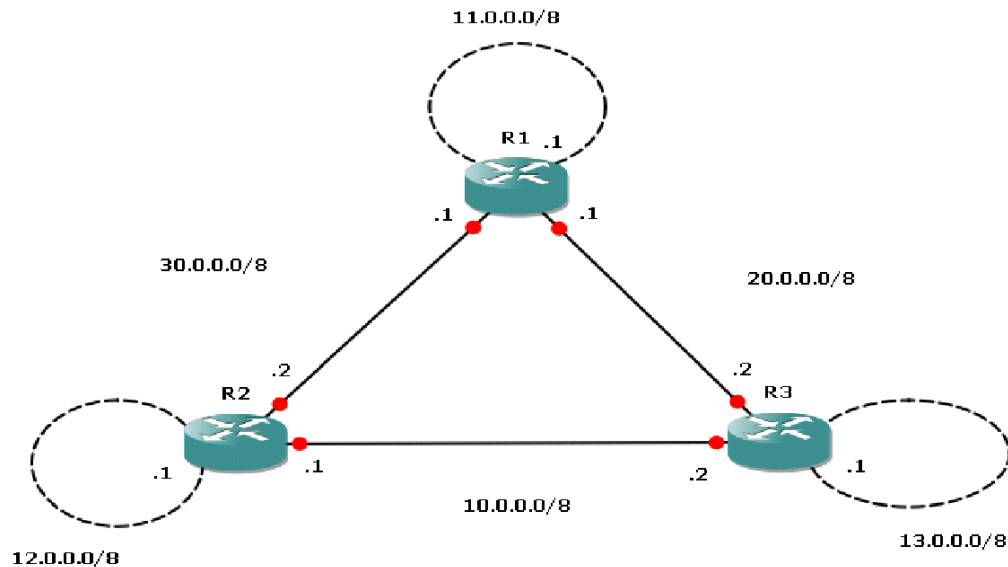


Assignment 2: Static Routing

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Class day/time:	2023-10-20

Instructions:

- IMPORTANT:** The router hostname should be set to **Lastname-RouterX**. So if your last name is Smith and you are setting the hostname for Router2, the hostname should be **Smith-Router2**.
- Use this file to submit yours answers. Take screenshots as instructed below. Crop out any irrelevant parts of the screen (**10% penalty if I can't easily read the output in the screenshot**).
- Submit the file in SLATE before the deadline. **You should submit 2 files;** this Word document saved as PDF file, and a ZIP file containing all the files in your GNS3 project. **Your submission will consist of one PDF file and one ZIP file. If the ZIP file is not submitted there will be a penalty of 10%.**



1. Answer the following questions:

Each router has _2_ active physical interface(s).	2 per router
Each router has _1_ virtual interface(s).	1 per router
Each router has ___ directly-connected networks in its routing table.	3 per router
Each router has ___ static routes in its routing table.	3 per router

2. For each router, show the output of the **show ip interface brief** command:

Output from Router1:

```
nolk-Router1#show ip interface brief
Interface                IP-Address      OK? Method Status      Protocol
FastEthernet0/0          30.0.0.1        YES manual up          up
FastEthernet1/0          20.0.0.1        YES manual up          up
Loopback0                 11.0.0.1        YES manual up          up
nolk-Router1#
```

Output from Router2:

```
nolk-Router2#show ip interface brief
Interface                IP-Address      OK? Method Status      Protocol
FastEthernet0/0          30.0.0.2        YES manual up          up
FastEthernet1/0          10.0.0.1        YES manual up          up
Loopback0                 12.0.0.1        YES manual up          up
nolk-Router2#
```

Output from Router3:

```
nolk-Router3#show ip interface brief
Interface                IP-Address      OK? Method Status      Protocol
FastEthernet0/0          20.0.0.2        YES manual up          up
FastEthernet1/0          10.0.0.2        YES manual up          up
Loopback0                 13.0.0.1        YES manual up          up
nolk-Router3#
```

3. For each router, show the output of the **show ip route** command:

Output from Router1:

```
Gateway of last resort is not set

C    20.0.0.0/8 is directly connected, FastEthernet0/0
S    10.0.0.0/8 [1/0] via 20.0.0.2
C    11.0.0.0/8 is directly connected, Loopback0
S    12.0.0.0/8 [1/0] via 30.0.0.2
S    13.0.0.0/8 [1/0] via 20.0.0.2
C    30.0.0.0/8 is directly connected, FastEthernet0/0
nolk-Router1#
```

