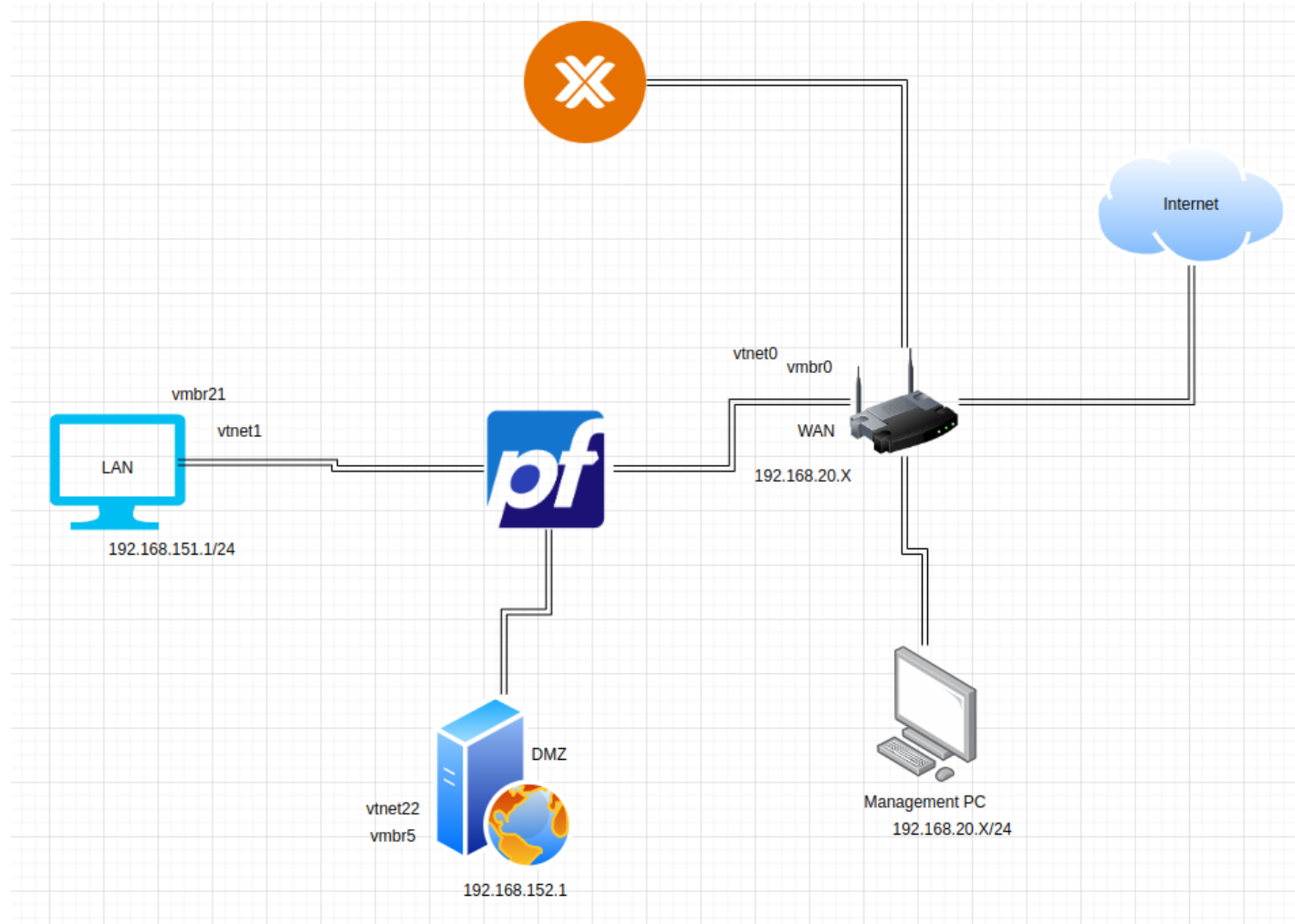




# Sommaire

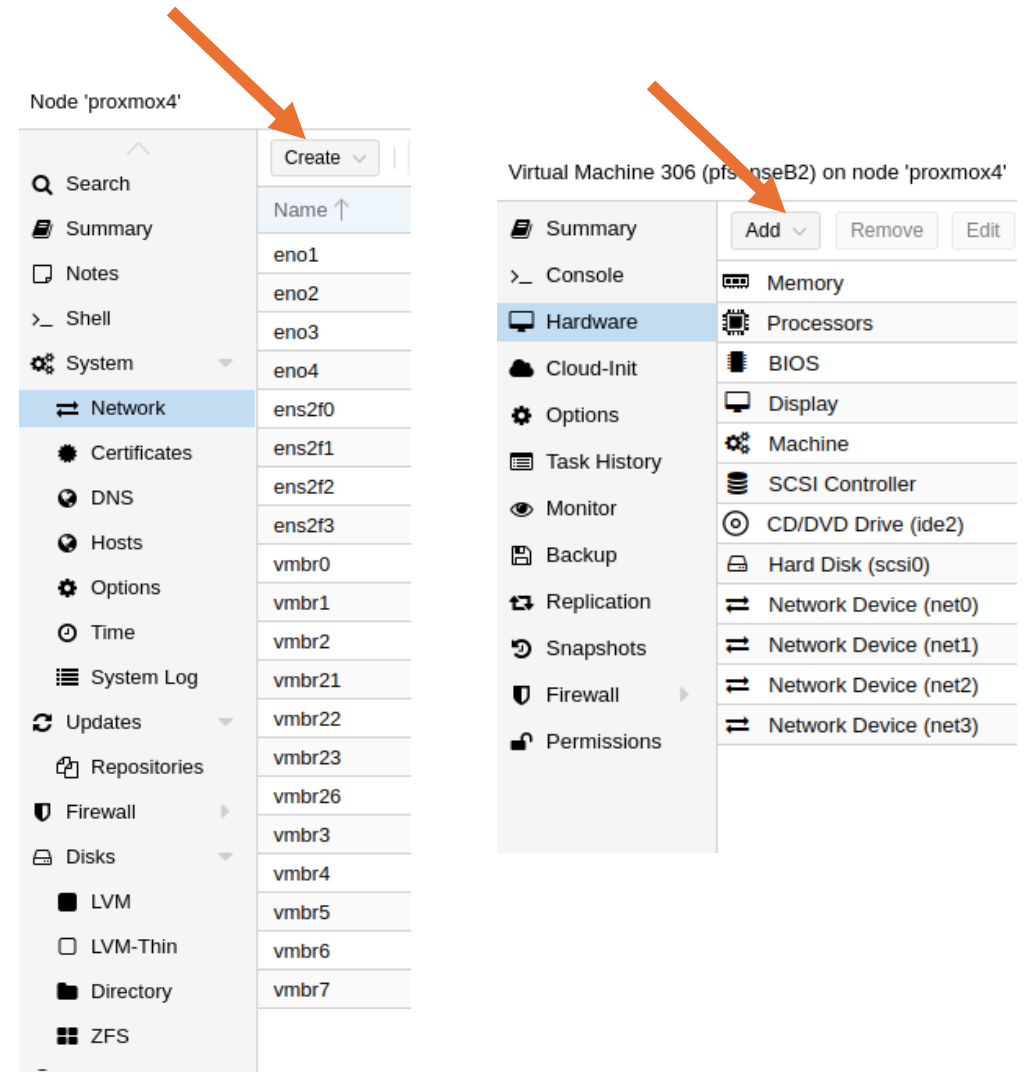
- Infra réseau à réaliser (page 3)
- Installation PFSense (page 4)
- Installation serveur LAMP (page 5)
- Ajout de la DMZ au PFSense (page 6 à 7)
- Réglages des règles du pare feu (page 8 à 11)

# Infrastructure réseau



# Installation PFSense

- Sur Proxmox installez une VM avec l'ISO de PFSense,
- Dans l'espace Proxmox ajoutez 2 cartes réseaux (Linux Bridge : une pour le LAN et une pour la DMZ,
- Puis ajoutez les à votre VM (Network Device),
- Allez sur : machine cliente > navigateur > IP du PFSense ; afin de configurer votre PFSense.



