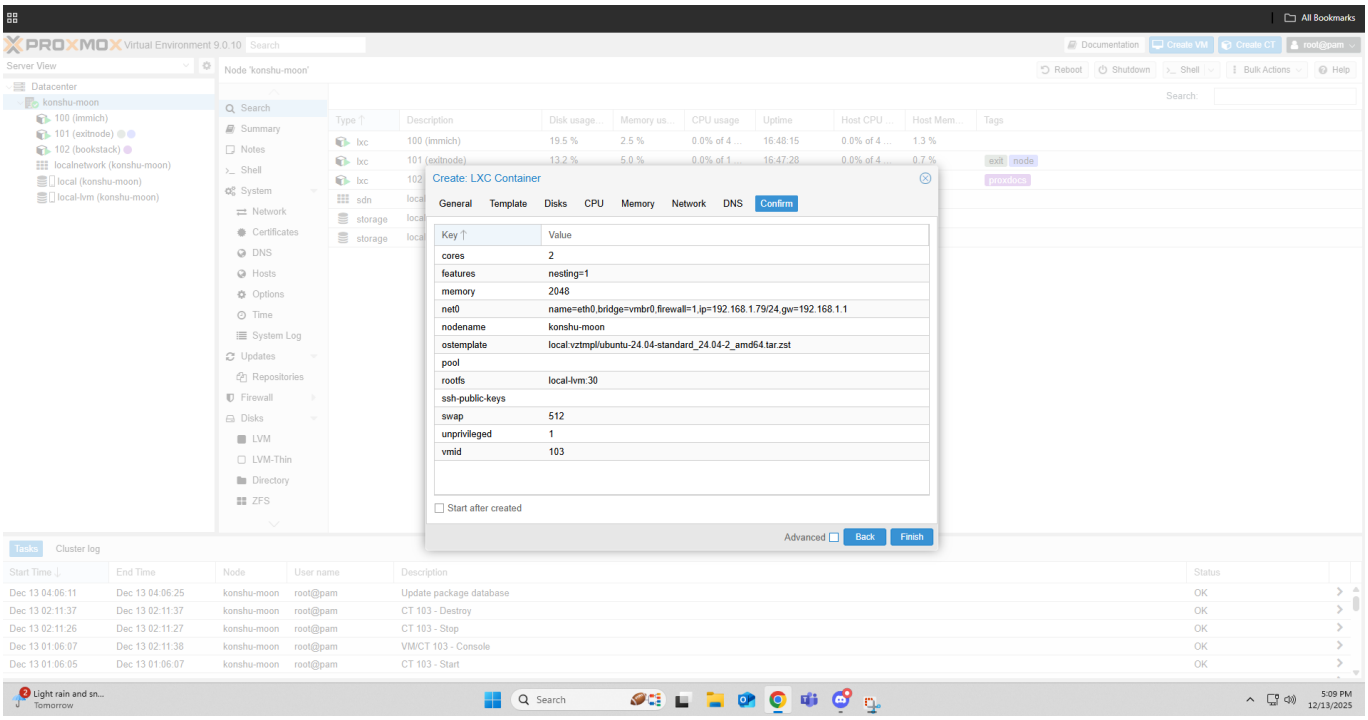
Server Hardware, LXC, Firewall, and Nginx Documentation

What are the server hardware specifications (LXC settings)?

My web server is running inside an **LXC container on Proxmox**, which uses shared kernel virtualization. Here are the specs:

