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Install and setup NEXUS 3 on Ubuntu 18.04

- Download the NEXUS package

```
$ wget https://sonatype-download.global.ssl.fastly.net/repository/repositoryManager/3/nexus-3.15.2-01-unix.tar.gz
```



Checkout for the latest version instead of 3.15

- Extract the file

```
$ tar -xzf nexus-3.15.2-01-unix.tar.gz
```

- Move the file to `/opt` directory.

```
$ sudo mv nexus-3.15.2-01 /opt/nexus-server/nexus-3.15.2-01.
```

- Create user `nexus`

```
$ sudo adduser nexus
```

- Give sudo permission to user `nexus`

```
$ sudo usermod -aG sudo nexus
```

- Change the ownership of the directory.

```
$ sudo chown nexus:nexus /opt/nexus-server
```

- In `bin/nexus.rc` assign the user between the quotes in the line below.

```
run_as_user="nexus"
```

- Create a file called `nexus.service`. Add the following contents, then save the file in the `/etc/systemd/system/` directory:

```
[Unit]
Description=nexus service
After=network.target

[Service]
Type=forking
LimitNOFILE=65536
ExecStart=/opt/nexus-server/nexus-3.15.2-01/bin/nexus start
ExecStop=/opt/nexus-server/nexus-3.15.2-01/bin/nexus stop
User=nexus
Restart=on-abort

[Install]
WantedBy=multi-user.target
```

- Activate the service with the following commands:

```
sudo systemctl daemon-reload
sudo systemctl enable nexus.service
sudo systemctl start nexus.service
```

- Default username and password is `admin` and `admin123` respectively with port beign 8081

Setup Maven Repository

We will not create maven repository additionally, NEXUS comes with a default configuration for Maven with repositories.

Following are the repositories created for maven.

- `maven-releases`, for hosting your release artifacts locally.
- `maven-snapsource,shots`, for hosting your snapsource,shot artifacts locally.
- `maven-central`, a repository of type `proxy` that connects to central maven repository.
- `maven-public`, a repository of type 'group' which holds the above repository, we connect to this repository from dev machine, the order of searching for artifacts as defined above.

Setup docker private registry

By default, the Docker client communicates with the repo using HTTPS. Since I didn't have the certificate, will use HTTP instead of HTTPS.



The Docker repo requires 2 different ports. We are going to use 8184 for pull from the proxy repo and 8185 for pull and pusource,sh to the private repo of release and 8186 for pull and pusource,sh of snapsource,shots.

- Create a blob store.(optional)

Goto **settings** → **repository** → **Blob stores** → **Create blob store**, provide name of the location, path also can be customized. image::docker_blob_store_1.png[]

- Create a private repository for releases

Goto **settings** → **repository** → **repositories** → **Create repository**, a repository recipe page pops up, select **docker(hosted)**

- Set name for the repository **docker-release**
- Choose **HTTP** type and set port to 8185
- Set anonymous docker pull (optional)
- Enable docker V1 API.
- Select previously created blob store from the dropdown.
- Deployment policy **Disable redeploy**
- Cleanup policy **none**.

Name:

A unique identifier for this repository

k-docker-release

Online:

☒ If checked, the repository accepts incoming requests

Repository Connectors

Connectors allow Docker clients to connect directly to hosted registries, but are not always required. Consult our [documentation](#) for which connector is appropriate for your use case. For information on scaling the repositories see our [scaling documentation](#).

HTTP:

Create an HTTP connector at specified port. Normally used if the server is behind a secure proxy.

☒ 8185

HTTPS:

Create an HTTPS connector at specified port. Normally used if the server is configured for https.

☐

Allow anonymous docker pull:

☒ Allow anonymous docker pull (Docker Bearer Token Realm required)

Docker Registry API Support

Enable Docker V1 API:

☒ Allow clients to use the V1 API to interact with this Repository

Storage

Blob store:

Blob store used to store asset contents

k-docker-store

Strict Content Type Validation:

☒ Validate that all content uploaded to this repository is of a MIME type appropriate for the repository format

Hosted

Deployment policy:

Controls if deployments of and updates to artifacts are allowed

Disable redeploy

Cleanup Policy

Available cleanup policies:

Select a cleanup policy

None

Create repository

Cancel

- Create a cleanup policy

Goto **settings** → **repository** → **cleanup policies** → **create cleanup policy**. set name, format to 'docker` and criteria as **Last Downloaded before**.

