Class C – Subnetting

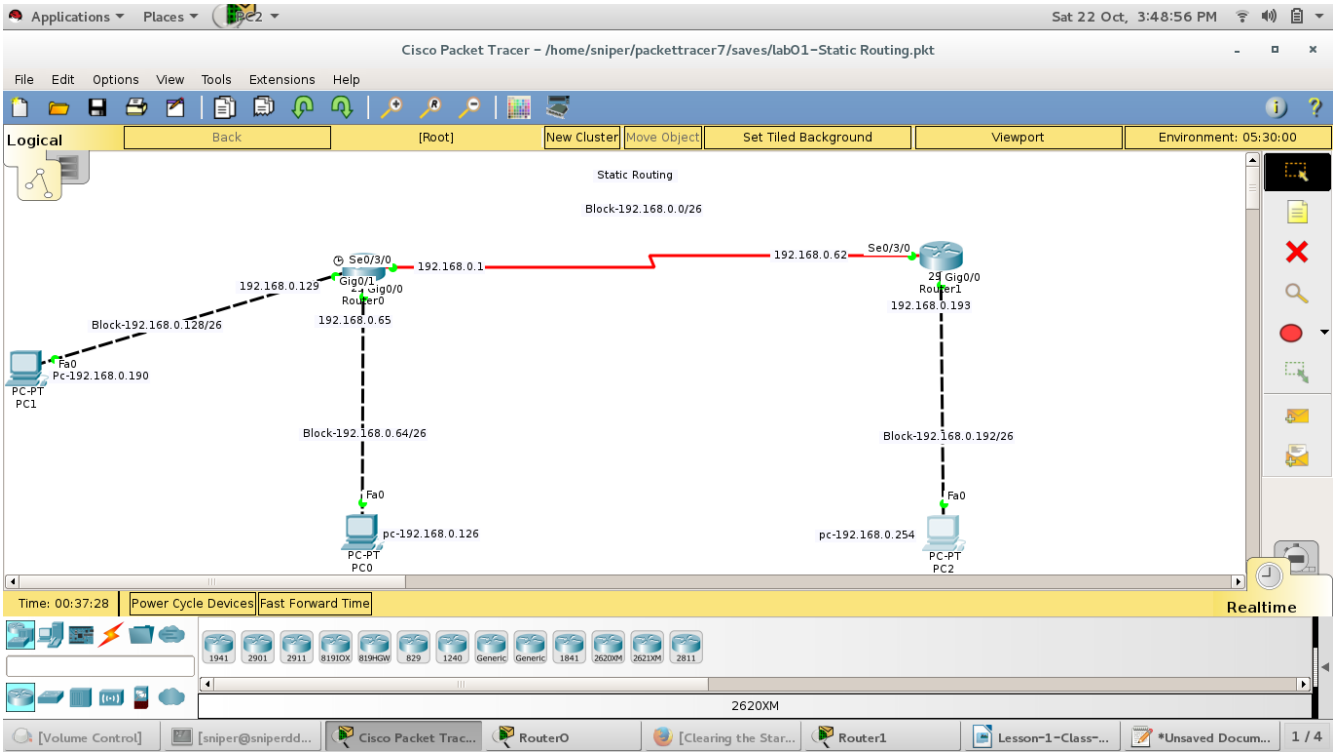
192.168.0.0/26
255.255.255.192

Step1:
Number of Subnet 2^n / Where n=number of mask bit =26-24=2
2^2 =4

Step2:
Number of Host Per Subnet =2^y /where y =numner of unmasx bit = 8-2=6
2^6=64
Valid Host Persubnet = 64-2 | 1=>Network address , 1=>Broadcast Address

Step3:
Valid Sibnet Block size
given subnet = 192
subnet size or block size = 2^8 - given subnet
= 256 – 192 = 64

Subnet	1st Host	Last Host	Broadcast
192.168.0.0	192.168.0.1	192.168.0.62	192.168.0.63
192.16.0.64	192.168.0.65	192.168.0.126	192.168.0.127
192.168.0.128	192.168.0.129	192.168.o.190	192.168.0.191
192.168.0.192	192.168.0.193	192.168.0.254	192.168.0.255

