LAB CONNECTIVITY BASICS

PE 2

This example is using Student 1’s IP scheme.

```
ROUTER EIGRP STDN1
 ADDRESS-FAMILY IPV4 UNICAST AUTONOMOUS-SYSTEM 101
 NETWORK X.X.X.X
  AF-INTERFACE TUNNEL 101
    AUTHENTICATION MODE XXXX
    AUTHENTICATION KEY-CHAIN XXXXX
```

INT VLAN 101
IP ADD 22.18.101.1 255.255.255.248
IP OSPF 1 AREA 1

STUDENT L3 SWITCH

STUDENT ROUTER

TUNNEL 1xx

UPSTREAM NEIGHBOR

G0/1
VLAN 101

VLAN 101

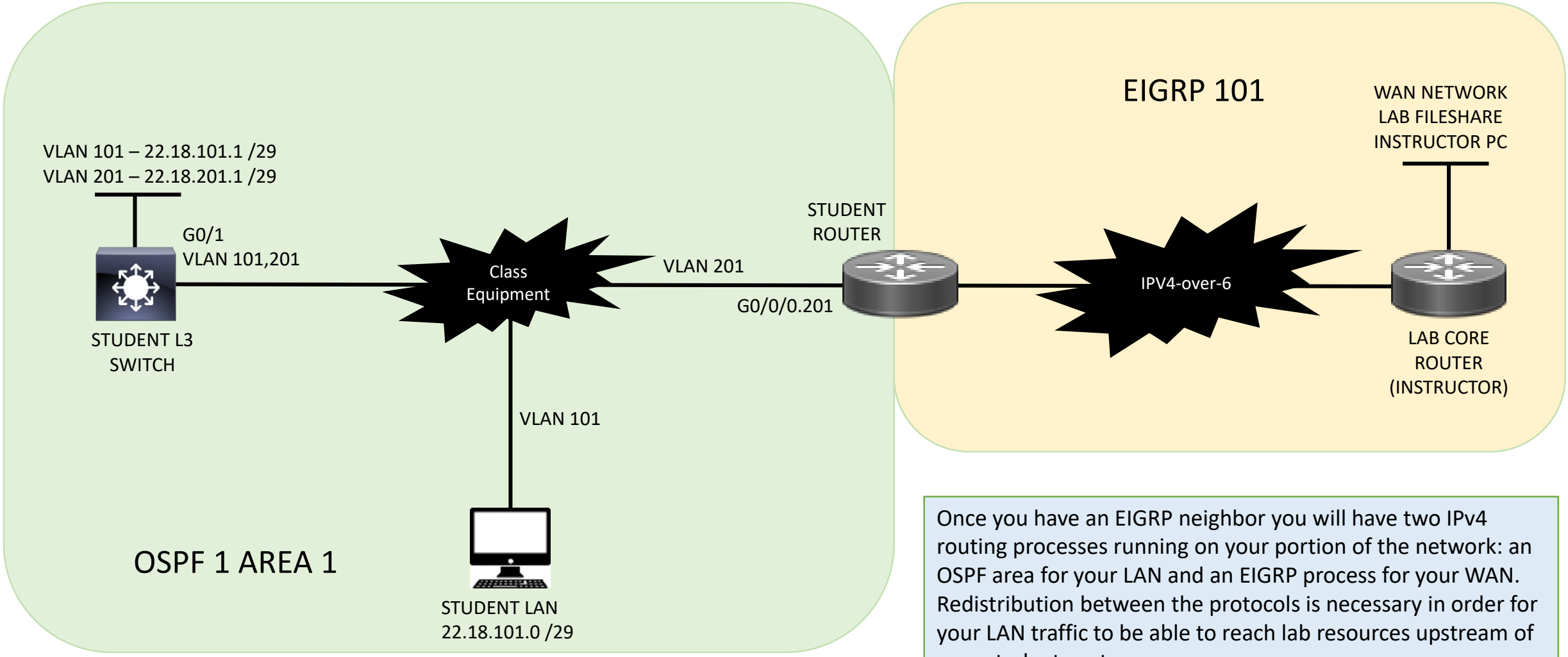
STUDENT LAN
22.18.101.0 /29

The student router forms an EIGRP neighbor with a core node across an IPV4-over-6 tunnel using named mode EIGRP.

