.198.14.2 Mask: 255.255.255.0 host A: Machine A change route to default => 23.131.159.126 Routes => 192.168.0.254 10..0.0.0/8

Level 6: Goal 1: host webserv.non-real.com needs to communicate with interface Somewhere on the Net - Status: KO - No forward way, try again . Check again Get my config internet I: Internet Routes: => 163.172.250.12 56.207.174.0/31 xxx.xxx.xxx.0/0 - 24 on this case, we need to interface R2 change the CIDR to anything interface R1 between 0 and 24 163.172.250.12 56.207.174.254 Mask: 255.255.255.240 Mask: 255.255.255.128 switch S: sw-1.non-real.com router R: gate.non-real.com Routes: 10.0.0.0/8 => 163.172.250.1 default the original 10.0.0.0/8 is a private IP, so to connect A interface A1 to the internet, we need a public IP. 56.207.174.227 Mask: 255.255.255.0 host A: webserv.non-real.com Routes: ✓ Interface R1 IP => 56.207.174.1 0.0.0.0/0 Vist need to change the host part of the IP to .254 to match R1

Level 7:

Goal 1: host dev.non-real.net needs to communicate with host accounting.non-real.net - Status: KO - Correct IP reached but wrong host, try again.

Check again Get my config



Level 8: Goal 1: host office.non-real.com needs to communicate with host home.non-real.com - Status: KO - No forward way, try again Goal 2: host office.non-real.com needs to communicate with interface Somewhere on the Net - Status : KO - No forward way, try again Goal 3: host home.non-real.com needs to communicate with interface Somewhere on the Net - Status: KO - No forward way, try again. Check again Get my config router R1: gate.non-real.com interface R12 Routes 163.91.250.12 XXX.XXX.XXX.0/26 => 1 XXX.XXX.XXX.61 Mask: 255.255.265.240 => 163.91.250.1 0.0.0.0/0

XXX.XXX.XXX.62

XXX.XXX.XXX.61

router R2: transit.my-isp.org Routes

Routes XXX.XXX.XXX.2

=> 128.89.104.62

interface C1

Mask. 255.255.250.240

interface R23

XXX.XXX.XXX.2

interface D1

Mask: 255.255.265.240

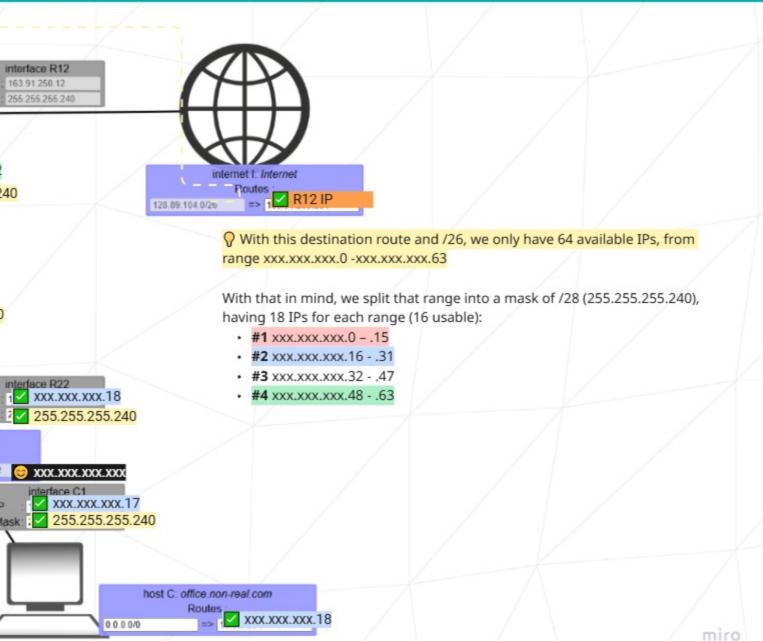
XXX.XXX.XXX

255.255.255.240

default

host D: home.non-real.com

255.255.255.240



Level 9: Goal 1: host meson needs to communicate with host fon - Status - KO - No forward way, try again ...
Goal 2: host cation needs to communicate with host gluon - Status - KO - No forward way, try again ...
Goal 3: host meson needs to communicate with host Internet - Status - KO - No forward way, try again Goal 4: host meson needs to communicate with host gluon - Status: KO - No forward way, try again ... Goal 5: host ion needs to communicate with host cation - Status: KO - No forward way, try again ... Goal 6 . host cation needs to communicate with host Internet - Status : KO - No forward way, try again default 191.168.xxx.1 191.168.xxx.2 internet I: Internet Mask: 255,255.0.0 198.112.0/22 => 163.172.250.12 0.0.0/27 => 163.172.250.12 ✓ 191.168.xxx.1 => 163.172.250.12 ** after 192.168.0.0 = private 172.250.12

Mask: 256 256 256 240 191.168.xxx.0/0 switch S: neutron interface R13 XXX.XXX.18.254 router R1: proton Mask 256 256 256 0 191.168.xxx.3^{2,0,0,0} => 163.172.250.1 1.2.3.1 Mask: 255.255.255.0 Mask: 256,256,256,252 1.2.3.2 host C: cation host A: meson router R2: boson Routes XXX.XXX.18.254ask: 256.256.256.0 191.168.XXX.1 0.0.0.0/0 0.0.0.0/0 XXX.XXX.XXX.XXX XXX.XXX.XXX.XXX-1 Mask: 255.255.255.192 host D: gluon xxx.xxx.xxx.xxx default => 13.101.254.153

Level 10: Goal 1: host Host one needs to communicate with host Host two. Status: KO. No forward way, try again. Goal 2 . host Host three needs to communicate with host Host four - Status . KO - No forward way, try again. Goal 3: host Host one needs to communicate with host Internet - Status : KO - No reverse way, try again ... Goal 4: host Host one needs to communicate with host Host four - Status: KO - No forward way, try again Goal 5: host Host two needs to communicate with host Host three - Status: KO - No forward way, try again Goal 6: host Host three needs to communicate with host Internet - Status : KO - No forward way, try again Goal 7: host Host four needs to communicate with host Internet - Status: KO - No forward way, try again Check again Get my config host H2: Host two Routes: default **141.53.105.1** interface H2 141.53.105.3 internet I: Internet 192.168.42.42 Routes: Mask 255 255 0 0 255.255.255.128 163.172.260.12 141.53.105.0/31 **/**0 Any CIDR on the interface R12 interface R11 163.172.250.12 range /0 to /24 will work 141.53.105.1 Mask, 255.255.255.240 Mask: 255 255 255 128 switch S1: Switch one interface R13 router R1: Router one 141.53.105.254 default default > 141.53.105.253 Mask, 255.255.256.0 255.255.255.252 141.53.105.128/26 - 141.53.105.253 0.0.0.0/0: => 163.172.250.1 interface H11 141.53.105.2 255.255.255.128 256.255.255.0 interface R21 141.53.105.253 Mask 255.265.255.252 141.53.105.129 ✓ 141.53.105.193 host H1: Host one 10.0.0.254 Routes . Mask 255.255.265.0 255.255.255.192 0.0.0.0/0 => 141.63.105.1 router R2: Router two Routes: => 141.63.106.254 0.0.0.0/0 interface H41 141.53.105.194 141.53.105.131 192.168.0.1 Mask: 255 255 255 192 lask: 255 255 255 0 /27 host H4: Host four host H3: Host three Routes: 141.53.105.193 => 141.53.105.129 0.0 0.0/0 => 10.0.0.254