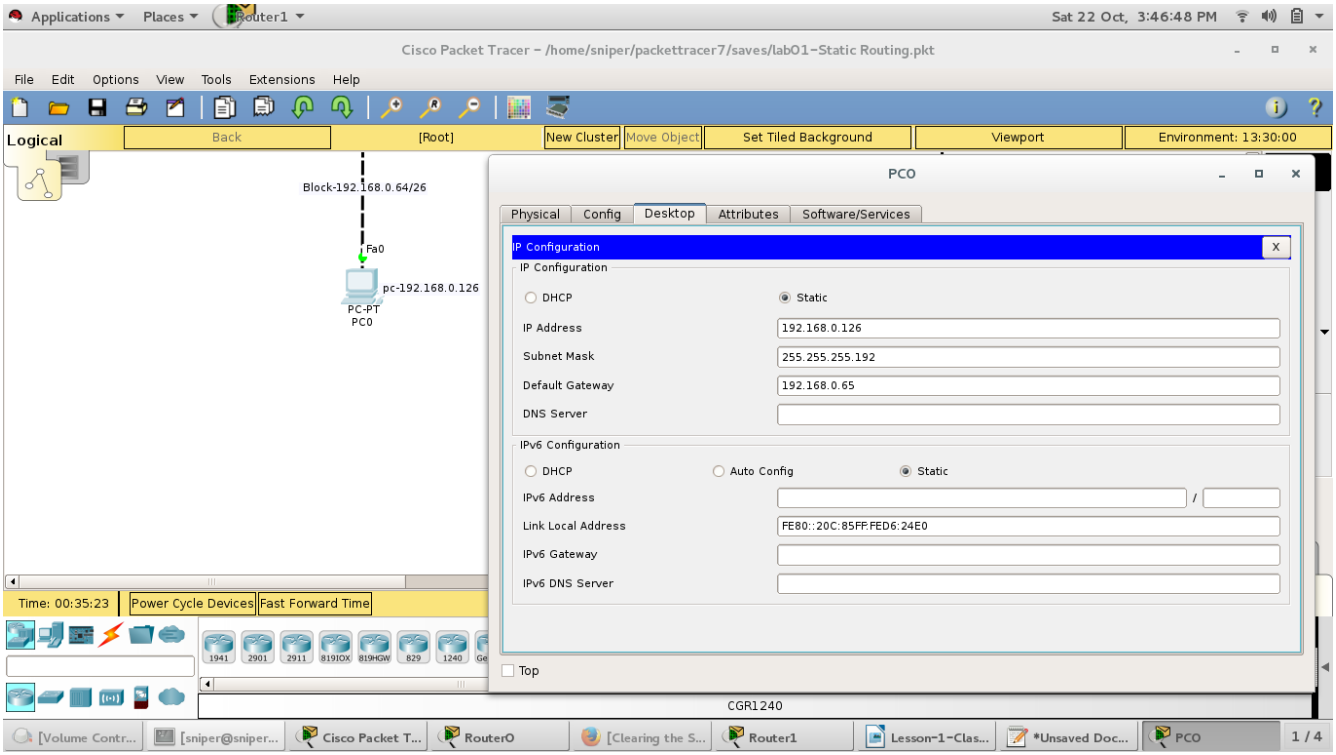



```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname One
One(config)#int Gig0/0
One(config-if)#ip add 192.168.0.65 255.255.255.192
One(config-if)#no shut
One(config-if)#exit
One(config)#int Gig0/1
One(config-if)#ip add 192.168.0.129 255.255.255.192
One(config-if)#no shut

One(config-if)#exit
One(config)#int se0/3/0
One(config-if)#ip add 192.168.0.1 255.255.255.192
One(config-if)#clock rate 64000
One(config-if)#no shut
One#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
One(config)#ip route 192.168.0.192 255.255.255.192 192.168.0.62
One(config)#do sh ip route

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
```

