

# Laboratorio 0 - Encendido y reinicio de routers y switches

## Equipamiento utilizado

- Routers cisco ISR2 1941 con IOS v15
- Switches Cisco Catalyst 1960s y 3560 con IOS v15
- Un ordenador con puerto de serie y software de terminal como Putty o MobaXterm
- Cables de consola para configurar los routers y switches.

## Conectar los dispositivos tal y como se muestra en la topología

Para ver los puertos de consola de nuestro equipo vamos al CMD e introducimos el comando “mode”. Cuando no tengamos un adaptador a serial conectado veremos algo como esto:

```
Símbolo del sistema
Microsoft Windows [Versión 10.0.19045.4894]
(c) Microsoft Corporation. Todos los derechos reservados.

C:\Users\thejuanvisu>mode

Estado para dispositivo CON:
-----
Líneas:          9001
Columnas:        120
Ritmo del teclado: 31
Retardo del teclado: 1
Página de códigos:   850

C:\Users\thejuanvisu>
```

Por otro lado, cuando conectemos un adaptador a serial veremos esto:

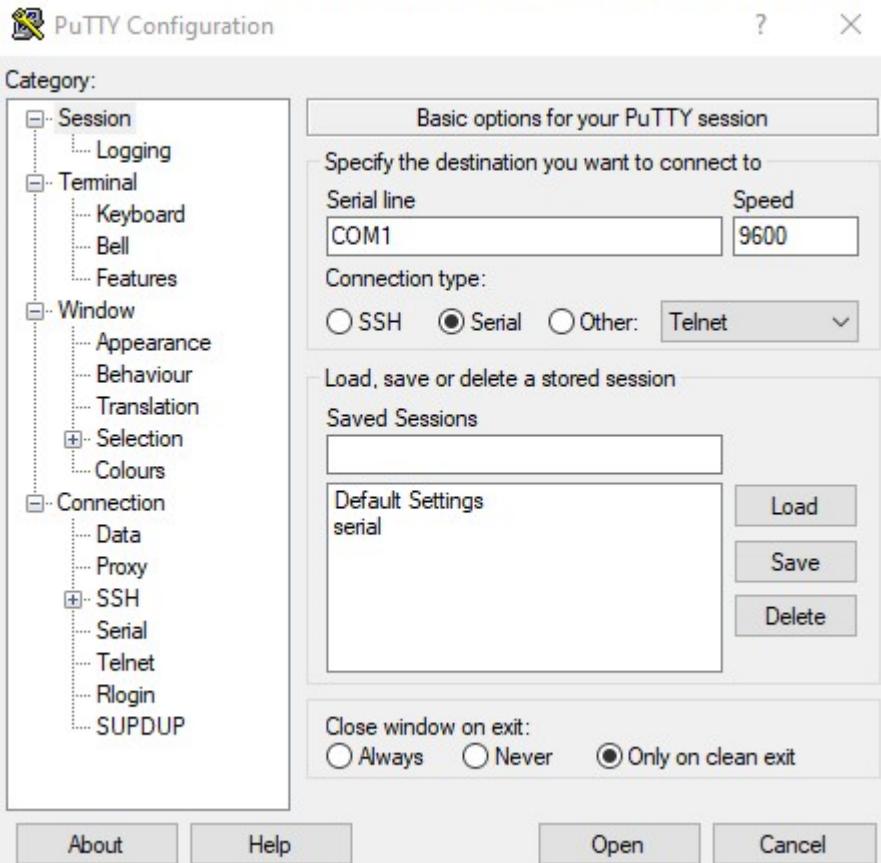
```
C:\Users\thejuanvisu>mode
Estado para dispositivo COM3:
-----
Baudios:          1200
Paridad:          None
Bits de datos:    7
Bits de paro:     1
Tiempo de espera: OFF
XON / XOFF:       OFF
Protocolo CTS:   OFF
Protocolo DSR:   OFF
Sensibilidad de DSR: OFF
Circuito DTR:    ON
Circuito RTS:    ON

Estado para dispositivo CON:
-----
Líneas:          9001
Columnas:        120
Ritmo del teclado: 31
Retardo del teclado: 1
Página de códigos: 850

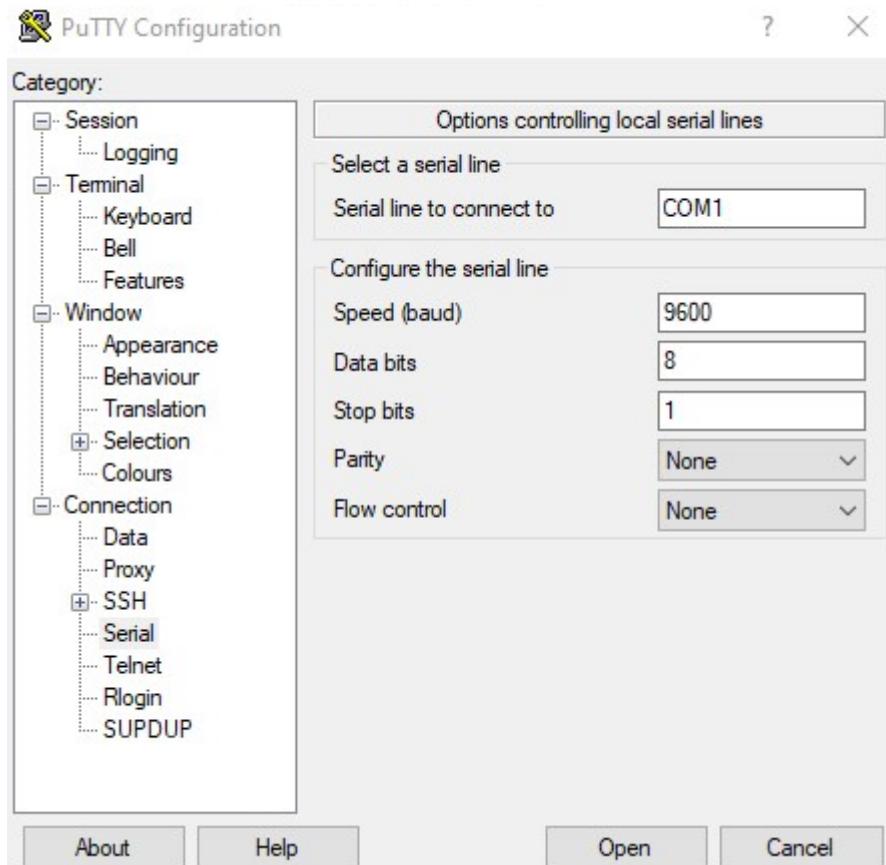
C:\Users\thejuanvisu>
```