Output from Router2:

```
Gateway of last resort is not set

S    20.0.0.0/8 [1/0] via 10.0.0.2
C    10.0.0.0/8 is directly connected, FastEthernet1/0
S    11.0.0.0/8 [1/0] via 30.0.0.1
C    12.0.0.0/8 is directly connected, Loopback0
S    13.0.0.0/8 [1/0] via 10.0.0.2
C    30.0.0.0/8 is directly connected, FastEthernet0/0
nolk-Router2#
```

Output from Router3:

```
Gateway of last resort is not set

C    20.0.0.0/8 is directly connected, FastEthernet0/0
C    10.0.0.0/8 is directly connected, FastEthernet1/0
S    11.0.0.0/8 [1/0] via 20.0.0.1
S    12.0.0.0/8 [1/0] via 10.0.0.1
C    13.0.0.0/8 is directly connected, Loopback0
S    30.0.0.0/8 [1/0] via 10.0.0.1
nolk-Router3#
```

4. For each router, run the **show run** command, and take screenshots of the parts showing the **interface configurations** and the part showing the **static routes**. Do not include the rest of the config file. **There will be a 10% penalty if you simply paste a screenshot of the entire config file.**

Output from Router1:

```
interface Loopback0
  ip address 11.0.0.1 255.0.0.0
!
interface FastEthernet0/0
  ip address 30.0.0.1 255.0.0.0
  duplex auto
  speed auto
!
interface FastEthernet1/0
  ip address 20.0.0.1 255.0.0.0
  duplex auto
  speed auto
!
no ip http server
ip route 10.0.0.0 255.0.0.0 20.0.0.2
ip route 12.0.0.0 255.0.0.0 30.0.0.2
ip route 13.0.0.0 255.0.0.0 20.0.0.2
!
```

Output from Router2:

```
interface Loopback0
  ip address 12.0.0.1 255.0.0.0
!
interface FastEthernet0/0
  ip address 30.0.0.2 255.0.0.0
  duplex auto
  speed auto
!
interface FastEthernet1/0
  ip address 10.0.0.1 255.0.0.0
  duplex auto
  speed auto
!
no ip http server
ip route 11.0.0.0 255.0.0.0 30.0.0.1
ip route 13.0.0.0 255.0.0.0 10.0.0.2
ip route 20.0.0.0 255.0.0.0 10.0.0.2
!
```

Output from Router3:

```
interface Loopback0
 ip address 13.0.0.1 255.0.0.0
!
interface FastEthernet0/0
 ip address 20.0.0.2 255.0.0.0
 duplex auto
 speed auto
!
interface FastEthernet1/0
 ip address 10.0.0.2 255.0.0.0
 duplex auto
 speed auto
!
no ip http server
ip route 11.0.0.0 255.0.0.0 20.0.0.1
ip route 12.0.0.0 255.0.0.0 10.0.0.1
ip route 30.0.0.0 255.0.0.0 10.0.0.1
```

5. From each router, ping all the interfaces on networks that are not directly connected to the router. For example, from Router1 you should ping 12.0.0.1, 13.0.0.1, 10.0.0.1 and 10.0.0.2. Take one screenshot showing the 4 ping results. **There will be a 10% penalty if the screenshot contains irrelevant information.**

Output from Router1:

```
holkm-Router1#ping 12.0.0.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 12.0.0.1, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 80 percent (4/5), round-trip min/avg/max = 60/79/96 ms
```

```
holkm-Router1#ping 13.0.0.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 13.0.0.1, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 80 percent (4/5), round-trip min/avg/max = 64/89/100 ms
```

```
holkm-Router1#ping 10.0.0.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.0.0.1, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 80 percent (4/5), round-trip min/avg/max = 68/89/96 ms
```

```
holkm-Router1#ping 10.0.0.2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.0.0.2, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 60/79/96 ms
```

```
holkm-Router1#
```



Output from Router2:

```
nolk-Router2#ping 12.0.0.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 12.0.0.1, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/3/4 ms
```

```
nolk-Router2#ping 13.0.0.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 13.0.0.1, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/68/84 ms
```

```
nolk-Router2#ping 10.0.0.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.0.0.1, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
```

```
nolk-Router2#ping 10.0.0.2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.0.0.2, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/3/4 ms
```

```
nolk-Router2#
```