Administration

- Repository
 - Blob Stores
 - Repositories
 - Content Selectors
- Cleanup Policies**
- IQ Server
 - Server
- Security
 - Privileges
 - Roles
 - Users
 - Anonymous
 - LDAP
 - Realms
 - SSL Certificates

Cleanup Policies / Create Cleanup Policy

Cleanup Policy

Name:
A unique name for the cleanup policy
k-docker-snapshot-cleanup

Format:
The format that this cleanup policy can be applied to
docker

Notes:
Remove older snapshots

Criteria

Published Before:
Restrict cleanup to components that were published to NXR more than the given number of days ago. (Blob updated date)
☐

Last Downloaded Before:
Restrict cleanup to components that were last downloaded more than the given number of days ago. (Last downloaded date)
☒ 30

[Preview results](#) [Create Cleanup Policy](#) [Cancel](#)

- Create a private repository for snapsource,shots

Goto **settings** → **repository** → **repositories** → **Create repository**, a repository recipe page pops up, select **docker(hosted)**

- Set name for the repository **docker-snapsource,shots**
- Choose **HTTP** type and set port to 8186
- Set anonymous docker pull (optional)
- Enable docker V1 API.
- Select previously created blob store from the dropdown.
- Deployment policy **Allow redeploy**
- Cleanup policy to previously created policy.

Name: A unique identifier for this repository
k-docker-snapshots

Online: ☒ If checked, the repository accepts incoming requests

Repository Connectors

Connectors allow Docker clients to connect directly to hosted registries, but are not always required. Consult our [documentation](#) for which connector is appropriate for your use case. For information on scaling the repositories see our [scaling documentation](#).

HTTP:
Create an HTTP connector at specified port. Normally used if the server is behind a secure proxy.
☒ 8186

HTTPS:
Create an HTTPS connector at specified port. Normally used if the server is configured for https.
☐

Allow anonymous docker pull:
☒ Allow anonymous docker pull (Docker Bearer Token Realm required)

Docker Registry API Support

Enable Docker V1 API:
☒ Allow clients to use the V1 API to interact with this Repository

Storage

Blob store:
Blob store used to store asset contents
k-docker-store

Strict Content Type Validation:
☒ Validate that all content uploaded to this repository is of a MIME type appropriate for the repository format

Hosted

Deployment policy:
Controls if deployments of and updates to artifacts are allowed
Allow redeploy

Cleanup Policy

Available cleanup policies:
Select a cleanup policy
k-docker-snapshot-cleanup

- Create a proxy repository for docker hub

A repository that proxies everything you download from the official registry, Docker Hub. Next time you download the same dependency, it will be cached in your Nexus.

Goto `settings` → `repository` → `repositories` → `Create repository`, a repository recipe page pops up, select `docker(proxy)`

Set primarily these parameters, name, remote storage(<https://registry-1.docker.io>), docker index to `docker hub`

Name: A unique identifier for this repository
k-docker-hub

Online: ☒ If checked, the repository accepts incoming requests

Repository Connectors

Connectors allow Docker clients to connect directly to hosted registries, but are not always required. Consult our [documentation](#) for which connector is appropriate for your use case. For information on scaling the repositories see our [scaling documentation](#).

HTTP:
Create an HTTP connector at specified port. Normally used if the server is behind a secure proxy.

☐

HTTPS:
Create an HTTPS connector at specified port. Normally used if the server is configured for https.

☐

Allow anonymous docker pull:

☐ Allow anonymous docker pull (Docker Bearer Token Realm required)

Docker Registry API Support

Enable Docker V1 API:

☒ Allow clients to use the V1 API to interact with this Repository

Proxy

Remote storage:

Location of the remote repository being proxied
https://registry-1.docker.io

Use the Nexus truststore:

☐ Use certificates stored in the Nexus truststore to connect to external systems [View certificate](#)

Docker Index:

☐ Use proxy registry (specified above)

☒ Use Docker Hub

☐ Custom Index

Location of Docker Index

https://index.docker.io/

Use the Nexus truststore:

☐ Use certificates stored in the Nexus truststore to connect to external systems [View certificate](#)

Blocked:

☐ Block outbound connections on the repository

Auto blocking enabled:

☒ Auto-block outbound connections on the repository if remote peer is detected as unreachable/unresponsive

Maximum component age:

How long (in minutes) to cache artifacts before rechecking the remote repository. Release repositories should use -1.
1440

Maximum metadata age:

How long (in minutes) to cache metadata before rechecking the remote repository.
1440

Storage

Blob store:

Blob store used to store asset contents
k-docker-store

Strict Content Type Validation:

☒ Validate that all content uploaded to this repository is of a MIME type appropriate for the repository format

Negative Cache

Not found cache enabled:

☒ Cache responses for content not present in the proxied repository

Not found cache TTL:

How long to cache the fact that a file was not found in the repository (in minutes)
1440

Cleanup Policy

Available cleanup policies:

Select a cleanup policy

k-docker-snapshot-cleanup

HTTP

☐ Authentication

☐ HTTP request settings

Create repository

Cancel

- Create Group Repository.

