Registry Manager with Secure Docker Registry Service

This tutorial makes use of the Docker official documentation on deploying a secure registry and native basic auth.

Generating htpasswd

Refer to this link to generate the htpasswd file we will use in the following section:

https://docs.docker.com/registry/deploying/#native-basic-auth

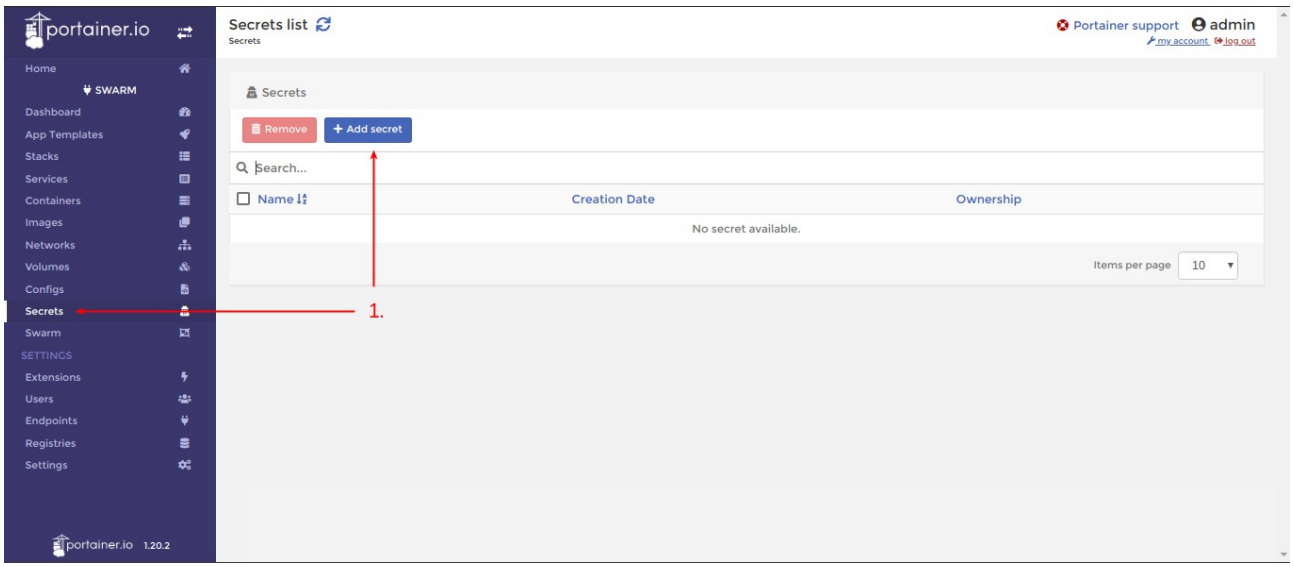
Generating cert,key and CA

Refer to this link to create your cert, key and CA files we will use in the following section:
https://docs.docker.com/registry/deploying/#get-a-certificate

Note: Make sure you follow the naming scheme you used to generate these files when adding them as secrets in Portainer.

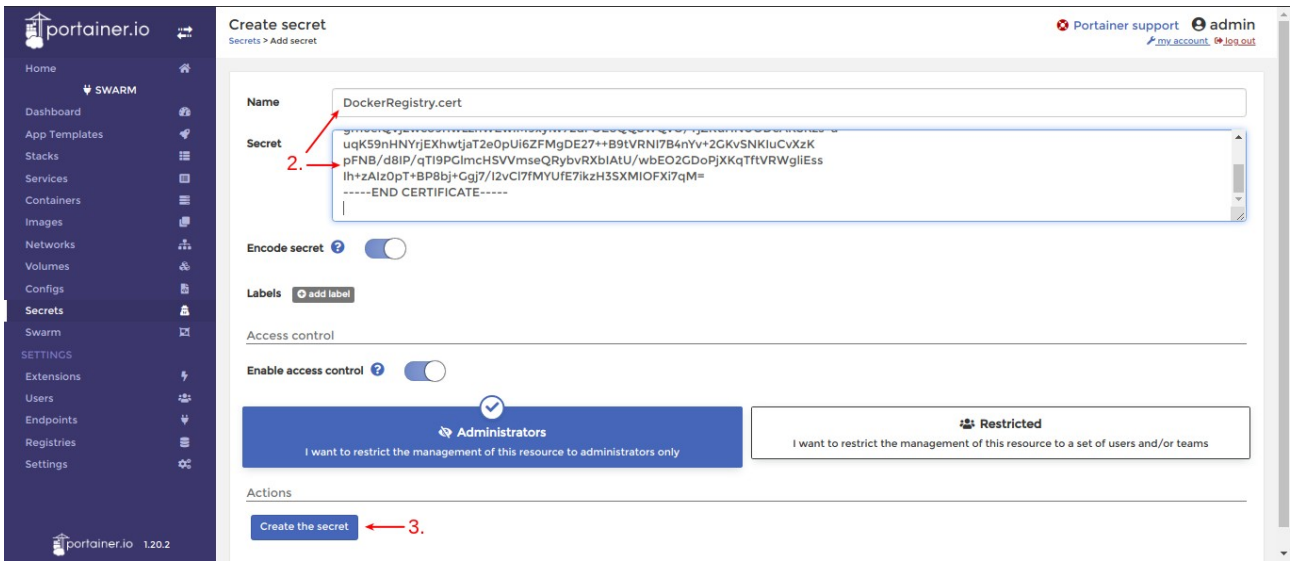
Adding the certificate

- **Step 1:** Navigate to the Secrets view and click the Add secret button.



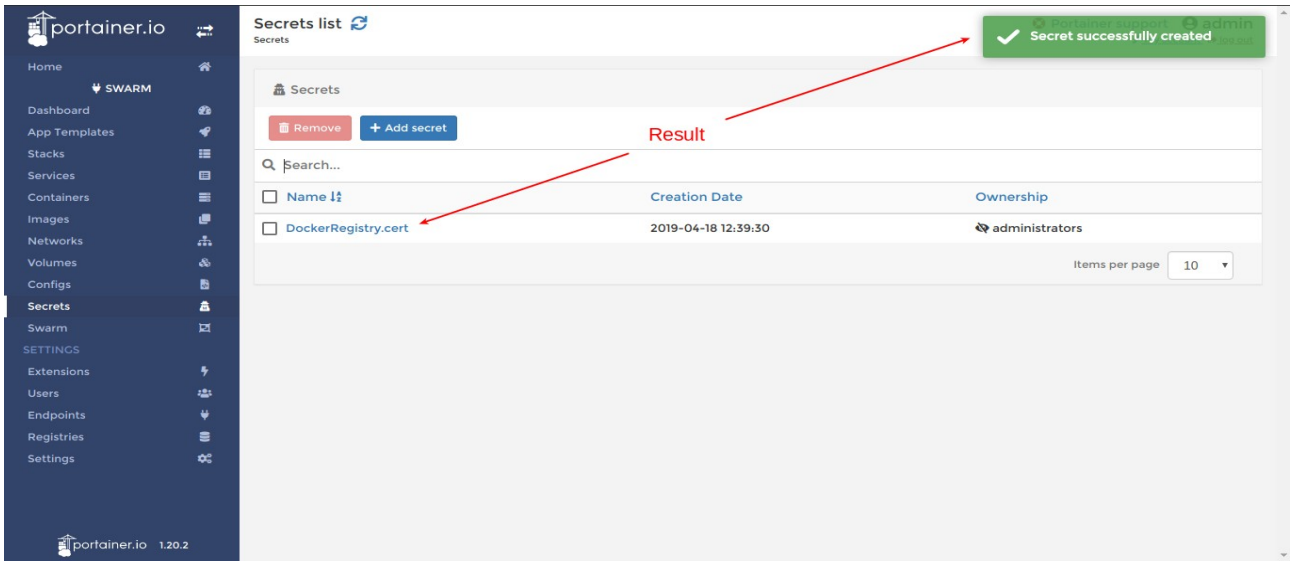
Clicking the Add a secret button

- **Step 2:** Name your secret the same as the certificate file generated earlier and paste in the content of the certificate.
- **Step 3:** Click the Create the secret button



Creating a secret with our certificate

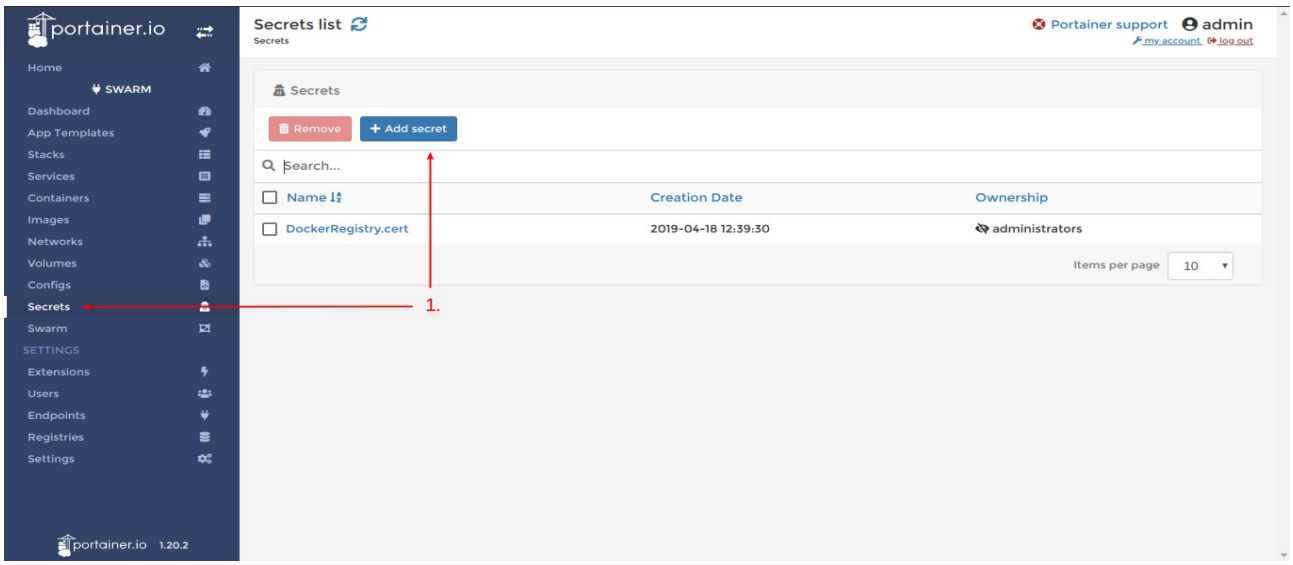
Result: You should see a green confirmation message appear in the top right of the screen if the certificate was successfully added into Portainer. You should also now see your certificate within the secrets list.