In named mode EIGRP, the name of the process (STDN1 in this example) is locally significant but the autonomous system number (101) must match the neighbor. Network statements are still utilized to activate IPv4 interfaces.

Summary addresses and authentication commands are applied under the AF-Interface sub menu. “AF” stands for address family.

This example is using Student 1's IP scheme.



Once you have an EIGRP neighbor you will have two IPv4 routing processes running on your portion of the network: an OSPF area for your LAN and an EIGRP process for your WAN. Redistribution between the protocols is necessary in order for your LAN traffic to be able to reach lab resources upstream of your student router.

Redistribution is done on the device that has neighbors in both protocols, so in this case, the student router.

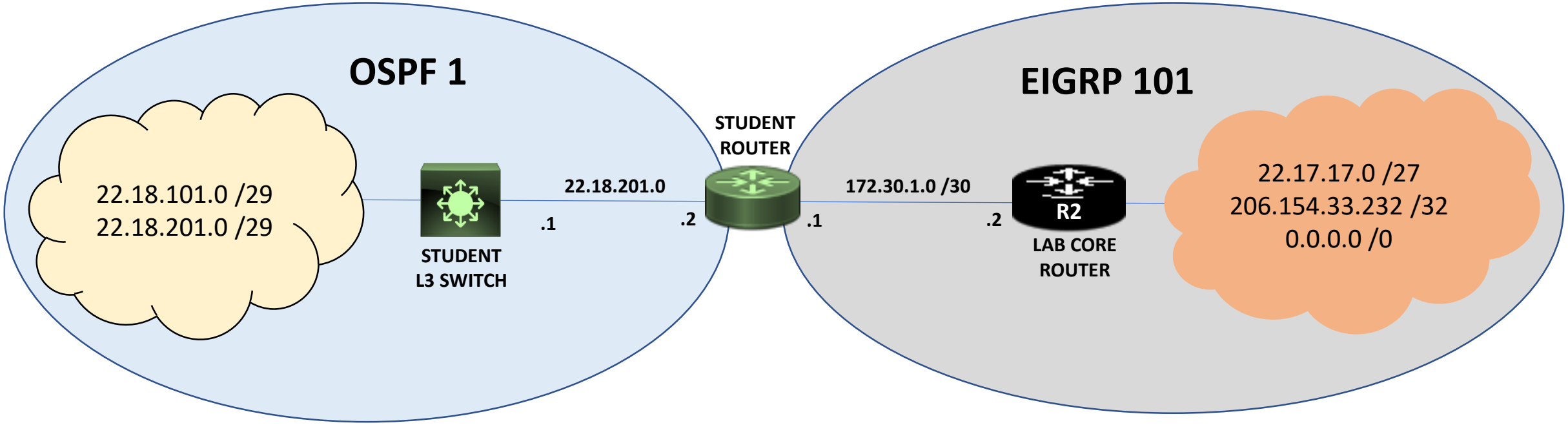
MUTUAL REDISTRIBUTION

(Example uses Student 1's scheme)

```
STUDENT_R1#

Router eigrp STDN1
Address-family ipv4 unicast autonomous-system 101
 topology base
 redistribute ospf 1 metric 1000000 0 255 1 1500

Router ospf 1
Redistribute eigrp 101 subnets
```