This will group all the above repos and provide you a single URL to configure your clients to download from to.

Goto **settings** → **repository** → **repositories** → **Create repository**, a repository recipe page pops up, select **docker(group)**

- Set name for the repository **docker-public**
- Choose **HTTP** type and set port to 8184
- Set anonymous docker pull (optional)
- Enable docker V1 API.
- Select previously created blob store from the dropdown.
- Finally add **docker-release**, **docker-snapsource,shots** and **'docker-hub'** in order as source,shown below.

Name: A unique identifier for this repository
k-docker-public

Online: ☒ If checked, the repository accepts incoming requests

Repository Connectors

Connectors allow Docker clients to connect directly to hosted registries, but are not always required. Consult our [documentation](#) for which connector is appropriate for your use case. For information on scaling the repositories see our [scaling documentation](#).

HTTP:

Create an HTTP connector at specified port. Normally used if the server is behind a secure proxy.

☒ 8184

HTTPS:

Create an HTTPS connector at specified port. Normally used if the server is configured for https.

☐

Allow anonymous docker pull:

☒ Allow anonymous docker pull (Docker Bearer Token Realm required)

Docker Registry API Support

Enable Docker V1 API:

☒ Allow clients to use the V1 API to interact with this Repository

Storage

Blob store:

Blob store used to store asset contents

k-docker-store

Strict Content Type Validation:

☒ Validate that all content uploaded to this repository is of a MIME type appropriate for the repository format

Group

Member repositories:

Select and order the repositories that are part of this group

Available

Filter



Members

k-docker-release

k-docker-snapshots

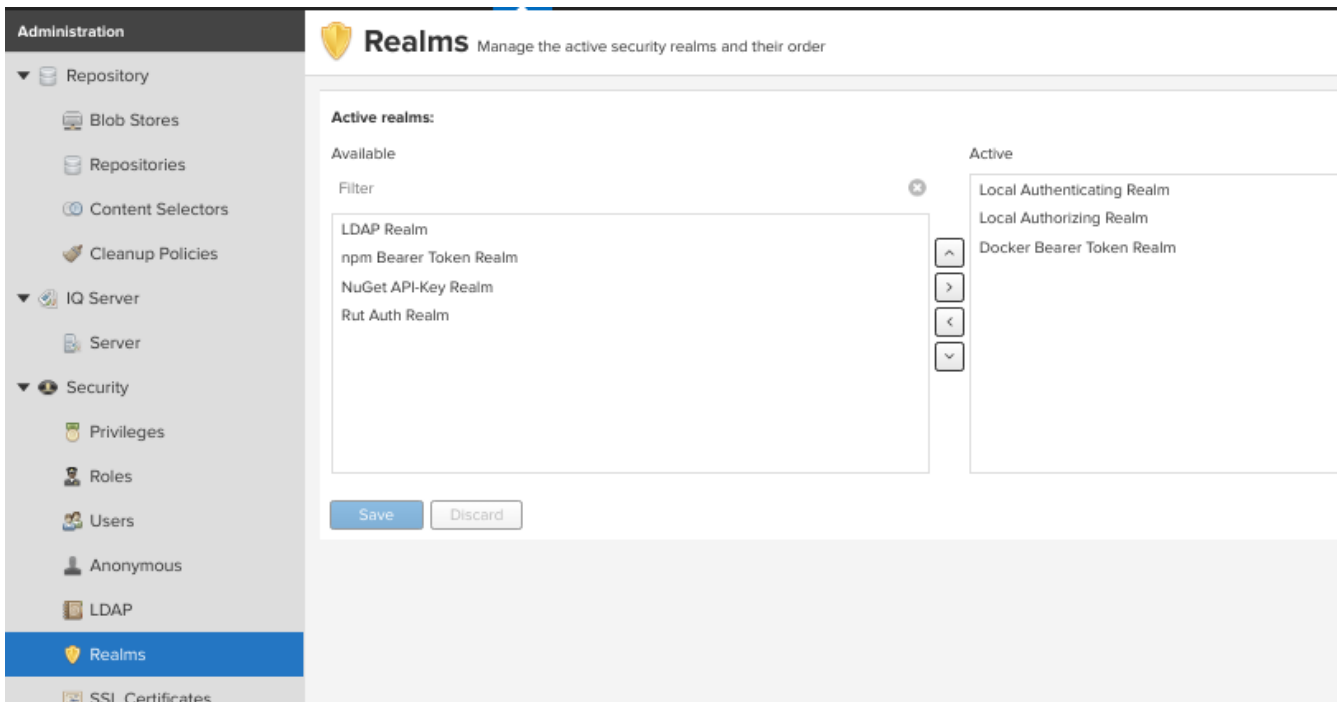
k-docker-hub



Create repository

Cancel

- To enable anonymous pull goto **settings** → **security** → **realms**, add **docker Bearer token Realm**.



Setup dev machine to use HTTP protocol.

To interact with your repo, the first thing is to configure the Docker daemon in your machine to accept working with HTTP instead of HTTPS.

- If its ubuntu machine open/create `/etc/docker/daemon.json` add following details:

```
{
  "insecure-registries": [
    "kp-ci:8184",
    "kp-ci:8185",
    "kp-ci:8186"
  ],
  "disable-legacy-registry": true
}
```

- Restart docker daemon service.

```
$ sudo systemctl restart docker
```

Create user with deployment privileges.

- First we need to create custom role before creating a user, goto `settings` → `security` → `Roles` → `Create Role` ⇒ `New Role`. Add role Id and role name. and also add below list of privileges.
 - nx-blobstores-all
 - nx-component-upload(most probably this source,should alone with view source,should suffice, though I did not test)
 - nx-repository-admin---*

- nx-repository-view---*
- Next goto **settings** → **security** → **users** → **create user**, a new popup comes prompting for user details fill all the details and set **status** to **Active** and also add the role created at previous step by moving the role from left hand side box to right hand side box.

Install Helm Repository.

Build from source code.

- Clone the project.

```
git clone https://github.com/sonatype-nexus-community/nexus-repository-helm.git
```

- change directory

```
cd nexus-repository-helm
```

- Build the source.

```
$ mvn clean package -DskipTests
```



If you want stable release checkout by last released version tag.

Enable Helm repository

- Copy the bundle from target to Copy the bundle into `<nexus_dir>/system/org/sonatype/nexus/plugins/nexus-repository-helm/0.0.7/nexus-repository-helm-0.0.7.jar`

```
sudo mkdir -p /opt/nexus-server/nexus-3.15.2-01/system/org/sonatype/nexus/plugins/nexus-repository-helm/0.0.7/
sudo target/nexus-repository-helm-0.0.7.jar \
/opt/nexus-server/nexus-3.15.2-01/system/org/sonatype/nexus/plugins/nexus-repository-helm/0.0.7/
sudo chown nexus:nexus -R /opt/nexus-server/nexus-3.15.2-01/system/org/sonatype/nexus/plugins/nexus-repository-helm/0.0.7/
```

- Update OSGi feature by updating **features.xml** at `<nexus_home>/system/org/sonatype/nexus/assemblies/nexus-core-feature/3.15.2-01/nexus-core-feature-3.15.2-01-features.xml`
 - Add entire highlighted line under **nexus-core-feature** section.

```

<feature name="nexus-core-feature"
description="org.sonatype.nexus.assemblies:nexus-core-feature"
version="3.15.2.01">
    <details>org.sonatype.nexus.assemblies:nexus-core-feature</details>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-audit-plugin</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-blobstore-tasks</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-ssl-plugin</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-coreui-plugin</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-repository-httpbridge</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-repository-maven</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-repository-npm</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-repository-pypi</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-repository-raw</feature>
    <strong><feature version="0.0.7" prerequisite="false" dependency=
"false">nexus-repository-helm</feature></strong>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-restore-maven</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-blobstore-s3</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-restore-npm</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-restore-pypi</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-restore-raw</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-script-plugin</feature>
    <feature version="3.15.2.01" prerequisite="false" dependency="false"
>nexus-task-log-cleanup</feature>
    <feature prerequisite="true" dependency="false">wrap</feature>
</feature>

```

- Add below xml section either below `nexus-core-feature` or just above `</features>`

```

<feature name="nexus-repository-helm"
description="org.sonatype.nexus.plugins:nexus-repository-helm" version="0.0.7">
    <details>org.sonatype.nexus.plugins:nexus-repository-helm</details>
    <bundle>mvn:org.sonatype.nexus.plugins/nexus-repository-helm/0.0.7</bundle>
</feature>

```

- Once **features.xml** file is updated restart the nexus service.

```
$ sudo systemctl restart nexus.service
```

- Verify nexus service start is successful.