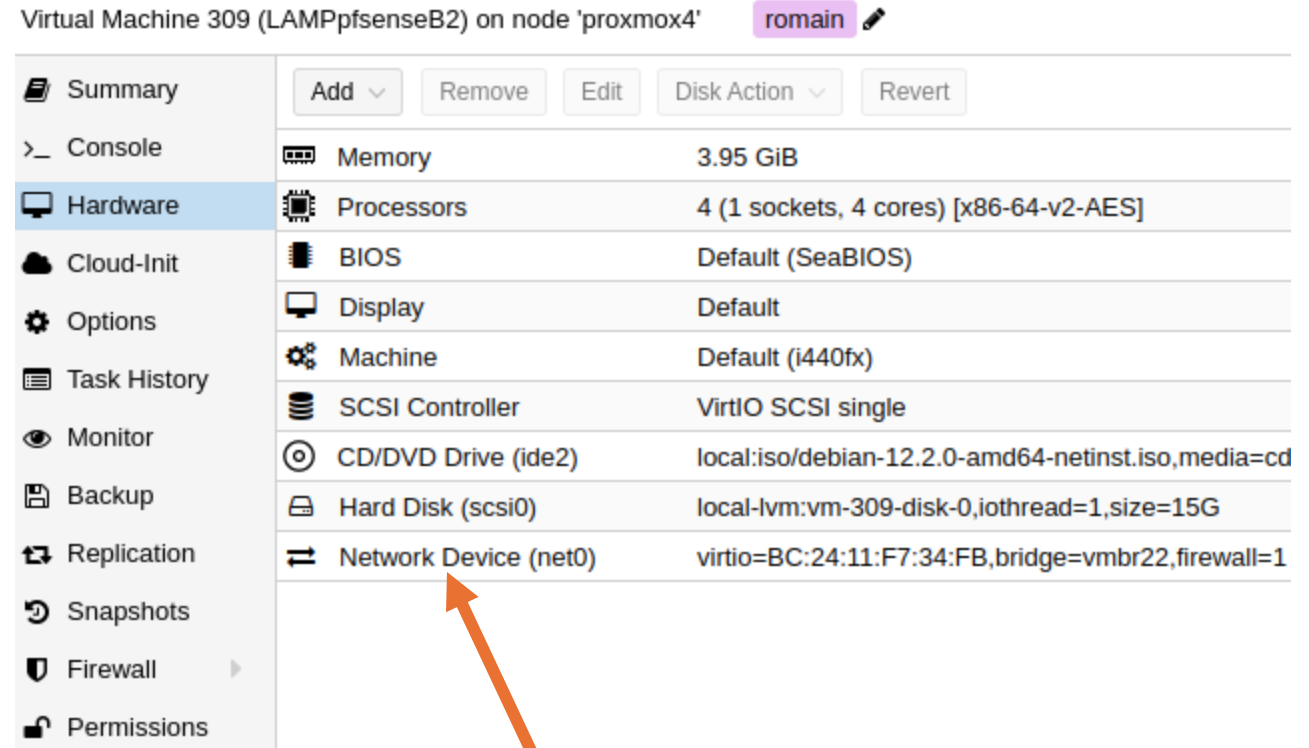
The image shows two screenshots from the Proxmox VE interface. The left screenshot shows the 'Node proxmox4' configuration page. An orange arrow points to the 'Create' button in the top right corner. The left sidebar shows the 'Network' section selected, with a list of network interfaces including 'eno1' through 'eno4', 'ens2f0' through 'ens2f3', and 'vmbr0' through 'vmbr7'. The right screenshot shows the configuration for 'Virtual Machine 306 (pfsenseB2) on node proxmox4'. An orange arrow points to the 'Add' button in the top right corner. The left sidebar shows the 'Hardware' section selected, and the right sidebar shows a list of hardware components including 'Memory', 'Processors', 'BIOS', 'Display', 'Machine', 'SCSI Controller', 'CD/DVD Drive (ide2)', 'Hard Disk (scsi0)', and three 'Network Device' entries (net0, net1, net2, net3).

