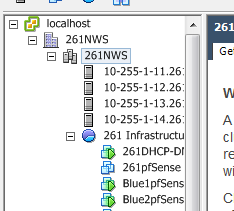
**Note: Local Copy of this document is saved on work station 3 on the red side in a desktop folder called vyos guide.**

**How to set up VyOS for Cyber Challenge Feb 2015**

1. **ISP Router**
   1. **Setting up the Virtual Machine**
      * Go to Red\_Side client (Work Station 3) with VMware vSphere installed; launch the program.
      * User name: root / Password: vmware / click ignore on pop-up.
      * Right click on 261NWS cluster and select new virtual machine
      * 
      * Leave Configuration Typical; click next
      * Name Virtual Machine (VyOS ISP); click next
      * Select correct Resource Pool (261 Infrastructure); click next
      * Select destination storage (Shared\_Vol1); click next
      * Guest Operating System: select (Linux), Version (Debian GNU/Linux 6 (32-bit)); click next
      * Number of NICs: select (4 for ISP router); Select Network: (ISP (dvSwitch)) for all for NICS; click next
      * Vitual disk size: change to (4 GB); Selet Thin Provision; click next
      * Setting for new virtual machine: Put a (check on Edit the virtual machine settings before completion); click next
      * Select New CD/DVD; Device Type: (select Datastore ISO File then browse to Shared\_Vol1🡪!ISO🡪vyos-1.1.0-i586-virt.iso
        + Click OK; Check the Connect at power on box above; then click Finish.
   2. **Installing the Router**
      * Right click on the machine and Power it On
      * Click on the console tab and wait for the vyos login: promt
      * Type: vyos / Password: (see local copy)
      * Type: install image
      * Answer with default entries and put yes if asked
      * Enter and re-enter password for user: keep it vyos
      * Reboot the machine by typing: reboot
      * Hit yes; the machine is now installed is rebooting
   3. **Configuring Router interface**
      * (IP addresses are based on diagrams drawn up by MSgt Nuanes. Contact him for any questions.)
      * Log into router
      * Enter configuration mode by typing configure
      * Eth0 is connected to Empire External Router; type:
        + set interfaces ethernet eth0 address 198.80.188.1/24
      * Eth1 is connected to Rebellion External Router; type:
        + set interfaces ethernet eth1 address 64.163.12.1/24
      * Eth2 is connected to RED\_TEAM External Router; type:
        + set interfaces ethernet eth2 address 192.168.234.1/24
      * Eth3 is connected to DNS-Serve; type:
        + set interfaces ethernet eth2 address 156.154.153.1/24
      * To apply these changes type: commit; to save these changes type: save
   4. **Configuring Static Routes**
      * (still need ip address for RED\_TEAM router’s internal interface eth1)
      * Static routes for blue enclaves; type:
        + set protocols static route 209.237.151.0/24 next-hop 198.80.188.2
        + set protocols static route 162.224.20.0/24 next-hop 64.163.12.2
        + commit
        + save
      * Reboot router as a precaution
2. **Empire External Router**
   1. **Setting up the Virtual Machine**
      * Follow procedures to set up this virtual machine except:
        + Name it VyOS Empire External
        + Select only 2 NICS: NIC1 select ISP (dvSwitch); NIC2 select Empire-External (dvSwitch)
   2. **Installing the Router**
      * Follow the same procedures for installing a router
   3. **Configuring Interfaces**
      * Eth0 is connected to ISP router; type:
        + set interfaces ethernet eth0 address 198.80.188.2/24
      * Eth1 is connected to Empire External Firewall; type:
        + set interfaces ethernet eth1 address 209.237.151.1/24
      * Commit
      * Save
   4. **Configuring Static Routes**
      * (still need ip address for RED\_TEAM router’s internal interface eth1)
      * Type:
        + set protocols static route 64.163.12.0/24 next-hop 198.80.188.1
        + set protocols static route 162.224.20.0/24 next-hop 198.80.188.1
        + set protocols static route 192.168.234.0/24 next-hop 198.80.188.1
        + set protocols static route 156.154.153.0/24 next-hop 198.80.188.1
        + commit
        + save
      * Reboot router as a precaution
3. **Rebellion External Router**
   1. **Setting up the Virtual Machine**
      * Follow procedures to set up this virtual machine except:
        + Name it VyOS Rebellion External
        + Select only 2 NICS: NIC1 select ISP (dvSwitch); NIC2 select Rebellion-External (dvSwitch)
   2. **Installing the Router**
      * Follow the same procedures for installing a router
   3. **Configuring Interfaces**
      * Eth0 is connected to ISP router; type:
        + set interfaces ethernet eth0 address 64.163.12.2/24
      * Eth1 is connected to Rebellion External Firewall; type:
        + set interfaces ethernet eth1 address 162.224.20.1/24
      * Commit
      * Save
   4. **Configuring Static Routes**
      * (still need ip address for RED\_TEAM router’s internal interface eth1)
      * Type:
        + set protocols static route 198.80.188.0/24 next-hop 64.163.12.1
        + set protocols static route 209.237.151.0/24 next-hop 64.163.12.1
        + set protocols static route 192.168.234.0/24 next-hop 64.163.12.1
        + set protocols static route 156.154.153.0/24 next-hop 64.163.12.1
        + commit
        + save
      * Reboot router as a precaution
4. **RED\_TEAM External Router**
   1. **Setting up the Virtual Machine**
      * Follow procedures to set up this virtual machine except:
        + Name it VyOS RED\_TEAM External
        + Select only 2 NICS: NIC1 select ISP (dvSwitch); NIC2 select RedTeam-External (dvSwitch)
   2. **Installing the Router**
      * Follow the same procedures for installing a router
   3. **Configuring Interfaces**
      * Eth0 is connected to ISP router; type:
        + set interfaces ethernet eth0 address 192.168.234.2/24
      * (Pending new network diagrams from Nuanes) Eth1 is connected to ???; type:
        + set interfaces ethernet eth1 address X.X.X.1/24
      * Commit
      * Save
   4. **Configuring Static Routes**
      * Type:
        + set protocols static route 198.80.188.0/24 next-hop 192.168.234.1
        + set protocols static route 209.237.151.0/24 next-hop 192.168.234.1
        + set protocols static route 64.163.12.0/24 next-hop 192.168.234.1
        + set protocols static route 162.224.20.0/24 next-hop 192.168.234.1
        + set protocols static route 156.154.153.0/24 next-hop 192.168.234.1
        + commit
        + save
      * Reboot router as a precaution