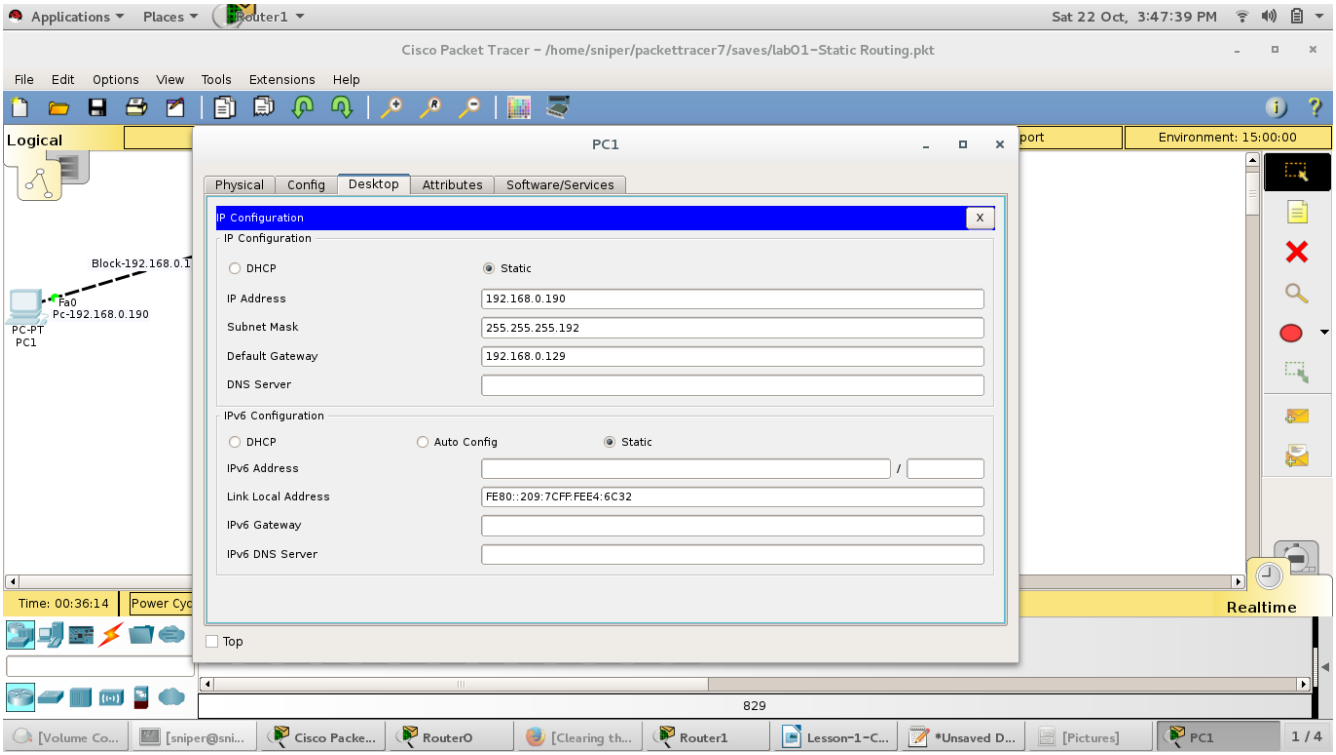
```
      i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
      * - candidate default, U - per-user static route, o - ODR
      P - periodic downloaded static route

Gateway of last resort is not set

    192.168.0.0/24 is variably subnetted, 7 subnets, 2 masks
C       192.168.0.0/26 is directly connected, Serial0/3/0
L       192.168.0.1/32 is directly connected, Serial0/3/0
C       192.168.0.64/26 is directly connected, GigabitEthernet0/0
L       192.168.0.65/32 is directly connected, GigabitEthernet0/0
C       192.168.0.128/26 is directly connected, GigabitEthernet0/1
L       192.168.0.129/32 is directly connected, GigabitEthernet0/1
S       192.168.0.192/26 [1/0] via 192.168.0.62
```

