

Лабораторная работа №6. Основные сетевые утилиты

Цель

Получить практические навыки работы с утилитами для сетевого администрирования с использованием командной оболочки Bash.

Постановка задачи:

Подключиться к серверу по SSH, выполнить ряд команд сетевого администрирования.

Анализ задачи

- Исследование источников;
- Подключение к удалённому серверу по SSH с использованием Putty/Terminal;
- Использование ip, ifconfig, traceroute, dig, nslookup;
- Скачивание файлов с использованием wget;
- Отправка HTTP-запросов с использованием curl;
- Прослушка порта с использованием nc (netcat);
- Отправить HTTP-запрос с помощью wget на сервер (ip:port) собеседника, который открыл порт с помощью nc;
- Отправить HTTP-запрос с помощью curl на сервер (ip:port) собеседника, который открыл порт с помощью nc;
- Отправка сообщений с использованием telnet на сервер (ip:port) собеседника, который открыл порт с помощью nc.

Отчет

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~# ip a
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: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 4e:4a:b8:7d:33:10 brd ff:ff:ff:ff:ff:ff
    inet 178.128.211.104/20 brd 178.128.223.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet 10.15.0.5/16 brd 10.15.255.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 2400:6180:0:d0::1042:7001/64 scope global
        valid_lft forever preferred_lft forever
    inet6 fe80::4c4a:b8ff:fe7d:3310/64 scope link
        valid_lft forever preferred_lft forever
3: eth1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether da:02:02:2e:32:f7 brd ff:ff:ff:ff:ff:ff
    inet 10.104.0.2/20 brd 10.104.15.255 scope global eth1
        valid_lft forever preferred_lft forever
    inet6 fe80::d802:2ff:fe2e:32f7/64 scope link
        valid_lft forever preferred_lft forever
root@ubuntu-s-1vcpu-2gb-sgp1-01:~#
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~# wget -O wget.zip http://ftp.gnu.org/gnu/wget/wget-1.5.3.tar.gz
--2021-10-04 12:23:17-- http://ftp.gnu.org/gnu/wget/wget-1.5.3.tar.gz
Resolving ftp.gnu.org (ftp.gnu.org)... 2001:470:142:3::b, 209.51.188.20
Connecting to ftp.gnu.org (ftp.gnu.org)|2001:470:142:3::b|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 446966 (436K) [application/x-gzip]
Saving to: 'wget.zip'
```

```
wget.zip                               100%[=====] 436.49K   417KB/s   in 1.0s

2021-10-04 12:23:19 (417 KB/s) - 'wget.zip' saved [446966/446966]
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~#
root@ubuntu-s-1vcpu-2gb-sgp1-01:~#
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 178.128.211.104 netmask 255.255.240.0 broadcast 178.128.223.255
    inet6 fe80::4c4a:b8ff:fe7d:3310 prefixlen 64 scopeid 0x20<link>
    inet6 2400:6180:0:d0::1042:7001 prefixlen 64 scopeid 0x0<global>
    ether 4e:4a:b8:7d:33:10 txqueuelen 1000 (Ethernet)
    RX packets 488348 bytes 394856662 (394.8 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 449273 bytes 67961277 (67.9 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

