Series Editor
Jean-Charles Pomerol

Systems and Network Infrastructure Integration

Design, Implementation, Safety and Supervision

Saida Helali

Color Section

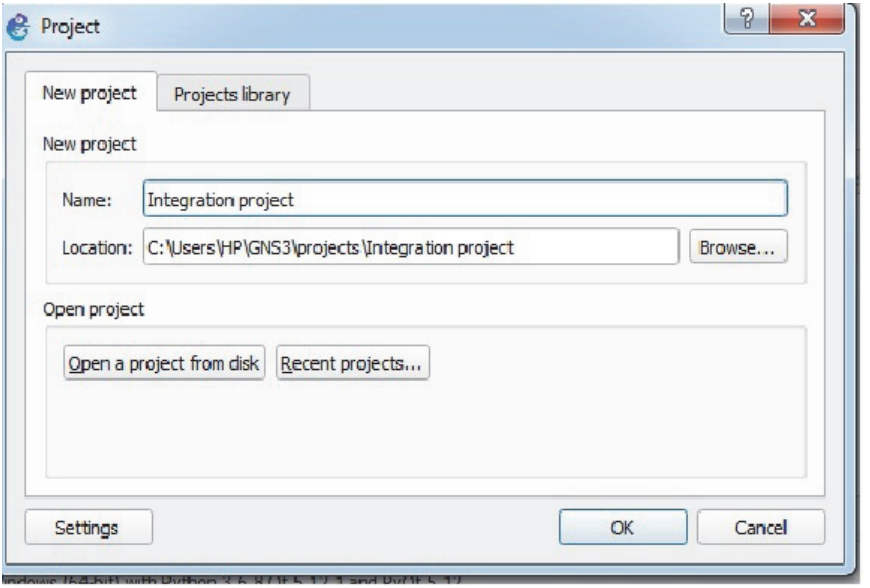


Figure 2.1. *Creation of a new project*

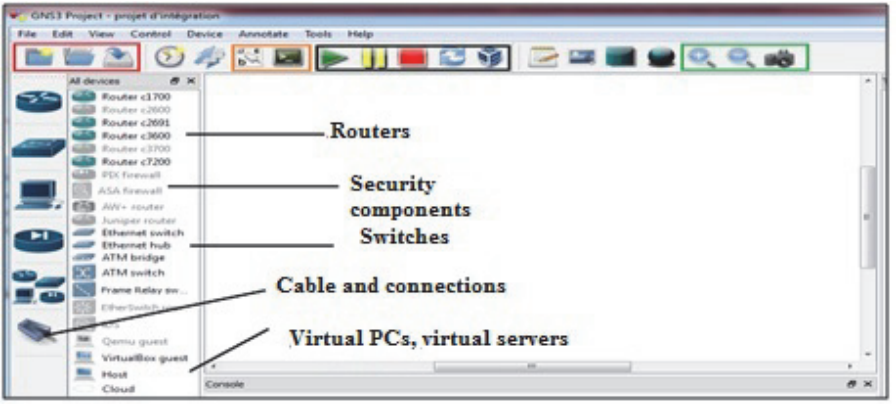


Figure 2.2. *Description of GNS3 interface*

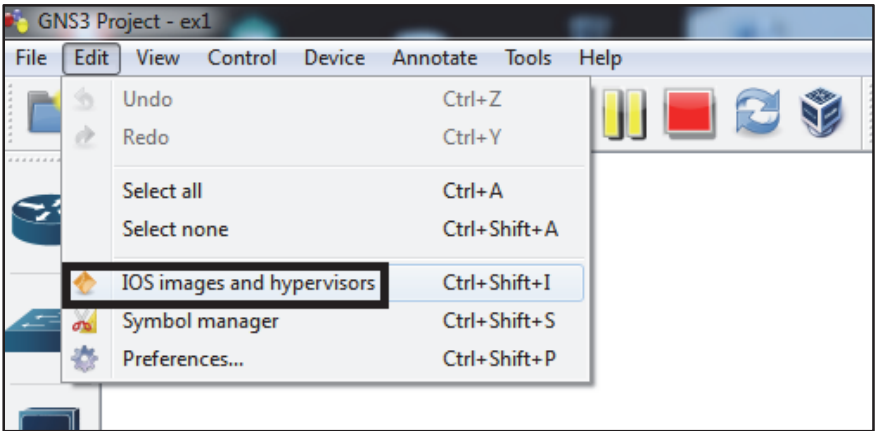


Figure 2.3. *Adding IOS images*

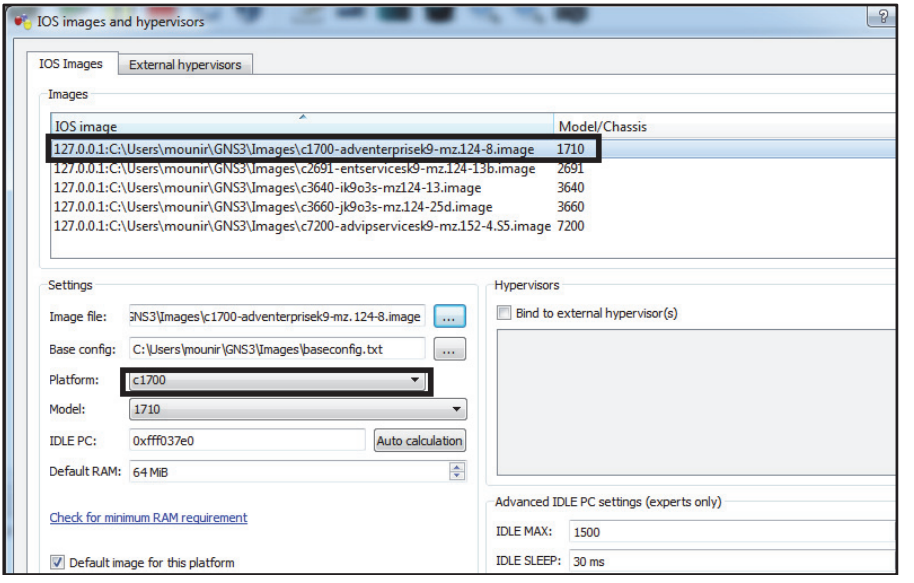


Figure 2.4. *Example of a router image*

