

# Deploy Semaphore & Netos Projects

## Introduction

This guide details how to install Ansible Semaphore and automatically import all of the projects referenced in [Netos NetOps](#). For example, to be able to [Install NetBox](#), run through this process first.

## 1. Size Your Server

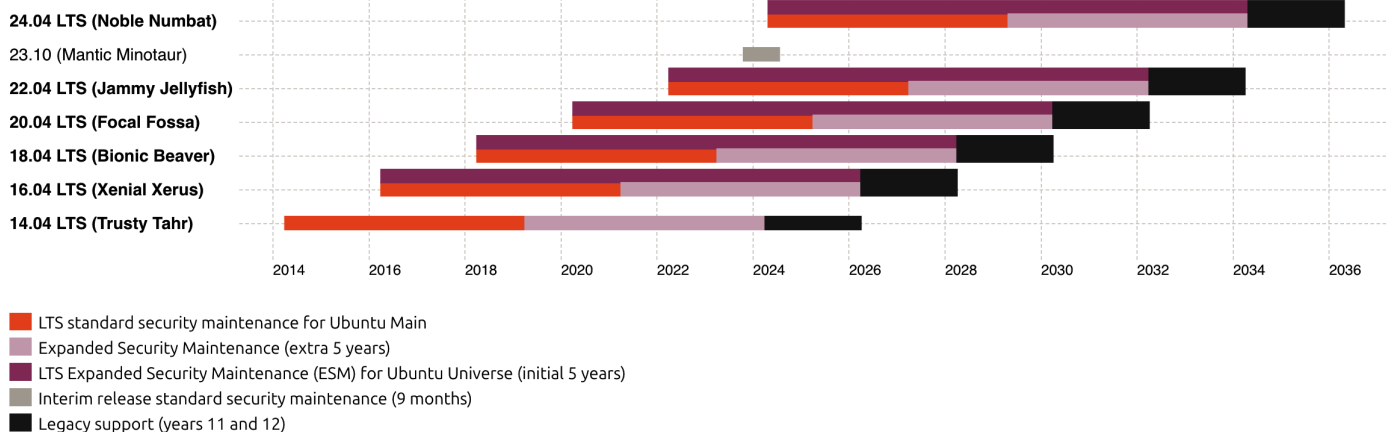
To run Semaphore and NetBox we'd suggest a server with a minimum of **4 x vCPU and 6GB of RAM, with SSD or NVMe disk**.

In the future Netos will publish more comprehensive guidance on server sizing. Many variables need to be taken into account. For example, a static NetBox instance with 100k devices doesn't require many system resources (they are just rows in database tables after all), whereas a NetBox server with 1k devices that is getting hammered by constant API hits, many plugins, and many CPU intensive background jobs is a different story.

## 2. Install Ubuntu 24.04 LTS

The Netos Semaphore solution has been developed and tested only on Ubuntu 24.04 LTS (Long Term Support), which you can [download from here](#). The ISO image will look like: `ubuntu-24.04-live-server-amd64.iso`.

## Ubuntu releases



*Ubuntu release cycle | Ubuntu*

Netos Semaphore will not work on earlier versions of Ubuntu.

## 3. Install Semaphore

### Run Installation Script

On a fresh install of Ubuntu 24.04 LTS with internet access, paste this script.

```
sudo wget https://raw.githubusercontent.com/netos-networks/netos-netops/refs/heads/main/easy-deploy.sh && sudo  
chmod +x easy-deploy.sh && sudo ./easy-deploy.sh
```

Alternatively, if you want to clone the repo yourself, follow these exact steps:

```
sudo mkdir /netos  
cd /netos  
sudo git clone https://github.com/netos-networks/netos-netops  
cd netos-netops  
sudo chmod +x deploy.sh  
clear  
sudo ./deploy.sh
```

The `/netos/` directory is central to many features, and in many cases (such as hard coded Semaphore variables) it's not easy to change, unless we start running `sed` on SQL dumps. Hence, please stick to the directory structure!

