CN Lab-3 Cisco - practical of cn having nothing

Computer Network (University of Mumbai)

Experiment Number: 3					
Date of Performance:		**10-08-2022**			
Date of Submission:		**17-08-2022**			
Program Execution/ formation/ correction/ ethical practices (07)	**Documentation (02)**	**Timely Submission (03)**	**Viva Answer to sample questions (03)**	**Experiment Total (15)**	**Sign**

Experiment No: 3

Aim: Build a simple network topology and configure it for static routing protocol using packet tracer. Setup a network and configure IP addressing, subnetting, masking.

Laboratory Outcome: Setup a Network using Cisco packet tracer and implement static routing.

Related Theory:

Routing is one of the most essential procedures in data communication. It ensures that data travels from one network to another with optimal speed and minimal delay, and that its integrity is maintained in the process.

Broadly, routing is performed in two different ways:

- Dynamic routing continuously updates its routing table with paths and their cost/metric, while making optimal routing decisions based on changing network operating environments.
- Static routing performs routing decisions with preconfigured routes in the routing table, which can be changed manually only by administrators. Static routes are normally implemented in those situations where the choices in route selection are limited, or there is only a single default route available. Also, static routing can be used if you have only few devices for route configuration and there is no need for route change in the future.

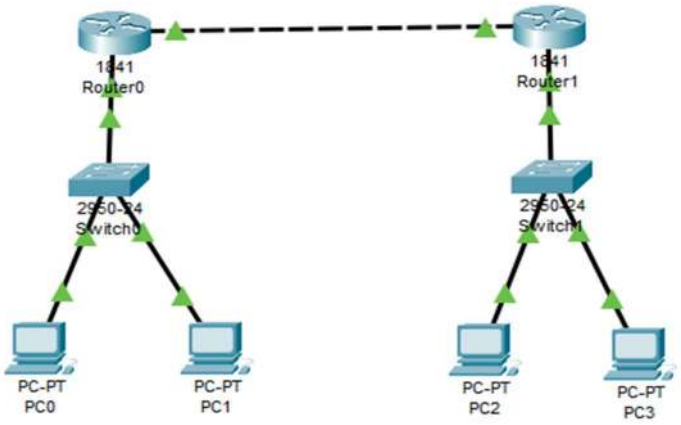
Static routing is considered the simplest form of routing.

You can supplement dynamic routes with static routes where appropriate. You can redistribute static routes into dynamic routing algorithms but you cannot redistribute routing information calculated by dynamic routing algorithms into the static routing table.

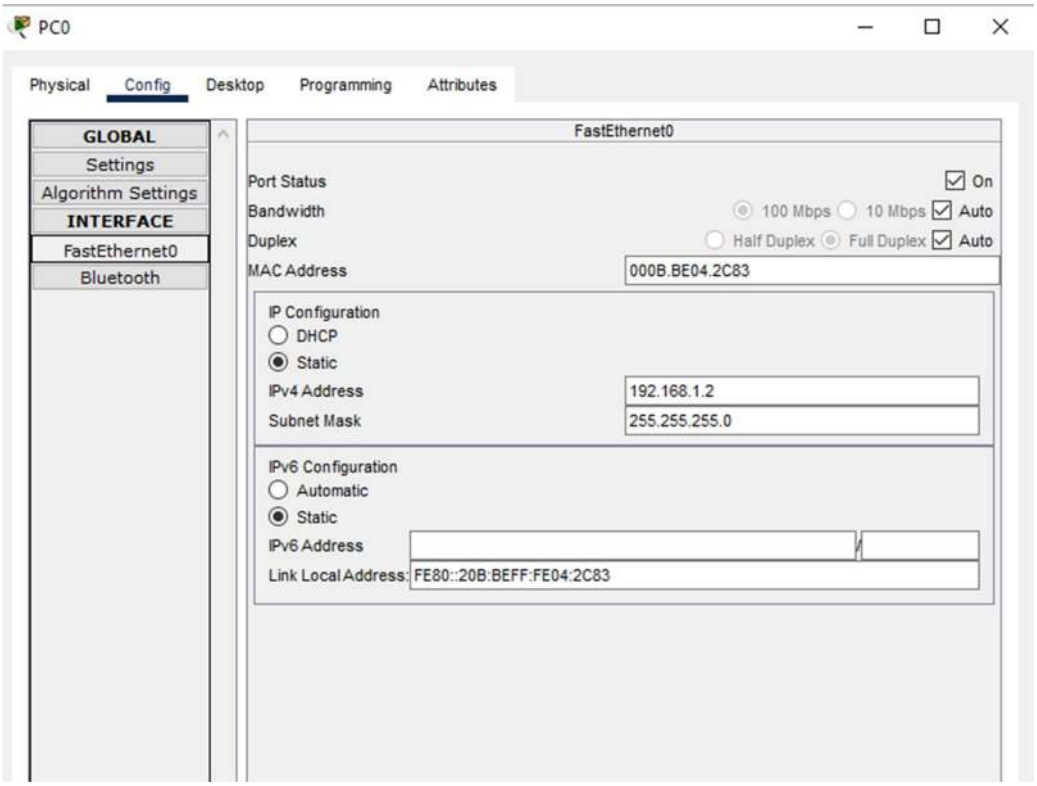
You should use static routes in environments where network traffic is predictable and where the network design is simple. You should not use static routes in large, constantly changing networks because static routes cannot react to network changes. Most networks use dynamic routes to communicate between routers but may have one or two static routes configured for special cases. Static routes are also useful for specifying a gateway of last resort (a default router to which all unroutable packets are sent).

