

## Lab1:Networking and Interface configuration

COMMUNITY EDITION

**WARNING:**  
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[Change the password as soon as possible.](#)

Interface Assignments

Interface Assignments Interface Groups Wireless VLANs QinQs PPPs GREs GIFs Bridges

LAGGs

Interface	Network port
WAN	em0 (08:00:27:8b:b0:b3)
LAN	em1 (08:00:27:fe:ef:a6) <span>Delete</span>

Save

Interfaces that are configured as members of a lagg(4) interface will not be shown.

Wireless interfaces must be created on the Wireless tab before they can be assigned.

MAC Address

xx:xx:xx:xx:xx:xx

This field can be used to modify ("spoof") the MAC address of this interface.  
Enter a MAC address in the following format: xx:xx:xx:xx:xx:xx or leave blank.

MTU

1401

If this field is blank, the adapter's default MTU will be used. This is typically 1500 bytes but can vary in some circumstances.

MSS

If a value is entered in this field, then MSS clamping for TCP connections to the value entered above minus 40 for IPv4 (TCP/IPv4 header size) and minus 60 for IPv6 (TCP/IPv6 header size) will be in effect.

Speed and Duplex

Default (no preference, typically autoselect)

Explicitly set speed and duplex mode for this interface.  
WARNING: MUST be set to autoselect (automatically negotiate speed) unless the port this interface connects to has its speed and duplex forced.

Static IPv4 Configuration

IPv4 Address

192.168.58.5 / 32

IPv4 Upstream gateway

None

+ Add a new gateway

```
v6/DHCP6: fd17:625c:f037:2:a00:27ff:fe8b:b0b3/64
LAN1 (lan) -> em1 -> v4: 192.168.58.5/24
```

- |                                     |                                  |
|-------------------------------------|----------------------------------|
| 0) Logout / Disconnect SSH          | 9) pfTop                         |
| 1) Assign Interfaces                | 10) Filter Logs                  |
| 2) Set interface(s) IP address      | 11) Restart GUI                  |
| 3) Reset admin account and password | 12) PHP shell + pfSense tools    |
| 4) Reset to factory defaults        | 13) Update from console          |
| 5) Reboot system                    | 14) Disable Secure Shell (sshd)  |
| 6) Halt system                      | 15) Restore recent configuration |
| 7) Ping host                        | 16) Restart PHP-FPM              |
| 8) Shell                            |                                  |

Enter an option: 8

```
[2.8.1-RELEASE][root@pfSense.home.arpal/root]: ping 8.8.8.8
```

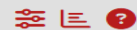
```
PING 8.8.8.8 (8.8.8.8): 56 data bytes
64 bytes from 8.8.8.8: icmp_seq=0 ttl=255 time=54.631 ms
64 bytes from 8.8.8.8: icmp_seq=1 ttl=255 time=33.761 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=255 time=40.890 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=255 time=319.433 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=255 time=524.245 ms
64 bytes from 8.8.8.8: icmp_seq=5 ttl=255 time=106.684 ms
64 bytes from 8.8.8.8: icmp_seq=6 ttl=255 time=35.776 ms
```



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WAN (em0)



### General Configuration

**Enable**

☐ Enable interface

**Description**

WAN

Enter a description (name) for the interface here.

**IPv4 Configuration Type**

DHCP

**IPv6 Configuration Type**

DHCP6

**MAC Address**

xx:xx:xx:xx:xx:xx

This field can be used to modify ("spoof") the MAC address of this interface.

192.168.58.5 C address in the following format: xx:xx:xx:xx:xx:xx or leave blank.



```
[-I interface] [-i wait] [-k addrtype] [-l preload] [-m hoplimit]
[-p pattern] [-P policy] [-S sourceaddr] [-s packetsize] [-t timeout]
]
[-W waittime] [-z tclass] [IPv6-hops ...] IPv6-host
[2.8.1-RELEASE][root@pfSense.home.arpal/root: ping -M D0 1300 -s 8.8.8.8
ping: invalid message: 'D'
[2.8.1-RELEASE][root@pfSense.home.arpal/root: ping -m do 1320 8.8.8.8
ping: invalid TTL: 'do'
[2.8.1-RELEASE][root@pfSense.home.arpal/root: ping -s 1320 8.8.8.8
PING 8.8.8.8 (8.8.8.8): 1320 data bytes
1328 bytes from 8.8.8.8: icmp_seq=0 ttl=255 time=123.039 ms
1328 bytes from 8.8.8.8: icmp_seq=1 ttl=255 time=66.128 ms
1328 bytes from 8.8.8.8: icmp_seq=2 ttl=255 time=70.618 ms
1328 bytes from 8.8.8.8: icmp_seq=3 ttl=255 time=43.398 ms
1328 bytes from 8.8.8.8: icmp_seq=4 ttl=255 time=50.945 ms
1328 bytes from 8.8.8.8: icmp_seq=5 ttl=255 time=63.465 ms
1328 bytes from 8.8.8.8: icmp_seq=6 ttl=255 time=57.505 ms
1328 bytes from 8.8.8.8: icmp_seq=7 ttl=255 time=31.313 ms
1328 bytes from 8.8.8.8: icmp_seq=8 ttl=255 time=77.630 ms
1328 bytes from 8.8.8.8: icmp_seq=9 ttl=255 time=47.283 ms
1328 bytes from 8.8.8.8: icmp_seq=10 ttl=255 time=45.136 ms
1328 bytes from 8.8.8.8: icmp_seq=11 ttl=255 time=34.354 ms
1328 bytes from 8.8.8.8: icmp_seq=12 ttl=255 time=48.751 ms
1328 bytes from 8.8.8.8: icmp_seq=13 ttl=255 time=37.282 ms
```

Lab2 :firewall rule logic and policy

Change the password as soon as possible.

