Installing and Using CisshGo

CisshGo is a concurrent SSH server to emulate network equipment (i.e. Cisco IOS-XE) for testing purposes.

Note: Depending on your account, you may need to add **sudo** before a command.

1. Install Python3 and PIP3 if needed:
   python3 –version
   pip3 --version
   sudo apt install python3 python3-pip
2. Install Git if needed:
   git status
   apt install git
3. Install Go if needed:
   go version
   snap install go --classic
4. Install PuTTY:
   apt install putty -y
5. Copy the CisshGo URL (https://github.com/tbotnz/cisshgo):
   cd my-ansible
6. Clone the repository:
   git clone https://github.com/tbotnz/cisshgo.git
7. Move to the CisshGo directory:
   cd cisshgo
8. Start the CisshGo server
   go run cissh.go *-listeners 10*

```
2020/10/01 12:57:00 Starting cissh.go ssh server on port :10000
2020/10/01 12:57:00 Starting cissh.go ssh server on port :10001
2020/10/01 12:57:00 Starting cissh.go ssh server on port :10002
2020/10/01 12:57:00 Starting cissh.go ssh server on port :10003
2020/10/01 12:57:00 Starting cissh.go ssh server on port :10004
2020/10/01 12:57:00 Starting cissh.go ssh server on port :10005
2020/10/01 12:57:00 Starting cissh.go ssh server on port :10006
2020/10/01 12:57:00 Starting cissh.go ssh server on port :10007
2020/10/01 12:57:00 Starting cissh.go ssh server on port :10008
<parts omitted>
```

   Note: Port numbers may appear in a different order.

9. Find the CisshGo server's IP address shown under docker0:
   ip addr

```
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default
qlen 1000
    link/ether 00:0c:29:67:bf:97 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.16/24 brd 10.0.2.255 scope global dynamic noprefixroute ens33
       valid_lft 12564sec preferred_lft 12564sec
```

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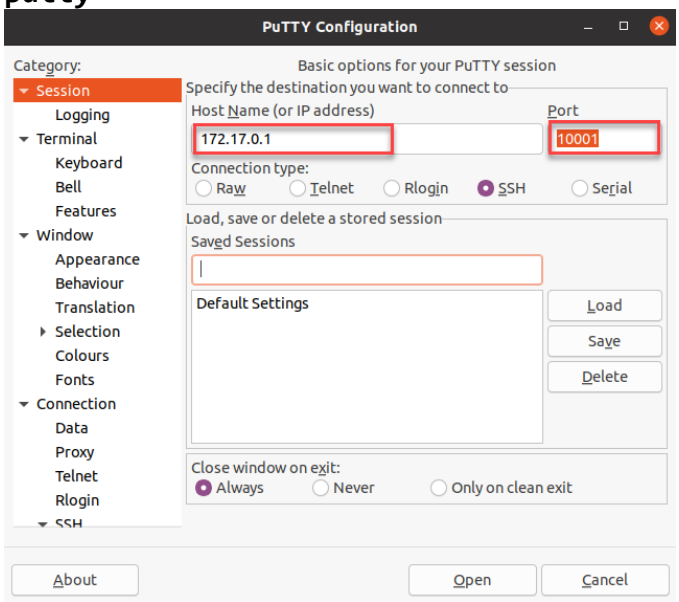
```
    inet6 fe80::65a3:f851:47ce:aac7/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
3: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group
default
    link/ether 02:42:c9:9a:82:ea brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
       valid_lft forever preferred_lft forever
```

Note: CisshGo runs in a Docker container. Look for the Docker IP address.

10. SSH into one of the open ports:
    putty

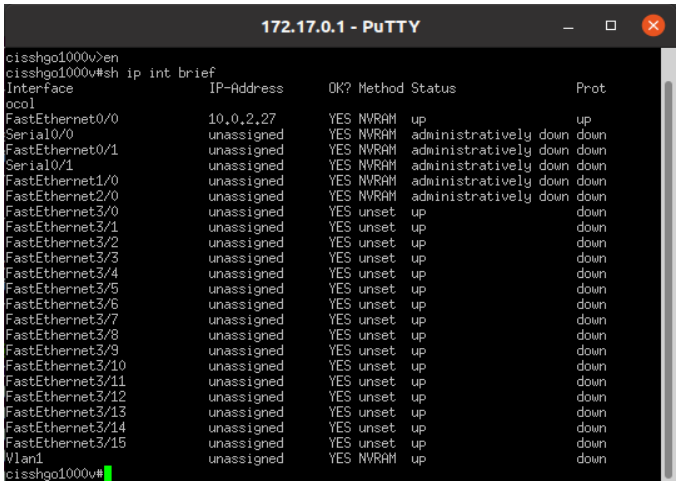


11. Username is **admin** and the password is **cisco**:

Note: The username and password can be changed in `transcript_map.yaml` file in the transcript folder.

12. You now have access to the router. By default, you can run "**`show version`**" or "**`show ip interface brief`**" or "**`show running-config`**". All devices have the same configuration.

    Note: You cannot make changes to the configuration.



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13. Add your own show commands.
    a. Navigate to the cisshgo/transcripts/cisco/csr1000v folder:

       `cd cisshgo/transcripts/cisco/csr1000v`

    b. List the folder contents to see the default files:

       `ls`

       ```
       show_ip_interface_brief.txt  show_running-config.txt  show_version.txt
       ```

    c. Login to a router and copy the contents of the show cdp neighbors output:

       ```
       Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                         S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
                         D - Remote, C - CVTA, M - Two-port Mac Relay

       Device ID        Local Intrfce     Holdtme    Capability  Platform  Port ID
       R2.netauto.com   Gig 0/1           122             R S I  1841      Fas 0/1
       S1.netauto.com   Gig 0/0           162              S I   WS-C2960- Gig 0/1

       Total cdp entries displayed : 2
       ```

    d. Create a new text file named **show_cdp_neighbors.txt** and paste the contents of the command output:

       `sudo nano show_cdp_neighbors.txt`

       Note: You can add as many commands as you want by repeating the above steps.

    e. Navigate back to the transcripts directory:
       `cd .. cd ..`

    f. Edit the transcript_map.yaml file:
       `sudo nano transcript_map.yaml`

    g. Under **command_trascripts:**, add your new files following the layout shown:
       `"show cdp neighbors": "transcripts/cisco/csr1000v/show_cdp_neighbors.txt"`

    Note: You can add as many text files as you want to simulate a real router.

For more information about cisshgo go to:
https://github.com/tbotnz/cisshgo