Anaconda Documentation

Release 6.1.4

Anaconda Inc.

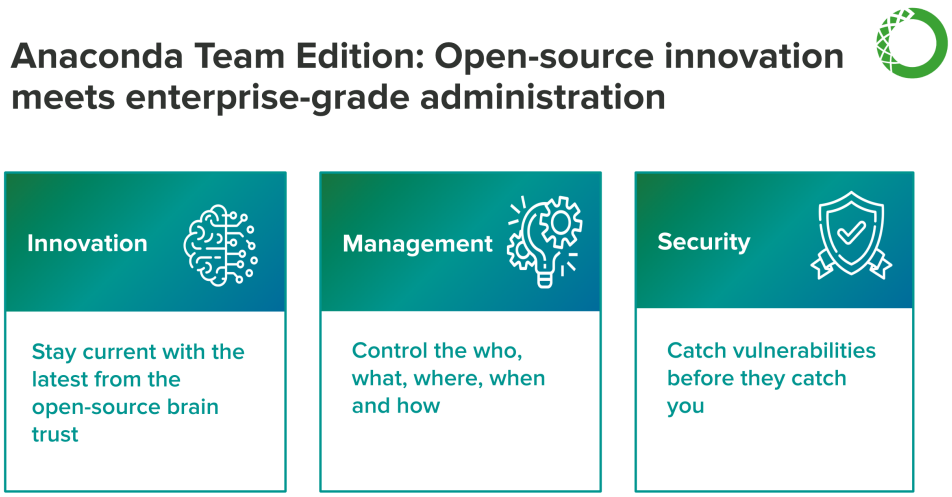
Oct 07, 2021

CONTENTS

Anaconda Team Edition is our latest generation repository for all things Anaconda. With support for all major operating systems, the repository serves as your central conda, PyPI, and CRAN packaging resource for desktop users, development clusters, CI/CD systems, and production containers.

- The clearinghouse for **build artifacts (packages and libraries)** - along with their metadata - at enterprise scale
- Comprehensive history of repository events to ensure **governance** and **security**
- Makes it easy to distribute consumable **artifacts** to end users, **package managers** and **CI servers** so that they can retrieve and store the artifacts and their dependencies during the development lifecycle.
- Integrates with **enterprise content management**, including CVE alerts

As the premier providers of open source for data science, AI, and ML, we already help teams build models, applications, dashboards, REST APIs through Anaconda Individual Edition, the conda package and environment manager, and our package repository on Anaconda Cloud. Anaconda Team Edition delivers this rich ecosystem with a governance layer that ensures your data scientists, your IT department, and your legal department stay in collaboration, not conflict.



CHAPTER

ONE

PREPARING ENVIRONMENT FOR ANACONDA TEAM EDITION

This section provides guidance on preparing your environment before you install Anaconda Team Edition. Select the preparation guide applicable to your environement:

1.1 Standard environment preparation

This topic provides guidance for preparing your environment before *Standard installation*.

1.1.1 Install requirements

Note: The installer provides a single-node installation process.

Software requirements

The installer is a self-extracting binary (ate-x.x.x-installer.sh, where x.x.x is the version number) that contains the necessary components to run Anaconda Teams services. The basic requirements prior to installation are:

- Any Linux variant capable of supporting Docker
- Docker Engine 1.13.1+ or Docker CE/EE 17.04+ (Supports Compose format 3.1)
- Docker Compose 1.11.0+ (Supports Compose format 3.1)
- If SELinux is enabled, it cannot be in enforcing mode
- Optional: DNS record and TLS/SSL certs (more information below)

Some additional recommendations:

- RHEL7/CentOS7: This is our customers' most common selection to date, and the variant we have the most experience supporting. The versions of Docker and Docker-compose available through the default yum package repository are sufficient.
- Ubuntu 20.04 LTS: This has proven to be a reliable choice for customers as well, using the versions of Docker and Docker-Compose available in the default `apt-get` package repository.
- RHEL8/CentOS8: Installing ATE on these variants is possible, but requires additional effort. Because RedHat has replaced its Docker offering with Podman, Podman must be removed from the installation Docker and Docker-Compose installed from third-party sources.
- Other Linux variants that provide full support for Docker and Docker-Compose are likely to work as well, but we invite you to inquire with the Anaconda implementation team for our most up-to-date experience.

For Docker, the default log driver must be configured to the json-file.

For Red Hat systems, please refer to the Default options for modifying docker daemon options. To verify that you're running the json-file, run the following command:

```
docker info --format '{{.LoggingDriver}}'
```

Hardware requirements

- 4 CPUs
- 8GB RAM
- 1TB storage space

> **Warning:** Our recommended storage space only accounts for Anaconda's default channels; if you wish to mirror additional channels or upload additional packages, please allocate more storage accordingly.

Optional: TLS/SSL certificate requirements

Team Edition can use certificates to provide transport layer security for the cluster. It is required to have your TLS/SSL certs prior to installation, otherwise self-signed certificates can be generated during the initial installation. You can configure the platform to use organizational TLS/SSL certificates after completing the installation.

You may purchase certificates commercially, use Let's Encrypt, or generate them using your organization's internal public key infrastructure (PKI) system. When using an internal PKI-signed setup, the CA certificate is stored on the file system. You will need to make sure that the root certificate of your certificate authority is trusted by the server running the application and the workstations used by users of the application.

In either case, the configuration will include the following:

- A certificate for the root certificate authority (CA)
- An intermediate certificate chain
- A server certificate
- A private server key

Optional: DNS requirements

Web browsers use domain names and web origins to separate sites, so they cannot tamper with each other. If you want to use DNS, you must have it ready prior to installation. This DNS name is what users will use to access the application.

1.1.2 Security requirements

External — accessible outside of server

It is important to protect all services running on the node from outside access. The exceptions are as shown below:

- `:80` nginx - only if you are using HTTP
- `:443` nginx - only if you are using HTTPS
- `:22` ssh - optional; only if you need SSH

Internal — accessible only within server

Note: This is only necessary in a multi-node install. Please contact your implementation representative for more information.

Anaconda Team Edition uses several ports for internal communication between components. These ports do not need to be open to the end user.

- `:5000` repo - Team Edition API
- `:5002` repo-proxy - Team Edition file serving API proxy
- `:5000` repo-dispatcher - Team Edition event dispatcher/handler (exposed only for prometheus metrics)
- `:5000` repo-worker - Team Edition scheduled jobs worker (exposed only for prometheus metrics)
- `:8080` keycloak - keycloak's `/auth/*` endpoints are proxied in Nginx
- `:5432` postgres - Postgresql database used by Team Edition and Keycloak
- `:6379` redis - Redis instance used by Team Edition services
- `:9090` prometheus - Prometheus is proxied in Nginx at `/Prometheus`

To change the `postgres` user password, run `\password postgres` when in the shell of the postgres container.

To change the `redis` user password, follow the instructions under *Troubleshooting*.

After ensuring all requirements have been met, proceed to *Standard installation* to install Team Edition.

1.2 Air gap environment preparation

This topic provides guidance for preparing an air-gapped environment and installing an air-gapped environment system for a straightforward installation of Anaconda Team Edition, as detailed in *Air gap installation*.

1.2.1 Preparing the air-gapped environment

Environment requirements

The installer is a self-extracting binary (ate-x.x.x-installer.sh, where x.x.x is the version number) that contains the necessary components to run Anaconda Team Edition.

The following tools and components are required to install Anaconda Team Edition in your air-gapped environment:

Software requirements

- Any Linux variant capable of supporting Docker (RHEL 7.x/CentOS)
- If SELinux is enabled, it cannot be in enforcing mode

- Use FQDN(Fully Qualified Domain Name) or Hostname
- **If you are not using DNS**: you will use the public IP address of your instance

Hardware requirements

- 2 CPUs
- 8GB RAM
- **1.5TB storage space**
  - Conda_air gap zip file is~ 700GB
  - CVE zip file is ~20MB

Installing packages and CVE files

Artifact download authorization

In order to pull down the conda packages and CVEs, you will need to provide the IP address of the server you are going to store the packages and CVEs on. This enables us to grant you access to the S3 bucket where we store the packages and CVEs.

Note: This will need to be completed prior to scheduling your implementation with Anaconda. **The download will take several hours**.

If you prefer not to use a hostname, the public IP address of your environment will be required.

Installing packages and CVEs

In this section, you will install Team Edition packages, move those packages to your air-gapped repository, and configure the `.env` file to point to the location of the CVEs.

Warning: Downloading the Anaconda Team Edition Packages may take **several hours**.

Run the following commands to install the air gap and cve packages:

```
curl -O https://anaconda-airgap-te.s3.amazonaws.com/conda_main_airgap.zip
curl -O https://anaconda-airgap-te.s3.amazonaws.com/conda_msys2_airgap.zip
curl -O https://anaconda-airgap-te.s3.amazonaws.com/conda_r_airgap.zip
curl -O https://anaconda-airgap-te.s3.amazonaws.com/cve.zip
```

Warning: Do not unzip the air gap or cve files.

DNS and TLS/SSL certificate requirements

Team Edition can use certificates to provide transport layer security for the cluster. It is required to have your TLS/SSL certs prior to installation; otherwise, self-signed certificates can be generated during the initial installation. You can configure the platform to use organizational TLS/SSL certificates after completing the installation.

You may purchase certificates commercially, use Let's Encrypt, or generate them using your organization's internal public key infrastructure (PKI) system. When using an internal PKI-signed setup, the CA certificate is stored on the file system. You will need to make sure the root certificate of your certificate authority is trusted by the server running the application and the workstations used by users of the application.

You must provide the SSL cert for the hostname your Team Edition instance is running on.

Security requirements

External Ports

These are ports that allow access outside of the server. It is important to protect all services running on the node from outside access. The exceptions are as shown below. These ports need to be open to allow access to Anaconda Team Edition via browser and (optionally) via SSH:

- `:80` nginx - only if you are using HTTP
- `:443` nginx - only if you are using HTTPS
- `:22` ssh - optional; only if you need SSH

Internal Ports

These are ports that allow access within the server and are open on docker containers, exposed only to the docker network. Ideally, Anaconda Team Edition will have a dedicated environment. Anaconda Team Edition uses several ports for internal communication between components. These ports do not need to be open to the end user but they need to be reserved, as some bind to the local host network interfaces.

You can run `docker ps` and reference the **PORTS** column, as shown in the following example:

```
CONTAINER ID        IMAGE                          COMMAND                  CREATED             STATUS              PORTS
3cda107f52f3        nginx:6.1.5-airgap             "/docker-entrypoint.…"   2 weeks ago         Up 2 seconds        0.0.0.0:443->8080/tcp
c92b90500d9c        repo-proxy:6.1.5-airgap        "/proxy /wait-for-ke…"   2 weeks ago         Up 2 seconds        0.0.0.0:5002->5002/tcp
a0ac5708b1b9        repo:6.1.5-airgap              "/opt/repo/wait-for-…"   2 weeks ago         Up 3 seconds        0.0.0.0:5000->5000/tcp
f853bbd20f95        repo:6.1.5-airgap              "/bin/repo run-dispa…"   2 weeks ago         Up 3 seconds        5000/tcp
825947b64364        repo:6.1.5-airgap              "/bin/repo run-worker"   2 weeks ago         Up 3 seconds        5000/tcp
d0c89c29ba19        keycloak:6.1.5-airgap          "/opt/jboss/tools/do…"   2 weeks ago         Up 2 seconds        0.0.0.0:8080->8080/tcp, 8443/tcp
01fd7842c9e7        postgres:9.6                   "docker-entrypoint.s…"   2 weeks ago         Up 3 seconds        0.0.0.0:5432->5432/tcp
856fa49c3d83        redis-ubi:6.1.5-airgap         "redis-server"           2 weeks ago         Up 2 seconds        0.0.0.0:6379->6379/tcp
04195d77f18b        prom/prometheus:v2.15.2        "/bin/prometheus --c…"   2 weeks ago         Up 2 seconds        0.0.0.0:9090->9090/tcp
```

- `:5000` repo - Team Edition API
- `:5002` repo-proxy - Team Edition file serving API proxy
- `:5000` repo-dispatcher - Team Edition event dispatcher/handler (exposed only for prometheus metrics)
- `:5000` repo-worker - Team Edition scheduled jobs worker (exposed only for prometheus metrics)
- `:8080` keycloak - keycloak's /auth/* endpoints are proxied in Nginx
- `:5432` postgres - Postgresql database used by Team Edition and Keycloak
- `:6379` redis - Redis instance used by Team Edition services
- `:9090` prometheus - Prometheus is proxied in Nginx at /Prometheus

1.2.2 Installing air-gapped environment system

Install Docker and Docker Compose. Contact your operating system vendor or IT department for assistance with this step.

After ensuring all requirements have been met, proceed to *Air gap installation* to install Team Edition in your air-gapped environment.

CHAPTER

TWO

INSTALLING ANACONDA TEAM EDITION

The topics in this section provide guidance on the installation process for Anaconda Team Edition. The installer is a self-contained executable that utilizes Docker to load and instantiate the necessary services. While the installer provides some automated installation capabilities, it also provides the building blocks for in-depth runtime customization.

2.1 Standard installation

This topic provides guidance on installing Anaconda Team Edition and verifying your installation.

Note: To successfully install Team Edition, you must have already prepared your environment according to the *Standard environment preparation* topic.

2.1.1 Installing Team Edition

Ensure you are in the same directory as the installer when completing these steps.

Installing with root access

Run the following in bash:

```
# Replace "x.x.x" with the version number.
# Replace "hostname of the target host" with the hostname of the server, which you will
#  use to access Team Edition. This could be internal or external (accessible from the␣
↪internet).
./ate-x.x.x-installer.sh --keep -- --domain <the IP or hostname of the target host> --
↪default-user anaconda
```

During installation, credentials will be printed as a random string in the terminal for two separate roles:

- **Admin** - for administration in Keycloak
- **"default-user"** - for administration in Team Edition UI.

Note: You will need the user names and passwords printed on the screen later, so save them!

Example output:

```
User anaconda-admin created, realm=dev, roles=admin
password: J86j193PwaH92tjIN5J78m67
User admin created, realm=master, roles=admin
password: 79g2X1Zx02iY9RKe729MP38Y
```

Within the `ate-x.x.x-installer/` folder is the `install.sh` script and `docker-compose.yml` file, which defines how the Anaconda Teams services are run.

Installing without root access

It is also possible to run the installer without root permission. However, this requires additional manual steps:

Add yourself to the docker group by running the following command:

```
# Replace <USERNAME> with your Anaconda username.
sudo usermod -a -G docker <USERNAME>
```

Enable port forwarding as root or with `sudo`:

```
sudo sysctl net.ipv4.conf.all.forwarding=1
sudo iptables -P FORWARD ACCEPT
```

By default, `/opt/anaconda/repo` is used as the default path for the installation folder. You can either create the folder manually by assigning write access to the current user, or use `-b` (`--base-dir` parameter of the installer to specify the folder for installation).

Within the `ate-x.x.x-installer/` folder is the `install.sh` script and `docker-compose.yml` file, which defines how the Anaconda Teams services are run.

2.1.2 Manual verification of installation

Services are one-to-one to containers. Therefore, verifying that all major containers are up and not restarting or failing is a good first step.

In a terminal, run:

```
docker ps
```

You should see output similar to the following:

```
CONTAINER ID        IMAGE                       COMMAND                  CREATED             STATUS              PORTS                                NAMES
38bd3972ff1d        repo:6.0.1                  "/opt/repo/wait-for-…"   5 days ago          Up 10 hours         0.0.0.0:5000->5000/tcp               repo-601-installer_repo_api_1
d47d9ab33fb1        nginx-proxy:6.0.1           "/bin/sh -c 'sed -i …"   5 days ago          Up 10 hours         0.0.0.0:80->80/tcp                   repo-601-installer_nginx_proxy_1
2fae2bdfc41f        repo:6.0.1                  "/conda/bin/python -…"   5 days ago          Up 10 hours         5000/tcp                             repo-601-installer_repo_worker_1
175c1465b384        repo:6.0.1                  "/conda/bin/python -…"   5 days ago          Up 10 hours         5000/tcp                             repo-601-installer_repo_dispatcher_1
d17031e454ce        repo-proxy:6.0.1            "/wait-for-keycloak.…"   5 days ago          Up 10 hours         0.0.0.0:5002->5002/tcp               repo-601-installer_proxy_1
19940ca06fa4        repo-keycloak:6.0.1         "/opt/jboss/tools/do…"   5 days ago          Up 10 hours         0.0.0.0:8080->8080/tcp, 8443/tcp     repo-601-installer_keycloak_1
787c8a300dc4        postgres:9.6                "docker-entrypoint.s…"   5 days ago          Up 10 hours         0.0.0.0:5432->5432/tcp               repo-601-installer_postgres_1
118e521d5df4        redis:latest                "docker-entrypoint.s…"   5 days ago          Up 10 hours         0.0.0.0:6379->6379/tcp               repo-601-installer_redis_1
```

It is important to note that each container appears in the output:

- Installer_repo_api
- Installer_nginx_proxy
- Installer_repo_worker
- Installer_repo_dispatcher
- Installer_repo_proxy
- Installer_keycloak
- Installer_postgres
- Installer_redis

It is also important to note that the status of each container is "Up", and that it does not get stuck in a restart loop.

Finally, you should be able to use a browser to navigate to the domain that you supplied when executing the installer. If you are able to successfully authenticate and use the product, it has installed correctly.

2.1.3 Next steps

After the installation has completed, open a browser and visit the domain you used during the product installation.

> **Warning:** Never delete the install directory containing the `docker-compose.yml` and `.env` files.

Further installation options can be seen by running the following command (after the basic installation is complete):

```
# Replace "x.x.x" with the version number.
./ate-x.x.x-installer/install.sh --help
```

This will present you with the following list of possible arguments:

Arguments (shorthand)	**Arguments (longhand)**	**Description**
-r DOCKER_REGISTRY	–registry DOCKER_REGISTRY	Docker registry, url:port (default uses the system Docker daemon)
-h POSTGRES_HOST	–pg-host POSTGRES_HOST	Postgresql host (default is on internal Postgres instance)
-p POSTRES_PORT	–pg-port POSTRES_PORT	Postgresql port
-u POSTGRES_USER	–pg-user POSTGRES_USER	Postgresql user
-pw POSTGRES_PASSWORD	–pg-password POSTGRES_PASSWORD	Postgresql password (will set the internal Postgres instance password)
-e REDIS_URL	–redis REDIS_URL REDIS_URL	Redis URL (default is an internal Redis instance)
-d DOMAIN	–domain DOMAIN	External domain (or IP) of host system
-c TLS_CERTIFICATE	–tls-cert	Path to TLS certification file for optionally configuring HTTPS
-k TLS_KEY	–tls-cert	Path to TLS key file for optionally configuring HTTPS
– default-user	DEFAULT_USER	Default user name
-l	–no-image-load	Don't load Docker images
-y	–no-prompt	Answer yes to all prompts
– help		Print help text

2.2 Air gap installation

This topic provides guidance for installing Anaconda Team Edition in an air-gapped environment.

Note: To successfully install Team Edition in an air-gapped environment, you must have already prepared your environment according to the *Air gap environment preparation* topic.

- *System validation checks*
- *Installing Anaconda Team Edition*
- *Installing packages and CVEs in Team Edition*
- *Restarting and logging in to Team Edition as admin*
- *Administering Team Edition in Keycloak*
- *Using Team Edition*

2.2.1 System validation checks

Run the following commands to gain information on your system and validate that it is ready for a Team Edition install.

Display what type of processor your system is running, including the number of CPUs present:

```
$cat /proc/cpuinfo
```

Report the amount of free and used memory (both physical and swap) on the system, as well as the shared memory and buffers used by the kernel:

```
$cat /proc/meminfo
```

A standard Unix command used to display the amount of available disk space for file systems on which the invoking user has appropriate read access:

```
$df -h
```

Displays the operating system name as well as the system node name, operating system release, operating system version, hardware name, and processor type:

```
$uname -a
```

Displays the operating system identification data:

```
$cat /etc/os-release
```

Docker verification check:

```
$docker-compose --version
```

2.2.2 Installing Anaconda Team Edition

Obtain the **Team Edition installer** and your **Team Edition license** from your Anaconda representative before proceeding.

Download Anaconda Team Edition:

```
# Replace <ATE-AIRGAP-INSTALL-URL> with the installer .sh file
$ curl -O \ <ATE-AIRGAP-INSTALL-URL>
```

Make it executable:

```
$ chmod 700 te-installer-6.1.5-airgap-3d840d9.sh
```

Install Team Edition and providing ability to view the output file:

```
# Replace <IP ADDRESS OR DOMAIN> with your IP address/FQDN
$ ./ate-installer.sh --keep -- --domain <IP ADDRESS OR DOMAIN> --default-user anaconda 2␣
↪> &1 | ate.install.output
```

Note: Keep an eye out for the admin credentials generated during the install. **You'll need these usernames and passwords later.**

The credentials will look like the following:

```
User anaconda created, realm=dev, roles=admin
password: <anaconda_pw_here>
User admin created, realm=master, roles=admin
password: <admin_pw_here>
```

Example output:

```
net.ipv4.conf.all.forwarding = 1
Loading Repo images ...
Loaded image: nginx:6.1.5
Loaded image: keycloak:6.1.5
Loaded image: redis-ubi:6.1.5
Loaded image: postgres:9.6
Loaded image: prom/prometheus:v2.15.2
Loaded image: repo:6.1.5
Loaded image: repo-proxy:6.1.5
Successfully loaded images
Installing into /opt/anaconda/repo
Generated secret for repo-service
secret=978kb2M2BcrWR812PxY8yCvp62906C20
realm role=view-users
Generated secret for repo-account-sync
secret=h4ZkM1892p9gK95W8A68T4T0TA4aK5Z7
# Usernames and passwords below:
User anaconda created, realm=dev, roles=admin
password: T2206u7iNFS0226Qy2ro0lX1
User admin created, realm=master, roles=admin
password: 6kd01Rmqz46849gRh8U78Uu3
```

2.2.3 Installing packages and CVEs in Team Edition

After downloading the zip files during *air gap environment preparation*, move them to the desired location. We have used `/repo/airgap/` in the following example:

```
mv conda_main_airgap.zip /opt/anaconda/repo/airgap/
mv cve.zip /opt/anaconda/repo/airgap/
```

In the Team Edition base directory, update `REPO_CVE_DEFAULT_MIRROR` in the `.env` file to the following:

```
REPO_CVE_DEFAULT_MIRROR=file://opt/anaconda/repo/airgap/cve.zip
```

2.2.4 Restarting and logging in to Team Edition as admin

In your base Team Edition directory, run the following commands:

```
docker-compose stop
docker-compose up -d
docker ps  # to make sure all processes are up
```

Log in to Team Edition, either at `http://<DNS>` or `http://<your instance public IP address>`.

Use the following credentials when logging in:

Username: anaconda

Password: your generated password from when you installed Team Edition

On your very first login, you will be redirected to Keycloak to authenticate your access.

2.2.5 Administering Team Edition in Keycloak

Once you've been redirected to Keycloak upon login, you can begin setting up your keycloak.

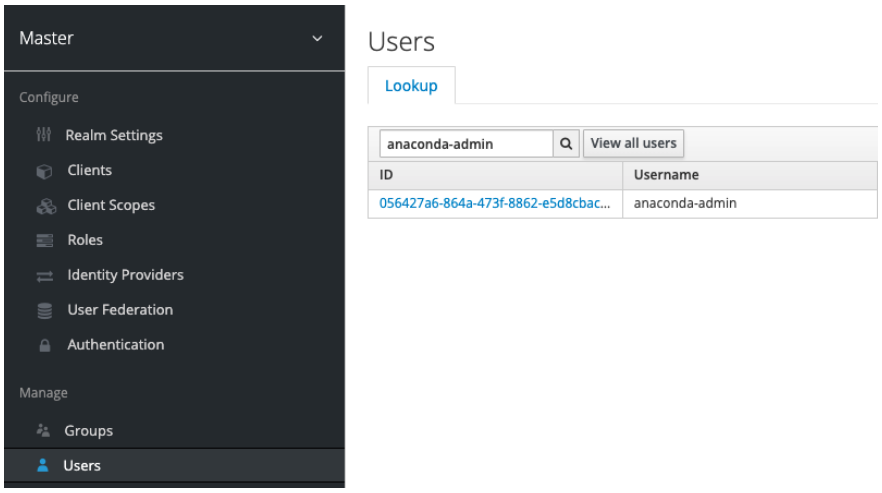
Log in using the following credentials:

Username: admin

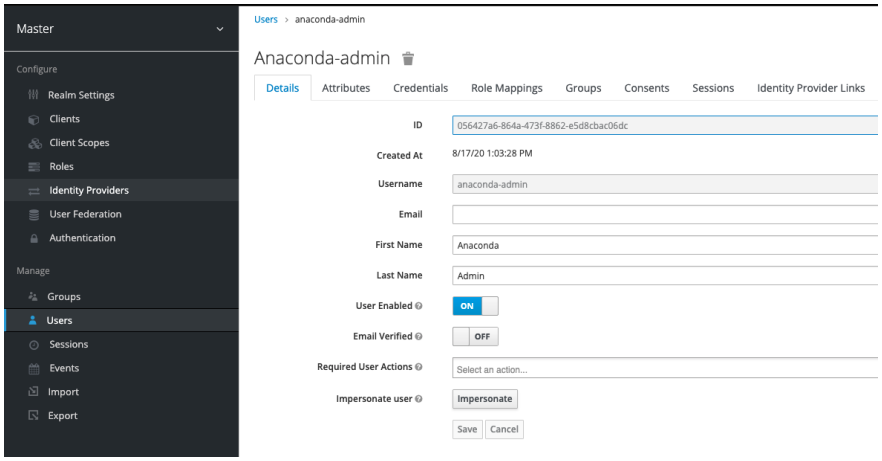
Password: your generated password from when you installed Team Edition

Once you have logged in to Keycloak, you will see the main page, as shown below. On the left-hand side, navigate to **Users**.

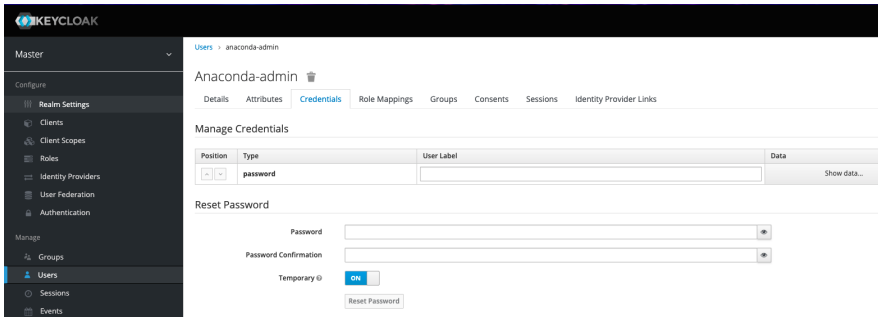
Click on the blue hyperlink in the ID column to take you to the admin profile.



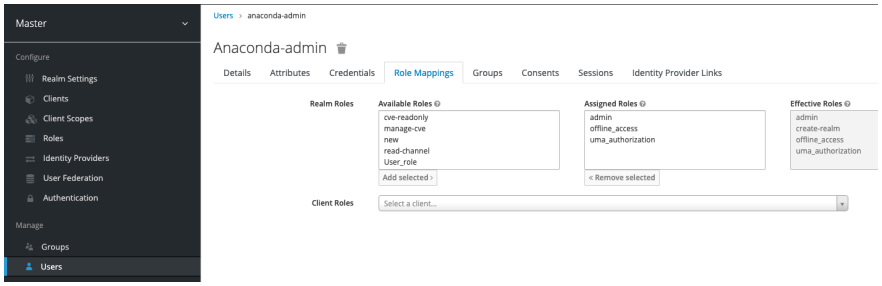
From the **Details** tab, you can make changes to the profile.



From the **Credentials** tab, you can change the password.



From the **Role Mappings** tab, you can add or remove permissions.



Once you have made your changes, you can log in to your Anaconda Team Edition instance. You will be prompted to enter your license to continue. This is the license you obtained from your Anaconda representative.

2.2.6 Using Team Edition

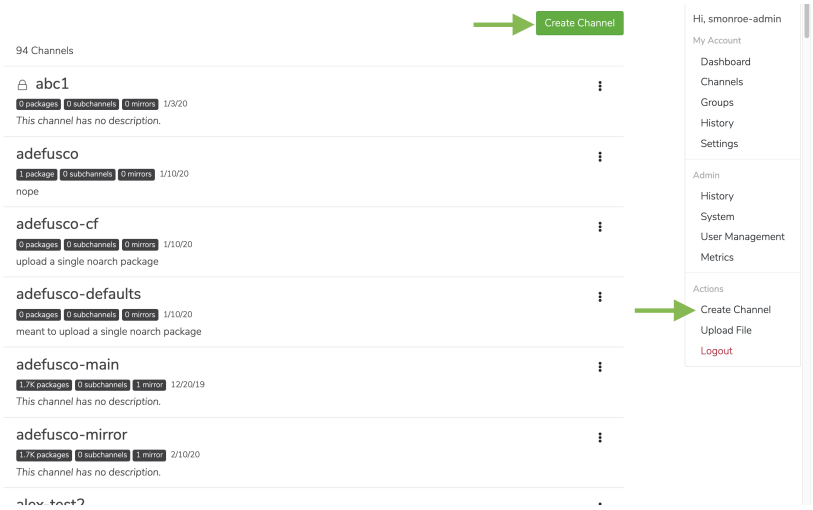
Log in to your Team Edition instance as administrator with the generated ID and password.

Creating a channel

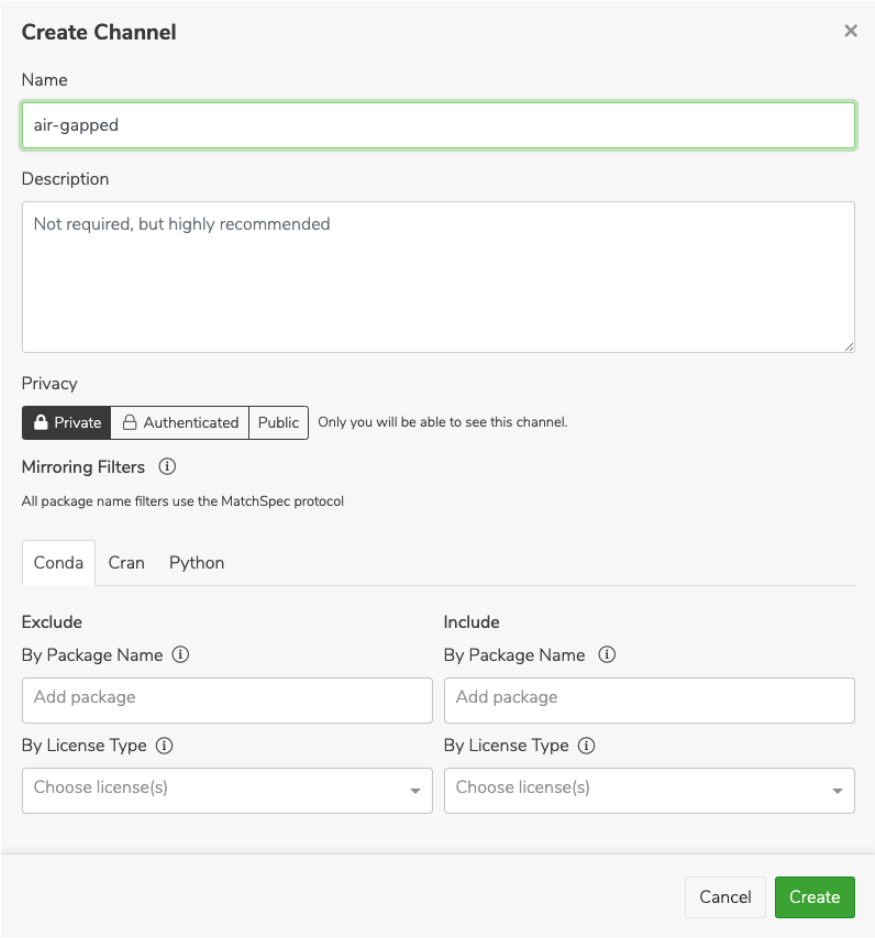
There are a few key things to note when creating a channel:

- If a channel name is already in use, create a new channel with a different name. That channel can then be set as the default channel on the **Settings** page under **My Account**.
- If an email is used as a username, the portion of the email before the "@" symbol (also known as the "local-part") will be used as the username. Because channel names are restricted to a limited set of characters (a-z 0-9 - _), some characters may be replaced with _. For example, if the email address `annie.anaconda@website.com` is used as a username, the channel `annie_anaconda` will be created.
- If you don't see any way of creating a channel (as shown in the following section), you may be lacking the permission to do so. Ask your administrator about *modifying your permissions* to allow you to create channels.

