Abdurrahim Yıldırım

104 Followers · About Follow

Deployment of Ansible AWX on OpenShift Origin

Abdurrahim Yıldırım Feb 13, 2019 · 4 min read ★

Red Hat and Ansible are agreed to creating an open-source project around the Ansible Tower codebases which was named Ansible AWX. The AWX source code is available under the Apache License 2.0. This project is hosted at Github.

Ansible is an automation technology for the management of IT environments and deployments. Using Ansible, IT operations teams can more easily deploy IT services, applications, and environments.

Some benefits of Ansible:

- Simple and human-readable configuration and deployment.
- Agent-less integration.
- Host inventory to define different IT infrastructures.
- A motivated and growing community that brings different modules and use cases.
- Handling dynamic inventories in a simple way.
- Open-source License.

In this post, we will start the installation of AWX on top of OpenShift Origin. In the next post, I will show how to use Ansible to manage Apache Configuration and deployment.

Pre-Requirements:

- OpenShift Origin
- Ansible installed server
- OpenShift CLI package
- Install Git to push a project

Steps To Install Ansible AWX

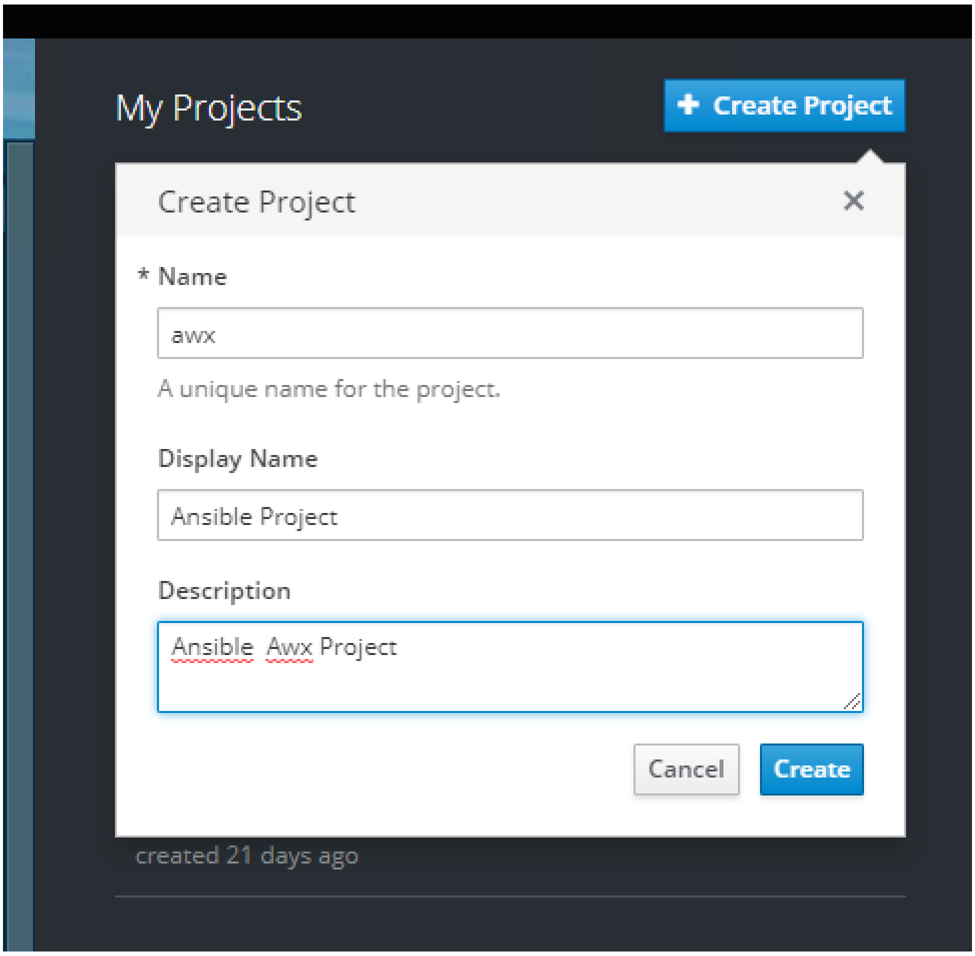
Step 1: Download Ansible Project from Github