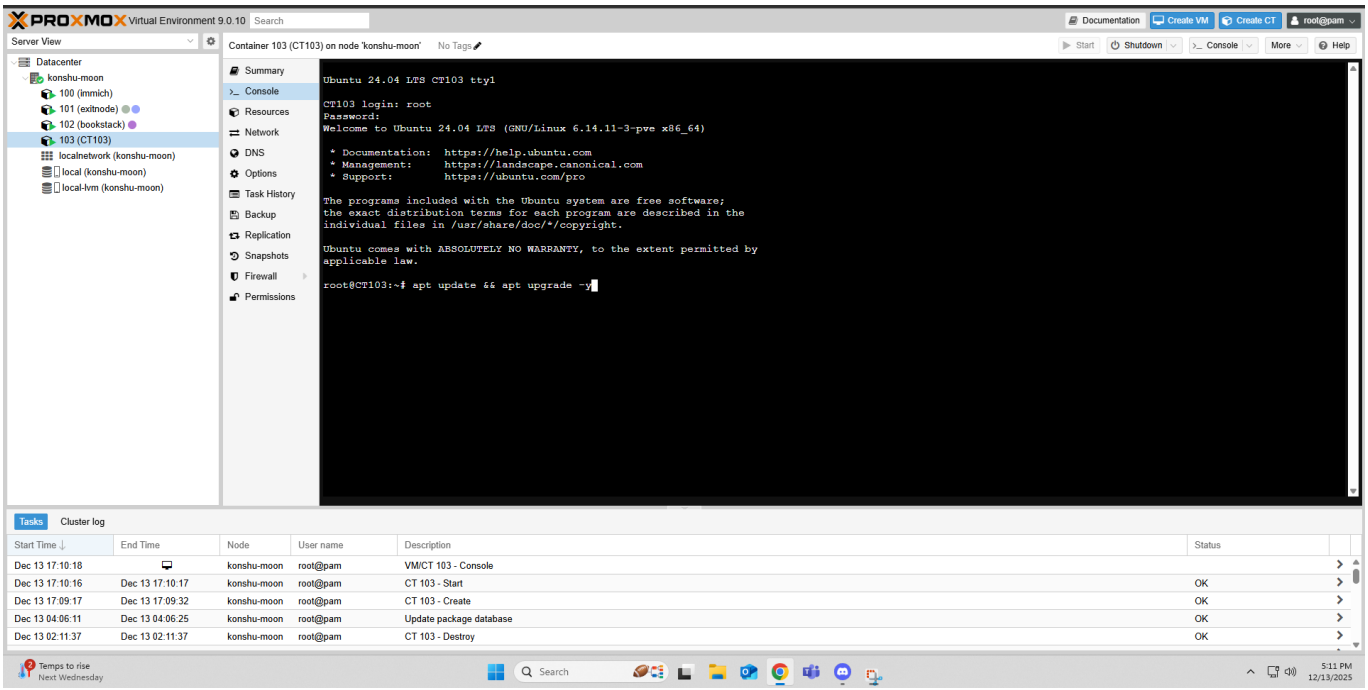


- **CPU:** 2 vCPU (enough for a static or low-traffic site)
- **Memory:** 2 GB RAM
- **Storage:** 30 GB disk
- **Network:** Bridged network (`vmbr0`)
- **Operating System:** Ubuntu 24.04 LTS

Because it is an LXC container, it is lightweight, boots fast, and uses fewer resources than a full virtual machine.