1. Click on the **My account** button in the top right, and then click **Create a Channel**. You can also create a channel by clicking the green **Create Channel** button from your channel page.



2. Fill in a name and description when prompted.


Create Channel
Name
air-gapped
Description
Not required, but highly recommended
Privacy
Private
Authenticated
Public
Only you will be able to see this channel.
Mirroring Filters
All package name filters use the MatchSpec protocol
Conda
Cran
Python
Exclude
By Package Name
Add package
By License Type
Choose license(s)
Include
By Package Name
Add package
By License Type
Choose license(s)
Cancel
Create

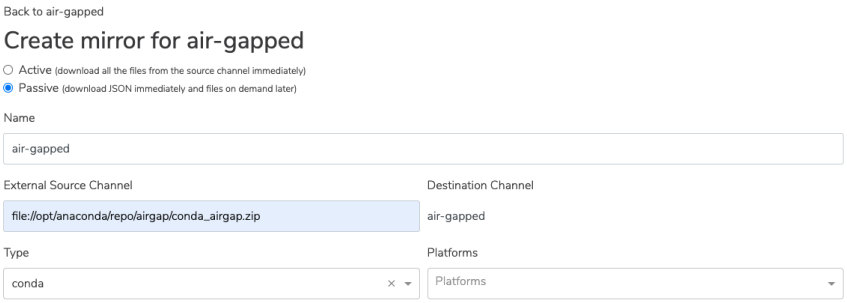
Creating a mirror

In the new channel, create a new mirror by clicking the green **Mirror** button in the channel.

Ensure **Passive** is selected at the top.

Note: Mirroring passively reduces the storage space used. You will still get the packages you need, as they are already stored in the Team Edition instance.

In the field **External Source Channel**, enter the file path to the `conda_main_airgap.zip` file.



Once you have created the mirror, you are all set to use Team Edition!

2.3 Licenses

Your license determines the number of users and channels available to your instance as well as the high-availability settings for your account.

Licenses are issued for their designated contract period. New licenses will be issued by Anaconda at the time of renewal.

This topic provides guidance on the following actions:

- *Obtaining a license*
- *Enabling your license*
- *Viewing your license*
- *Updating your license*
- *Understanding licensing limitations*

2.3.1 Obtaining a license

You may obtain or upgrade a license through one of the following methods:

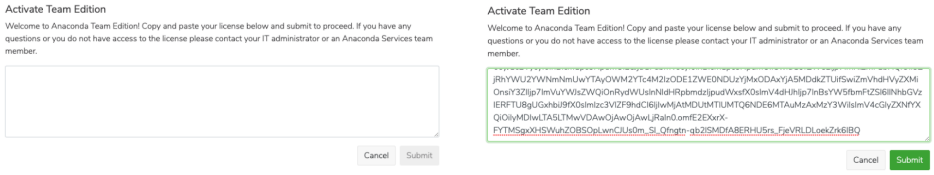
1. The Anaconda sales team. Team Edition can be installed on premise (may be air gapped) or in your existing cloud infrastructure.
2. OEM partners.

2.3.2 Enabling your license

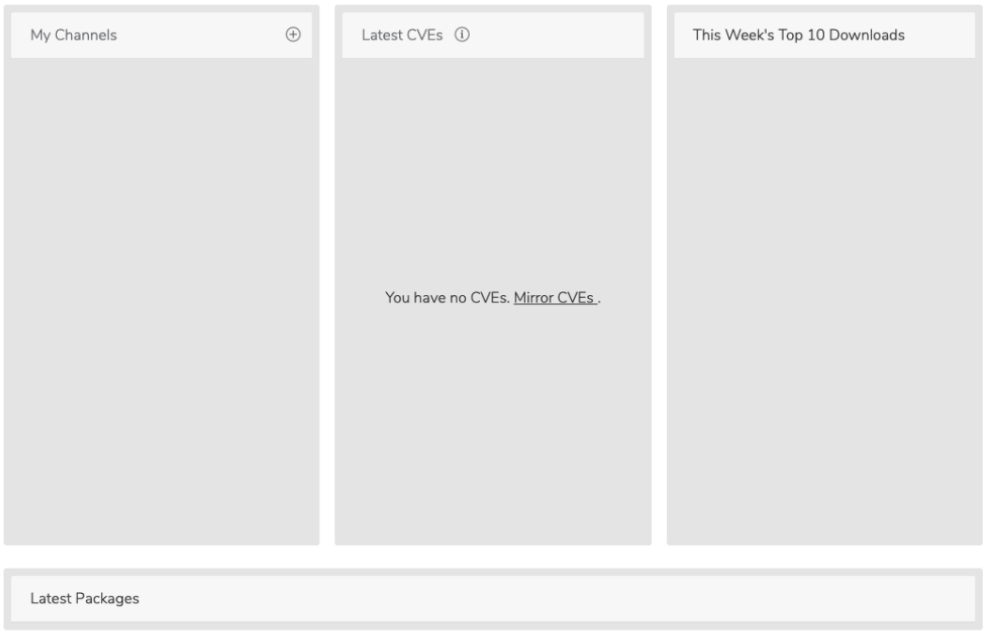
Once you have obtained your license, complete the following steps:

1. Run the installer.
2. Once the installer has completed, go to `https://<YOUR_DOMAIN>/`.
3. Click **Login**, and then log in using the default administrator username and password created during the installation.

4. You will be presented with a page where you can paste your license and hit **Submit**.



If the license was accepted, you will be redirected to the Dashboard.



2.3.3 Viewing your license

Depending on your permissions, you may or may not be able to view the licensing section. Follow these steps to view your license:

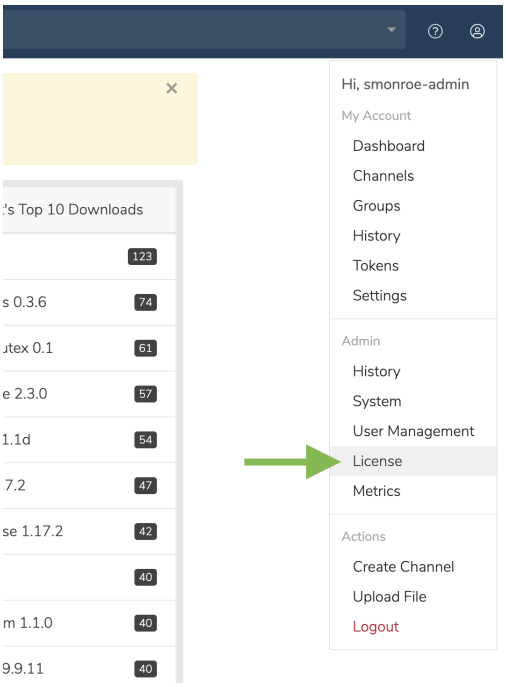
1. Click on the **My account** button in the top right.
2. In the dropdown, under **Admin**, select **License**.

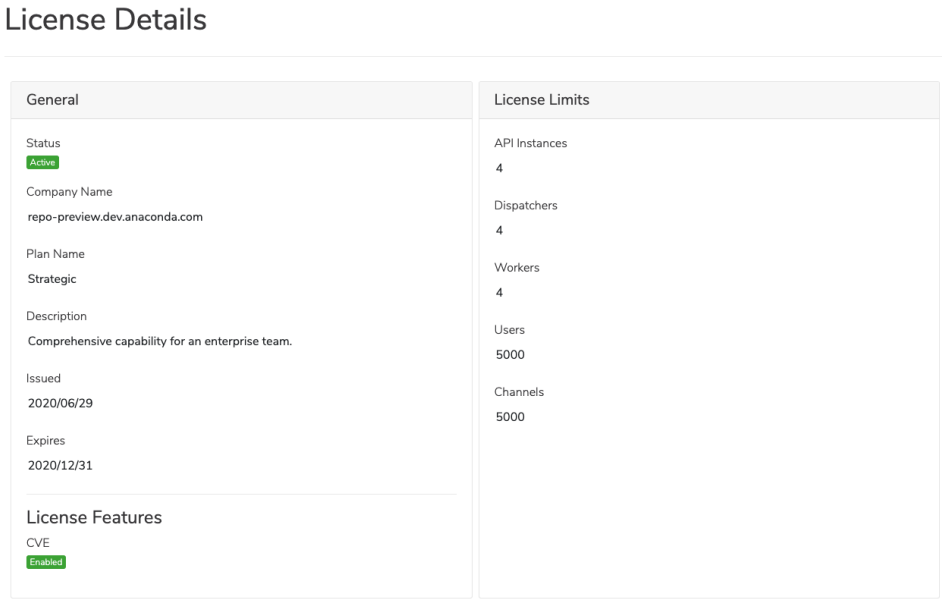
You will be presented with the License Details page:

2.3.4 Updating your license

If you obtain a new license, you'll need to update your license by completing the following steps:

1. Clear the browser cache/cookies for your ATE URL.
2. Create an ATE user in Keycloak from the Dev Realm and assign an admin role if one is not already assigned.
3. Log in to ATE using the new credentials at `https://<FQDN>`.
4. You will be taken to the license page. Copy and paste the license.

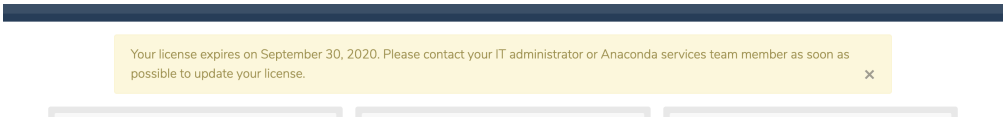

Hi, smonroe-admin
My Account
Dashboard
Channels
Groups
History
Tokens
Settings
Admin
History
System
User Management
License
Metrics
Actions
Create Channel
Upload File
Logout
's Top 10 Downloads
123
s 0.3.6
74
utex 0.1
61
e 2.3.0
57
1.1d
54
7.2
47
se 1.17.2
42
40
m 1.1.0
40
9.9.11
40


License Details
General
Status
Active
Company Name
repo-preview.dev.anaconda.com
Plan Name
Strategic
Description
Comprehensive capability for an enterprise team.
Issued
2020/06/29
Expires
2020/12/31
License Features
CVE
Enabled
License Limits
API Instances
4
Dispatchers
4
Workers
4
Users
5000
Channels
5000

2.3.5 Understanding licensing limitations

A license will limit you to a certain number of users/workers. These limitations are used to track your usage of resources, such as the number of users in your Team Edition instance.

Banners at the top of Team Edition will inform you of any limits you are reaching or have already passed. For example, if your user count exceeds its limit, you may receive a banner like the following:



Note: Team Edition user account limitations are triggered by the first log in of a new user, *not* from the creation of that user's account in Keycloak.

2.4 Backup and restore

This topic provides guidance on the following actions:

- *Backing up Team Edition*
- *Restoring Team Edition*

2.4.1 Backing up Team Edition

Follow these steps to back up your instance of Team Edition:

1. Install `pg_dump` and `pg_restore`.
2. Run the following command from the install directory:

```
# Replace <POSTGRES_PASSWORD> with your postgres password. You can find your␣
↪postgres password here: <BASE_INSTALL_DIR>/config/postgres/postgres_db_password.
↪txt
./repo-tools backup --database-uri postgresql://postgres:<POSTGRES_PASSWORD>
↪@localhost:5432/postgres --keycloak-database-uri postgresql://
↪keycloak:keycloak@localhost:5432/keycloak --blob-dir /opt/anaconda/repo/state/
↪internal/blobs/ > repo.backup.zip
```

3. Save the `repo.backup.zip` file to a secure location.
4. Save the `REPO_TOKEN_CLIENT_SECRET` and `REPO_KEYCLOAK_SYNC_CLIENT_SECRET` values from the `.env` file in the installer directory.

2.4.2 Restoring Team Edition

Follow these steps to restore your instance of Team Edition:

1. *Reinstall Team Edition*.
2. Reinstall `pg_dump` and `pg_restore` as shown *above*.
3. Copy the `repo.backup.zip` file.
4. Run the following command from the install directory:

```
# Replace <POSTGRES_PASSWORD> with your postgres password. You can find your␣
↪postgres password here: <BASE_INSTALL_DIR>/config/postgres/postgres_db_password.
↪txt
./repo-tools restore repo.backup.zip --database-uri postgresql://postgres:<POSTGRES_
↪PASSWORD>@localhost:5432/postgres --keycloak-database-uri postgresql://
↪keycloak:keycloak@localhost:5432/keycloak --blob-dir /opt/anaconda/repo/state/
↪internal/blobs/
```

5. Modify the `.env` file in the install directory and replace `REPO_TOKEN_CLIENT_SECRET` and `REPO_KEYCLOAK_SYNC_CLIENT_SECRET` with the values saved earlier.
6. Run the following in the install directory:

```
docker-compose up -d repo_api
```

2.5 Stopping and Uninstalling Anaconda Team Edition

2.5.1 Stopping Team Edition

To stop your containers, run the following command. This action will not remove your containers, but simply stop them:

```
docker-compose stop
```

To start your containers, run the following command:

```
docker-compose up
```

2.5.2 Uninstalling Team Edition

Warning: Make sure you *back up* logs, the artifacts database, and the postgres database before uninstalling.

To remove Anaconda Team Edition package data, log in with the same user profile you used to install Team Edition and run the following commands in the terminal where Team Edition is installed:

```
# Replace x.x.x with your current version of Team Edition
cd ate-x.x.x-installer
docker-compose down
rm -rf /opt/anaconda/repo
```

To perform a complete uninstall, i.e. to delete Team Edition application and configuration (as opposed to just deleting package data), run the following command as well:

```
# Replace x.x.x with your current version of Team Edition
rm -rf ~/ate-x.x.x-installer
```

CHAPTER

THREE

ADMINISTERING ANACONDA TEAM EDITION

This Anaconda Team Edition Administration guide is intended for user management and administration.

3.1 User management and configuration

The topics within this section pertain to user management and configuration.

3.1.1 User roles and permissions

This topic provides guidance on the following actions:

Assigning access and permissions to individual users can be too fine-grained and cumbersome for organizations to manage, so Anaconda Team Edition enables you to assign access permissions to specific roles.

Understanding roles and permissions

Use roles to authorize individual or groups of users to perform specific actions. Default roles allow you to automatically assign user role mappings when any user is newly created or imported (for example, through LDAP).

Default user roles

By default, Team Edition contains the following preconfigured roles for the **dev** realm.

- **Admin** — the user who, in addition to managing all content, can manage mirrors and CVE data as well
- **Author** — an authenticated user who can create channels
- **Everyone** — a non-authenticated user

Permission categories

Within the Team Edition UI, any role created in Keycloak can be assigned these permission categories. Each of these support read/write admin values.

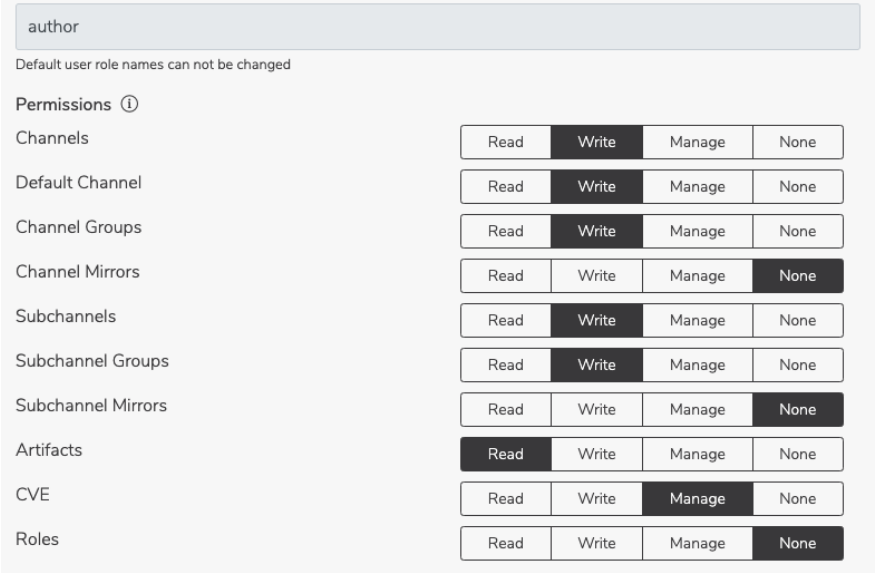
- channel
- channel.default-channel (managing default channel)
- channel.group (managing channel groups)
- channel.mirror (managing channel mirror)
- subchannel
- subchannel.group
- subchannel.mirror
- artifact
- cve
- roles

Each possible permission category can be assigned the value of **read**, **write**, **manage**, or **none**.

- **read** — provides the ability to view the resource
- **write** — provides the ability to view and create the resource
- **manage** — provides the ability to view, create, and edit the resource
- **none** - denies the ability to view, create, or edit the resource

Default roles and permissions

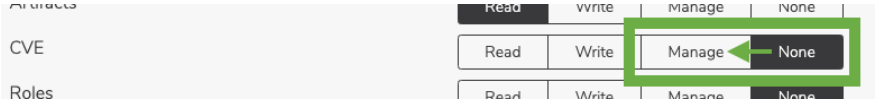
These are the permissions assigned to authors and admins by default:



Editing default permissions

It is possible to edit default permission settings for **everyone** and **author** roles. It is not possible to edit default settings for the **admin** role.

For example, you can grant CVE access to authors by switching user permissions for **CVE** from **None** to **Manage** in the **User Management** dashboard:



Creating custom roles

In order to do this, we must first create and map the role in Keycloak.

Accessing the Keycloak administration console

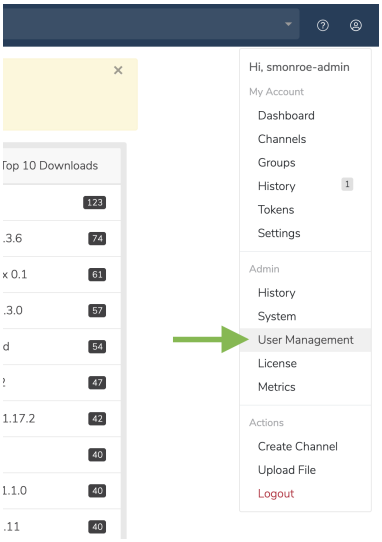
Follow these steps to access the Keycloak administration console:

1. Click on the **My account** button in the top right.
2. In the dropdown, under **Admin**, select **User Management**.
3. On the **User Management** screen, click the **Manage Users** button. You will be directed to the Keycloak login screen.

The default admin username is **admin**, and the admin password can be found in the installer output (an example of which is shown in the *Installing with root access section* of the install instructions). The installer will generate a random password for this user.

Alternatively, you can use `<DOMAIN>/auth/admin` to reach the Keycloak admin login page.

Additional guides for Keycloak:

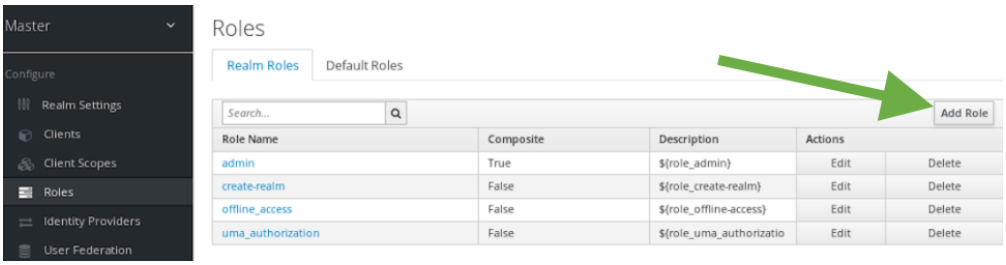


- Keycloak documentation for server administration
- User management
- Setup and configuration of Keycloak server

Creating new roles in Keycloak

Follow these steps to create a new role in Keycloak:

1. To create a new role, click **Add Role** on the **Realm Roles** tab.



2. Enter a name and description of the role, and click **Save**.

Note: Roles can be assigned to users automatically or require an explicit request. If a user has to explicitly request a realm role, enable the **Scope Param Required** switch. The role must then be specified using the `scope` parameter when requesting a token.

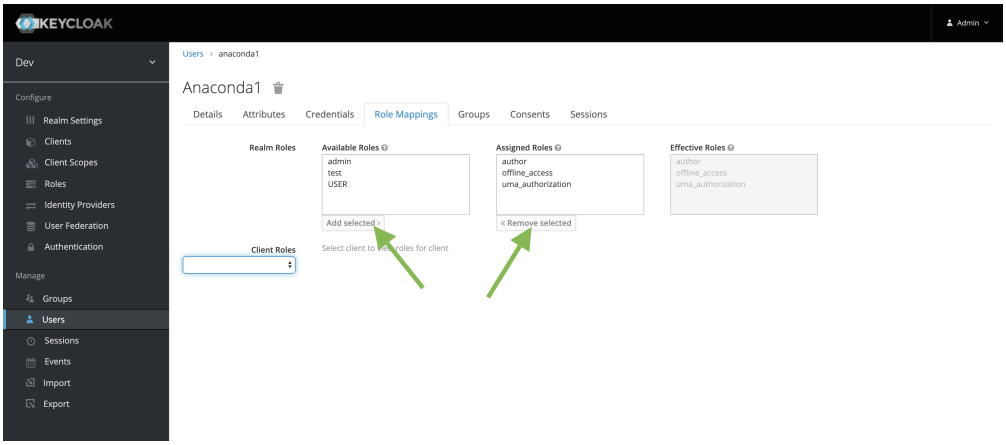
The new role is now available to be used as a default role.

Setting and removing admin roles in Keycloak

Follow these steps to set or remove the admin role for a Team Edition user:

1. In Keycloak, under **Manage**, navigate to the **Users** page.
2. Go to the **Role Mappings** tab.
3. **To set the admin role:** Under **Available Roles**, select **admin** and click **Add selected**.

   To remove the admin role: Under **Assigned Roles**, select the user and click **Remove selected**.
4. Log in again and check the available actions.



View existing users in Keycloak

Follow these steps to view a list of existing users currently present in Team Edition:

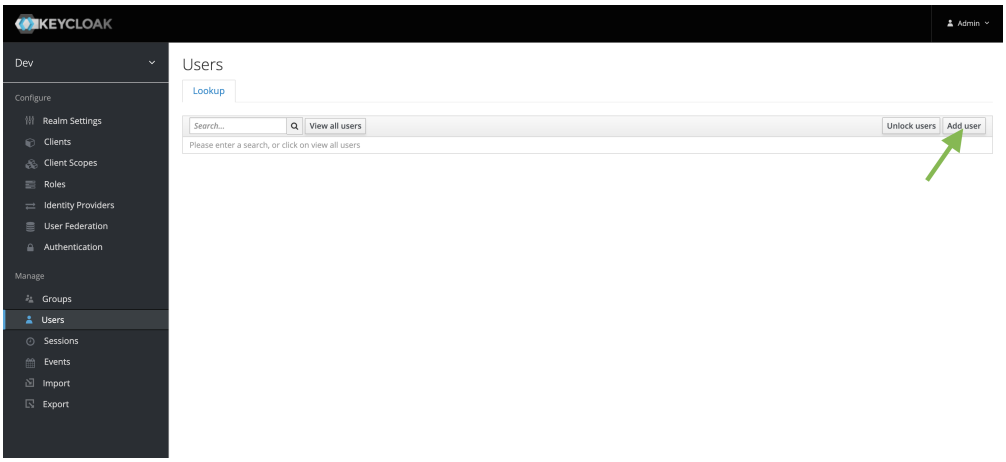
1. Log in to Keycloak as the admin user.
2. Select **DEV** realm.
3. In the Manage menu on the left, click **Users**.
4. On the **Lookup** tab, click **View all users** to list every user in the system, or search the user database for all users that match the criteria you enter, based on their first name, last name, or email address.

Note: This will search the local user database and not the federated database (such as LDAP) because not all external identity provider systems inlcude a way to page through users. If you want users from a federated database to be synced into the local database, select **User Federation** in the Configure menu on the left, and adjust the **Sync Settings** for your user federation provider.

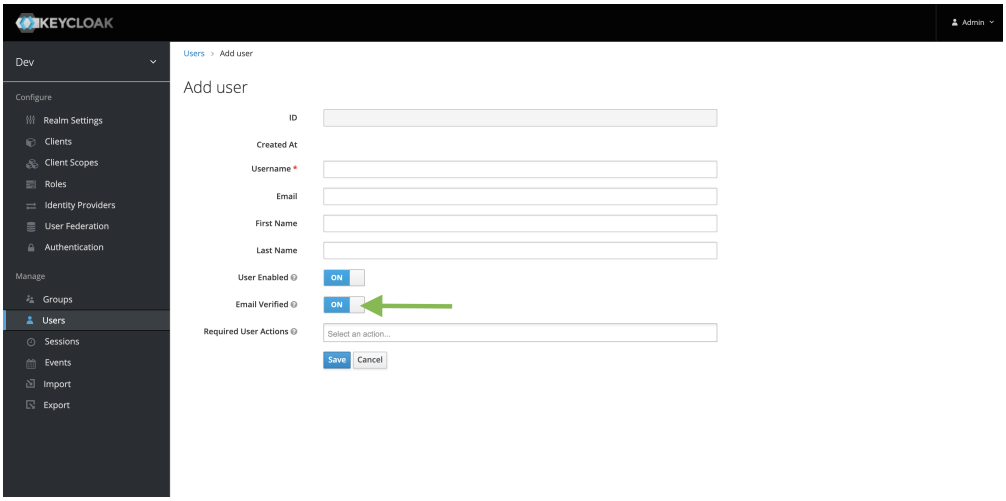
Create a user in Keycloak

Follow these steps to create a user:

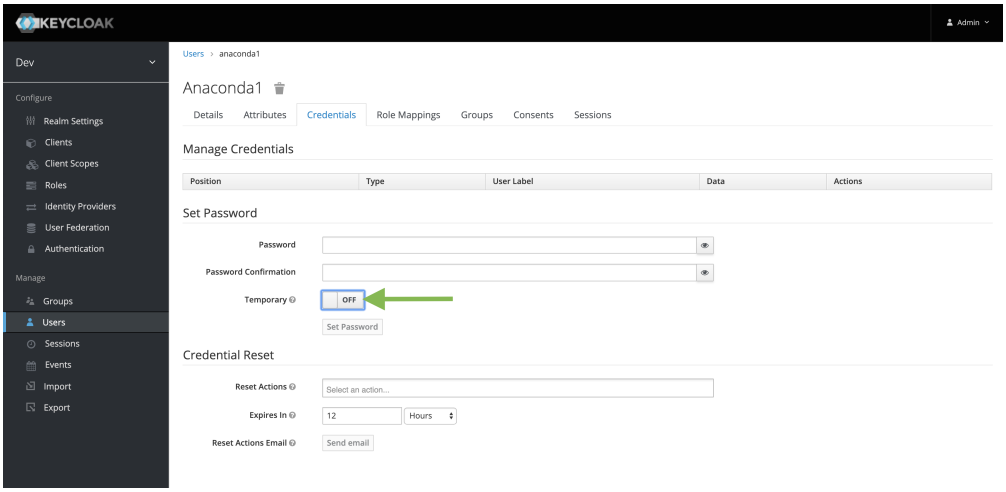
1. In Keycloak, go to the **Users** section on the left.
2. Click **Add user** and specify a user name—and optionally provide values for the other fields—before clicking **Save**.



3. Enter the username and ensure **Email Verified** is **ON**. User names containing unicode characters—special characters, punctuation, symbols, spaces—are not permitted.



4. Click save, then navigate to the Credentials tab.
5. Ensure **Temporary** is **OFF**.
6. Click **Set Password**.



Add a new master realm admin user/Reset password

Follow these steps from the command line to add a new admin user to the master realm *or* to reset your admin password if you're locked out or have forgotten your password.

1. Exec into the Keycloak container:

```
# Replace <KEYCLOAK_CONTAINER_ID> with your keycloak container ID
docker exec -it <KEYCLOAK_CONTAINER_ID> /bin/bash
```

2. Create a user:

```
# Replace <USERNAME> with your username and <PASSWORD> with your password
/opt/jboss/keycloak/bin/add-user-keycloak.sh -u <USERNAME> -p <PASSWORD> -r master -
↪-roles=admin
```

3. Restart the server. Restarting the server will delete the container and any current state:

```
/opt/jboss/keycloak/bin/standalone.sh -Djboss.socket.binding.port-offset=100
```

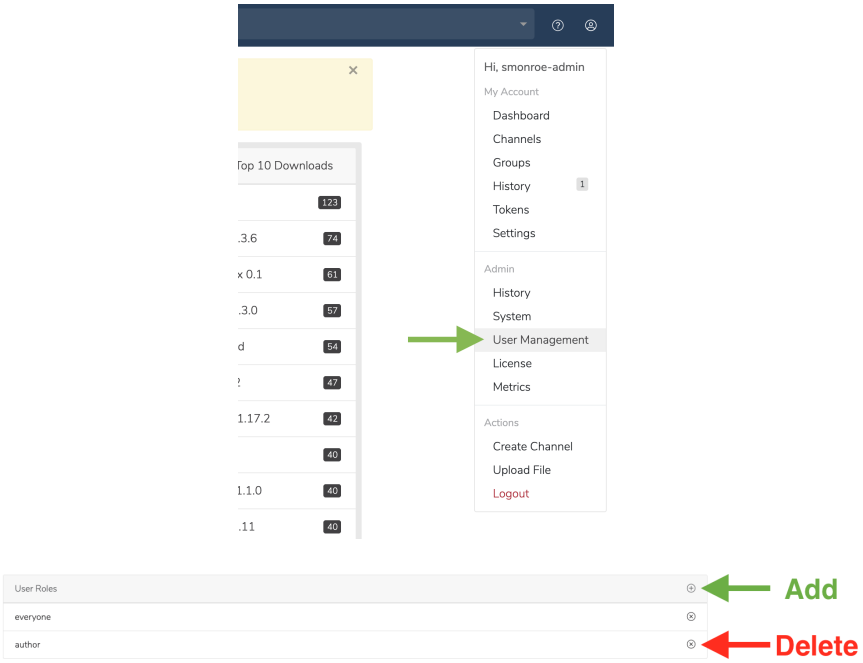
4. Log in to Keycloak from the following URL:

```
#Replace <FQDN> with your fully qualified domain name
<https://<FQDN>/auth/admin/master/console>.
```

Adding and editing user roles in Team Edition

Once roles have been mapped in Keycloak, you can manage users in Team Edition.

1. Click on the **My account** button in the top right.
2. In the dropdown, under **Admin**, select **User Management**.
3. On the **User Management** screen, you can see the **User Roles** table listing the current roles. Click on a role to edit it, or click the **+** icon to add a new role. You can also delete a role by clicking the **x** icon. This will prompt a window to confirm the deletion.



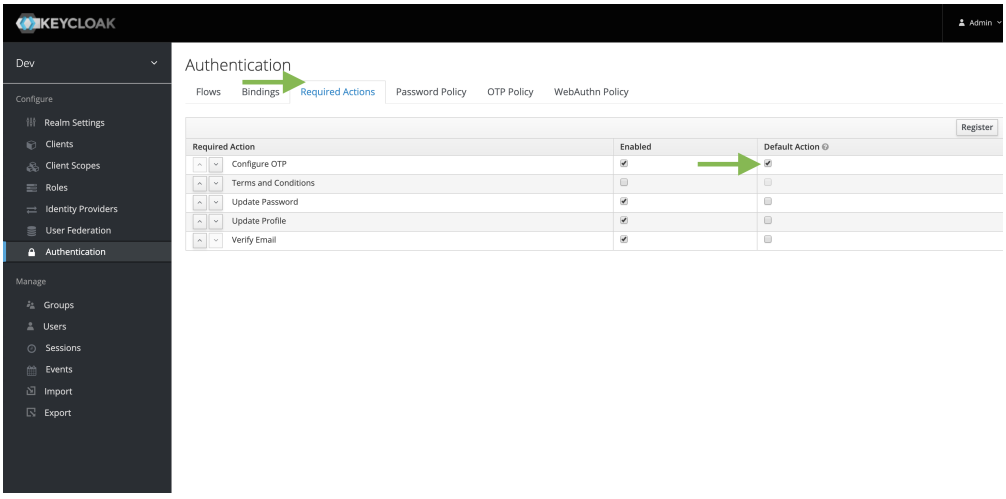
3.1.2 Enabling two-factor authentication

Two-factor authentication(2FA) can be enabled in Keycloak using either Google Authenticator or the One-Time Password(OTP) tool FreeOTP.

