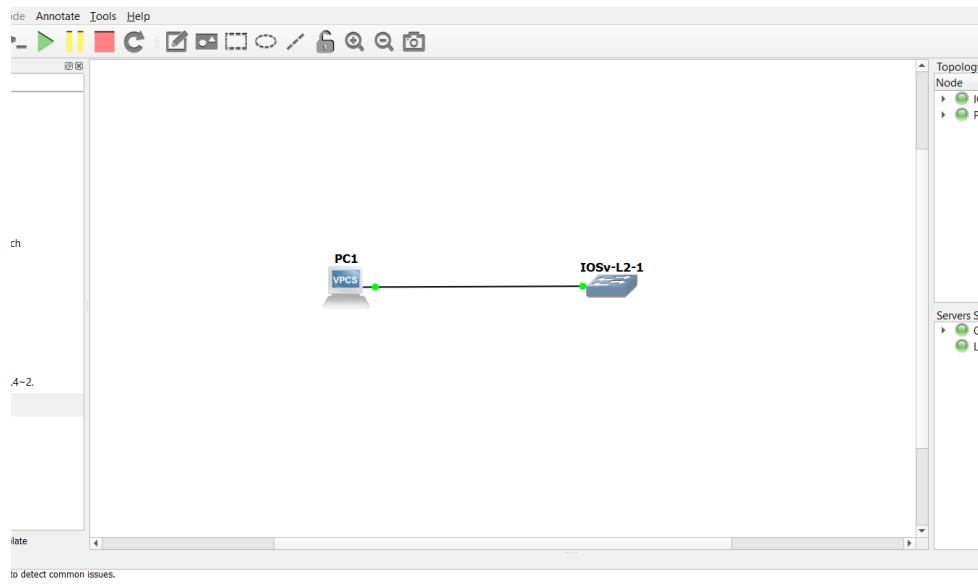


ΑΣΚΗΣΗ 4



Hostname:

```
vIOS-L2-01>
vIOS-L2-01>
*Mar 23 08:07:17.484: %PLATFORM-5-SIGNATURE_VERIFIED: Image 'flash0:/vios_l2-adventureprisek9-m' passed code signing verification
vIOS-L2-01>en
vIOS-L2-01#conf t
Enter configuration commands, one per line. End with CNTL/Z.
vIOS-L2-01(config)#host
% Incomplete command.

vIOS-L2-01(config)#hostname 1080424
% Hostname contains one or more illegal characters.

1080424(config)#
```

Πύθμιση κωδικού:

enable

configure terminal

enable secret 1080424

service password-encryption

end

show running-config

copy running-config startup-config

Διαμορφώστε την πρόσβαση της κονσόλας:

```
% Invalid input detected at '^' marker.  
1080424#enable  
1080424#conf t  
Enter configuration commands, one per line. End with CNTL/Z.  
1080424(config)#line con 0  
1080424(config-line)#password 1080424  
1080424(config-line)#history size 15  
1080424(config-line)#exec-timeout 6 45  
1080424(config-line)#login synchronous  
          ^  
% Invalid input detected at '^' marker.  
1080424(config-line)#login synchronous  
1080424(config-line)#end  
1080424#  
*Mar 23 08:25:18.505: %SYS-5-CONFIG_I: Configured from console by console  
1080424#[
```

Ρυθμίστε την πρόσβαση Telnet:

```
1080424>enable  
Password:  
1080424#conf t  
Enter configuration commands, one per line. End with CNTL/Z.  
1080424(config)#line vty 0 15  
1080424(config-line)#password 1080424  
1080424(config-line)#History size: 15 commands  
          ^  
% Invalid input detected at '^' marker.  
1080424(config-line)# 15 commands  
          ^  
% Invalid input detected at '^' marker.  
1080424(config-line)#15 commands  
          ^  
% Invalid input detected at '^' marker.  
1080424(config-line)#history size 15  
1080424(config-line)#login  
1080424(config-line)#logging synchronous  
          ^  
% Invalid input detected at '^' marker.  
1080424(config-line)#logging synchronous  
1080424(config-line)#end  
1080424#[
```

