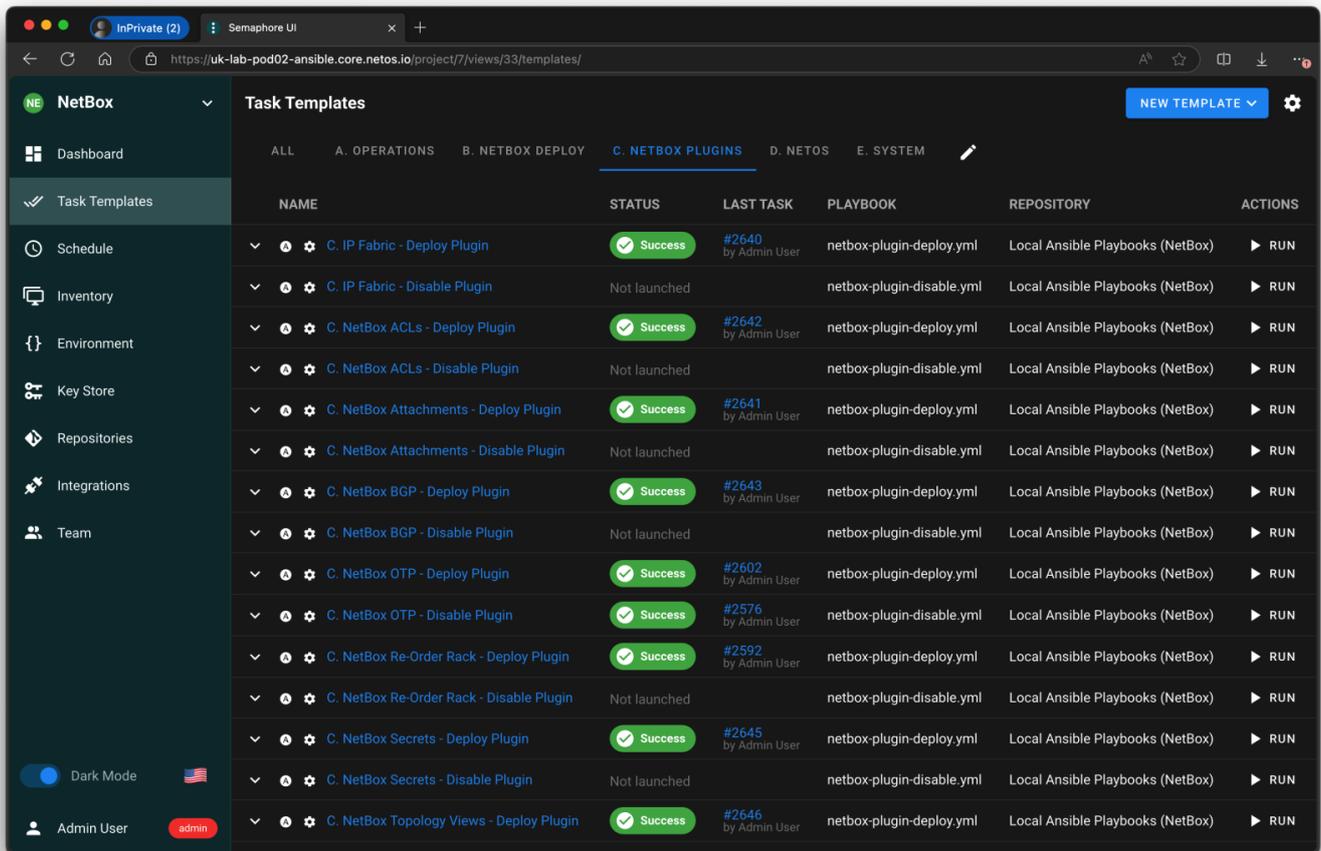


Deploy NetBox Community Plugins

This feature is a work-in-progress. Testing has been completed deploying the plugins in the screenshot to NetBox `3.7.8`, and NetBox `4.0.11`, and also upgrading NetBox, and then re-deploying using this tool.