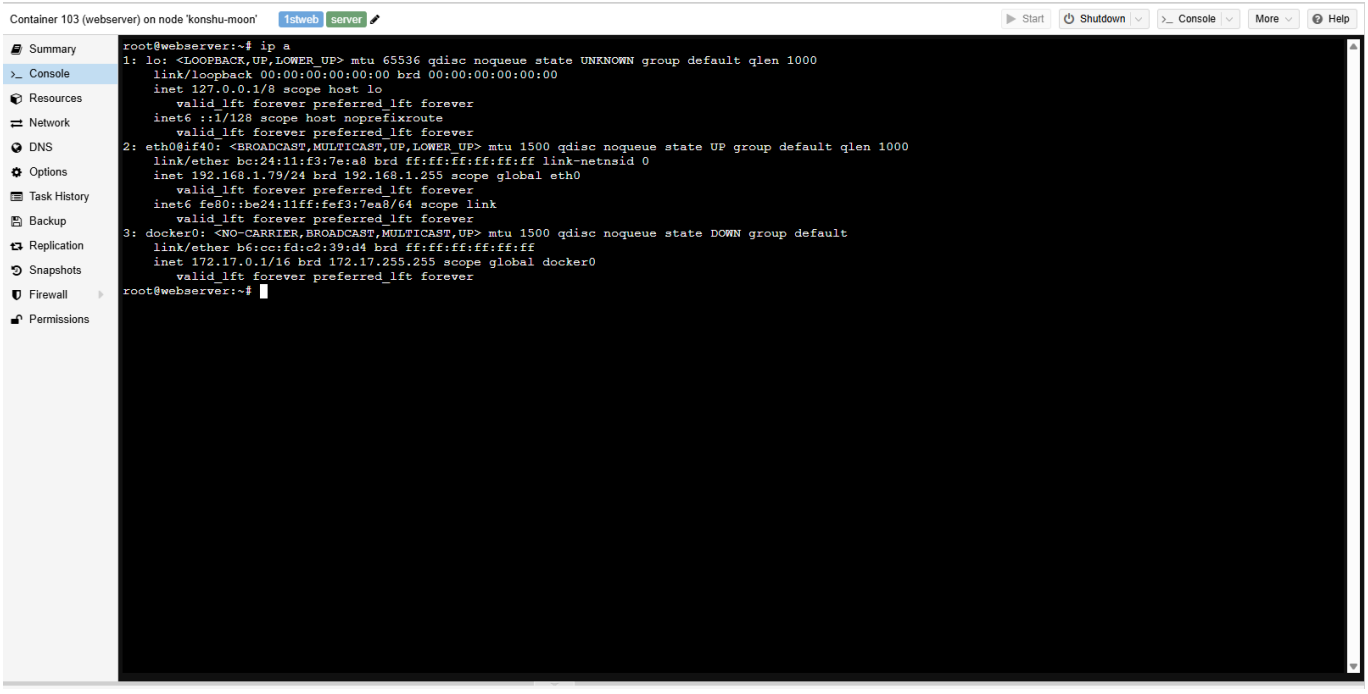
What is the lxc login screen?

Here we have the login screen for the container that holds our server, it will look different from what you have as I am running the instance on proxmox.



What is the IP address of your LXC server?

Inside the LXC container, you find the IP address using the command: ip a This command lists all network interfaces and shows the IPv4 address assigned to the container. In this case, the LXC server is assigned a private LAN IP address (for example: `192.168.1.79/24`).