For more background on OTPs, see Keycloak's documentation on OTP.

For new users

1. Go to **Authentication**.
2. Navigate to the **Required Actions** tab.
3. Under **Configure OTP**, select **Default**.



For existing users

Note: This should be done for every user that does not have an OTP configured.

1. Go to the user profile page.
2. Under **Required Field**, select **Configure OTP**.

3.1.3 Okta integration using OpenID Connect Provider (OIDC)

Note: For more detailed integration steps, see Keycloak with Okta OpenID Connect Provider.

Follow these steps to integrate Okta using OIDC:

1. Ensure you have completed the steps in Simple login flow.
2. Start creating th eOIDC Identity Provider integration in the Keycloak.
3. In Okta, create a new OpenID connect application integration and use **PUBLIC** (make sure it's not a localhost) redirect uri as a login URL in Okta form.
4. Copy the Client ID and Client Secret from Okta into the Keycloak's configuration.
5. Under **Client Authentication**, select **Client Secret Sent as POST**.
6. By default, use `https://{OKTA-DOMAIN}/oauth2/default/v1/authorize` and `https://{OKTA-DOMAIN}/oauth2/default/v1/token` as authorization and token endpoints, respectively.
7. Set `openid profile email` as default scopes.

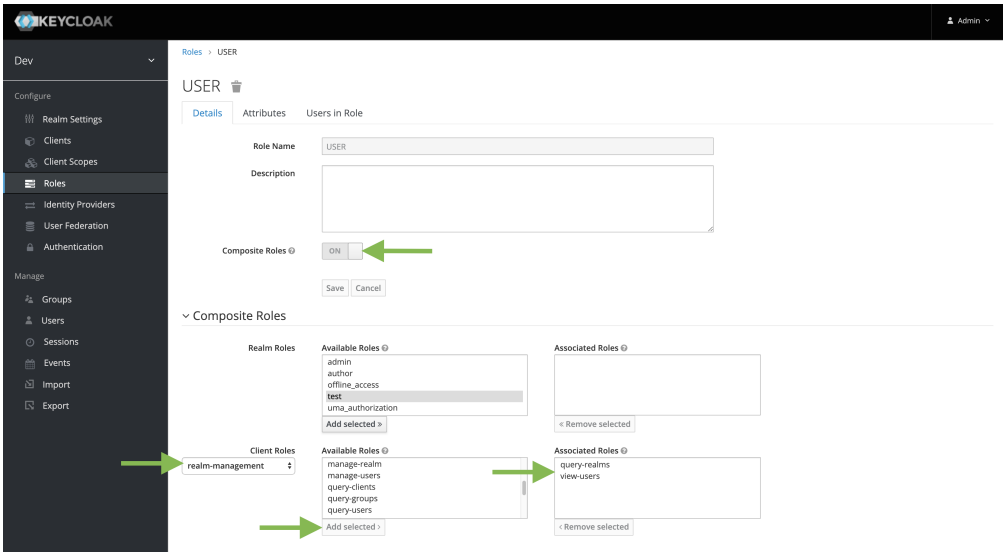
3.1.4 Create a dev-users-admin role

By default, the installer creates an admin role, which provides you full management of the Keycloak configuration. In some cases, you may want to give a user the ability to manange Team Edition users without providing that user with full permissions to the configuration. In our example, we'll refer to this role as the *dev-users-admin*; however, you may name this role as you like.

For example, you may want to provide a user the ability to view and edit other users' personal information, credentials, and roles.

Follow these steps to create the dev-users-admin role:

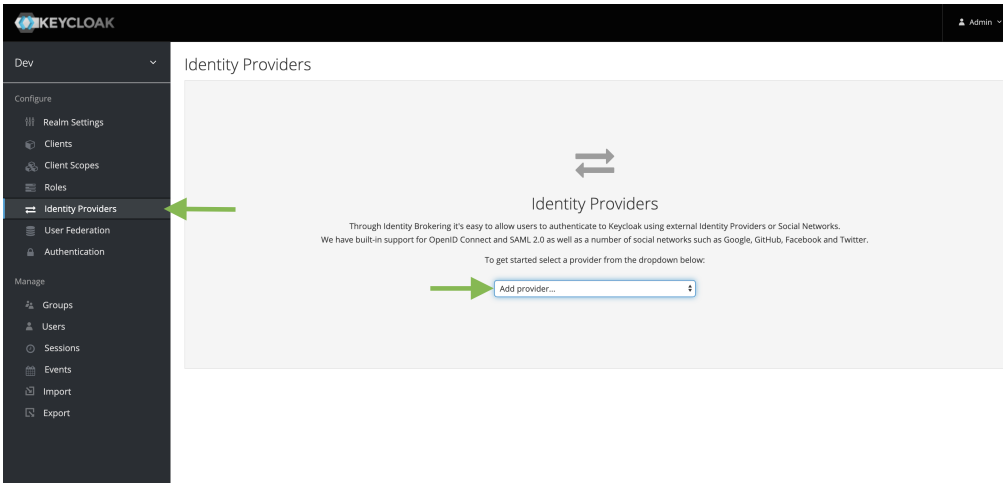
1. Log in as an admin.
2. Go to MASTER realm.
3. Go to **Roles** and click **Add Role**.
4. Ensure **Composite Roles** is **ON**.
5. Under the **Client Roles** dropdown, select dev-realm.
6. Assign available roles by selecting those roles and clicking **Add selected**.



3.1.5 Social login integration (GitHub)

For each Keycloak installation, you must create corresponding integrations for the relevant identity provider:

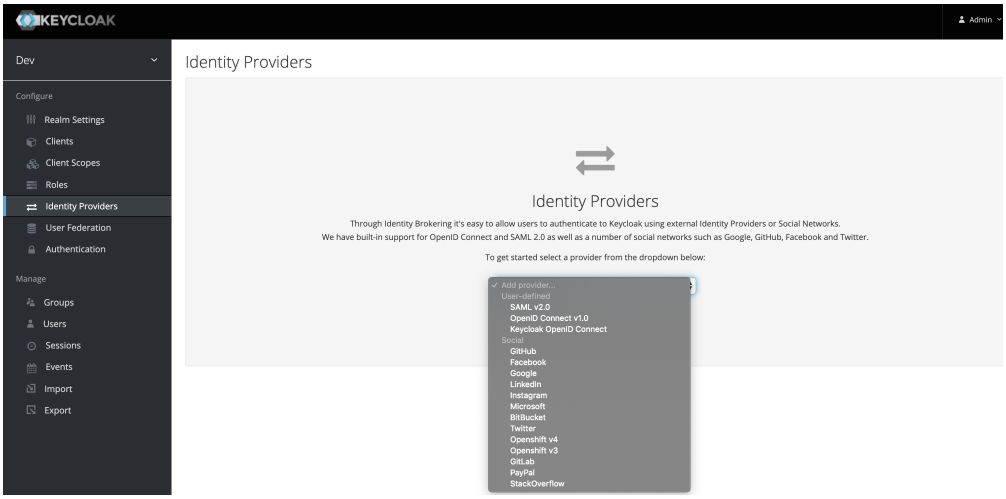
1. Log in as the admin user.
2. Select **DEV** realm.
3. Naviate to **Identity Providers** and click **Add provider…**.

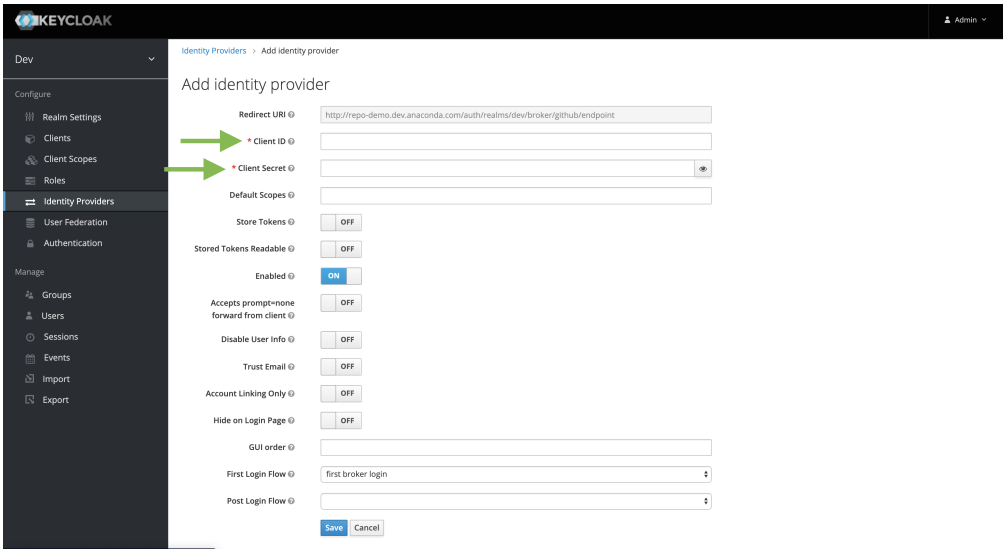


4. From the dropdown, select **GitHub**.

5. Enter the ClientID/Secret from the corresponding GitHub OAuth application settings.

You should then see a **GitHub** link on the login screen.


KEYCLOAK
Admin
Dev
Identity Providers
Configure
Realm Settings
Clients
Client Scopes
Roles
Identity Providers
User Federation
Authentication
Manage
Groups
Users
Sessions
Events
Import
Export
Identity Providers
Through Identity Brokering it's easy to allow users to authenticate to Keycloak using external Identity Providers or Social Networks.
We have built-in support for OpenID Connect and SAML 2.0 as well as a number of social networks such as Google, GitHub, Facebook and Twitter.
To get started select a provider from the dropdown below:
Add provider...
User-defined
SAML v2.0
OpenID Connect v1.0
Keycloak OpenID Connect
Social
GitHub
Facebook
Google
LinkedIn
Instagram
Microsoft
BitBucket
Twitter
Openshift v4
Openshift v3
GitLab
PayPal
StackOverflow


KEYCLOAK
Admin
Dev
Identity Providers
Add identity provider
Configure
Realm Settings
Clients
Client Scopes
Roles
Identity Providers
User Federation
Authentication
Manage
Groups
Users
Sessions
Events
Import
Export
Add identity provider
Redirect URI
http://repo-demo.dev.anaconda.com/auth/realms/dev/broker/github/endpoint
* Client ID
* Client Secret
Default Scopes
Store Tokens
OFF
Stored Tokens Readable
OFF
Enabled
ON
Accepts prompt=none forward from client
OFF
Disable User Info
OFF
Trust Email
OFF
Account Linking Only
OFF
Hide on Login Page
OFF
GUI order
First Login Flow
first broker login
Post Login Flow
Save
Cancel

3.2 Role provisioning: Keycloak admin user with restricted rights

It's possible to create keycloak admin users with restricted rights. For example, a keycloak user who can only manage the DEV realm users.

Follow these steps to assign a restricted role to a user:

1. Navigate to MASTER realm and create a user.
2. Assign a restricted role to that user. For example, you can create the dev-users-admin role upfront, which gives users the ability to only manage repo users.

3.3 Proxy mirroring

This topic provides guidance on the following actions:

- *Single proxy with upgrade connection*
- *Multiple proxies (or users) for mirror jobs*
- *Terminating SSL Proxy*

There are a few common setups for situations where mirrors should go through a proxy server, each with their own specific requirements and considerations.

These methods can be compounded, meaning you can have an environment that employs any combination of the following setups:

3.3.1 Single proxy

A single proxy is used for all outgoing HTTP/HTTPS connections to the internet.

Requirements

- Proxy address/port
- Network access from Anaconda Team Edition (TE) to the proxy server
- Ensuring proper name resolution (if needed)

Implementation

Follow these steps to set up a single proxy:

1. Open your `docker-compose.yml` file.
2. Add `HTTP_PROXY` and/or `HTTPS_PROXY` environment variables to the `repo_worker` and `repo_api` containers. For example:

```
repo_worker:
  environment:
    - HTTP_PROXY=http://<PROXY_USER>:<PROXY_PW>@proxypy:8899
    - HTTPS_PROXY=http://<PROXY_USER>:<PROXY_PW>@proxypy:8899
repo_api:
```

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```
  environment:
    - HTTP_PROXY=http://<PROXY_USER>:<PROXY_PW>@proxypy:8899
    - HTTPS_PROXY=http://<PROXY_USER>:<PROXY_PW>@proxypy:8899
```

3. Restart the containers by running the following command:

```
docker-compose up -d $(docker ps|grep repo_worker|cut -d' ' -f1)
docker-compose up -d $(docker ps|grep repo_api|cut -d' ' -f1)
```

3.3.2 Multiple proxies (or users) for mirror jobs

When mirroring through different proxies—whether this is because you're using a different proxy server or an entirely different user is mirroring—you must apply the correct settings to each respective mirror.

Requirements

The requirements for multiple proxies are the same as the requirements for single proxies; however, you must modify the settings for each respective proxy.

For example, the proxy URI two users could be named the following:

```
http://user1:pw1@proxy:8899
and
http://user2:pw2@proxy:8899
```

Implementation

Note: All updates to the mirror must go through the CLI/PAI, *not* through the GUI (the proxy setting will be removed if you update from the GUI).

Establish the mirror using `conda repo mirror` in the cli, or `/channel/mirrors` via the REST API. This will allow you to specify the proxy address to be used for the specific mirror:

The following example shows multiple mirrors with different proxy users. It assumes a proxy is available at http://proxy:8899 with basic auth.

If you are using a terminating SSL proxy, see the *Terminating SSL proxy* section.

```
# Replace user1/pw1 and user2/pw2 with valid credentials.
repo channel --create proxy-example
conda repo mirror --create proxy-mirror1 \
                --channel proxy-example \
                --source https://repo.anaconda.com/pkgs/main \
                --only_spec python \
                --proxy http://user2:pw2@proxy:8899
```

Here is a second mirror with a different user. You can also use multiple proxies in the same manner, for example `@another.proxy.server` instead of `@proxy`.

```
conda repo mirror --create proxy-mirror2 \
                --channel proxy-example \
                --source https://repo.anaconda.com/pkgs/main \
```

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```
                --only_spec pandas \
                --proxy http://user1:pw1@proxy:8899
```

3.3.3 Terminating SSL Proxy

For a proxy server that terminates the SSL connection, you'll typically need to distribute the root ca certificate used by the proxy to TE so it can verify the certs.

Requirements

- Same requirements as those for single proxies
- The ca cert from the proxy server
- All certs for proxies (if multiple proxies are used)

Implementation

For this setup, you must append all required ca certs to the TE `repo_api` and `repo_worker` containers. Certs are stored in `/conda/ssl/cacert.pem`.

Use the following bash function to update existing containers with the root CA for the proxy:

```
update_proxy_ca() {
  # usage: update_proxy_ca <path-to-cert>
  if [[ -f $1 ]]; then
    ca="$1"
  else
    echo please provide a path to cert file
    return
  fi
  for c in $(docker ps | awk '/repo_[a,w]/ {print $1}') ; do
    docker cp $ca ${c}:/usr/share/pki/ca-trust-source/anchors/proxy.pem
    docker exec -ti ${c} sh -c "cat /usr/share/pki/ca-trust-source/anchors/proxy.pem >> /
↪conda/ssl/cacert.pem"
    docker exec $c update-ca-trust
  done
}
```

3.4 Enabling and configuring SSL

3.4.1 Enabling SSL

If you install Team Edition and do not specify a certificate or private key, your Team Edition instance will not be configured for SSL. To enable SSL after installation, the following steps must be taken.

1. Edit `docker-compose.yml`
    1. Near the top of the file, uncomment the following lines:

```
# secrets:
# - source: nginx_key
#   target: /etc/nginx/certs/tls.key
# - source: nginx_cert
#   target: /etc/nginx/certs/tls.crt
```

    2. Further down in the file, under the `keycloak` key, uncomment this line:

```
# - PROXY_ADDRESS_FORWARDING=true
```

2. Edit `.env` file
    1. Change `DOMAIN` to new FQDN, if applicable.
    2. Change `NGINX_PROXY_PORT` to `443`.
3. Edit `/opt/anaconda/repo/config/nginx/conf.d/repo.conf`
    1. Near the top of the file, change `listen 8080;` to `listen 8080 ssl;`.
    2. Add the following lines after the `listen 8080 ssl;` line:

```
ssl_certificate     /etc/nginx/certs/tls.crt;
ssl_certificate_key /etc/nginx/certs/tls.key;
ssl_protocols       TLSv1.2 TLSv1.3;
ssl_ciphers         HIGH:!aNULL:!MD5;
```

4. Add your certificate and private key, named `tls.crt` and `tls.key`, to the following directory:

```
/opt/anaconda/repo/config/nginx/certs
```

5. Run the following command from the directory containing `docker-compose.yml` to apply the changes:

```
docker-compose up -d nginx_proxy
```

3.4.2 Configuring SSL

The following steps will allow you to configure the SSL:

1. Add or remove the following lines relating to the SSL in `<BASE_INSTALL_DIR>/config/nginx/conf.d/repo.conf`, where `<BASE_INSTALL_DIR>` is the installation directory:

```
listen              8080 ssl;

ssl_certificate     /etc/nginx/certs/tls.crt;
ssl_certificate_key /etc/nginx/certs/tls.key;
ssl_protocols       TLSv1.2 TLSv1.3;
ssl_ciphers         HIGH:!aNULL:!MD5;
```

2. Add or remove certificates from the following directory:

```
# Replace <BASE_INSTALL_DIR> with your base install directory.
<BASE_INSTALL_DIR>/config/nginx/certs
```

3. Run the following command:

```
docker-compose up -d nginx_proxy
```

Refer to nginx's documentation for the standard SSL configuration procedure.

3.5 LDAPS

LDAPS is used to secure your LDAP connection. Refer to the Keycloak documentation on LDAP for more information.

Keycloak uses the default location within the container:

```
/opt/jboss/keycloak/standalone/configuration/keystores
```

Copy in your certificate authority (CA):

```
# Replace <CA.pem> with your certificate authority.
# Replace <container_ID> with your container ID.
docker ps|grep cloak
docker cp <CA.pem> <container_ID>:/opt/jboss
```

Drop into the container:

```
# Replace <container_ID> with your container ID.
docker exec -u root -it <container_ID> /bin/bash
```

Add the keystore:

```
# Replace <CA.pem> with your certificate authority.
cd /opt/jboss/keycloak/standalone/configuration/keystores
keytool -keystore truststore -storepass anaconda -noprompt -trustcacerts -importcert -
↪alias ldap-ca -file /opt/jboss/<CA.pem>
```

Add the following to the CA certs bundle:

```
# Replace <CA.pem> with your certificate authority.
cp /opt/jboss/<CA.pem> /etc/pki/ca-trust/source/anchors/
update-ca-trust
```

This will update the CA certs bundle found in the following file path:

```
/etc/pki/ca-trust/extracted/java
```

Restart the container:

```
# Replace <container_ID> with your container ID.
docker ps|grep cloak
docker restart <container_ID>
```

3.5.1 Troubleshooting

If you have any issues, verify the CA against the LDAPS server:

```
# Replace <CA.pem> with your certificate authority.
openssl s_client -CAfile <CA.pem> -connect ldapserver.com:636
```

This should return the following string:

```
Verify return code: 0 (ok)
```

You can inspect the keystore you created with the following command:

```
keytool -list -v -keystore /opt/jboss/keycloak/standalone/configuration/keystores/
↪truststore -storepass anaconda
```

3.6 Updating your domain

If you wish to change your domain—for instance, if you accepted the default domain temporarily until you knew the correct domain—then **you need to make the change in Anaconda Team Edition and Keycloak for the change to truly take effect**.

This topic provides guidance on the following actions:

- *Updating the domain in Team Edition*
- *Updating the domain in Keycloak*

3.6.1 Updating the domain in Team Edition

To update the domain in Team Edition, you need to update the domain environment variable:

1. Make a copy of the old `.env` file for reference and/or recovery purposes:

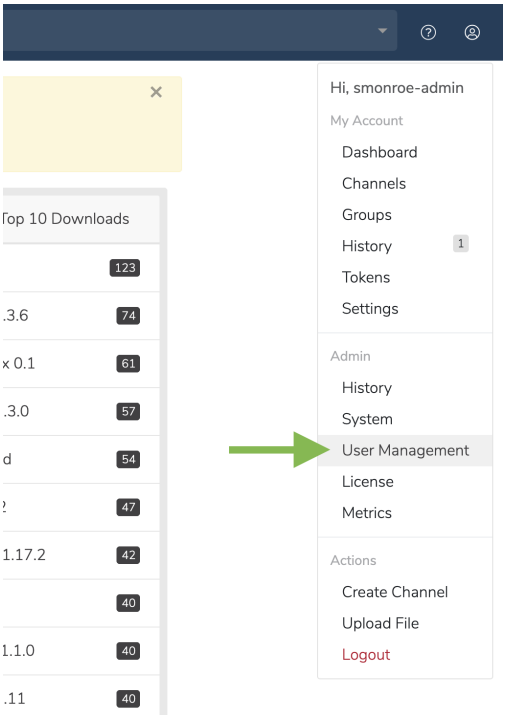
   ```
   cp .env .env.old
   ```

2. Open the `.env` file, located in the same directory as the `docker-compose.yml` file.
3. Update the `<DOMAIN>` variable to your new domain.

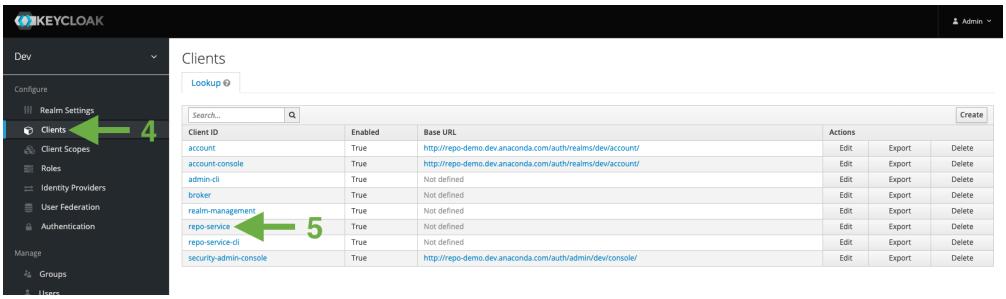
Note: If you have existing clients (tools) configured to use the Team Edition instance using the old DNS name, you will need to update those clients as well.

3.6.2 Updating the domain in Keycloak

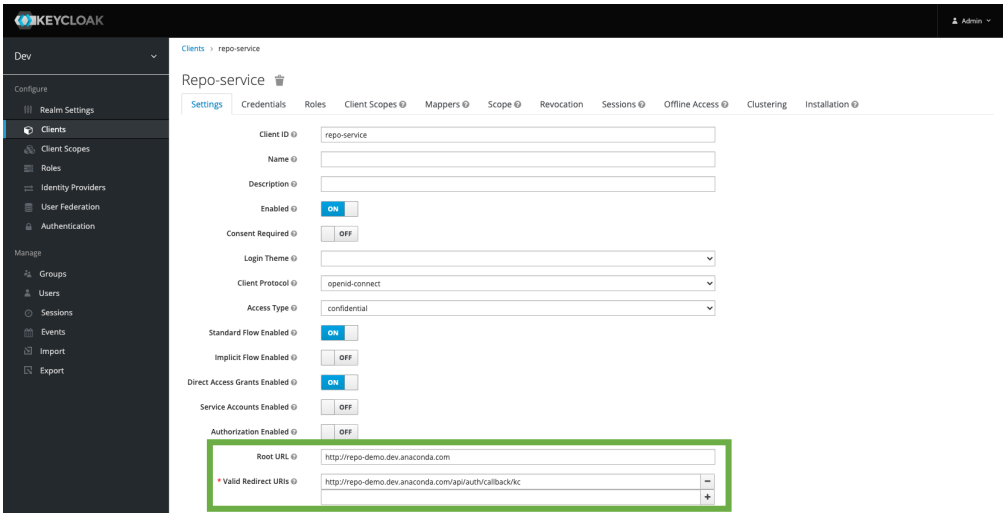
1. From Team Edition, click on the **My account** button in the top right.
2. In the dropdown, under **Admin**, select **User Management**.



3. On the **User Management** screen, click the **Manage Users** button. You will be directed to the Keycloak login screen.
4. Log in to Keycloak using the keycloak master realm admin account, and then go to the **Clients** page under **Configure**.
5. On the **Clients** page, select **repo-service**. This is the default client ID.



6. On the **Repo-service** page, scroll down to the **Root URL** and **Valid Redirect URIs** settings.
7. Update the **Root URL** to your new domain:




```
https://<DOMAIN>
```

8. Update the **Valid Redirect URIs** to your new domain's Keycloak redirect path:

```
https://<DOMAIN>/api/auth/callback/kc
```

9. Click **Save**.
10. If you have SSL, make sure to update your certificates in the Configuring SSL section to refer to your new domain.
11. Run docker-compose restart:

```
docker-compose restart
```

3.7 Common Vulnerabilities and Exposures (CVEs)

CVEs are Common Vulnerabilities and Exposures found in software components. Because modern software is complex with its many layers, interdependencies, data input, and libraries, vulnerabilities tend to emerge over time. Ignoring a high CVE score can result in security breaches and unstable applications. Read our blog post on CVEs to learn more.

Software developers refer to CVE databases and scores on a regular basis to minimize the risk of using vulnerable components (packages and binaries) in their applications or web pages. They also monitor for vulnerabilities in components they currently use. To reduce the risk of a security breach from open-source packages, data science teams need to take this page from the software developer's playbook and apply it to their data science and machine learning pipeline.

When an administrator is looking to minimize the risk of a model the team is developing they are going to want to filter out packages and files with known vulnerabilities that are above a certain threshold. Anaconda Team Edition allows the administrator to decide which filters to apply and who will have access to the filtered channels and packages. This level of security and governance allows the team to focus on building their model.

This topic provides guidance on the following actions:

- *Understanding CVEs*
- *Listing the latest CVEs*
- *Viewing the details of CVEs*

3.7.1 Understanding CVEs

CVE scores

Severity scores are assigned based on the numerical Common Vulnerability Scoring System (CVSS) on a zero to ten scale.

CVSS score	**Qualitative Rating**
0	None
0.1 - 3.9	Low
4.0 - 6.9	Medium
7.0 - 8.9	High
9.0 - 10	Critical

CVSS 3 and CVSS 2

While both CVSS 3 and CVSS 2 scores and details can be reviewed by clicking through to a specific CVE, CVSS 3 is presented on the dashboard because it provides a more comprehensive view of CVEs. This is due to two added metrics: Scope and User Interaction.

- **Scope** — captures whether a vulnerability in one vulnerable component impacts resources in components beyond its security scope.
- **User Interaction** — captures the requirement for a human user, other than the attacker, to participate in the successful compromise of the vulnerable component.

For more information about CVE scoring, visit NVD.

CVE curation

The CVE curation process can be summarized in four steps:

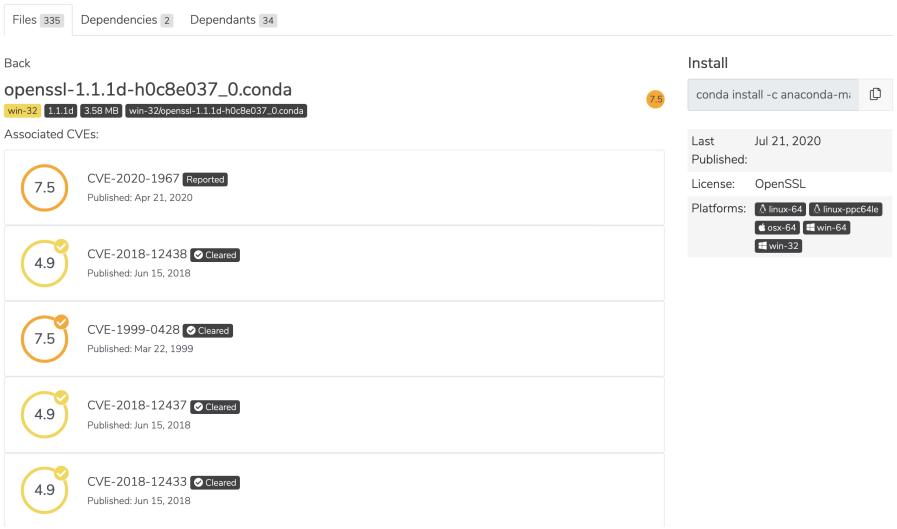
1. Anaconda sources Team Edition's CVE information from the National Institute of Standards and Technology(NIST) National Vulnerability Database (NVD).
2. From there, NVD CVE information is matched with the package names and versions in the Anaconda repository.
3. Each auto-matched CVE is examined for accuracy by Anaconda staff. The CVEs get one or more reviews to categorize, refine, and improve the reported information.
4. The refined CVE metadata allows you to learn more about each vulnerability and filter out OSS packages that don't meet your security requirements.

Note: After your license is applied, CVEs are automatically applied, brought in to the system, and **updated hourly**.

In the following topic, you can *see how this applies to mirrors*.

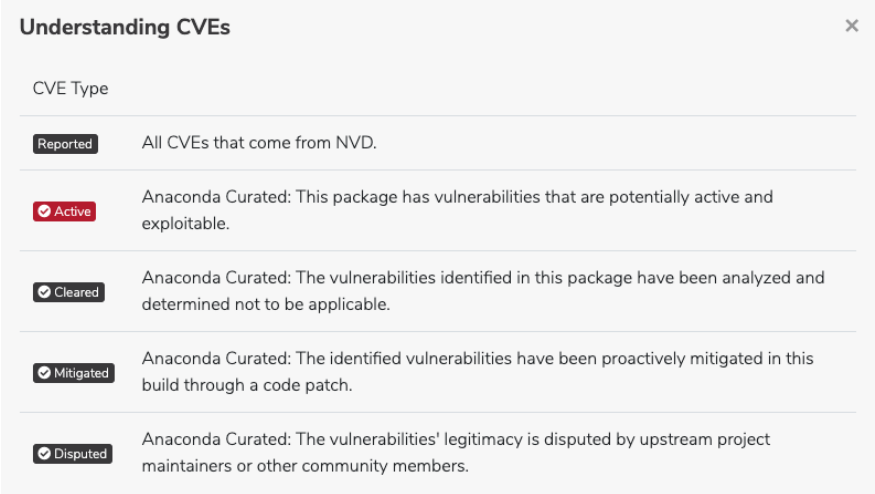
CVE statuses

CVE descriptions include one of five CVE status categories. "Reported" is a CVE from NIST that has not been reviewed by the Anaconda Team. All other categories have been curated and their labels feature a check mark:



The number beside the CVE name indicates the number of files affected in the organization. N/A indicates no associated CVEs.

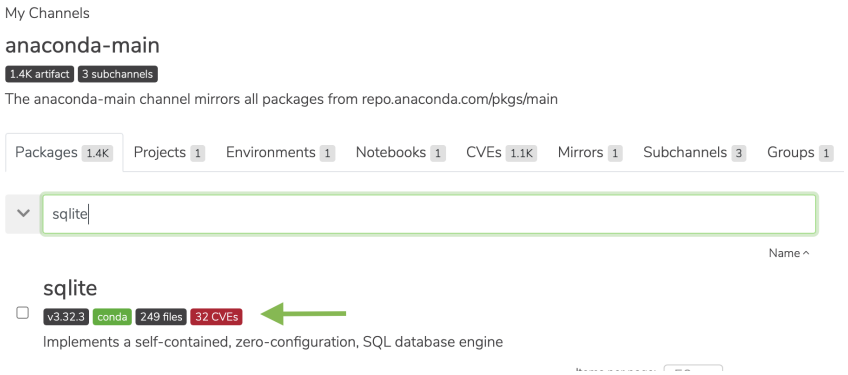
Click on the information icon beside CVEs (located throughout Team Edition) to view descriptions of CVE statuses.