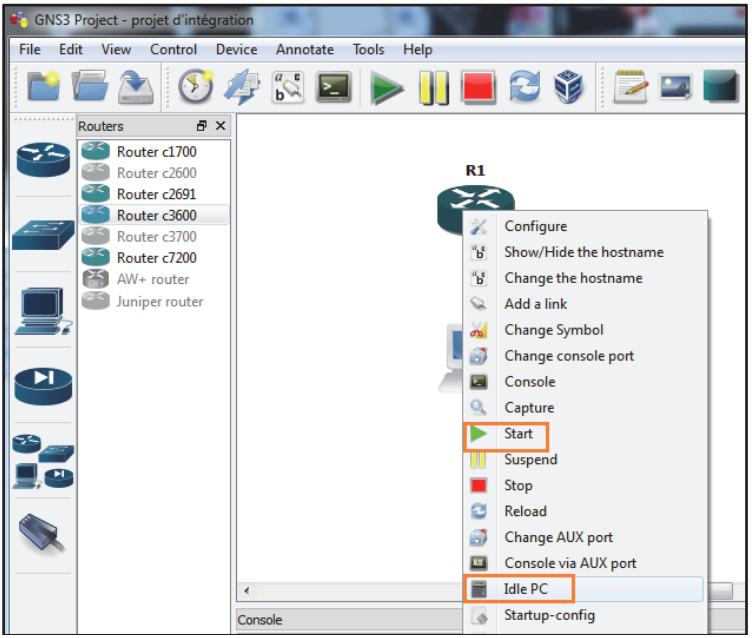


Figure 2.5. *Using the IDLE PC function*

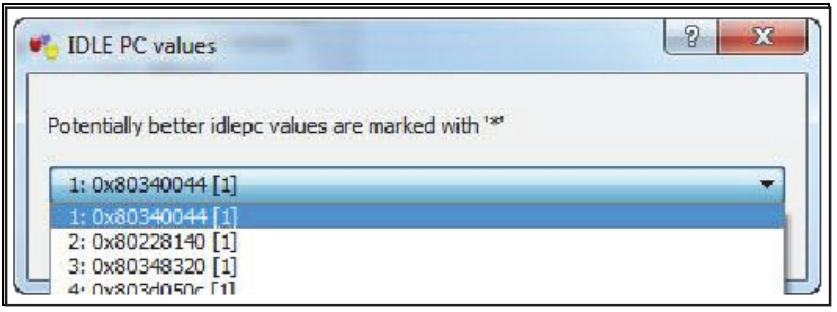


Figure 2.6. *Suggested range of IDLE PC values*

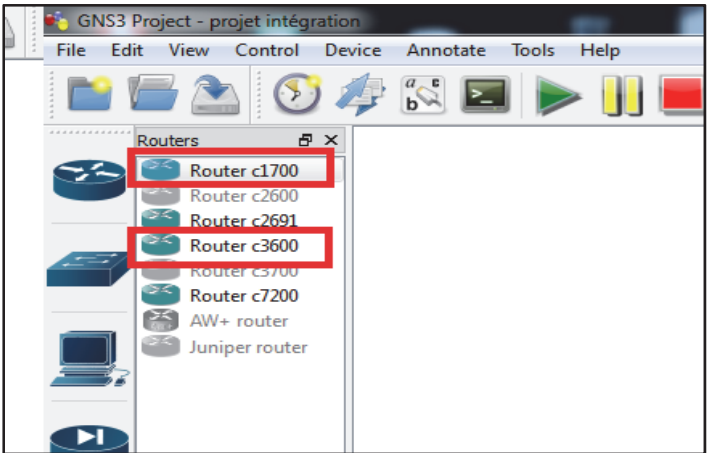


Figure 2.7. *Available router images*

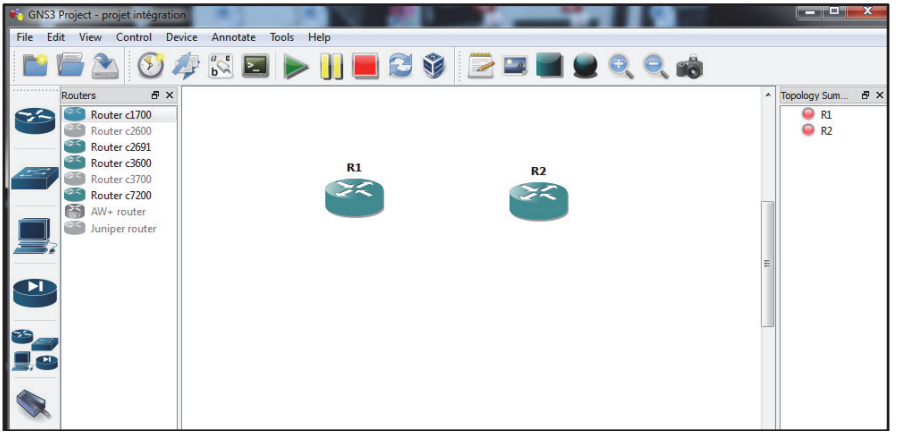


Figure 2.8. *Adding routers to a topology*

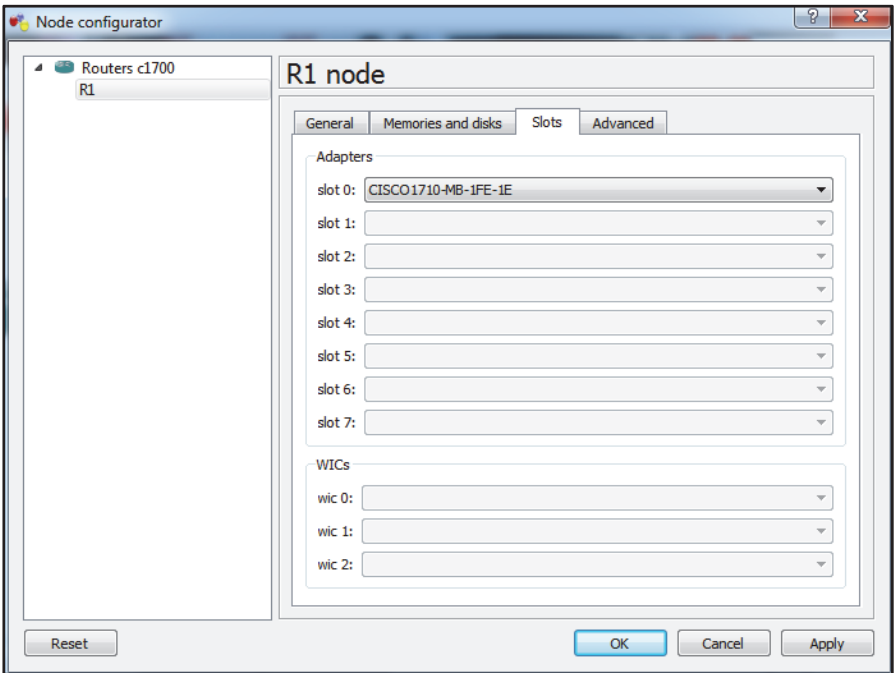


Figure 2.9. *Configuration of a router*

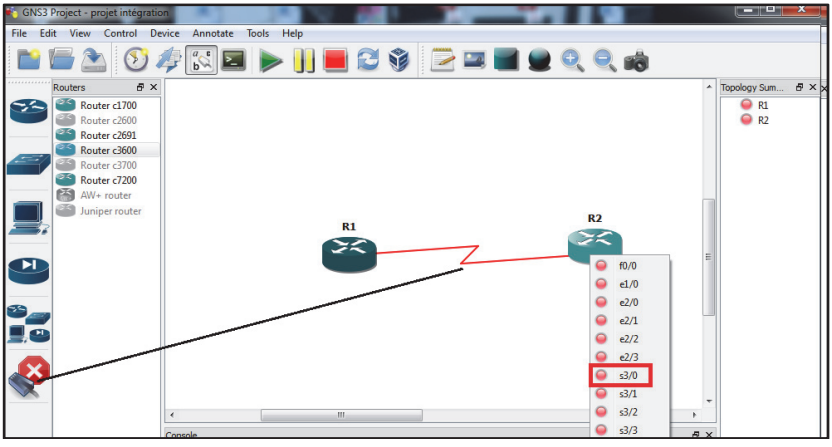