We need to install Ansible one of the servers that we use for installation. I will perform all installation steps at the OpenShift master node. So Ansible and OpenShift CLI package will be already installed.

```
[root@master01 installer]# ansible  --version
ansible 2.6.9
  config file = /etc/ansible/ansible.cfg
  configured module search path =
[u'/root/.ansible/plugins/modules',
u'/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python2.7/site-
packages/ansible
  executable location = /bin/ansible
  python version = 2.7.5 (default, Oct 30 2018, 23:45:53) [GCC 4.8.5
20150623 (Red Hat 4.8.5-36)]

[root@master01 installer]# oc version
oc v3.11.0+62803d0-1
kubernetes v1.11.0+d4cacc0
features: Basic-Auth GSSAPI Kerberos SPNEGO

#mkdir  /appdata/
#cd /appdata/
#git clone https://github.com/ansible/awx.git
#cd awx/installer
```

Step 2: Create an OpenShift AWX project and PostgreSQL service

- Create a Project named "awx"



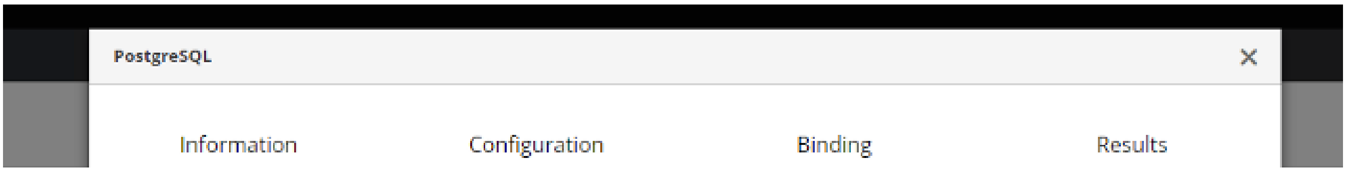
* Name: awx

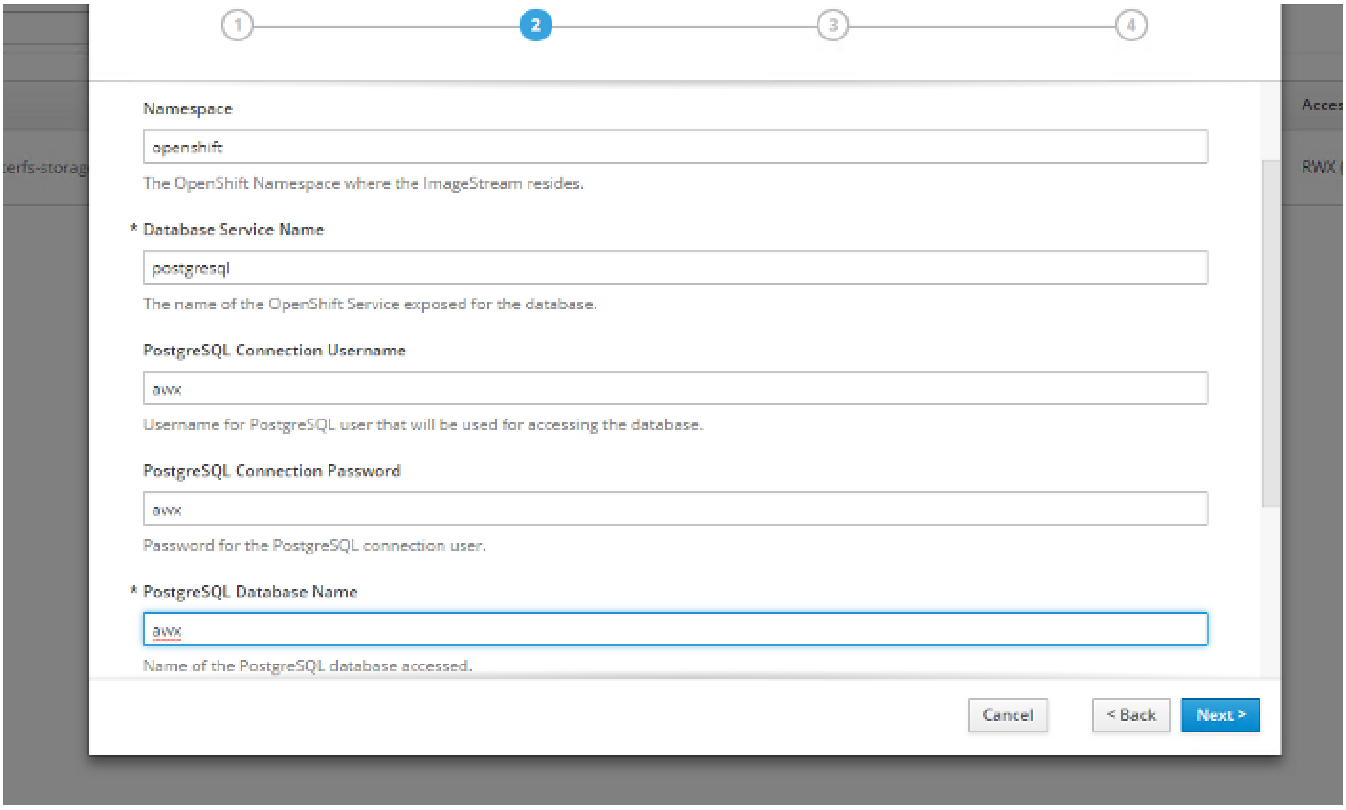
A unique name for the project.