## Configuración Putty

Primero vamos a session y seleccionamos el tipo de conexión serial:



Tras eso vamos al apartado de Connection y seleccionamos serial, ahí modificamos el ajuste Flow Control para que ponga none. Los ajustes deberían quedar como en la siguiente imagen:



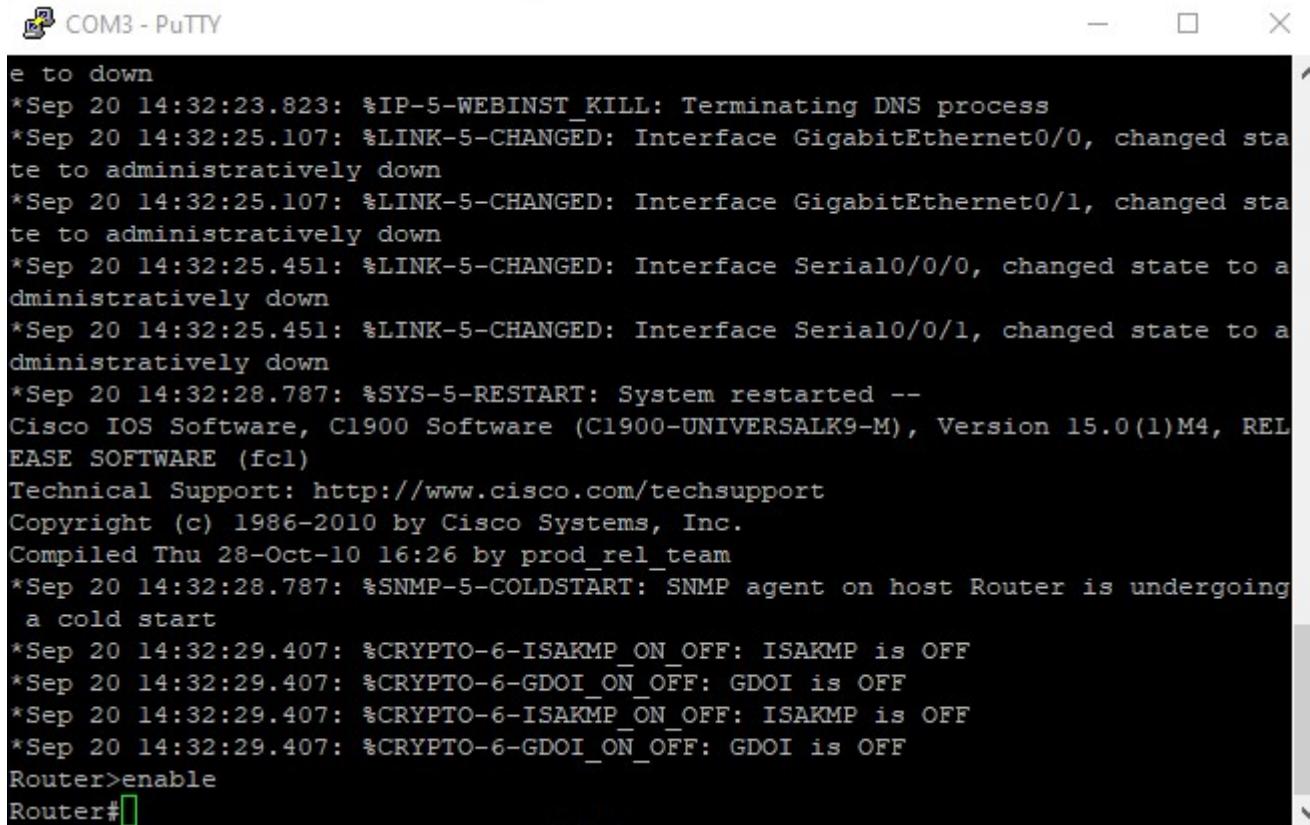
En este caso nos conectaremos con el COM3 (Como se puede observar en la captura del comando mode) OJO: cuando nos conectemos al router y nos pregunte si queremos la configuración inicial le diremos que no, en caso de decirle que si por error se debe pulsar Control + C.