Figure 2.10. *Connection of two routers*

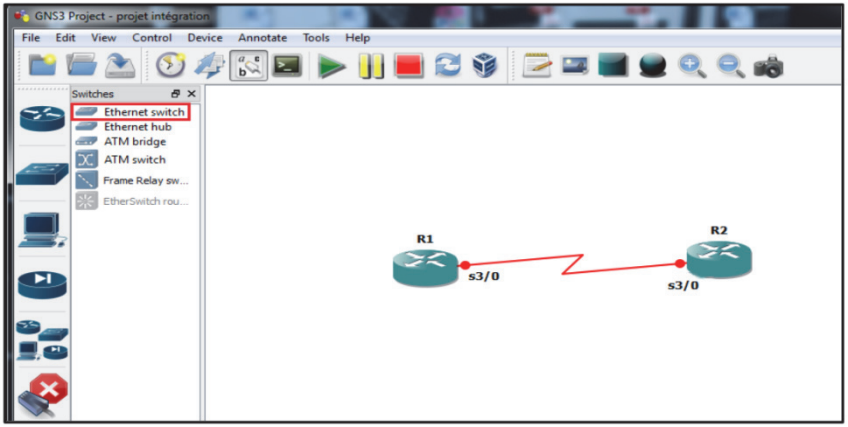


Figure 2.11. *Adding a switch*

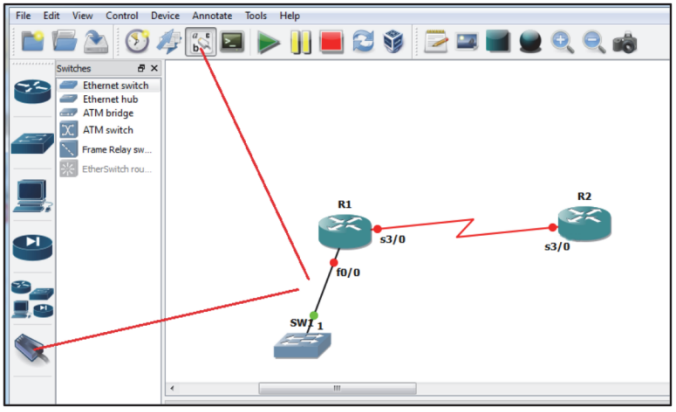


Figure 2.12. *Connection to a switch*

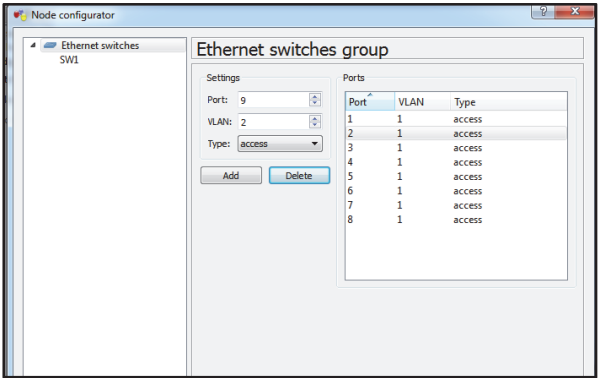


Figure 2.13. *Switch configuration*

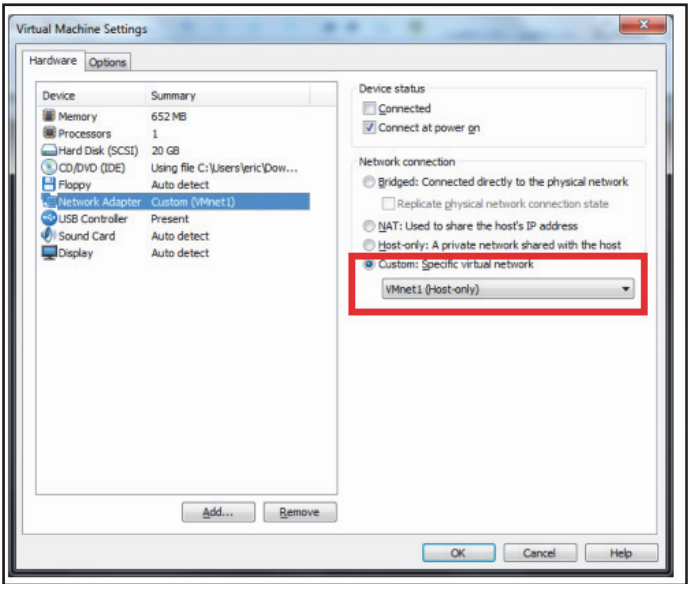


Figure 2.14. *Network configuration of a virtual machine*

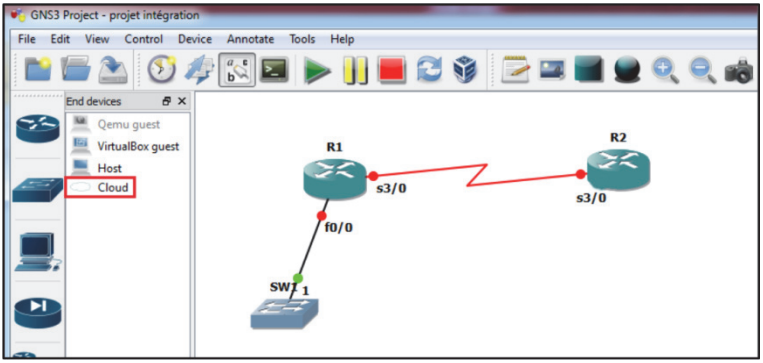


Figure 2.15. *Creation of a cloud connection*