Display Name: Ansible Project

Description: Ansible Awx Project

- Create a PostgreSQL database with these configuration settings. You should keep these parameters to add an inventory file later.





Namespace

openshift

The OpenShift Namespace where the ImageStream resides.

* Database Service Name

postgresql

The name of the OpenShift Service exposed for the database.

PostgreSQL Connection Username

awx

Username for PostgreSQL user that will be used for accessing the database.

PostgreSQL Connection Password

awx

Password for the PostgreSQL connection user.

* PostgreSQL Database Name

awx

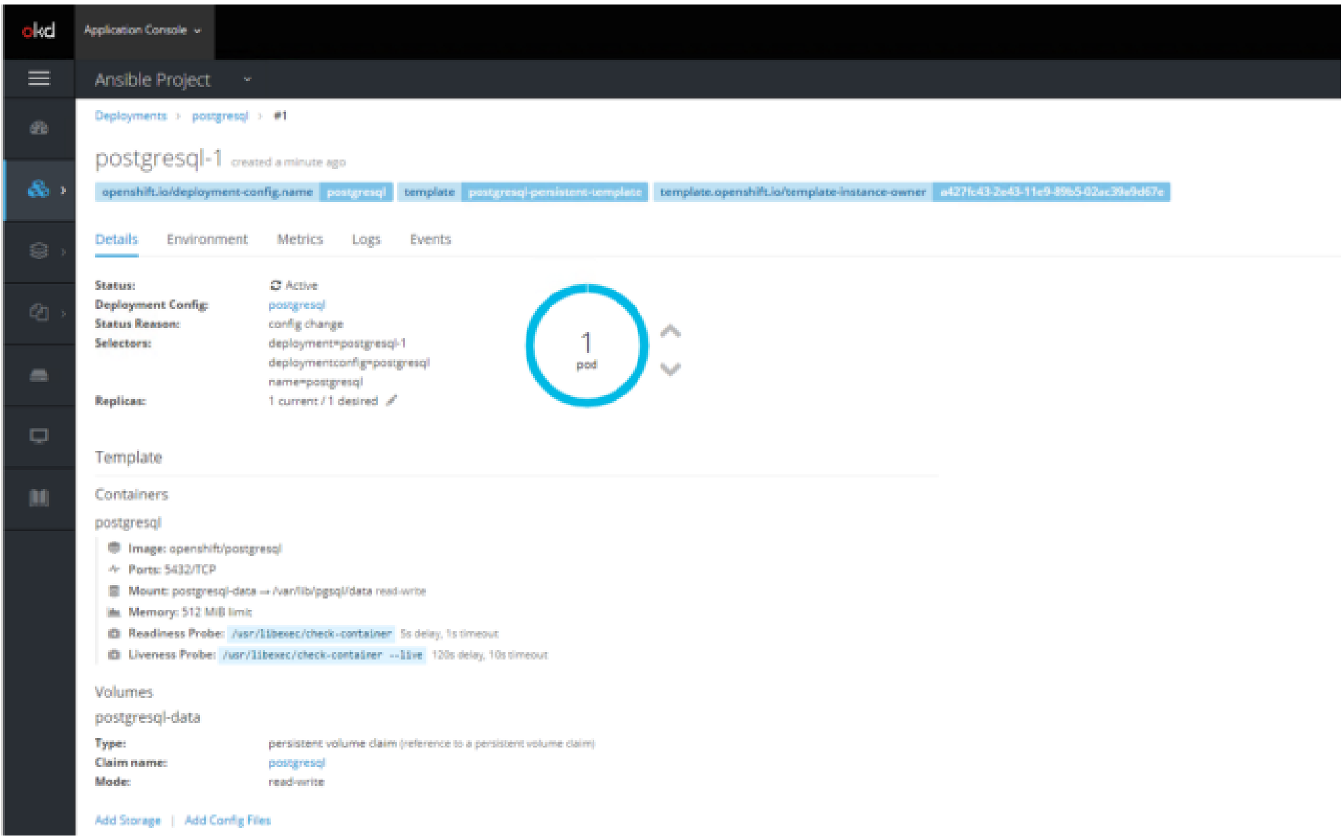
Name of the PostgreSQL database accessed.