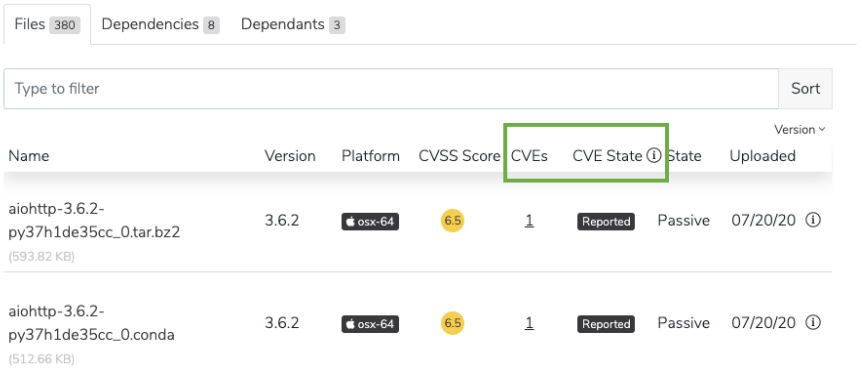
CVE labels and tabs

The number located on the **CVE** tab only indicates the number of CVEs pertaining to the packages within that channel:

Packages have a CVE tag indicating how many CVEs are associated with that specific package:



The **CVEs** and **CVE State** columns on artifact pages show the number of CVEs associated with that file and CVE status, respectively. The *State column* shows whether the mirror is active or passive.

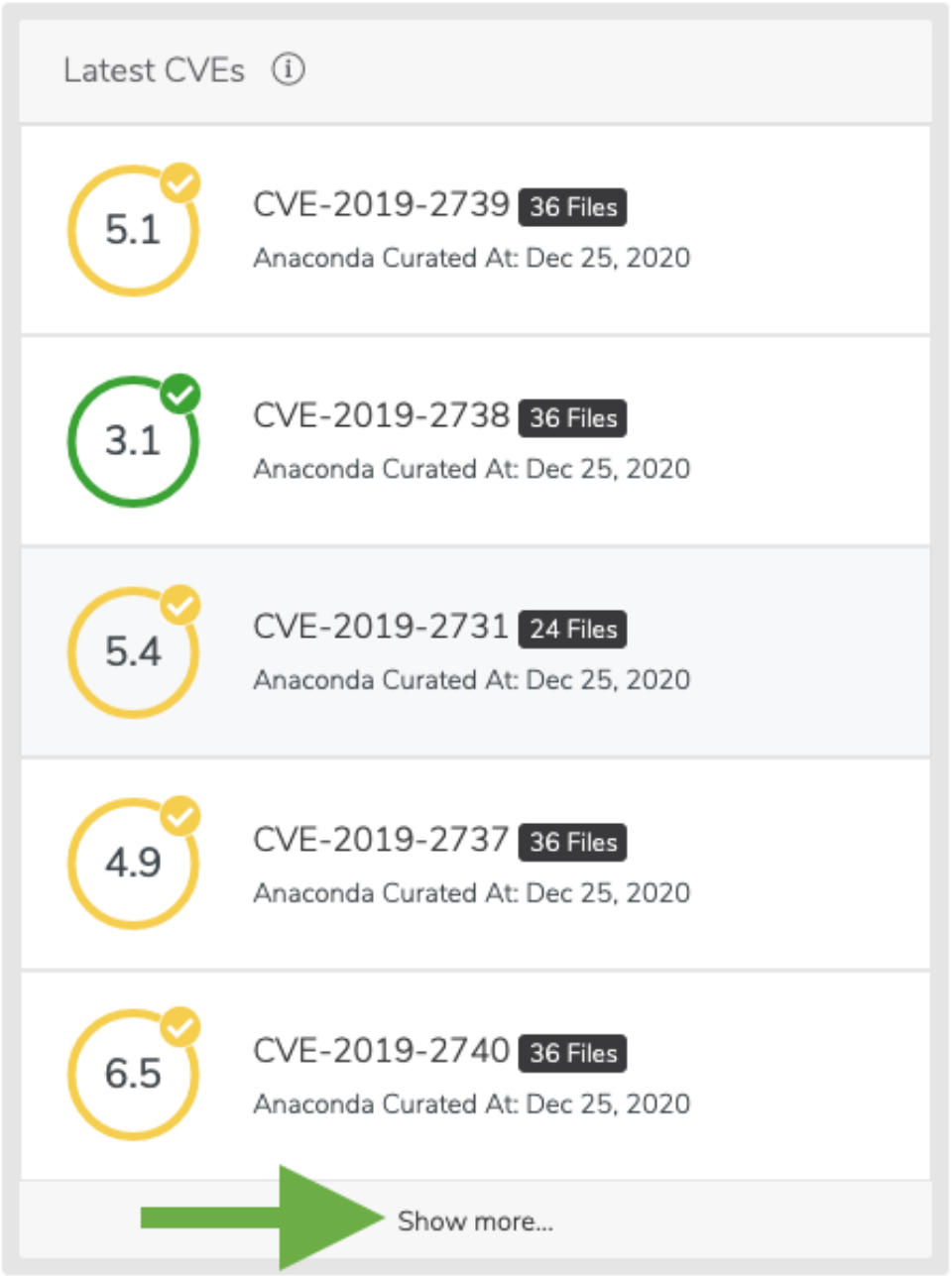


3.7.2 Listing the latest CVEs

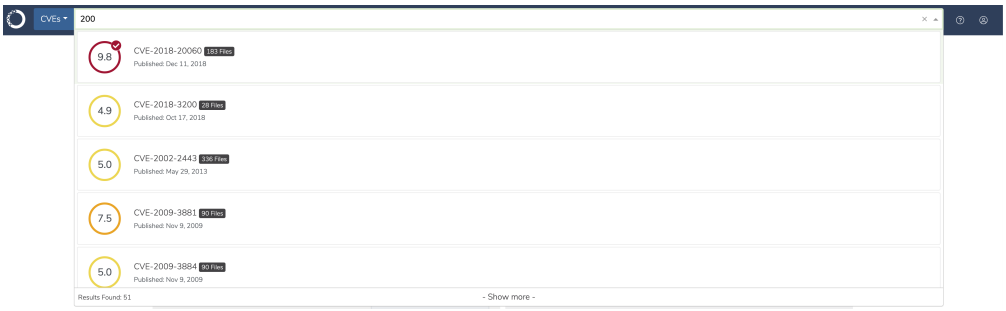
As an administrator, you are able to view the latest published CVEs.

Via the UI:

You can view a list of the latest CVEs at the top of the dashboard. Additionally, you can click **Show more** at the bottom of the list to view a larger list of CVEs. CVEs are sorted by their Anaconda Curated date, followed by published CVEs that have yet to be curated.



You can also search for CVEs in the search bar at the top of the page.



Via the API:

```
GET /api/cves
```

Via the CLI:

```
conda repo cves --list
```

3.7.3 Viewing the details of CVEs

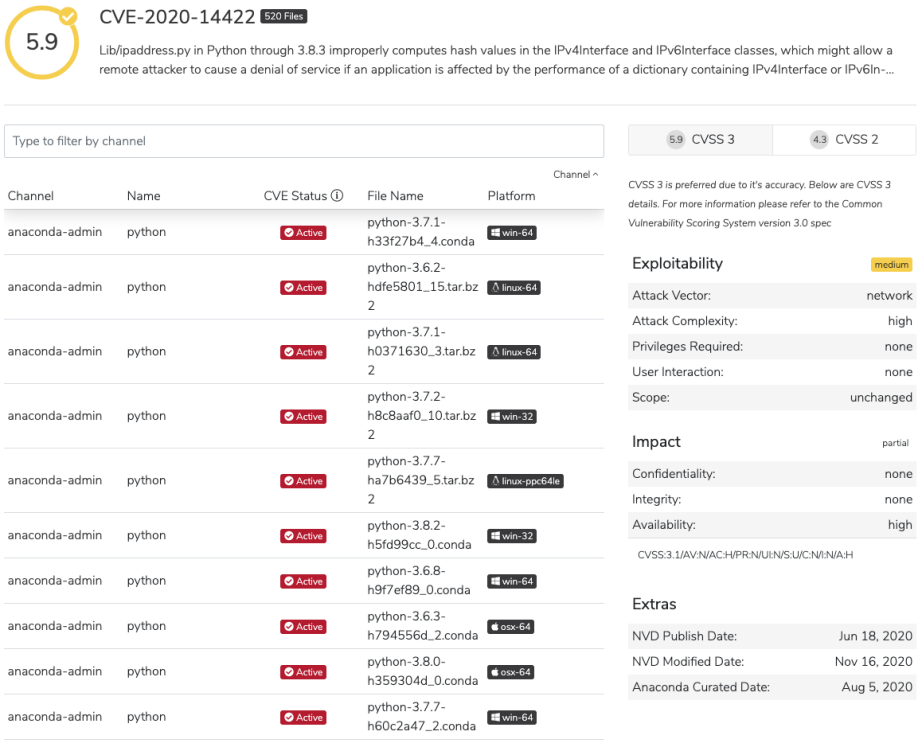
Tip: All users have the ability to view CVEs as long as the admin has *assigned* the `cve:manage` role to users.

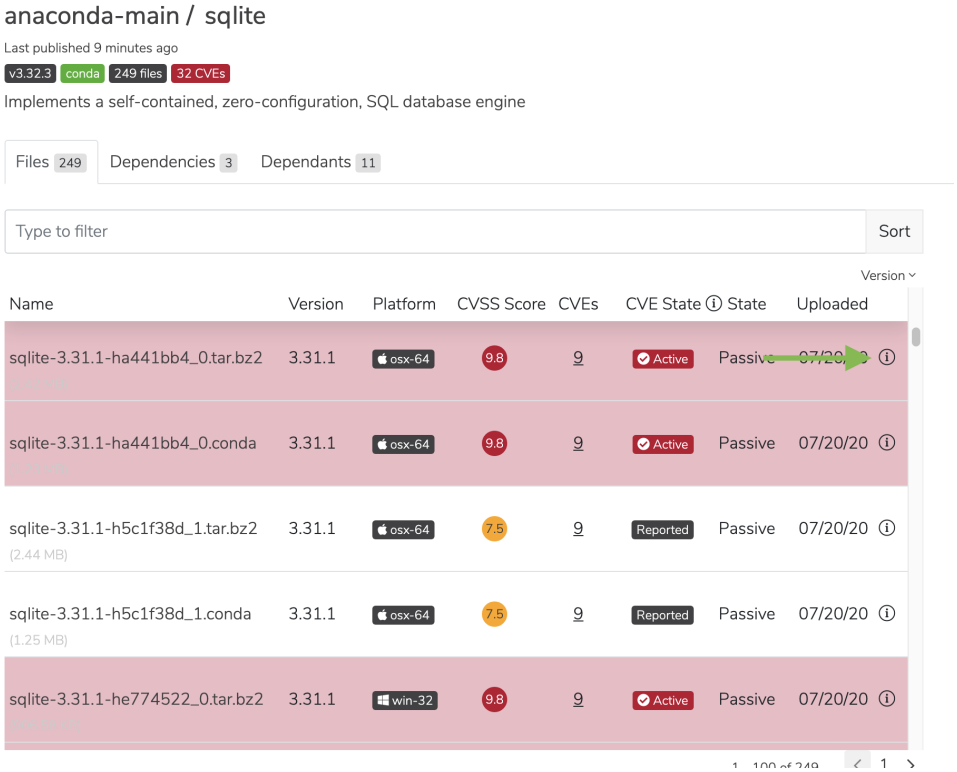
Via the UI:

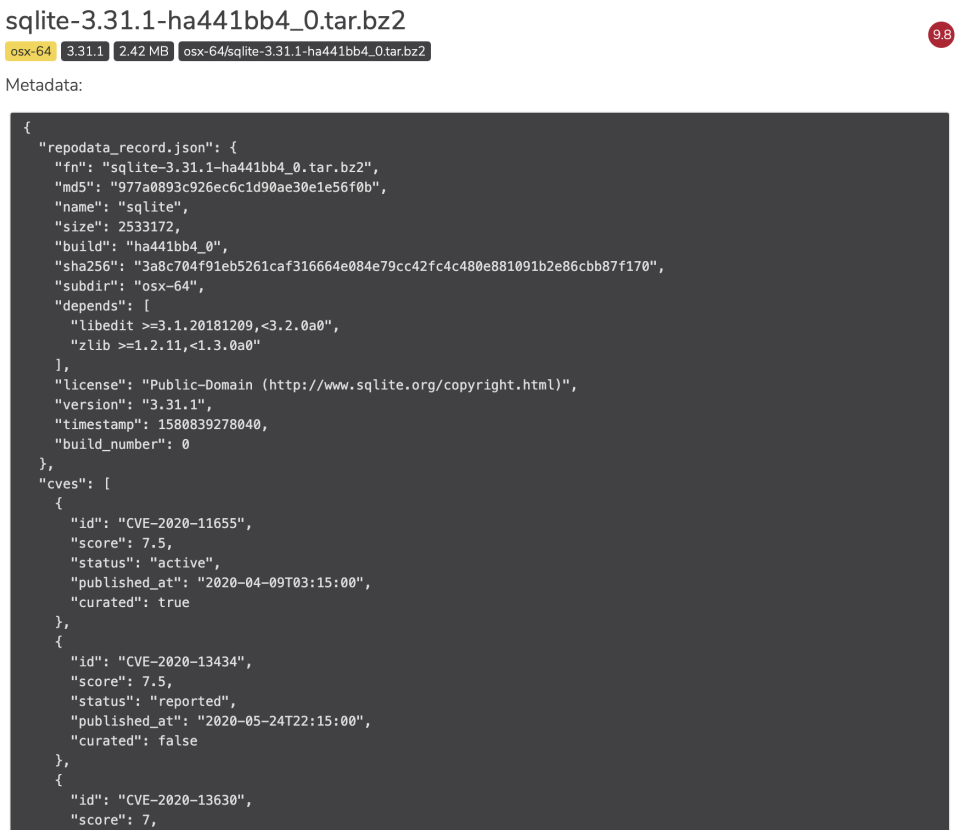
You can view a list of the latest CVEs at the top of the dashboard. Additionally, you can click **Show more** at the bottom of the list to view a larger list of CVEs. From there, click an individual CVE to view further details.

To view the metadata of a CVE, click on the information icon beside its upload date.

You will be presented with the CVE's metadata.


5.9
CVE-2020-14422
520 Files
Lib/ipaddress.py in Python through 3.8.3 improperly computes hash values in the IPv4Interface and IPv6Interface classes, which might allow a remote attacker to cause a denial of service if an application is affected by the performance of a dictionary containing IPv4Interface or IPv6In-...
Type to filter by channel
Channel
Name
CVE Status
File Name
Platform
anaconda-admin python Active python-3.7.1-h33f27b4_4.conda win-64
anaconda-admin python Active python-3.6.2-hdfe5801_15.tar.bz2 linux-64
anaconda-admin python Active python-3.7.1-h0371630_3.tar.bz2 linux-64
anaconda-admin python Active python-3.7.2-h8c8aaf0_10.tar.bz2 win-32
anaconda-admin python Active python-3.7.7-ha7b6439_5.tar.bz2 linux-ppc64le
anaconda-admin python Active python-3.8.2-h5fd99cc_0.conda win-32
anaconda-admin python Active python-3.6.8-h9f7ef89_0.conda win-64
anaconda-admin python Active python-3.6.3-h794556d_2.conda osx-64
anaconda-admin python Active python-3.8.0-h359304d_0.conda osx-64
anaconda-admin python Active python-3.7.7-h60c2a47_2.conda win-64
5.9 CVSS 3
4.3 CVSS 2
CVSS 3 is preferred due to it's accuracy. Below are CVSS 3 details. For more information please refer to the Common Vulnerability Scoring System version 3.0 spec
Exploitability medium
Attack Vector: network
Attack Complexity: high
Privileges Required: none
User Interaction: none
Scope: unchanged
Impact partial
Confidentiality: none
Integrity: none
Availability: high
CVSS:3.1/AV:N/AC:H/PR:N/UI:N/S:U/C:N/I:N/A:H
Extras
NVD Publish Date: Jun 18, 2020
NVD Modified Date: Nov 16, 2020
Anaconda Curated Date: Aug 5, 2020


anaconda-main / sqlite
Last published 9 minutes ago
v3.32.3 conda 249 files 32 CVEs
Implements a self-contained, zero-configuration, SQL database engine
Files 249
Dependencies 3
Dependants 11
Type to filter
Sort
Version
Name Version Platform CVSS Score CVEs CVE State State Uploaded
sqlite-3.31.1-ha441bb4_0.tar.bz2 3.31.1 osx-64 9.8 9 Active Passive
sqlite-3.31.1-ha441bb4_0.conda 3.31.1 osx-64 9.8 9 Active Passive 07/20/20
sqlite-3.31.1-h5c1f38d_1.tar.bz2 3.31.1 osx-64 7.5 9 Reported Passive 07/20/20
(2.44 MB)
sqlite-3.31.1-h5c1f38d_1.conda 3.31.1 osx-64 7.5 9 Reported Passive 07/20/20
(1.25 MB)
sqlite-3.31.1-he774522_0.tar.bz2 3.31.1 win-32 9.8 9 Active Passive 07/20/20



Via the API:

```
# Replace <CVE_ID> with the ID from the CVE.
GET /api/cves/<CVE_ID>
```

Via the CLI:

```
# Replace <CVE_ID> with the ID from the CVE.
conda repo cves --show <CVE_ID>
```

3.8 Mirrors

Anaconda Team Edition enables you to create a local copy of a repository so users can access *approved* software components from a centralized on-premise or cloud location.

Note: In order to mirror, you must first *create a channel* for your organization to use.

The mirror can be complete, partial, or include/exclude specific packages or types of packages based on CVE score, license type, and version. You can also create a mirror in an air-gapped environment, allowing access to approved packages and other artifacts without access to the larger internet.

Common use case of channel filtering with multiple mirrors configured to that channel:

You can set up multiple mirrors into a single channel of whatever artifacts you choose. Filters can be set at the channel level to apply to all mirrors of a channel, or at the mirror level to apply to specific mirrors.

For example, say you want to achieve the following mirroring goals:

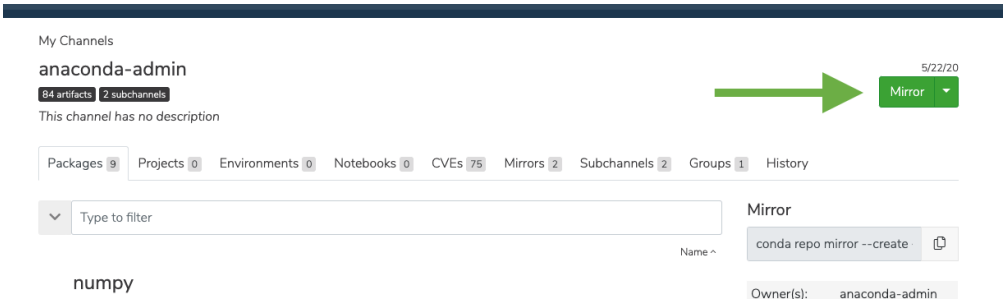
1. Prevent all packages with a GPL license from being mirrored
2. Prevent a specific Windows package from getting into the channel

To achieve the first goal, you can exclude packages by all GPL License types via the channel editor. To achieve the second goal, you can create separate mirrors—perhaps one for each operating system—that filter by the subdirectory.

This topic provides guidance on the following actions:

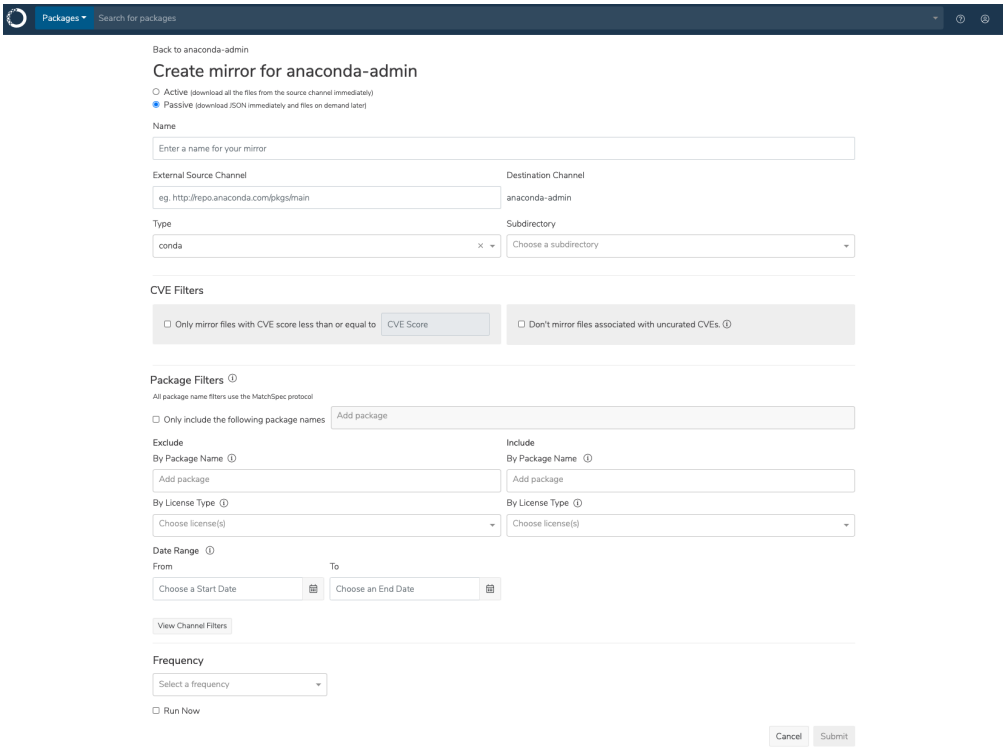
3.8.1 Creating mirrors

To create a mirror, click the green **Mirror** button from any channel page.



You will be presented with the **Create mirror** page:

Set the details, filters, and frequency you'd like, and then click **Submit**.



Active or passive mirroring

Mirroring can be either active or passive. An active mirror would clone channel artifacts with their binary content (files) and metadata. A passive mirror would only clone channel artifacts metadata, while the actual files would be fetched on demand (on first request).

Essentially, when you mirror actively, you're really mirroring passively and manually going through and fetching files from the upstream channel.

Defining your external source and mirror type

Note: Please whitelist the following URLs before mirroring:

- http://repo.anaconda.com/
- http://repo.anaconda.cloud/
- http://anaconda.org/
- http://pypi.python.org/
- http://anaconda.com/

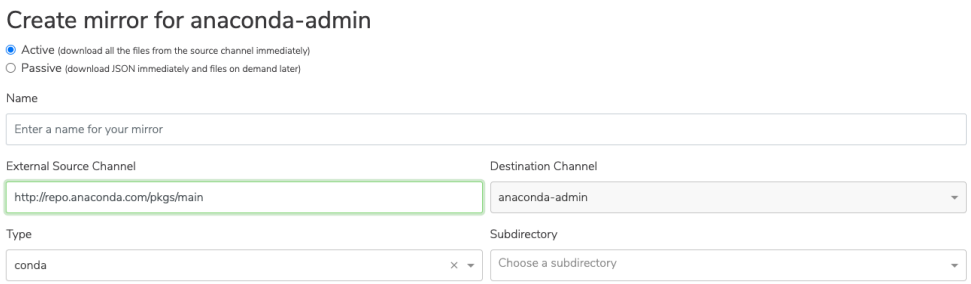
Select the mirror Type that matches the external source channel. You can mirror Conda, PyPI, or CRAN.

Conda

Use http://repo.anaconda.com/pkgs/main as the external source channel for conda type.

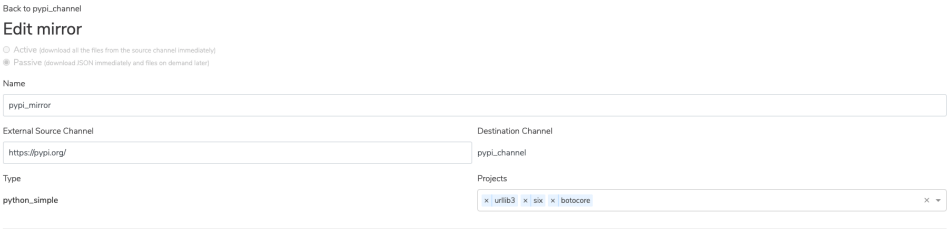
PyPI

Use https://pypi.python.org/ as the external source channel for PyPI (python_simple) type.



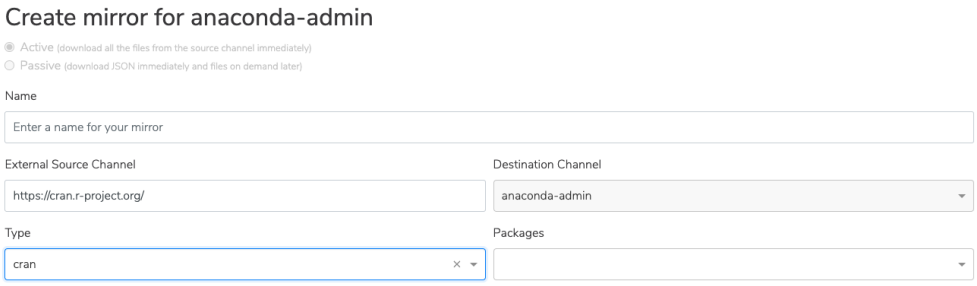
For the time being, you only need to fill in the Name, External Source Channel, Type, and Project when mirroring PyPI packages—no need to modify package filters.

Note: Make sure to add the specific PyPI packages you'd like to mirror to the **Projects** cell. Hit enter after typing in the name of each package. This will turn the name blue, indicating that the package you entered has been accepted.



CRAN

Use https://cran.r-project.org/ as the external source channel for CRAN type.



Mirroring filters

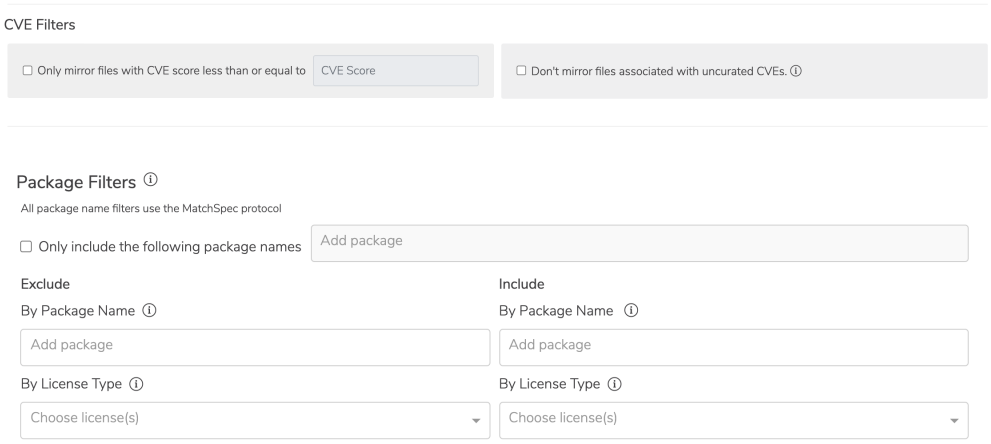
CVE filters

On the **Edit mirror** page, you have the ability to limit the files being mirrored based on their CVE score. Use the cell labeled *CVE score* to set the maximum CVE score you're willing to mirror. Ensure the box to the left is checked.

You also have the ability to omit files that have not gone through Anaconda's curation process. If this box is checked, packages with at least one `Reported` CVE will not be mirrored. If this box is left unchecked, those packages will be mirrored regardless. This filter applies only to active mirroring.

Package filters

You can filter which packages will be included in a mirror in the **Package Filters** section on the **Edit mirror** page. Include and exclude by package name and license type.

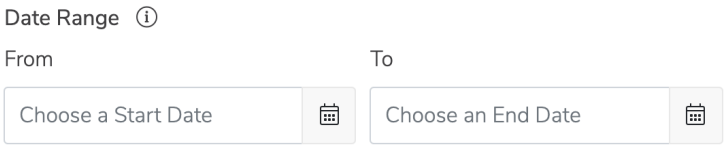


Filter packages **By License Type** to include or exclude them from your mirror. See *License types* for more details on licenses.

Tip: When limiting the mirror to specific architecture, it's a good idea to include the `noarch` package type to ensure that cross-platform packages are included. For example, if you have no need for Windows compatible packages, you would include `win-32`, `win-64`, and `noarch` package types.

Date range filters

You can also filter packages by the date the package was modified on the source site.



View channel filters

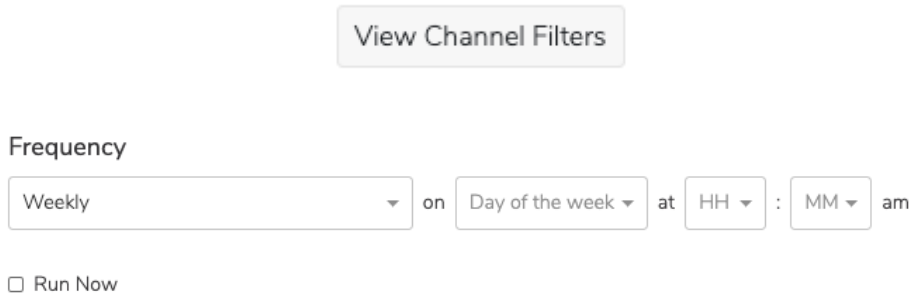
Click the **View Channel Filters** button at the bottom of the **Package Filters** section on the **Edit mirror** page to view the filters applied to all mirrors within the channel.

Mirror frequency

You can modify how frequently a channel is mirrored at the bottom of the **Edit mirror** page. You can also run the mirror immediately by checking the box beside **Run Now**.

Custom mirroring frequency expressions are written in cron syntax. you can use https://crontab.guru to learn about and validate cron expressions.

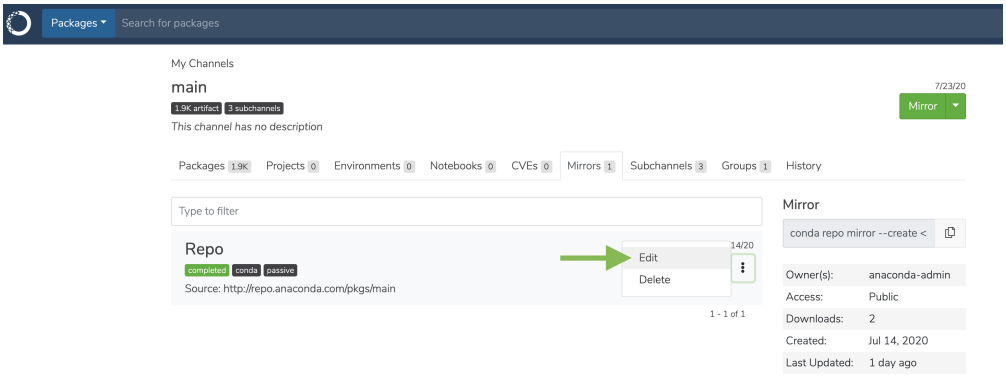
Warning: Mirroring large channels, such as anaconda repository main for conda-forge, can take several hours. It is not recommended to set a frequency higher than daily due to mirror collision between current and updating mirror.



Note: Even if you want to run the mirror immediately by selecting the **Run Now** checkbox, you still need to set a frequency for how often you would like the channel updated to reflect the current state of the mirrored repository.

3.8.2 Editing mirrors

Click the three dots on a mirror, and then click **Edit**.