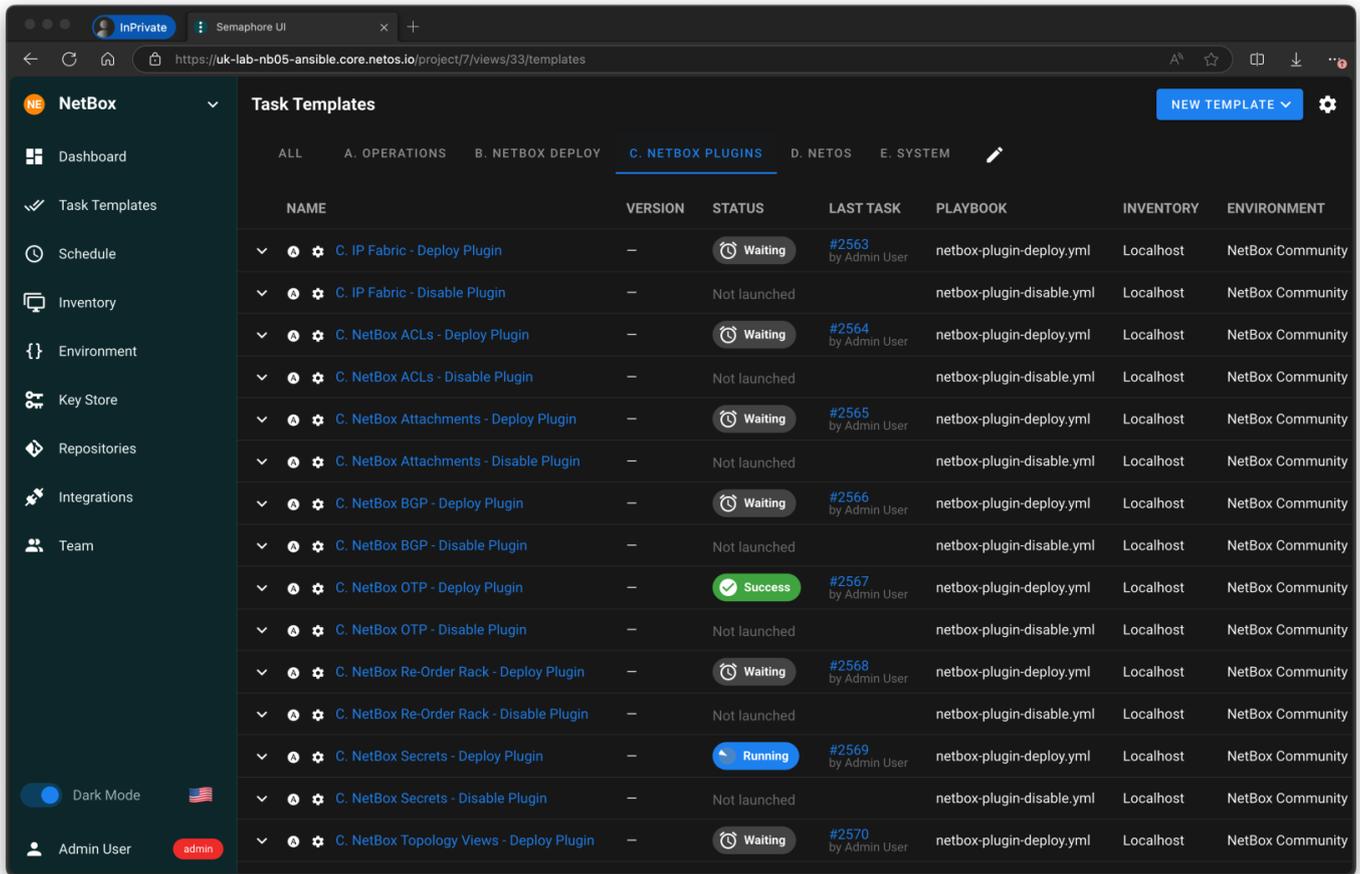
Introduction

Deploy, manage, and upgrade NetBox community plugins from within Semaphore:



NAME	STATUS	LAST TASK	PLAYBOOK	REPOSITORY	ACTIONS
✓ C. IP Fabric - Deploy Plugin	Success	#2640 by Admin User	netbox-plugin-deploy.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✗ C. IP Fabric - Disable Plugin	Not launched		netbox-plugin-disable.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✓ C. NetBox ACLs - Deploy Plugin	Success	#2642 by Admin User	netbox-plugin-deploy.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✗ C. NetBox ACLs - Disable Plugin	Not launched		netbox-plugin-disable.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✓ C. NetBox Attachments - Deploy Plugin	Success	#2641 by Admin User	netbox-plugin-deploy.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✗ C. NetBox Attachments - Disable Plugin	Not launched		netbox-plugin-disable.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✓ C. NetBox BGP - Deploy Plugin	Success	#2643 by Admin User	netbox-plugin-deploy.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✗ C. NetBox BGP - Disable Plugin	Not launched		netbox-plugin-disable.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✓ C. NetBox OTP - Deploy Plugin	Success	#2602 by Admin User	netbox-plugin-deploy.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✓ C. NetBox OTP - Disable Plugin	Success	#2576 by Admin User	netbox-plugin-disable.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✓ C. NetBox Re-Order Rack - Deploy Plugin	Success	#2592 by Admin User	netbox-plugin-deploy.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✗ C. NetBox Re-Order Rack - Disable Plugin	Not launched		netbox-plugin-disable.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✓ C. NetBox Secrets - Deploy Plugin	Success	#2645 by Admin User	netbox-plugin-deploy.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✗ C. NetBox Secrets - Disable Plugin	Not launched		netbox-plugin-disable.yml	Local Ansible Playbooks (NetBox)	▶ RUN
✓ C. NetBox Topology Views - Deploy Plugin	Success	#2646 by Admin User	netbox-plugin-deploy.yml	Local Ansible Playbooks (NetBox)	▶ RUN

You can queue up tasks (providing `concurrency=1` in the Semaphore project/dashboard settings, in order to avoid having multiple tasks running at the same time):



Plugin Mapping Tables

Version Selection

Similar to the mapping logic during the [NetBox installation process](#), each plugin has a defined mapping table that maps the plugin version to the supported NetBox version. For example, in this playbook, the logic is as follows:

1. Get the current NetBox version from the NetBox API `/api/status/`
2. Query the plugin-specific mapping table, in this case for `netbox_topology_views`
3. Check the **NetBox Version** to **Plugin Version** mapping, and if there is a match, proceed with the installation.