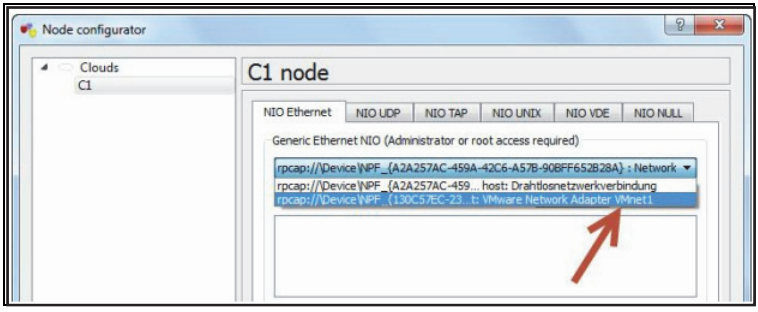


Figure 2.16. *Configuring the cloud*

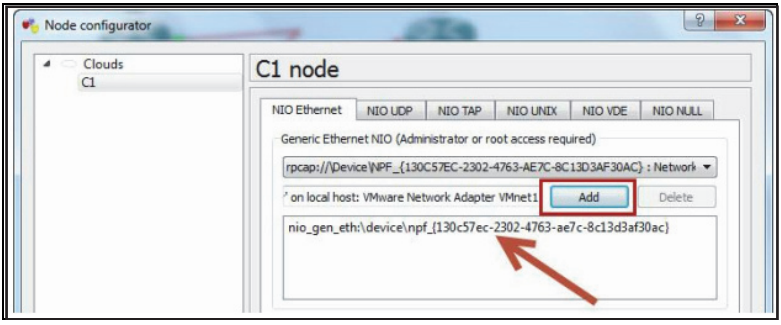


Figure 2.17. *Adding the interface*

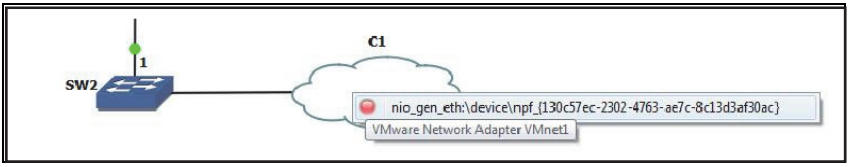


Figure 2.18. *Connecting the cloud with the switch*

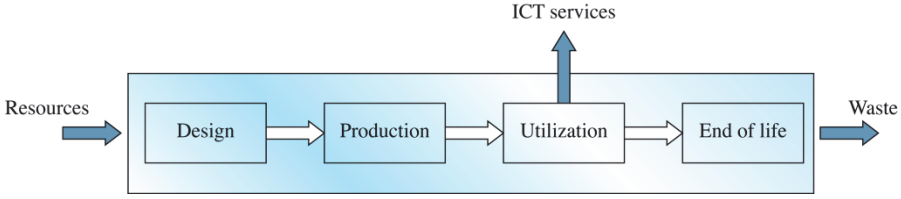


Figure 3.1. *Lifecycle of ICT equipment*

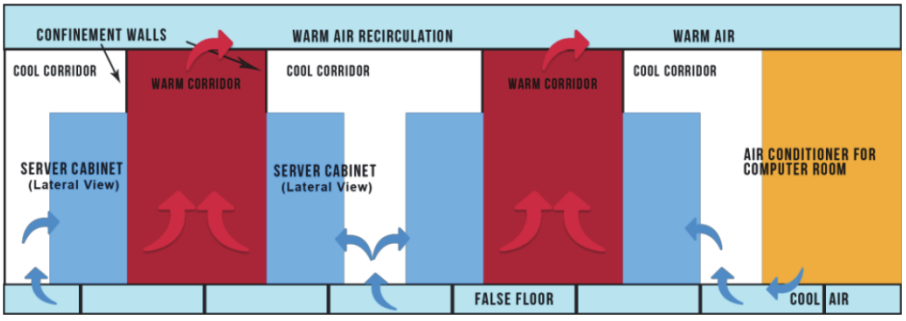


Figure 3.2. *Cool corridor solution*

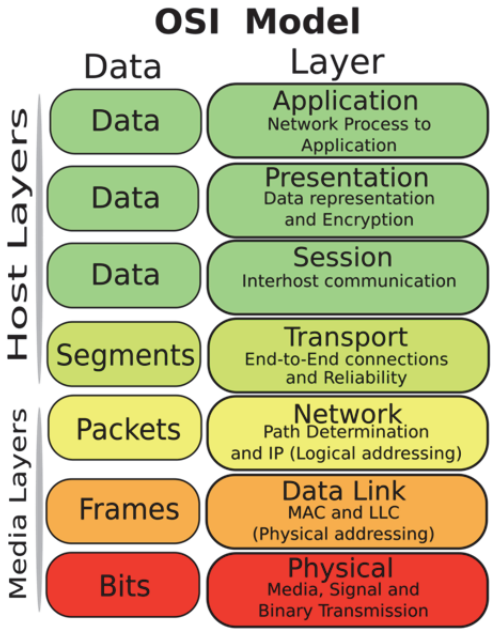


Figure 4.2. *OSI model*

