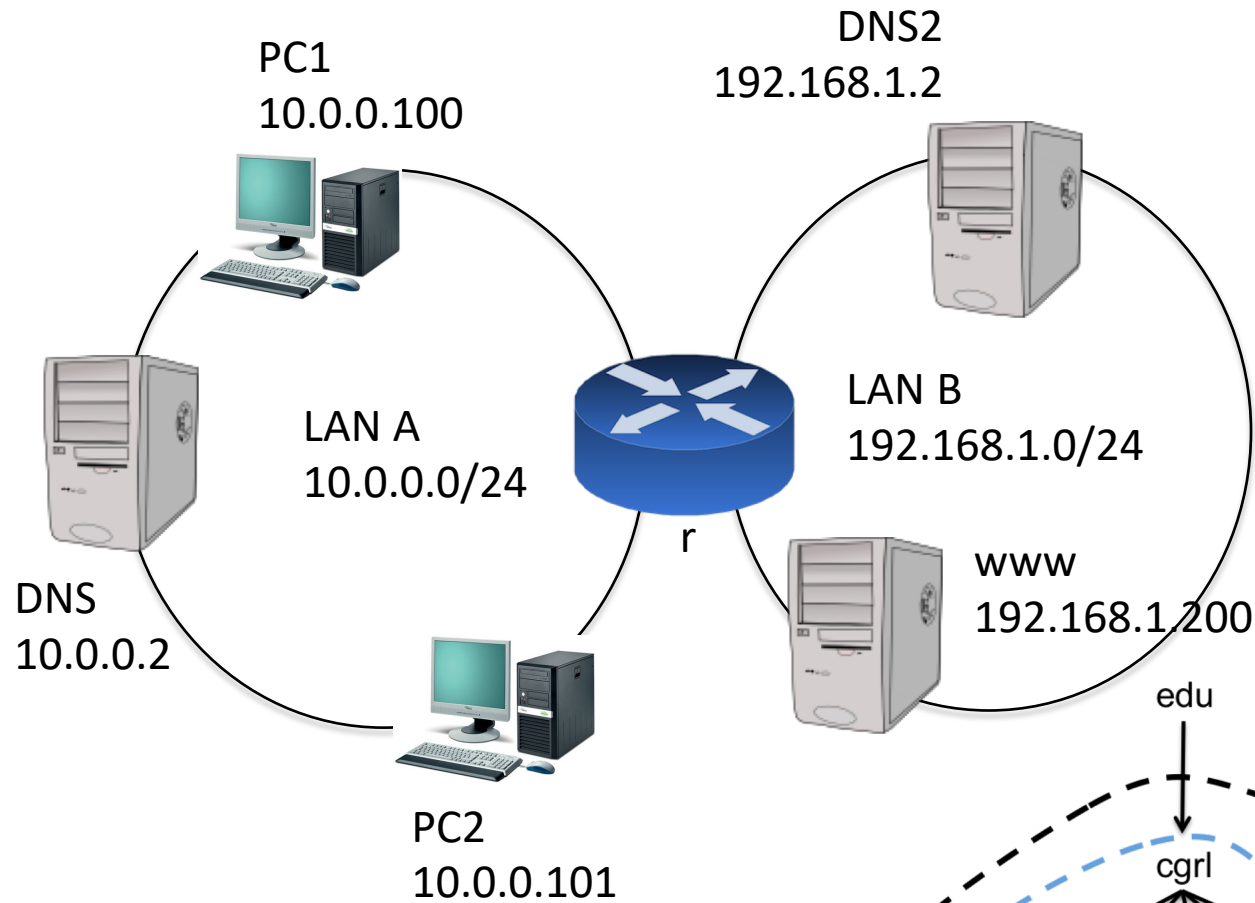# Troubleshooting and debugging

Intro

- We have 3 "broken" laboratories
- In each lab there is (at least) 1 miss-configuration
- Miss-configuration can be at any level
  - Syntax errors in app configuration file
  - Syntax errors in network configuration
  - Semantic errors…
- <u>Problems are not notified properly</u>
  - This is done on purpose, usually a customer is not able to really understand the problem behind…
- Approach
  - Verify the error (repeat it…)
  - Check for netkit startup error messages
  - Launch apps manually and check for errors
  - Check application log files