# Installation du serveur LAMP

- Un serveur LAMP est demandé pour la DMZ,
  - Installez un DEBIAN 12 puis Apache2, MariaDB et PHP,
  - Votre serveur LAMP est prêt,
  - Changez sa carte réseau pour attribuer la même que dans PFSense.
- <https://www.it-connect.fr/installer-un-serveur-lamp-linux-apache-mariadb-php-sous-debian-11/>

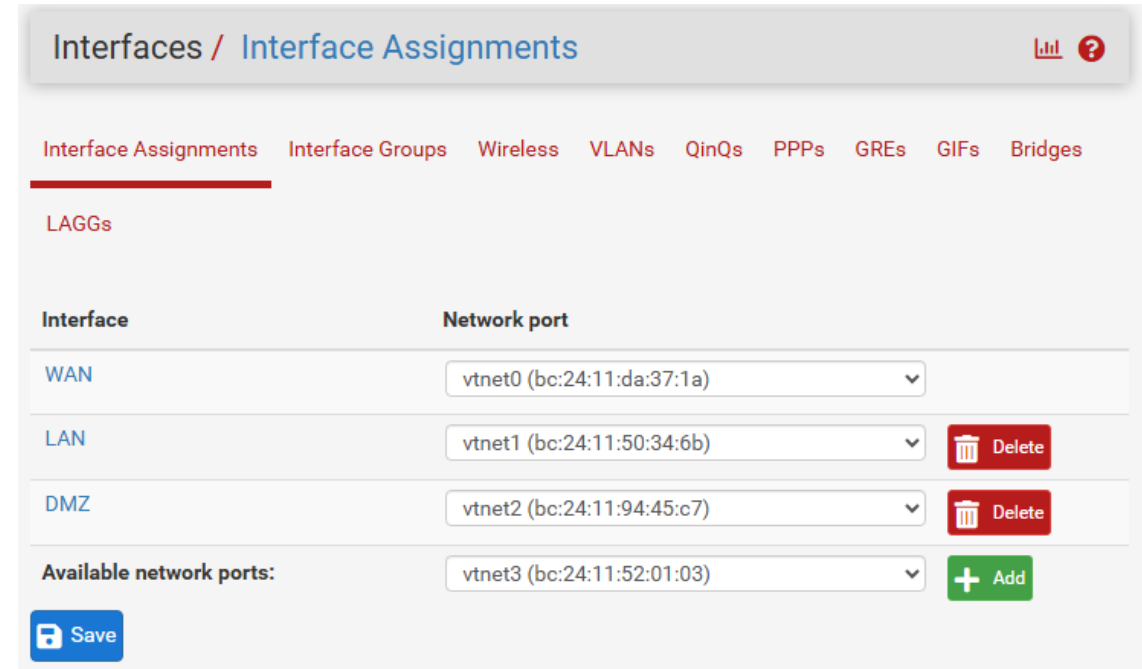
Virtual Machine 309 (LAMPpfsenseB2) on node 'proxmox4' romain

Add		Remove	Edit	Disk Action	Revert
Summary	Memory	3.95 GiB			
Console	Processors	4 (1 sockets, 4 cores) [x86-64-v2-AES]			
Hardware	BIOS	Default (SeaBIOS)			
Cloud-Init	Display	Default			
Options	Machine	Default (i440fx)			
Task History	SCSI Controller	VirtIO SCSI single			
Monitor	CD/DVD Drive (ide2)	local:iso/debian-12.2.0-amd64-netinst.iso,media=cd			
Backup	Hard Disk (scsi0)	local-lvm:vm-309-disk-0,iosthread=1,size=15G			
Replication	Network Device (net0)	virtio=BC:24:11:F7:34:FB,bridge=vmbr22,firewall=1			
Snapshots					
Firewall					
Permissions					



# Ajout de la DMZ au PFSense

- Lancez une machine cliente (Windows 10), qui sera votre LAN, connectée à votre PFSense afin de le configurer depuis cette dernière,
- Allez dans interface > assignments > OPT1,
- Modifier le nom en DMZ puis attribuez une nouvelle adresse IP;
- Puis validez les modifications.