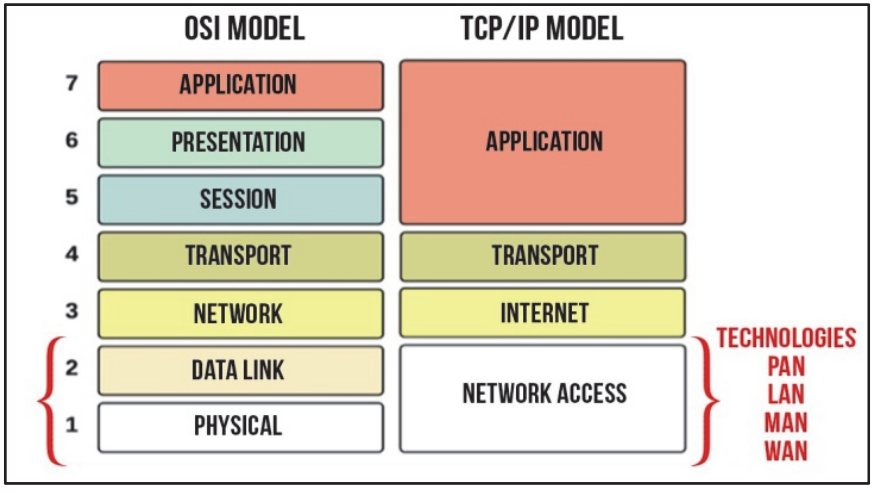


Figure 4.4. *OSI model versus TCP/IP model*

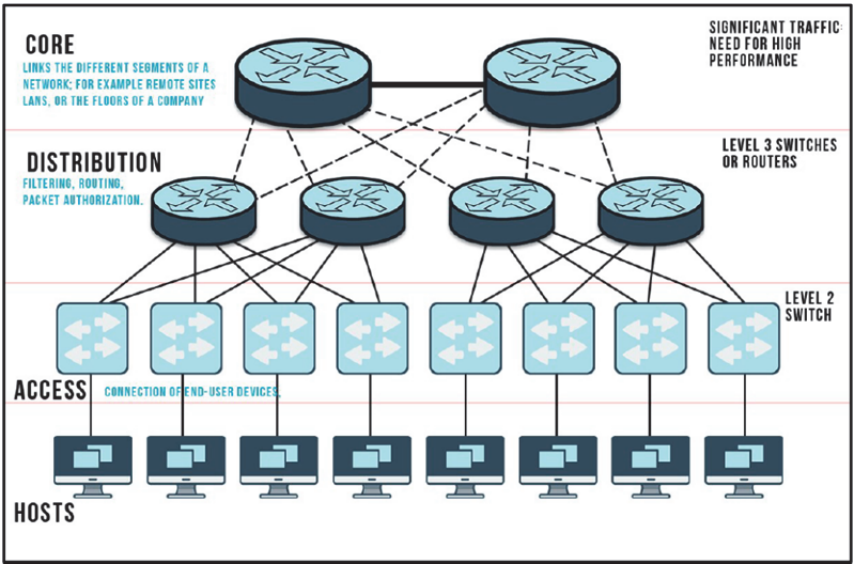


Figure 4.6. *Hierarchical model*

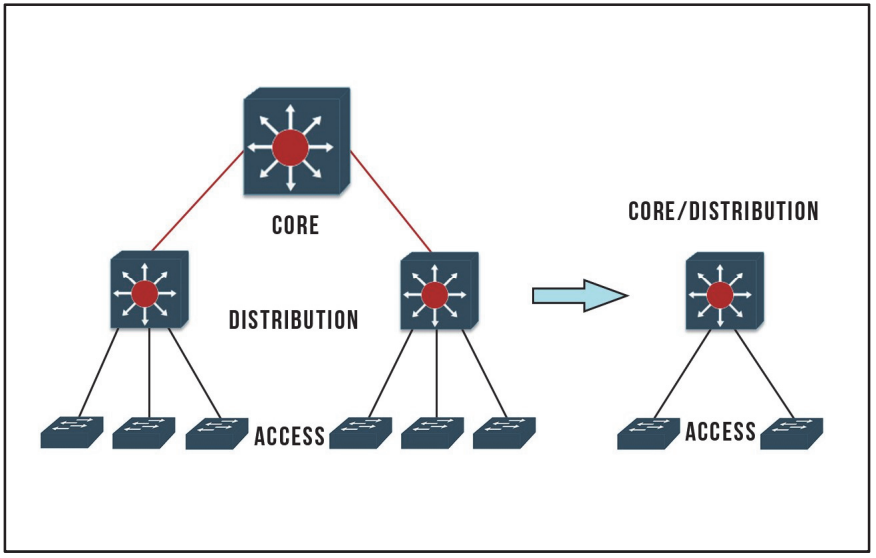


Figure 4.7. *Clustering of the distribution and core layers*

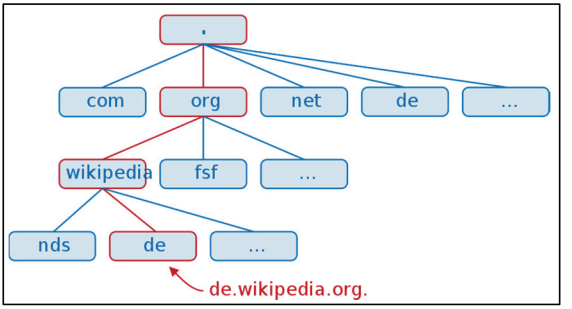


Figure 5.7. *Tree organization of domain names*

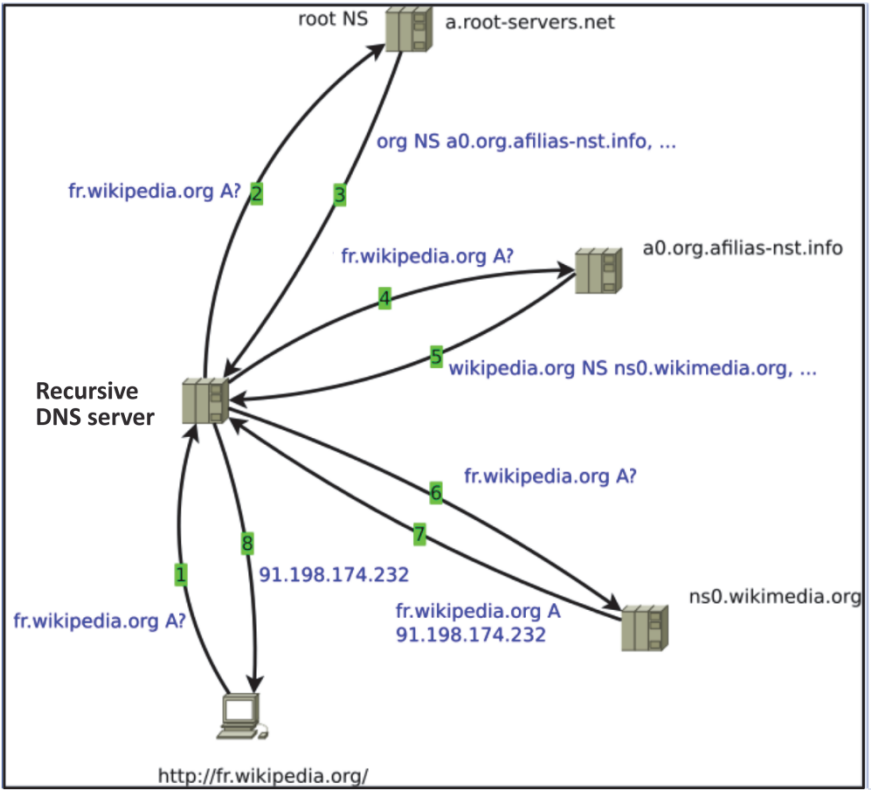


Figure 5.8. *DNS operating principle*

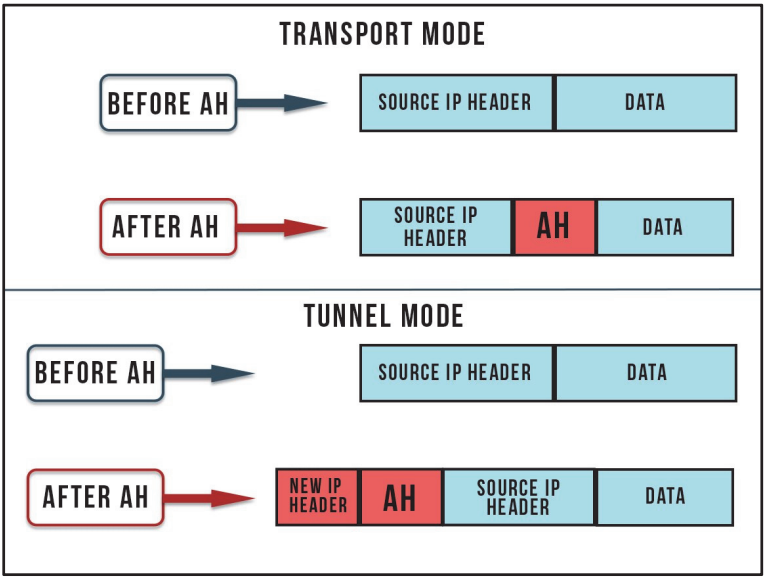


