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Internetworking  
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**Lab 7 Lab Report**

**Lab Description:**   
Set up a network utilizing OSPF Routing as well as an Internet PC, Switch, and ISP Router.

**Topography:**  
Diagram

Description automatically generated  
  
Syntax:

CLI Command Description Mode of Cisco OIS

|  |  |  |
| --- | --- | --- |
| ping | Used to ping ip addresses from a PC. You can ping other PC’s or switches with this. | Windows CMD |
| Logging synchronous | Forces error messages to be on its own line, rather than interrupt a line that you’re typing on. | Console Line |
| Enable | Enter Privileged Mode | User Mode |
| Conf t | Enter Global Configurator Mode | Privileged Mode |
| Line con 0 | Enter the Console Line | Global Configurator Mode |
| Hostname | Used to name a switch or PC | Privileged Mode |
| Password | Used to set a password | Privileged Mode |
| Login | Used to require the password to utilize User Mode | Global Configurator Mode |
| Enable password | Used to set an unencrypted Privileged Password | Global Configurator Mode |
| Show ip interface brief (sh ip int brief) | Displays a brief list of all interfaces | Privileged Mode |
| vtp domain INETLAB | Renames the VTP domain from NULL to INETLAB | Global Configurator Mode |
| Vtp password cisco | Set a password within the VTP Domain | Global Configurator Mode |
| Vtp mode server/client | Sets the vtp mode between server or client, in the case of this lab. | Global Configurator Mode |
| Switchport mode access | Changes the mode of a switchport to access mode | Line configuration Mode (within a vlan) |
| Switchport trunk encapsulation dot1q | Sets up the switch to switch connect to use IEEE 802.1Q encapsulation | Within a vlan with a multi-Connection switch |
| Switchport mode trunk | Sets the mode for the switchport to trunk | Within a vlan |
| Spanning-tree vlan xx root primary | Setting up a spanning tree within a vlan, and setting it to root primary | Privileged mode |
| Encapsulation dot1q xx | Sets up a VLAN in IEEE 802.1Q within a router | ROUTER Line Configuration Mode(within a sub interface) |
| Ip route (ip) (SM) (ip) | Sets up a static IP Route | Interface Mode |
| Router rip | Sets the Router into RIP mode | Global Configuration |
| Version 2 | Sets the RIP version to version 2 | Global Configuration |
| Network (ip address) | Sets the Network for RIPv2 networking | Global Configuration |

**Verification:**

B)

**Text

Description automatically generated**NY-Router G0/1  
A screenshot of a computer

Description automatically generated with medium confidenceNY-Router S0/0/0  
**Table

Description automatically generated**NY-Router Interfaces Brief  
**Text, letter

Description automatically generated**NY-Router Routing Table

Text

Description automatically generatedTX-Router G0/1  
A screenshot of a computer

Description automatically generated with medium confidenceTX-Router S0/0/1  
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Description automatically generated with low confidenceTX-Router S0/1/1  
Text, table

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Text

Description automatically generatedIL-Router G0/1  
Text, letter

Description automatically generatedIL-Router S0/0/1  
Table

Description automatically generatedIL-Router Interfaces Brief  
Text, letter

Description automatically generatedIL-Router Routing Table

H)

Text

Description automatically generatedNY-Router IP Protocol  
Text

Description automatically generatedTX-Router IP Protocol  
Text, letter

Description automatically generatedIL-Router IP Protocol

I)  
LSA is Link-State Advertisement, which is a basic means of communication for OSPF Routing Protocols. It allows the routers to communicate the routers local routing topology to all the other local routers within the same OSPF area.

J)  
Text

Description automatically generatedTX-Router Routing Table

K)

Text

Description automatically generatedNY-Router Routing Table

L)  
What is occurring for the NY-Router’s default route is that it will automatically send information to the other half of the 172.19.12.x network to see if, in this case, the TX-Router has the information to carry a message to another router, whether it is another PC or Router.

M)  
Graphical user interface, text, application

Description automatically generatedAttempting to use Internet on NY-PC1.

**Conclusion:**This lab was significantly more difficult to get functioning as compared to previous labs, with the primary point of trouble being that I was not able to ping the Internet-PC from any NY-PC or IL-PC, however was able to with TX-PC. This took a lot of trial and error, and I am not entirely sure what fixed it, as when I closed out of the lab and reopened it at a later time, it seemed to be functioning just fine.