Certificate successfully added into Portainer

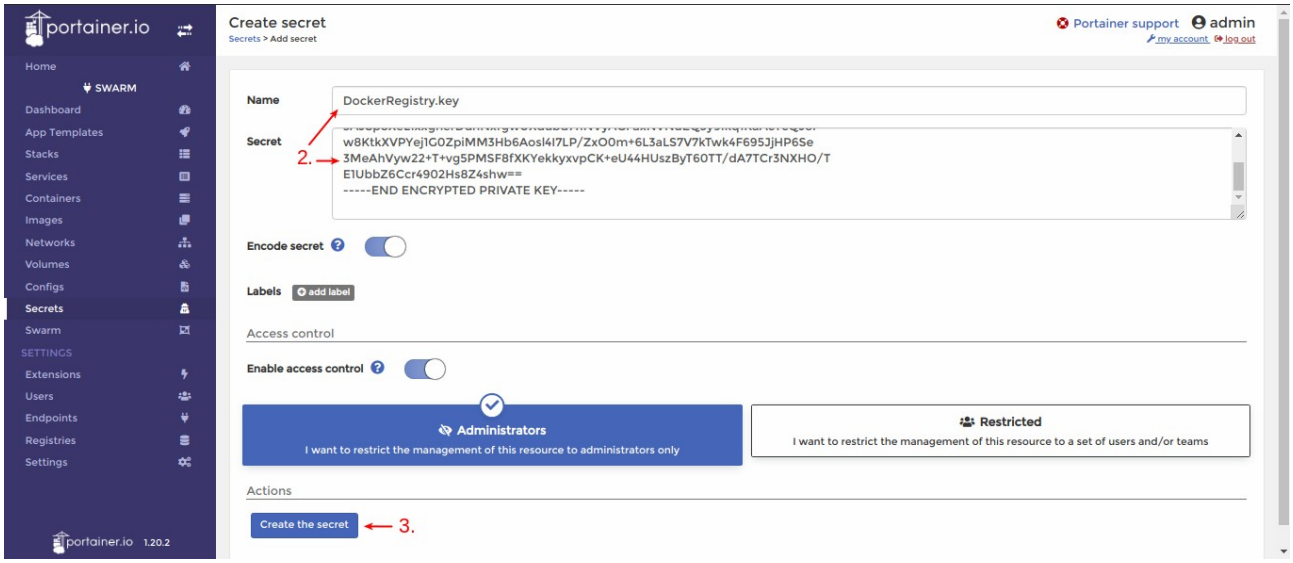
Adding the key

- **Step 1:** From within the same Secrets view and click the Add secret button.



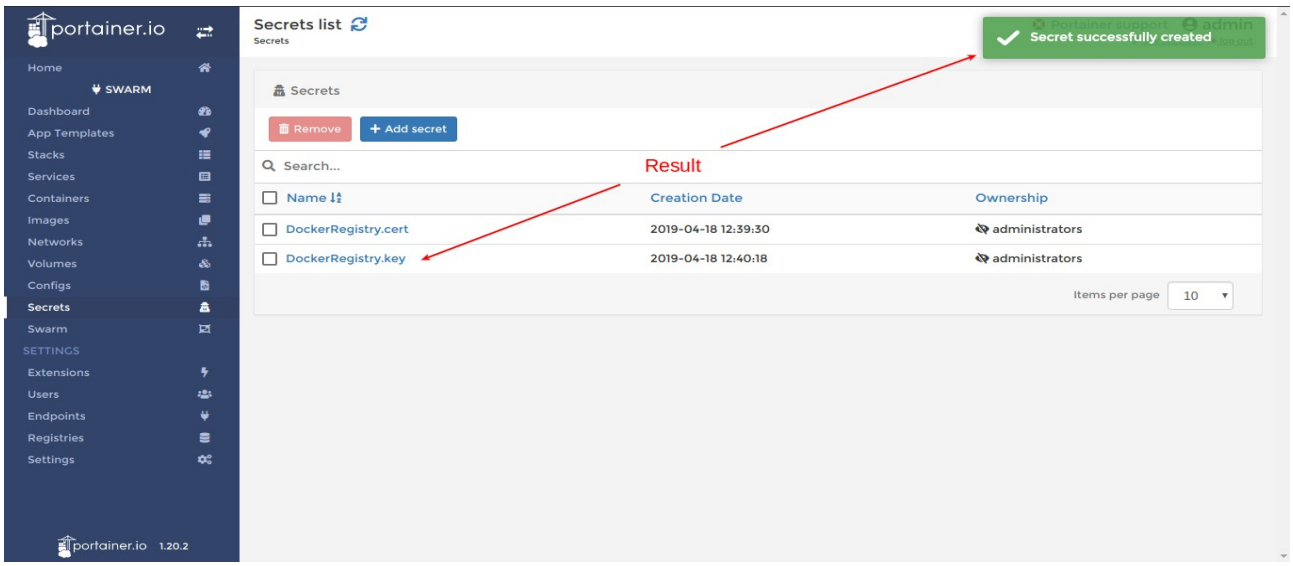
Clicking the Add a secret button

- **Step 2:** Name your secret the same as the key file generated earlier and paste in the content of the key you have generated.
- **Step 3:** Click the Create the secret button.



Creating a secret with our key

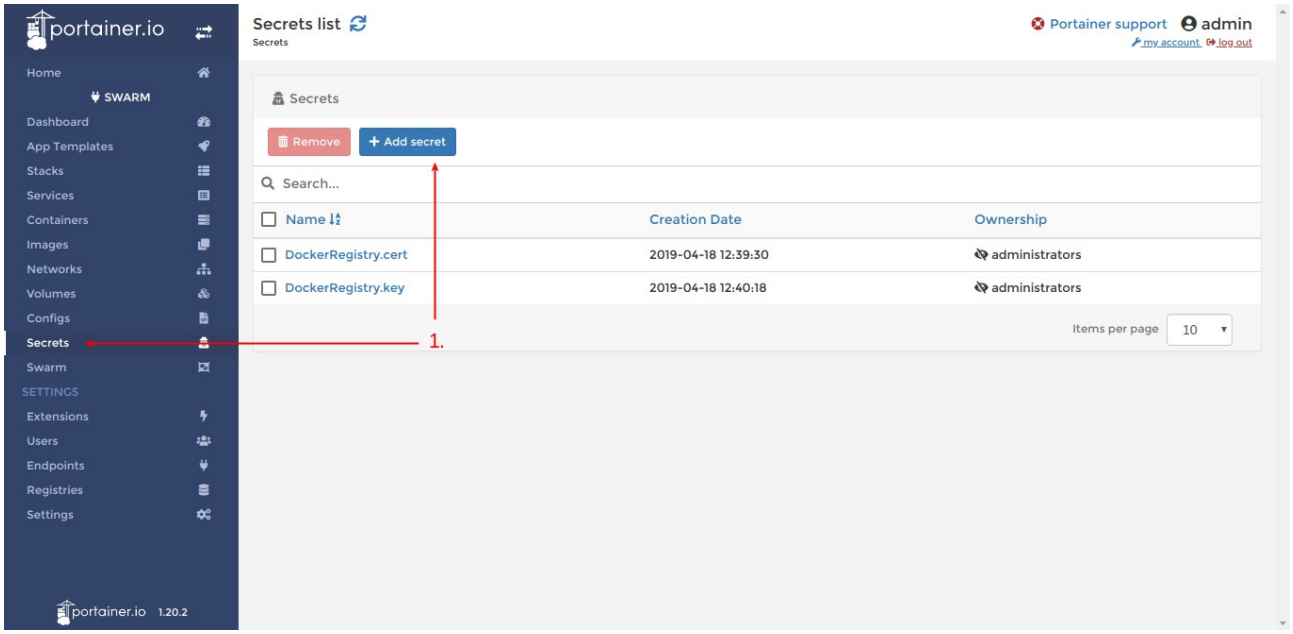
Result: You should see a green confirmation message appear in the top right of the screen if the key was successfully added into Portainer. You should also now see your key within the secrets list.



Key successfully added into Portainer

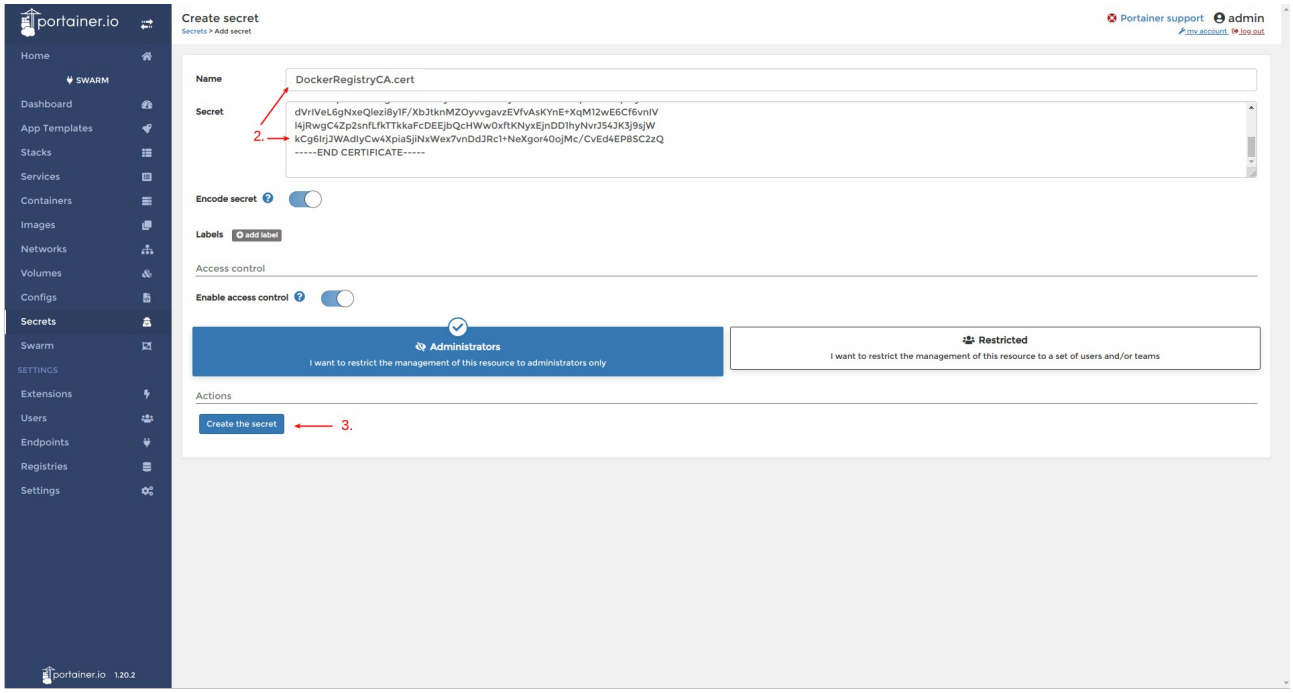
Adding the CA file

- **Step 1:** From within the same Secrets view and click the Add secret button.