Interface	Network port	
WAN	vtnet0 (bc:24:11:da:37:1a)	
LAN	vtnet1 (bc:24:11:50:34:6b)	Delete
DMZ	vtnet2 (bc:24:11:94:45:c7)	Delete
Available network ports:	vtnet3 (bc:24:11:52:01:03)	+ Add

# Affichages après ajout DMZ

Virtual Machine 306 (pfsenseB2) on node 'proxmox4' romain

Start Shutdown

```
(Local Database)
FreeBSD/amd64 (pfSense.pfsense.local) (ttyv0)
KUM Guest - Netgate Device ID: 4b23752a7eab109a882d
*** Welcome to pfSense 2.5.2-RELEASE (amd64) on pfSense ***

WAN (wan)      -> vtnet0      -> v4/DHCP4: 192.168.20.56/24
LAN (lan)      -> vtnet1      -> v4: 192.168.151.1/24
DMZ (opt1)     -> vtnet2      -> v4: 192.168.152.1/24

0) Logout (SSH only)
1) Assign Interfaces
2) Set interface(s) IP address
3) Reset webConfigurator password
4) Reset to factory defaults
5) Reboot system

9) pfTop
10) Filter Logs
11) Restart webConfigurator
12) PHP shell + pfSense tools
13) Update from console
14) Enable Secure Shell (sshd)
15) Restore recent configuration
16) Restart PHP-FPM
```

Interfaces			
	WAN	↑	10Gbase-T <full-duplex> 192.168.20.56
	LAN	↑	10Gbase-T <full-duplex> 192.168.151.1
	DMZ	↑	10Gbase-T <full-duplex> 192.168.152.1

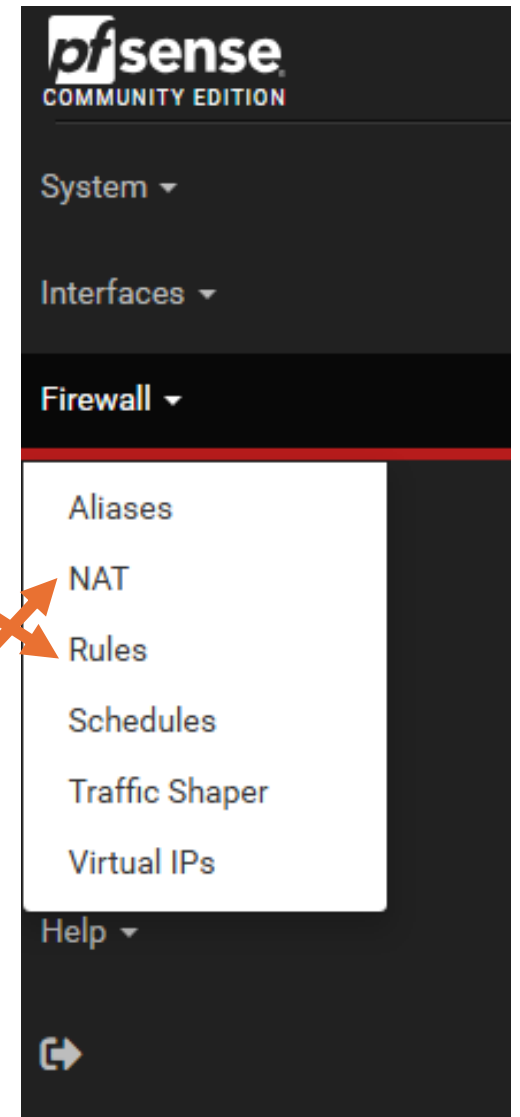
# Réglages des règles du pare feu

Ajoutez les règles dans Firewall > Rules > [sélectionnez le réseau]

- Première règle : autoriser la DMZ à envoyer des requêtes,
- Deuxième règle : autoriser le LAN à accéder au serveur LAMP (déjà autorisé de base normalement).






Ajoutez la règle dans Firewall > NAT > Port Forward :




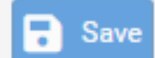

- Sert à rediriger les ports 80 (HTTP) et 443 (HTTPS) vers l'IP du serveur dans la DMZ.