Ρυθμίστε τη διεύθυνση IP του switch:

```
Mar 23 08:30:23.170: %GRUB-5-CONFIG_WRITTEN: GRUB configuration was written to disk successfully.  
1080424#enable  
1080424#conf t  
Enter configuration commands, one per line. End with CNTL/Z.  
1080424(config)#interface Vlan1  
1080424(config-if)#ip addr  
*Mar 23 08:30:50.160: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to down  
1080424(config-if)#ip address 192.168.1.2 255.255.255.0  
1080424(config-if)#no shutdown  
1080424(config-if)#  
*Mar 23 08:31:07.817: %LINK-3-UPDOWN: Interface Vlan1, changed state to up  
*Mar 23 08:31:08.817: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up  
1080424(config-if)#exit  
1080424(config)#exit  
1080424#  
*Mar 23 08:31:12.053: %SYS-5-CONFIG_I: Configured from console by 1080424 on console  
1080424#
```

sh ip int br:

```
*Mar 23 08:31:08.817: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up  
1080424(config-if)#exit  
1080424(config)#exit  
1080424#  
*Mar 23 08:31:12.053: %SYS-5-CONFIG_I: Configured from console by 1080424 on console  
1080424#sh ip int br  
Interface IP-Address OK? Method Status Protocol  
GigabitEthernet0/0 unassigned YES unset up up  
GigabitEthernet0/1 unassigned YES unset down down  
GigabitEthernet0/2 unassigned YES unset down down  
Vlan1 192.168.1.2 YES manual up up  
1080424#
```

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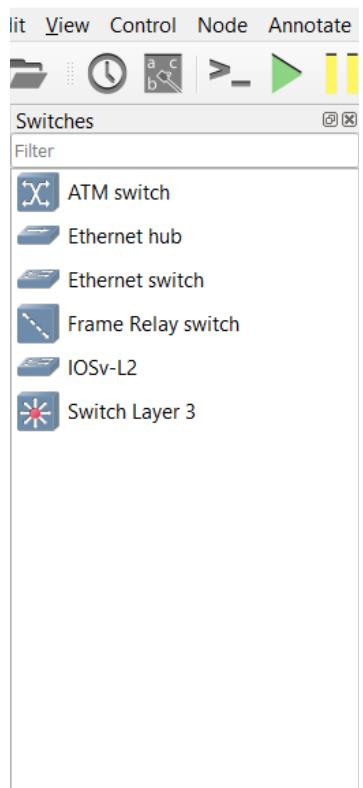
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ΔΟΚΙΜή Σύνδεσης:

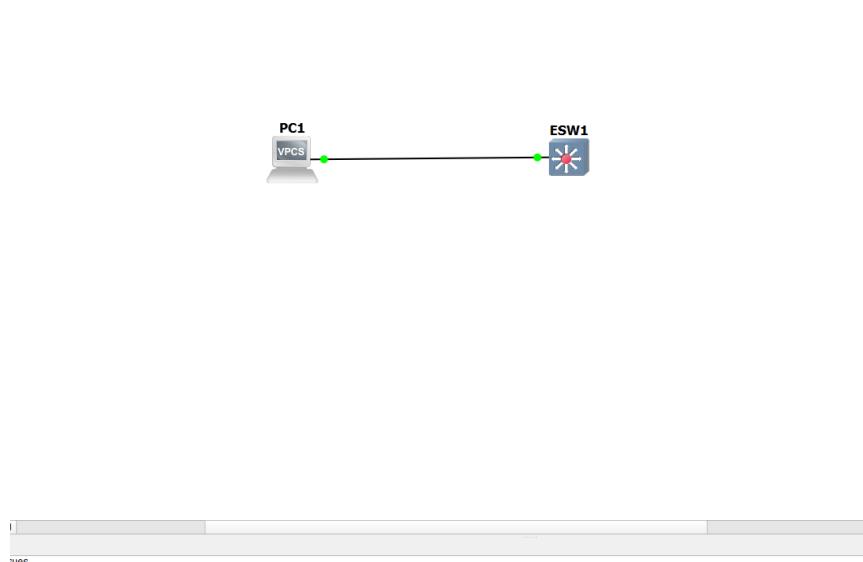
```
*****  
User Access Verification  
  
Username: 1080424  
Password:  
*****  
* IOSv - Cisco Systems Confidential *  
*  
* This software is provided as is without warranty for internal *  
* development and testing purposes only under the terms of the Cisco *  
* Early Field Trial agreement. Under no circumstances may this software *  
* be used for production purposes or deployed in a production *  
* environment. *  
*  
* By using the software, you agree to abide by the terms and conditions *  
* of the Cisco Early Field Trial Agreement as well as the terms and *  
* conditions of the Cisco End User License Agreement at *  
* http://www.cisco.com/go/eula *  
*  
* Unauthorized use or distribution of this software is expressly *  
* Prohibited. *  
*****  
1080424>
```