  - Check firewall
  - Use TCPDUMP (with "–n", otherwise if we have a connectivity problem we don't see anything)
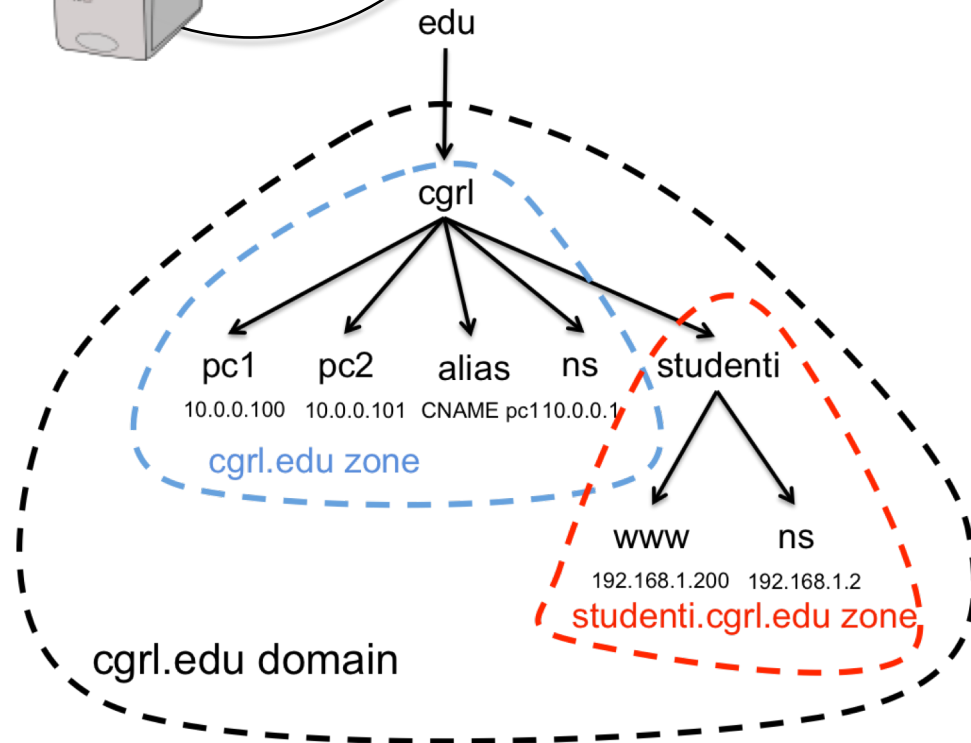 - Check network topology
  - Ecc…

Lab DNS

Lab and DNS topology in the next slide

We have 2 problems (to be solved in order)

1. pc1 cannot resolve pc2.cgrl.edu

2. pc1 cannot resolve www.studenti.cgrl.edu

PC1
10.0.0.100

DNS2
192.168.1.2

LAN A
10.0.0.0/24

LAN B
192.168.1.0/24

r

www
192.168.1.200

DNS
10.0.0.2

PC2
10.0.0.101

1. DNS is the default resolver for pc1 and pc2
2. DNS is authoritative for cgrl.edu
3. DNS2 is delegated for studenti.cgrl.edu