## Conexión con el router por línea de comandos

Se accede al modo privilegiado del router con el siguiente comando:

```
USER  
Router> enable Router#
```

Veremos el Router# como indicador de que estamos logueados en modo privilegiado



COM3 - PuTTY

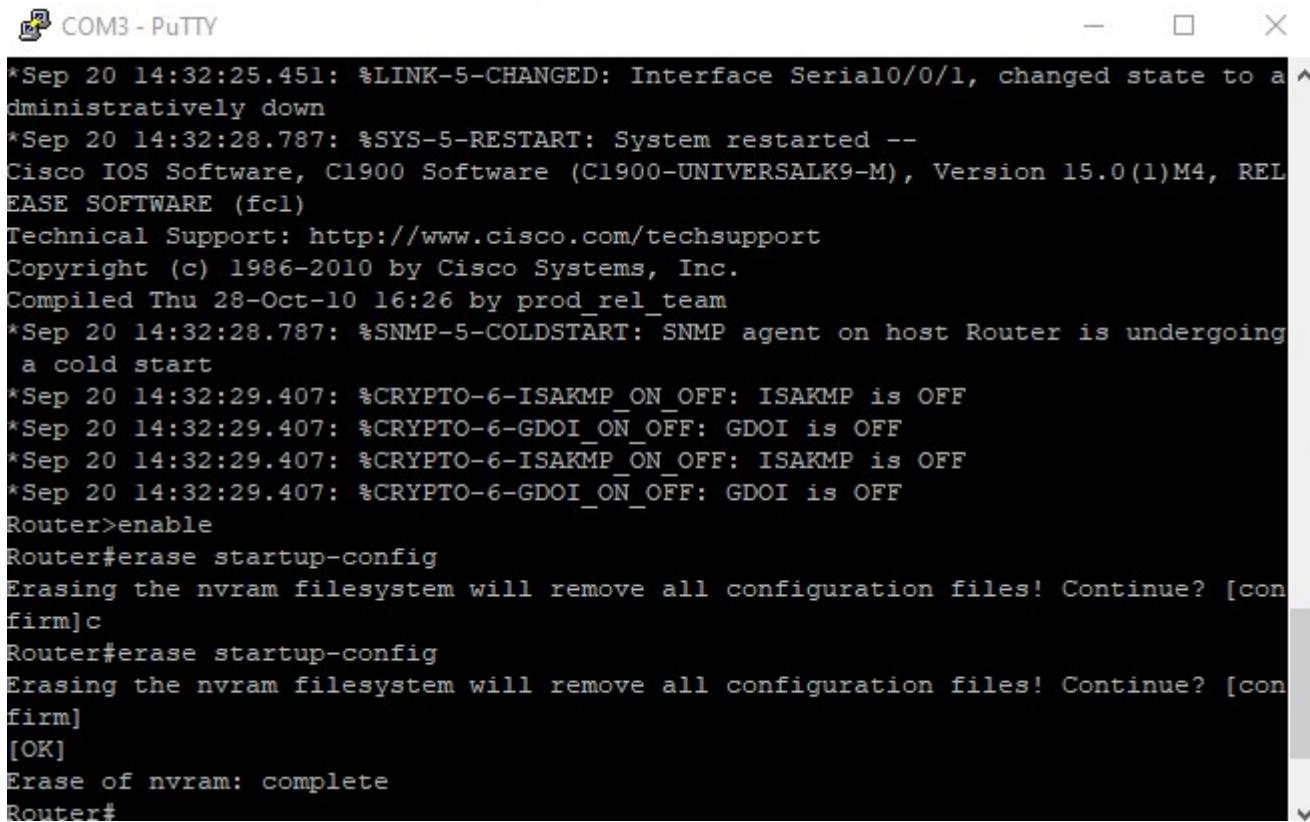
```
e to down
*Sep 20 14:32:23.823: %IP-5-WEBINST_KILL: Terminating DNS process
*Sep 20 14:32:25.107: %LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to administratively down
*Sep 20 14:32:25.107: %LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to administratively down
*Sep 20 14:32:25.451: %LINK-5-CHANGED: Interface Serial0/0/0, changed state to administratively down
*Sep 20 14:32:25.451: %LINK-5-CHANGED: Interface Serial0/0/1, changed state to administratively down
*Sep 20 14:32:28.787: %SYS-5-RESTART: System restarted --
Cisco IOS Software, C1900 Software (C1900-UNIVERSALK9-M), Version 15.0(1)M4, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2010 by Cisco Systems, Inc.
Compiled Thu 28-Oct-10 16:26 by prod_rel_team
*Sep 20 14:32:28.787: %SNMP-5-COLDSTART: SNMP agent on host Router is undergoing a cold start
*Sep 20 14:32:29.407: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
*Sep 20 14:32:29.407: %CRYPTO-6-GDOI_ON_OFF: GDOI is OFF
*Sep 20 14:32:29.407: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
*Sep 20 14:32:29.407: %CRYPTO-6-GDOI_ON_OFF: GDOI is OFF
Router>enable
Router#
```

## Eliminación del archivo de configuración de inicio

Para eliminar la configuración de la vram se utiliza el comando “startup-config”

USER

```
Router# erase startup-config Erasing the nvram filesystem will remove all configuration files!
Continue? [confirm] [ok] Erase of nvram: complete Router#
```