Output from Router3:

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 12.0.0.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 68/83/100 ms
nolkm-Router3#ping 13.0.0.1

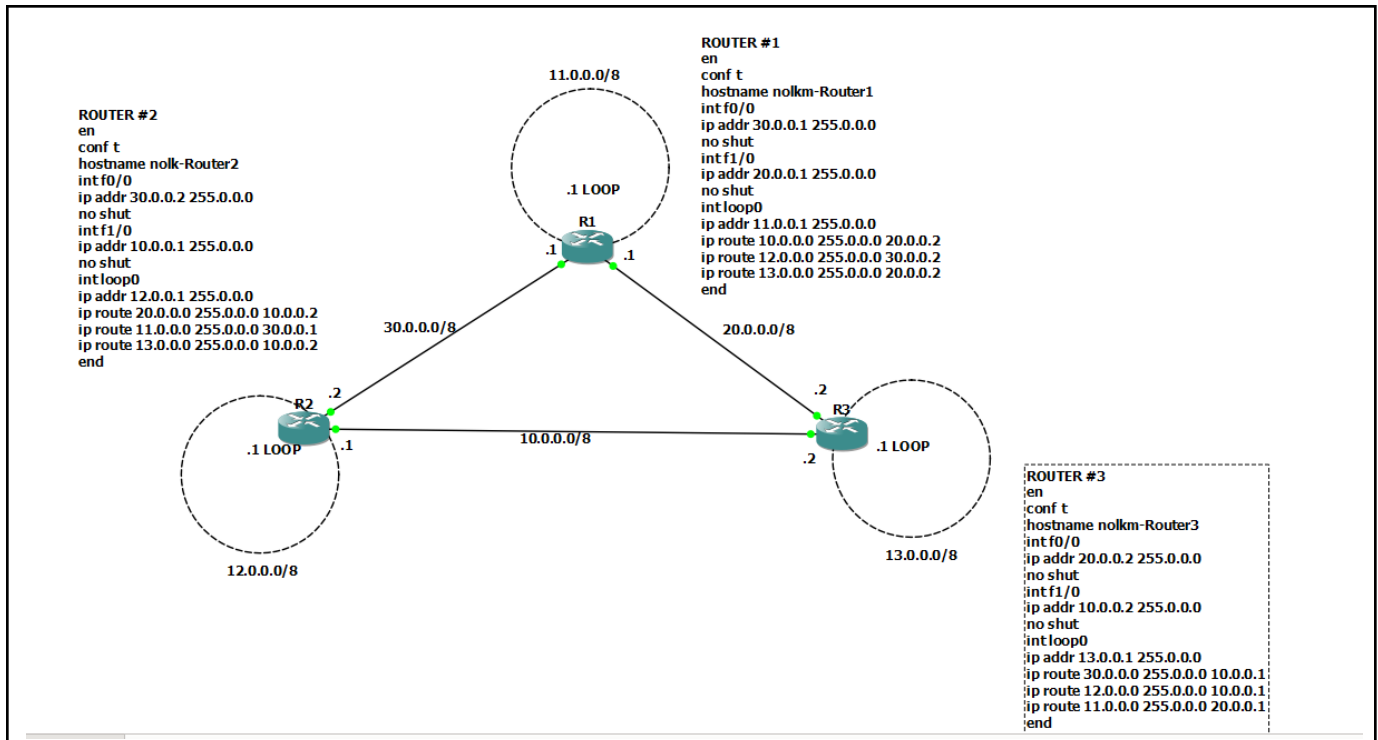
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 13.0.0.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/3/4 ms
nolkm-Router3#ping 10.0.0.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.0.0.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/64/64 ms
nolkm-Router3#ping 10.0.0.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.0.0.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/64/64 ms
nolkm-Router3#
```

6. Take a screenshot of your GNS3 network topology. Use the screenshot feature in GNS3 (click File, Take a screenshot). **It is a good idea to have all your config commands added as notes in your screenshot as was shown in class.**

GNS3 Network:



Final reminders:

Remember to save this document as a PDF file.

Submit one PDF file and one ZIP file.

DO NOT include the PDF file inside the ZIP file.