edu

cgrl

pc1   pc2   alias   ns   studenti
10.0.0.100   10.0.0.101   CNAME pc110.0.0.1

cgrl.edu zone

www   ns
192.168.1.200   192.168.1.2

studenti.cgrl.edu zone

cgrl.edu domain
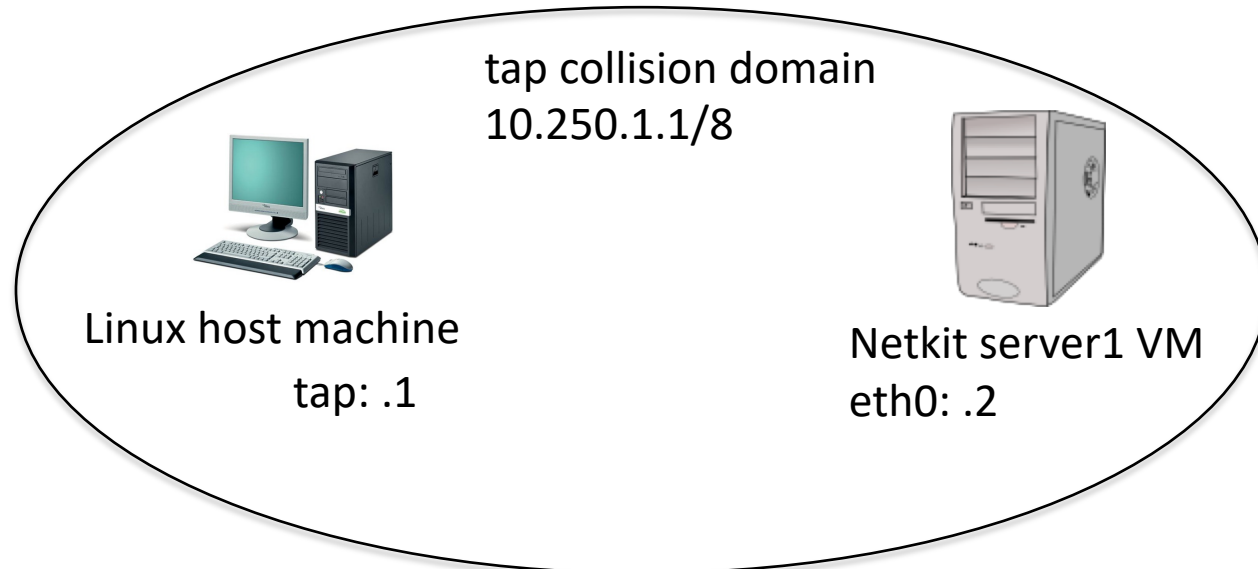
Solutions

Solutions:

- pc1 has a wrong DNS resolver
- DNS has a wrong delegation glue record for studenti.cgrl.edu
- DNS2 has a wrong default GW

Lab Apache

Server1 has 2 virtual hosts
- www.mysite.com (/etc/apache2/sites-available/mysite)
- www.cgrl.edu (/etc/apache2/sites-available/cgrl)

- TODO: remember to configure static name:ip in /etc/hosts of the Linux host machine is required to reach the 2 virtual hosts
  - 10.250.1.2 --> www.mysite.com
  - 10.250.1.2 --> www.cgrl.edu

- Neither of the two works!

tap collision domain
10.250.1.1/8

Linux host machine
tap: .1

Netkit server1 VM
eth0: .2

Solutions

- Typo in www.cgrl.edu virtual host configuration (line 6, remove the space in the document root path)