Εισαγωγή Cisco L3 Switch - L3 Switching:

1_2 - GNS3



ΑΣΚΗΣΗ 5



Αλλάξτε το όνομα του switch:

```
ESW1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
ESW1(config)#hostname 1080424
% Hostname contains one or more illegal characters.

1080424(config)#exit
1080424#
*Mar 1 00:01:01.731: %SYS-5-CONFIG_I: Configured from console by console
1080424#
```

Add vlan:

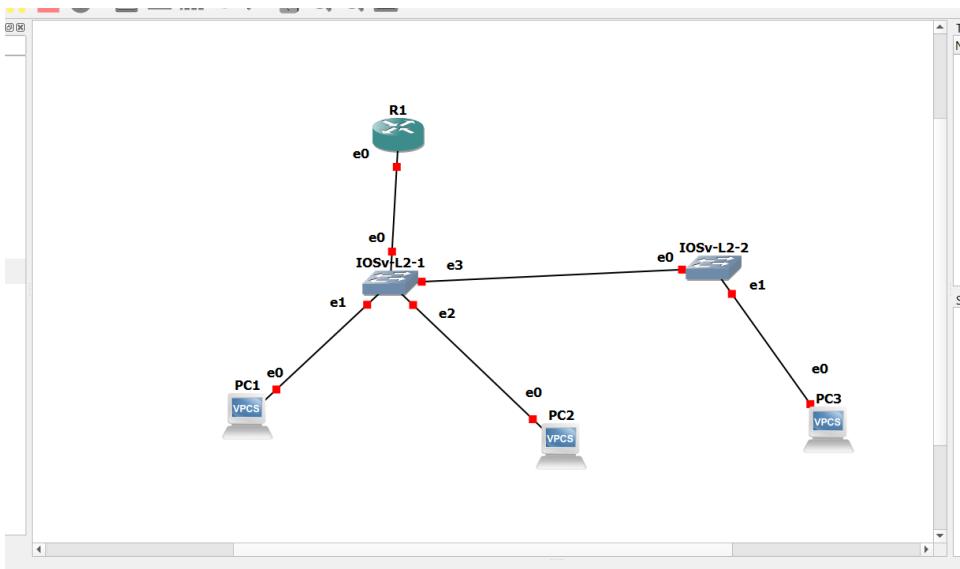
```
1080424#vlan database
1080424(vlan)#Vlan 10
VLAN 10 added:
  Name: VLAN0010
1080424(vlan)#apply
APPLY completed.
1080424(vlan)#exit
APPLY completed.
Exiting...
1080424#show vlan switch

VLAN Name          Status    Ports
----- -----
1   default         active    Fa0/0, Fa0/1, Fa0/2, Fa0/3
                           Fa0/4, Fa0/5, Fa0/6, Fa0/7
                           Fa0/8, Fa0/9, Fa0/10, Fa0/11
                           Fa0/12, Fa0/13, Fa0/14, Fa0/15

10  VLAN0010        active
1002 fddi-default   active
1003 token-ring-default   active
1004 fddinet-default  active
1005 trnet-default   active

VLAN Type SAID      MTU  Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
----- -----
1   enet  100001    1500 -     -     -     -     1002  1003
10  enet  100010    1500 -     -     -     -     0     0
1002 fddi  101002    1500 -     -     -     -     1     1003
1003 tr  101003    1500 1005  0     -     srb   1     1002
1004 fddnet 101004    1500 -     -     1     ibm  -     0     0
1005 trnet 101005    1500 -     -     1     ibm  -     0     0
1080424#
```