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#host Two
Two(config)#int Gig0/0
Two(config-if)#ip add 192.168.0.193 255.255.255.192
Two(config-if)#no shut
Two(config-if)#exit
Two(config)#int se0/3/0
Two(config-if)#ip add 192.168.0.62 255.255.255.192
Two(config-if)#no shut
Two#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

    192.168.0.0/24 is variably subnetted, 4 subnets, 2 masks
C       192.168.0.0/26 is directly connected, Serial0/3/0
L       192.168.0.62/32 is directly connected, Serial0/3/0
C       192.168.0.192/26 is directly connected, GigabitEthernet0/0
L       192.168.0.193/32 is directly connected, GigabitEthernet0/0
```

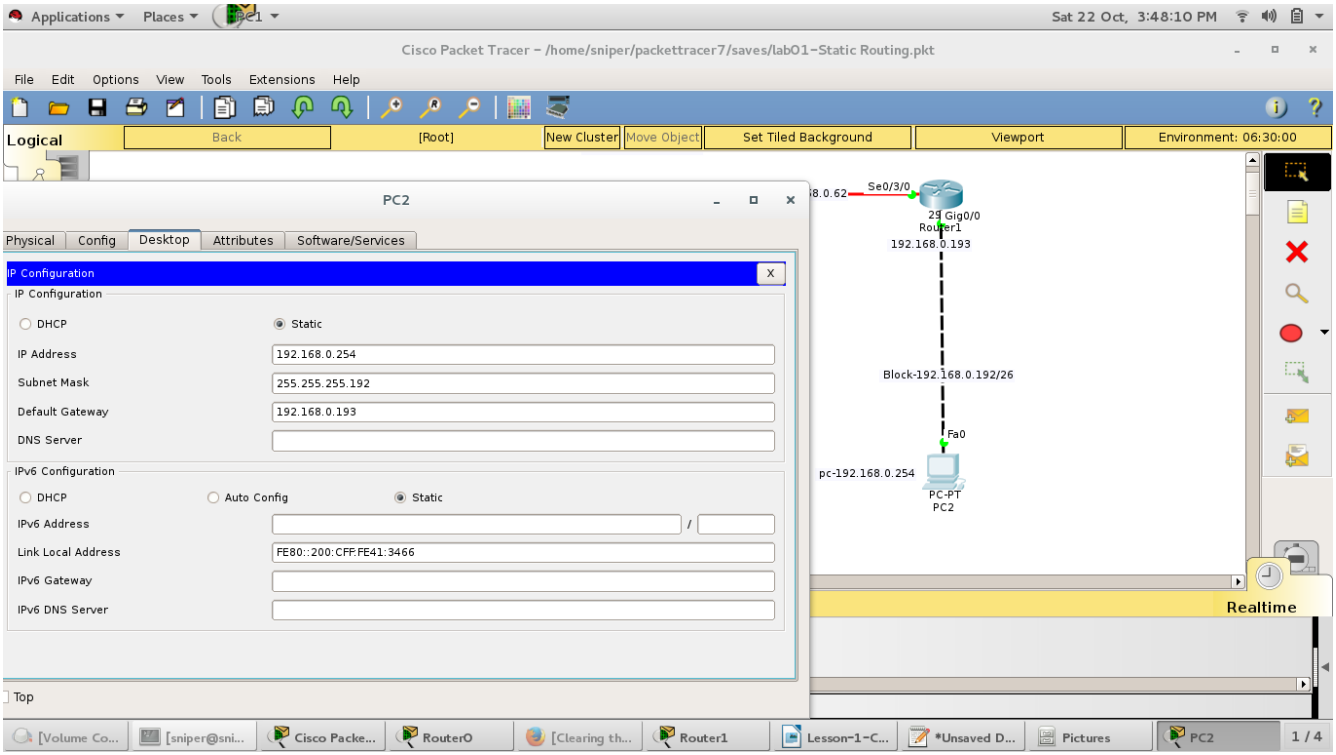
```
Two#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Two(config)#ip route 192.168.0.64 255.255.255.192 192.168.0.1
Two(config)#ip route 192.168.0.128 255.255.255.192 192.168.0.1
Two(config)#do sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set