Database Service Name: postgresql

Database Connection Username: awx

PostgreSQL Connection Password: awx

PostgreSQL Database Name: awx



postgresql-1 created a minute ago

openshift.io/deployment-config.name postgresql template postgresql-persistent-template template.openshift.io/template-instance-owner a427fc43-2e43-11e9-89b5-02ac39a9d67e

Status: Active

Deployment Config: postgresql

Status Reason: config change

Selectors: deployment=postgresql-1
deploymentconfig=postgresql
name=postgresql

Replicas: 1 current / 1 desired

Template

Containers

postgresql

- Image: openshift/postgresql
- Ports: 5432/TCP
- Mount: postgresql-data → /var/lib/pgsql/data read-write
- Memory: 512 MiB limit
- Readiness Probe: `/usr/libexec/check-container` 5s delay, 1s timeout
- Liveness Probe: `/usr/libexec/check-container --live` 120s delay, 10s timeout

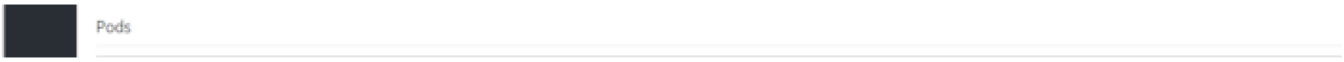
Volumes

postgresql-data

Type: persistent volume claim (reference to a persistent volume claim)

Claim name: postgresql

Mode: read-write



Step 3: Configure Inventory File

The default inventory file will be located under the installer directory. Uncomment and change only the parameters that you need to use. I downloaded binary files under "/appdata/". So my inventory file will be located "/appdata/awx/installer/". Also, you can download the inventory file which I used at this post from that link.

```
#cd /appdata/awx/installer/inventory

#vi /appdata/awx/installer/inventory

openshift_host=console.openshift.domdom.local:443 #OpenShift web
console FQDN and  Port

openshift_project=awx #OpenShift project name which was created at
step 2

openshift_user=development #OpenShift web console username

openshift_password=development #OpenShift web console password

openshift_skip_tls_verify=True #Define  true  if your web console
ceriticate  is  untruested.

pg_hostname=postgresql.awx.svc #PostgreSQL service name -
Applications > Service > postgresql > Hostname

pg_username=awx   #postgresql username

pg_password=awxpassword #postgresql password

pg_database=awx #postgresql database name

pg_port=5432 #postgresql port
```

Step 4: Execute the Installation with Ansible

```
#cd /appdata/awx/installer/

#ansible-playbook -i inventory install.yml
```