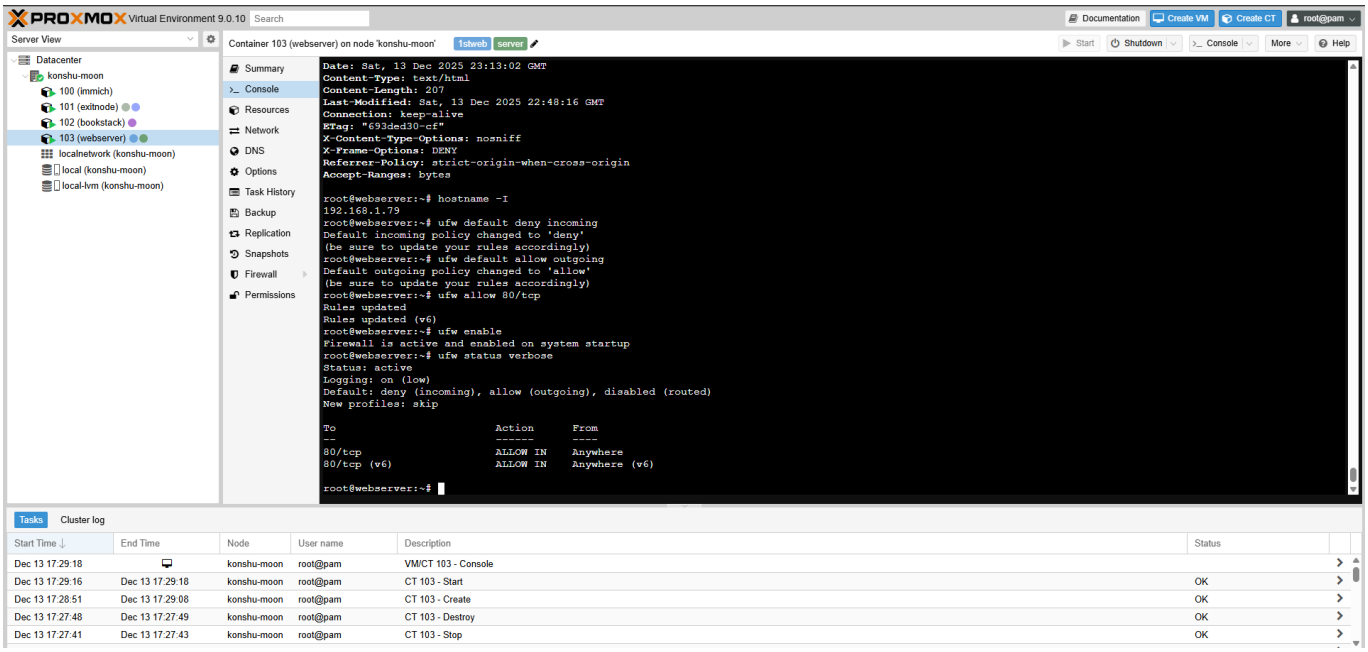


How do you work with the Firewall in Proxmox and the LXC?

Firewall management happens at **two layers**:

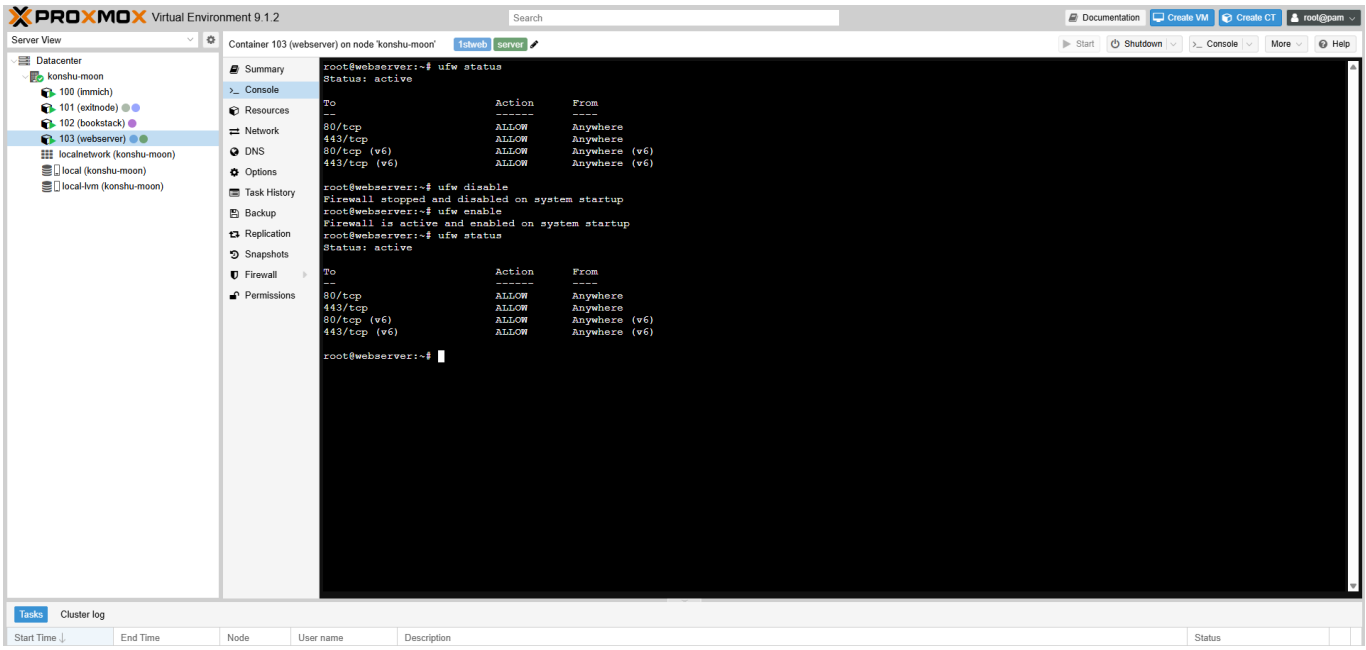
- Proxmox firewall (host / datacenter / node / container level)
- Firewall inside the LXC container (UFW)