COM3 - PuTTY

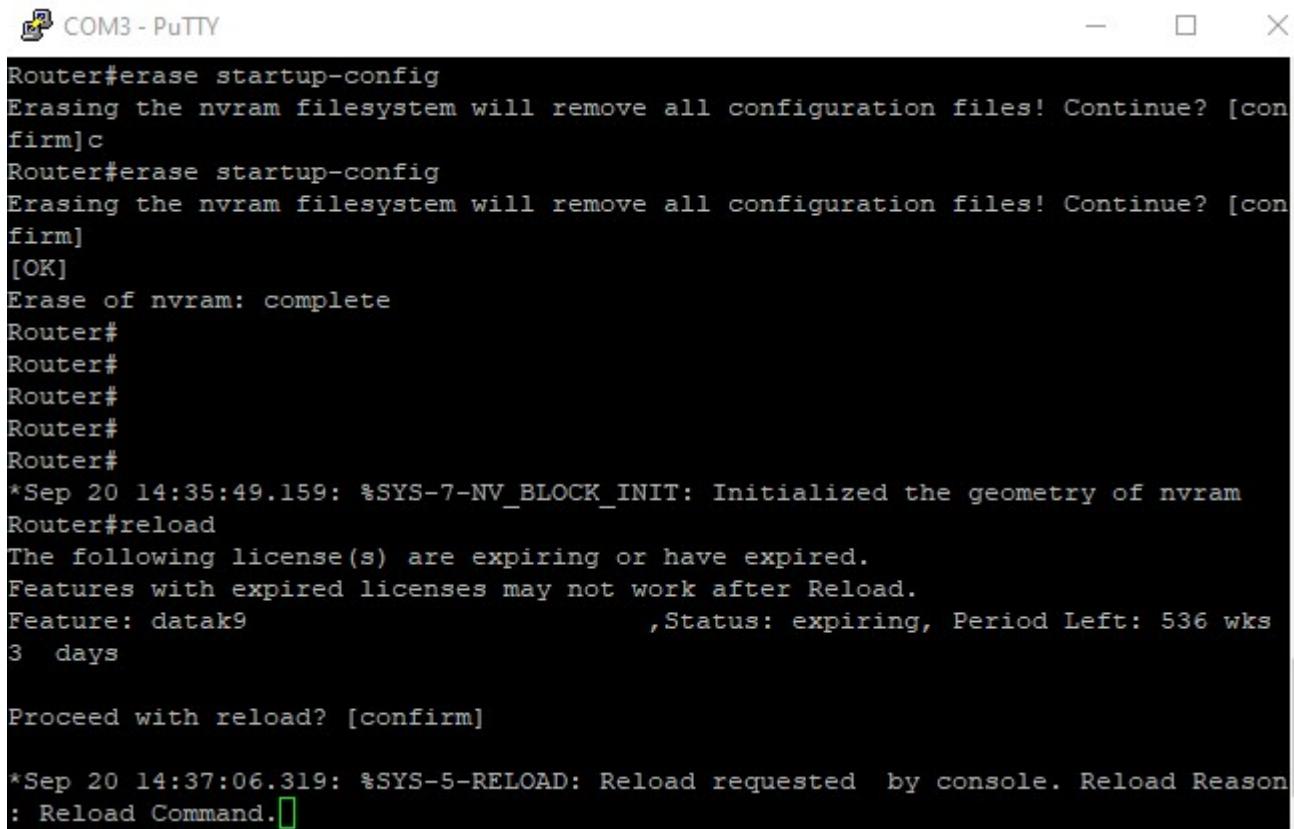
```
*Sep 20 14:32:25.451: %LINK-5-CHANGED: Interface Serial0/0/1, changed state to administratively down
*Sep 20 14:32:28.787: %SYS-5-RESTART: System restarted --
Cisco IOS Software, C1900 Software (C1900-UNIVERSALK9-M), Version 15.0(1)M4, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2010 by Cisco Systems, Inc.
Compiled Thu 28-Oct-10 16:26 by prod_rel_team
*Sep 20 14:32:28.787: %SNMP-5-COLDSTART: SNMP agent on host Router is undergoing a cold start
*Sep 20 14:32:29.407: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
*Sep 20 14:32:29.407: %CRYPTO-6-GDOI_ON_OFF: GDOI is OFF
*Sep 20 14:32:29.407: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
*Sep 20 14:32:29.407: %CRYPTO-6-GDOI_ON_OFF: GDOI is OFF
Router>enable
Router#erase startup-config
Erasing the nvram filesystem will remove all configuration files! Continue? [confirm]c
Router#erase startup-config
Erasing the nvram filesystem will remove all configuration files! Continue? [confirm]
[OK]
Erase of nvram: complete
Router#
```

## Reinicio de Router

Para reiniciar el router se usa el comando “reload”. Como consecuencia del reinicio toda configuración que se encuentre en RAM será eliminada.