Step 5: Add a persistent volume to AWX-Celery

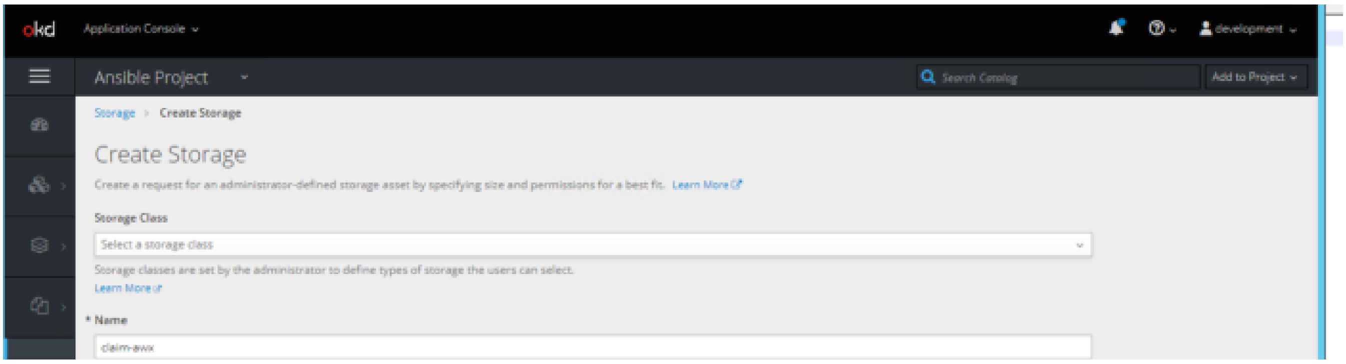
After installation, we need to define a persistent volume to AWX-Celery.

```
[root@master01 installer]# oc  login
Authentication required for https://console-
int.openshift.domdom.local:443 (openshift)
Username: development
Password:
Login successful.

You have access to the following projects and can switch between
them with 'oc project <projectname>':

* awx

Using project "awx".
[root@master01 installer]# oc get statefulset
NAME      DESIRED   CURRENT   AGE
awx       1         1         10m
[root@master01 installer]#
```

Set running statefulset replicas to “0” for awx.

```
[root@master01 installer]# oc get statefulset
NAME      DESIRED   CURRENT   AGE
awx       1         1         10m
[root@master01 installer]# oc scale --replicas=0  statefulsets awx
statefulset.apps/awx scaled
[root@master01 installer]# oc get statefulset
NAME      DESIRED   CURRENT   AGE
awx       0         1         12m
[root@master01 installer]# oc get statefulset
NAME      DESIRED   CURRENT   AGE
awx       0         0         12m
[root@master01 installer]#
```

You should create a persistent volume claim for the “awx-celery”. First, use the web console to create a PVC named “claim-awx” then run these commands for volume.



Create Storage

Create a request for an administrator-defined storage asset by specifying size and permissions for a best fit. Learn More

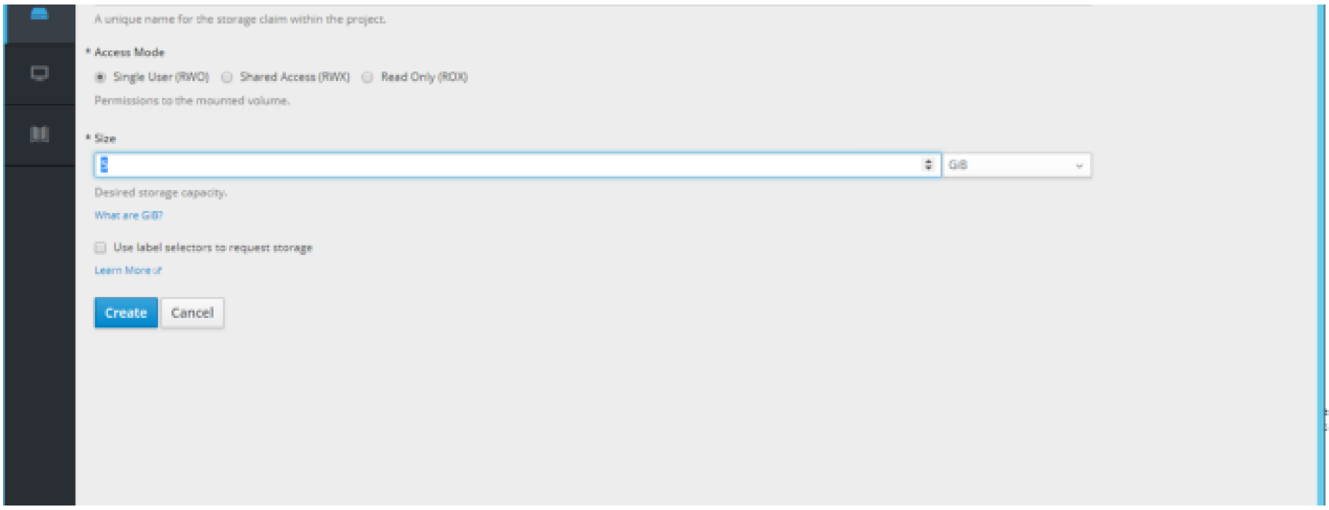
Storage Class

Select a storage class

Storage classes are set by the administrator to define types of storage the users can select.
Learn More

