

## GII TDRC

# MEMORIA Práctica 1

### Conceptos y topología

Autor: Miguel Ángel López (Revisión Antonio M. Mora, Antonio Fernández Ares)

**Duración: 1 sesión**

NOMBRE Y APELLIDOS	Nikita Stetskiy				
OPCIÓN	A	ISLA X	8	ISLA Y	10

**IMPORTANTE:** En base a los valores X e Y tendrá que calcular la opción de respuesta del guión de prácticas. Para ello, tendrá que seguir la siguiente tabla:

OPCIÓN	VALOR X	VALOR Y
A	PAR	PAR
B	PAR	IMPAR
C	IMPAR	PAR
D	IMPAR	IMPAR

### INSTRUCCIONES:

- Debe reemplazar por la respuesta correcta todo texto que aparezca de color rojo.
- Incluya capturas de pantalla de las configuraciones donde aparezca el símbolo de imagen (reemplace dicha imagen por la captura o capturas que necesite):



- Puede emplear la herramienta recortes en windows para realizar las capturas de pantalla o emplear el atajo WINDOWS+IMPRIMIR\_PANTALLA y posteriormente pegar la captura en el documento.
- Puede emplear la herramienta Screenshot en linux para realizar las capturas de pantalla.
- Puede emplear el atajo COMANDO+MAYUSCULAS+4+BARRA\_ESPACIADORA en MAC para realizar las capturas de pantalla.

## 2. ACCESO AL PC

### 2. Comprobación con el comando ipconfig /all

```
C:\>ipconfig /all

FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Physical Address.....: 0001.42D6.3E2A
    Link-local IPv6 Address.....: FE80::201:42FF:FED6:3E2A
    IP Address.....: 10.8.1.1
    Subnet Mask.....: 255.255.255.0
    Default Gateway.....: 10.8.1.100
    DNS Servers.....: 0.0.0.0
    DHCP Servers.....: 0.0.0.0
    DHCPv6 Client DUID.....: 00-01-00-01-57-60-23-84-00-01-42-D6-3E-2A

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Physical Address.....: 000C.8573.C5A6
    Link-local IPv6 Address.....: ::
    IP Address.....: 0.0.0.0
    Subnet Mask.....: 0.0.0.0
    Default Gateway.....: 0.0.0.0
    DNS Servers.....: 0.0.0.0
    DHCP Servers.....: 0.0.0.0
    DHCPv6 Client DUID.....: 00-01-00-01-57-60-23-84-00-01-42-D6-3E-2A
```

### 3. Default Gateway

Default Gateway es la dirección ip, la cual se encarga de redirigir todo el tráfico que no pertenezca a una red conocida para el ordenador. En nuestro caso el Default Gateway es 10.8.1.100, necesitamos configurar solo una puerta de enlace habiendo una o mas redes conectadas al ordenador, ya que la puerta de enlace es quien se encarga de enrutar todo el tráfico que el ordenador no sepa alcanzar.

## 3. COMANDOS BÁSICOS DE DIAGNÓSTICO

### 1. Memoria FLASH Y NVRAM

show flash : Muestra la disposición y contenido de la memoria Flash  
show version : Muestra información sobre el Cisco IOS y la plataforma  
En nuestro caso podemos observar que tenemos 63488K bytes de memoria FLASH y 191K bytes de NVRAM.

### 1. Memoria FLASH Y NVRAM

```
R8_A>show flash

System flash directory:
File Length Name/status
  3 33591768 c1841-advipservicesk9-mz.124-15.T1.bin
  2 28282 sigdef-category.xml
  1 227537 sigdef-default.xml
[33847587 bytes used, 30168797 available, 64016384 total]
63488K bytes of processor board System flash (Read/Write)
```

```
R8_A#show version
Cisco IOS Software, 1841 Software (C1841-ADVIPSERVICESK9-M), Version 12.4(15)T1, RELEASE SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Wed 18-Jul-07 04:52 by pt_team
```

```
ROM: System Bootstrap, Version 12.3(8r)T8, RELEASE SOFTWARE (fc1)
```

```
System returned to ROM by power-on
System image file is "flash:c1841-advipservicesk9-mz.124-15.T1.bin"
```

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:  
<http://www.cisco.com/wwl/export/crypto/tool/stqrg.html>