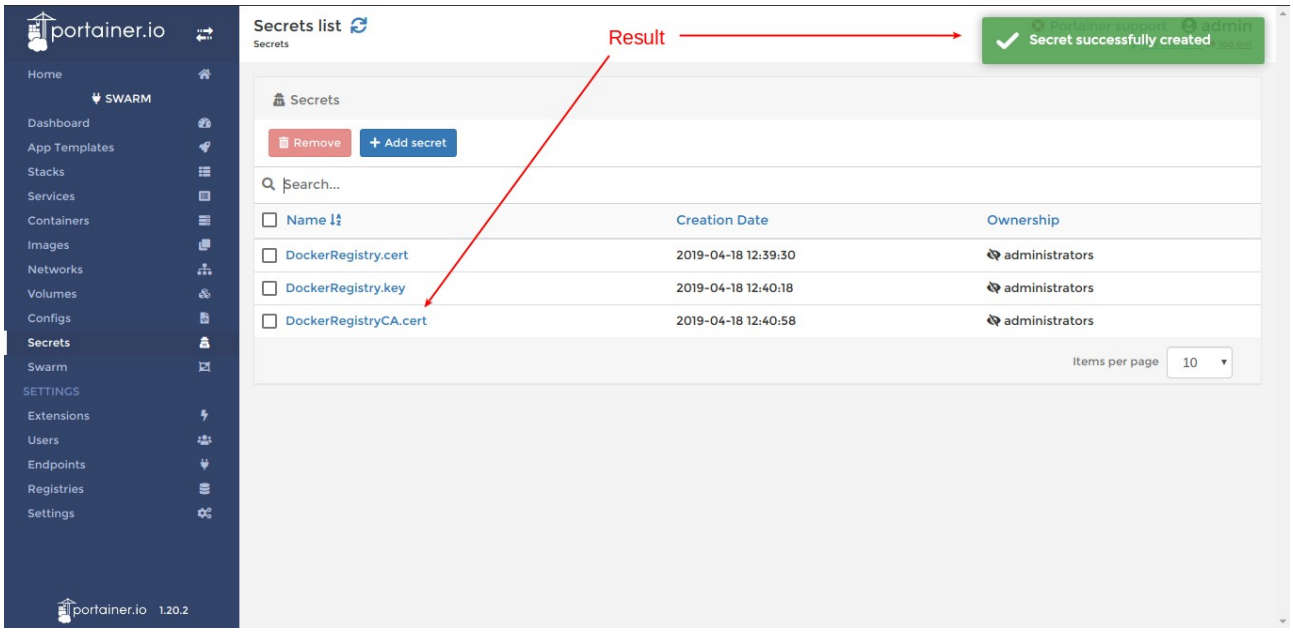
Clicking the Add a secret button

- **Step 2:** Name your secret the same as the CA file generated earlier and paste in the content of the CA file.
- **Step 3:** Click the Create the secret button.



Creating a secret with our CA file

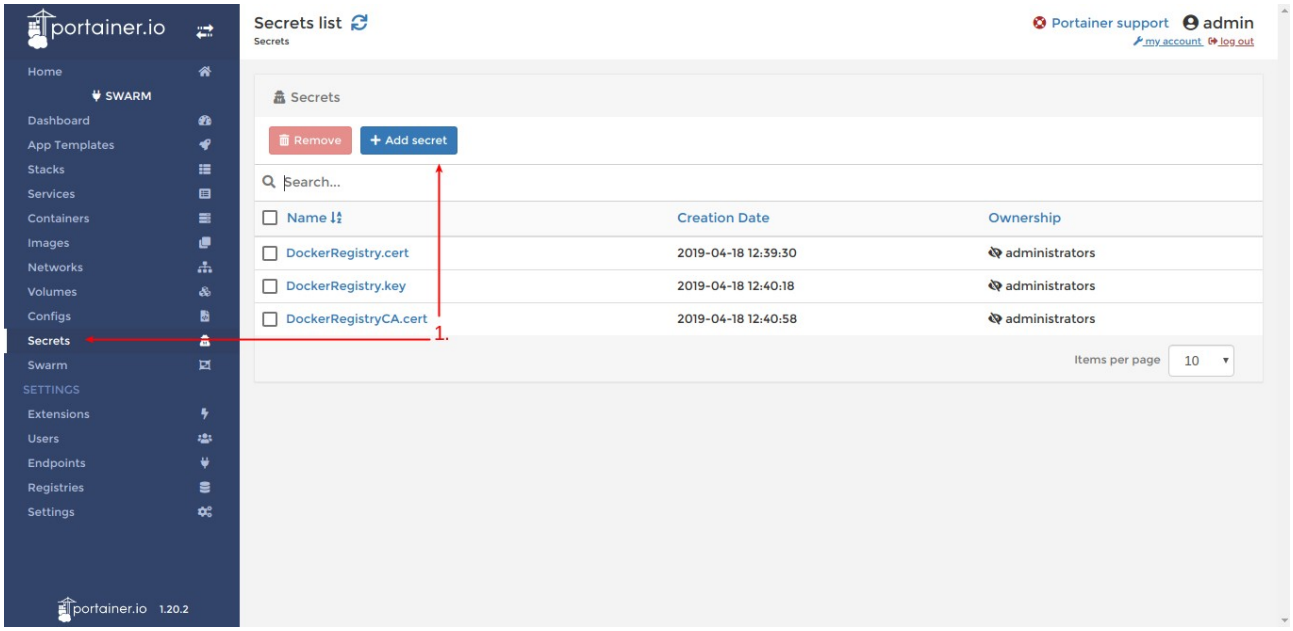
Result: You should see a green confirmation message appear in the top right of the screen if the CA file was successfully added into Portainer. You should also now see your CA file within the secrets list.



CA file successfully added into Portainer

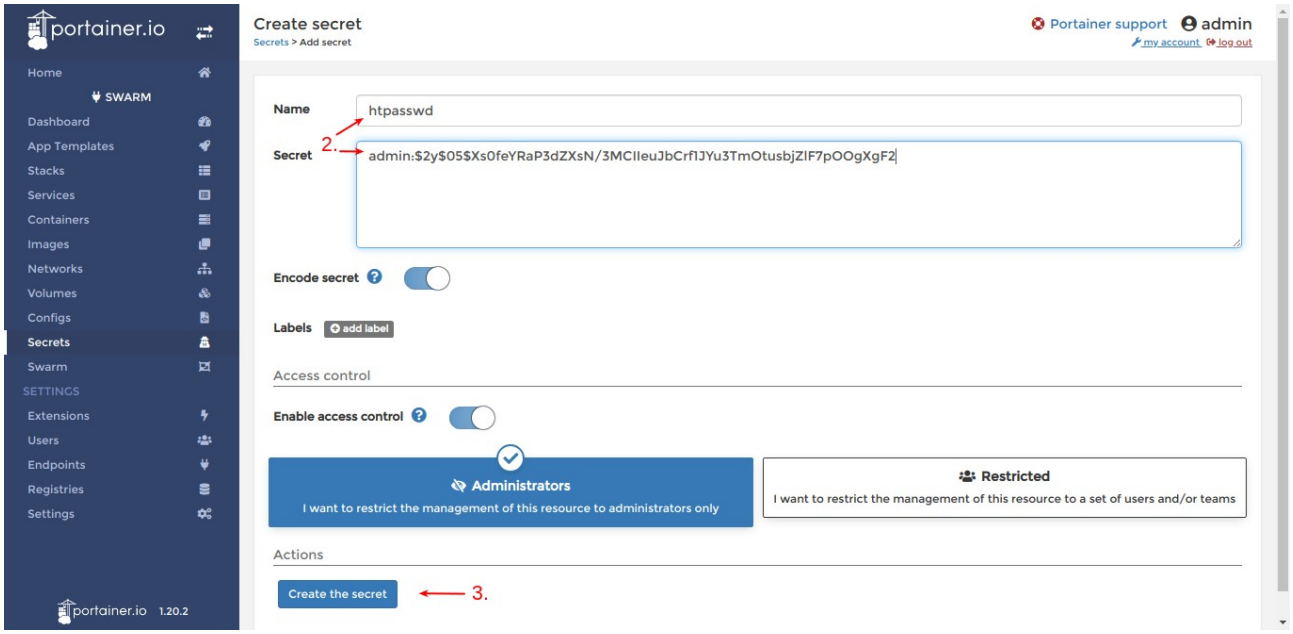
Adding the htpasswd file

- **Step 1:** From within the same Secrets view click the Add secret button.



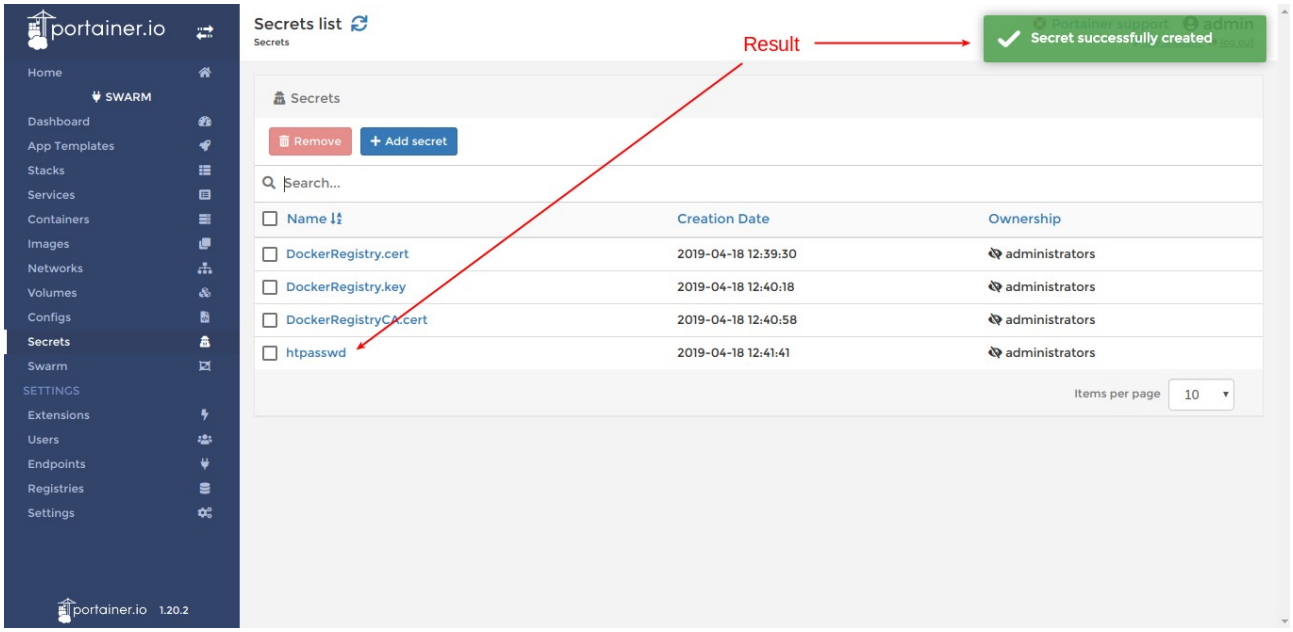
Clicking the Add a secret button

- **Step 2:** Name your secret the same as the htpasswd file generated earlier and paste in the content of the htpasswd file.
- **Step 3:** Click the Create the secret button.