You will be presented with the **Edit mirror** page:

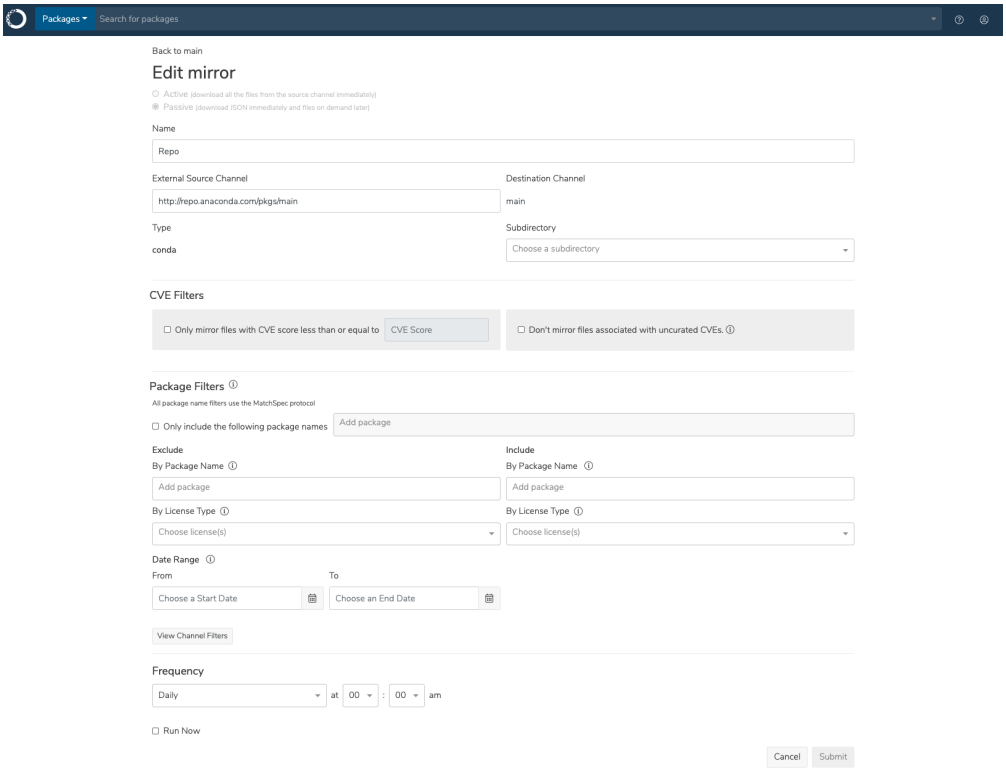
Make the changes you'd like implemented, and then click **Submit**.

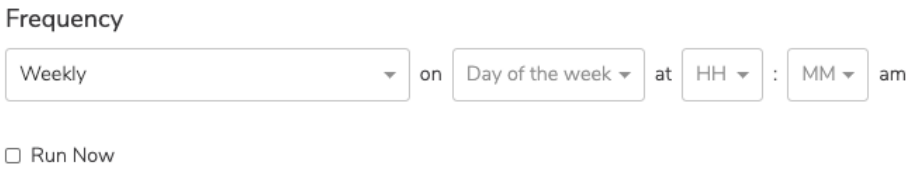
Edit mirror frequency

You can modify how frequently a channel is mirrored at the bottom of the **Edit mirror** page. You can also run the mirror immediately by checking the box beside **Run Now**.

Custom mirroring frequency expressions are written in cron syntax. you can use https://crontab.guru to learn about and validate cron expressions.

Warning: Mirroring large channels, such as anaconda repository main for conda-forge, can take several hours. It is not recommended to set a frequency higher than daily due to mirror collision between current and updating mirror.


Packages
Search for packages
Back to main
Edit mirror
Active (download all the files from the source channel immediately)
Passive (download JSON immediately and files on demand later)
Name
Repo
External Source Channel
http://repo.anaconda.com/pkgs/main
Destination Channel
main
Type
conda
Subdirectory
Choose a subdirectory
CVE Filters
Only mirror files with CVE score less than or equal to
CVE Score
Don't mirror files associated with uncurated CVEs.
Package Filters
All package name filters use the MatchSpec protocol
Only include the following package names
Add package
Exclude
By Package Name
Add package
By License Type
Choose license(s)
Include
By Package Name
Add package
By License Type
Choose license(s)
Date Range
From
To
Choose a Start Date
Choose an End Date
View Channel Filters
Frequency
Daily
at
00
:
00
am
Run Now
Cancel
Submit

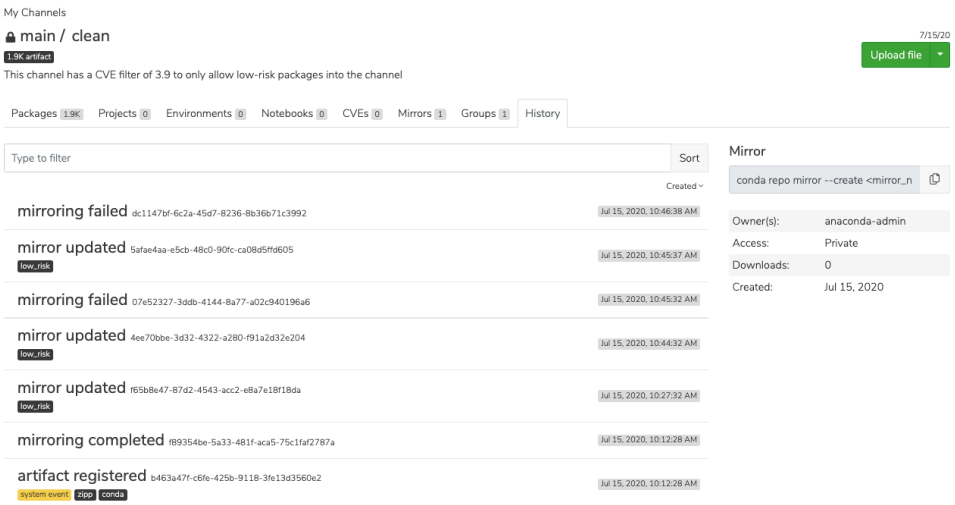

Frequency
Weekly
on
Day of the week
at
HH
:
MM
am
Run Now

3.8.3 Viewing mirror history

You can view the history of mirrors you have created by clicking the **History** tab in a channel.

On the History page, you will see the following possible states for mirroring:

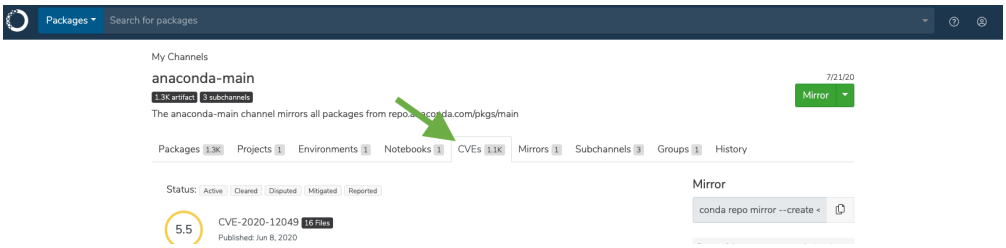
- completed
- failed
- pending
- running



3.8.4 Viewing CVEs by channel

On a channel page, click the **CVEs** tab to view the CVEs within that channel.

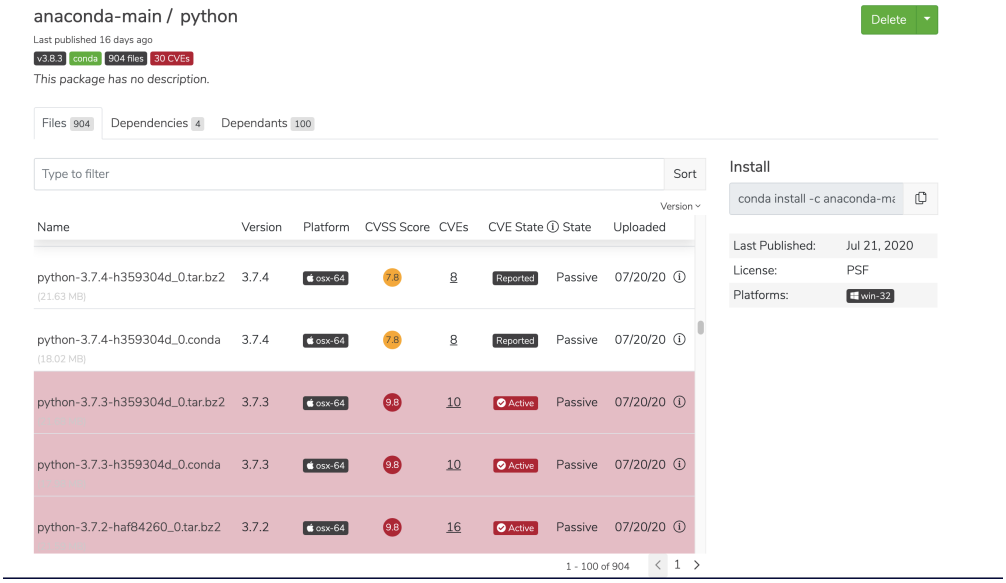
Note: The number located on the **CVEs** tab itself represents the number of CVEs that match packages in your channel, not the full collection of CVEs maintained by Team Edition.



3.8.5 Viewing CVEs by package

Click on a package to view its details. Under the **Files** tab, you can see the CVE score and the number of associated CVEs for each package listed. If you click on that number, you can then access all associated CVEs for greater detail.

The score displayed in the **Score** column represents the highest score of the associated `Active` and `Reported` CVEs. If no `Active` or `Reported` CVEs are found, the maximum score for `Cleared`, `Disputed`, and `Mitigated` CVEs is diplayed instead.



3.9 CVE mirror troubleshooting

This topic provides guidance on the following actions:

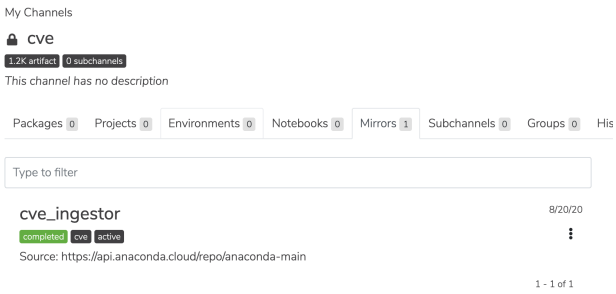
- *Understanding CVE ingestion*
- *Validating CVE mirrors*
- *Fixing CVE mirror failure during setup*

3.9.1 Understanding CVE ingestion

The initial setup for CVEs in Team Edition (TE) is triggered during install, when you first enter a license—either from the UI or by making a call to the rest end point at `https://<FQDN>/api/system/license`. When that happens, TE creates a channel called cve (`https://<FQDN>/channels/cve`).

Note: By default, only admin users can navigate to this channel (URL). For users to be able to access this channel, an admin user must assign the **Manage** permission for CVEs to users from the **User Management** dashboard.

TE will also set up a mirror in the channel called `cve_ingestor`, which will mirror all the packages in https://api.anaconda.cloud/repo/anaconda-main by default. "Packages" in this context refers to cve metadata.



Your token is extracted from the license and used to authenticate to the CVE endpoint; without it, you will not be able to mirror from api.anaconda.cloud.

The SSL certificate that is used on api.anaconda.cloud is signed by Let's Encrypt. This is important to know because repo.anaconda.cloud is signed by a different CA than repo.anaconda.com.

3.9.2 Validating CVE mirrors

Until your mirrored packages are matched to CVEs, you will not see metadata for those CVEs. In some cases, though, even entering your license does not provide you with mirrored CVE metadata. However, you can verify the CVEs are present by going through the following steps:

1. Navigate to your CVE view:

```
# Replace <FQDN> with your fully qualified domain name.
https://<FQDN>/channels/cve
```

2. List your CVEs on the command line:

```
conda repo cves --list
```

3. Use the rest end point with your admin user token:

```
# Replace <FQDN> with your fully qualified domain name.
export api=https://<FQDN>/api
conda repo login
token=$(conda repo auth -i 2>&1 | grep -Po "Token: \K(.*)")
curl -H "X-Auth: $token"  $api/channels/cve
```

4. As an alternate to step 3, you can use the rest end point with a bearer token, in case your user token doesn't work:

```
# Replace <FQDN> with your fully qualified domain name.
export api=https://FQDN/api/
export ATE_USER=<USER> ; export ATE_USER_PW=<PASSWORD>
export token=$(curl -sk -X POST -H 'Content-Type: application/json' -d '{"username":
↪"'$ATE_USER'", "password":"'$ATE_USER_PW'"}' ${api}/auth/login | jq -r '.token')
curl -k -H 'Authorization: Bearer '$token $api/cves | jq '.'
```

If after these steps you find that the CVE mirroring did not work as expected, there are a few known causes for this issue persisting:

- **Lack of internet access or proxy.** Any setup that does not have internet access or is not routed through a proxy will result in a mirror failure. This is true even if the docker host is able to connect to the internet via a proxy setting.

Solution: Ensure your proxy server is *configured correctly*.

- **Terminating proxy is replacing the certs.** A terminating proxy (transparent or explicit) or network device may be replacing the certs you've presented to TE, which is using the default request CA bundle (Mozilla) and not the system store.

  Solution: Add your custom root CA to the requests library store.

- **Missing root CA certs.** This is especially troublesome for the *Let's Encrypt* certs on the proxy.

  Solution: Even with a proper configuration, it is possible that the proxy itself need to be modified to validate the certificates on the other side of the connection.

After you've ensured that any of the above issues you were having are resolved; api.anaconda.cloud can be reached; and the SSL validated from the API repo container is successful, you may proceed with the following CVE mirror fix:

```
cd /opt/anaconda # or wherever TE docker-compose.yml is located.
docker-compose exec repo_api /bin/sh -c echo | openssl s_client -connect api.anaconda.
↪cloud:443 2>/dev/null | grep "Verify return code"
```

If the connection is working correctly, you should receive a confirmation like the following:

```
Verify return code: 0 (ok)
```

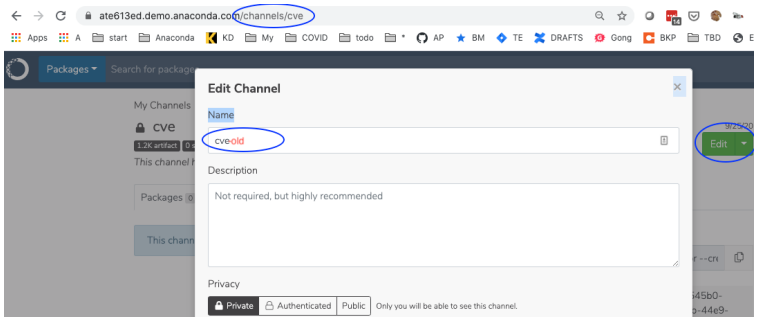
3.9.3 Fixing CVE mirror failure during setup

Note: Ensure you are using TE version 6.1.2 or later before attempting this procedure.

If you work through the steps above and find that your channels still do not contain CVEs, try the following steps:

1. Rename the CVE channel by navigating to the following path, clicking edit, and renaming the channel:

   ```
   # Replace <FQDN> with your fully qualified domain name.
   https://<FQDN>/channels/cve
   ```



1. Get the bearer token:

```
# Replace <FQDN> with your fully qualified domain name.
export api=https://FQDN/api/
export ATE_USER=<USER> ; export ATE_USER_PW=<PASSWORD>
export token=$(curl -sk -X POST -H 'Content-Type: application/json' -d '{"username":
↪"'$ATE_USER'", "password":"'$ATE_USER_PW'"}' ${api}/auth/login | jq -r '.token')
```

2. Call put `https://<FQDN>/api/system/license` endpoint:

```
curl -k -X PUT -H 'Authorization: Bearer '$token $api/system/license
```

3. Verify that the new CVE channel and mirror are created by navigating to your CVE view:

```
# Replace <FQDN> with your fully qualified domain name.
https://<FQDN>/channels/cve
```

4. Verify that CVE data is now available. If it is, you can safely delete the old CVE channel by navigating to the following path and deleting the channel from the green **Edit** button's dropdown options:

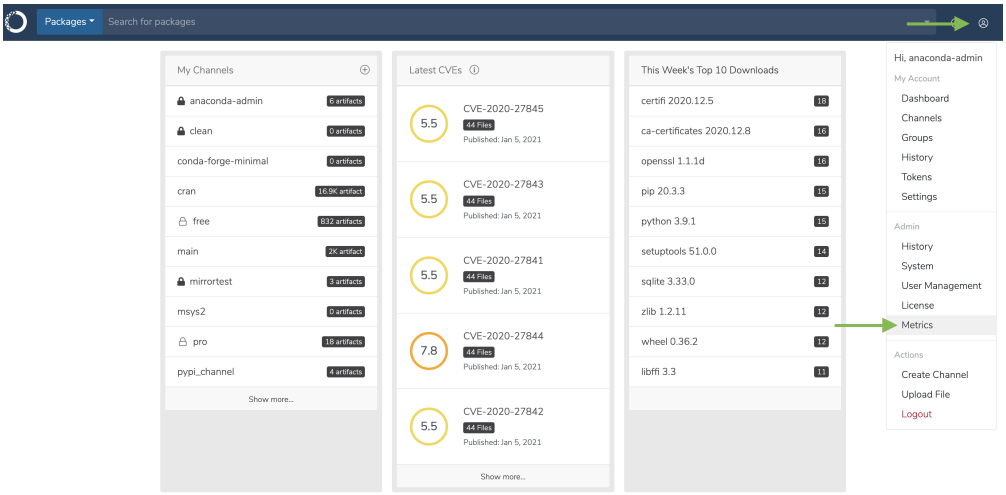
```
# Replace <FQDN> with your fully qualified domain name and <OLD_CVE> with the name␣
↪of the old CVE channel.
https://<FQDN>/channels/<OLD_CVE>
```

3.10 System metrics with Prometheus

Team Edition system performance can be monitored to understand system health, evaluate network traffic, and detect issues. Each of the Team Edition services expose a set of metrics that can be visualized using the built-in Prometheus expression browser. Metrics are provided in OpenMetrics (Prometheus) format.

3.10.1 Accessing Prometheus

To access your system metrics from the UI, click on the **My account** button in the top right, and then click **Metrics**. This will open a new browser tab with the root URL of the Team Edition installation appended with */prometheus/*. For example, *https://yourcompany.com/prometheus/*.



Alternatively, you can add `/prometheus` to the root URL of the Team Edition installation.

3.10.2 Using the expression browser

Prometheus uses a built-in expression browser for time series visualizations of system metrics.

Follow these steps to create visualizations from the expression browser:

1. Select a metric from the dropdown by clicking in the cell that reads *insert metric at cursor*.
2. Click on the **Graph** tab.
3. Select a time period. We recommend two weeks ("2w").
4. Select an "until" date, that being the point in time up to which the selected metric will displayed on the graph. The default time is the current date and time.
5. Click **Execute**.

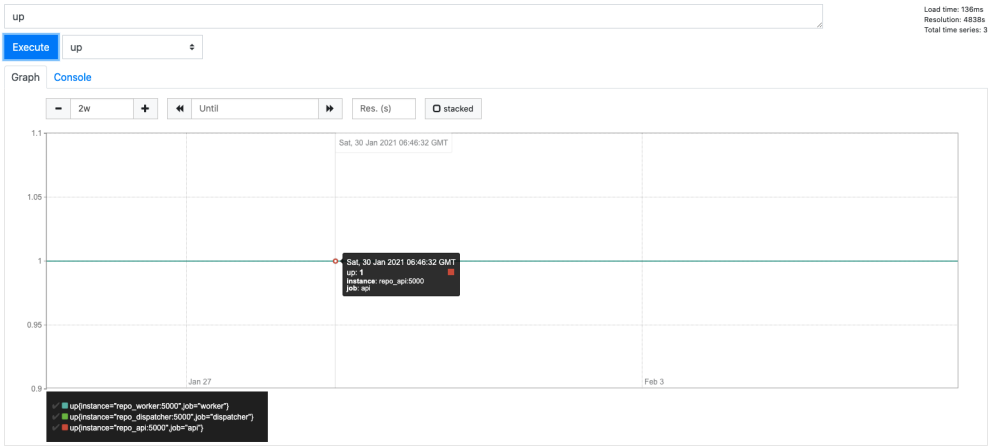
A graph will be populated with the selected metric, and a console readout will appear beneath it.

Tip: You can isolate a single resource by clicking it in the legend below the graph.

3.10.3 Popular metrics

up

While not the most exciting graph, the `up` time metric tells you if your instance is indeed running.

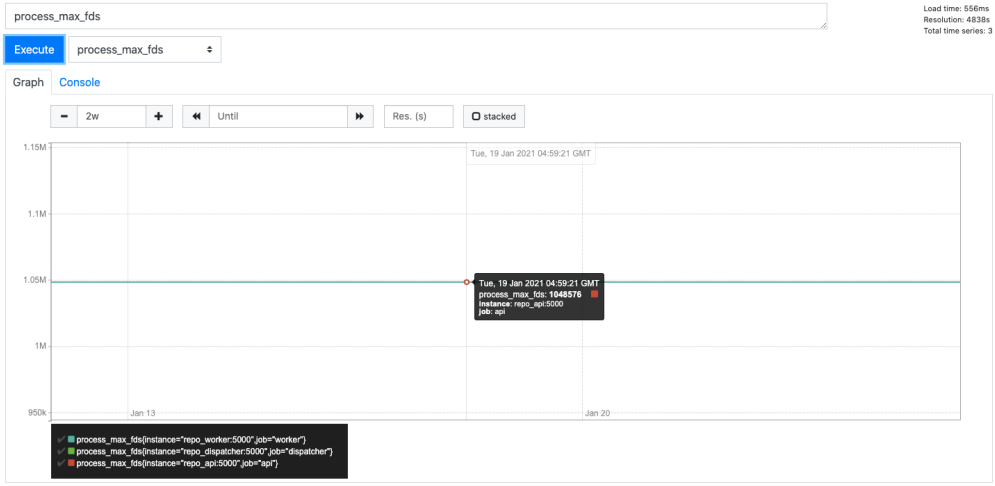


process_open_fds

`process_open_fds` counts the number of files in `/proc/PID/fd` directory. This tells you how many regular files, sockets, pseudo terminals, etc. you currently have open.

process_max_fds

`process_max_fds` reads `/proc/<PID>/limits` and uses the **Soft Limit** from the **Max Open Files** row. Interestingly, `/limits` lists both soft and hard limits. The soft limit is the value the kernel enforces for the corresponding resource, while the hard limit acts as the ceiling for the soft limit.



3.10.4 Setting a file limit alert

Using the two metrics above, `process_open_fds` and `process_max_fds`, you can quickly write an alert to warn you when a process hits, say, 80% of the limit:

```
groups:
- name: example
  rules:
  - alert: ProcessNearFDLimits
    expr: process_open_fds / process_max_fds > 0.8
    for: 10m
```

3.11 Upgrading Team Edition

3.11.1 Upgrading from 6.1.3 to 6.1.4

Install commands

You can see a full list of install commands by running the following command:

```
./install.sh --help
```

Anaconda Team Edition 6.1.4 supports the ability to upgrade from the previous version while keeping the product operating. You'll see this feature in the list as `--upgrade-from PREVIOUS_DIR`, where `PREVIOUS_DIR` represents the location of the previous installation (where the `docker-compose.yml` is located).

Upgrade steps

Extract the installer

First, extract the installer:

```
./ate-installer-6.1.4-<HASH>.sh -- --help`
```

You will see the folder `./ate-installer-6.1.4-<HASH>`, where `<HASH>` represents your hash.

cd into the folder:

```
# Replace <HASH> with your hash
cd ./ate-installer-6.1.4-<HASH>
```

From here, you can run the upgrade.

Default upgrade command

The following is the default command for upgrading to 6.1.4, meaning you may need to add more to the command depending on your setup. This could mean appending more directives to your upgrade command, such as those in the following subsections. Run `./install.sh --help` to see other options.

```
# Replace <FQDN> with your fully qualified domain name
# Replace <PREVIOUS_DIR> with the location of the previous installation (where the␣
↪docker-compose.yml is located)
./install.sh -d <FQDN> --upgrade-from <PREVIOUS_DIR>
```

For example, say your domain name is *team-edition.example.com*, and the previous installer is stored in */home/user/installers/ate-installer-6.1.3-xxx*, then the proper command would be the following:

```
./install.sh -d team-edition.example.com --upgrade-from /home/user/installers/ate-
↪installer-6.1.3-xxx
```

HTTPS setup

If your previous setup was for HTTPS, you'll need to provide the TLS certificate and key:

```
# Replace <PREV_BASE_DIR> with the base directory where config and file storage are␣
↪saved. The default value is /opt/anaconda/repo.
# Replace <FQDN> with your fully qualified domain name
# Replace <TLS_CERTIFICATE> and <TLS_KEY> with your TLS cert and key
# Replace <PREVIOUS_DIR> with the location of the previous installation (where the␣
↪docker-compose.yml is located)
./install.sh -b <PREV_BASE_DIR> -d <FQDN> --tls-cert <TLS_CERTIFICATE> --tls-key <TLS_
↪KEY> --upgrade-from <PREVIOUS_DIR>
```

Custom implementation considerations

If you're using a custom implementation, verify your `docker-compose.yml` and/or `repo.conf` (nginx configuration) files reflect the upgraded changes.

3.11.2 Upgrading from 6.1.0/6.1.1 to 6.1.3

Follow these steps to upgrade your version of Anaconda Team Edition from 6.1.0 or 6.1.1 to 6.1.3:

Note: Upgrading does not require hardware upgrades. Your data integrity will not be impacted.

1. Save the `REPO_TOKEN_CLIENT_SECRET` and `REPO_KEYCLOAK_SYNC_CLIENT_SECRET` values from the `.env` file in the installer directory for your current version of Team Edition.
2. Run `docker-compose stop` in your current version's install directory (most likely in the same location as your `docker-compose.yml` file). This will stop the container(s) and preserve the data.
3. Download, extract, and install the new version of Team Edition using the 6.1.3 installer.
4. Modify the `.env` file in the new version's directory and replace `REPO_TOKEN_CLIENT_SECRET` and `REPO_KEYCLOAK_SYNC_CLIENT_SECRET` with the values from the old install directory.
5. Run `docker-compose up -d repo_api` in the new install directory.
6. Re-upload the license:

- Via UI: Sign in as an admin and enter your license key via the following path:

```
<DOMAIN>/enter-license-key
```

- Via API:

```
POST /system/license
```

CHAPTER

FOUR

USING ANACONDA TEAM EDITION

Anaconda Team Edition offers several ways to work with channels, subchannels, and packages. The topics in this user section show these different methods, so choose the method that works for you.

4.1 Using Conda with Anaconda Team Edition

4.1.1 Configuration

You will need to configure Conda to install packages from your Anaconda Team Edition installation.

1. Set your channel alias on conda:

- If you are using SSL:

```
# Replace <DOMAIN> with your domain.
conda config --set channel_alias http(s)://<DOMAIN>/api/repo
```

- If you are **not** using SSL:

```
# Replace <DOMAIN> with your domain.
conda config --set channel_alias http://<DOMAIN>/api/repo
```

And configure your default channels to include the channel where Anaconda Distribution packages have been mirrored:

```
# Replace <DEFAULT_CHANNEL> with the channel where Anaconda Distribution packages have␣
↪been mirrored.
conda config --prepend default_channels <DEFAULT_CHANNEL>
```

You can run the above command multiple times to configure several default channels.

Alternatively, you can edit your `.condarc` file manually:

You will need to configure your conda configuration file, `.condarc`, to point to your instance of Team Edition and set up the channel(s) you want to pull packages from. This enables Conda to install packages from your instance of Team Edition rather than pulling from repo.anaconda.com.

The location of your `.condarc` file depends on which operating system you use. Consult the condarc documentation to determine the correct path.

1. Open the `.condarc` file with a text editor
2. Set the `channel_alias` and the `default_channels`

```
channel_alias: https://<HOST_NAME>.<COMPANY>.com/api/repo

default_channels:
  - <DEFAULT_CHANNEL>
```

3. Save the file.

4.1.2 Installing packages

Install packages from Anaconda Team Edition (public channels):

```
conda install [-c <CHANNEL_NAME>] <PACKAGE_NAME>
```

The `-c <CHANNEL_NAME>` flag allows you to install packages from channels on Anaconda Team Edition that have been created by users or administrators.

If you do not specify the `-c` flag, packages will be taken from the channels in the `default_channels` configuration.

Note: Prior to installing packages from a private or authenticated channel, you first need to log in using the *Anaconda Team Edition CLI*, **not** from the browser.

4.1.3 Conda Reference

More information on conda commands can be found in the conda documentation.

4.2 Anaconda Team Edition CLI

The Anaconda Team Edition CLI is used by both users and administrators to do the following:

- Install packages from private or authenticated channels
- Configure channels
- Upload assets
- Create mirrors

This topic provides guidance on the following actions:

4.2.1 Installing the conda repo CLI

Install the Anaconda Team Edition CLI (hereafter referred to as simply CLI) the `conda-repo-cli` package:

```
conda install conda-repo-cli
```

Note: The Anaconda Team Edition administrators may also choose to mirror this package into a channel on the server. Contact your administors to determine if `conda-repo-cli` can be installed from an Anaconda Team Edition channel.

4.2.2 Conda repo configuration

Follow these steps to configure your conda repo site:

- Use the following commands if you are using SSL:

```
# Replace <SITE_NAME> with the short tag you'll use to identify the fully qualified␣
↪domain name.
# Replace <DOMAIN> with your domain.
conda repo config --set sites.<SITE_NAME>.url https://<DOMAIN>/api
conda repo config --set default_site <SITE_NAME>

# The following is an example of two sites, one for production and the second for␣
↪development:
# conda repo config --set sites.production.url https://prod.my-ate.company.com/api
# conda repo config --set sites.development.url https://dev.my-ate.company.com/api
```

- Use the following commands if you are **not** using SSL:

```
# Replace <SITE_NAME> with the short tag you'll use to identify the fully qualified␣
↪domain name.
# Replace <DOMAIN> with your domain.
conda repo config --set sites.<SITE_NAME>.url http://<DOMAIN>/api
conda repo config --set default_site <SITE_NAME>
```

For example, <SITE_NAME> may be anaconda-repo and <DOMAIN> may be anaconda-repo.company.com.

4.2.3 OAuth and SAML configuration

If you are using OAuth or SAML, run the following command to go through the standard SAML authorization flow **after** configuring your site:

```
conda repo config --set oauth2 true
```

when you run `conda repo login`, a browser window will open for you to log in to Anaconda Team Edition. After login has completed, the window will display "Token Received." You can then close the browser window and continue to use the CLI.

4.2.4 Logging in

Run the following code to log in to Team Edition:

```
conda repo login # You will be prompted to enter your Team Edition username and password
```

Now you will be able to install packages from private and authenticated channels you have access to.

4.2.5 Further assistance

For a more robust view of conda repo commands, run the following command:

```
conda repo --help
```

Similarly, appending `--help` or the shorthand `-h` to a command will provide you with further actions you can take, such as the following:

```
conda repo mirror -h
conda repo channel -h
conda repo upload -h
```

4.3 Configuring Navigator to work with Team Edition

Note: You must *configure conda* prior to using Navigator with Team Edition.

Anaconda Navigator is a desktop graphical user interface (GUI) included in Anaconda distribution that allows you to launch applications and easily manage conda packages, environments, and channels without using command-line commands. Navigator can search for packages on Anaconda Cloud or in a local Anaconda Repository. It is available for Windows, macOS, and Linux.

Learn how to use Navigator in the Anaconda Navigator guide.

Note: Sign in on Navigator is not currently tied to Team Edition.

4.3.1 Viewing environments

Team Edition environments are currently not displayed on the Navigator **Environment** tab. As Navigator only displays environments on your own machine, you will need to download an environment from Team Edition onto your machine to view it and then import it into Navigator.

4.4 Accessing tooltips

Use tooltips and commands to gain more information on items and files.

4.4.1 Via the User Interface:

In the UI, you will see tooltips as you hover over various elements for more information. Additionally, you will see "i" icons that you can click and/or hover over to get more information on a given item or file.

4.4.2 Via the CLI:

To get a list of all possible commands, enter the following:

```
conda repo --help
```

4.5 Logging in/out of Team Edition

4.5.1 Logging in to Team Edition

Via the UI:

Visit `https://<YOUR_DOMAIN>` (or `http://<YOUR_DOMAIN>` if you are **not** using SSL) and enter your username and password.

Via the CLI:

```
conda repo login
```

4.5.2 Logging in if IDP is configured

Via the UI:

Visit `https://<YOUR_DOMAIN>` (or `http://<YOUR_DOMAIN>` if you are **not** using SSL) and enter your username and password, or click on a third party login option (for example, GitHub).

Via the CLI:

In order to enable browser-based login for conda repo CLI, you must first set oauth2 to true:

```
conda repo config --set oauth2 true
```

Then, run `conda repo login`.

A browser window will open for you to log in to Anaconda Team Edition. After login has completed, the window will display "Token Received." You can then close the browser window and continue to use the CLI.

4.5.3 Logging out of Team Edition

Via the UI:

Click on the user icon in the top right. Click **Logout**.

Via the CLI:

```
conda repo logout
```

4.6 Anaconda Project

Anaconda Project encapsulates data science projects and makes them easily portable. A project makes it easy to reproduce your work and collaborate with other team members. A project automates setup steps such as installing the right packages, downloading files, setting environment variables, and running commands.

