

**MATERIA:** Conmutadores y Redes Inalámbricas

**DOCENTE:** Dr. Luis Gutiérrez Alfaro

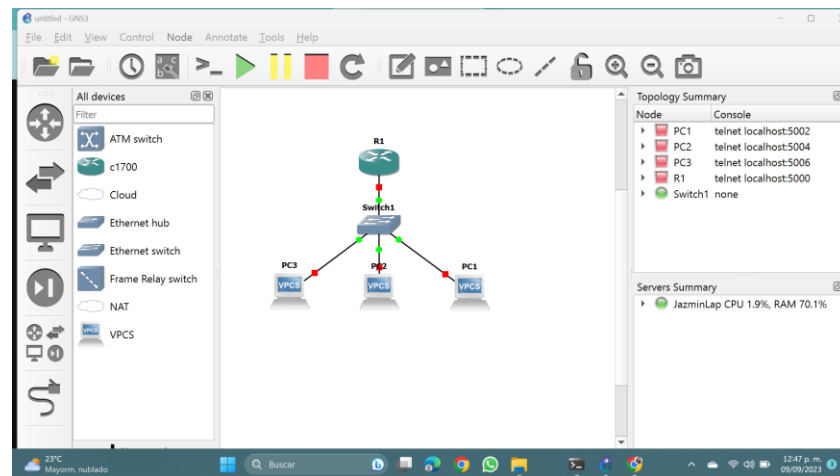
**ACTIVIDAD:** Act. 2.4 Configuración de DHCP en Router Cisco usando GNS3

**ALUMNA:** Brian Michell Coronel Ovilla

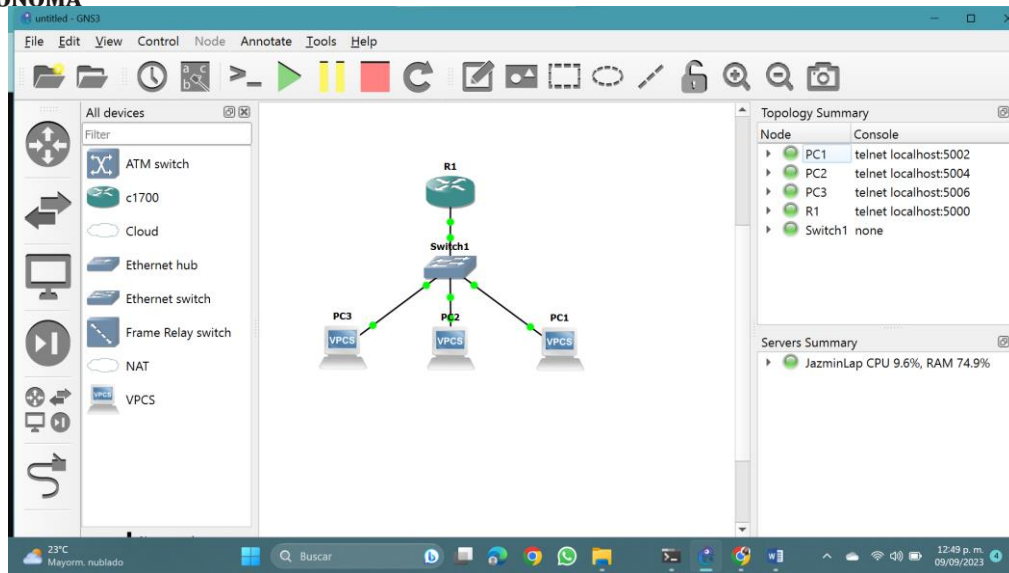
**SEMESTRE Y GRUPO:** 7mo “N”