Creating a secret with an htpasswd file

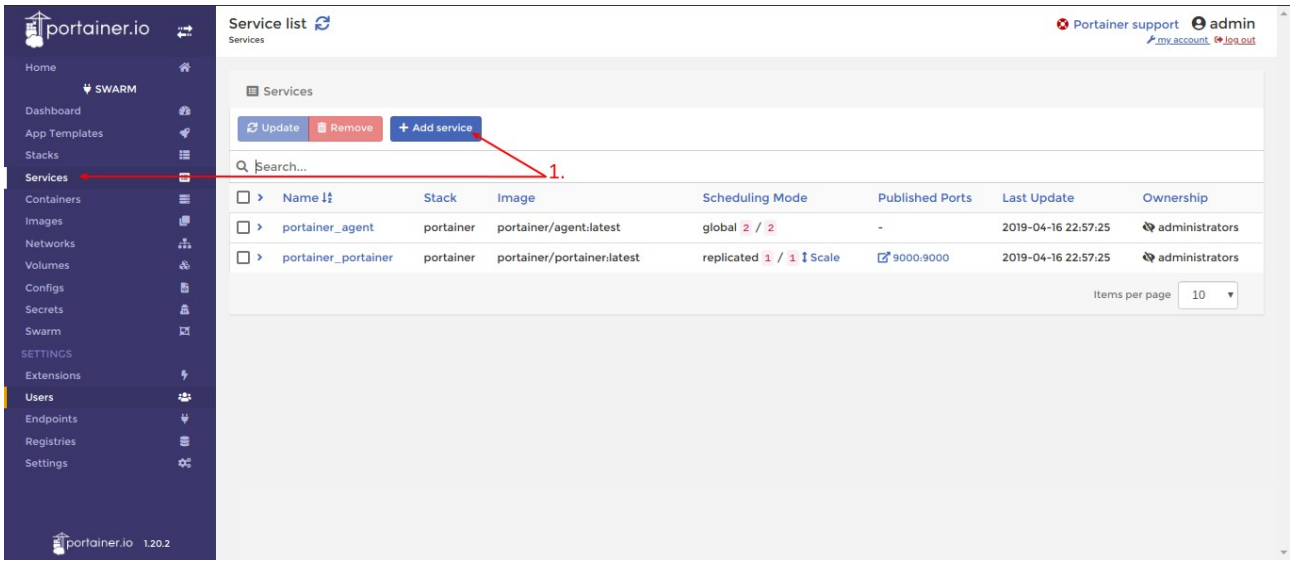
Result: You should see a green confirmation message appear in the top right of the screen if the htpasswd file was successfully added into Portainer. You should also now see your htpasswd file within the secrets list.



htpasswd file successfully added into Portainer

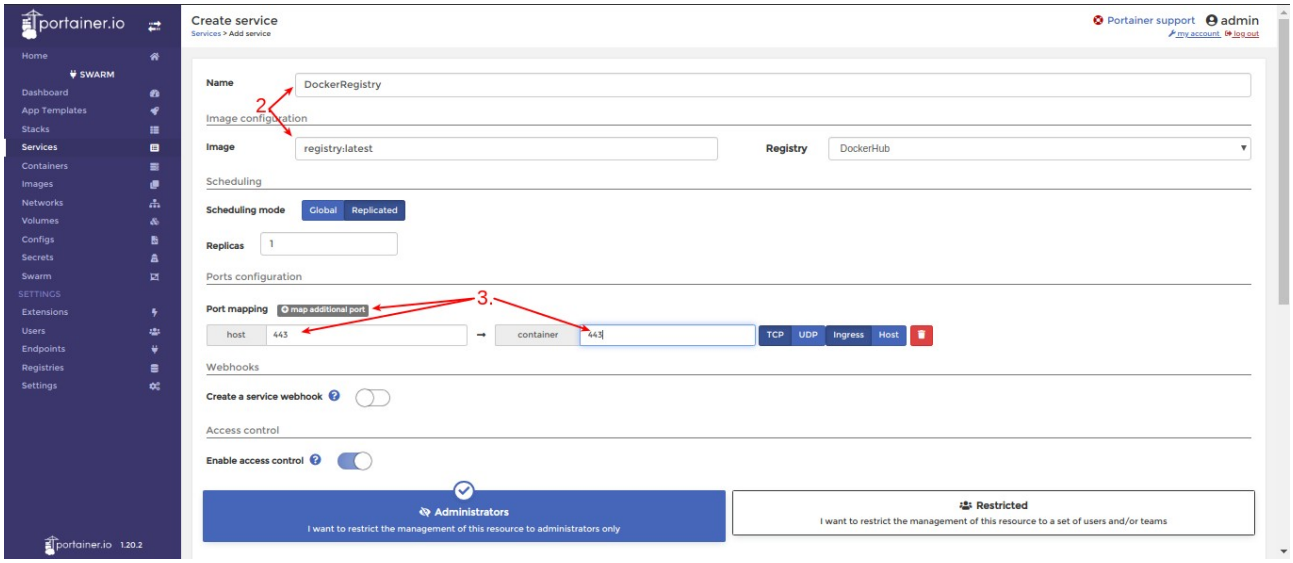
Deploying the service

- **Step 1:** Navigate to the Services view and click the Add service button.



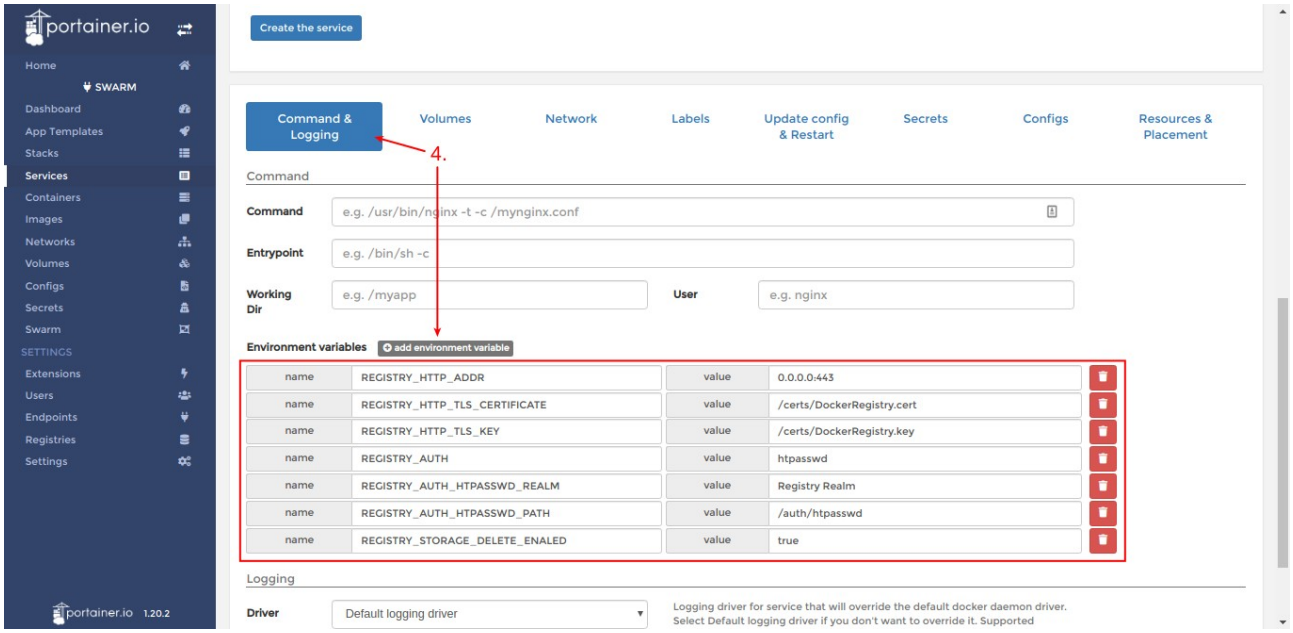
Creating a service for the registry

- **Step 2:** Fill in a name for your service and select the registry image for your service.
- **Step 3:** Click map additional port, and fill in the port 443.



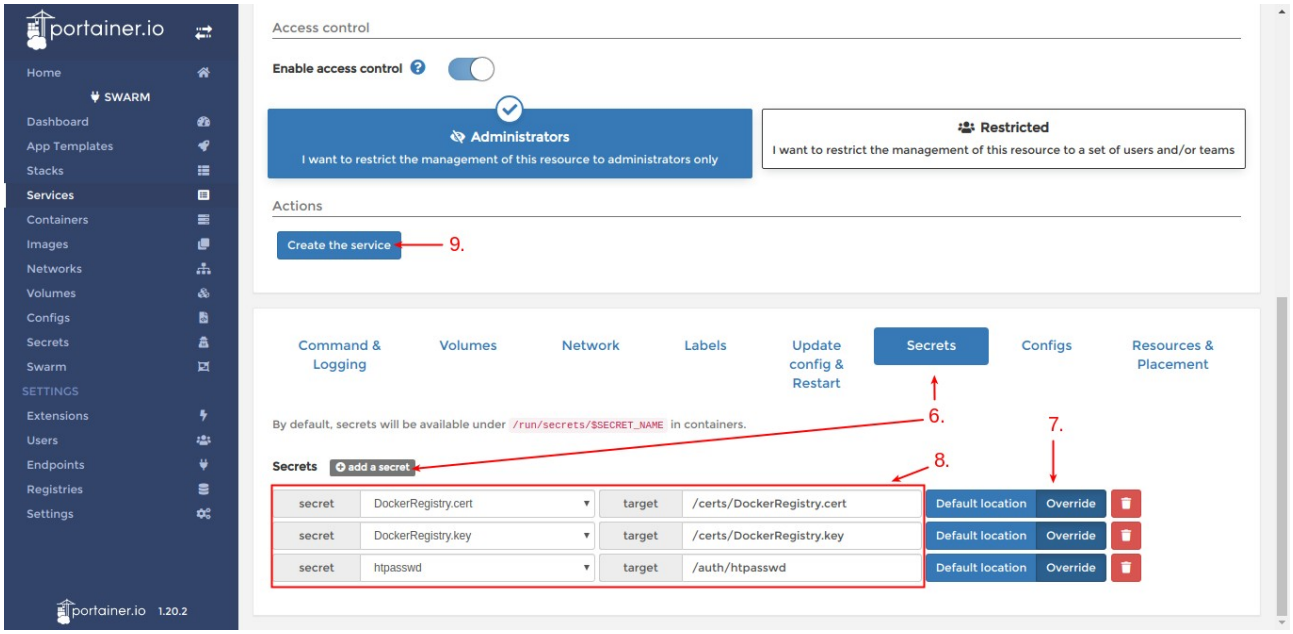
Name service, select image and map ports

- **Step 4:** Scroll to the additional configuration tab, and click the add environment variable button 7 times to create 7 entries.
- **Step 5:** Fill in the environment variables with:
  - REGISTRY_HTTP_ADDR which is the IP & Port of your registry
  - REGISTRY_HTTP_TLS_CERTIFICATE which is the path of your certificate
  - REGISTRY_HTTP_TLS_KEY which is the path of your key
  - REGISTRY_AUTH which should be set to *htpasswd*
  - REGISTRY_AUTH_HTPASSWD_REALM should be set to *Registry Realm*
  - REGISTRY_AUTH_HTPASSWD_PATH which is the path of your htpasswd file
  - REGISTRY_STORAGE_DELETE_ENABLED which should be set to *true*
    Note: This must be set to true for Registry Management features to work.
  -