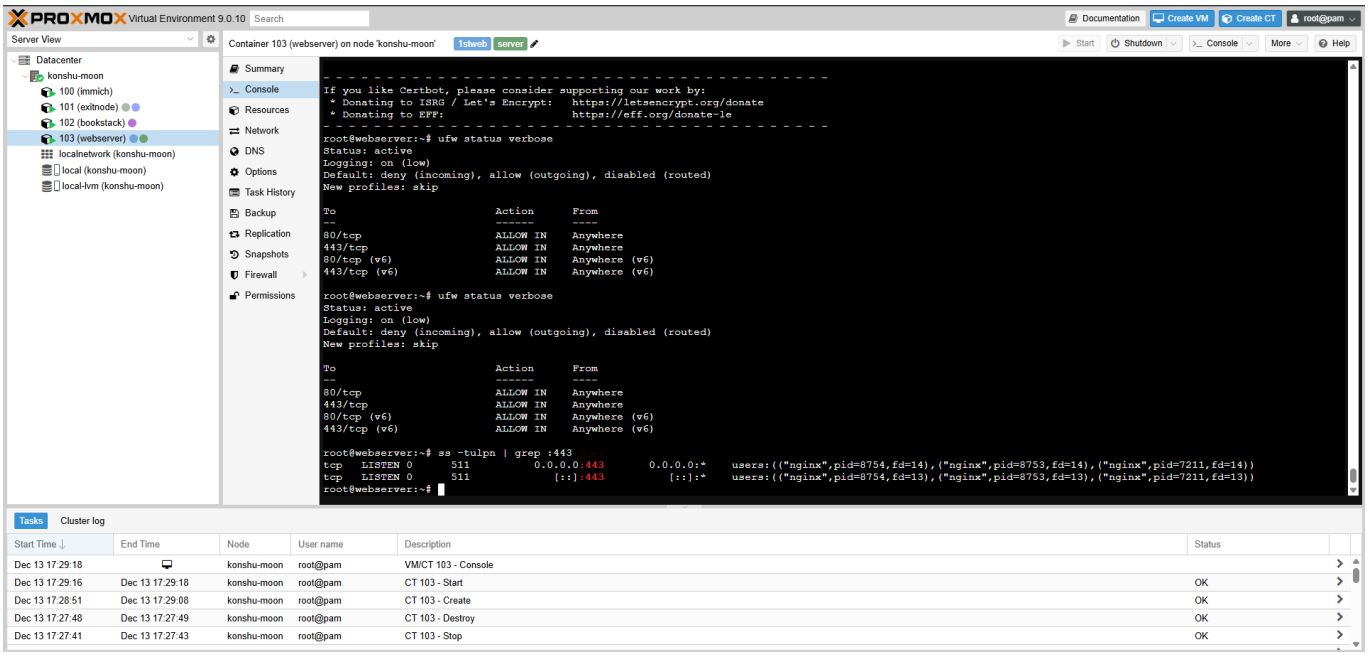
Inside the LXC, you used **UFW (Uncomplicated Firewall)**, which is a frontend for `iptables`. UFW are rules that also come pre-installed in Ubuntu.



Common UFW commands

Here we have some commands that can be used for UFW and their explanations. I have also included a photo to show what some might look like in action.





- `sudo ufw status`
  - Shows whether the firewall is active and lists all current rules.
- `sudo ufw enable`
  - Enables the firewall and starts enforcing rules.
- `sudo ufw disable`
  - Disables the firewall and stops filtering traffic.
- `sudo ufw allow 80/tcp`
  - Allows incoming HTTP traffic on port **80**.
- `sudo ufw allow 443/tcp`
  - Allows incoming HTTPS traffic on port **443**.

- `sudo ufw deny 8000/tcp`
    - Blocks access to port **8000** from external sources.