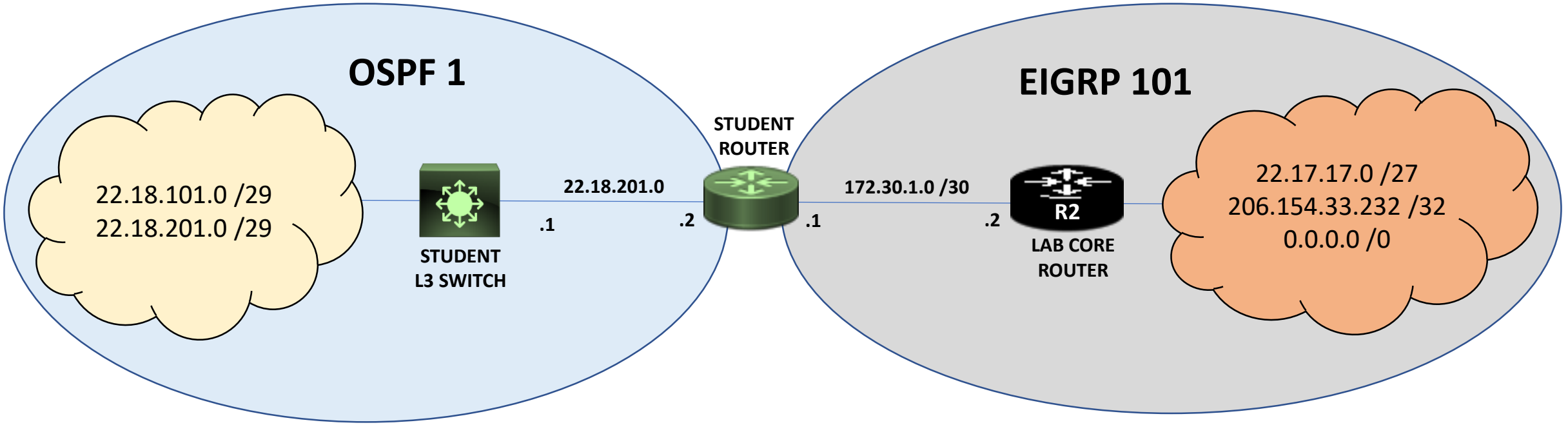


REDISTRIBUTION IS CONFIGURED ON THE STUDENT ROUTER SINCE IT HAS NEIGHBORS IN BOTH PROTOCOLS. WHEN REDISTRIBUTING ANOTHER PROTOCOL INTO EIGRP YOU MUST SPECIFY A METRIC (SHOWN ABOVE). IF THERE IS ONLY 1 SOURCE FOR THE ROUTES (AS IN THIS LAB) THE METRIC DOES NOT NEED TO BE CALCULATED SPECIFICALLY. IT SIMPLY MUST CONTAIN A VALUE FOR BANDWIDTH (1000000), DELAY (0), RELIABILITY (255), LOAD (1) AND MTU (1500). WHEN REDISTRIBUTING ANOTHER PROTOCOL INTO OSPF, INCLUDE THE WORD "SUBNETS".

MUTUAL REDISTRIBUTION

(Example uses Student 1's scheme)

REDISTRIBUTION IS SEEN ON THE LAYER 3 DEVICES UPSTREAM AND DON'T STREAM OF THE DEVICE DOING THE REDISTRIBUTION. IN THIS CASE THE STUDENT LAYER 3 SWITCH WILL SEE REDISTRIBUTED EIGRP ROUTES IN THE ROUTING TABLE AS "O E2" ROUTES. THE CORE'S ROUTING TABLE (WHICH THE STUDENT CANNOT SEE) WILL HAVE SEE REDISTRIBUTED OSPF NETWORKS AS "D EX" ROUTES. THE STUDENT ROUTER WILL ONLY SEE "O" AND "D" ROUTES IN THE ROUTING TABLE SINCE THE ROUTES ARE NOT LEARNED VIA REDISTRIBUTION FROM THEIR PERSPECTIVE.




```
STUDENT_SW1# SHOW IP ROUTE

S*        0.0.0.0/0 [1/0] VIA 22.18.201.2
C         22.18.101.0/29 [CONNECTED]
C         22.18.201.0/29 [CONNECTED]
O E2      22.17.17.0/27 [110/2] VIA 22.18.202.2 VLAN 201
O E2      206.154.33.232/32 [100/2] VIA 22.18.202.2 VLAN 201
```

```
LAB_CORE-1# SHOW IP ROUTE

C         172.30.1.0/30 [CONNECTED]
D         22.17.17.0/27 [90/251720] VIA 22.16.0.4
D         206.154.33.232/32 [90/24671] VIA 22.16.0.4
D EX      22.18.101.0/29 [170/284657] VIA 172.30.1.1
D EX      22.18.201.0/29 [170/284657] VIA 172.30.1.1
```