# Première règle + test

Rules (Drag to Change Order)											
<input type="checkbox"/>	States	Protocol	Source	Port	Destination	Port	Gateway	Queue	Schedule	Description	Actions
<input type="checkbox"/>	✓	0 / 0 B	IPv4 *	DMZ	*	*	*	*	none	Allow DMZ net to Any	    

 Add  Add  Delete  Save  Separator

```
root@debian:~# ping www.google.fr
PING www.google.fr (142.250.179.67) 56(84) bytes of data:
64 bytes from par21s19-in-f3.1e100.net (142.250.179.67): icmp_seq=1 ttl=115 time=11.4 ms
64 bytes from par21s19-in-f3.1e100.net (142.250.179.67): icmp_seq=2 ttl=115 time=11.3 ms
64 bytes from par21s19-in-f3.1e100.net (142.250.179.67): icmp_seq=3 ttl=115 time=12.4 ms
64 bytes from par21s19-in-f3.1e100.net (142.250.179.67): icmp_seq=4 ttl=115 time=11.7 ms
^X64 bytes from par21s19-in-f3.1e100.net (142.250.179.67): icmp_seq=5 ttl=115 time=11.1 ms
64 bytes from par21s19-in-f3.1e100.net (142.250.179.67): icmp_seq=6 ttl=115 time=11.9 ms
64 bytes from par21s19-in-f3.1e100.net (142.250.179.67): icmp_seq=7 ttl=115 time=9.43 ms
^C
--- www.google.fr ping statistics ---
7 packets transmitted, 7 received, 0% packet loss, time 8391ms
rtt min/avg/max/mdev = 9.426/11.327/12.443/0.882 ms
```

# Deuxième règle + test

Firewall / Rules / WAN

Floating **WAN** LAN DMZ

Rules (Drag to Change Order)

<input type="checkbox"/>	States	Protocol	Source	Port	Destination	Port	Gateway	Queue	Schedule	Description
<input type="checkbox"/>	0 /2.01 MiB	*	Reserved Not assigned by IANA	*	*	*	*	*		Block bogon networks
<input type="checkbox"/>	0 / 0 B	IPv4 TCP	*	*	192.168.152.100	80 (HTTP)	*	none		

QEMU (win10clientPFSENSEb2) - noVNC - Google Chrome

Non sécurisé <https://192.168.20.204:8006/?console=kvm&novnc=1&vmid=308&vmname=win10clientPFSENSEb2&node=proxmox4&resize=off&>

pfSense.pfsense.local - Firewall: R x Apache2 Debian Default Page: It works!

Non sécurisé | 192.168.152.100

## Apache2 Debian Default Page

**It works!**

The default welcome page used to test the correct operation of the Apache2 server after installation on Debian systems. If you can read this page, it means that the Apache HTTP server at this site is working properly. You should **replace this file** (located at `/usr/share/doc/apache2/README.Debian.gz`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means the site is currently unavailable due to maintenance. If the problem persists, please contact the site administrator.

### Configuration Overview

Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Debian tools. The configuration system is **fully documented in `/usr/share/doc/apache2/README.Debian.gz`**. Refer to this for the full configuration. Documentation for the web server itself can be found by accessing the **manual** if the doc package was installed on this server.

The configuration layout for an Apache2 web server installation on Debian systems is as follows:

# Dernière règle + test

Firewall / NAT / Port Forward

The changes have been applied successfully. The firewall rules are now reloading in the background. Monitor the filter reload progress.

Port Forward 1:1 Outbound NPT

Rules									
	Interface	Protocol	Source Address	Source Ports	Dest. Address	Dest. Ports	NAT IP	NAT Ports	Description
<input checked="" type="checkbox"/>	WAN	TCP	*	*	WAN address	80 (HTTP)	192.168.152.100	80 (HTTP)	



Firewall / Rules / WAN

Floating WAN LAN DMZ

Rules (Drag to Change Order)										
	States	Protocol	Source	Port	Destination	Port	Gateway	Queue	Schedule	Description
<input type="checkbox"/>	0 /2.01 MiB	*	Reserved Not assigned by IANA	*	*	*	*	*	*	Block bogon networks
<input type="checkbox"/>	0/0 B	IPv4 TCP	*	*	192.168.152.100	80 (HTTP)	*	none		
<input type="checkbox"/>	0/0 B	IPv4 TCP	*	*	192.168.152.100	80 (HTTP)	*	none		NAT

192.168.20.56

**Apache2 Debian Default Page**

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Debian systems. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

**Configuration Overview**

Debian's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Debian tools. The configuration system is **fully documented in `/usr/share/doc/apache2/README.Debian.gz`**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the `apache2-doc` package was installed on this server.