     192.168.0.0/24 is variably subnetted, 6 subnets, 2 masks
C       192.168.0.0/26 is directly connected, Serial0/3/0
L       192.168.0.62/32 is directly connected, Serial0/3/0
S       192.168.0.64/26 [1/0] via 192.168.0.1
S       192.168.0.128/26 [1/0] via 192.168.0.1
C       192.168.0.192/26 is directly connected, GigabitEthernet0/0
L       192.168.0.193/32 is directly connected, GigabitEthernet0/0

Two(config)#
```



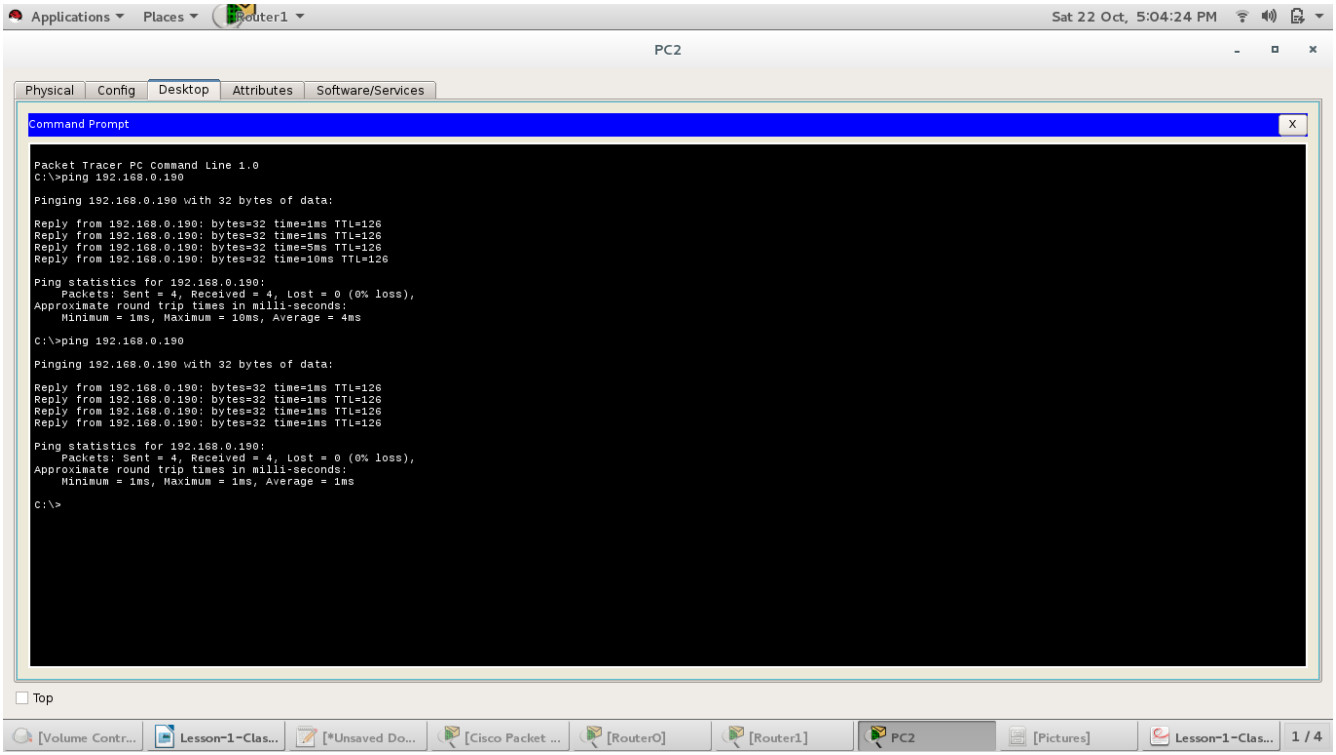
PC0-Configur

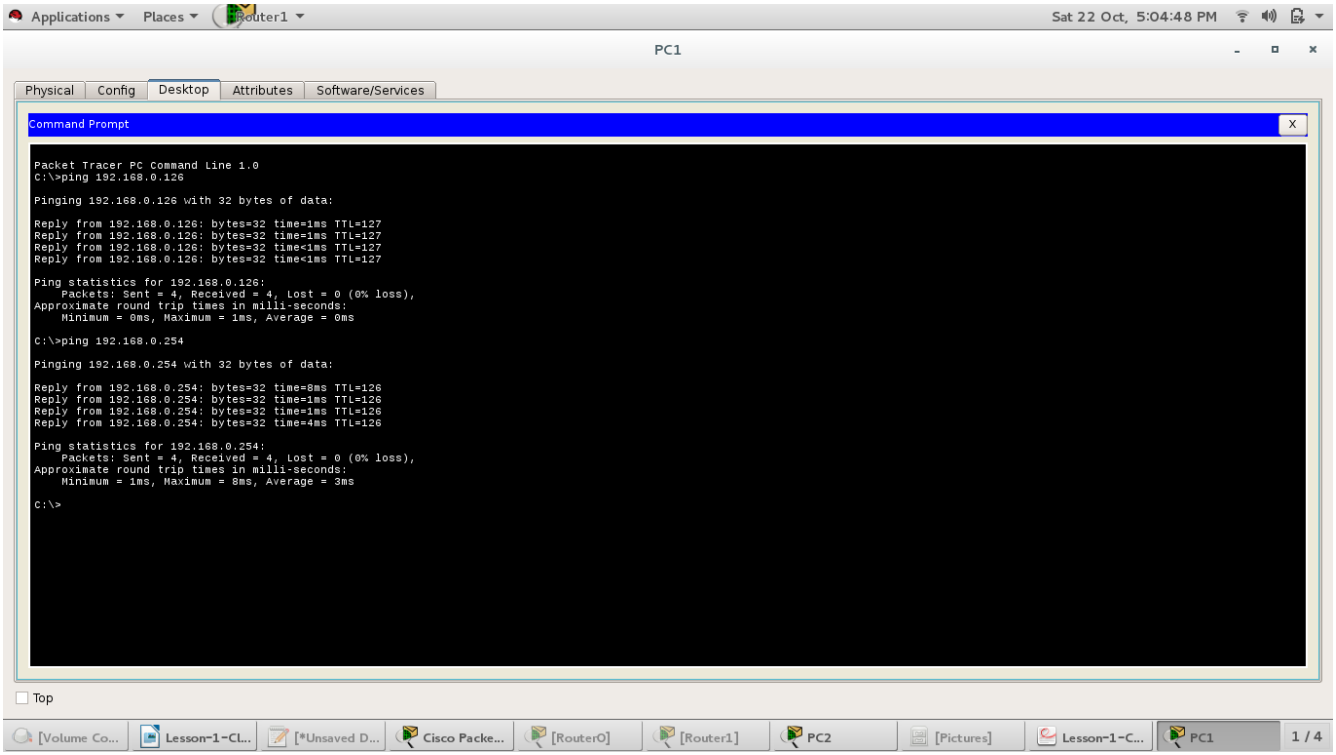


PC1-Configur



PC2-Configur





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You can delete the current startup configuration files and return the router to its factory default settings with the *erase nvram:* command:

```
Router1#erase nvram:
Erasing the nvram filesystem will remove all files! Continue? [confirm] <enter>
[OK]
Erase of nvram: complete
Router1#reload

System configuration has been modified. Save? [yes/no]: no
Proceed with reload? [confirm]<enter>
```

You can achieve the same result with the erase *startup-config* command:

```
Router1#erase startup-config
Erasing the nvram filesystem will remove all files! Continue? [confirm] <enter>
[OK]
Erase of nvram: complete
Router1#reload
Proceed with reload? [confirm]<enter>
```

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