Program Listings and Output:

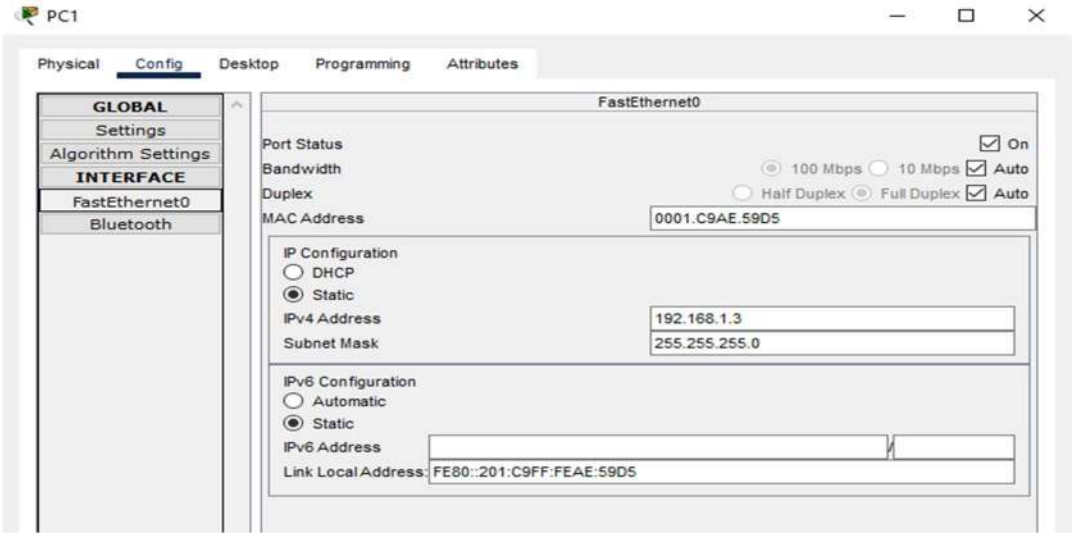
Connect the devices as shown below:



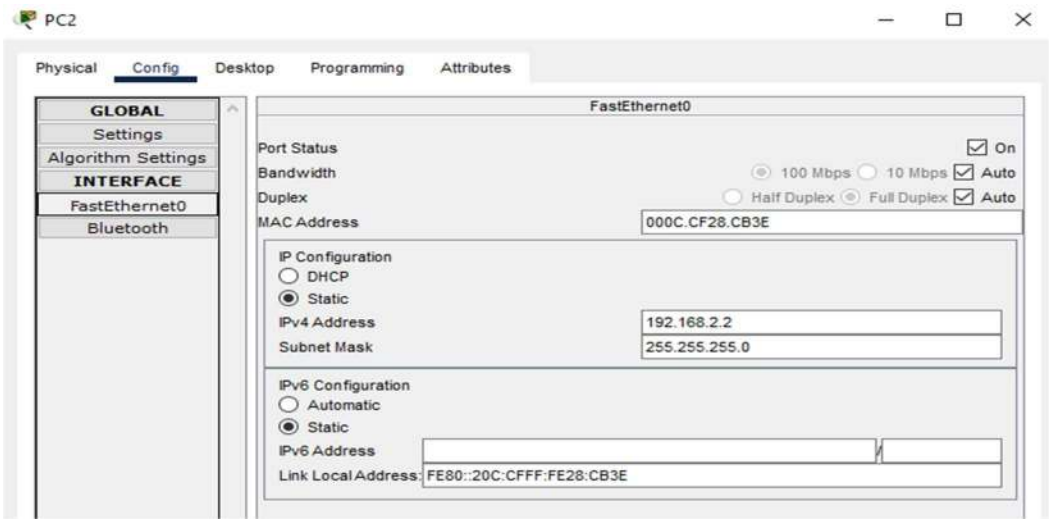
Configure PC0:



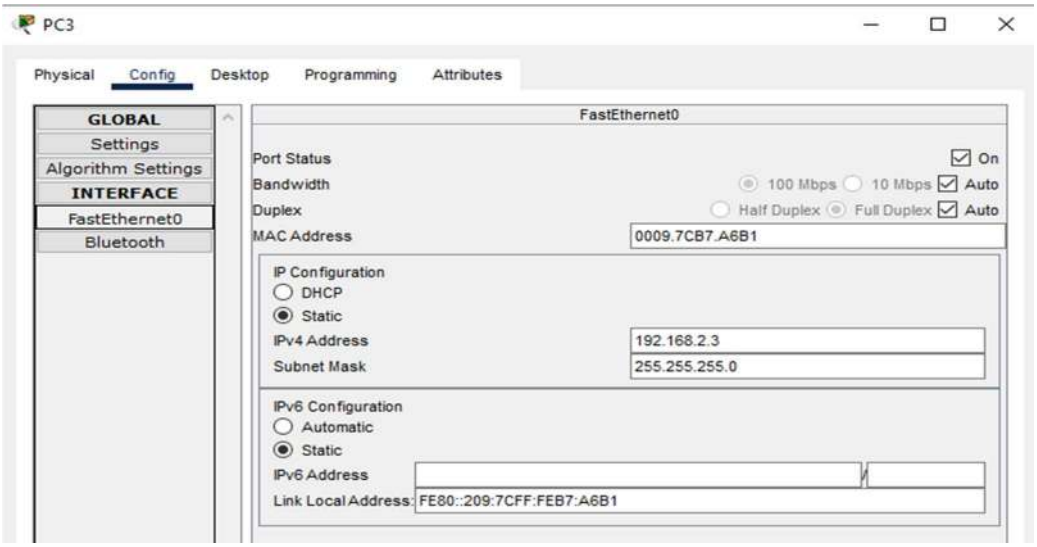
Configure PC1:



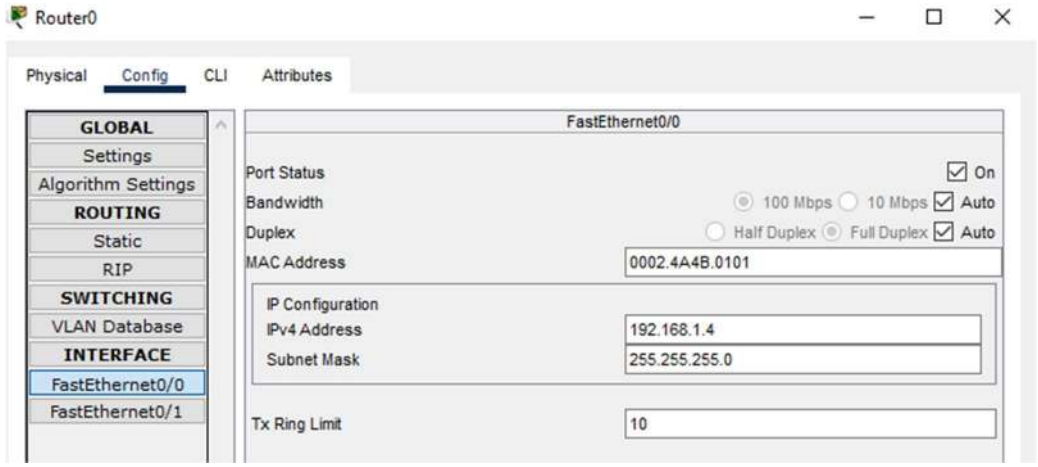
Configure PC2:

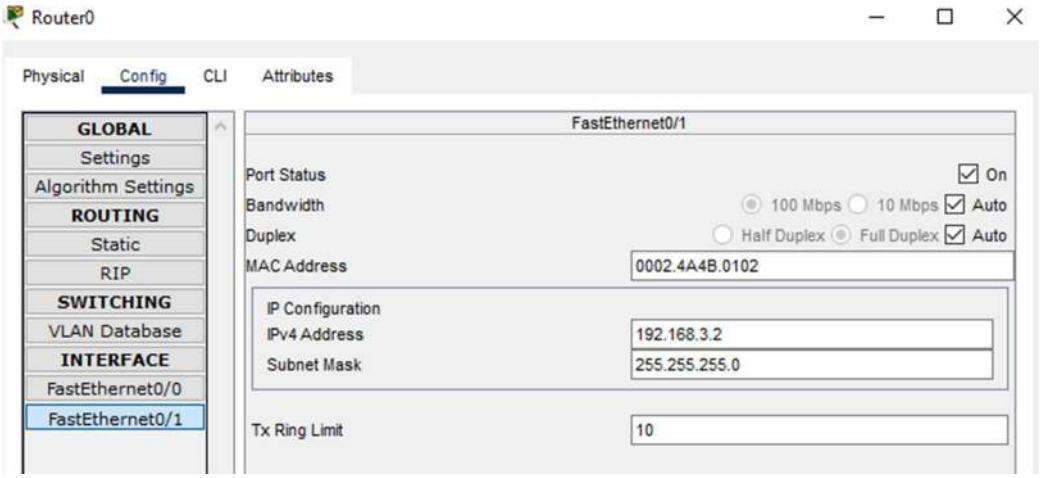


Configure PC3:

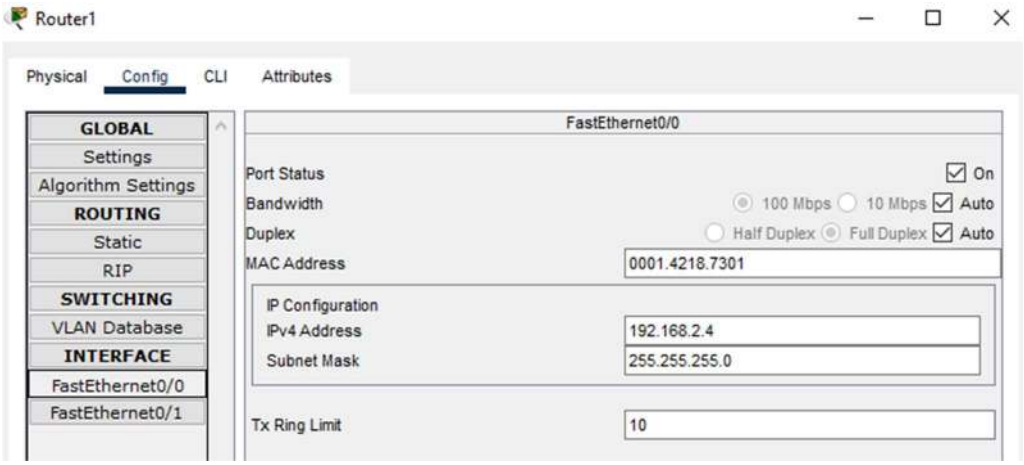


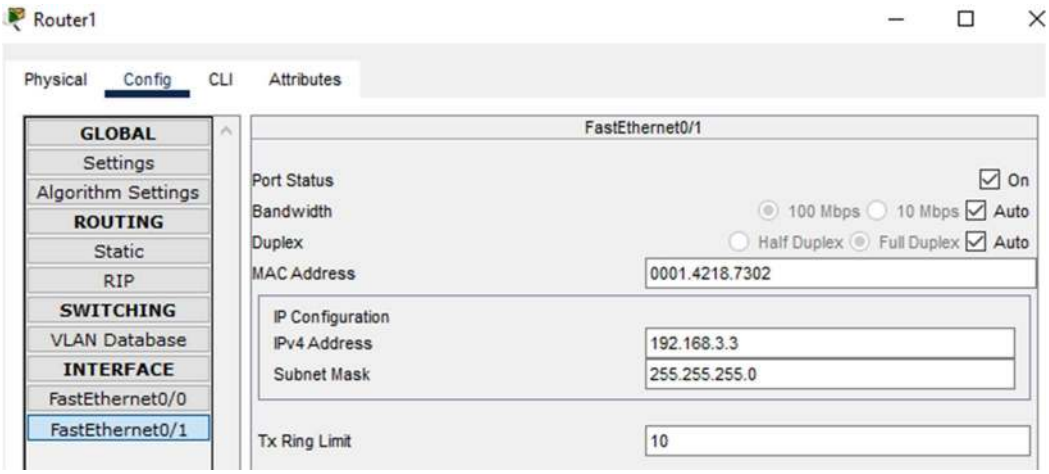
Configure Router 0:





Configure Router 1:





Verifying Connection with Message Transfer:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	PC3	Router1	ICMP		0.000	N	18	(edit)
	Successful	PC0	PC2	ICMP		0.000	N	19	(edit)
	Successful	PC1	PC3	ICMP		0.000	N	20	(edit)

Conclusion: We have built a simple network topology and configure it for static routing protocol using packet tracer