## Installation Process

The `deploy.sh` script will:

1. Install dependencies on Ubuntu using `apt`
2. Install Ansible via `pip` into a `venv`
3. Run the `semaphore-install` Ansible playbook which will:
  1. Install MySQL and provision the database
  2. Install Semaphore
  3. Import the Netos Semaphore projects from a SQL dump ( `semaphore-netos-netops.sql` )
4. Present you with a URL to login to Semaphore to continue with the setup, e.g.  
**`https://10.1.1.1:3000`**

Re: step 4.3, we decided to import the Semaphore projects using a SQL backup rather than using the [Semaphore UI Restore API](#). The Restore API doesn't support importing secret variables, which would have therefore required a significant amount of work for new users to just get a base instance up and running. You can of course (and should) change all the default passwords in a production build. Over time we'll transition to the Restore API.

Netos maintain a master/clean instance of the Semaphore project and create the `semaphore-netos-netops.sql` file as updates are made. If you want to add playbooks or tasks to the project, please create an issue in [Netos NetOps GitHub](#).

## 4. Installation Screenshots

The following screenshots show the installation process when `deploy.sh` is run on the Ubuntu 24.04LTS server.

```
netosadm@uk-lab-pod05: ~  
  
NETOS  
  
Visit https://netos.io/labs for support  
  
#####  
[INFO] If this is a production system, please change the MySQL password for Semaphore.  
[INFO] The database password is set in: /netos/netos-netops/vars/secrets.yml.  
  
[INFO] This script will install Ansible Semaphore and import Netos projects.  
[INFO] You can then deploy and manage NetBox, Netos Pod, and more.  
  
[INFO] You should update the MySQL password/variable in the Semaphore Global Settings  
[INFO] environment in Sempahore after installation, if you change it now.  
  
#####  
  
Press enter to continue, or CTRL-C to exit...  

```

```
netosadm@uk-lab-pod05: ~  
  
TASK [semaphore-install : Ensure required MySQL packages and Ansible Core are installed] *****  
changed: [127.0.0.1]  
  
TASK [semaphore-install : Ensure Mysql Python pip is installed] *****  
changed: [127.0.0.1]  
  
TASK [semaphore-install : Ensure MySQL is started and enabled] *****  
ok: [127.0.0.1]  
  
TASK [semaphore-install : Create MySQL user for Ansible Semaphore] *****  
[WARNING]: Option column_case_sensitive is not provided. The default is now false, so the  
column's name will be uppercased. The default will be changed to true in community.mysql 4.0.0.  
changed: [127.0.0.1]  
  
TASK [semaphore-install : Create MySQL Semaphore database] *****  
changed: [127.0.0.1]  
  
TASK [semaphore-install : Copy Semaphore database master Netos image] *****  
changed: [127.0.0.1]  
  
TASK [semaphore-install : Import Netos MySQL database for base Semaphore project] *****  
changed: [127.0.0.1]  
  
TASK [semaphore-install : Ensure base directory structure is in place] *****  