USER

Router# reload Proceed with reload? [confirm]



```

COM3 - PuTTY

Router#erase startup-config
Erasing the nvram filesystem will remove all configuration files! Continue? [confirm]c
Router#erase startup-config
Erasing the nvram filesystem will remove all configuration files! Continue? [confirm]
[OK]
Erase of nvram: complete
Router#
Router#
Router#
Router#
Router#
*Sep 20 14:35:49.159: %SYS-7-NV_BLOCK_INIT: Initialized the geometry of nvram
Router#reload
The following license(s) are expiring or have expired.
Features with expired licenses may not work after Reload.
Feature: datak9                         , Status: expiring, Period Left: 536 wks
3 days

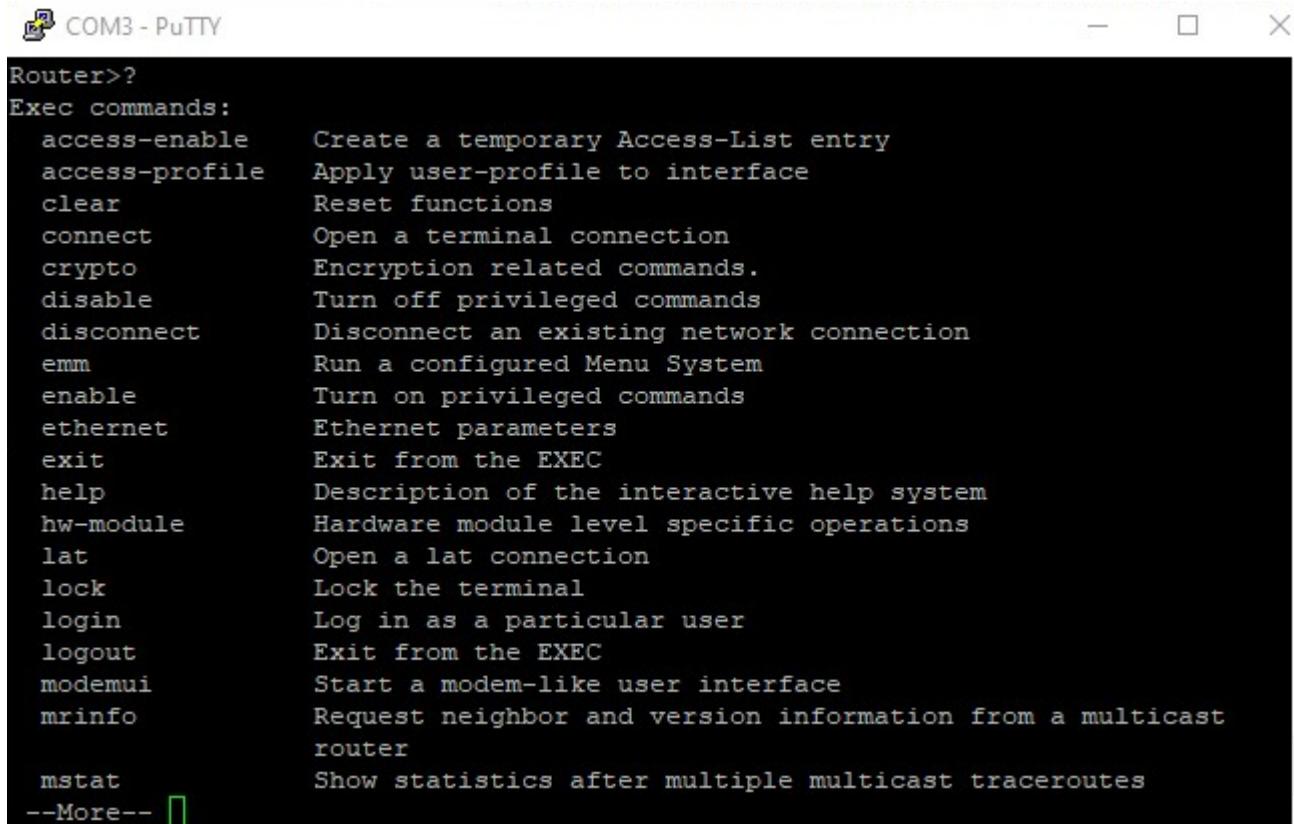
Proceed with reload? [confirm]

*Sep 20 14:37:06.319: %SYS-5-RELOAD: Reload requested by console. Reload Reason
: Reload Command. []