**FECHA:** 20 de Noviembre de 2023

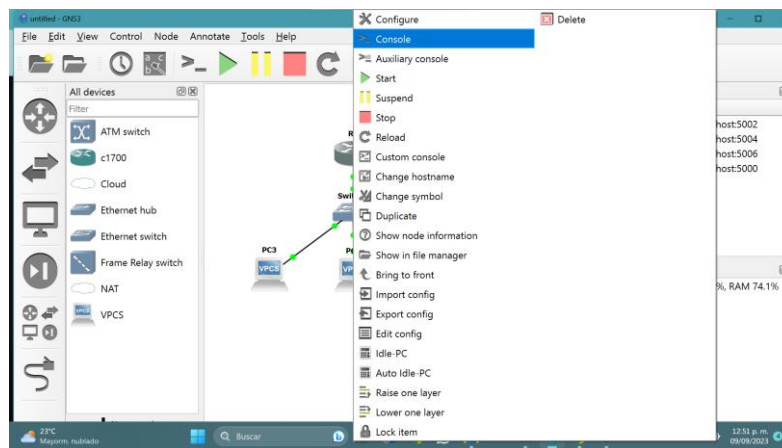
Creamos nuestro esquema



Después tenemos que iniciar nuestros dispositivos

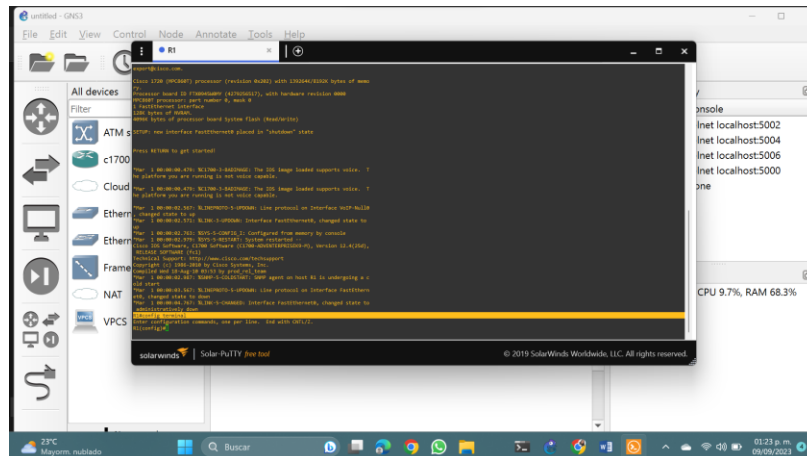


Abrimos la terminal para configurar nuestro router



Una vez en la terminal comenzamos con la configuración del router; R1, como vemos en la imagen primero colocamos el siguiente comando;

`config terminal`



y después asignamos una ip a nuestra interface de red colocando los siguientes comandos;

indicamos la interface fastethernet que usaremos

int fa0/0



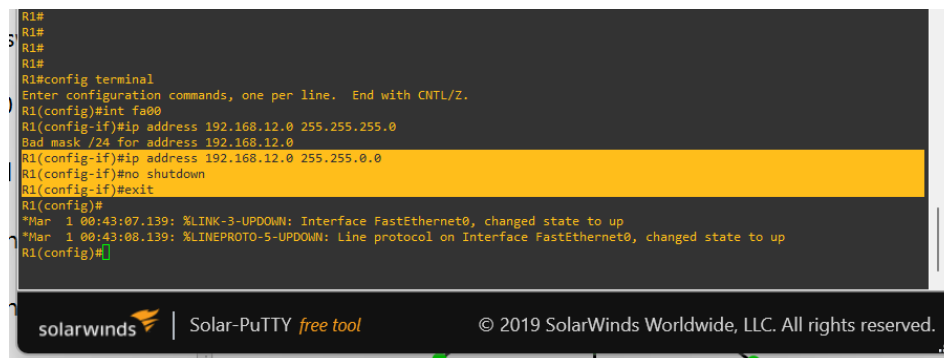
Le agregamos una ip

ip address \*ip que nos asigno el profe en la act.1.3\* \*mask subred\*

Lo encendemos y salimos

no shutdown

exit





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Procedemos a activar el servicio DHCP