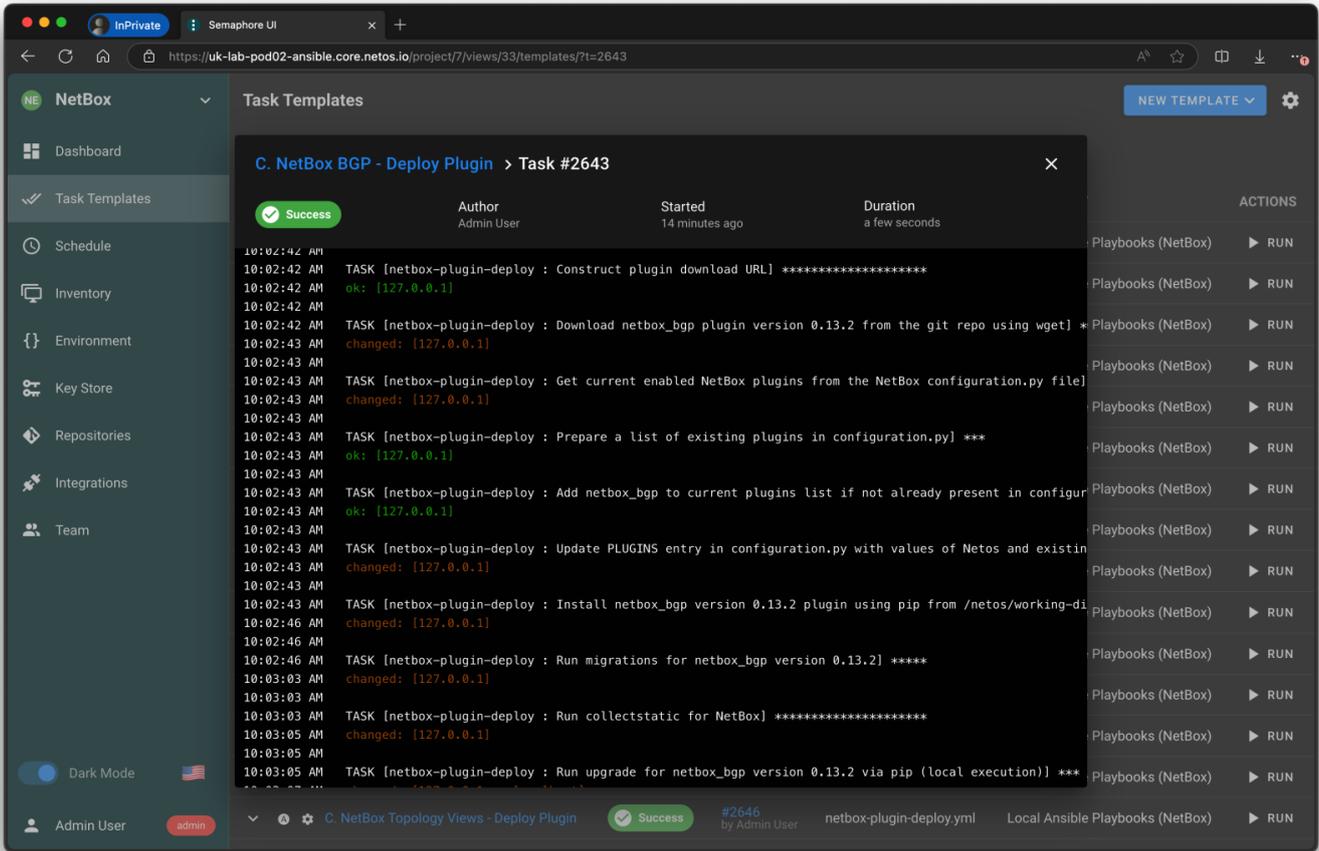
Here you can see that we are running NetBox `3.7.8` and that the playbook has detected that the suitable plugin version is `3.9.0`.

The screenshot shows the Semaphore UI interface. The main window displays a task titled "C. NetBox Topology Views - Deploy Plugin" with a status of "Success". The task was executed by "Admin User" and started 40 minutes ago. The output log shows the following steps:

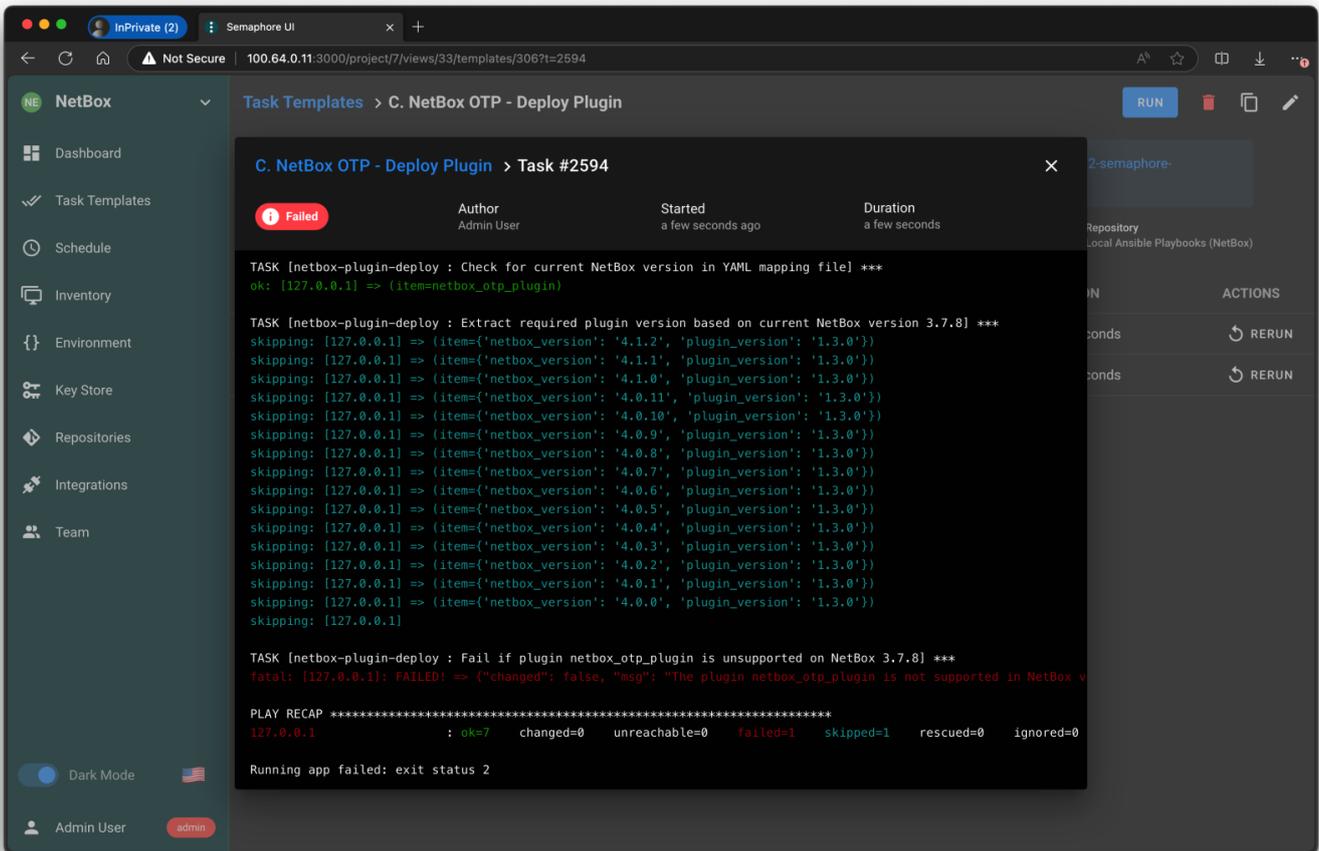
```
11:24:08 AM Task 2627 added to queue
11:24:13 AM TASK [Gathering Facts] *****
11:24:13 AM PLAY [127.0.0.1] *****
11:24:13 AM No role/requirements.yml file found. Skip galaxy install process.
11:24:13 AM No role/requirements.yml file found. Skip galaxy install process.
11:24:13 AM No collection/requirements.yml file found. Skip galaxy install process.
11:24:13 AM Started: 2627
11:24:13 AM Run TaskRunner with template: C. NetBox Topology Views - Deploy Plugin
11:24:13 AM Preparing: 2627
11:24:13 AM installing static inventory
11:24:13 AM No collection/requirements.yml file found. Skip galaxy install process.
11:24:14 AM ok: [127.0.0.1] => (item={'netbox_version': '3.7.8', 'plugin_version': '3.9.0'})
11:24:14 AM skipping: [127.0.0.1] => (item={'netbox_version': '2.10.0', 'plugin_version': '0.5.0'})
11:24:14 AM skipping: [127.0.0.1] => (item={'netbox_version': '3.7.0', 'plugin_version': '3.9.0'})