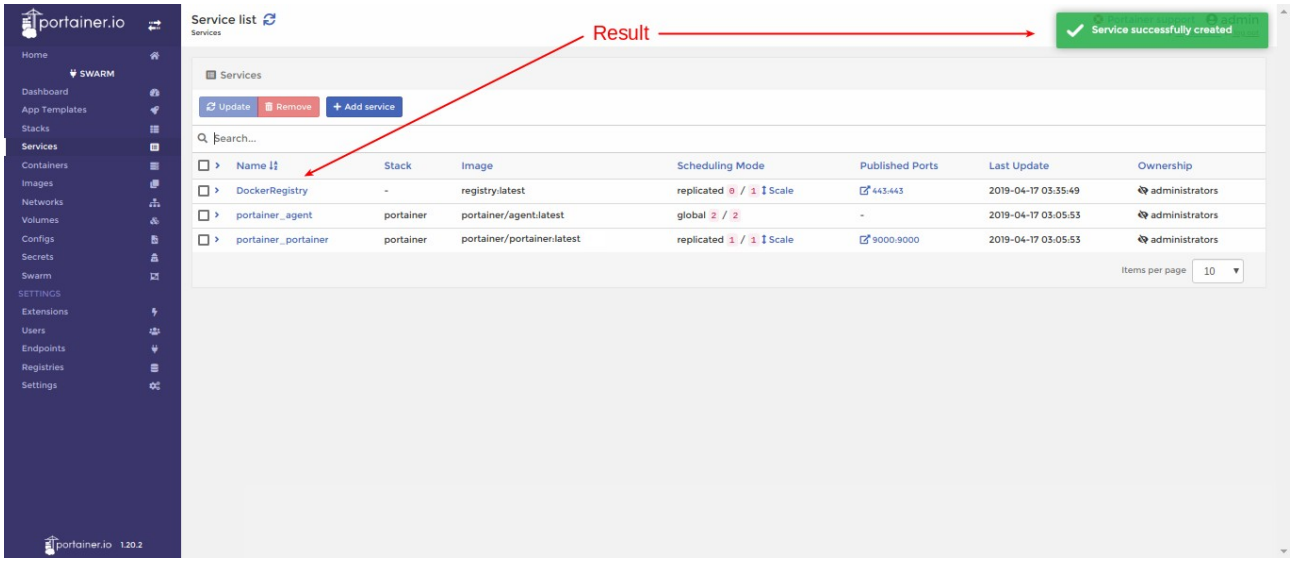
Configuring environment variables

- **Step 6:** Click on the Secrets tab then click the add a secret button three times. This will add three fields for your certificate, key and htpasswd file.
- **Step 7:** Click the override button on each field to show the target field, where we will enter the paths for the secrets.
- **Step 8:** Select the certificate, key and htpasswd from the drop-down fields & fill in the associated paths for the files.
- **Step 9:** Click the Create the service button.



Configuring the secrets and creating the service

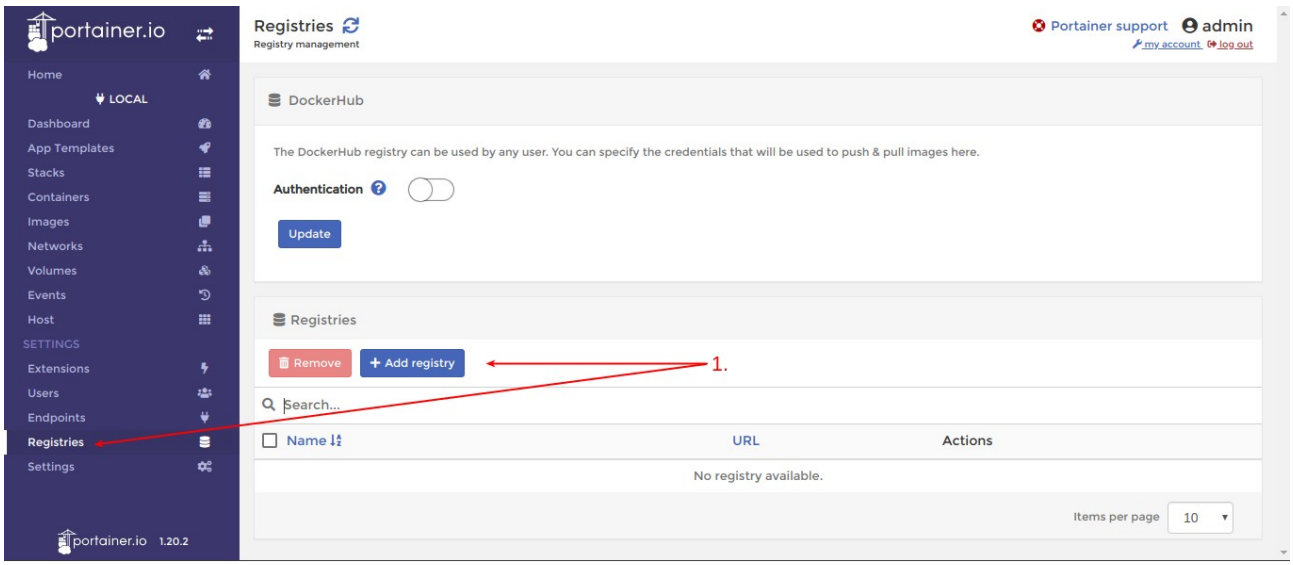
Result: You should see a green confirmation message appear in the top right of the screen if the service was successfully created. You should also now see your registry service within the services list.



Registry service with TLS successfully created.

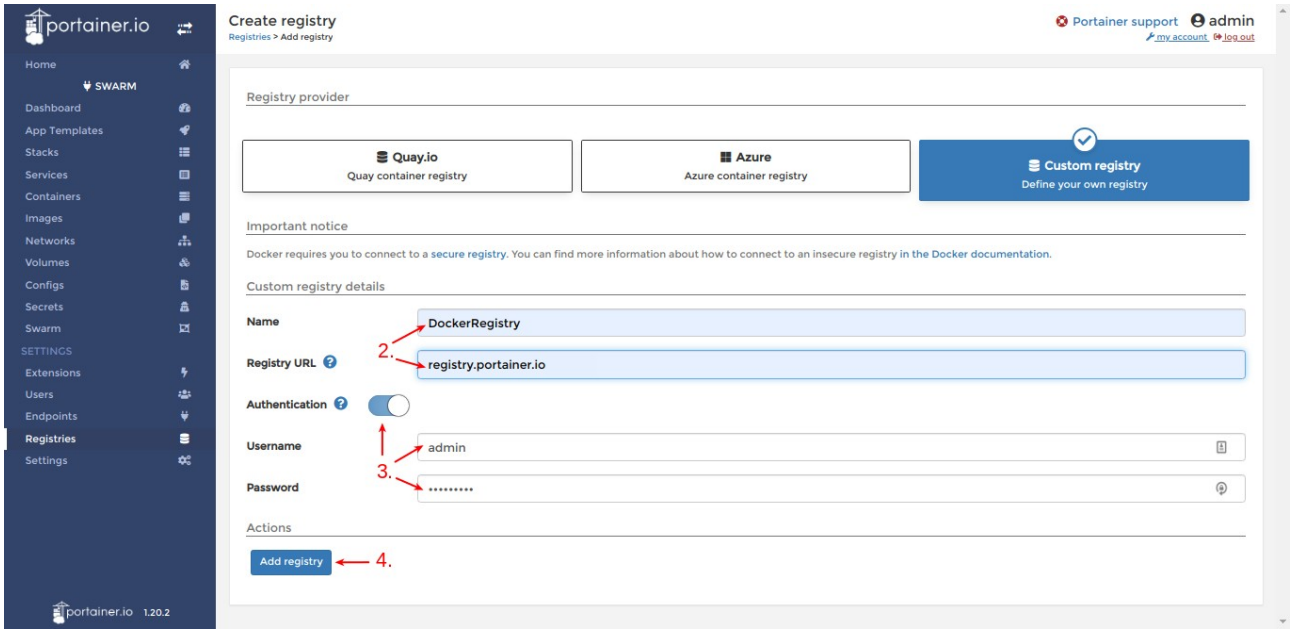
Adding the registry to Portainer

- **Step 1:** Navigate to the Registries view and click on the Add registry button.



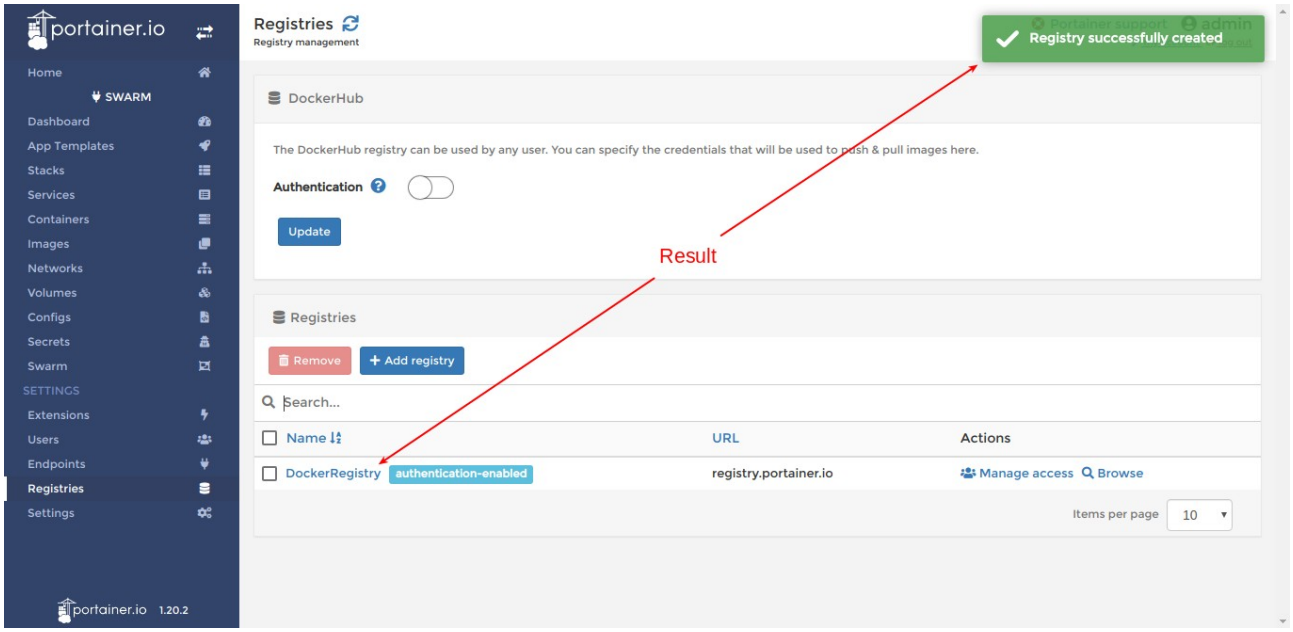
Adding a registry from the Registries view

- **Step 2:** Fill in a name for your registry and the URL of your registry service.
- **Step 3:** Click the authentication toggle, then fill in the fields that appear with the username and password you used to create the htpasswd file.
- **Step 4:** Click the Add registry button.



Adding your Docker registry into Portainer

Result: You should see a green confirmation message appear in the top right of the screen if the registry was successfully added into Portainer. You should also now see your registry within the registries list.