`service dhcp`

creamos una DHCP pool

`ip dhcp pool *nombre*`

Dentro ya de la dhcp pool configuramos los parámetros para establecer la red

`network *ip asignada* *mask subred*`

```
Interface IP-Address OK? Method Status Protocol
GigabitEthernet0/24 192.168.12.0 YES manual up up

R1#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip dhcp excluded-address 192.168.0.0
R1(config)#exit
R1#
*Mar 1 01:13:09.599: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip int brief
Interface IP-Address OK? Method Status Protocol
FastEthernet0 192.168.12.0 YES manual up up
R1#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#service dhcp
R1(config)#ip dhcp pool jazmin
R1(dhcp-config)#network 192.168.12.0 /24
R1(dhcp-config)#
```

Establecemos la puerta de enlace

`Default-router *ip asignada*`

Asignamos los servidores DNS, (en mi caso use los servidores de Google) y salimos

`Dns-server *direcciones de los servidores*`

`Exit`

```
R1
R1(dhcp-config)#192.168.12.0 / 225.225.255.0 is an invalid network.
% Invalid input detected at '^' marker.
R1(dhcp-config)#R1(dhcp-config)#network 192.168.0.0 225.225.255.0
% Invalid input detected at '^' marker.
R1(dhcp-config)#192.168.0.0 / 225.225.255.0 is an invalid network.
% Invalid input detected at '^' marker.
R1(dhcp-config)#R1(dhcp-config)#
% Invalid input detected at '^' marker.
R1(dhcp-config)#
R1#
*Mar 1 00:48:17.311: %SYS-5-CONFIG_I: Configured from console by console
R1#
R1#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#service dhcp
R1(config)#ip dhcp pool jazmin
R1(dhcp-config)#network 192.168.0.0 /24
R1(dhcp-config)#default-router 192.168.12.0
R1(dhcp-config)#dns-server 0.0.0.0 0.0.0.4
R1(dhcp-config)#exit
R1(config)#
```

Mostramos la ip de nuestra interface para ver si esta asignada y habilitada

Show ip int brief

```
R1#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#show ip int brief
% Invalid input detected at '^' marker.
R1(config)#exit
R1#
*Mar 1 00:55:17.771: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip int brief
Interface IP-Address OK? Method Status Protocol
FastEthernet0 192.168.12.0 YES manual up
R1#
```

Para la configuración de los computadores abrimos la consola, para ver la ip colocamos

Show ip

```

Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2019 02:42:20
Copyright (c) 2007-2014, Paul Meng (mirnshi@gmail.com)
All rights reserved.

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Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.

Press '?' to get help.

Executing the startup file

PC1> show ip

NAME       : PC1[1]
IP/MASK    : 0.0.0.0/0
GATEWAY    : 0.0.0.0
DNS        :
MAC        : 00:50:79:66:68:00
LPORT      : 10012
RHOST:PORT : 127.0.0.1:10013
MTU        : 1500

PC1>

```

Por defecto no busca ninguna dirección ip, entonces hacemos la búsqueda manual de un servidor dhcp con el siguiente comando

Ip dhcp

Una vez que recibe la dirección ip le colocamos de nuevo

Show ip

Y logramos ver que ya se le asigno una dirección ip

```

Can't find dhcp server

PC1> show ip

NAME       : PC1[1]
IP/MASK    : 0.0.0.0/0
GATEWAY    : 0.0.0.0
DNS        :
MAC        : 00:50:79:66:68:00
LPORT      : 10012
RHOST:PORT : 127.0.0.1:10013
MTU        : 1500

PC1> ip dhcp
DDORA IP 192.168.12.1/24 GW 192.168.12.0

PC1> show ip

NAME       : PC1[1]
IP/MASK    : 192.168.12.1/24
GATEWAY    : 192.168.12.0
DNS        :
DHCP SERVER : 192.168.12.0
DHCP LEASE  : 86338, 86400/43200/75600
MAC        : 00:50:79:66:68:00
LPORT      : 10012
RHOST:PORT : 127.0.0.1:10013
MTU        : 1500