11:24:14 AM skipping: [127.0.0.1] => (item={'netbox_version': '3.6.4', 'plugin_version': '3.8.1'})
11:24:14 AM skipping: [127.0.0.1] => (item={'netbox_version': '3.6.0', 'plugin_version': '3.7.X'})
11:24:14 AM skipping: [127.0.0.1] => (item={'netbox_version': '3.5.0', 'plugin_version': '3.4.X'})
11:24:14 AM skipping: [127.0.0.1] => (item={'netbox_version': '3.4.0', 'plugin_version': '3.X.X'})
11:24:14 AM skipping: [127.0.0.1] => (item={'netbox_version': '3.3.0', 'plugin_version': '3.0.0'})
11:24:14 AM skipping: [127.0.0.1] => (item={'netbox_version': '3.2.0', 'plugin_version': '1.1.0'})
11:24:14 AM skipping: [127.0.0.1] => (item={'netbox_version': '3.1.8', 'plugin_version': '1.0.0'})
11:24:14 AM skipping: [127.0.0.1] => (item={'netbox_version': '2.11.1', 'plugin_version': '0.5.3'})
11:24:14 AM skipping: [127.0.0.1] => (item={'netbox_version': '2.10.0', 'plugin_version': '0.4.10'})
11:24:14 AM TASK [netbox-plugin-deploy : Fail if plugin netbox_topology_views is unsupported on NetBox 3.7.8] ***
11:24:14 AM skipping: [127.0.0.1]
```