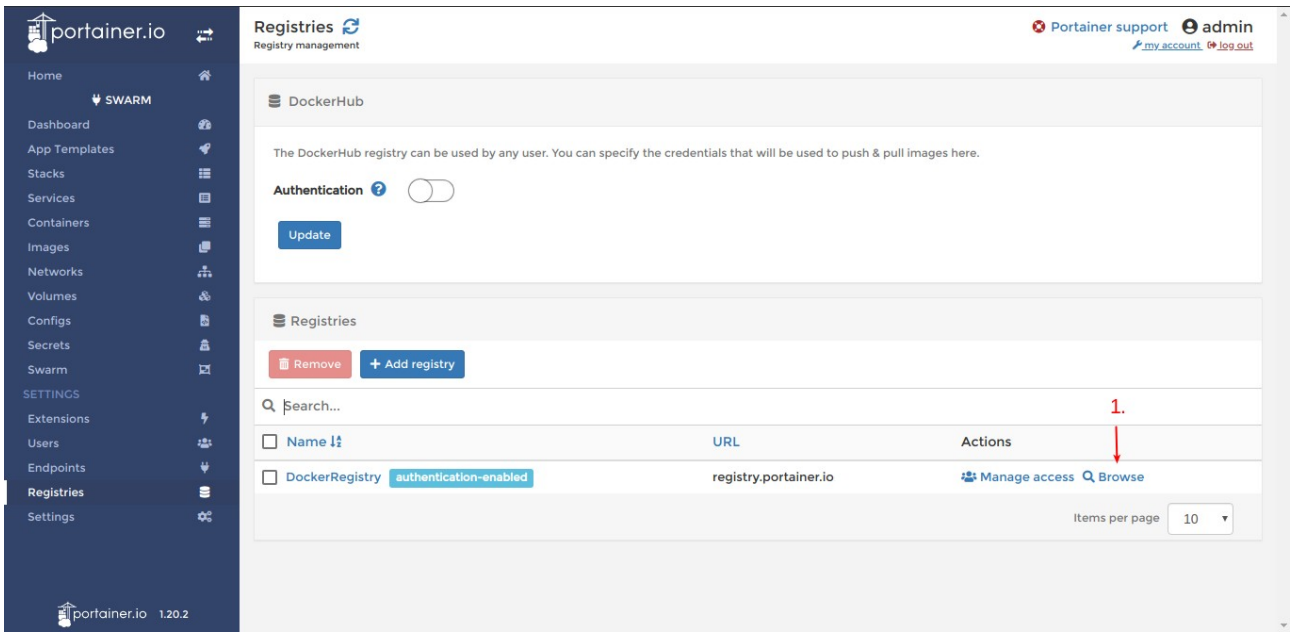


Docker Registry successfully added into Portainer

Using the registry management extension

The registry management extension enables advanced registry management features from within Portainer and is used to browse a registry. **Note:** To use the Registry Manager the registry must first be configured to use your TLS settings.

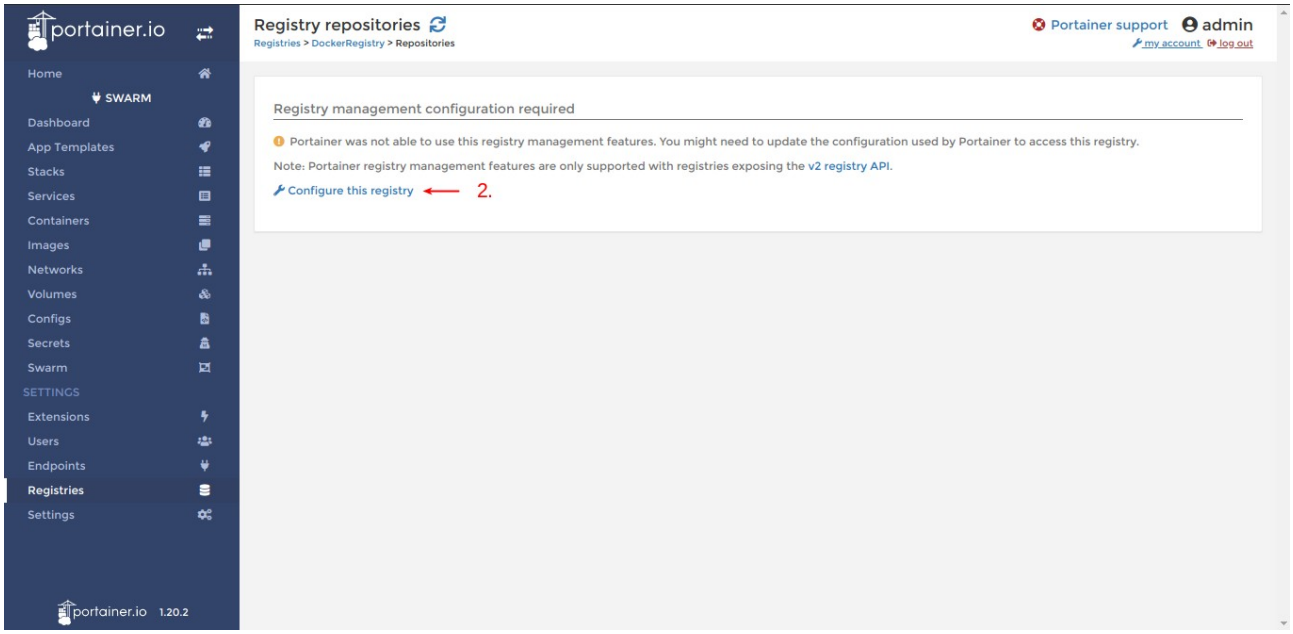
- **Step 1:** Click the browse button to start using the Registry Management extension (This button will be disabled until you buy and enable the extension).



Clicking the browse button to start using the Registry Management extension.

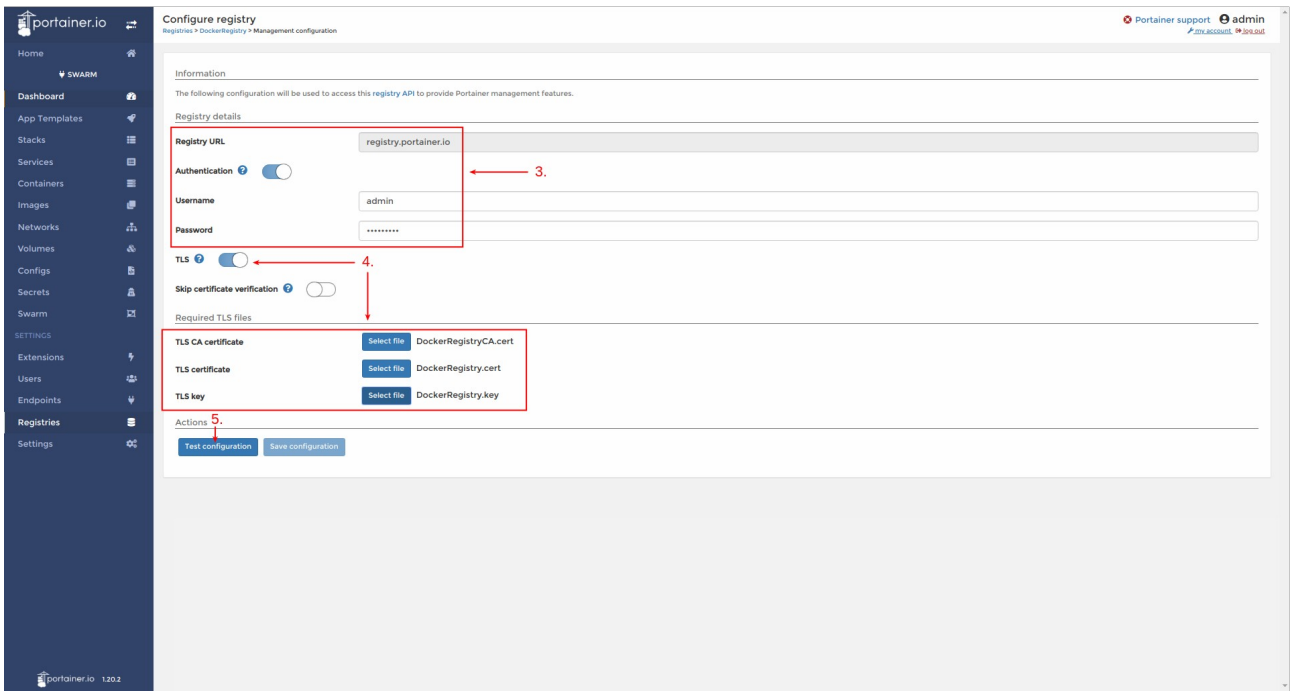
Note: You will now be presented with a screen asking to configure the registry to work with the Registry Management extension.

- **Step 2:** Click Configure this registry.



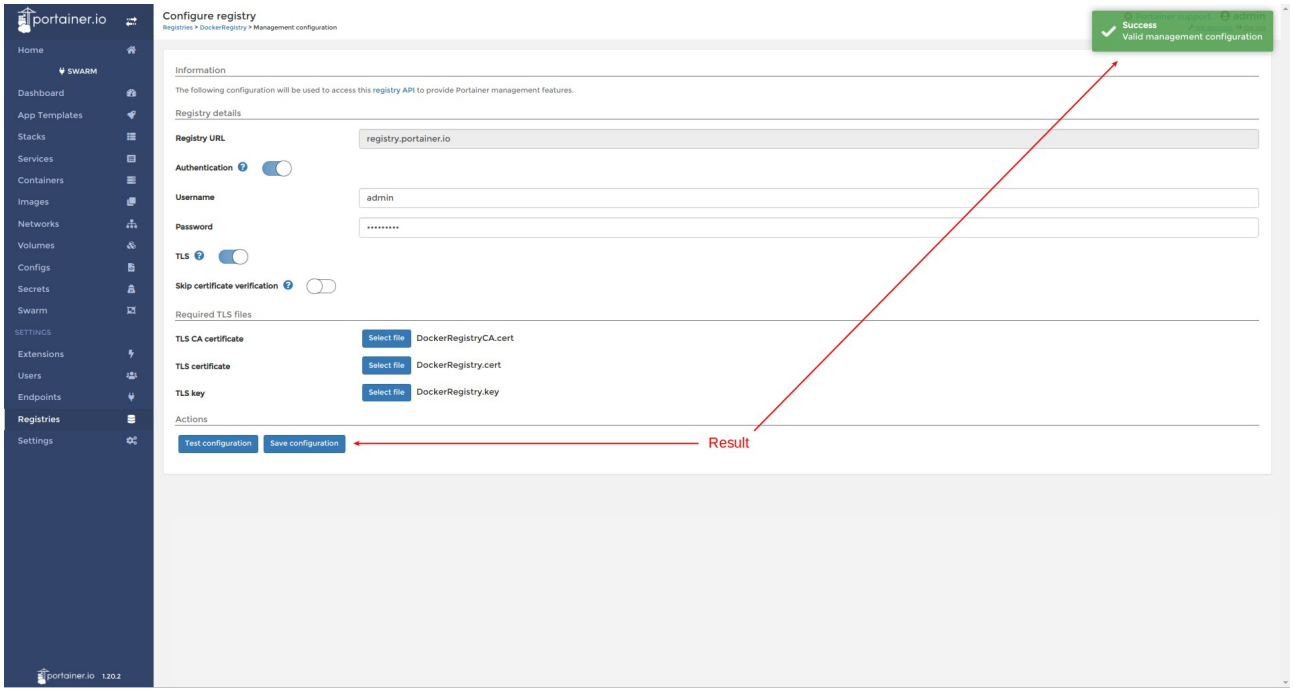
Configuring the registry

- **Step 3:** Fill in the URL of the registry, make sure the Authentication toggle is selected, then fill in the username and password with those used to create the htpasswd file.
- **Step 4:** Click the TLS toggle and then upload the CA, cert and key files you generated at the start of this guide.
- **Step 5:** Click test configuration to confirm your setup is correct.