```

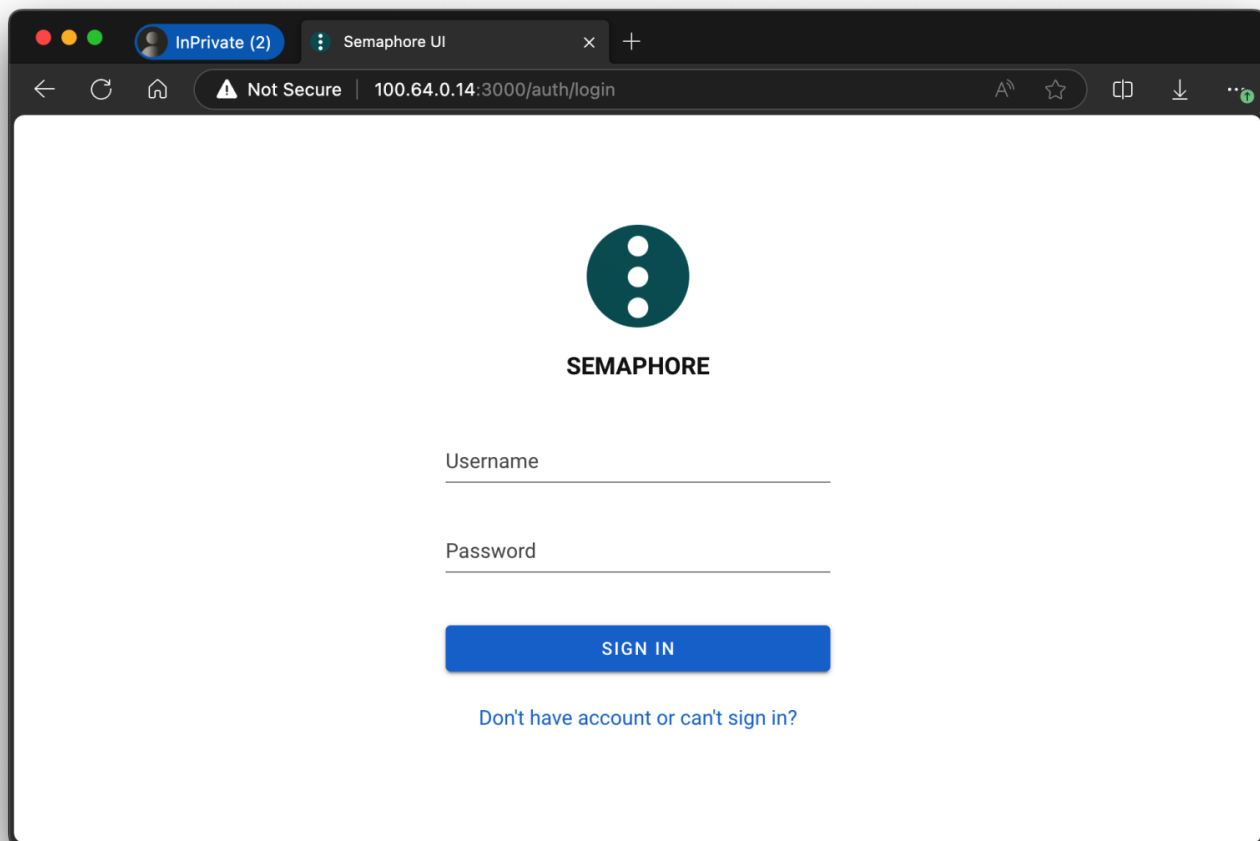
```
netosadm@uk-lab-pod05: ~  
ok: [127.0.0.1]  
  
TASK [semaphore-install : Ensure all bash scripts are executable] *****  
skipping: [127.0.0.1]  
  
TASK [semaphore-install : Ensure the Semaphore service is started and enabled] *****  
changed: [127.0.0.1]  
  
PLAY RECAP *****  
127.0.0.1 : ok=20  changed=14  unreachable=0  failed=0  skipped=2  rescue  
d=0  ignored=0  
  
#####  
Connect to http://100.64.0.14:3000 with username: admin and pass: admin  
#####  
  
[SUCCESS] Semaphore Deployment Completed Successfully  
  
netosadm@uk-lab-pod05:~$  
netosadm@uk-lab-pod05:~$  
netosadm@uk-lab-pod05:~$
```

Note the URL you can connect to and to use TCP port 3000. Note that in the [NGINX configuration guide](#), you can present this correctly using a FQDN on TCP443.