```

## Comando básico "?"

El comando "?" nos permite ver los comandos disponibles en el modo usuario del router.



```

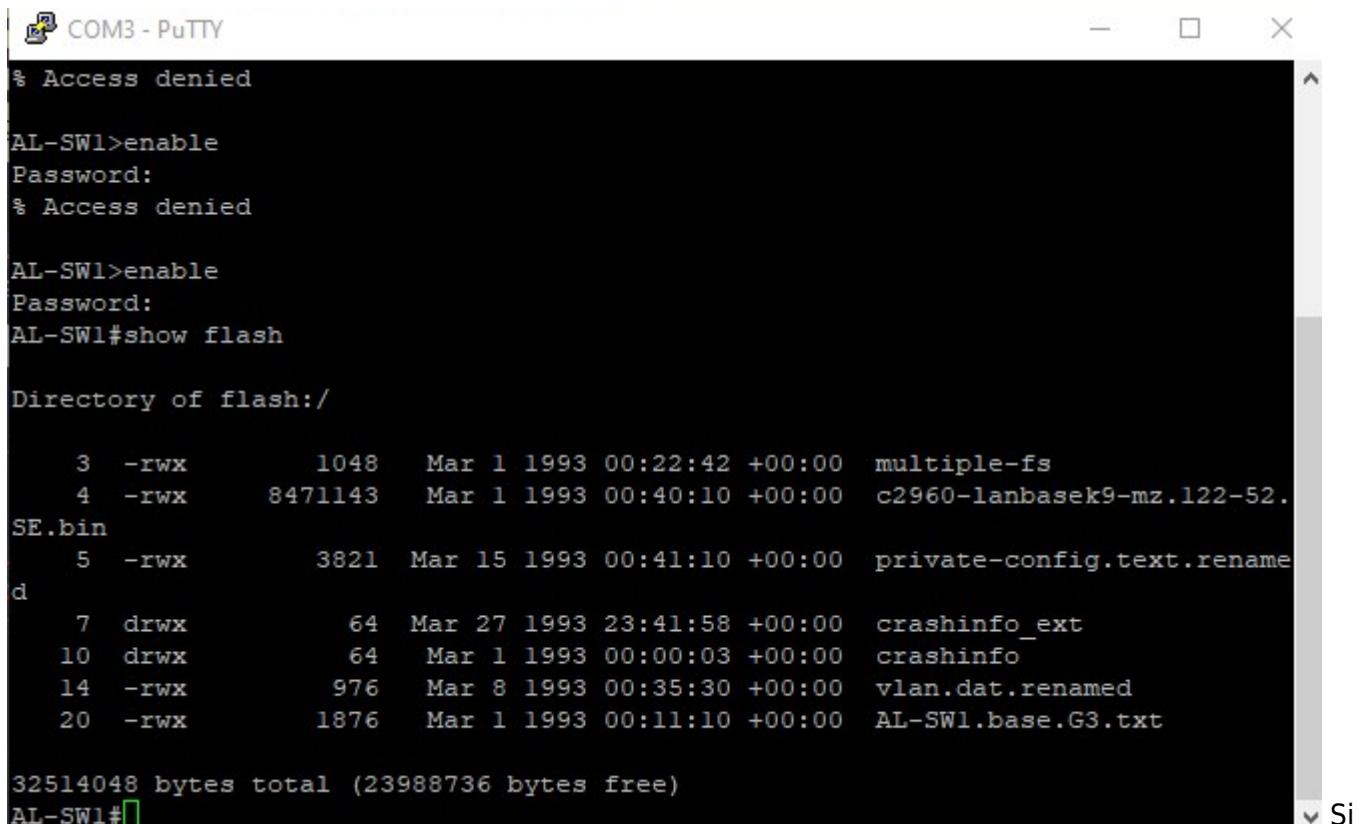
COM3 - PuTTY

Router>?
Exec commands:
  access-enable      Create a temporary Access-List entry
  access-profile     Apply user-profile to interface
  clear              Reset functions
  connect            Open a terminal connection
  crypto             Encryption related commands.
  disable            Turn off privileged commands
  disconnect         Disconnect an existing network connection
  emm               Run a configured Menu System
  enable             Turn on privileged commands
  ethernet          Ethernet parameters
  exit               Exit from the EXEC
  help               Description of the interactive help system
  hw-module          Hardware module level specific operations
  lat                Open a lat connection
  lock               Lock the terminal
  login              Log in as a particular user
  logout             Exit from the EXEC
  modemui           Start a modem-like user interface
  mrinfo            Request neighbor and version information from a multicast
                   router
  mstat              Show statistics after multiple multicast traceroutes
--More-- []

```

## Iniciar y volver a cargar el switch

Para acceder al modo privilegiado del Switch, al igual que en el router usamos el comando “enable”. Una vez dentro revisamos si hay alguna vlan creada con el comando “show flash”:



```
% Access denied
AL-SW1>enable
Password:
% Access denied

AL-SW1>enable
Password:
AL-SW1#show flash

Directory of flash:/

   3  -rwx          1048  Mar  1 1993 00:22:42 +00:00  multiple-fs
   4  -rwx        8471143  Mar  1 1993 00:40:10 +00:00  c2960-lanbasek9-mz.122-52.
SE.bin
   5  -rwx          3821  Mar 15 1993 00:41:10 +00:00  private-config.text.rename
d
   7  drwx          64    Mar 27 1993 23:41:58 +00:00  crashinfo_ext
  10  drwx          64    Mar  1 1993 00:00:03 +00:00  crashinfo
  14  -rwx          976   Mar  8 1993 00:35:30 +00:00  vlan.dat.renamed
  20  -rwx         1876  Mar  1 1993 00:11:10 +00:00  AL-SW1.base.G3.txt

32514048 bytes total (23988736 bytes free)
AL-SW1#
```