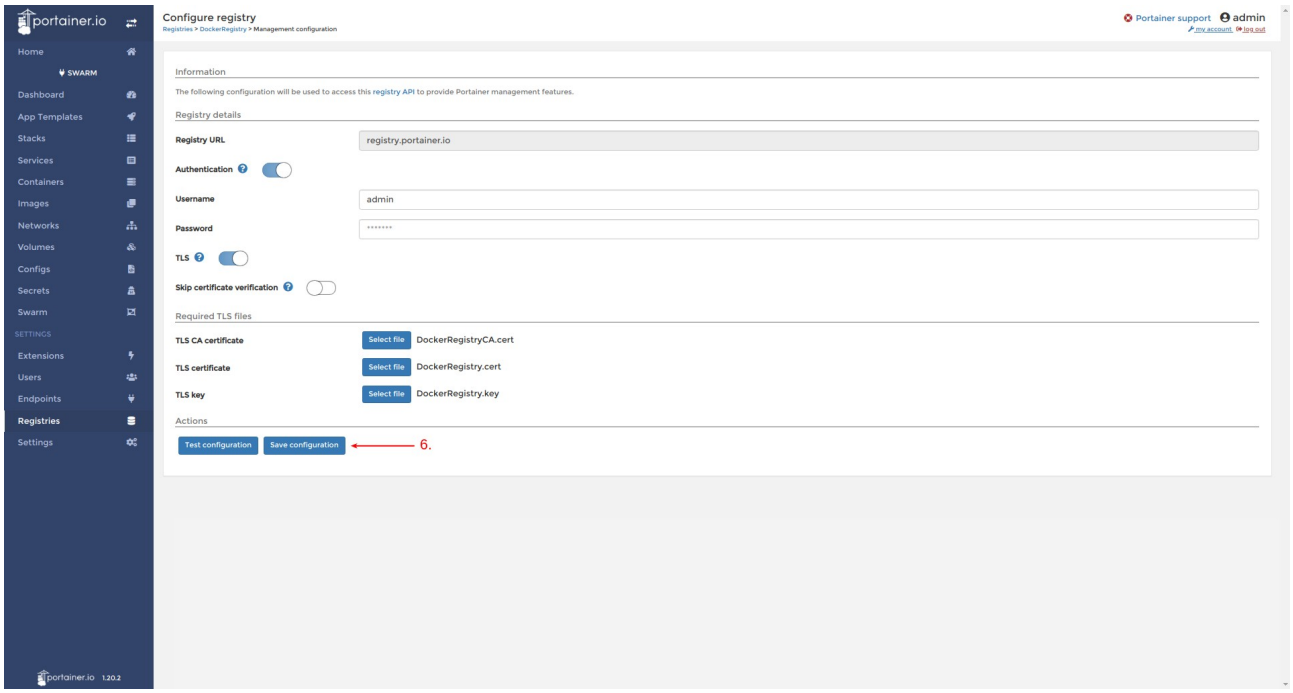
Configuring and testing the registry for TLS

Result You should see a green confirmation message appear in the top right of the screen if the configuration was tested correctly. You should also see the Save configuration button is now enabled.



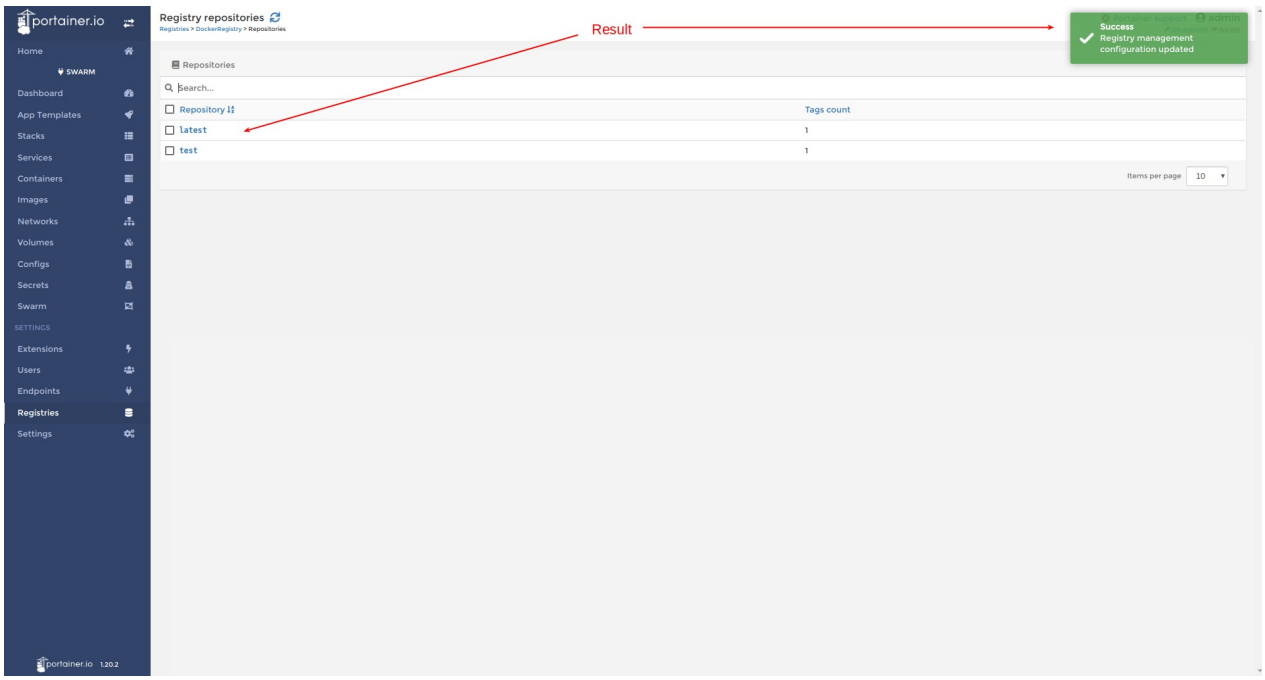
Configuration successfully tested

- **Step 6:** Click the Save configuration button.



Saving registry TLS configuration

Result: You should see a green confirmation message appear in the top right of the screen if the registry was successfully configured. You should also be redirected to the registry browsing view and see the contents of the registry listed.



Registry successfully configured for TLS

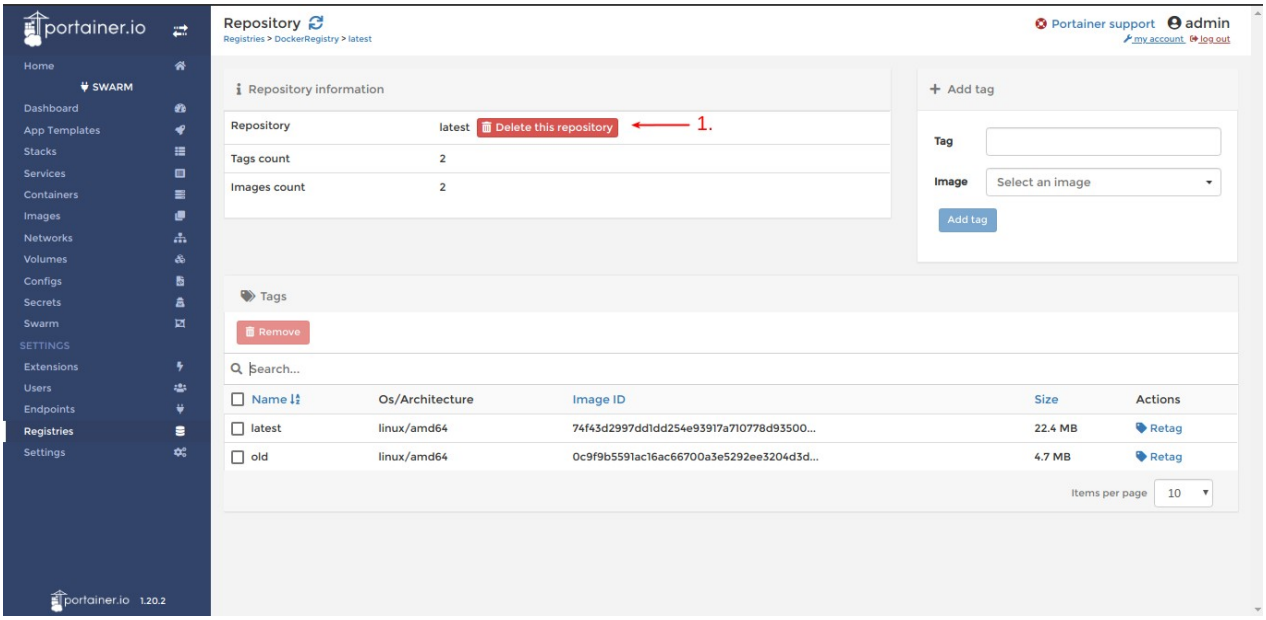
Registry management view

Clicking on a repository will bring you to the Repository view. Here you can use the various features of the Registry Management extension including:

- Deleting the repository
- Adding a tag
- Removing a tag
- Renaming a tag

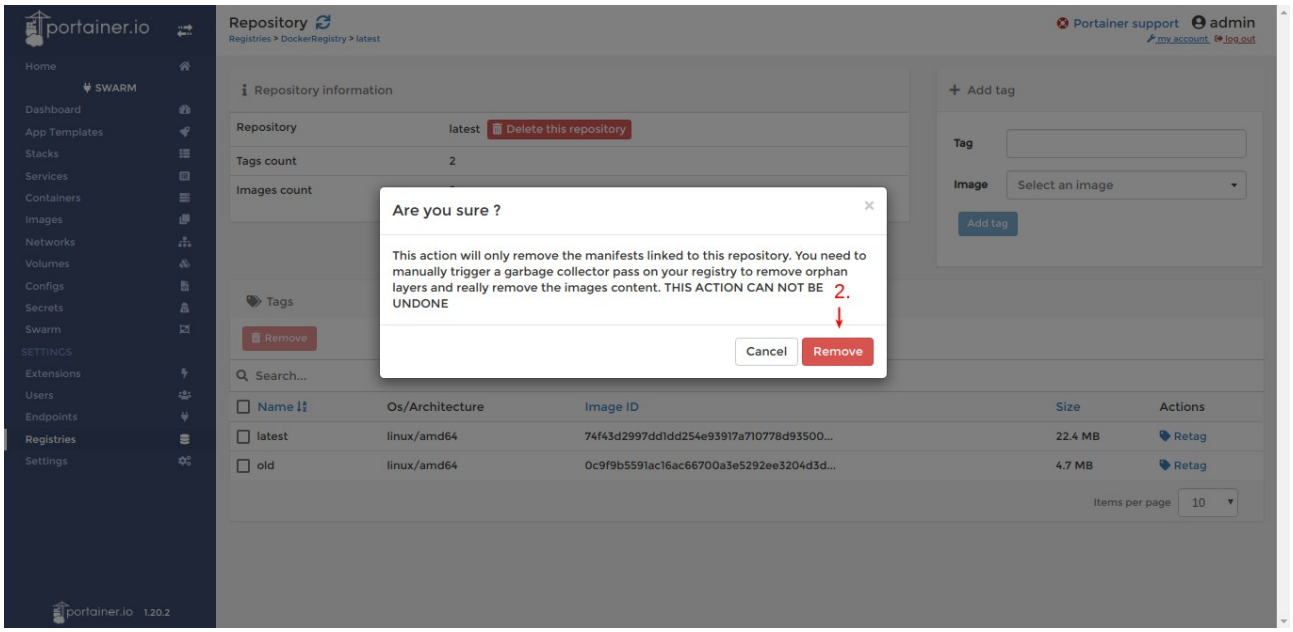
Deleting a repository

- **Step 1:** Click the Delete this repository button.



