Static IP Routing

Static routing is a form of routing that occurs when a router uses a manually-configured routing entry, rather than information from dynamic routing traffic . In many cases, static routes are manually configured by a network administrator by adding in entries in the routing table though this may not always be the case. Unlike dynamic routing static routes are fixed and do not change if the network is changed or reconfigured. Static routing and dynamic routing are not mutually exclusive. Both dynamic routing and static routing are usually used on a router to maximise routing efficiency and to provide backups in case dynamic routing information fails to be exchanged. Static routing can also be used in stub networks, or to provide a gateway of last resort.

Features of Static IP Routing:

- Static routing can be used to define an exit point from a router when no other routes are available or necessary. This is called a Default Route.
- Static routing can be used for small networks that require only one or two routes. This is often more efficient since a link is not being wasted by exchanging dynamic routing information.
- Static routing is often used as a complement to dynamic routing to provide a failsafe backup if a dynamic route is unavailable.
- Static routing is often used to help transfer routing information from one routing protocol to another (routing redistribution).

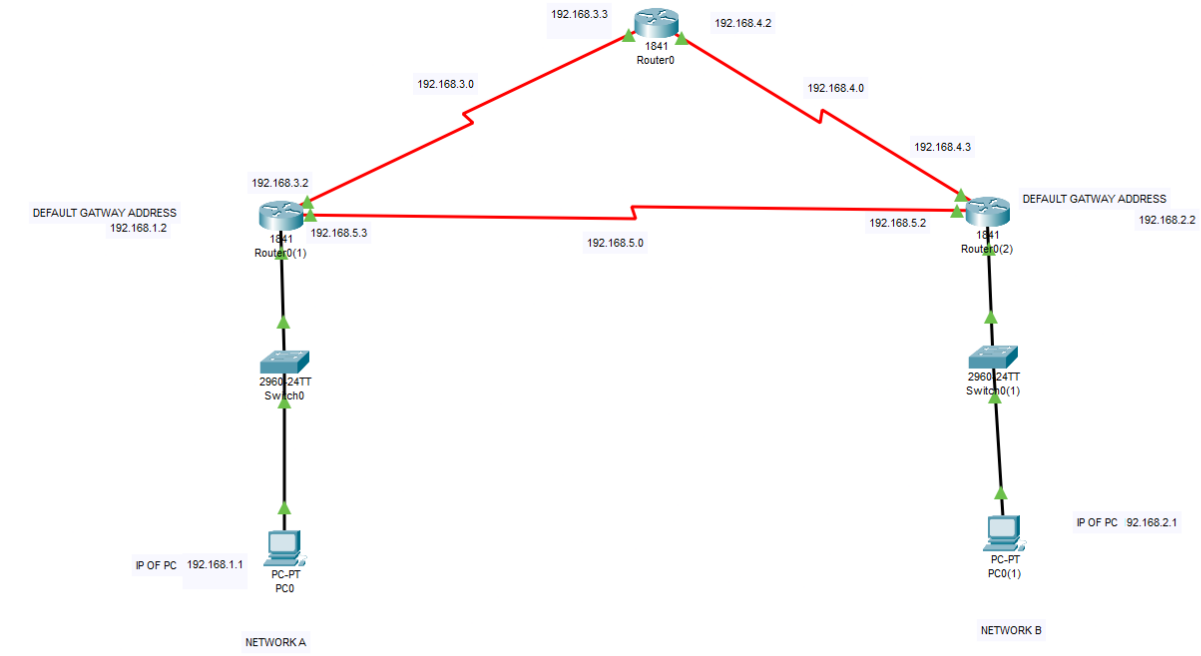
Advantages of Static IP Routing :

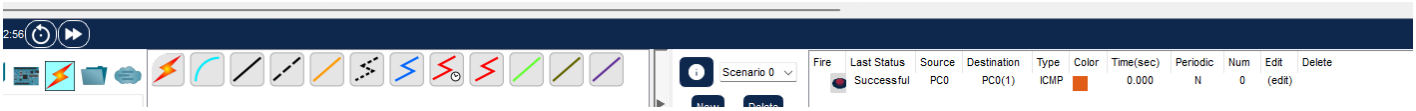
- Static routing causes very little load on the CPU of the router, and produces no traffic to other routers.

- **Static routing leaves the network administrator with full control over the routing behavior of the network.**
- **Static Routing is very easy to configure on small networks.**

Disadvantages of Static IP Routing:

- **Human error:** In many cases, static routes are manually configured. This increases the potential for input mistakes. Administrators can make mistakes and mistype in network information, or configure incorrect routing paths by mistake.
- **Fault tolerance:** Static routing is not fault tolerant. This means that when there is a change in the network or a failure occurs between two statically defined devices, traffic will not be re-routed. As a result, the network is unusable until the failure is repaired or the static route is manually reconfigured by an administrator.
- **Administrative distance:** Static routes typically take precedence over routes configured with a dynamic routing protocol. This means that static routes may prevent routing protocols from working as intended. A solution is to manually modify the administrative distance.
- **Administrative overhead:** Static routes must be configured on each router in the network. This configuration can take a long time if there are many routers. It also means that reconfiguration can be slow and inefficient. Dynamic routing on the other hand automatically propagates routing changes, reducing the need for manual reconfiguration.


192.168.3.3
1841
Router0
192.168.4.2
192.168.3.0
192.168.4.0
192.168.4.3
192.168.3.2
DEFAULT GATWAY ADDRESS
192.168.1.2
1841
Router0(1)
192.168.5.3
192.168.5.0
192.168.5.2
DEFAULT GATWAY ADDRESS
192.168.2.2
1841
Router0(2)
2960-24TT
Switch0
2960-24TT
Switch0(1)
IP OF PC 192.168.1.1
PC-PT
PC0
IP OF PC 92.168.2.1
PC-PT
PC0(1)
NETWORK A
NETWORK B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Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
Successful
PC0
PC0(1)
ICMP
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