- www.mysite.com is not enabled

- Wrong document root for www.mysite.com

Lab-rotto-marco
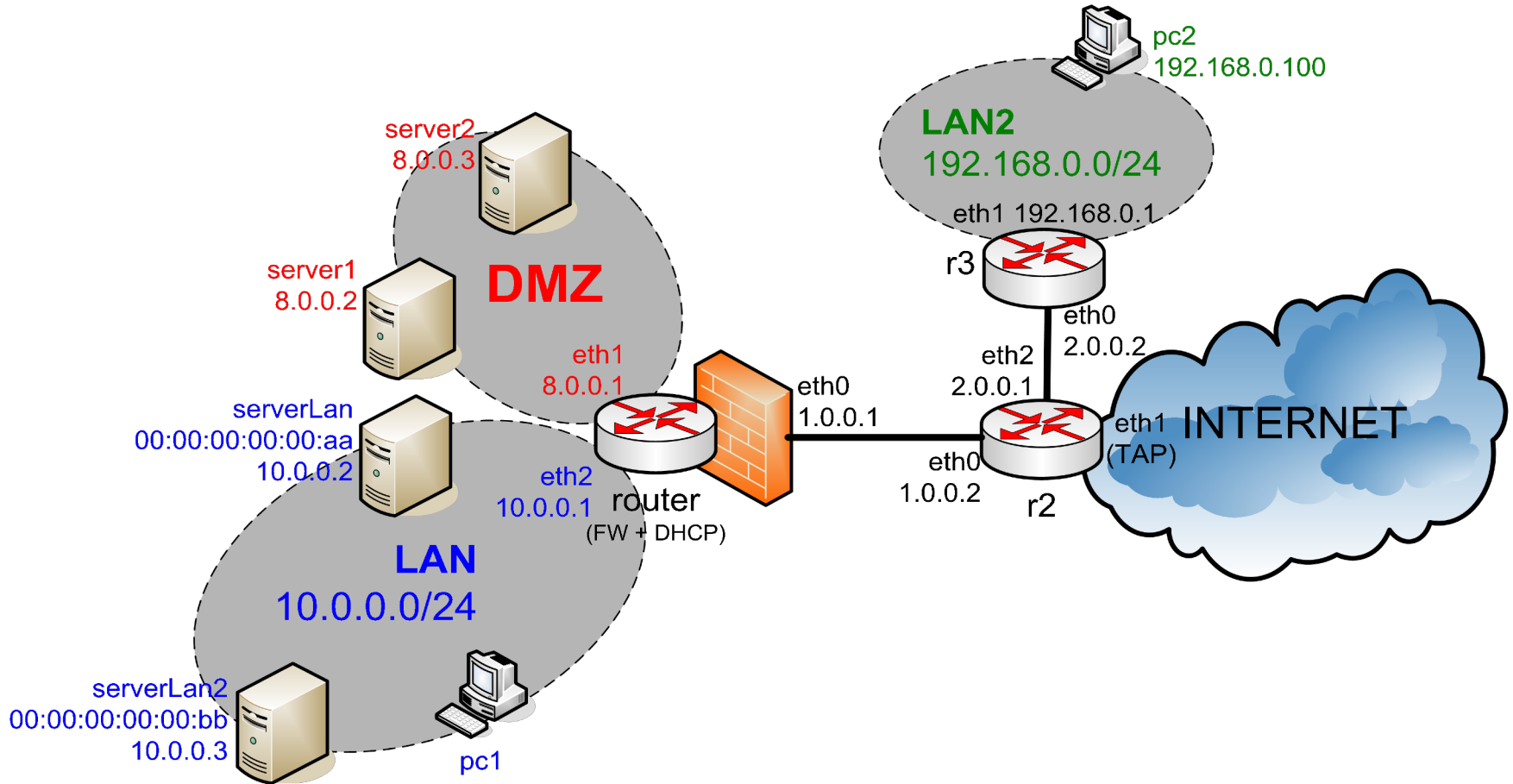
Lab-rotto-marco

We have 4 problems (to be solved in order)

1. pc2 cannot reach www.google.com

2. pc1 cannot reach www.google.com

3. Extern world (e.g. pc2) cannot reach DMZ

4. Server LAN (for which we have a DNAT entry configured in router) does not reply

Solutions

1. 2 errors
    1. No DNS resolver on pc2
    2. Wrong default route on r3
2. router does not MASQUERADE
3. FW rule 1 in FORWARD change eth2 with eth1
4. 2 errors
    1. Apache2 not running
    2. ACCEPT in FORWARD packets to ServerLan