

Virtual PC Simulator

The VPCS can simulate up to 9 PCs. You can ping/traceroute them, or ping/traceroute the other hosts/routers from the virtual PCs when you study the Cisco routers in the Dynamips. VPCS is not the traditional PC, it is just a program running on the Linux or Windows, and only few network commands can be used in it. But VPCS can give you a big hand when you study the Cisco devices in the Dynamips. VPCS can replace the routers or VMware boxes which are used as PCs in the Dynamips network.

Try VPCS, it can save your CPU/Memory. It is very small.

Usage

OPTIONS:

```
-h          print this help then exit
-v          print version information then exit

-R          disable relay function
-i num      number of vpc instances to start (default is 9)
-p port     run as a daemon listening on the tcp port
-m num      start byte of ether address, default from 0
[-r] FILENAME load and execute script file FILENAME

-e          tap mode, using /dev/tapx by default (linux only)
[-u]       udp mode, default
```

udp mode options:

```
-s port     local udp base port, default from 20000
-c port     remote udp base port (dynamips udp port), default from 30000
-t ip       remote host IP, default 127.0.0.1
```

tap mode options:

```
-d device   device name, works only when -i is set to 1
```

hypervisor mode option:

```
-H port     run as the hypervisor listening on the tcp port
```

If no FILENAME specified, vpcs will read and execute the file named startup.vpc if it exists in the current directory.

```
VPCS[1]> ?
```

```
? Print help
! COMMAND [ARG ...] Invoke an OS COMMAND with optional ARG(s)
digit Switch to the VPCdigit. digit range 1 to 9
arp [digit|all] Shortcut for: show arp. Show arp table
clear ARG Clear IPv4/IPv6, arp/neighbor cache, command history
dhcp [OPTION] Shortcut for: ip dhcp. Get IPv4 address via DHCP
disconnect Exit the telnet session (daemon mode)
echo TEXT Display TEXT in output. See also set echo ?
help Print help
history Shortcut for: show history. List the command history
ip ARG ... [OPTION] Configure the current VPC's IP settings. See ip ?
load [FILENAME] Load the configuration/script from the file FILENAME
ping HOST [OPTION ...] Ping HOST with ICMP (default) or TCP/UDP. See ping ?
quit Quit program
relay ARG ... Configure packet relay between UDP ports. See relay ?
rlogin [ip] port Telnet to port on host at ip (relative to host PC)
save [FILENAME] Save the configuration to the file FILENAME
set ARG ... Set VPC name and other options. Try set ?
show [ARG ...] Print the information of VPCs (default). See show ?
sleep [seconds] [TEXT] Print TEXT and pause running script for seconds
trace HOST [OPTION ...] Print the path packets take to network HOST
version Shortcut for: show version
```

```
VPCS[1]> sh
```

NAME	IP/CIDR	GATEWAY	MAC	LPORT	RPORT
VPCS1	192.168.1.2/24 fe80::2050:79ff:fe66:6800/64	192.168.1.1	00:50:79:66:68:00	20000	30000
VPCS2	0.0.0.0/0 fe80::2050:79ff:fe66:6801/64 2001:1::2050:79ff:fe66:6801/64 eui-64	0.0.0.0	00:50:79:66:68:01	20001	30001
VPCS3	192.168.11.2/24 fe80::2050:79ff:fe66:6802/64 2001:11::2/64 eui-64	192.168.11.1	00:50:79:66:68:02	20002	30002
VPCS4	192.168.12.2/24 fe80::2050:79ff:fe66:6803/64 2001:12::2050:79ff:fe66:6803/64 eui-64	192.168.12.1	00:50:79:66:68:03	20003	30003
VPCS5	192.168.3.5/24 fe80::2050:79ff:fe66:6804/64	0.0.0.0	00:50:79:66:68:04	20004	30004
VPCS6	192.168.3.6/24 fe80::2050:79ff:fe66:6805/64	0.0.0.0	00:50:79:66:68:05	20005	30005
VPCS7	192.168.4.7/24 fe80::2050:79ff:fe66:6806/64	0.0.0.0	00:50:79:66:68:06	20006	30006
VPCS8	192.168.4.8/24 fe80::2050:79ff:fe66:6807/64	192.168.4.1	00:50:79:66:68:07	20007	30007
VPCS9	192.168.4.9/24 fe80::2050:79ff:fe66:6808/64	192.168.4.1	00:50:79:66:68:08	20008	30008

```
VPCS[9]> p
```

ping address [options], Ping the network host, Ctrl+C to stop the command

- 1 ICMP mode, default
- 2 UDP mode
- 3 TCP mode
- c count packet count
- l size data size
- T ttl set TTL, default 64
- p port source and destination port
- f flag tcp head flag, |C|E|U|A|P|R|S|F|
bits |7 6 5 4 3 2 1 0|
- s winsize tcp window size
- t send packet until interrupt by Ctrl+C
- i ms wait 'ms' milliseconds between sending each packet
- w ms wait 'ms' milliseconds to receive the response

```
VPCS[9]> i
```

```
ip address [gateway] CIDR, Set the PC's ip, gateway's ip and network mask.
  dhcp          Configure host/gateway address using DHCP, only ipv4
  auto          Stateless address autoconfiguration, only ipv6
                PC will try to get the ipv6 address from the router at startup
  address [gateway] CIDR set the PC's ip, gateway's ip and network mask
                Default IPv4 CIDR is 24, IPv6 is 64. In the ether mode,
                the ip of the tapx is the maximum host ID of the subnet.

                'ip 10.1.1.70 10.1.1.65 26', set the host ip to 10.1.1.70,
                the gateway ip to 10.1.1.65, the netmask to 255.255.255.192,
                the tapx ip to 10.1.1.126 in the ether mode.
```

Sample Net file

```
# VLAN lab
ghostios = True
sparsemem = True
[localhost]
  [[ROUTER sw]]
    model = 2621
    image = /ios.run/c2600-ipbase-mz.123-8.T.bin
    ram = 128
    slot1 = NM-16ESW
    f1/0 = r1 f0/1
    f1/1 = NIO_udp:30000:127.0.0.1:20000
    f1/2 = NIO_udp:30001:127.0.0.1:20001
    idlepc = 0x805785a0
  [[router r1]]
    model = 2621
    image = /ios.run/c2600-i-mz.123-6c.bin
    ram = 32
    slot1 = NM-1FE-TX
    f0/0 = NIO_udp:30002:127.0.0.1:20002
    idlepc = 0x804f4044
```