ΑΣΚΗΣΗ 6



Παραμετροποίησης για τα PC:

```
PC1> ip 192.168.5.5 192.168.5.1
Checking for duplicate address...
PC1 : 192.168.5.5 255.255.255.0 gateway 192.168.5.1
```

```
PC1> show ip
```

```
NAME      : PC1[1]
IP/MASK   : 192.168.5.5/24
GATEWAY   : 192.168.5.1
DNS       :
MAC       : 00:50:79:66:68:02
LPORT     : 20009
RHOST:PORT : 127.0.0.1:20010
MTU       : 1500
```

```
PC1> save
```

```
Saving startup configuration to startup.vpc
```

```
. done
```

```
PC1>
```

```
PC2> ip 192.168.10.10 192.168.10.1
Checking for duplicate address...
PC2 : 192.168.10.10 255.255.255.0 gateway 192.168.10.1
```

```
PC2> show ip
```

```
NAME      : PC2[1]
IP/MASK   : 192.168.10.10/24
GATEWAY   : 192.168.10.1
DNS       :
MAC       : 00:50:79:66:68:01
LPORT     : 20011
RHOST:PORT : 127.0.0.1:20012
MTU       : 1500
```

```
PC2> save
```

```
Saving startup configuration to startup.vpc
```

```
. done
```

```
PC2>
```

```
PC3> ip 192.168.5.10 192.168.5.1
Checking for duplicate address...
PC3 : 192.168.5.10 255.255.255.0 gateway 192.168.5.1
```

```
PC3> show ip
```

```
NAME      : PC3[1]
IP/MASK   : 192.168.5.10/24
GATEWAY   : 192.168.5.1
DNS       :
MAC       : 00:50:79:66:68:00
LPORT     : 20013
RHOST:PORT : 127.0.0.1:20014
MTU       : 1500
```

```
PC3> save
```

```
Saving startup configuration to startup.vpc
```

```
. done
```

```
PC3>
```

Παραμετροποίησης για το L2 Switch-1:

```
vios-l2-01>
vios-l2-01>
vios-l2-01>vios-l2-01software (vios_l2-ADVENTERPRISEK9-M), Version 15.0(TTC_20140605)FLO_DSG57, EARLY DEPLOYMENT DEVELOPMENT BUILD, synced to V2
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2014 by Cisco Systems, Inc.
Compiled Thu 05-Jun-14 05:35 by jzfeng
vios-l2-01>enable
vios-l2-01>conf t
Enter configuration commands, one per line. End with CNTL/Z.
vios-l2-01(config)#vlan 5
vios-l2-01(config-vlan)#name 1080424
vios-l2-01(config-vlan)#exit
vios-l2-01(config)#vlan 10
vios-l2-01(config-vlan)#name sales
vios-l2-01(config-vlan)#exit
vios-l2-01(config)#
```

solarwinds | Solar-PuTTY free tool

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Αλλαγή ονόματος vlan:

```
*Mar 24 15:13:03.786: %SYS-5-CONFIG_I: Configured from console by console
vios-l2-01#sh vlan

VLAN Name          Status    Ports
---- -----
1    default        active    Gi0/0, Gi0/1, Gi0/2, Gi0/3
5    1080424        active
10   sales          active
100  VLAN100       active
200  VLAN200       active
300  VLAN300       active
1002 fddi-default  act/unsup
1003 trcrf-default act/unsup
1004 fddinet-default act/unsup
1005 trbrf-default act/unsup

VLAN Type SAID      MTU    Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- -----  -----
1    enet  100001    1500   -     -     -     -     0     0
5    enet  100005    1500   -     -     -     -     0     0
10   enet  100010    1500   -     -     -     -     0     0
100  enet  100100    1500   -     -     -     -     0     0
200  enet  100200    1500   -     -     -     -     0     0
300  enet  100300    1500   -     -     -     -     0     0
1002 fddi  101002    1500   -     -     -     -     0     0
--More--
```

```
% Invalid input detected at '^' marker.
vios-l2-01>enable
vios-l2-01>conf t
Enter configuration commands, one per line. End with CNTL/Z.
vios-l2-01(config)#interface gigabitethernet 0/1
vios-l2-01(config-if)#switchport mode access
vios-l2-01(config-if)#switchport access vlan 5
vios-l2-01(config-if)#exit
vios-l2-01(config)#interface gigabitethernet 0/3
vios-l2-01(config-if)#switchport trunk encapsulation dot1q
*Mar 24 15:36:29.882 %PLATFORM-5-SIGNATURE_VERIFIED: Image 'flash0:/vios_l2-adventerprisek9-m' passed code signing verification
vios-l2-01(config-if)#switchport trunk encapsulation dot1q
vios-l2-01(config-if)#switchport mode trunk
vios-l2-01(config-if)#exit
vios-l2-01(config-if)#interface gigabitethernet 0/2
vios-l2-01(config-if)#switchport mode access
vios-l2-01(config-if)#switchport access vlan5
^
% Invalid input detected at '^' marker.

vios-l2-01(config-if)#exit
vios-l2-01(config)#interface gigabitethernet 0/0
vios-l2-01(config-if)#switchport trunk encapsulation dot1q
vios-l2-01(config-if)#switchport mode trunk
vios-l2-01(config-if)#exit
vios-l2-01(config)#
```