Ananconda Project compressed the project directory into a .tar.bz2, .tar.gz or .zip file to make it easier to store and share with others.

Anaconda Team Edition enables you to upload and share Anaconda Project files within a channel. You can move, copy, and share your project with your team or provide authorized users access to the channel.

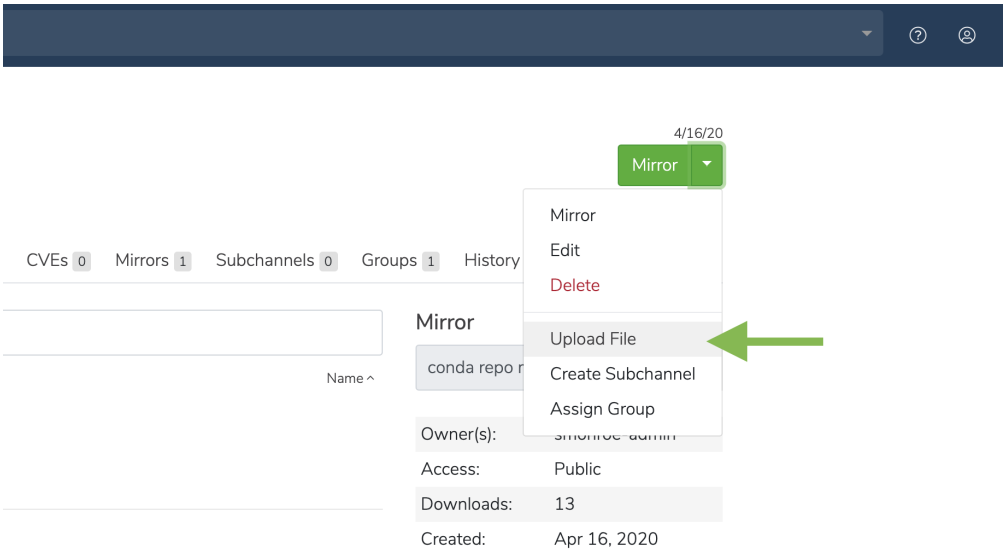
This topic provides guidance on the following actions:

- *Uploading a project*
- *Downloading a project*
- *Viewing project metadata*
- *Managing a project*

4.6.1 Uploading a project

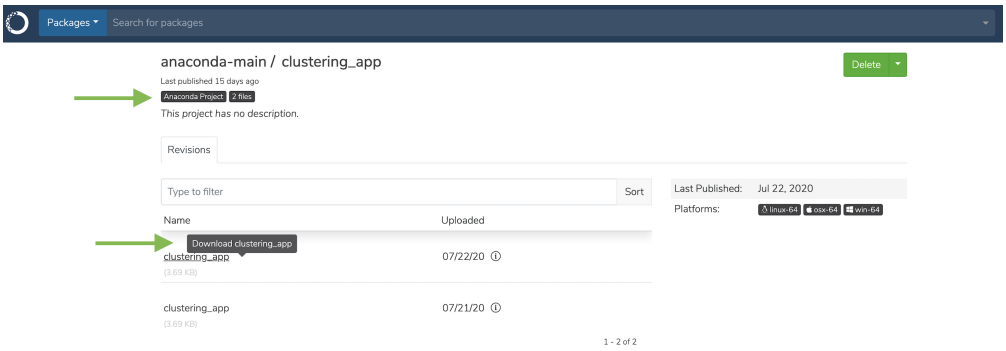
1. Preparation for uploading projects differs depending on your project type. Please follow the relevant guide for your respective projects:
    - sdist and wheels
    - cran
    - conda-build

1. Click the green dropdown button in the top right corner, and then click **Upload File**.
2. On the **Upload a File** screen, select the type of file you'd like to upload from the dropdown.
3. Click the **Browse** button to find your file and add it to the page.
4. Click **Upload**.



4.6.2 Downloading a project

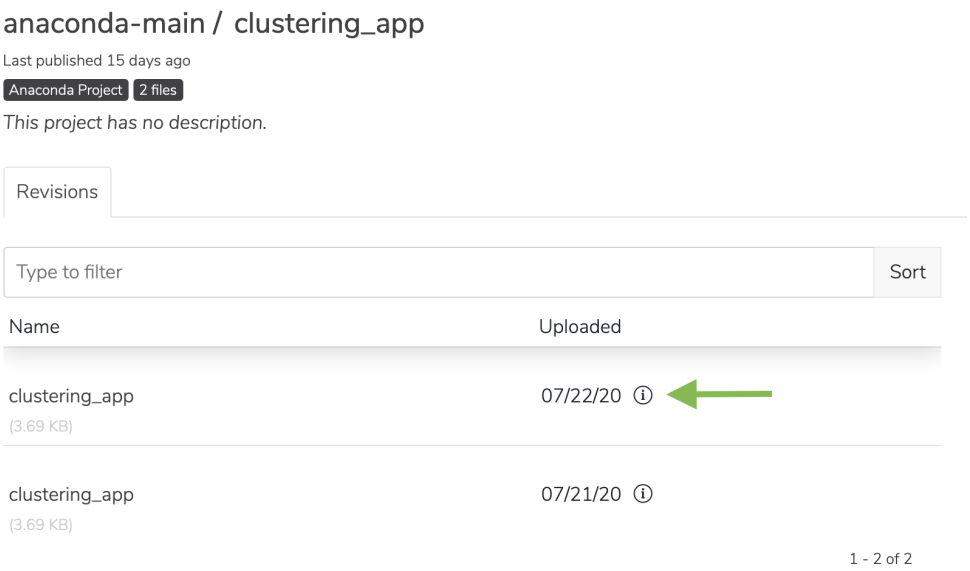
On the project details page, click on a file name to download the file.

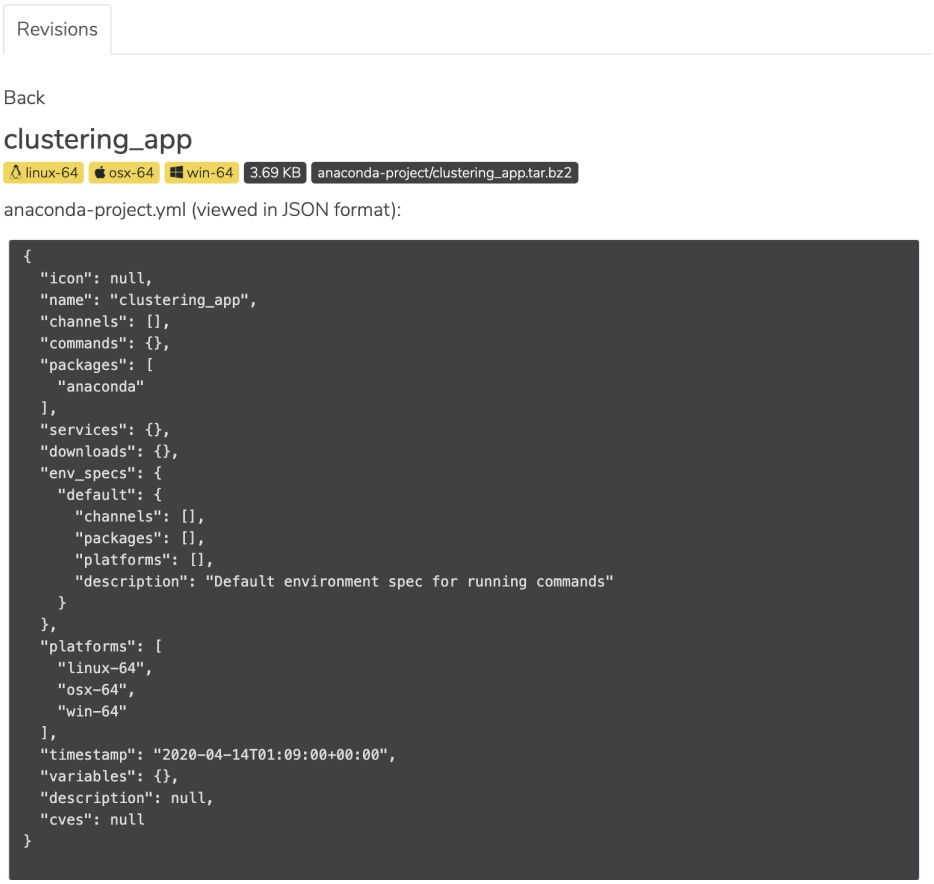


4.6.3 Viewing project metadata

Click the information icon to view a file's metadata.

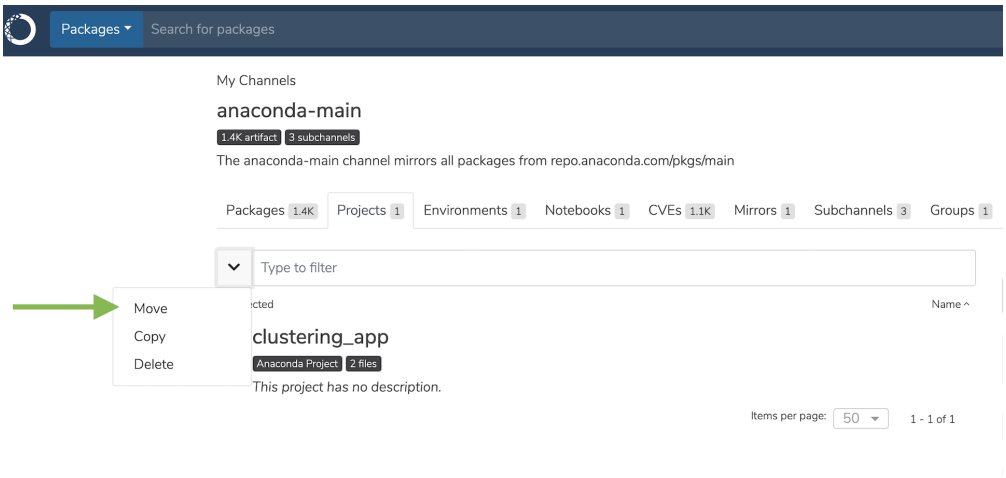
You will be presented with the project's metadata.


anaconda-main / clustering_app
Last published 15 days ago
Anaconda Project
2 files
This project has no description.
Revisions
Type to filter
Sort
Name
Uploaded
clustering_app
(3.69 KB)
07/22/20
clustering_app
(3.69 KB)
07/21/20
1 - 2 of 2


Revisions
Back
clustering_app
linux-64
osx-64
win-64
3.69 KB
anaconda-project/clustering_app.tar.bz2
anaconda-project.yml (viewed in JSON format):
{
"icon": null,
"name": "clustering_app",
"channels": [],
"commands": {},
"packages": [
"anaconda"
],
"services": {},
"downloads": {},
"env_specs": {
"default": {
"channels": [],
"packages": [],
"platforms": [],
"description": "Default environment spec for running commands"
}
},
"platforms": [
"linux-64",
"osx-64",
"win-64"
],
"timestamp": "2020-04-14T01:09:00+00:00",
"variables": {},
"description": null,
"cves": null
}

4.6.4 Managing a project

Check the box next to a project. Then, click the dropdown next to the search bar. You may then move, copy, or delete the project.



4.7 Environments

Anaconda Team Edition enables you to upload, move, copy, share, and download an environment yaml file. An environment is a folder or directory that contains a specific collection of conda packages and their dependencies. This allows them to be maintained and run separately without interference from each other.

For example, you may use a conda environment for only Python 2 and Python 2 packages, maintain another conda environment with only Python 3 and Python 3 packages, and maintain another for R language packages.

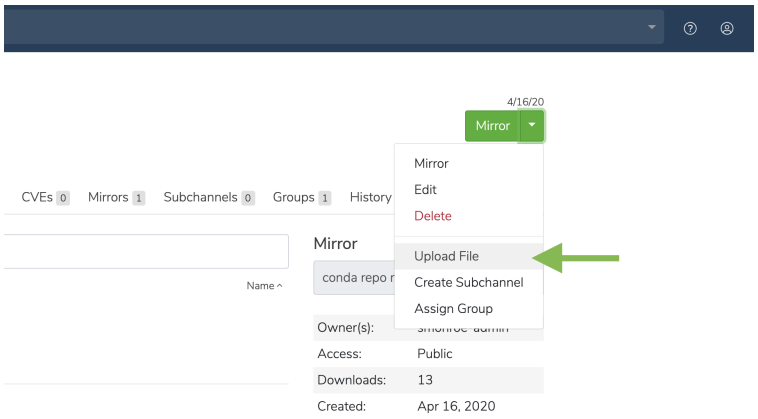
This topic provides guidance on the following actions:

- *Uploading an environment.yml file*
- *Viewing environment dependencies*
- *Viewing environment metadata*
- *Managing an environment*

4.7.1 Uploading an environment.yml file

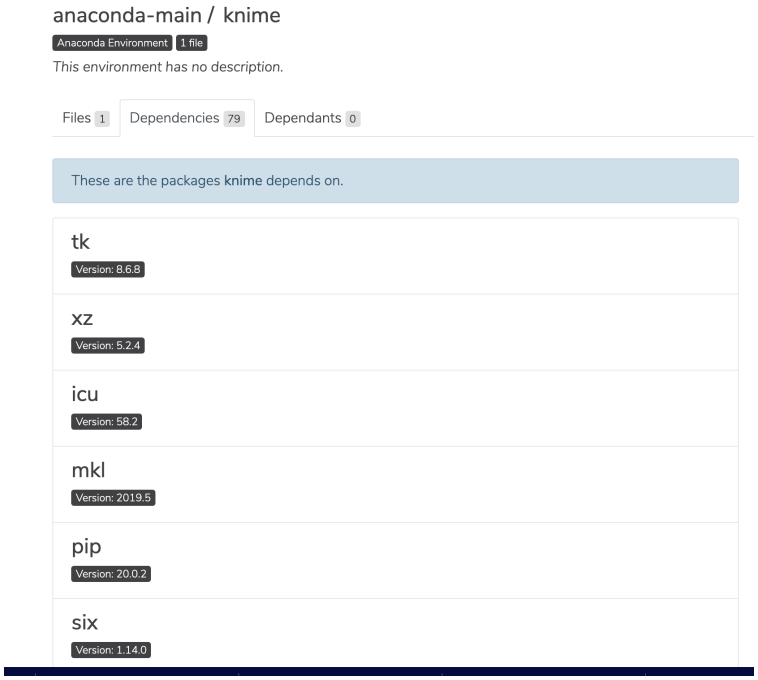
1. Create your environment file
2. Click the green dropdown button in the top right corner, and then click **Upload File**.

3. On the **Upload a File** screen, select the type of file you'd like to upload from the dropdown.
4. Click the **Browse** button to find your file and add it to the page.
5. Click **Upload**.



4.7.2 Viewing environment dependencies

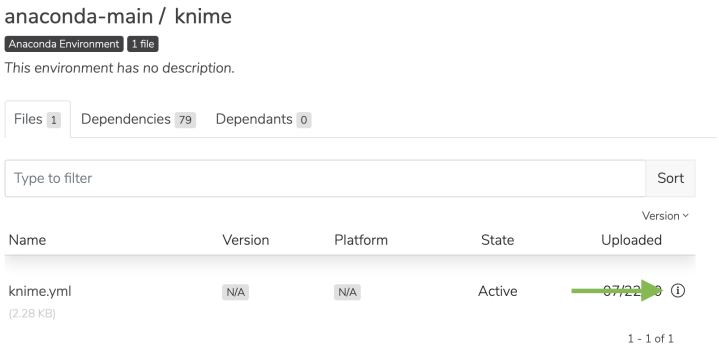
On the **Environments** tab, click anywhere on an environment to view its details.

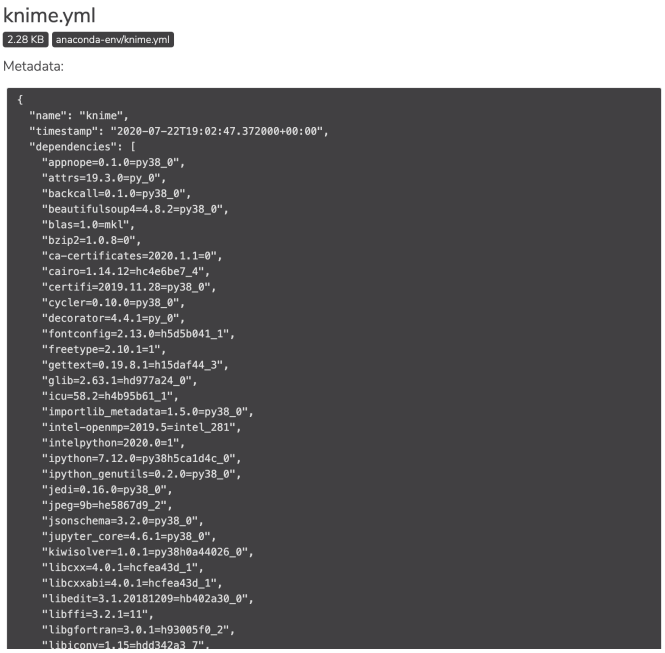


4.7.3 Viewing environment metadata

Click the information icon to view a file's metadata.

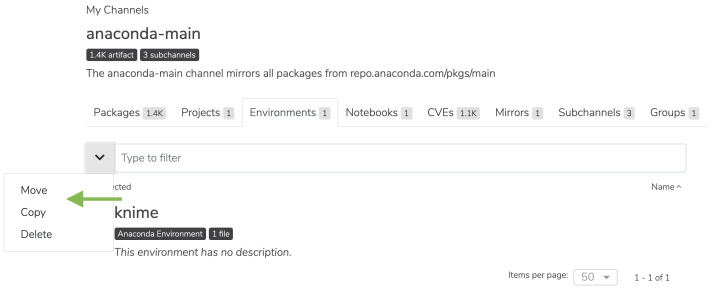
You will be presented with the environment's metadata.


anaconda-main / knime
Anaconda Environment
1 file
This environment has no description.
Files 1
Dependencies 79
Dependants 0
Type to filter
Sort
Version
Name
Version
Platform
State
Uploaded
knime.yml
(2.28 KB)
N/A
N/A
Active
1 - 1 of 1


knime.yml
2.28 KB
anaconda-env/knime.yml
Metadata:
{
"name": "knime",
"timestamp": "2020-07-22T19:02:47.372000+00:00",
"dependencies": [
"appnope=0.1.0=py38_0",
"attrs=19.3.0=py_0",
"backcall=0.1.0=py38_0",
"beautifulsoup4=4.8.2=py38_0",
"blas=1.0=mkl",
"bzip2=1.0.8=0",
"ca-certificates=2020.1.1=0",
"cairo=1.14.12=hc4e6be7_4",
"certifi=2019.11.28=py38_0",
"cycler=0.10.0=py38_0",
"decorator=4.4.1=py_0",
"fontconfig=2.13.0=h5d5b041_1",
"freetype=2.10.1=1",
"gettext=0.19.8.1=h15daf44_3",
"glib=2.63.1=hd977a24_0",
"icu=58.2=h4b95b61_1",
"importlib_metadata=1.5.0=py38_0",
"intel-openmp=2019.5=intel_281",
"intelpython=2020.0=1",
"ipython=7.12.0=py38h5ca1d4c_0",
"ipython_genutils=0.2.0=py38_0",
"jedi=0.16.0=py38_0",
"jpeg=9b=he5867d9_2",
"jsonschema=3.2.0=py38_0",
"jupyter_core=4.6.1=py38_0",
"kiwisolver=1.0.1=py38h0a44026_0",
"libcxx=4.0.1=hcfea43d_1",
"libcxxabi=4.0.1=hcfea43d_1",
"libedit=3.1.20181209=hb402a30_0",
"libffi=3.2.1=11",
"libgfortran=3.0.1=h93005f0_2",
"libiconv=1.15=hdd342a3_7",

4.7.4 Managing an environment

Check the box next to an environment. Then, click the dropdown next to the search bar. You may then move, copy, or delete the environment.



4.8 Channels and subchannels

Anaconda Team Edition contains channels and subchannels, which provide a location in the repository where you can look for artifacts that have been mirrored, uploaded, copied, or moved. Both administrators and users can define channels and subchannels, determine which artifacts are available in a channel or subchannel, and restrict or grant access to specific users or groups.

In Team Edition, we allow for an additional level within your channel, called a subchannel (previously called a label in anaconda.org).

When a user logs in to Team Edition for the first time, a user profile and default channel will be created. If a channel by that name already exists, a default channel will not be created for that user.

This topic provides guidance on the following actions:

- *Creating a channel*
- *Creating a subchannel*
- *List channels you can access*
- *Viewing channel details*
- *Viewing subchannel details*
- *Editing a channel*
- *Editing a subchannel*
- *Creating a group*
- *Adding members to a group*
- *Assigning a group to a channel*
- *Deleting a channel*
- *Deleting a subchannel*

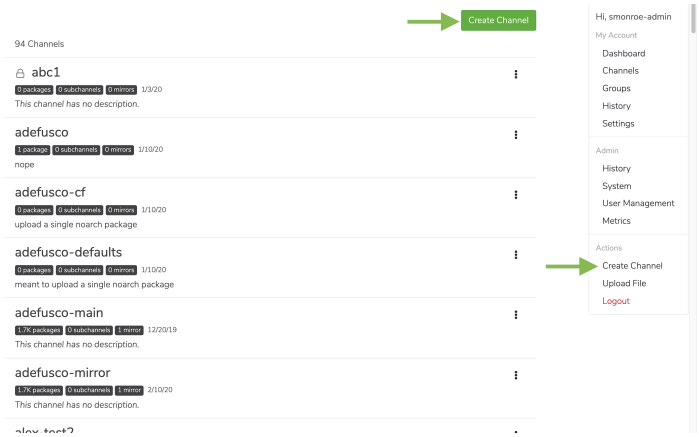
4.8.1 Creating a channel

There are a few key things to note when creating a channel:

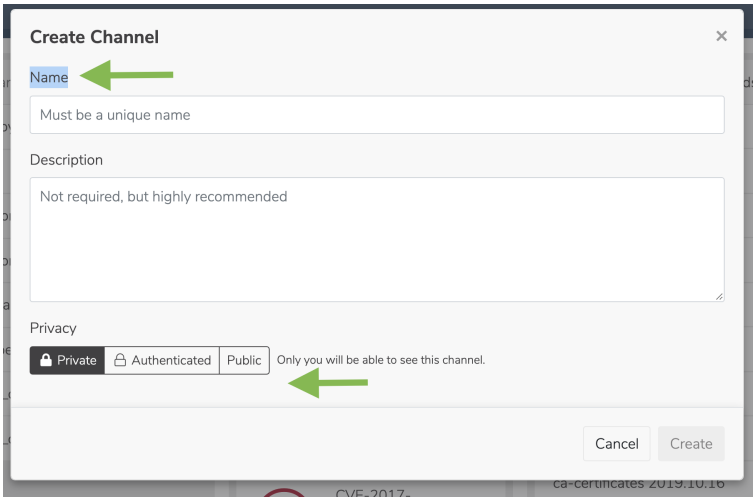
- If a channel name is already in use, create a new channel with a different name. That channel can then be set as the default channel on the **Settings** page under **My Account**.
- If an email is used as a username, the portion of the email before the "@" symbol (also known as the "local-part") will be used as the username. Because channel names are restricted to a limited set of characters (a-z 0-9 - _), some characters may be replaced with _. For example, if the email address `erica.lamara@website.com` is used as a username, the channel `erica_lamara` will be created.
- If you don't see any way of creating a channel (as shown in the following UI section), you may be lacking the permission to do so. Ask your administrator about *modifying your permissions* to allow you to create channels.

Via the UI:

1. Click to open the User Menu (left click on the user icon in the header on the right side), and then click **Create a Channel**.



2. Fill in a name and description when prompted.



You can also create a new channel by clicking on the green button on the top right of the channels list page, or by clicking the plus **+** icon in the top right of the My Channels list on the dashboard page.

Via the API:

```
<DOMAIN>/swagger/ui/#/channels/repo.endpoints.channels.channels.post_channel
```

Via the CLI:

```
conda repo channel --create <CHANNEL_NAME>
```

4.8.2 Creating a subchannel

Via the UI:

1. Go to the details page of a channel.
2. You will notice a green button on the right side with an arrow to the right of it. Click that arrow, and then select **Create subchannel**.
3. Fill in a name and description when prompted.

Via the API:

```
POST /api/channels/<CHANNEL_NAME>/subchannels
```

Via the CLI:

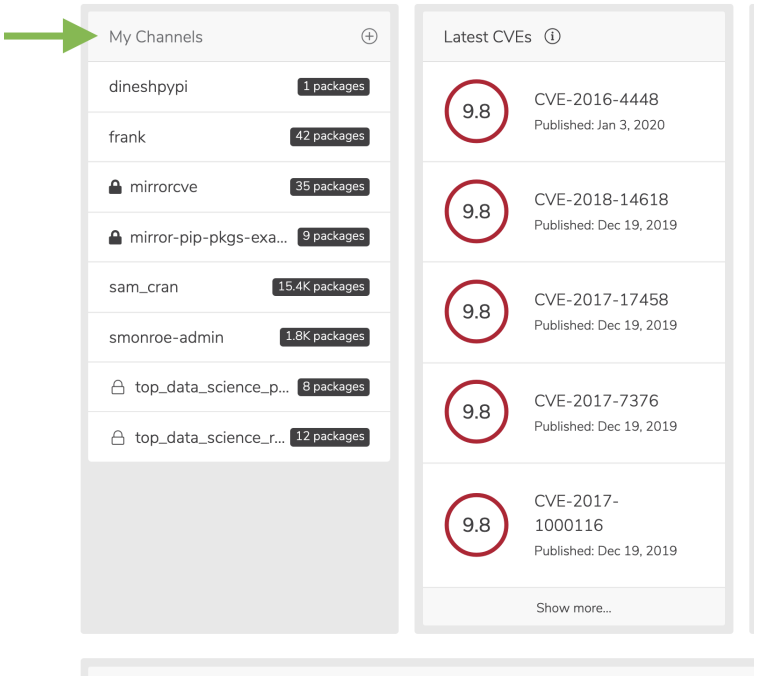
```
conda repo channel --create <CHANNEL_NAME>/<SUBCHANNEL_NAME>
```

4.8.3 List channels you can access

Via the UI:

On the dashboard in the top left you will see a list of channels that you have access to. If you have more than 10 channels that you have access to, you can click the **Show more** button at the bottom of the list of channels. Private channels that you don't have access to don't show up.

Alternatively, you can click on the user icon in the header and select **Channels** to get a list of channels that you own and have access to. If you are an administrator, you will see all channels in your organization.



Via the API:

```
GET /api/channels/

# or

GET /api/account/channels
```

Via the CLI:

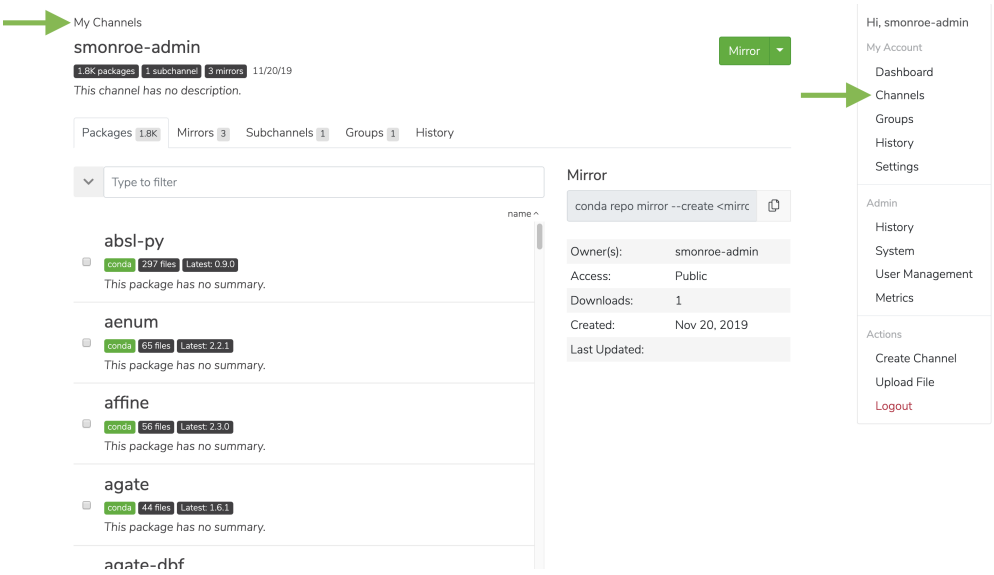
```
conda repo channel --list
```

4.8.4 Viewing channel details

Inside each channel is metadata on the channel, such as the name and description. Additionally, you can get a list of packages, mirrors, subchannels, groups, and history.

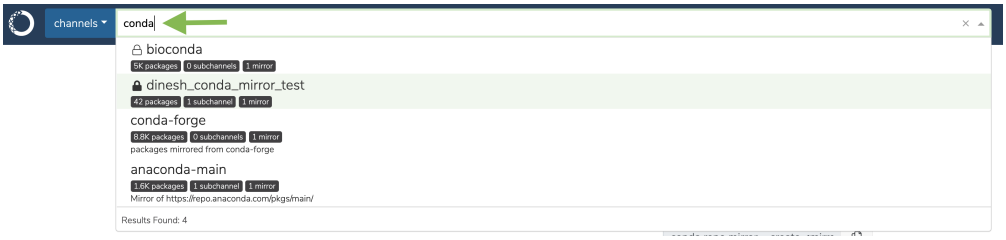
Via the UI:

1. From the dashboard, click on the name of a channel. Alternatively, click on the user menu icon in the far right of the top navigation.
2. Select **channels** to see a list of all the channels you have access to, and then click through to view the details.



or

Type the name of the channel in the search bar at the top of the page and select it from the dropdown.



Via the API:

```
GET /api/channels/<CHANNEL_NAME>
GET /api/channels/<CHANNEL_NAME>/artifacts
GET /api/channels/<CHANNEL_NAME>/history
GET /api/channels/<CHANNEL_NAME>/mirrors
GET /api/channels/<CHANNEL_NAME>/subchannels
```

Via the CLI:

```
conda repo channel --show <CHANNEL_NAME>
conda repo channel --list-packages <CHANNEL_NAME>
conda repo channel --list-files <CHANNEL_NAME>
```

4.8.5 Viewing subchannel details

Inside each channel is metadata on the channel, such as the name and description. Additionally, you can get a list of packages, mirrors, subchannels, groups, and history.

Via the UI:

1. Go to the channel's detail page and click on the **Subchannels** tab.
2. Click on the subchannel to see the subchannel details.

Via the API:

```
GET /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>
GET /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>/artifacts
GET /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>/history
GET /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>/mirrors
```

Via the CLI:

```
conda repo channel --show <CHANNEL_NAME>/<SUBCHANNEL_NAME>
conda repo channel --list-packages <CHANNEL_NAME>/<SUBCHANNEL_NAME>
conda repo channel --list-files<CHANNEL_NAME>/<SUBCHANNEL_NAME>
```

4.8.6 Editing a channel

Inside each channel is metadata on the channel that you can edit, such as the name, description, and privacy.

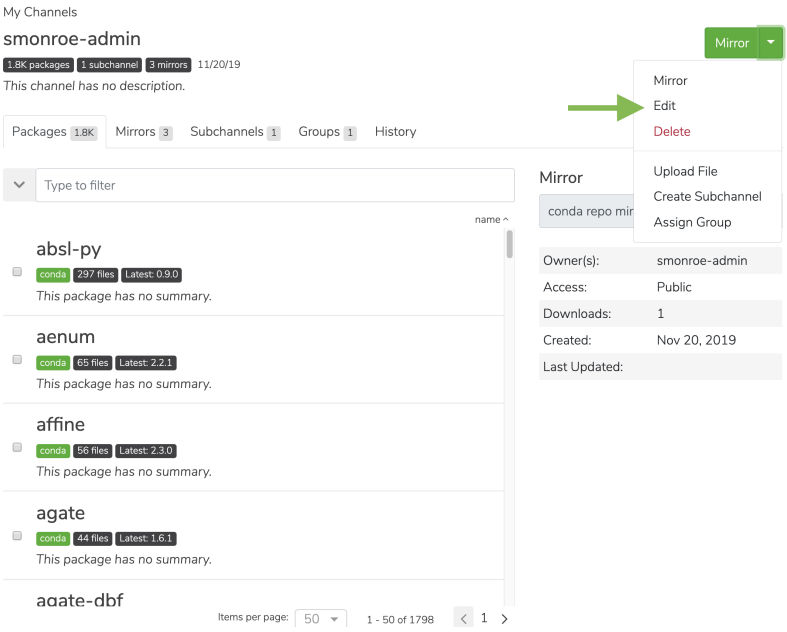
Via the UI:

1. From the dashboard, click on the name of a channel. Alternatively, click on the user menu icon in the far right of the top navigation.
2. Select **channels** to see a list of all the channels you have access to, and then click through to view the details.
3. On the channel details page, click the down arrow next to the large green button and select **Edit** from the menu.