* Name

claim-awx



A unique name for the storage claim within the project.

* Access Mode

● Single User (RWO) ○ Shared Access (RWX) ○ Read Only (ROX)

Permissions to the mounted volume.

* Size

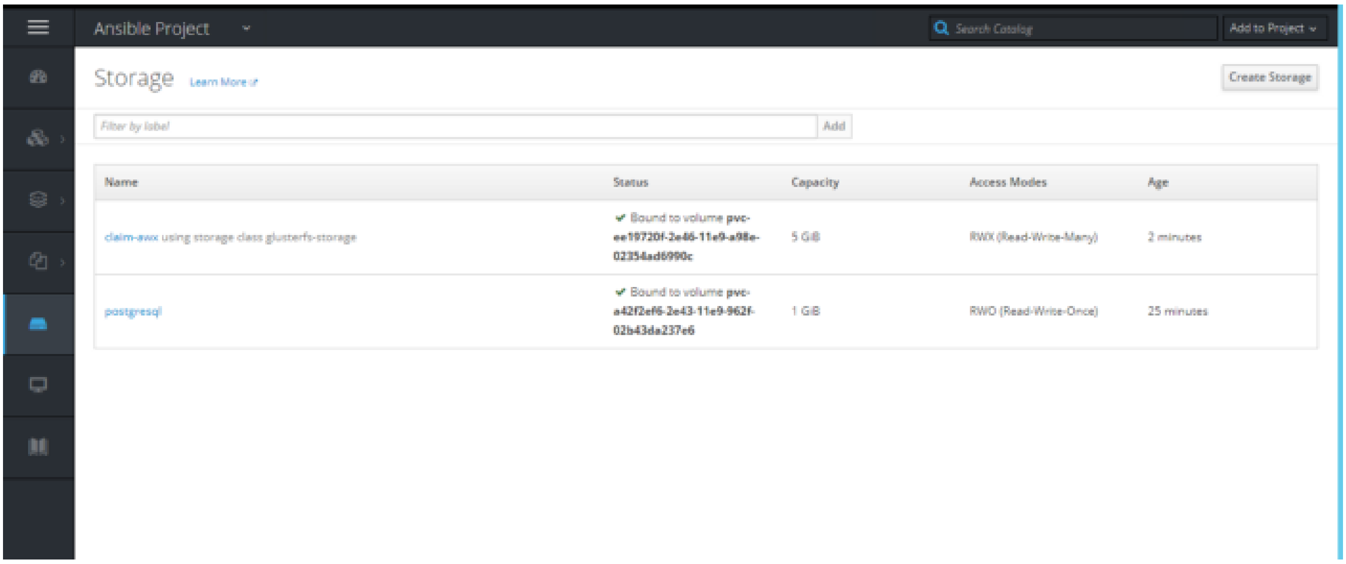
GiB

Desired storage capacity.

What are GiB?

