

00-broadcast

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This lab took me about 2 hours to do.

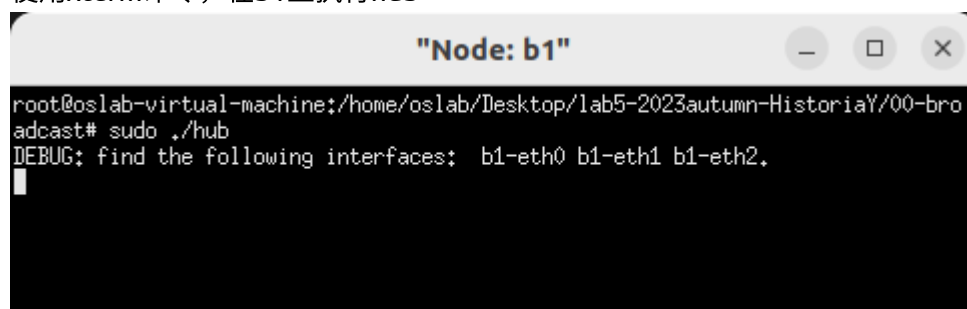
Implementation Explanation:

broadcast实现如下，利用相关已提供接口实现广播

```
void broadcast_packet(iface_info_t *iface, const char *packet, int len)
{
    iface_info_t *tx_iface = NULL;
    // 遍历所有的interface
    list_for_each_entry(tx_iface, &instance->iface_list, list)
    {
        if (tx_iface->index != iface->index)
            iface_send_packet(tx_iface, packet, len);
    }
}
```

Screenshots:

使用xterm命令，在b1上执行hub



使用ping命令，测试每对Host之间连通性

```
oslab@oslab-virtual-machine:~/Desktop/lab5-2023autumn-HistoriaY/00-broadcast$ sudo ./three_nodes_bw.py
mininet> xterm b1
mininet> h1 ping h2 -c 2
PING 10.0.0.2 (10.0.0.2) 56(84) bytes of data.
64 bytes from 10.0.0.2: icmp_seq=1 ttl=64 time=0.216 ms
64 bytes from 10.0.0.2: icmp_seq=2 ttl=64 time=0.258 ms

--- 10.0.0.2 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1025ms
rtt min/avg/max/mdev = 0.216/0.237/0.258/0.021 ms
mininet> h1 ping h3 -c 2
PING 10.0.0.3 (10.0.0.3) 56(84) bytes of data.
64 bytes from 10.0.0.3: icmp_seq=1 ttl=64 time=0.259 ms
64 bytes from 10.0.0.3: icmp_seq=2 ttl=64 time=0.105 ms

--- 10.0.0.3 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1020ms
rtt min/avg/max/mdev = 0.105/0.182/0.259/0.077 ms
mininet> h2 ping h1 -c 2
PING 10.0.0.1 (10.0.0.1) 56(84) bytes of data.
64 bytes from 10.0.0.1: icmp_seq=1 ttl=64 time=0.178 ms
64 bytes from 10.0.0.1: icmp_seq=2 ttl=64 time=0.098 ms

--- 10.0.0.1 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1030ms
rtt min/avg/max/mdev = 0.098/0.138/0.178/0.040 ms
mininet> h2 ping h3 -c 2
PING 10.0.0.3 (10.0.0.3) 56(84) bytes of data.
64 bytes from 10.0.0.3: icmp_seq=1 ttl=64 time=0.213 ms
64 bytes from 10.0.0.3: icmp_seq=2 ttl=64 time=0.111 ms

--- 10.0.0.3 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1018ms
rtt min/avg/max/mdev = 0.111/0.162/0.213/0.051 ms
mininet> h3 ping h1 -c 2
PING 10.0.0.1 (10.0.0.1) 56(84) bytes of data.
64 bytes from 10.0.0.1: icmp_seq=1 ttl=64 time=0.175 ms
64 bytes from 10.0.0.1: icmp_seq=2 ttl=64 time=0.104 ms

--- 10.0.0.1 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1025ms
rtt min/avg/max/mdev = 0.104/0.139/0.175/0.035 ms
mininet> h3 ping h2 -c 2
PING 10.0.0.2 (10.0.0.2) 56(84) bytes of data.
64 bytes from 10.0.0.2: icmp_seq=1 ttl=64 time=0.175 ms
64 bytes from 10.0.0.2: icmp_seq=2 ttl=64 time=0.181 ms

--- 10.0.0.2 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1029ms
rtt min/avg/max/mdev = 0.175/0.178/0.181/0.003 ms
mininet> 
```

Remaining Bugs:

Host间全部连通，无遗留bug