You will be presented with a modal in which you can edit the details of the channel.

Via the API:

```
PUT /api/channels/<CHANNEL_NAME>
```



Via the CLI:

```
# lock a channel (set the privacy to private)
conda repo channel --lock<CHANNEL_NAME>

# soft-lock a channel (set the privacy to authenticated)
conda repo channel --soft-lock <CHANNEL_NAME>

# unlock a channel (set the privacy to public)
conda repo channel --unlock<CHANNEL_NAME>
```

4.8.7 Editing a subchannel

Via the UI:

1. Go to a channel's detail page and click on the **Subchannels** tab.
2. Click on the subchannel you wish to view details for.
3. On the subchannel details page, click the down arrow next to the large green button and select **Edit** from the menu.

You will be presented with a modal in which you can edit the details of the subchannel.

Via the API:

```
PUT /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>
```

Via the CLI:

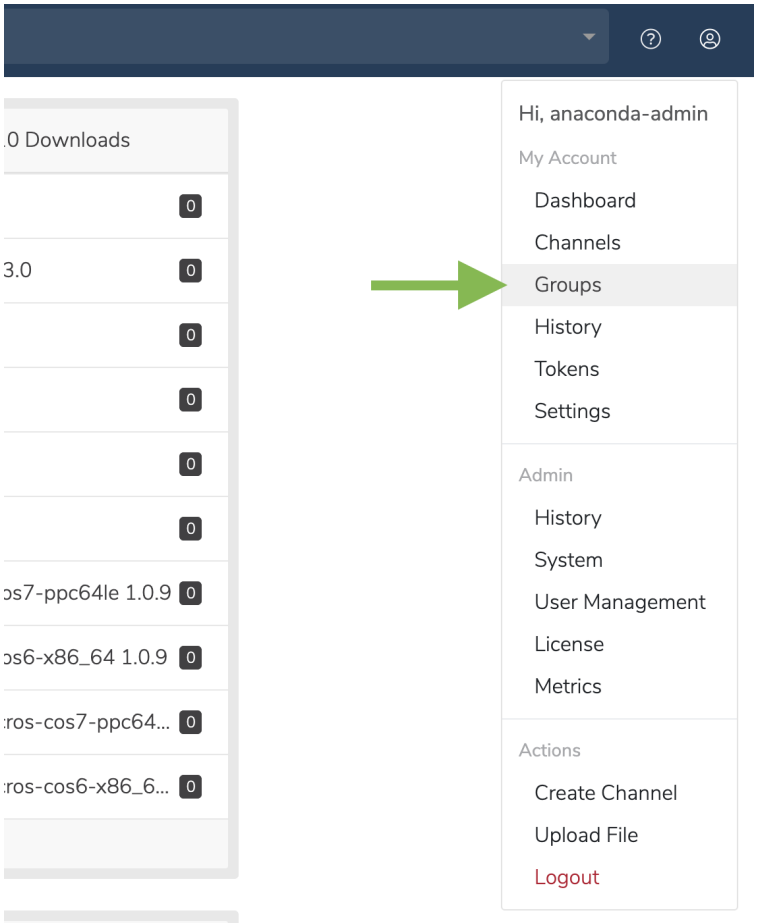
```
# lock a subchannel (set the privacy to private)
conda repo channel --lock<CHANNEL_NAME>/<SUBCHANNEL_NAME>

# soft-lock a subchannel (set the privacy to authenticated)
conda repo channel --soft-lock <CHANNEL_NAME>/<SUBCHANNEL_NAME>

# unlock a subchannel (set the privacy to public)
conda repo channel --unlock<CHANNEL_NAME>/<SUBCHANNEL_NAME>
```

4.8.8 Creating a group

1. Click on the **My account** button in the top right.
2. In the dropdown, under **My Account**, select **Groups**.

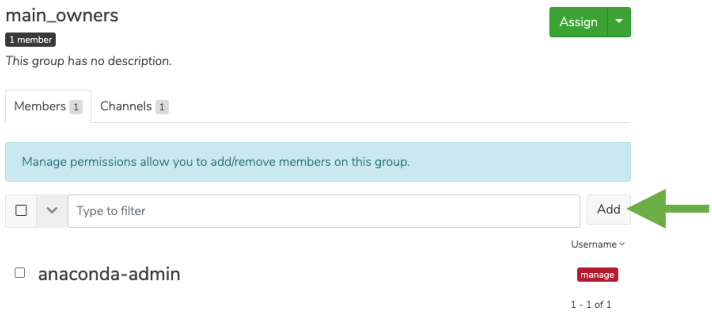


3. On this page, you can see the groups that have already been created. Click the **Create Group** button to create a new group.
4. Enter a unique group name and description, then click **Create**.

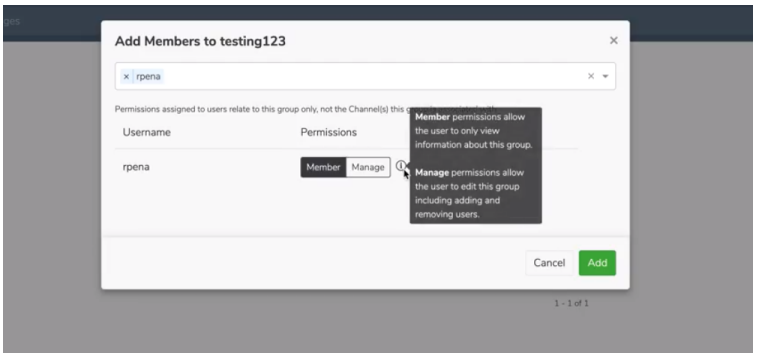
Note: Members can be added to a group once it is created.

4.8.9 Adding members to a group

1. From the group page, click the **Add** button to add a new member to the group and assign member permissions.



2. Once the member's username has populated under **Username**, you can select their permission level. Click on the information icon next to the permissions to learn more about the permissions available.



4.8.10 Assigning a group to a channel

1. From the group page, click on the **Channels** tab.
2. If the group has yet to be assigned to a channel, the following notification will be displayed on the page:

Note: This group is not associated with any channels. **Assign this group** to a channel.

1. Click on **Assign this group**.

2. In the popup window, the dropdown search bar will list the channels to which you have permission to modify. Select the channel you wish to add your group to.
3. Then, select the permission you wish to assign to the group *as a whole*, and then click **Add**.

4.8.11 Deleting a channel

Deleting a channel marks the channel as deleted. Once you delete a channel, all associates artifacts will not be found in search. However, the files will remain on the disc. The ability to manipulate deleted channels and files will be possible in a future release of Team Edition.

Via the UI:

On a channel detail page click the green button's down arrow to reveal other actions, then click **Delete**.

Alternatively, on the channels list page, you can click the elipses icon **...** on the right of each channel row and choose **Delete**.

Via the API:

```
DELETE /api/channels/<CHANNEL_NAME>
```

Via the CLI:

```
conda repo channel --remove <CHANNEL_NAME>
```

4.8.12 Deleting a subchannel

Via the UI:

On a channel detail page, click on the subchannels tab. Select one or more subchannels, and then select the down arrow next to the filter text field. A menu will appear where you can select **Delete** to delete the selected Subchannels.

Alternatively, you can click on a subchannel to view its detail page. From there, click on the green button's down arrow to reveal other actions, then click **Delete**.

Via the API:

```
DELETE /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>
```

Via the CLI:

```
conda repo channel --remove <CHANNEL_NAME>/<SUBCHANNEL_NAME>
```

4.9 Using packages within channels/subchannels

There are several ways to get packages into a channel or subchannel:

- Upload a package file directly to a channel
- Create a mirror configuration and specify the source channel
- Copy/move specific packages from another channel

This topic provides guidance on the following actions:

- *Uploading to a channel*
- *Uploading to a subchannel*
- *Mirror to/from a channel*
- *Mirror to/from a subchannel*
- *Copy/move packages to/from a channel*
- *Copy/move packages to/from a subchannel*

4.9.1 Uploading to a channel

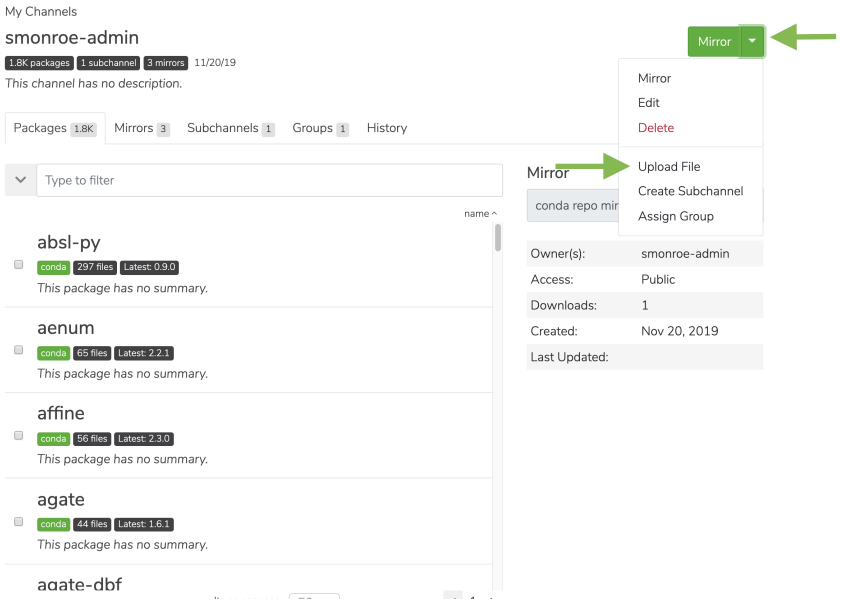
Via the UI:

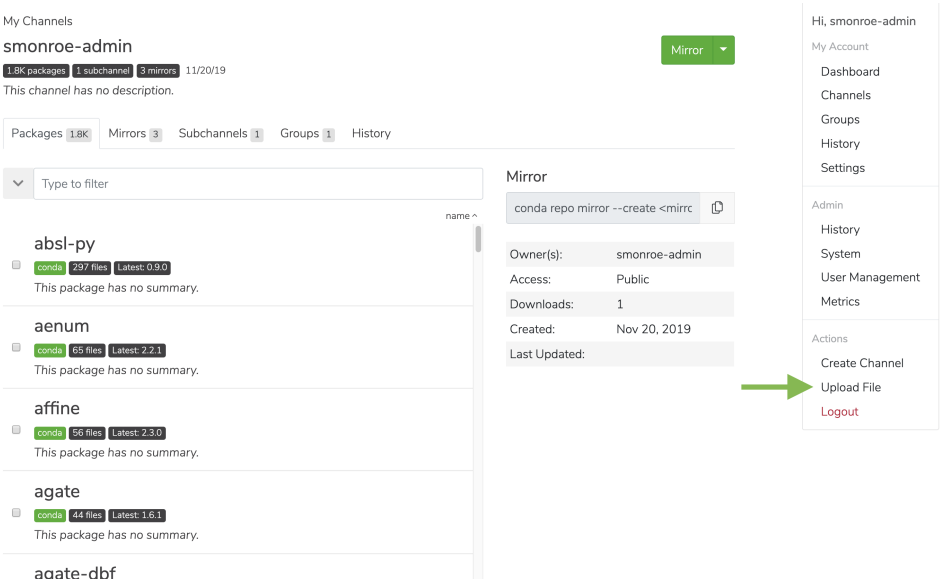
1. Visit the channel you wish to upload packages to.
2. Click on the action button on the right side of the **Mirror** button and select the option to **Upload**.
3. In the modal that appears, select the file from your local computer that you wish to upload.

A toast notification will appear informing you of success or failure.

or

1. Click on the user icon and choose **Upload Package**.
2. Choose the file to upload and what channel to upload it to.


My Channels
smonroe-admin
1.8K packages
1 subchannel
3 mirrors
11/20/19
This channel has no description.
Mirror
Mirror
Edit
Delete
Upload File
Create Subchannel
Assign Group
Packages 1.8K
Mirrors 3
Subchannels 1
Groups 1
History
Type to filter
name
absl-py
conda
297 files
Latest: 0.9.0
This package has no summary.
aenum
conda
65 files
Latest: 2.2.1
This package has no summary.
affine
conda
56 files
Latest: 2.3.0
This package has no summary.
agate
conda
44 files
Latest: 1.6.1
This package has no summary.
agate-dbf
Mirror
conda repo mir
Owner(s): smonroe-admin
Access: Public
Downloads: 1
Created: Nov 20, 2019
Last Updated:


My Channels
smonroe-admin
1.8K packages
1 subchannel
3 mirrors
11/20/19
This channel has no description.
Mirror
Packages 1.8K
Mirrors 3
Subchannels 1
Groups 1
History
Type to filter
name
absl-py
conda
297 files
Latest: 0.9.0
This package has no summary.
aenum
conda
65 files
Latest: 2.2.1
This package has no summary.
affine
conda
56 files
Latest: 2.3.0
This package has no summary.
agate
conda
44 files
Latest: 1.6.1
This package has no summary.
agate-dbf
Mirror
conda repo mirror --create <mirrc
Owner(s): smonroe-admin
Access: Public
Downloads: 1
Created: Nov 20, 2019
Last Updated:
Hi, smonroe-admin
My Account
Dashboard
Channels
Groups
History
Settings
Admin
History
System
User Management
Metrics
Actions
Create Channel
Upload File
Logout

Via the API:

```
POST /api/channels/<CHANNEL_NAME>/artifacts
```

Via the CLI:

```
conda repo upload -c <CHANNEL_NAME><FILE_PATH>
```

4.9.2 Uploading to a subchannel

Via the UI:

1. Visit the subchannel you wish to upload packages to.
2. Click on the action button on the right side and select the option to **Upload**.
3. In the modal that appears, select the file from your local computer that you wish to upload.

A toast notification will appear informing you of success or failure.

or

1. Click on the user icon and choose **Upload Package**.
2. Choose the file to upload and what channel/subchannel combination to upload it to.

Via the API:

```
POST /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>/artifacts
```

Via the CLI:

```
conda repo upload -c <CHANNEL_NAME>/<SUBCHANNEL_NAME><FILE_PATH>
```

4.9.3 Mirror to/from a channel

Via the UI:

1. As an admin user, visit the channel you wish to mirror to (the destination) and click the green **Mirror** button.
2. Enter the source of the mirror and whether that source is internal (a channel on this repo) or external (a channel on some other repo such as http://www.anaconda.org).
3. Indicate whether you wish for the mirror to be passive (one time only) or active (synced with the source channel).

Additionally, you will be presented with other options for your mirror such as CVE score restrictions and frequency.

Via the API:

```
POST /api/channels/<CHANNEL_NAME>/mirrors
```

Via the CLI:

```
conda repo mirror --create<MIRROR_NAME> -c <DESTINATION_CHANNEL> -s <SOURCE> --mode<MODE>

# For example:
# conda repo mirror --create tm3 -c mychannel -s "https://conda.anaconda.org/conda-test" --mode passive
```

4.9.4 Mirror to/from a subchannel

Via the UI:

TBD

Via the API:

```
POST /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>/mirrors
```

Via the CLI:

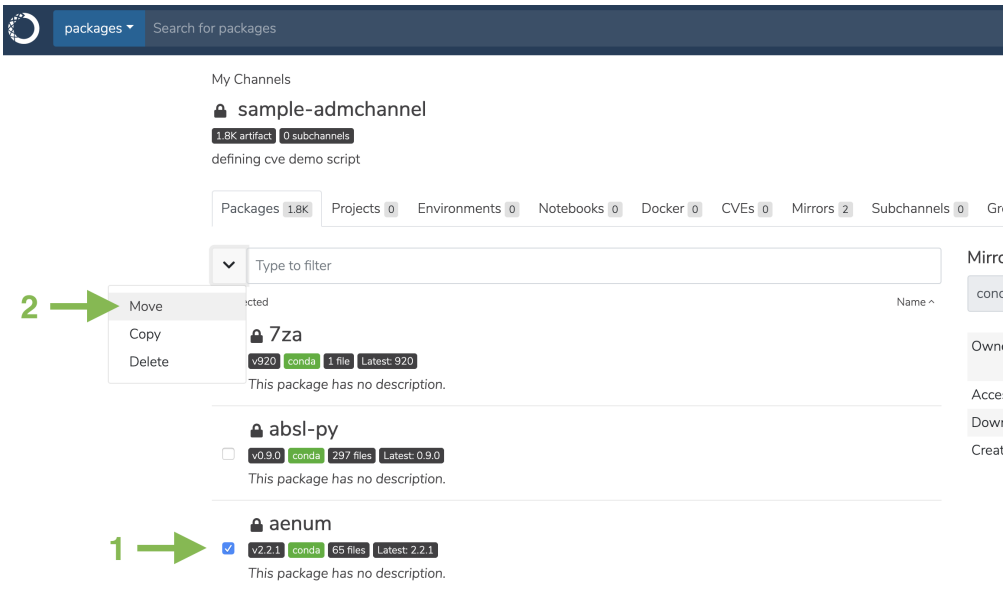
```
conda repo mirror --create<MIRROR_NAME> -c <CHANNEL_NAME>/<SUBCHANNEL_NAME> -s <SOURCE> --mode<MODE>

# For example:
# conda repo mirror --create tm3 -c mychannel/dev -s "https://conda.anaconda.org/conda-test " --mode passive
```

4.9.5 Copy/move packages to/from a channel

Via the UI:

1. Go to the channel you wish to copy packages to/move packages from.
2. Click on the **Packages** tab, where you will see a list of all the packages in that channel.
3. Select one or more packages, and then click **move** or **copy** to a new or existing channel.



Via the API:

```
POST /channels/<CHANNEL_NAME>/artifacts/bulk
```

Via the CLI:

```
conda repo copy <SPEC> -d<DESTINATION_CHANNEL>
conda repo move <SPEC> -d<DESTINATION_CHANNEL>

# where dest = <CHANNEL_NAME>[/<SUBCHANNEL_NAME>][::<PACKAGE>[/<VERSION>[/<FILE_NAME>]]]

# If file name is not given, copy all files in the version

# For example:
# conda repo copy john::bokeh/1.0.2/bokeh-1.0.2-py37_0.tar.bz2 -d john2
# conda repo move john::bokeh/1.0.2/bokeh-1.0.2-py37_0.tar.bz2 -d john2
```

4.9.6 Copy/move packages to/from a subchannel

Via the UI:

1. Go to the subchannel you wish to copy packages to/move packages from.
2. Click on the **Packages** tab, where you will see a list of all the packages in that subchannel.
3. Select one or more packages, and then click **move** or **copy** to a new or existing channel or subchannel.

Via the API:

```
POST /channels/<CHANNEL_NAME>/artifacts/bulk
```

Via the CLI:

```
conda repo copy <spec> -d <CHANNEL_NAME>/<SUBCHANNEL_NAME>
conda repo move <spec> -d <CHANNEL_NAME>/<SUBCHANNEL_NAME>

# where dest =<CHANNEL_NAME>/<SUBCHANNEL_NAME>[::<PACKAGE>[/<VERSION>[/<FILE_NAME>]]]

#If filename is not given, copy all files in the version

# For example:
# conda repo copy john::bokeh/1.0.2/bokeh-1.0.2-py37_0.tar.bz2 -d john/ts2
# conda repo move john::bokeh/1.0.2/bokeh-1.0.2-py37_0.tar.bz2 -d john/ts2
```

4.10 History

This page is under construction

The History page allows you to view and filter past events. You may also click on the event itself to view its metadata.

The following is a list of some events you may see captured in your History log:

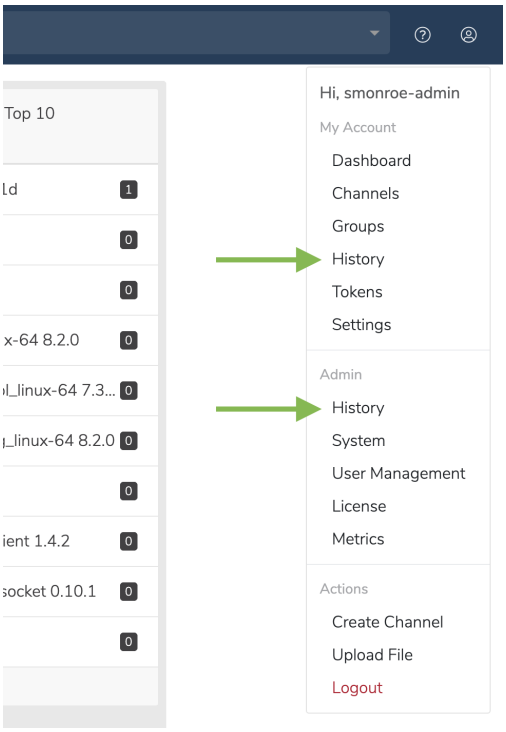
- Channel created
- Channel group added
- Group user added
- Artifact registered
- Mirror updated
- Mirroring failed

4.10.1 Viewing history

To access your History page, click on the **My account** button in the top right.

Note: As a user, you will see your history under the **My Account** section. As an admin, you will have an additional section that displays the history of all events within that instance of Team Edition.

On the History page, you may sort and filter by the type of event. Click on any event to view its metadata.



4.11 Packages

Anaconda Team Edition enables you to upload packages (conda, cran, wheel, egg, sdist, etc.) to the repository and store them in several different channel structures. Each package contains specific metadata for that package along with the dependencies and dependents for the package.

This topic provides guidance on the following actions:

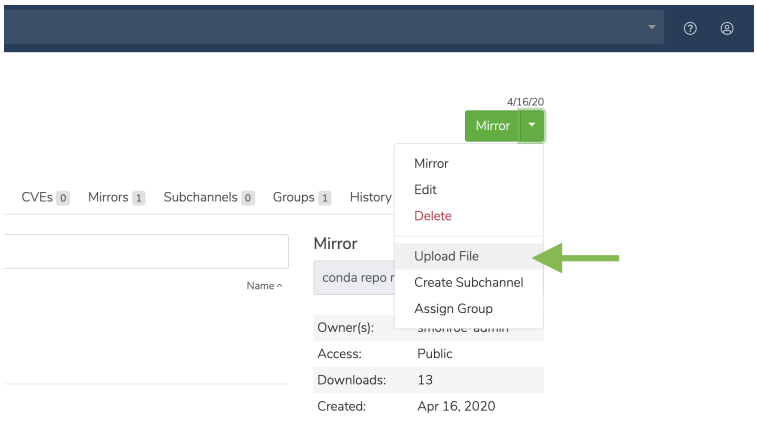
- *Uploading a package*
- *Downloading a package*
- *Viewing package details*
- *Viewing package metadata*
- *Managing a package*
- *Deleting a package*

4.11.1 Uploading a package

Preparation for uploading packages differs depending on your package type. Please follow the relevant guide for your respective packages:

- sdist and wheels
- cran
- conda-build

Via the UI:



1. Click the green dropdown button in the top right corner, and then click **Upload File**.
2. On the **Upload a File** screen, select the type of file you'd like to upload from the dropdown.
3. Click the **Browse** button to find your file and add it to the page.
4. Click **Upload**.

Via the CLI:

To upload into the default user channel:

```
# Replace <PACKAGE> with the package name
conda repo upload <PACKAGE>
```

To upload multiple packages:

```
# Replace <PACKAGE1> etc. with the package names
conda repo upload <PACKAGE1> <PACKAGE2>
```

To upload into a specific channel:

```
# Replace <PACKAGE> with the package name and <CHANNEL_NAME> with the channel name
conda repo upload - <CHANNEL_NAME> <PACKAGE>
```

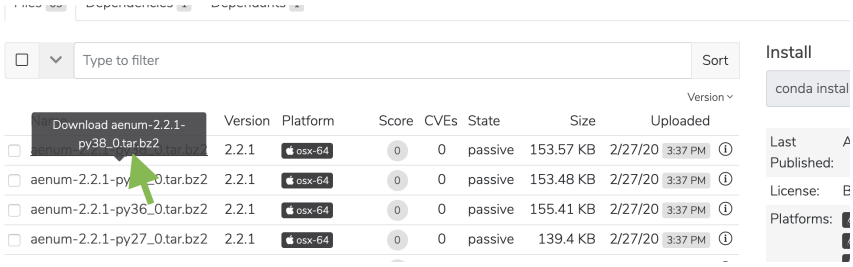
By default, the system will try to identify the package type automatically. However, you can also provide the file type yourself:

```
# Replace <CHANNEL_NAME> with the channel name
conda repo upload -t conda -c <CHANNEL_NAME> package.tar.bz2

# Or, to upload a notebook:
# Replace <CHANNEL_NAME> with the channel name
conda repo upload -t ipynb -c <CHANNEL_NAME> notebook.ipynb
```

4.11.2 Downloading a package

On a package details page, click on a file name to download the file.

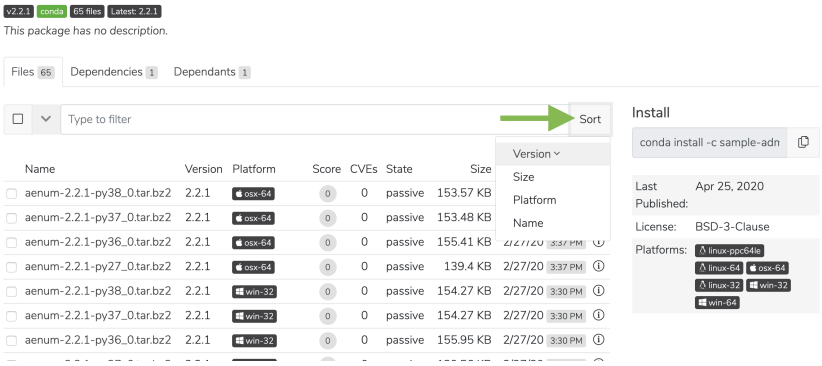


4.11.3 Viewing package details

Via the UI:

Click anywhere on a package to view its details.

You can then click the **Sort** button to sort files by version, size, platform, and name.



Via the API:

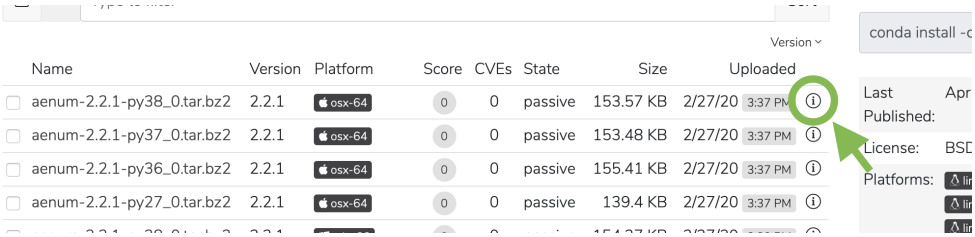
```
GET /api/channels/<CHANNEL_NAME>/artifacts/<ARTIFACT_TYPE>/<ARTIFACT_NAME>
GET /api/channels/<CHANNEL_NAME>/artifacts/<ARTIFACT_TYPE>/<ARTIFACT_NAME>/readme
GET /api/channels/<CHANNEL_NAME>/artifacts/<ARTIFACT_TYPE>/<ARTIFACT_NAME>/cves
GET /api/channels/<CHANNEL_NAME>/artifacts/<ARTIFACT_TYPE>/<ARTIFACT_NAME>/files
GET /api/channels/<CHANNEL_NAME>/artifacts/<ARTIFACT_TYPE>/<ARTIFACT_NAME>/dependencies
GET /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>/artifacts/<ARTIFACT_TYPE>/
↪<ARTIFACT_NAME>
GET /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>/artifacts/<ARTIFACT_TYPE>/
↪<ARTIFACT_NAME>/readme
GET /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>/artifacts/<ARTIFACT_TYPE>/
↪<ARTIFACT_NAME>/cves
GET /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>/artifacts/<ARTIFACT_TYPE>/
↪<ARTIFACT_NAME>/files
GET /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>/artifacts/<ARTIFACT_TYPE>/
↪<ARTIFACT_NAME>/dependencies
```

Via the CLI:

```
# Replace <CHANNEL_NAME> with the channel name
conda repo channel --list-file<CHANNEL_NAME> --full-details
```

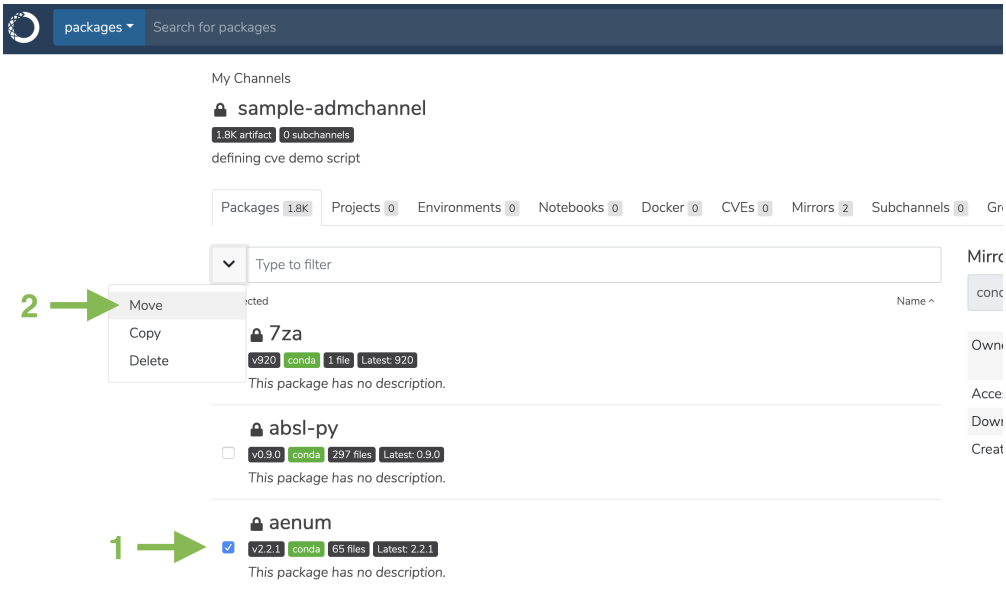
4.11.4 Viewing package metadata

Click the information icon to view a file's metadata.



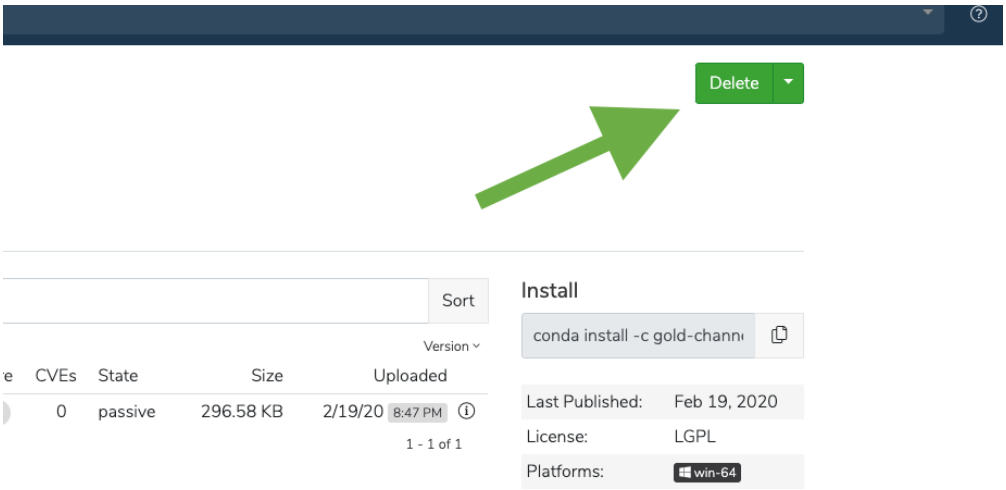
4.11.5 Managing a package

1. Check the box next to a package.
2. Click the dropdown next to the search bar. You may then move, copy, or delete the package.



4.11.6 Deleting a package

Click the green Delete button to delete a package. You will be prompted to confirm that you wish to delete the Package. Click Delete to confirm.



Via the UI:

1. On a package details page, navigate to the **Files** tab to see all the versions of a given package.
2. Select one or more packages, and then click on the down arrow to the left of the filter field and click **Delete**.