```

PC2

```

PC2> show ip

NAME       : PC2[1]
IP/MASK    : 0.0.0.0/0
GATEWAY    : 0.0.0.0
DNS        :
MAC        : 00:50:79:66:68:01
LPORT      : 10010
RHOST:PORT : 127.0.0.1:10011
MTU        : 1500

PC2> ip dhcp
DDORA IP 192.168.12.2/24 GW 192.168.12.0

PC2> show ip

NAME       : PC2[1]
IP/MASK    : 192.168.12.2/24
GATEWAY    : 192.168.12.0
DNS        :
DHCP SERVER : 192.168.12.0
DHCP LEASE  : 86393, 86400/43200/75600
MAC        : 00:50:79:66:68:01
LPORT      : 10010
RHOST:PORT : 127.0.0.1:10011
MTU        : 1500

PC2>

```

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PC3

```

show ip

NAME       : PC3[1]
IP/MASK    : 0.0.0.0/0
GATEWAY    : 0.0.0.0
DNS        :
MAC        : 00:50:79:66:68:02
LPORT      : 10014
RHOST:PORT : 127.0.0.1:10015
MTU        : 1500

PC3> ip dhcp
DDORA IP 192.168.12.3/24 GW 192.168.12.0

PC3> show ip

NAME       : PC3[1]
IP/MASK    : 192.168.12.3/24
GATEWAY    : 192.168.12.0
DNS        :
DHCP SERVER : 192.168.12.0
DHCP LEASE  : 86391, 86400/43200/75600
MAC        : 00:50:79:66:68:02
LPORT      : 10014
RHOST:PORT : 127.0.0.1:10015
MTU        : 1500

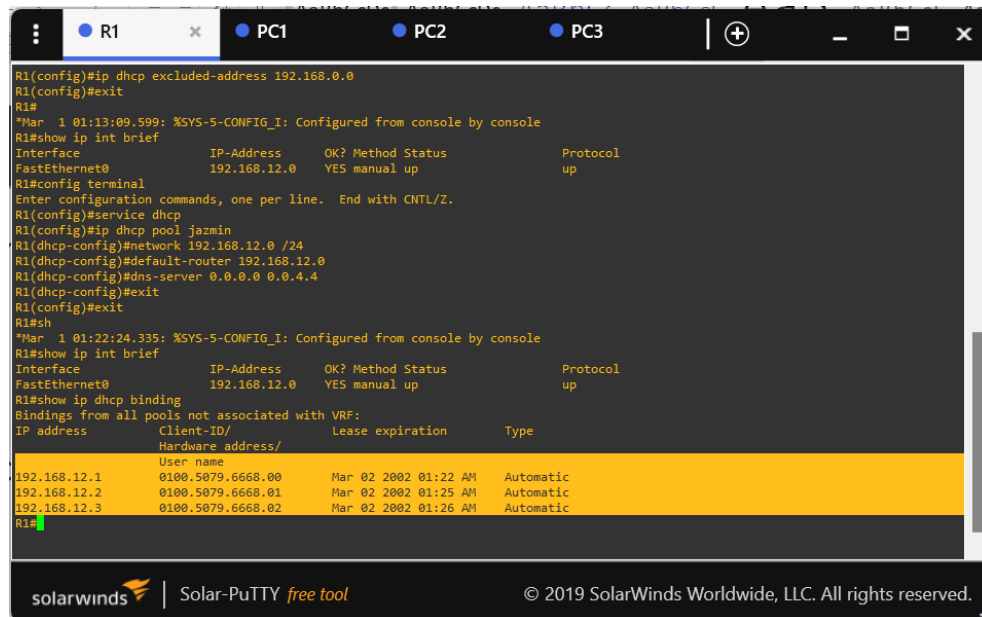
PC3>

```

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En la terminal de nuestro router tambien podemos ver las ip que ya están asignadas con el comando