A red arrow points to the line "No collection/requirements.yml file found. Skip galaxy install process." in the log output.

The script then proceeds to download the plugin (to `/netos/working-dir/netbox-plugins`) and install it.



If a match isn't found, i.e. the plugin is not supported on that version of NetBox (according to the mapping table) the installation will fail like this:



Mapping File Example

Each plugin has a mapping file similar to this in the `netos-netbox` repository. They are manually constructed based on the individual plugin recommendations to ensure that for each NetBox version the latest plugin is installed.

The `git_url`, `version_prefix`, and `file_type` variables are used to construct the URL to pull the plugin from the repo, as URL structures vary between plugins.

```
netbox_topology_views:
  name: "NetBox Topology Views"
  description: "A NetBox plugin that provides a graphical topology view for devices in NetBox."
  git_url: "https://github.com/netbox-community/netbox-topology-views"
  version_prefix: "v"
  file_type: "zip"
  version_mapping:
    - netbox_version: "4.1.0"
      plugin_version: "4.1.0"

    - netbox_version: "4.0.0"
      plugin_version: "4.0.0"
```

```
- netbox_version: "3.7.8"  
  plugin_version: "3.9.0"
```

Every NetBox version is mapped to a specific plugin version based on the plugin documentation.

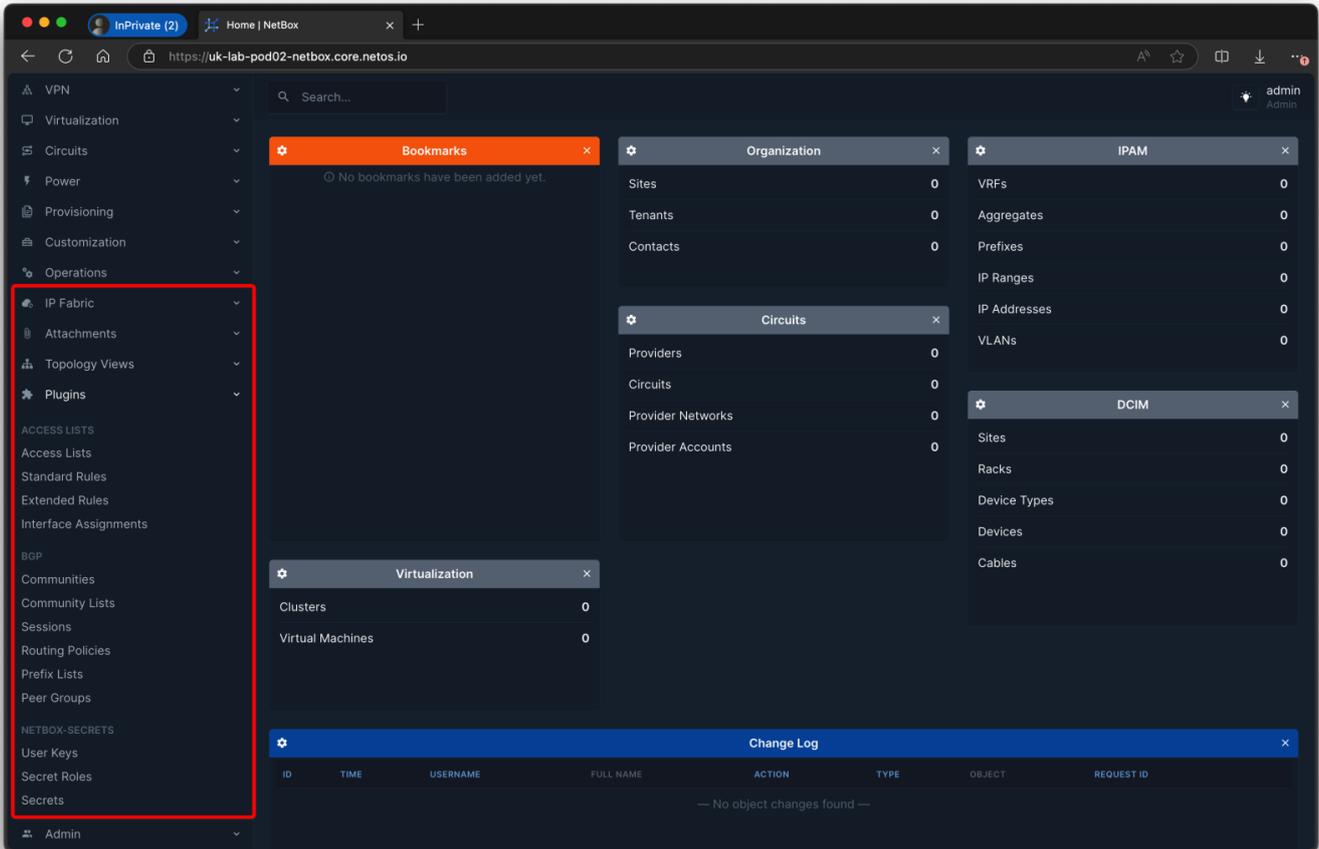
Updating Configuration.py

Plugins must be registered in `configuration.py`, for example; `PLUGINS = ['netbox_topology_views']`. The playbook will check if the plugin name is included, and if not, add it.

If there is an issue with the plugin, it can cause NetBox to fail to start, i.e. you'll get an NGINX 502 error. If this happens you can use the [Health Check](#) script to see if there is anything obvious in the logs. You can also [Disable NetBox Plugins](#) to remove the plugin entry from `configuration.py`.