Figure 6.5. *IPsec operating modes with AH mechanism*

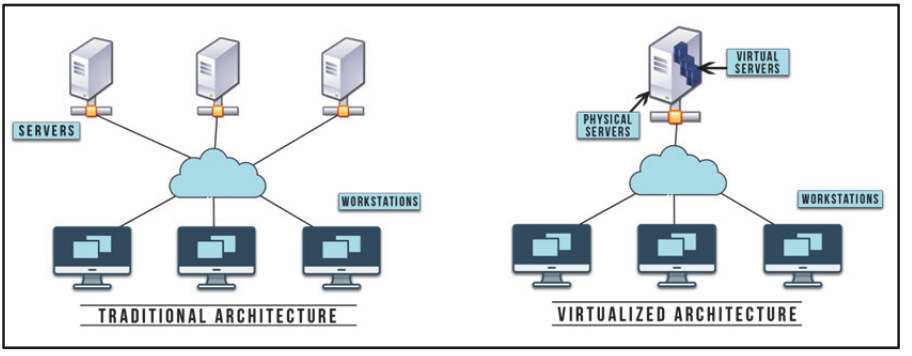


Figure 7.1. *Virtualization of servers*

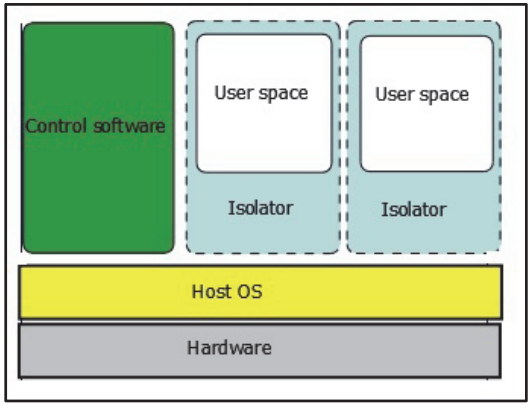


Figure 7.3. *Virtualization by isolation*

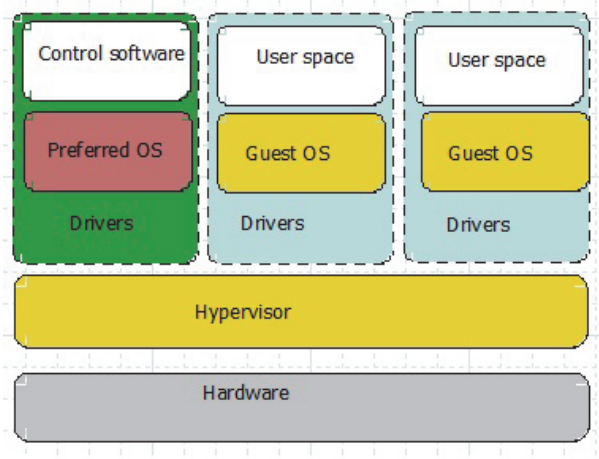


Figure 7.4. *Paravirtualization*

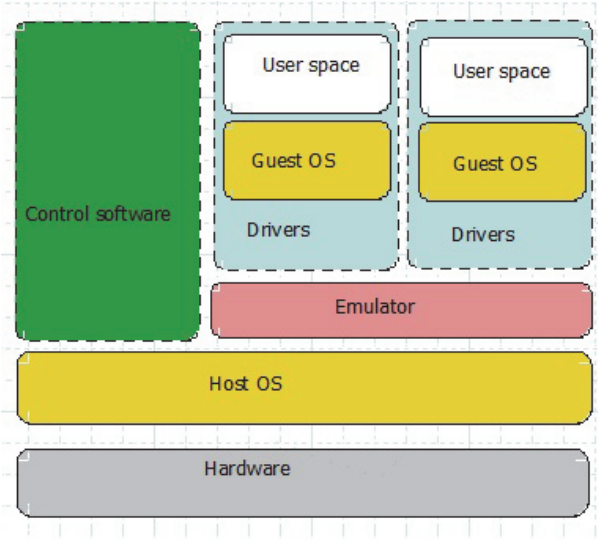


Figure 7.5. *Complete virtualization*

Figure 7.7. *Distribution of responsibility for cloud computing service delivery models*