Via the API:

```
# Replace placeholders in <BRACKETS> with the applicable information
DELETE /api/channels/<CHANNEL_NAME>/artifacts/<ARTIFACT_TYPE>/<ARTIFACT_NAME>
DELETE /api/channels/<CHANNEL_NAME>/subchannels/<SUBCHANNEL_NAME>/artifacts/<ARTIFACT_
↪TYPE>/<ARTIFACT_NAME>
```

Via the CLI:

```
# Replace placeholders in <BRACKETS> with the applicable information
conda-repo remove [--family]<CHANNEL_NAME>/<SUBCHANNEL_NAME>[::<PACKAGE>[/<VERSION>[/
↪<FILE_NAME>]]]
```

4.12 Jupyter Notebooks

Notebooks (Jupyter Notebooks) are representations of all content visible in the web application, including inputs and outputs of the computations, explanatory text, mathematics, images, and rich media representations of objects.

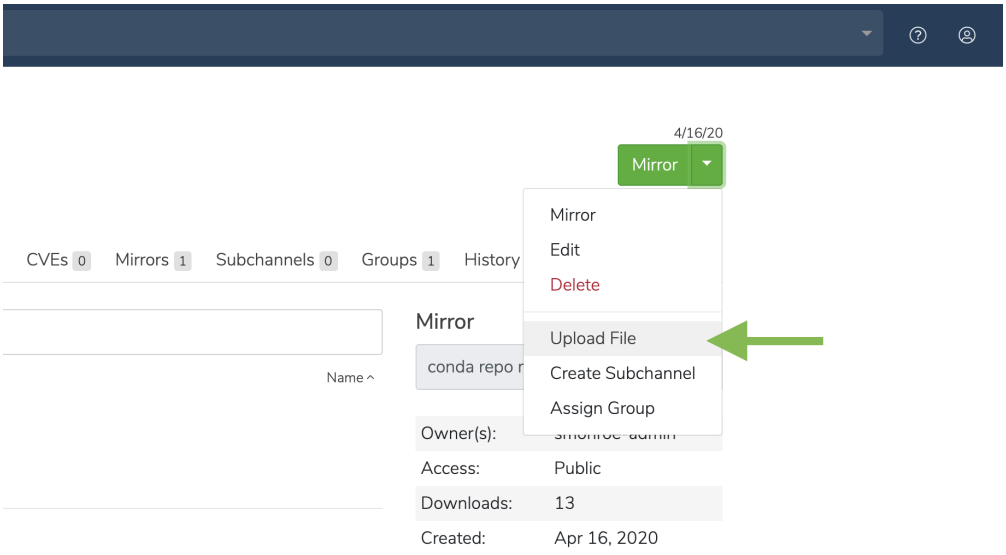
Anaconda Team Edition enables you to share a notebook .ipynb file to provide visualization and storage of notebook files within the channel.

This topic provides guidance on the following actions:

- *Uploading an existing notebook to a channel*
- *Visualizing a notebook*
- *Managing a notebook*

4.12.1 Uploading an existing notebook to a channel

1. Preparation for uploading notebooks differs depending on your notebook type. Please follow the relevant guide for your respective notebooks:
    - sdist and wheels
    - cran
    - conda-build



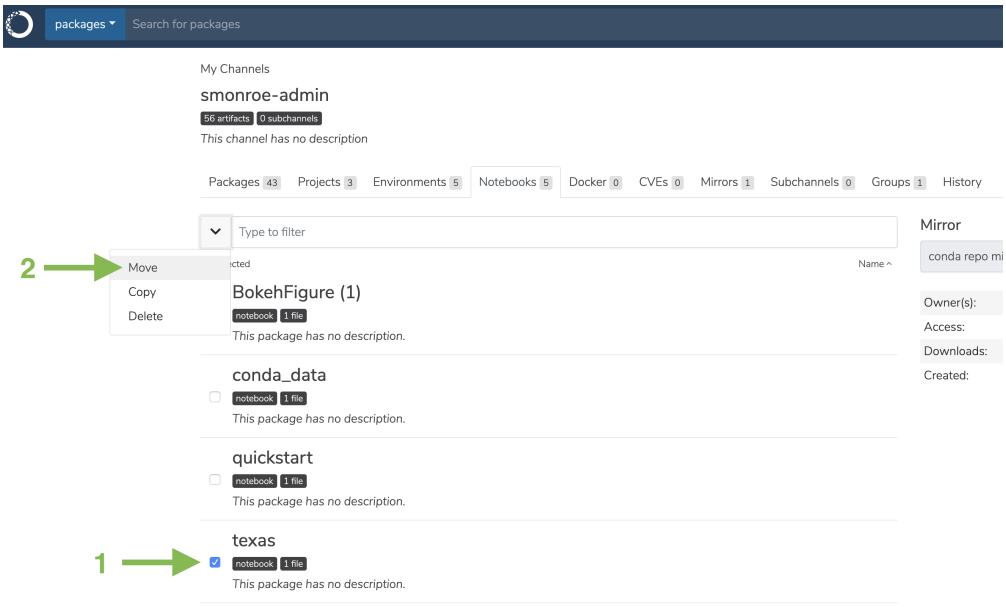
1. Click the green dropdown button in the top right corner, and then click **Upload File**.
2. On the **Upload a File** screen, select the type of file you'd like to upload from the dropdown.
3. Click the **Browse** button to find your file and add it to the page.
4. Click **Upload**.

4.12.2 Visualizing a notebook

Click on a file to visualize the notebook.

4.12.3 Managing a notebook

1. Check the box next to a notebook.
2. Click the dropdown next to the search bar. You may then move, copy, or delete the notebook.



4.13 Authorization tokens

Authorization tokens can be created by users and administrators to provide fine-grained access control to resources (channels) or scopes when using the API or CLI. These tokens can be used in place of username-based authentication, particularly for third-party applications or automation tools.

This topic provides guidance on the following actions:

- *Understanding tokens*
- *Understanding scopes*
- *Listing the available authorization scopes*
- *Listing the user authorization tokens*
- *Create a new user authorization token*
- *Removing a user authorization token*

4.13.1 Understanding tokens

Scope-based

Scope-based tokens give the token holder permission to take specific actions. It is possible to create private tokens with a specific set of scopes.

Resource-based

Resource-based tokens provide access to specific resources. Channel group permissions granted by the token will determine what actions the user is allowed to take.

4.13.2 Understanding scopes

In our model, scopes are represented as a concatenated string, like so:

Resource:Action

Note: Some features in the table below may contain "(by user with **manage** permissions)", like in the feature associated with **channel:edit** in the third row down, for example. This means the token has a role with a corresponding permission level (in this case, **manage**) for a specific resource (in this case, **channel**).

Resource	Action	Scope (Resource + Action)	Feature	Default Roles
channel	create	channel:create	Create a channel (at least by authenticated user)	author, admin
	view	channel:view	View a channel (public)	everyone, author, admin
	edit	channel:edit	Edit a channel information (by user with **manage** permissions)	admin
	delete	channel:delete	Delete a channel (by user with **manage** permission)	admin
	history	channel:history	See channel history (by user with **manage** permissions)	admin
	view-artifacts	channel:view-artifacts	View channel artifacts (public)	everyone, author, admin
channel.default-channel	edit	channel.default-channel:edit	Edit default channel (user with **manage** permissions)	admin
channel.group	edit	channel.group:edit	Edit channel group (user with **manage** permissions)	admin

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Table 1 – continued from previous page

Resource	Action	Scope (Resource + Action)	Feature	Default Roles
channel.mirror	view	channel.mirror:view	View channel mirror configuration	admin-only
	edit	channel.mirror:edit	Edit channel mirror configuration	admin-only
subchannel	create	subchannel:create	Create subchannel (user with write permission) to the parent channel	admin
	view	subchannel:view	View subchannel (public)	everyone, author, admin
	edit	subchannel:edit	Edit subchannel information (user with **manage** permission)	admin
	delete	subchannel:delete	Edit subchannel information (user with **manage** permission)	admin
	history	subchannel:history	View subchannel history (user with **manage** permission)	admin
	view-artifacts	subchannel:view-artifacts	View subchannel artifacts (public)	everyone, author, admin
subchannel.group	edit	subchannel.group:edit	View subchannel groups (user with **manage** permissions)	admin*
subchannel.mirror	view	subchannel.mirror:view	View subchannel mirror configuration	admin-only
	edit	subchannel.mirror:edit	Edit subchannel mirror configuration	admin-only
artifact	create	artifact:create	Upload artifact (user with write permission to parent resource which is channel or subchannel)	author, admin
	view	artifact:view	View artifact (public)	everyone author, admin
	edit	artifact:edit	Edit artifact (user with **manage** permission to parent resource)	author, admin
	download	artifact:download	Download artifact (public)	everyone author, admin
	delete	artifact:delete	Delete artifact (user with **manage** permission to parent resource)	author, admin
cve	view	cve:view	View CVE	admin-only
role	view	role:view	View custom roles	admin-only
	edit	role:edit	Edit custom roles	admin-only
system.license	*view, edit*	*system.license:view system.license:edit*	*View / Edit licenses*	
system.blobs ?	*delete*	*system.blobs:delete*	*Delete orphan blobs*	
system			*View system history*	
system			*View system stats*	

Italicized items in table are under development.

4.13.3 Listing the available authorization scopes

Via the API:

```
GET /api/system/tokens
```

Via the CLI:

```
conda repo auth --list-scopes
```

4.13.4 Listing the user authorization tokens

Via the API:

```
GET /api/account/token
```

Via the CLI:

```
conda repo auth --list
```

4.13.5 Create a new user authorization token

Via the API:

```
POST /api/account/tokens
```

Via the CLI:

```
conda repo auth --create -n <NAME>
```

4.13.6 Removing a user authorization token

Via the API:

```
DELETE /api/account/tokens/<TOKEN_ID>
```

Via the CLI:

```
conda repo auth --remove <TOKEN_ID>
```

4.14 Working with private channels using third-party tools

In order to access private channels via third-party tools (such as pip, Twine, or R), you must have a user token. This can be done through the conda repo tool or by *creating channel-specific, read-only/read-write tokens via UI*.

4.14.1 Python packages

Uploading

Twine is a popular tool for uploading Python packages to PyPI-like repositories. Run the following command to upload Python packages:

```
twine upload --repository-url http://<DOMAIN>/api/repo/<CHANNEL>
<PACKAGE> -u <TOKEN> -p x-auth-token
```

Example

```
twine upload --repository-url
http://demo-repo.com/api/repo/my-pip-channel six-1.13.0-py2.py3-none-any.whl -u␣
↪46e98d3dbf2378bb26e2107867652ee734eb098ea5b96f35 -p x-auth-token
```

If the token is incorrect, you will receive a 401 error message.

Please refer to the Twine package documentation to learn how to configure your username and password via the configuration file or environment variables.

Installing

Similar to pip, Team Edition supports user authentication using Basic Authentication. The following is the proper format for installing pip packages:

```
pip install --trusted-host <DOMAIN> --index-url
http://<TOKEN>:x-auth-token@<DOMAIN>/api/repo/<CHANNEL>/simple <PACKAGE>
```

Note: `x-auth-token` is not a placeholder, but is used as the actual password for Basic Authentication.

Example

```
pip install --trusted-host demo-repo.com --index-url
http://46e98d3dbf2378bb26e2107867652ee734eb098ea5b96f35:x-auth-token@demo-repo.com/api/
↪repo/alex-pip/simple six
```

Make sure to add a trusted host.

Please refer to the pip documentation to learn how to configure the index URL via the configuration file or environment variables.

4.14.2 R packages

Uploading

Since there is no standard tool for uploading R packages, you can use either the UI or API directly. Run the following command to upload R packages:

```
curl -v -F filetype=cran_source_package -F content=@<FILENAME>
http://<DOMAIN>/api/repo/<CHANNEL> -H"X-Auth: <TOKEN>"
```

Where <TOKEN> is the `x-auth-token`.

Example

```
curl -v -F filetype=cran_source_package -F content=@abc_2.1.tar.gz
http://demo-repo.com/api/repo/alex-pip -H"X-Auth:␣
↪46e98d3dbf2378bb26e2107867652ee734eb098ea5b96f35"
```

Please use `cran_source_package` for source packages and `cran_binary_package` for binary R packages.

Installing

You can use your domain as a repository URL in the `install.packages` function by injecting a token into the path:

```
http://<DOMAIN>/api/repo/t/<TOKEN>/<CHANNEL>/cran
```

This may look something like the following:

```
http://demo-repo.com/api/repo/t/46e98d3dbf2378bb26e2107867652ee734eb098ea5b96f35/alex-
↪pip/cran
```

Example

```
> install.packages("abc", repos="http://demo-repo.com/api/t/
↪46e98d3dbf2378bb26e2107867652ee734eb098ea5b96f35/repo/alex-pip/cran")
```

CHAPTER

FIVE

REFERENCE MATERIALS

The following information is provided to help you understand some of the core terminology used in Anaconda Team Edition and what changes were made between releases.

We also include answers to common questions you may have and workarounds for known issues you may encounter while using the platform.

Additional information to help you get the most out of Anaconda features is available at https://support.anaconda.com/.

5.1 Release notes

The following notes are provided to help you understand the major changes made between releases, and therefore may not include minor bug fixes and updates.

5.1.1 Anaconda Team Edition 6.1.4

Released February 4, 2021

What's new

- Ability to mirror from another installation of Team Edition via https.
- Ability to upgrade Team Edition and maintain current settings and filters.
- Role Mapping: when additional roles are added to User Management, Admin is able to restrict or add additional permissions to the end user.
- Ability to mirror from repo.anaconda.cloud.
- Ability to move, copy, and delete artifacts within a package.
- Easily upgrade a license key from the Admin user's UI dashboard

Improvements

- Improved the support and documentation for custom certificates.
- Mirror frequency and performance issues.
- When you remove a subdirectory, it is removed from the package artifact list upon updating the mirror.
- Added notification that frequency is in UTC time.
- **CVE improvements:**
  - CVEs are now updating in Team Edition every 4 hours to align with NIST.

  - All CVEs have the correct status for reporting (*Reported* or Anaconda Curated: *Active*, *Cleared*, *Mitigated*, or *Disputed*).
  - Ability to filter by CVE status (*Reported* or Anaconda Curated: *Active*, *Cleared*, *Mitigated*, or *Disputed*).
  - Display the CVE date as shown by NIST for Published and Modified.
  - Display the date Anaconda curated the CVE.

Bug fixes

- Dashboard now displays the correct package count for a channel.
- An error duing customer logout experience with Team Edition was caused by a miscommunication between web socket and callback endpoint API.
- Sorting in channels not working as expected.
- Ability to sort all pages of package artifacts by *Size*, *Version*, *Last Updated*, and *Platform*.
- Ability to sort packages based on *Name*.
- Issues with conda repo functionality for conda repo channel copy and conda repo upload options have been fixed.
- Index of cache on Team Edition related to *If-Modified-Since* header has been fixed.
- API to trigger on channel index refresh lead to displaying inconsistent information between the channel and actual artifacts in the channel.

5.1.2 Anaconda Team Edition 6.1.3

Released August 10, 2020

What's New

- CVEs will be automatically fed to and updated on the Team Edition dashboard, so you no longer have to mirror them.
- CVEs will now be pulled down from NIST and listed as Reported (not curated).
- CVEs that are curated by Anaconda will now be designated with a checkmark and a label defining the stage of curation.
- You can now search for CVEs in the search bar at the top of Team Edition (Admin only).
- CVEs are displayed using an algorithm. When one or more CVEs are associated with a package, the score that is displayed is based on the highest score and risk state of a CVE for each file.
- Clicking on the number of CVEs related to a package file will show a CVE listing view.
- The number of unique CVEs for a package is displayed at the package level.
- When viewing files in a package, the appropriate CVE score (or N/A) will be displayed based on the number of CVEs and severity.
- The metadata will now display all the CVEs score information.
- All the packages affected by a CVE will be associated with that CVE.

Improvements

- Each CVE status can be seen by clicking on "info" icons and viewing meta information.
- It is now more clear that the CVE number is a clickable link.
- There is greater distinction between Anaconda curated and non-curated CVEs via a checkbox selection.

- More than two mirrors can now be run at the same time.

Bug fixes

- The heirarchy for mirroring filters has been corrected; now, if a package is added to both "include" and "exclude," the package will be excluded.
- System metering (Prometheus) is now showing up properly.
- Admins can now update user roles and create custom roles.

5.2 License types

Packages used for data science are very often associated with open source licenses that specify how the packages can be used. While many licenses allow a broad range of usage, some are more restrictive, especially with respect to production environments. Team Edition allows for filtering by license type, which can help organizations govern package availability before license issues can cause production issues.

The following is a list of OSS licenses and links to further details.

- Affero General Public License (AGPL) - https://opensource.org/licenses/AGPL-3.0
- General Public License 2 (GPL2) https://opensource.org/licenses/GPL-2.0
- General Public License 3 (GPL3) https://opensource.org/licenses/GPL-3.0
- Lesser General Public License (LGPL) https://opensource.org/licenses/GPL-3.0
- Berkeley Source Distribution (BSD) https://opensource.org/licenses/BSD-3-Clause
- Massachusetts Institute of Technology (MIT) https://opensource.org/licenses/MIT
- Apache https://opensource.org/licenses/Apache-2.0
- Python Software Foundation (PSF) https://opensource.org/licenses/Python-2.0
- Public Domain
- Propriatary
- Other
- None
- https://opensource.org/licenses
- https://opensource.org/licenses/alphabetical

5.3 Troubleshooting

This page details some common issues and their respective workarounds. For Anaconda installation or technical support options, visit our support offerings page.

5.3.1 403 error

Problem

A 403 errors is a generic Forbidden error issued by a web server in the event the client is forbidden from accessing a resource.

The 403 error you are receiving may look like the following:

```
Collecting package metadata (current_repodata.json): failed

UnavailableInvalidChannel: The channel is not accessible or is invalid.
  channel name: pkgs/main
  channel url: https://repo.anaconda.com/pkgs/main
  error code: 403

You will need to adjust your conda configuration to proceed.
Use `conda config --show channels` to view your configuration's current state,
and use `conda config --show-sources` to view config file locations.
There are several reasons a 403 error could be received:
```

There are a few possible reasons for receiving this error:

- The user has misconfigured their channels in their configuration (for example, the secure location where the token is stored was accidentally deleted (most common)
- A firewall or other security device or system is preventing user access (second most common)
- We are blocking their access because of a potential terms of service violation (third most common)

Solution

1. First, run the following to undo your configuration of Commercial Edition:

   ```
   conda config --remove-key default_channels
   ```

2. Next, install or upgrade the conda-token tool:

   ```
   conda install --freeze-installed conda-token
   ```

3. Lastly, re-apply the token and configuration settings:

   ```
   # Replace <TOKEN> with your token
   conda token set <TOKEN>
   ```

If this doesn't resolve the issue, we recommend consulting our Terms of Service error page.

5.3.2 Conda: Channel is unavailable/missing or package itself is missing

Problem

After you have configured your `.condarc` for either Team Edition or Commercial Edition, in some cases you may be unable to install packages. You may receive an error message that the channel or package is unavailable or missing.

Solution

One potential fix for all of these is to run the following command:

```
conda clean -i
```

This will clear the "index cache" and force conda to sync metadata from the repo server.

5.3.3 SSL-related issues

If you experience any trouble regarding SSL errors, confirm that you are adhering to the guidance in this section.

Moving CA certs to the docker-host

We recommend mounting the `cacert.pem` file to the docker-host and concatenating the required root CAs to that file on the docker-host, rather than copying the file to the containers.

1. First, place a `cacert.pem` file in `${BASE_INSTALL_DIR}/config/cacert.pem`. You can obtain this file from any conda environment with `certifi` package installed (`$<CONDA_PREFIX>/ssl/cacert.pem`) or from one of the TE docker containers:

```
# Replace {BASE_INSTALL_DIR} with your base install directory.
docker cp $(docker ps | awk '/repo_api/ {print $1}'):/conda/ssl/cacert.pem  ${BASE_
↪INSTALL_DIR}/config/cacert.pem
```

2. Concatenate the necessary root certs in pem format:

```
# Replace <YOUR_CERT> with your cert and {BASE_INSTALL_DIR} with your base install␣
↪directory.
cat <YOUR_CERT> >> ${BASE_INSTALL_DIR}/config/cacert.pem
```

3. You now have two options for updating the TE application to use the docker-host `cacert.pem`:

- Edit the `docker-compose.yml` file and add volume mounts to `nginx_proxy`, `repo_api`, `repo_worker` and `repo_dipacher`, or
- Use a separate .yml file (shown below) and let docker-compose merge it with the stock one when starting up:

```
cat << EOF > custom-cas.yml
services:
    nginx_proxy:
        volumes:
        - \${BASE_INSTALL_DIR}/config/cacert.pem:/conda/ssl/cacert.pem
    repo_api:
        volumes:
        - \${BASE_INSTALL_DIR}/config/cacert.pem:/conda/ssl/cacert.pem
```

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```
    repo_worker:
        volumes:
        - \${BASE_INSTALL_DIR}/config/cacert.pem:/conda/ssl/cacert.pem
    repo_dispatcher:
        volumes:
        - \${BASE_INSTALL_DIR}/config/cacert.pem:/conda/ssl/cacert.pem
EOF
docker-compose -f docker-compose.yml -f custom-cas.yml up -d
```

Storing user credentials

If the proxy connection requires credentials, we recommend storing the credentials in the .env file (located in the same folder as the `docker-compose.yml` file) and referencing it in `docker_compose.yml` so that `docker-compose.yml` is readable for a broader set of users.

When TE is installed, an .env file is created alongside the `docker-compose.yml` file by default. You can edit this file and add variables to be referenced in the `docker-compose.yml` file as follows:

```
# example .env
BASE_INSTALL_DIR=/opt/anaconda/repo
DOCKER_REGISTRY=
DOMAIN=example.com
NGINX_PROXY_PORT=443
POSTGRES_HOST=postgres
POSTGRES_URI=postgresql://postgres:postgres@postgres/postgres
REDIS_ADDR=redis://redis:6379/0
VERSION=6.1.4
PROTOCOL=https
REPO_TOKEN_CLIENT_SECRET=something
REPO_KEYCLOAK_SYNC_CLIENT_SECRET=somethingsomething
DOCKER_UID=0
DOCKER_GID=0

# Added for example..
PROXY_USER=eden
PROXY_PW=eden-password
```

Then, merge the following with existing compose content in the `docker-compose.yml` file. Notice the environment variable from .env being referenced in the environment variables:

```
repo_worker:
  environment:
    - HTTP_PROXY=http://<PROXY_USER>:<PROXY_PW>@proxypy:8899
    - HTTPS_PROXY=http://<PROXY_USER>:<PROXY_PW>@proxypy:8899
repo_api:
  environment:
    - HTTP_PROXY=http://<PROXY_USER>:<PROXY_PW>@proxypy:8899
    - HTTPS_PROXY=http://<PROXY_USER>:<PROXY_PW>@proxypy:8899
```

Local mirrors

Another option is mirroring locally. You can do this by getting packages into an admin-managed channel—say, `ananconda/main`—and then mirroring filtered packages from that channel to other channels. This will make TE the source for the mirror. As such, TE needs to be able to validate its own certificate, which in most cases won't work (in very much the same way PROXY with terminating SSL will not work).

For this to work, then, you will most likely need to update the `cacert.pem` file of all TE containers. For this reason, we recommend hosting the `cacert.pem` file on the docker-host instead of the containers.

SSL verification error

Cause

You may receive an SSL verification error if you have SSL enabled with a self-signed certificate.

Solution

Run the following command to disable SSL certificate check:

```
conda repo config --set ssl_verify False
```

Run the following to verify the above command worked:

```
conda repo config --show
```

OAuth2 with self-signed certificates

Cause

Even if you have `ssl_verify` set to `false` while using self-signed certificates and SAML, you may still run into SSL verification errors.

You may receive an error similar to the following:

```
ConnectionError: HTTPSConnectionPool(host='my_server_endpoint', port=443): Max retries␣
↪exceeded with url: /endpoint (Caused by NewConnectionError('<urllib3.connection.
↪VerifiedHTTPSConnection object at 0x7fb73dc3b3d0>: Failed to establish a new␣
↪connection: [Errno 110] Connection timed out',))
```

Solution

Set an environment variable called a `REQUESTS_CA_BUNDLE`.

For Windows, run the following:

```
SET REQUESTS_CA_BUNDLE=<PATH>
conda repo login
```

For Unix, run the following:

```
export REQUESTS_CA_BUNDLE=<PATH>
conda repo login
```

HTTP 000 CONNECTION FAILED

If you receive this error message, run the following command:

```
conda config --set ssl_verify false
```

5.3.4 Using Redis

Cause

By default, Redis does not require a password. Not enabling a password requirement leaves your instance of Team Edition vulnerable.

Solution

Follow these steps to password protect your instance:

1. In the installation directory, update `config/nginx/conf.d/repo.conf` to include the `add_header` directive somewhere in the `server` block:

```
server {
    ...
    add_header Strict-Transport-Security "max-age=31536000; includeSubDomains"␣
↪always;
    ...
}
```

2. Create a directory called `redis` in the configs directory:

```
mkdir -p config/redis
```

3. Create a file called `redis.conf` inside `config/redis` with the following contents:

```
requirepass "mypassword"
```

4. Update the `docker-compose.yml` file of TE installation to mount this custom redis config:

```
redis:
    image: ${DOCKER_REGISTRY}redis-ubi:${VERSION}
    restart: always
    volumes:
      - ${BASE_INSTALL_DIR}/config/redis/redis.conf:/usr/local/etc/redis/redis.conf
    command:
    - /usr/local/etc/redis/redis.conf

#Alternative:
#  redis:
#    image: ${DOCKER_REGISTRY}redis-ubi8:${VERSION}
#    restart: always
#    ports:
#    - 6379:6379
#    command:
#    - /usr/local/bin/redis-server
#    - --requirepass mypassword
# If you use this alternative configuration, there's no need to create a config/
↪redis/redis.conf file to mount in.
```

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5. Update `REDIS_ADDR` variable in `.env` file to include password:

```
...
REDIS_ADDR=redis://:mypassword@redis:6379/0
...
```

6. Restart docker-compose services so changes are picked up. You can do this using:

```
docker-compose up -d
```

5.4 Glossary

Anaconda

Sometimes used as shorthand for the Anaconda Distribution, Anaconda, Inc. is the company behind Anaconda Distribution, conda, conda-build and Anaconda Enterprise.

Anaconda Cloud

A cloud package repository hosting service at https://www.anaconda.org. With a free account, you can publish packages you create to be used publicly.

Anaconda Distribution

Open source repository of hundreds of popular data science packages, along with the conda package and virtual environment manager for Windows, Linux, and MacOS. Conda makes it quick and easy to install, run, and upgrade complex data science and machine learning environments like scikit-learn, TensorFlow, and SciPy.

Anaconda Enterprise

A software platform for developing, governing, and automating data science and AI pipelines from laptop to production. Enterprise enables collaboration between teams of thousands of data scientists running large-scale model deployments on high-performance production clusters.

Anaconda Navigator

A desktop Graphical User Interface (GUI) included in Anaconda Distribution that allows you to easily use and manage IDEs, conda packages, environments, channels, and notebooks without the need to use the Command Line Interface (CLI).

Anaconda project

An encapsulation of your data science assets to make them easily portable. Projects may include files, environment variables, runnable commands, services, packages, channels, environment specifications, scripts, and notebooks. Each project also includes an `anaconda-project.yml` configuration file to automate setup, so you can easily run and share it with others. You can create and configure projects from the Enterprise web interface or command line interface.

Artifact

A catch-all term for a variety of files that are can be stored or shared. Artifact can mean: packages, notebooks, projects, environments, data sets.

Channel

A location in the repository where Anaconda Enterprise looks for packages. Enterprise Administrators and users can define channels, determine which packages are available in a channel, and restrict access to specific users or groups.

Commit

To make a set of local changes permanent by copying them to the remote server. Anaconda Enterprise checks to see if your work will conflict with any commits that your colleagues have made on the same project, so the files will not be overwritten unless you so choose to do so.

Conda

An open source package and environment manager that makes it quick and easy to install, run, and upgrade complex data science and machine learning environments like scikit-learn, TensorFlow, and SciPy. Thousands of Python and R packages can be installed with conda on Windows, MacOS X, Linux and IBM Power.

Conda-build

A tool used to build conda packages from recipes.

Conda environment

A superset of Python virtual environments, conda environments make it easy to create projects with different versions of Python and avoid issues related to dependencies and version requirements. A conda environment maintains its own files, directories, and paths so that you can work with specific versions of libraries and/or Python itself without affecting other Python projects.

Conda package

A binary tarball file containing system-level libraries, Python and R modules, executable programs, or other components. Conda tracks dependencies between specific packages and platforms, making it simple to create operating system-specific environments using different combinations of packages.

Conda recipe

Instructions used to tell conda-build how to build a package.

CVEs

Common Vulnerabilities and Exposures found in software components. Because modern software is complex with its many layers, interdependencies, data input, and libraries, vulnerabilities tend to emerge over time. Ignoring a high CVE score can result in security breaches and unstable applications.

Deployment

A deployed Anaconda project containing a Notebook, web app, dashboard or machine learning model (exposed via an API). When you deploy a project, Anaconda Enterprise builds a container with all the required dependencies and runtime components—the libraries on which the project depends in order to run—and launches it with the security and access permissions defined by the user. This allows you to easily run and share the application with others.

Environments

A virtual environment allows multiple incompatible versions of the same (software) package to coexist on a single system. An environment is simply a file path containing a collection of mutually compatible packages. By isolating distinct versions of a given package (and their dependencies) in distinct environments, those versions are all available to work on particular projects or tasks.

Interactive data application

Visualizations with sliders, drop-downs and other widgets that allow users to interact with them. Interactive data applications can drive new computations, update plots and connect to other programmatic functionality.

Interactive development environment (IDE)

A suite of software tools that combines everything a developer needs to write and test software. It typically includes a code editor, a compiler or interpreter, and a debugger that the developer accesses through a single Graphical User Interface (GUI). An IDE may be installed locally, or it may be included as part of one or more existing and compatible applications accessed through a web browser.

Jupyter

A popular open source IDE for building interactive Notebooks by the Jupyter Foundation.

JupyterHub

An open source system for hosting multiple Jupyter Notebooks in a centralized location.

JupyterLab

Jupyter Foundation's successor IDE to Jupyter, with flexible building blocks for interactive and collaborative computing. For Jupyter Notebook users, the interface for JupyterLab is familiar and still contains the notebook, file browser, text editor, terminal, and outputs.

Jupyter Notebook

The default browser-based IDE available in Anaconda Enterprise. It combines the notebook, file browser, text editor, terminal and outputs.

Live notebook

JupyterLab and Jupyter Notebooks are web-based IDE applications that allow you to create and share documents that contain live code in R or Python, equations, visualizations, and explanatory text.

Mirror

Mirroring is the process of accurately copying data from a source and then storing it in a new location. A mirror can be either a subset of the original or an exact 1 to 1. Mirroring can be in real-time, on a fixed schedule, or a one-time event.

Package

Software files and information about the software—such as its name, description, and specific version—bundled into a file that can be installed and managed by a package manager. Packages can be encapsulated into environments or projects for easy portability.

Project template

Contains all the base files and components to support a particular programming environment. For example, a Python Spark project template contains everything you need to write Python code that connects to Spark clusters. When creating a new project, you can select a template that contains a set of packages and their dependencies.

Repository

Any storage location from which software or software assets may be retrieved and installed on a local computer.

REST API

A common way to operationalize a machine learning model is through a REST API. A REST API is a web server endpoint, or callable URL, which provides results based on a query. REST APIs allow developers to create applications that incorporate machine learning and prediction, without having to write models themselves.

Session

An open project, running in an editor or IDE.

Spark

A distributed SQL database and project of the Apache Foundation. While Spark has historically been tightly associated with Apache Hadoop and run on Hadoop clusters, recently the Spark project has sought to separate itself from Hadoop by releasing support for Spark on Kubernetes. The core data structure in Spark is the RDD (Resilient Distributed Dataset)—a collection of data types, distributed in redundant fashion across many systems. To improve performance, RDDs are cached in memory by default, but can also be written to disk for persistence. Spark Ignite is a project to offer Spark RDDs that can be shared in-memory across applications.