How do you check if the Firewall is running?

sudo ufw status

How do you disable the Firewall?

sudo ufw disable

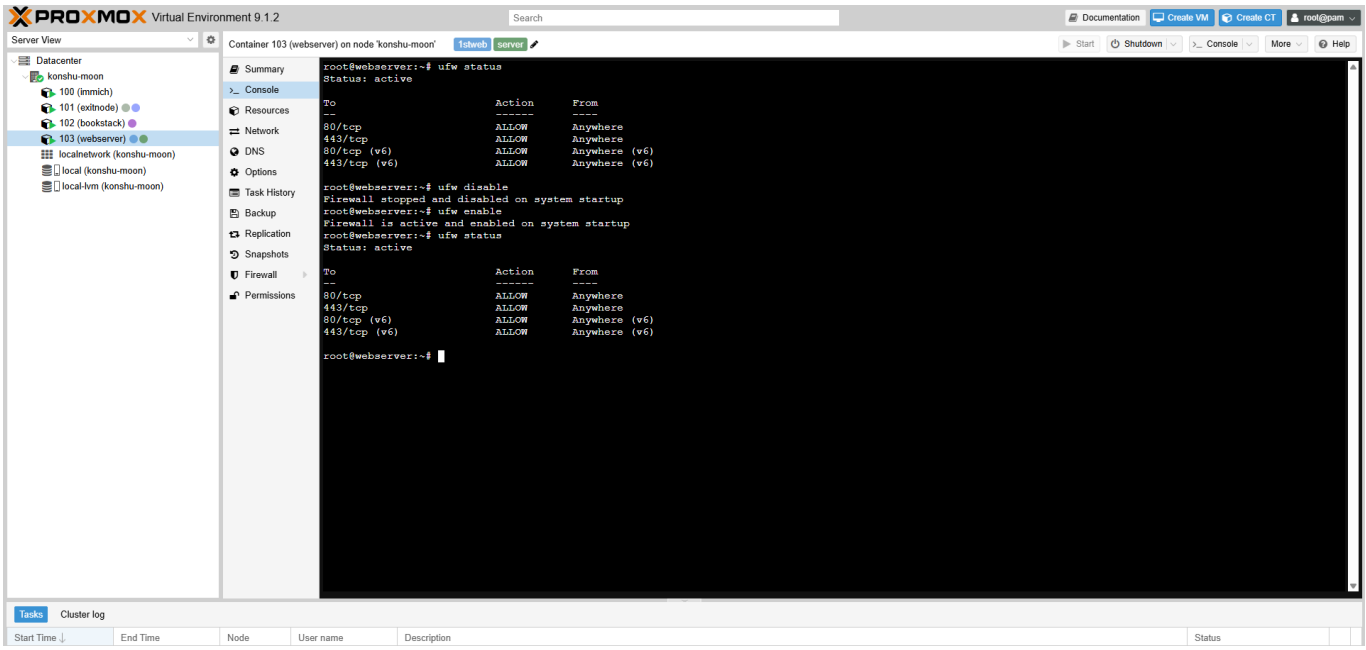
How do you add Nginx to the Firewall?

sudo ufw allow 80/tcp sudo ufw allow 443/tcp

Or:

sudo ufw allow 'Nginx Full'

The commands to check if the firewall is running or disabled are above but here is also a screenshot to show them.