solarwinds | Solar-PuTTY free tool

Εκτελέστε τα παρακάτω βήματα Παραμετροποίησης για το L2 Switch-2:

```

Configuring...
VIOS-L2-01#conf t
Enter configuration commands, one per line. End with CNTL/Z.
VIOS-L2-01(config)#vlan 5
VIOS-L2-01(config-vlan)#name 1080424
VIOS-L2-01(config-vlan)#exit
VIOS-L2-01(config)#exit
VIOS-L2-01#
*Mar 24 16:04:11.686: %SYS-5-CONFIG_I: Configured from console by console
VIOS-L2-01#sh vlan

VLAN Name          Status    Ports
----- -----
1    default        active    Gi0/1, Gi0/2, Gi0/3
5    1080424        active
100   VLAN100       active
200   VLAN200       active
300   VLAN300       active
1002  fddi-default  act/unsup
1003  trcrf-default act/unsup
1004  fdnet-default act/unsup
1005  trbrf-default act/unsup

VLAN Type      SAID     MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
----- -----
1   enet  100001   1500   -    -    -    -    0    0
5   enet  100005   1500   -    -    -    -    0    0
100  enet  100100   1500   -    -    -    -    0    0
200  enet  100200   1500   -    -    -    -    0    0
300  enet  100300   1500   -    -    -    -    0    0
1002 fddi   101002   1500   -    -    -    -    0    0
1003 trcrf  101003   4472  1005  3276  -    srb   0    0
1004 fdnet  101004   1500   -    -    ieee  -    0    0
--More-- [1]

```

solarwinds  | Solar-PuTTY *free tool*

Ερώτημα:

Ping PC1 προς PC2,PC3:

```

PC1> ping 192.168.5.5 255.255.255.0 gateway 192.168.5.1
PC1> ping 192.168.10.10
host (192.168.5.1) not reachable
PC1> ping 192.168.5.10
host (192.168.5.10) not reachable
PC1>

```

Host not reachable: σημαίνει ότι ο προσαρμογέας δικτύου είναι απενεργοποιημένος ή ότι έχω αποσυνδέσει το καλώδιο ethernet.

Παραμετροποίησης για τον Δρομολογητή R1:

```

R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface ethernet0/0
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#

```

Επιβεβαίωση δημιουργίας των εικονικών υποδικτύων:

```

R1#sh ip int br
Interface          IP-Address      OK? Method Status      Protocol
Ethernet0/0        unassigned    YES unset up           up
Ethernet0/0.5      192.168.5.1  YES manual up          up
Ethernet0/0.10     192.168.10.1 YES manual up          up
Ethernet1/0         unassigned    YES unset administratively down down
Ethernet1/1         unassigned    YES unset administratively down down
Ethernet1/2         unassigned    YES unset administratively down down
Ethernet1/3         unassigned    YES unset administratively down down
R1#

```

show vlans: ελέγχω αν όντως έγινε σωστά το encapsulation

```
% Unrecognized command
R1#show vlans

Virtual LAN ID: 1 (IEEE 802.1Q Encapsulation)
  VLAN Trunk Interface: Ethernet0/0
This is configured as native Vlan for the following interface(s) :
Ethernet0/0
  Protocols Configured: Address: Received: Transmitted:
    Other          0           0            173
  0 packets, 0 bytes input
  173 packets, 11566 bytes output

Virtual LAN ID: 5 (IEEE 802.1Q Encapsulation)
  VLAN Trunk Interface: Ethernet0/0.5
  Protocols Configured: Address: Received: Transmitted:
    IP           192.168.5.1      7           4
    Other          0           0            1
  7 packets, 646 bytes input
  5 packets, 454 bytes output

Virtual LAN ID: 10 (IEEE 802.1Q Encapsulation)
  VLAN Trunk Interface: Ethernet0/0.10
  Protocols Configured: Address: Received: Transmitted:
    IP           192.168.10.1     5           4
    Other          0           0            1
  5 packets, 472 bytes input
  5 packets, 454 bytes output

R1#
R1#
```