If you require further assistance please contact us by sending email to [export@cisco.com](mailto:export@cisco.com).

```
Cisco 1841 (revision 5.0) with 114688K/16384K bytes of memory.
Processor board ID FTX0947Z18E
M860 processor: part number 0, mask 49
2 FastEthernet/IEEE 802.3 interface(s)
191K bytes of NVRAM.
63488K bytes of ATA CompactFlash (Read/Write)
```

```
Configuration register is 0x2102
```

## 2. Fichero ISO

El IOS se copia en la RAM durante el arranque. La memoria flash es memoria de PC no volátil que se utiliza como almacenamiento permanente para el IOS y otros archivos relacionados con el sistema. El IOS se copia de la memoria flash a la RAM durante el proceso de arranque. Podemos ver el nombre del archivo con el comando show flash o dir flash, en nuestro caso es "c1841-advipservicesk9-mz.124-15.T1.bin".

## 2. Fichero ISO

```
R8_A#show flash:
```

```
System flash directory:
```

```
File Length Name/status
  3 33591768 c1841-advipservicesk9-mz.124-15.T1.bin
  2 28282 sigdef-category.xml
  1 227537 sigdef-default.xml
```

```
[33847587 bytes used, 30168797 available, 64016384 total]
63488K bytes of processor board System flash (Read/Write)
```

```
R8_A#dir flash:
```

```
Directory of flash:/
```

```
 3 -rw- 33591768 <no date> c1841-advipservicesk9-mz.124-15.T1.bin
 2 -rw- 28282 <no date> sigdef-category.xml
 1 -rw- 227537 <no date> sigdef-default.xml
```

```
64016384 bytes total (30168797 bytes free)
```

## 3. Interfaces

show ip interface brief - Muestra un breve resumen de la información y del estado de una dirección IP. En nuestro caso FastEthernet0/0, FastEthernet0/1 y Vlan1.

## 3. Interfaces

```
R8_A>show ip interface brief
```

Interface	IP-Address	OK?	Method	Status	Protocol
FastEthernet0/0	10.8.1.100	YES	NVRAM	up	up
FastEthernet0/1	172.16.8.100	YES	NVRAM	up	up
Vlan1	unassigned	YES	NVRAM	administratively down	down

## 4. Configuración Actual

show running-config - Muestra la configuración actual en la RAM

#### 4. Configuración Actual

```
R8_A#show running-config
Building configuration...

Current configuration : 577 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname R8_A
!
!
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
 ip address 10.8.1.100 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 172.16.8.100 255.255.255.0
 duplex auto
 speed auto
!
interface Vlan1
 no ip address
 shutdown
!
ip classless
!
ip flow-export version 9
!
!
!
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
 login
!
!
!
end
```

4.  
FastEthernet0/0

show interface – Podemos ver tenemos 1500 bytes de MTU, 100000 Kbit BW y con una fiabilidad de 255/255. La carga de recepción y transmisión es de 1/255 en ambos casos.

4.  
FastEthernet0/0

```
R8_A#show interface
FastEthernet0/0 is up, line protocol is up (connected)
  Hardware is Lance, address is 0002.1658.6501 (bia 0002.1658.6501)
  Internet address is 10.8.1.100/24
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Full-duplex, 100Mb/s, media type is RJ45
  ARP type: ARPA, ARP Timeout 04:00:00,
  Last input 00:00:08, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max/drops); Total output drops: 0
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    0 input packets with dribble condition detected
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
FastEthernet0/1 is up, line protocol is up (connected)
  Hardware is Lance, address is 0002.1658.6502 (bia 0002.1658.6502)
  Internet address is 172.16.8.100/24
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Full-duplex, 100Mb/s, media type is RJ45
  ARP type: ARPA, ARP Timeout 04:00:00,
  Last input 00:00:08, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max/drops); Total output drops: 0
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    0 input packets with dribble condition detected
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
Vlan1 is administratively down, line protocol is down
  Hardware is CPU Interface, address is 0060.3e09.676a (bia 0060.3e09.676a)
  MTU 1500 bytes, BW 100000 Kbit, DLY 1000000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 21:40:21, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    1682 packets input, 530955 bytes, 0 no buffer
    Received 0 broadcasts (0 IP multicast)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    563859 packets output, 0 bytes, 0 underruns
    0 output errors, 23 interface resets
    0 output buffer failures, 0 output buffers swapped out
```