eth1: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.104.0.2 netmask 255.255.240.0 broadcast 10.104.15.255
    inet6 fe80::d802:2ff:fe2e:32f7 prefixlen 64 scopeid 0x20<link>
    ether da:02:02:2e:32:f7 txqueuelen 1000 (Ethernet)
    RX packets 230 bytes 16176 (16.1 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 246 bytes 17356 (17.3 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 2154 bytes 227790 (227.7 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 2154 bytes 227790 (227.7 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@ubuntu-s-1vcpu-2gb-sgp1-01:~#
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~# traceroute google.com
traceroute to google.com (74.125.24.139), 30 hops max, 60 byte packets
 1 * * *
 2 10.76.69.23 (10.76.69.23) 1.165 ms 10.76.69.53 (10.76.69.53) 1.220 ms 10.76.69.5 (10.76.69.5) 1.227 ms
 3 138.197.251.168 (138.197.251.168) 1.703 ms 138.197.251.44 (138.197.251.44) 2.793 ms 2.778 ms
 4 138.197.251.175 (138.197.251.175) 1.297 ms 138.197.251.173 (138.197.251.173) 5.504 ms 138.197.251.163 (138.197.251.163) 1.382 ms
 5 138.197.245.4 (138.197.245.4) 1.581 ms 138.197.245.6 (138.197.245.6) 1.295 ms 138.197.245.2 (138.197.245.2) 1.617 ms
 6 74.125.52.142 (74.125.52.142) 1.468 ms 103.253.144.255 (103.253.144.255) 0.962 ms 74.125.52.142 (74.125.52.142) 0.745 ms
 7 * * *
 8 108.170.254.225 (108.170.254.225) 1.932 ms * 72.14.232.220 (72.14.232.220) 2.491 ms
 9 108.170.254.226 (108.170.254.226) 1.690 ms 108.170.254.227 (108.170.254.227) 1.139 ms 74.125.242.35 (74.125.242.35) 0.923 ms
10 * 66.249.94.149 (66.249.94.149) 2.765 ms 172.253.68.253 (172.253.68.253) 1.781 ms
11 72.14.233.235 (72.14.233.235) 1.694 ms * 216.239.51.46 (216.239.51.46) 1.505 ms
12 172.253.69.1 (172.253.69.1) 3.306 ms 172.253.68.245 (172.253.68.245) 1.937 ms *
13 * * *
14 * * *
15 * * *
16 * * *
17 * * *
18 * * *
19 * * *
20 * sf-in-f139.1e100.net (74.125.24.139) 1.852 ms *

root@ubuntu-s-1vcpu-2gb-sgp1-01:~#
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~# dig google.com
```

```
;; <<>> DiG 9.16.1-Ubuntu <<>> google.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 44299
;; flags: qr rd ra; QUERY: 1, ANSWER: 6, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;google.com.                IN      A

;; ANSWER SECTION:
google.com.                107     IN      A      74.125.24.138
google.com.                107     IN      A      74.125.24.113
google.com.                107     IN      A      74.125.24.102
google.com.                107     IN      A      74.125.24.101
google.com.                107     IN      A      74.125.24.100
google.com.                107     IN      A      74.125.24.139

;; Query time: 0 msec
;; SERVER: 127.0.0.53#53(127.0.0.53)
;; WHEN: Mon Oct 04 12:27:10 UTC 2021
;; MSG SIZE rcvd: 135
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~#
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~# nslookup google.com
```

```
Server:                127.0.0.53
Address:                127.0.0.53#53
```

```
Non-authoritative answer:
```

```
Name:   google.com
Address: 74.125.24.138
Name:   google.com
Address: 74.125.24.113
Name:   google.com
Address: 74.125.24.102
Name:   google.com
Address: 74.125.24.101
Name:   google.com
Address: 74.125.24.100
Name:   google.com
Address: 74.125.24.139
Name:   google.com
Address: 2404:6800:4003:c04::8b
Name:   google.com
Address: 2404:6800:4003:c04::66
Name:   google.com
Address: 2404:6800:4003:c04::64
Name:   google.com
Address: 2404:6800:4003:c04::65
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~#
```



```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~# curl google.com
<HTML><HEAD><meta http-equiv="content-type" content="text/html; charset=utf-8">
<TITLE>302 Moved</TITLE></HEAD><BODY>
<H1>302 Moved</H1>
The document has moved
<A HREF="http://www.google.com/sorry/index?continue=http://google.com/&q=EhAkAGGAAAAA0AAAAAQnABGM_n64oGIhBr1F0auAyi25T0WhkQgC4tMgFy">here
</A>
</BODY></HTML>
root@ubuntu-s-1vcpu-2gb-sgp1-01:~#
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~# nc -l 43210
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~# wget --post-data 'user=foo&password=bar' http://3.139.239.175:4321
--2021-10-04 12:38:37-- http://3.139.239.175:4321/
Connecting to 3.139.239.175:4321... connected.
HTTP request sent, awaiting response... 200 No headers, assuming HTTP/0.9
Length: unspecified
Saving to: 'index.html.2'
```

```
index.html.2 [=====>] 4.15K 712 B/s
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~# curl -X POST -d 'name=linuxize&email=linuxize@example.com' http://3.139.239.175:4321
curl: (1) Received HTTP/0.9 when not allowed
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~#
```

```
root@ubuntu-s-1vcpu-2gb-sgp1-01:~# telnet 3.139.239.175 4321
Trying 3.139.239.175...
Connected to 3.139.239.175.
Escape character is '^]'.
privet
poshel naher)
sam poshel
█
```