Post Installation

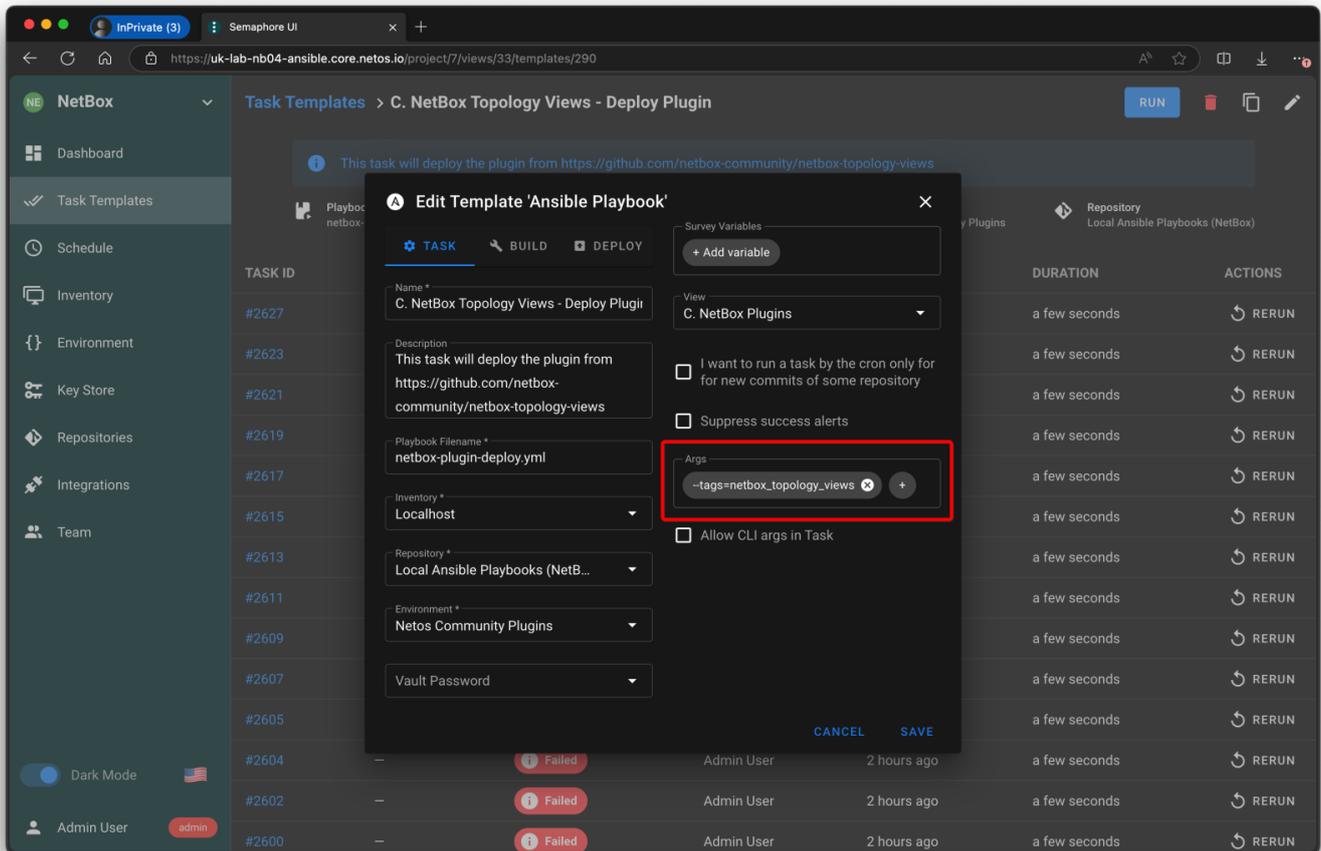
After running the playbooks in the screenshot at the top of this guide, we can see that the plugins have been installed in NetBox:



Add New Plugins to Semaphore

The process for adding a plugin to deploy through Semaphore is as follows:

1. The respective templates must be configured in Semaphore, pointing to the correct playbooks, i.e. `netbox-plugin-deploy.yml` and `netbox-plugin-disable.yml`
2. Within the template, the tag must align with the plugin name, i.e. `-- tags=netbox_topology_views`
3. The plugin name must be added to `netbox-plugin-deploy.yml` and `netbox-plugin-disable.yml`
4. The mapping file must be configured, e.g. in Ansible `/mappings/netbox-plugins/netbox_topology_views.yml`



Some plugins, i.e. `netbox_data_flows`, caused issues with the `venv`, and broke the installation of other plugins. Further investigation is required.

To Do

- Define the optimal sequencing, i.e. upgrade plugin, then NetBox, then migrate, etc.
- Knit everything together, e.g. upgrading NetBox along with 7 different plugins
- Ensuring a critical mass of mapping tables and data to make it useful
- Adding / supporting external/local/private plugins
- Create combined playbooks / checks to test the installation of all NetBox plugins on all NetBox versions

Revision #14

Created 23 September 2024 12:34:53 by Richard Foster

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