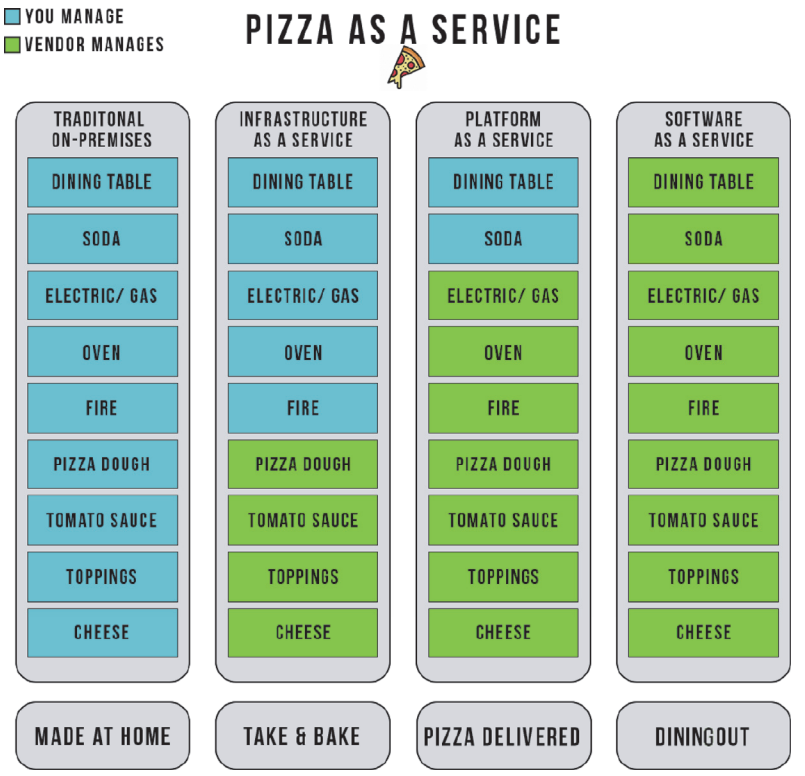


Figure 7.8. *Pizza as a Service analogy*

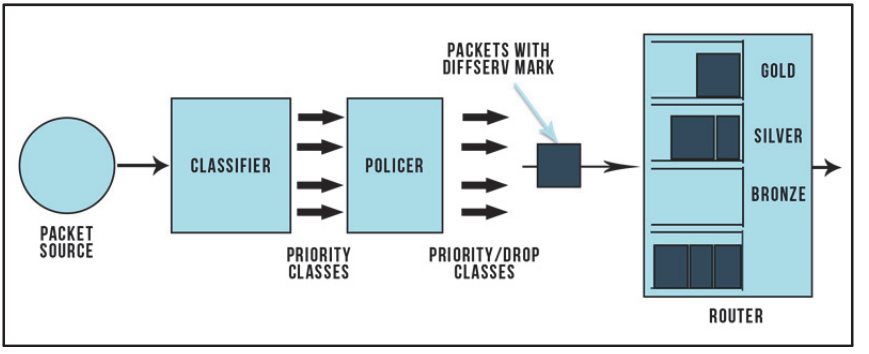


Figure 8.1. *General principles of QoS establishment*

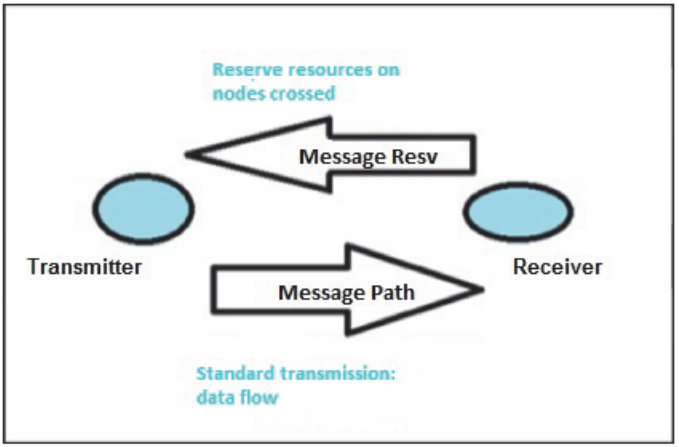


Figure 8.2. *Basic principles of RSVP*

Version (4 bits)	**Header length** (4 bits)	**Service type** TOS or DSCP (8 bits)	**Total length** (16 bits)
Identification (16 bits)		**Flag** (3 bits)	**Offset Fragment** (13 bits)
Lifespan (8 bits)	**Protocol** (8 bits)	**Checksum** (16 bits)	
IP source address (32 bits)			
IP destination address (32 bits)			
Options (possible)			

Figure 8.3. *IPv4 header and TOS/DSCP fields*

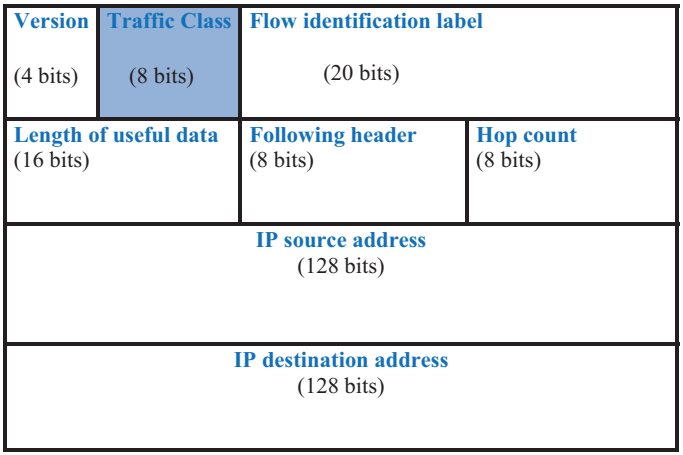


Figure 8.4. *IPv6 header and traffic class field*

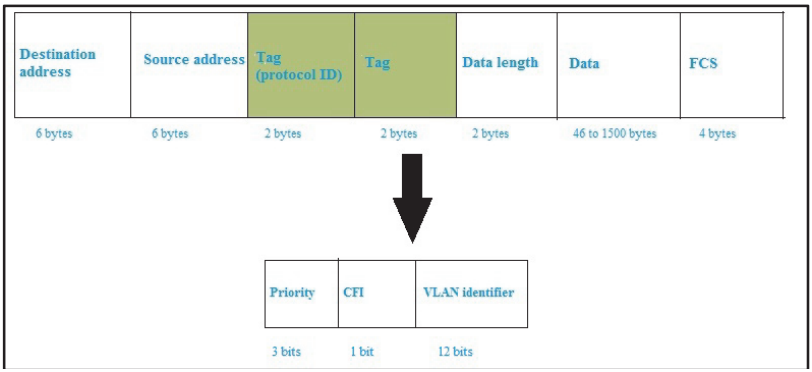
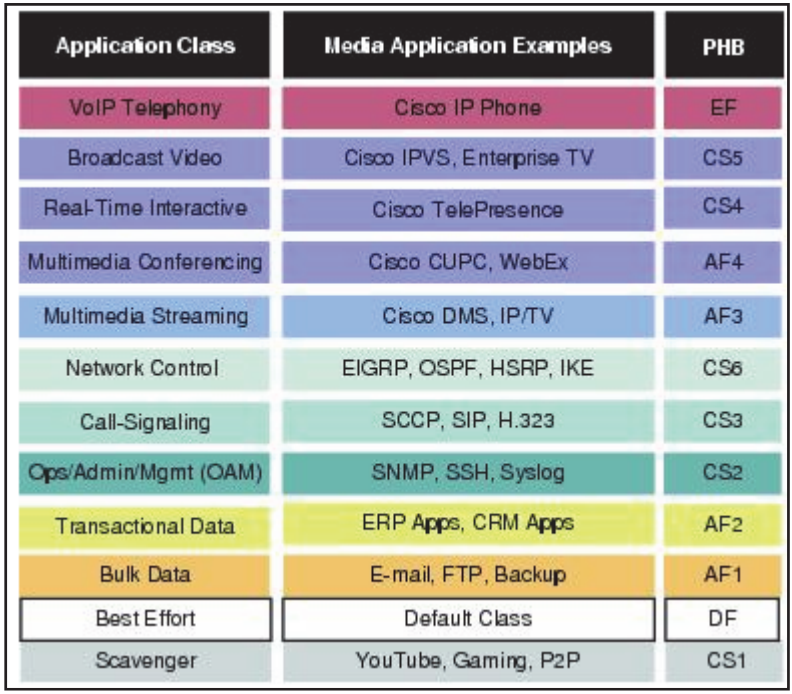