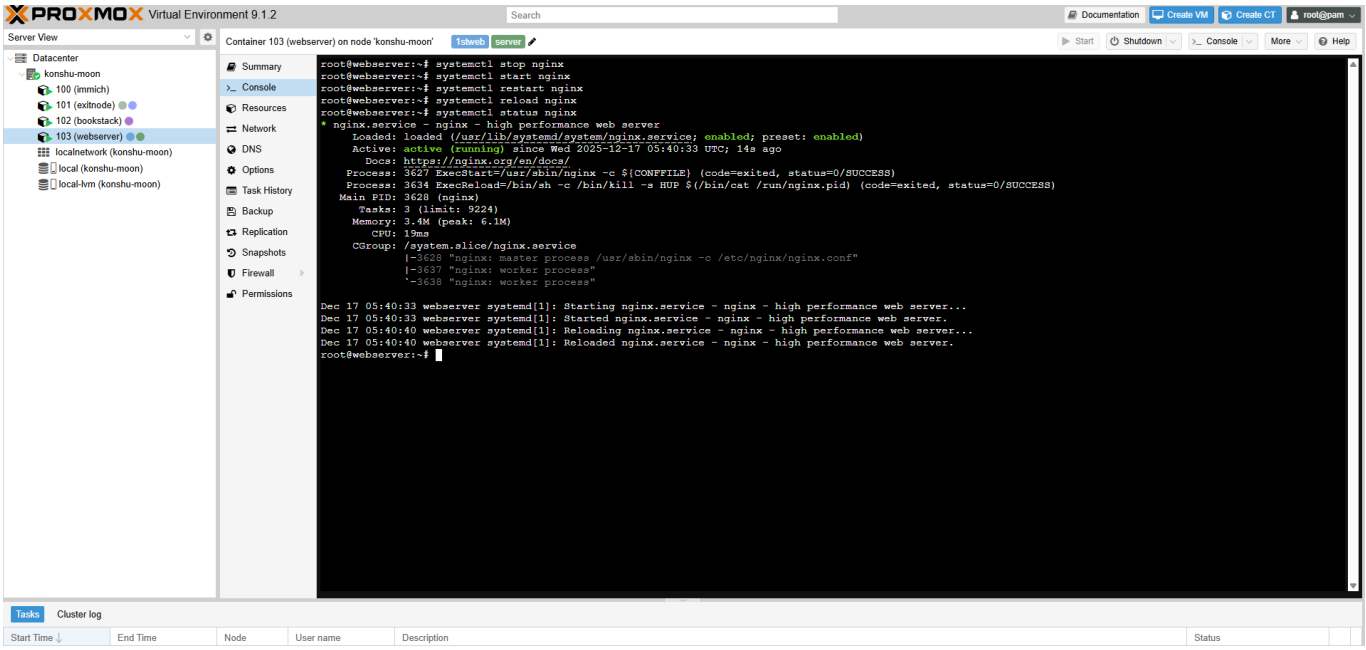


What different commands do we use to work with Ngnix?

Down below you will see the commands that have been used.

Nginx service commands

sudo systemctl start nginx sudo systemctl stop nginx sudo systemctl restart nginx sudo systemctl reload nginx sudo systemctl status nginx