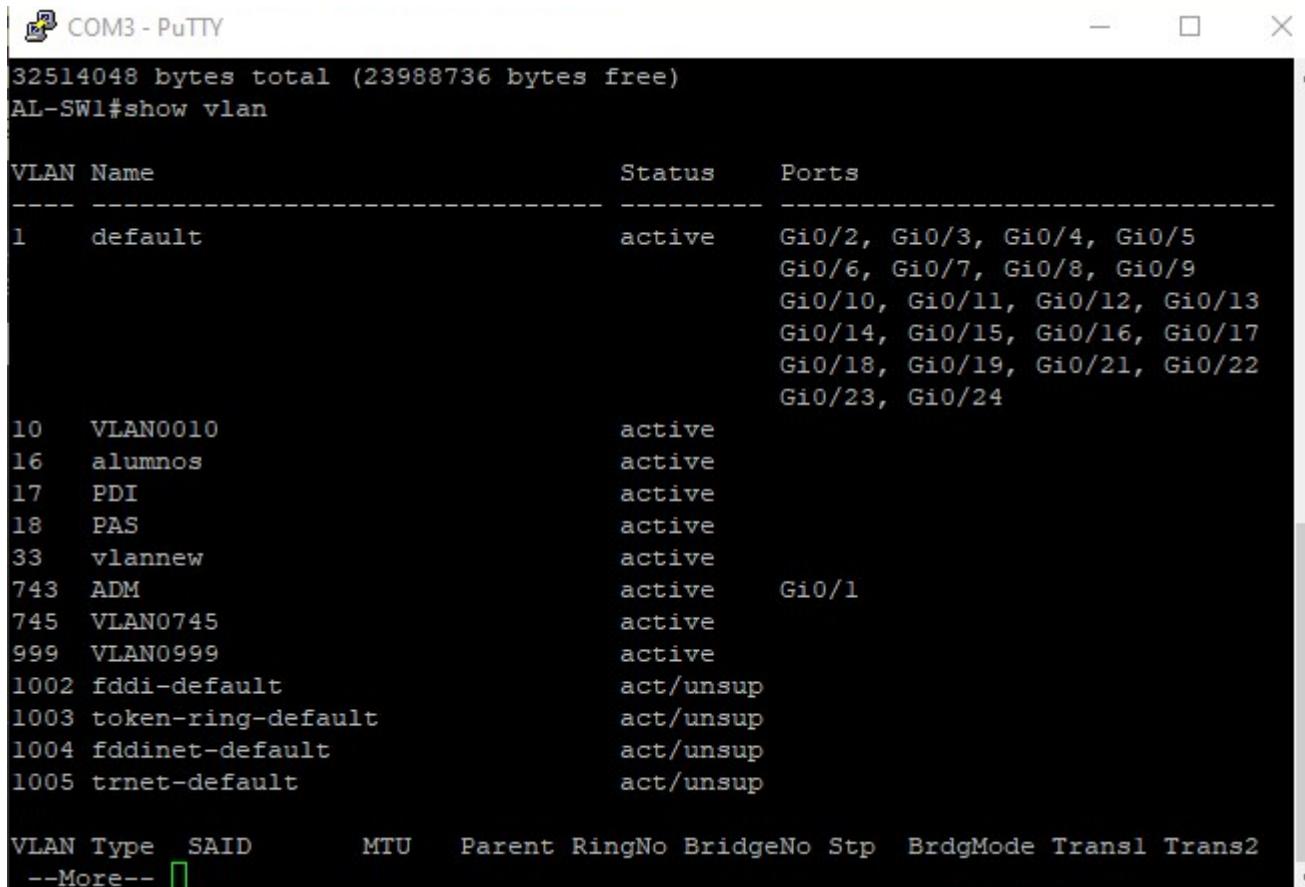
vemos un archivo llamado vlan.dat de la siguiente forma:

USER

6 -rwx 616 Mar 1 1993 00:07:13 +00:00 vlan.dat

significa que hay vlans creadas en este switch.

Si queremos ver más información sobre las vlan podemos usar el comando “show vlan”:



COM3 - PuTTY

```
32514048 bytes total (23988736 bytes free)
AL-SW1#show vlan

VLAN Name          Status    Ports
---- --           -----
1    default        active    Gi0/2, Gi0/3, Gi0/4, Gi0/5
                           Gi0/6, Gi0/7, Gi0/8, Gi0/9
                           Gi0/10, Gi0/11, Gi0/12, Gi0/13
                           Gi0/14, Gi0/15, Gi0/16, Gi0/17
                           Gi0/18, Gi0/19, Gi0/21, Gi0/22
                           Gi0/23, Gi0/24
10   VLAN0010       active
16   alumnos         active
17   PDI             active
18   PAS             active
33   vlannew         active
743  ADM             active    Gi0/1
745  VLAN0745       active
999  VLAN0999       active
1002 fddi-default   act/unsup
1003 token-ring-default act/unsup
1004 fddinet-default act/unsup
1005 trnet-default   act/unsup

VLAN Type    SAID      MTU      Parent RingNo BridgeNo Stp  BrdgMode Transl Trans2
--More--
```