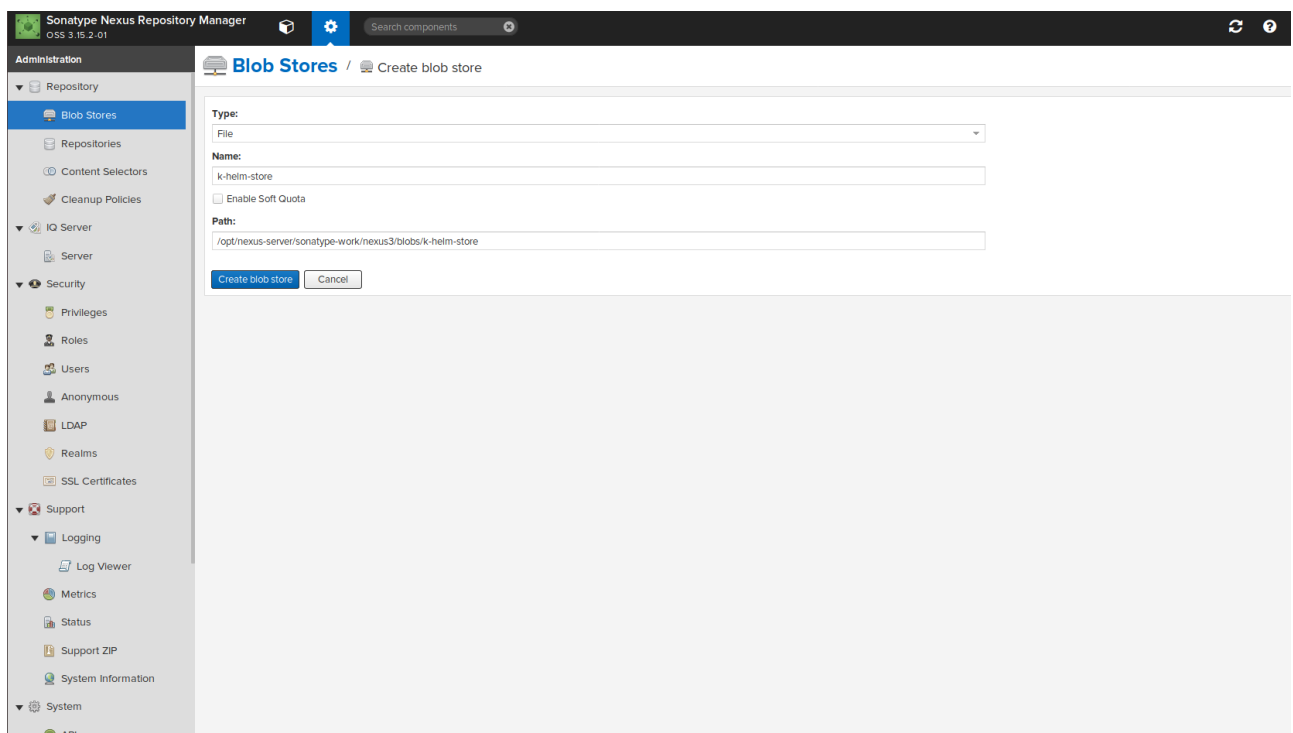
```
$ sudo systemctl status nexus.service
```

Create a hosted Helm repository

Current implementation supports hosted and proxy repositories, and does not support group, We will be creating only hosted helm repository, creating proxy should be straight forward.

- Create blob to store helm packages.

Go to **settings** → **repository** → **Blob stores** → **Create blob**, fill the blob name, if required change the path keep the blob store directory/path as is.



- Create helm local repository.

Go to **settings** → **repository** → **Repositories** → **Create Repository**, and select **helm(hosted)** from list of repositories. Set the desired name and the also set the blob name that was created in previous step.

Sonatype Nexus Repository Manager
OSS 3.15.2-01

Search components

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Repositories

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IQ Server

Server

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Privileges

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Anonymous

LDAP

Realms

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Support

Logging

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Status

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System Information

System

API

Repositories / Select Recipe / Create Repository: helm (hosted)

Name:
A unique identifier for this repository
helm-local

Online:
☒ If checked, the repository accepts incoming requests

Storage
Blob store:
Blob store used to store asset contents
k-helm-store
Strict Content Type Validation:
☒ Validate that all content uploaded to this repository is of a MIME type appropriate for the repository format

Hosted
Deployment policy:
Controls if deployments of and updates to artifacts are allowed
Disable redeploy

Create repository Cancel