□ Use label selectors to request storage

Learn More



Ansible Project

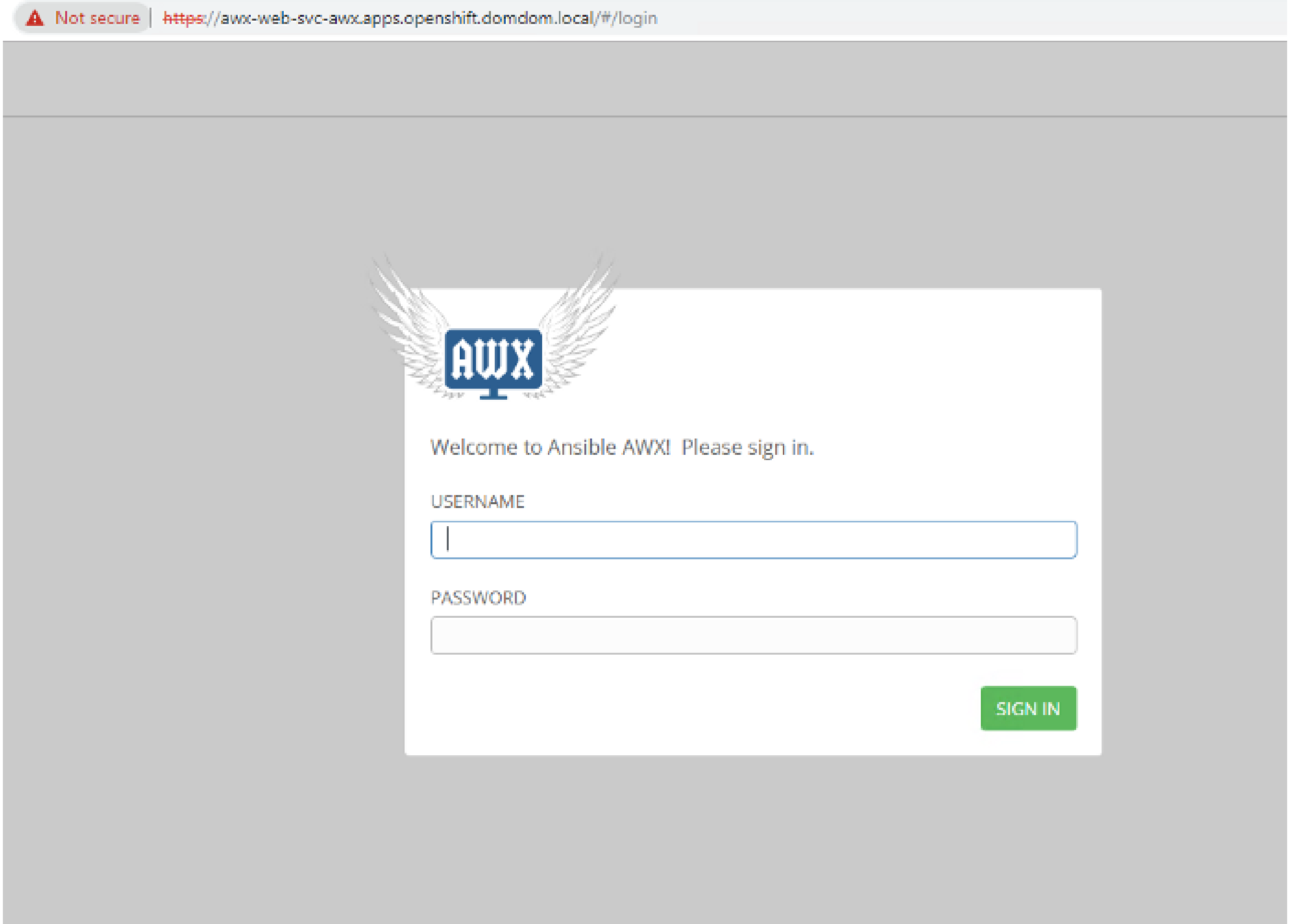
Storage Learn More

Name	Status	Capacity	Access Modes	Age
claim-awx using storage class glusterfs-storage	✓ Bound to volume **pvc-ee19720f-2e46-11e9-a98e-02354ad6990c**	5 GiB	RWX (Read-Write-Many)	2 minutes
postgresql	✓ Bound to volume **pvc-a42f2ef6-2e43-11e9-962f-02b43da237e6**	1 GiB	RWO (Read-Write-Once)	25 minutes

```
[root@master01 installer]# oc  patch statefulsets awx -p '{"spec":
{"template":{"spec":{"volumes":
[{"name":"awxprojectsdata","persistentVolumeClaim":
{"claimName":"claim-awx"}}]}}}}'
statefulset.apps/awx patched
[root@master01 installer]# oc  patch statefulsets awx -p  '{"spec":
{"template":{"spec":{"containers":[{"name":"awx-
celery","volumeMounts":
[{"mountPath":"/var/lib/awx/projects/","name":"awxprojectsdata"}]}]}
}}}'
statefulset.apps/awx patched
[root@master01 installer]# oc scale --replicas=1  statefulsets awx
statefulset.apps/awx scaled
[root@master01 installer]# oc get statefulset
NAME      DESIRED   CURRENT   AGE
awx       1         1         24m
[root@master01 installer]#
```