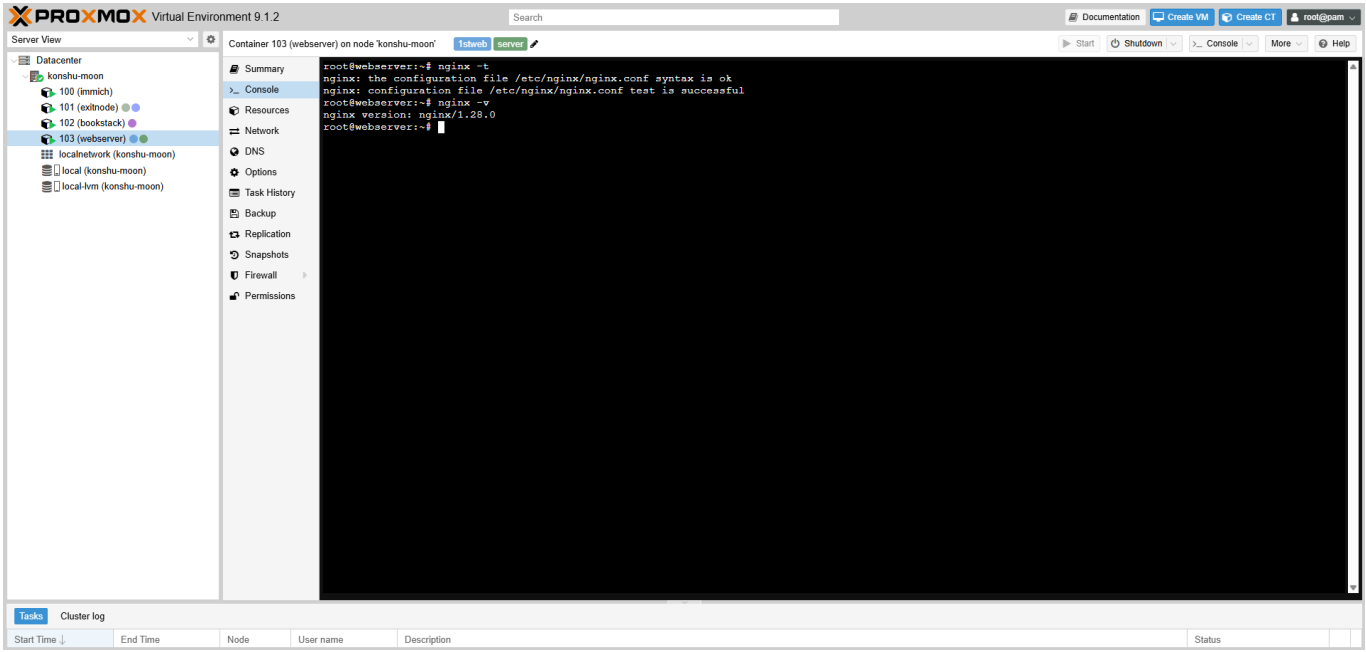
Test Nginx configuration

sudo nginx -t

Check Nginx version

nginx -v

Here we have the screenshot that displays nginx -t and nginx -v.



Nginx configuration files

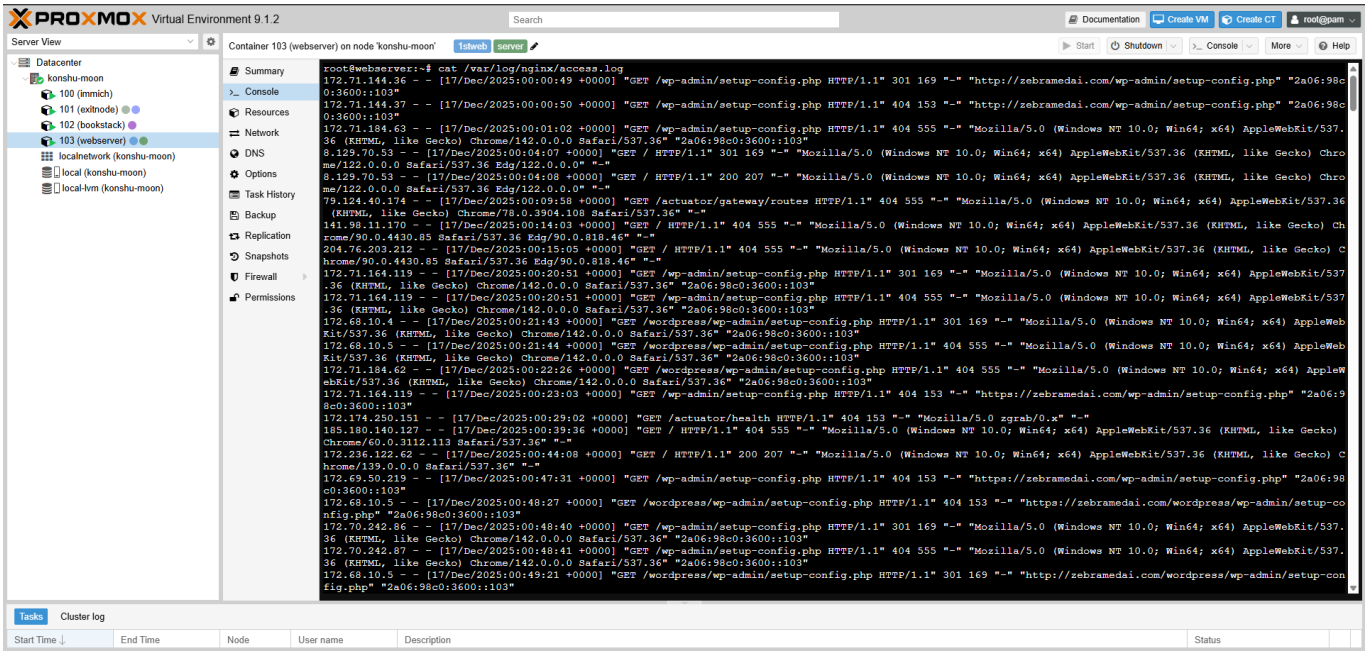
- `/etc/nginx/nginx.conf`
- `/etc/nginx/conf.d/*.conf`
- `/etc/nginx/sites-available/`
- `/etc/nginx/sites-enabled/`

Nginx logs

- `/var/log/nginx/access.log`
- `/var/log/nginx/error.log`

Review logs

cat /var/log/nginx/access.log cat /var/log/nginx/error.log tail -f /var/log/nginx/access.log grep error /var/log/nginx/error.log



A bonus screenshot I have here is being able to see a live log of who enters our site.