## 5. Connect to Semaphore

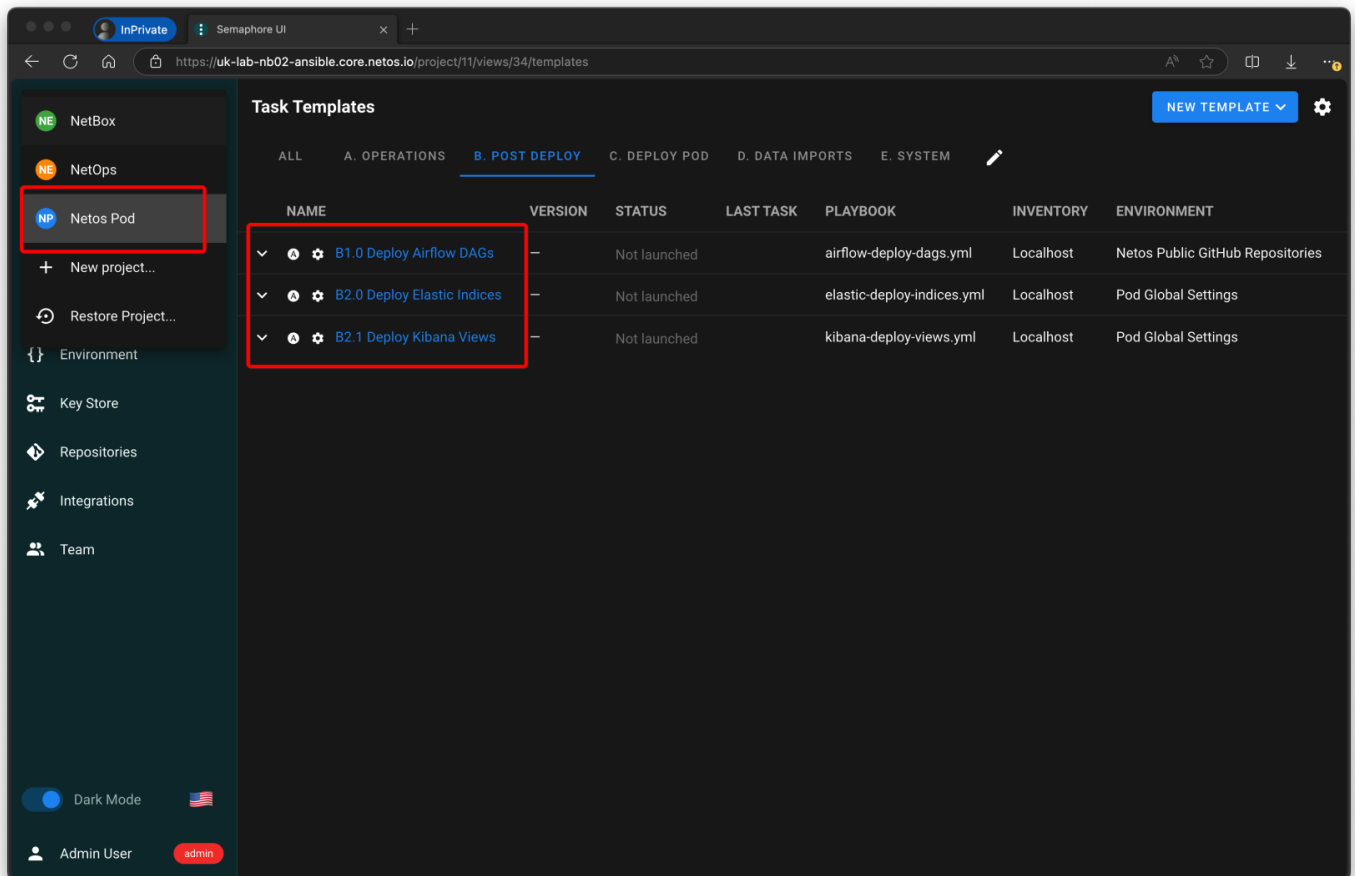
Once installed you should connect to a page like this, where you can login with the following default credentials. Check the [Users, Accounts, and Tokens](#) guide for more information about credentials and variables.

- Username:
- Password:



## 6. Delete Unwanted Projects & Tasks

You can delete unwanted projects, views, and tasks from the default Netos installation. When you pull repository updates, as outlined [here](#), it will not change the Semaphore configuration. For example, maybe you want to delete these, if deployed:



Revision #11

Created 22 September 2024 14:57:12 by Richard Foster

Updated 12 October 2024 08:48:08 by Richard Foster