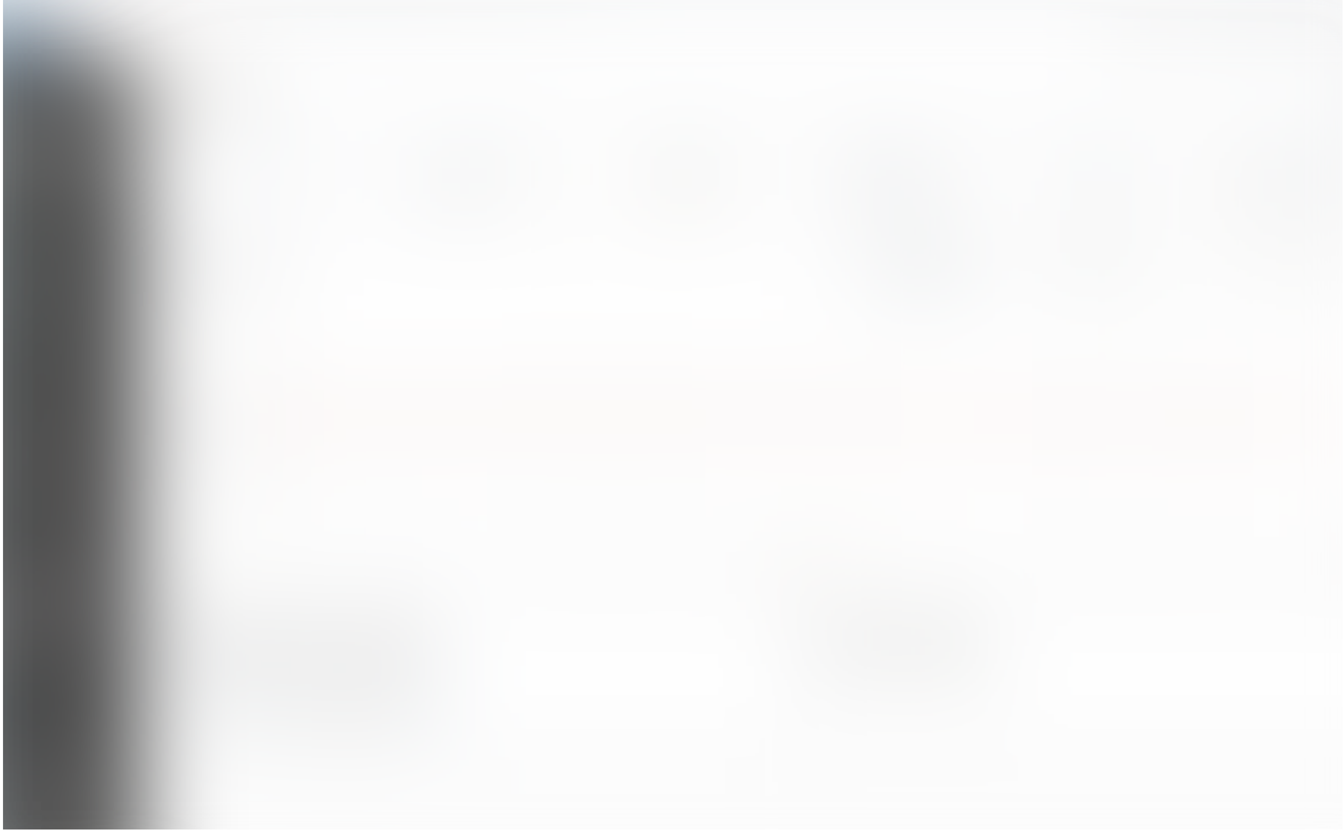
That’s all. You can access URL and then login with the default username and password.

> *Default username: admin*
>
> *Password:password*



Not secure | ~~https~~://awx-web-svc-awx.apps.openshift.domdom.local/#/login

Welcome to Ansible AWX! Please sign in.



If you have any questions or need help, feel free to open a support ticket on the web page. Let’s share together.

DevOps Ansible Openshift Linux Tower