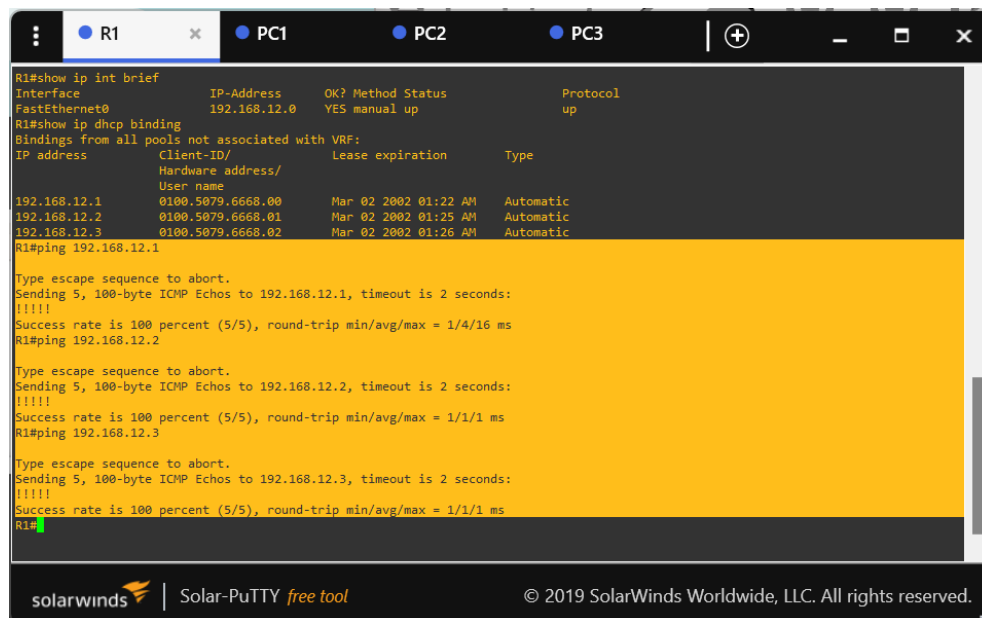
Show ip dhcp binding



```
R1(config)#ip dhcp excluded-address 192.168.0.0
R1(config)#exit
R1#
*Mar 1 01:13:09.599: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip int brief
Interface                IP-Address      OK? Method Status      Protocol
FastEthernet0            192.168.12.0    YES manual up          up
R1#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#service dhcp
R1(config)#ip dhcp pool jazmin
R1(dhcp-config)#network 192.168.12.0 /24
R1(dhcp-config)#default-router 192.168.12.0
R1(dhcp-config)#dns-server 0.0.0.0 0.0.4.4
R1(dhcp-config)#exit
R1#sh
*Mar 1 01:22:24.335: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip int brief
Interface                IP-Address      OK? Method Status      Protocol
FastEthernet0            192.168.12.0    YES manual up          up
R1#show ip dhcp binding
Bindings from all pools not associated with VRF:
IP address                Client-ID/
                           Hardware address/
                           User name
192.168.12.1                0100.5079.6668.00    Mar 02 2002 01:22 AM    Automatic
192.168.12.2                0100.5079.6668.01    Mar 02 2002 01:25 AM    Automatic
192.168.12.3                0100.5079.6668.02    Mar 02 2002 01:26 AM    Automatic
R1#
```

Y hacemos el ping a cada computador para afirmar que funciona correctamente

Ping \*ip\*



```
R1#show ip int brief
Interface                IP-Address      OK? Method Status      Protocol
FastEthernet0            192.168.12.0    YES manual up          up
R1#show ip dhcp binding
Bindings from all pools not associated with VRF:
IP address                Client-ID/
                           Hardware address/
                           User name
192.168.12.1                0100.5079.6668.00    Mar 02 2002 01:22 AM    Automatic
192.168.12.2                0100.5079.6668.01    Mar 02 2002 01:25 AM    Automatic
192.168.12.3                0100.5079.6668.02    Mar 02 2002 01:26 AM    Automatic
R1#ping 192.168.12.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.12.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/4/16 ms
R1#ping 192.168.12.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.12.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms
R1#ping 192.168.12.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.12.3, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms
R1#
```