## Eliminación del archivo VLAN

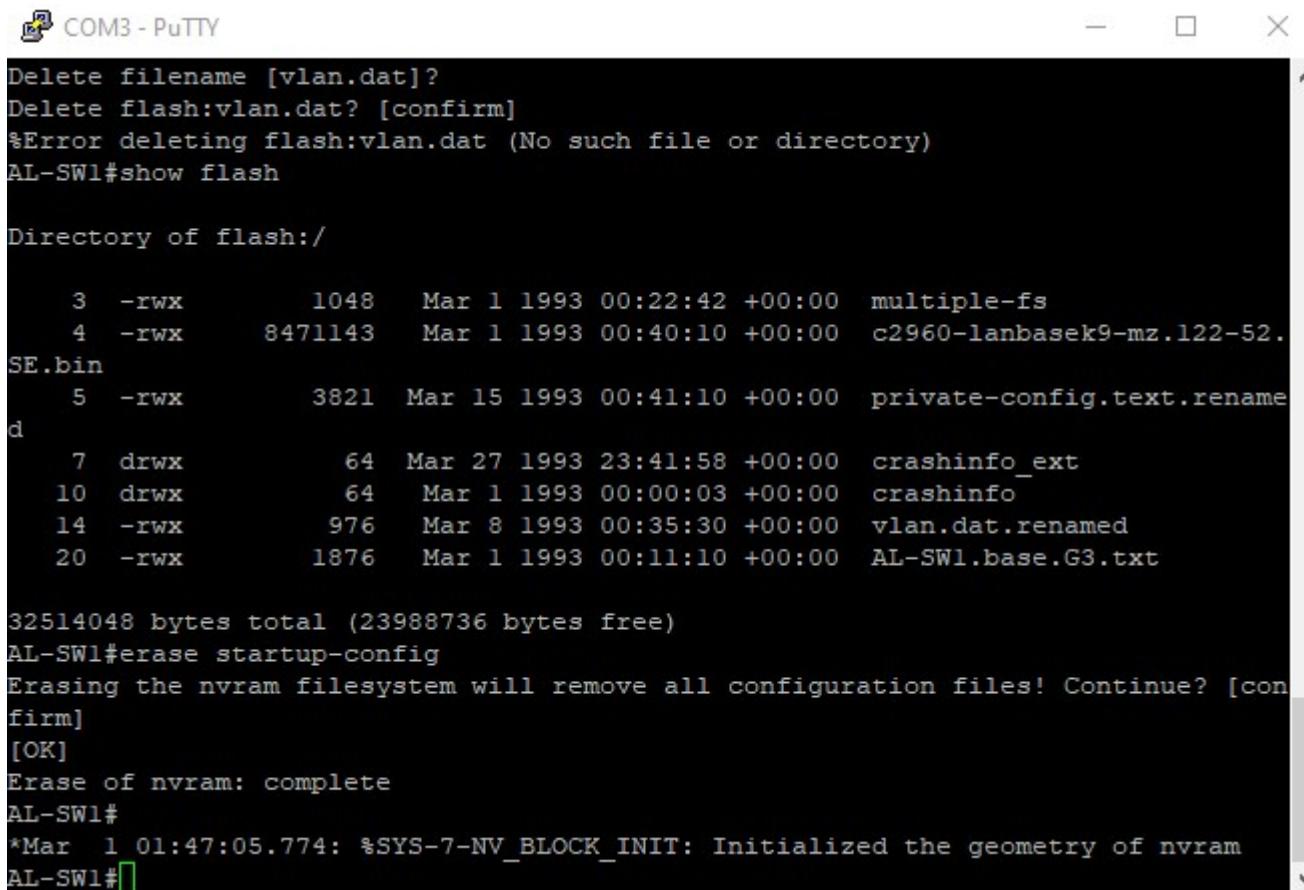
Para eliminar las VLANS utilizamos el comando “delete vlan.dat” para eliminar el archivo “vlan.dat” que contiene la información de las vlans:

USER

```
Switch# delete vlan.dat Delete filename [vlan.dat]? Delete flash:/vlan.dat? [confirm] Switch#
```

## Eliminación del archivo de configuración de inicio

Para eliminar la configuración inicial se utiliza el comando “erase startup-config”:



```
COM3 - PuTTY

Delete filename [vlan.dat]?
Delete flash:vlan.dat? [confirm]
%Error deleting flash:vlan.dat (No such file or directory)
AL-SW1#show flash

Directory of flash:/

  3  -rwx        1048  Mar  1 1993 00:22:42 +00:00  multiple-fs
  4  -rwx     8471143  Mar  1 1993 00:40:10 +00:00  c2960-lanbasek9-mz.122-52.
SE.bin
  5  -rwx        3821  Mar 15 1993 00:41:10 +00:00  private-config.text.rename
d
  7  drwx         64  Mar 27 1993 23:41:58 +00:00  crashinfo_ext
10  drwx         64  Mar  1 1993 00:00:03 +00:00  crashinfo
14  -rwx         976  Mar  8 1993 00:35:30 +00:00  vlan.dat.renamed
20  -rwx        1876  Mar  1 1993 00:11:10 +00:00  AL-SW1.base.G3.txt

32514048 bytes total (23988736 bytes free)
AL-SW1#erase startup-config
Erasing the nvram filesystem will remove all configuration files! Continue? [confirm]
[OK]
Erase of nvram: complete
AL-SW1#
*Mar  1 01:47:05.774: %SYS-7-NV_BLOCK_INIT: Initialized the geometry of nvram
AL-SW1#
```

## Reinicio del Switch

Para reiniciar el switch se usa el comando “reload”:

```
COM3 - PuTTY

Directory of flash:/

  3  -rwx        1048  Mar  1 1993 00:22:42 +00:00  multiple-fs
  4  -rwx     8471143  Mar  1 1993 00:40:10 +00:00  c2960-lanbasek9-mz.122-52.
SE.bin
  5  -rwx        3821  Mar 15 1993 00:41:10 +00:00  private-config.text.rename
d
  7  drwx        64   Mar 27 1993 23:41:58 +00:00  crashinfo_ext
10  drwx        64   Mar  1 1993 00:00:03 +00:00  crashinfo
14  -rwx        976   Mar  8 1993 00:35:30 +00:00  vlan.dat.renamed
20  -rwx       1876  Mar  1 1993 00:11:10 +00:00  AL-SW1.base.G3.txt

32514048 bytes total (23988736 bytes free)
AL-SW1#erase startup-config
Erasing the nvram filesystem will remove all configuration files! Continue? [confirm]
[OK]
Erase of nvram: complete
AL-SW1#
*Mar  1 01:47:05.774: %SYS-7-NV_BLOCK_INIT: Initialized the geometry of nvram
AL-SW1#reload
Proceed with reload? [confirm]

*Mar  1 01:49:03.877: %SYS-5-RELOAD: Reload requested by console. Reload reason:
Reload command
```

## Comandos que hacen la vida más cómoda

- “no ip domain-lookup”: Evita que el switch se cale unos minutos si te equivocas con un comando.

USER

R(config): no ip domain-lookup

- “line con 0” y después ponemos “logging sync”: evita que se borre lo que estamos tecleando cuando se muestre algo del syslog

USER

R(config): line con 0 R(config-line): logging **sync**

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