Figure 8.7. *Structure of IEEE 802.1q frame*



Application Class	Media Application Examples	PHB
VoIP Telephony	Cisco IP Phone	EF
Broadcast Video	Cisco IPVS, Enterprise TV	CS5
Real-Time Interactive	Cisco TelePresence	CS4
Multimedia Conferencing	Cisco CUPC, WebEx	AF4
Multimedia Streaming	Cisco DMS, IP/TV	AF3
Network Control	EIGRP, OSPF, HSRP, IKE	CS6
Call-Signaling	SCCP, SIP, H.323	CS3
Ops/Admin/Mgmt (OAM)	SNMP, SSH, Syslog	CS2
Transactional Data	ERP Apps, CRM Apps	AF2
Bulk Data	E-mail, FTP, Backup	AF1
Best Effort	Default Class	DF
Scavenger	YouTube, Gaming, P2P	CS1

Figure 8.9. *Examples of the application and corresponding DSCP values*

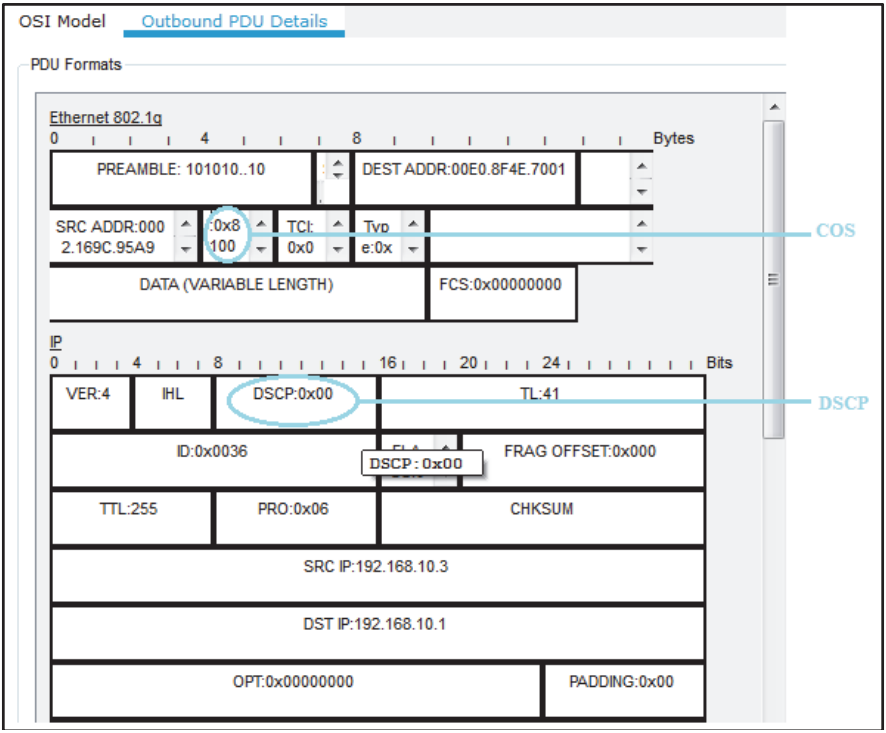


Figure 8.13. *Failure of prioritized frame transmission*

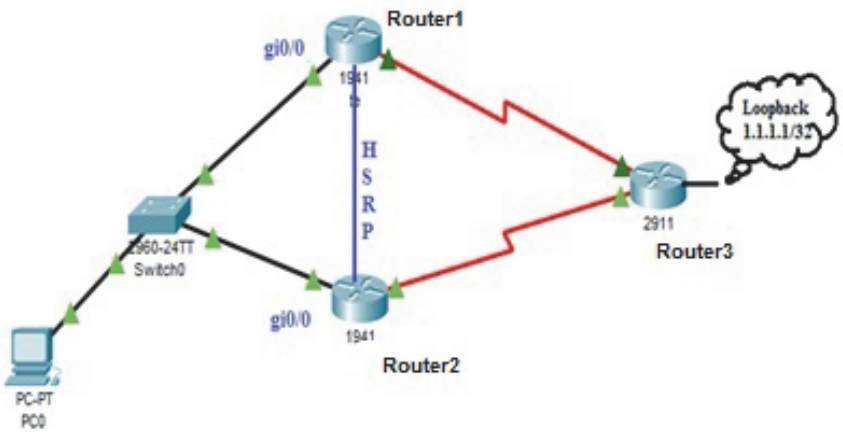


Figure 8.18. *Mock configuration of the HSRP protocol*

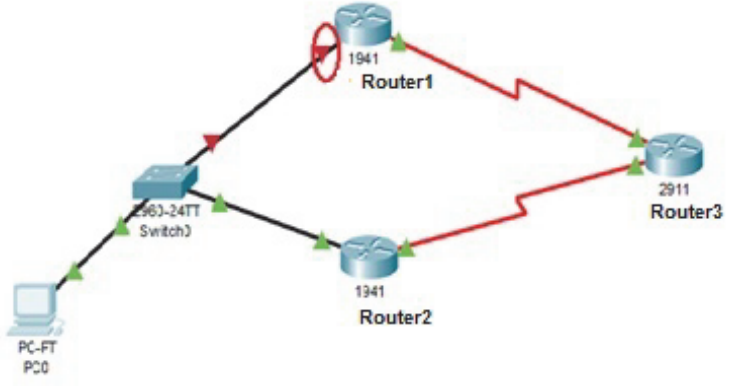


Figure 8.19. *Simulation of a Router 1 breakdown*