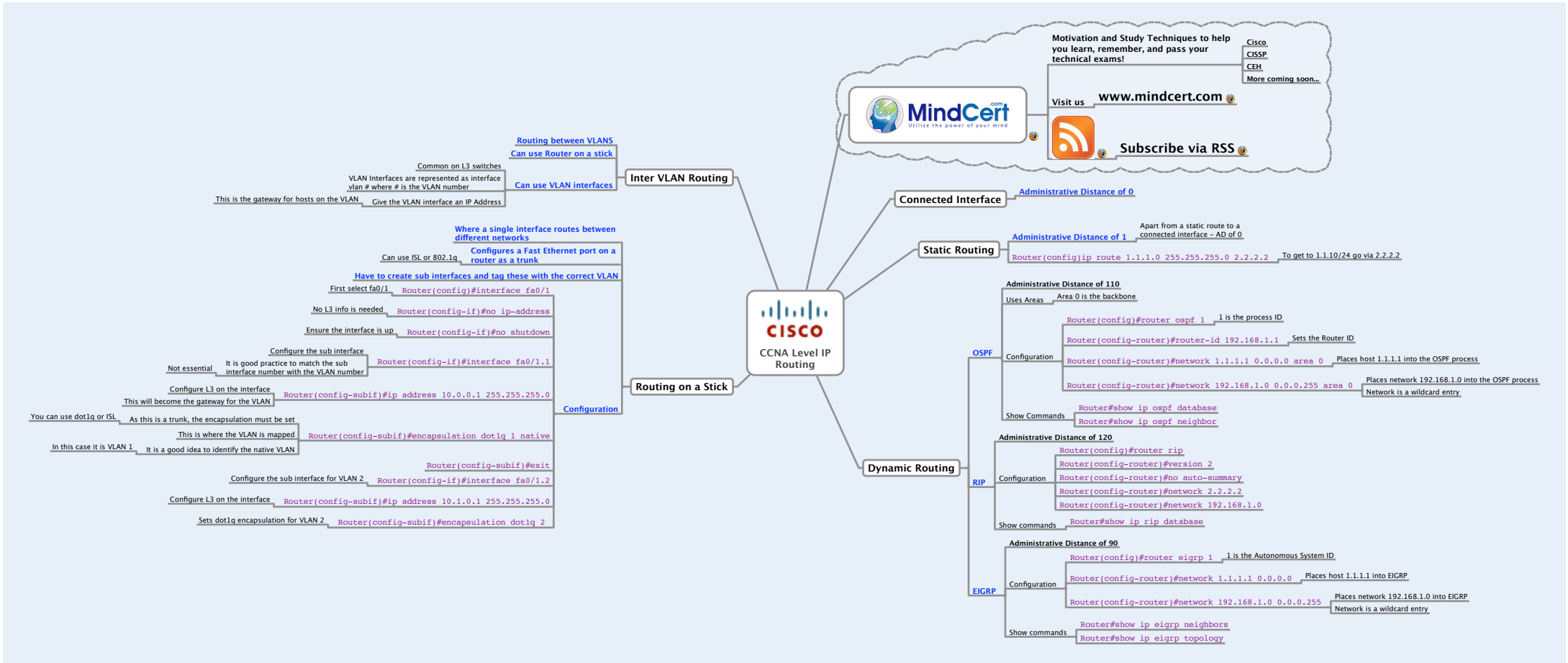
CCNA Level IP Routing
Motivation and Study Techniques to help you learn, remember, and pass your technical exams!
Cisco
CISSP
CEH
More coming soon...
MindCert.com
Utilize the power of your mind
Visit us
www.mindcert.com
Subscribe via RSS
Inter VLAN Routing
Routing between VLANS
Can use Router on a stick
Can use VLAN interfaces
Common on L3 switches
VLAN Interfaces are represented as interface vlan # where # is the VLAN number
Give the VLAN interface an IP Address
This is the gateway for hosts on the VLAN
Routing on a Stick
Where a single interface routes between different networks
Configures a Fast Ethernet port on a router as a trunk
Can use ISL or 802.1q
Have to create sub interfaces and tag these with the correct VLAN
Configuration
First select fa0/1
Router(config)#interface fa0/1
No L3 info is needed
Router(config-if)#no ip-address
Ensure the interface is up
Router(config-if)#no shutdown
Configure the sub interface
Router(config-if)#interface fa0/1.1
Not essential
It is good practice to match the sub interface number with the VLAN number
Configure L3 on the interface
Router(config-subif)#ip address 10.0.0.1 255.255.255.0
This will become the gateway for the VLAN
You can use dot1q or ISL
Router(config-subif)#encapsulation dot1q 1 native
As this is a trunk, the encapsulation must be set
This is where the VLAN is mapped
In this case it is VLAN 1
It is a good idea to identify the native VLAN
Router(config-subif)#exit
Configure the sub interface for VLAN 2
Router(config-if)#interface fa0/1.2
Configure L3 on the interface
Router(config-subif)#ip address 10.1.0.1 255.255.255.0
Sets dot1q encapsulation for VLAN 2
Router(config-subif)#encapsulation dot1q 2
Connected Interface
Administrative Distance of 0
Static Routing
Administrative Distance of 1
Apart from a static route to a connected interface - AD of 0
Router(config)ip route 1.1.1.0 255.255.255.0 2.2.2.2
To get to 1.1.10/24 go via 2.2.2.2
Dynamic Routing
OSPF
Administrative Distance of 110
Uses Areas
Area 0 is the backbone
Configuration
Router(config)#router ospf 1
1 is the process ID
Router(config-router)#router-id 192.168.1.1
Sets the Router ID
Router(config-router)#network 1.1.1.1 0.0.0.0 area 0
Places host 1.1.1.1 into the OSPF process
Router(config-router)#network 192.168.1.0 0.0.0.255 area 0
Places network 192.168.1.0 into the OSPF process
Network is a wildcard entry
Show Commands
Router#show ip ospf database
Router#show ip ospf neighbor
RIP
Administrative Distance of 120
Configuration
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#no auto-summary
Router(config-router)#network 2.2.2.2
Router(config-router)#network 192.168.1.0
Show commands
Router#show ip rip database
EIGRP
Administrative Distance of 90
Configuration
Router(config)#router eigrp 1
1 is the Autonomous System ID
Router(config-router)#network 1.1.1.1 0.0.0.0
Places host 1.1.1.1 into EIGRP
Router(config-router)#network 192.168.1.0 0.0.0.255
Places network 192.168.1.0 into EIGRP
Network is a wildcard entry
Show commands
Router#show ip eigrp neighbors
Router#show ip eigrp topology