Ξανά κάνω ping από το PC1 προς PC2,PC3:

```
PC1> ping 192.168.10.10
192.168.10.10 icmp_seq=1 ttl=63 time=30.134 ms
84 bytes from 192.168.10.10 icmp_seq=2 ttl=63 time=21.872 ms
84 bytes from 192.168.10.10 icmp_seq=3 ttl=63 time=37.325 ms
84 bytes from 192.168.10.10 icmp_seq=4 ttl=63 time=32.722 ms
84 bytes from 192.168.10.10 icmp_seq=5 ttl=63 time=52.878 ms
PC1> ping 192.168.5.10
84 bytes from 192.168.5.10 icmp_seq=1 ttl=64 time=16.433 ms
84 bytes from 192.168.5.10 icmp_seq=2 ttl=64 time=19.097 ms
84 bytes from 192.168.5.10 icmp_seq=3 ttl=64 time=32.722 ms
84 bytes from 192.168.5.10 icmp_seq=4 ttl=64 time=14.412 ms
84 bytes from 192.168.5.10 icmp_seq=5 ttl=64 time=9.703 ms
PC1>
```

ΣΗΜΕΙΩΣΗ:

Κάθε φορά που το έσβηνα και ξαναέμπαινα έχασα την σύνδεση.(ενώ έκανα αποθήκευση σε κάθε βήμα) στο τέλος έχω κάθε ρύθμιση που είχα ώστε να λειτουργούν σωστά.

```
% Invalid input detected at '^' marker.
% Error on initialize VLAN database 1: VTP feature not yet initialized
% Access vlan 5 does not exist
% Access vlan 10 does not exist
% Access vlan 5 does not exist
%
solarwinds Solar-PuTTY free tool
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```

ΣΧΟΛΙΑ:

Εδώ έχω ενεργοποιήσει το trunk mode για τα Gi0/0 και G0/3 για να περνάνε πακέτα ανεξάρτητα με το vlan tag

```
vios-l2-01#show int trunk
Port      Mode      Encapsulation  Status      Native vlan
Gi0/0    on       802.1q        trunking   1
Gi0/3    on       802.1q        trunking   1

Port      Vlans allowed on trunk
Gi0/0    1-4094
Gi0/3    1-4094

Port      Vlans allowed and active in management domain
Gi0/0    1,5,10,100,200,300
Gi0/3    1,5,10,100,200,300

Port      Vlans in spanning tree forwarding state and not pruned
Gi0/0    1,5,10,100,200,300
Gi0/3    1,5,10,100,200,300
vios-l2-01#
```

Στο Switch 2 θα μπει αυτόματα σε trunk mode εφόσον γίνει το configuration στο Switch 1.

Εδώ έχω αλλάξει το access των interface ώστε να ταιριάζουν στα vlan που ανήκουν

Εδώ είναι του switch1:

```
vios-12-81#show vlan
vios-12-81#show vlan

VLAN Name          Status Ports
-----+-----+-----+
1   default        active  GbE1
2   sales          active  GbE2
100  VLAN100       active
1000 VLAN1000      active
2000 VLAN2000      active
3000 VLAN3000      active
3000 VLAN3000     act/unsup
1003 trcf-default act/unsup
1004 rddinet-default act/unsup
1005 trrf-default act/unsup
-----+-----+-----+
VLAN Type SAD ID MTU Parent RingNo BridgeMode Stp Bridgemode Trans1 Trans2
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1   enet 100001 1500 - - - - - - 0 0
2   enet 100002 1500 - - - - - - 0 0
100 enet 100010 1500 - - - - - - 0 0
1000 enet 100100 1500 - - - - - - 0 0
10000 enet 100200 1500 - - - - - - 0 0
2000 enet 100300 1500 - - - - - - 0 0
3000 enet 100300 1500 - - - - - - 0 0
3000 VLAN3000     act/unsup
1003 trcf-default act/unsup
1004 rddinet-default act/unsup
1005 trrf-default act/unsup
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
<more>^Z
```

Switch2:

```
vios-12-81#show vlan
vios-12-81#show vlan

VLAN Name          Status Ports
-----+-----+-----+
1   default        active  GbE1
5   1000424       active
100  VLAN100       active
2000 VLAN2000      active
3000 VLAN3000      active
1003 trcf-default act/unsup
1004 rddinet-default act/unsup
1005 trrf-default act/unsup
-----+-----+-----+
VLAN Type SAD ID MTU Parent RingNo BridgeMode Stp Bridgemode Trans1 Trans2
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1   enet 100001 1500 - - - - - - 0 0
2   enet 100005 1500 - - - - - - 0 0
100 enet 100006 1500 - - - - - - 0 0
200 enet 100200 1500 - - - - - - 0 0
300 enet 100300 1500 - - - - - - 0 0
1002 fddi 101002 1500 - - - - - - 0 0
1003 trcf 101003 4472 1005 3276 - - srb 0 0
1004 fddi 101004 1500 - - - leee - - 0 0
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
<more>^Z
```