LAN1

The firewall rule configuration has been changed.  
The changes must be applied for them to take effect.

✓ Apply Changes

Floating

WAN

LAN1

Rules (Drag to Change Order)

<input type="checkbox"/>	States	Protocol	Source	Port	Destination	Port	Gateway	Queue	Schedule	Descr
<input checked="" type="checkbox"/>	✓ 13/88 KiB	*	*	*	LAN1 Address	80 22	*	*		Anti-I
<input type="checkbox"/>	✓ 0/0 B	IPv4 ICMP any	LAN1 subnets	*	*	*	*	none		
<input type="checkbox"/>	✓ 0/72 B	IPv4 *	LAN1 subnets	*	*	*	*	none		Defau
<input type="checkbox"/>	✓ 0/0 B	IPv6 *	LAN1 subnets	*	*	*	*	none		Defau

↑ Add

↓ Add

🗑 Delete

🔄 Toggle

📄 Copy

💾 Save

+ Sep

i

## Block

Choose what to do with packets that match the criteria specified below.

Hint: the difference between block and reject is that with reject, a packet (TCP RST or ICMP port unreachable for UDP) is returned to the sender, whereas with block the packet is dropped silently. In either case, the original packet is discarded.

### Disabled

☐ Disable this rule

Set this option to disable this rule without removing it from the list.

### Interface

LAN1

Choose the interface from which packets must come to match this rule.

### Address Family

IPv4

Select the Internet Protocol version this rule applies to.

### Protocol

ICMP

Choose which IP protocol this rule should match.

### ICMP Subtypes

Source quench  
Timestamp reply  
Timestamp  
Time exceeded

For ICMP rules on IPv4, one or more of these ICMP subtypes may be specified.

### Source

#### Source

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LAN1

The firewall rule configuration has been changed.  
The changes must be applied for them to take effect.

✓ Apply Changes

Floating WAN LAN1

### Rules (Drag to Change Order)

<input type="checkbox"/>	States	Protocol	Source	Port	Destination	Port	Gateway	Queue	Schedule	Des
<input checked="" type="checkbox"/>	✓ 6/234 KiB	*	*	*	LAN1 Address	80 22	*	*		An
<input type="checkbox"/>	✓ 0/0 B	IPv4 TCP	192.168.58.5/24	*	*	*	*	none		
<input type="checkbox"/>	✗ 0/0 B	IPv4 ICMP timereq	LAN1 subnets	*	*	*	*	none		
<input type="checkbox"/>	✓ 1/805 B	IPv4 *	LAN1 subnets	*	*	*	*	none		De
<input type="checkbox"/>	✓ 0/0 B	IPv6 *	LAN1 subnets	*	*	*	*	none		De

↑ Add

↓ Add

🗑 Delete

🔄 Toggle


📄 Copy


💾 Save

+ Separator


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### Lab 3: Nat and port forwarding

COMMUNITY EDITION





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Port Forward 



The NAT configuration has been changed.  
The changes must be applied for them to take effect. 


Port Forward 1:1 Outbound NPt

**Rules**

<input type="checkbox"/>	Interface	Protocol	Source Address	Source Ports	Dest. Address	Dest. Ports	NAT IP
<input type="checkbox"/>	  WAN	ANY	*	*	WAN subnets	*	LAN1 address

 Add  Add  Delete  Toggle  Save  Separator

**Legend**  
 Pass  
 Linked rule



Hybrid Outbound NAT rule generation.  
(Automatic Outbound NAT + rules below)




Manual Outbound NAT rule generation.  
(AON - Advanced Outbound NAT)



Disable Outbound NAT rule generation.  
(No Outbound NAT rules)

 Save

Mappings

<input type="checkbox"/>	Interface	Source	Source Port	Destination	Destination Port	NAT Address	NAT Port	Static I
<input type="checkbox"/>	✕ WAN	LAN1 subnets	8080	*	*	WAN address	*	

 Add

 Add

 Delete

 Toggle

 Save

Automatic Rules

	Interface	Source	Source Port	Destination	Destination Port	NAT Address
✓	WAN	127.0.0.0/8 ::1/128	192.168.58.0/24	*	*	500 WAN address
✓	WAN	127.0.0.0/8 ::1/128	192.168.58.0/24	*	*	* WAN address



Comma separated list of integer rule IDs

 Filter

States

Interface	Protocol	Source (Original Source) -> Destination (Original Destination)
lo0	udp	fe80::a00:27ff:fe8b:b0b3[546] -> ff02::1:2[547]
WAN	udp	fe80::a00:27ff:fe8b:b0b3[546] -> ff02::1:2[547]
LAN1	tcp	192.168.58.1:50528 -> 192.168.58.5:80
lo0	tcp	127.0.0.1:23202 -> 127.0.0.1:953
lo0	tcp	127.0.0.1:23202 -> 127.0.0.1:953
WAN	ipv6-icmp	fe80::a00:27ff:fe8b:b0b3[64785] -> fe80::2[128]
WAN	icmp	10.0.2.15:65266 -> 10.0.2.2:8
lo0	tcp	127.0.0.1:12192 -> 127.0.0.1:953
lo0	tcp	127.0.0.1:12192 -> 127.0.0.1:953
lo0	udp	fe80::a00:27ff:fefe:efa6[546] -> ff02::1:2[547]