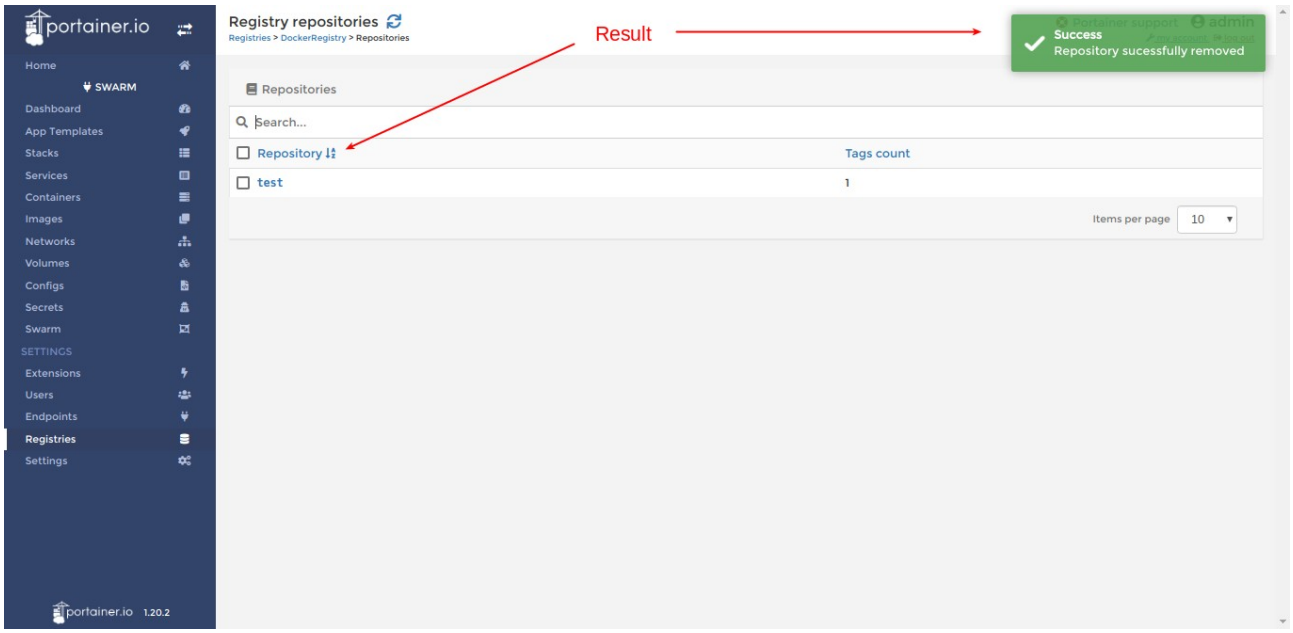
Deleting an image repository within the Repository view

- **Step 2:** You will be prompted to confirm deletion of the repository.



Confirmation that you want to delete the repository

Result: You should see a green confirmation message appear in the top right of the screen if the repository was successfully deleted. You should also now no longer see the repository in the repositories list.

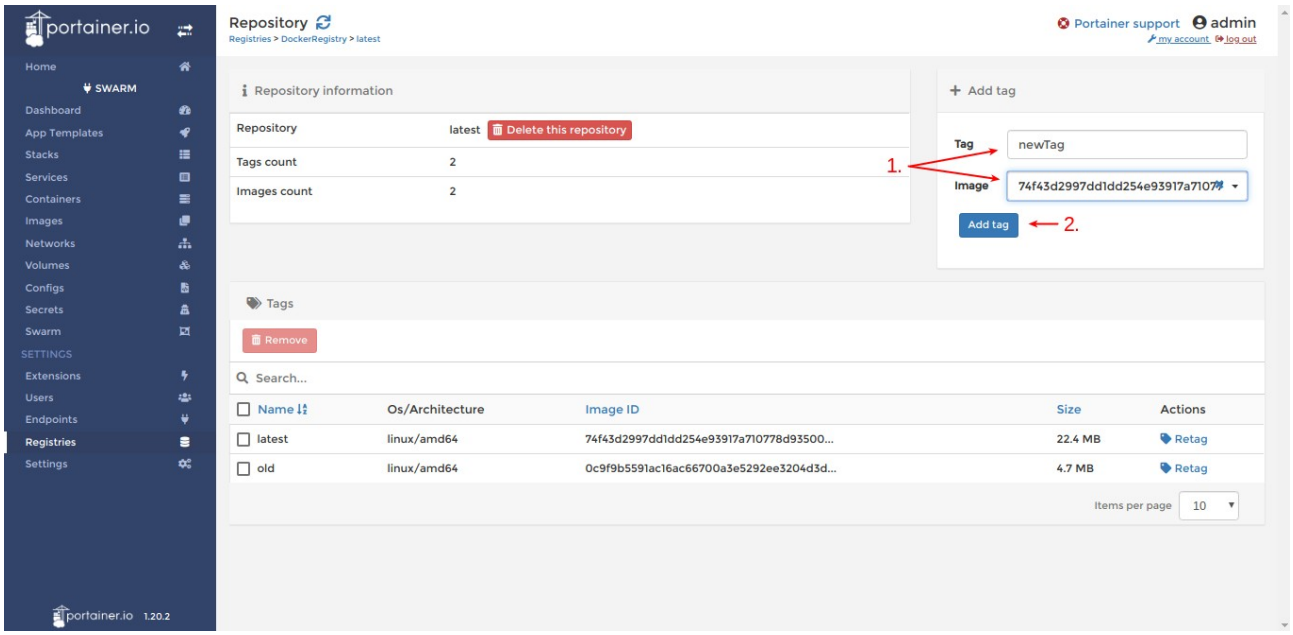


Repository successfully deleted

Adding a Tag

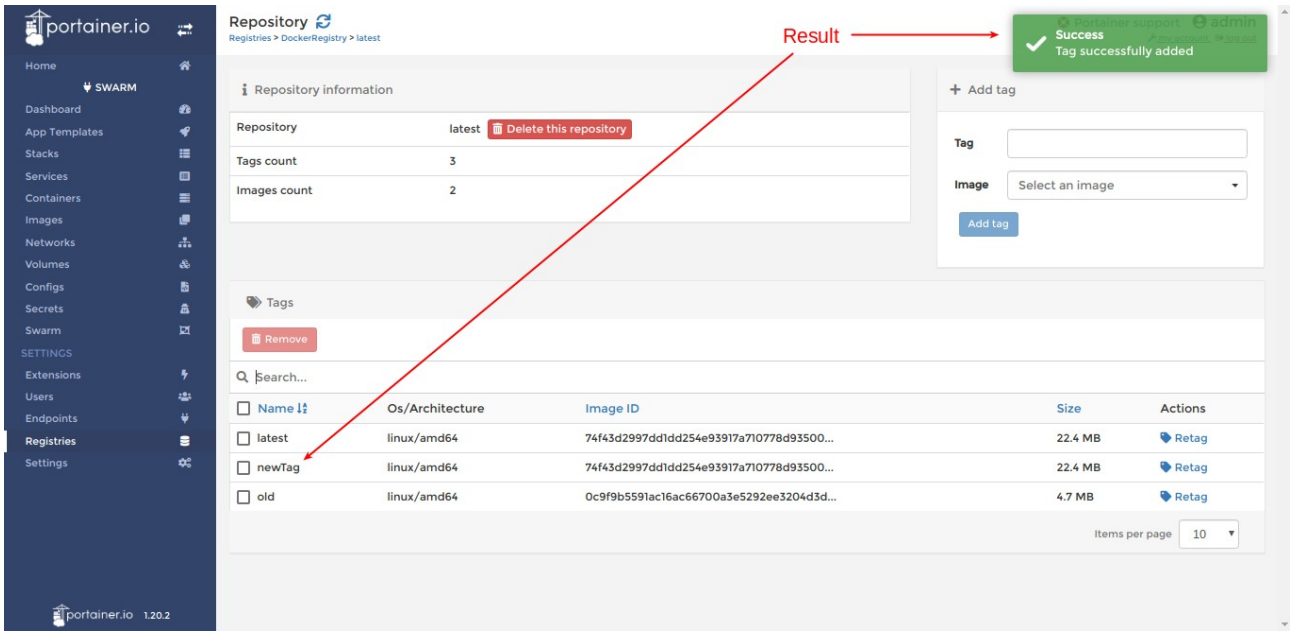
- **Step 1:** Enter a name for the tag and select the image you would like to tag from the drop down list.
- **Step 2:** Click the Add tag button.

Note: If an existing tag name is used to tag a different image, the image associated with the tag will be replaced with the specified one.



Adding a tag to an image

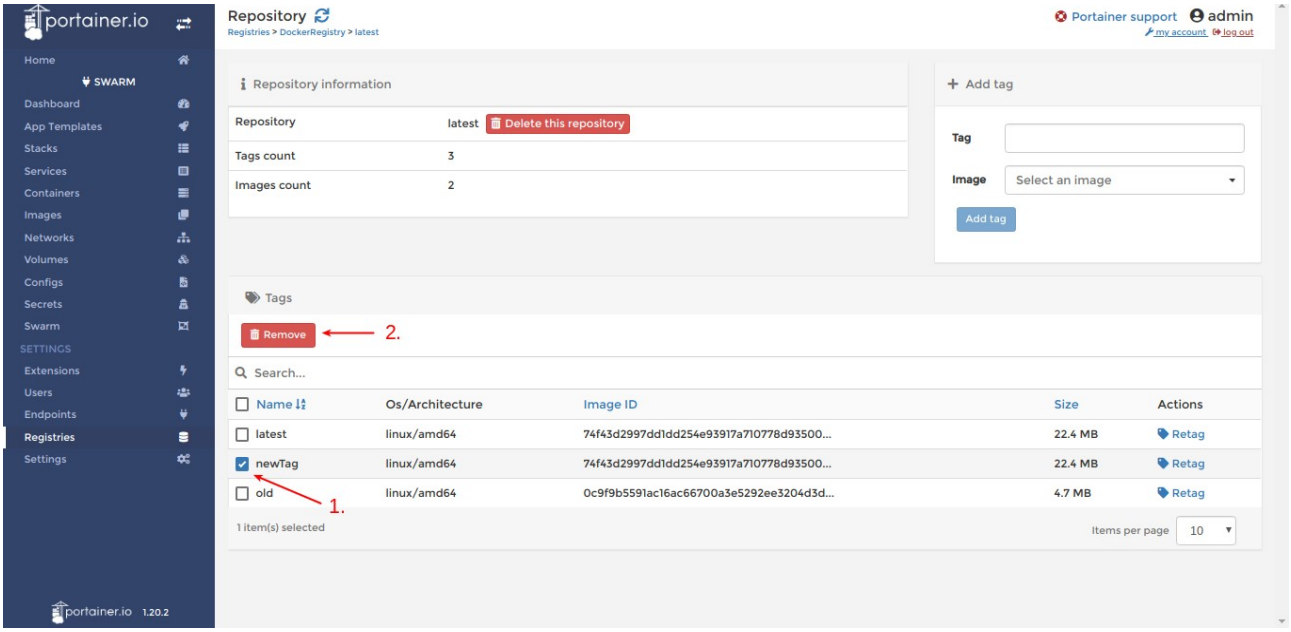
Result: You should see a green confirmation message appear in the top right of the screen if the tag was successfully added to the image. You should also now see the tagged image present in the Tags list.



Tag successfully added to specified image

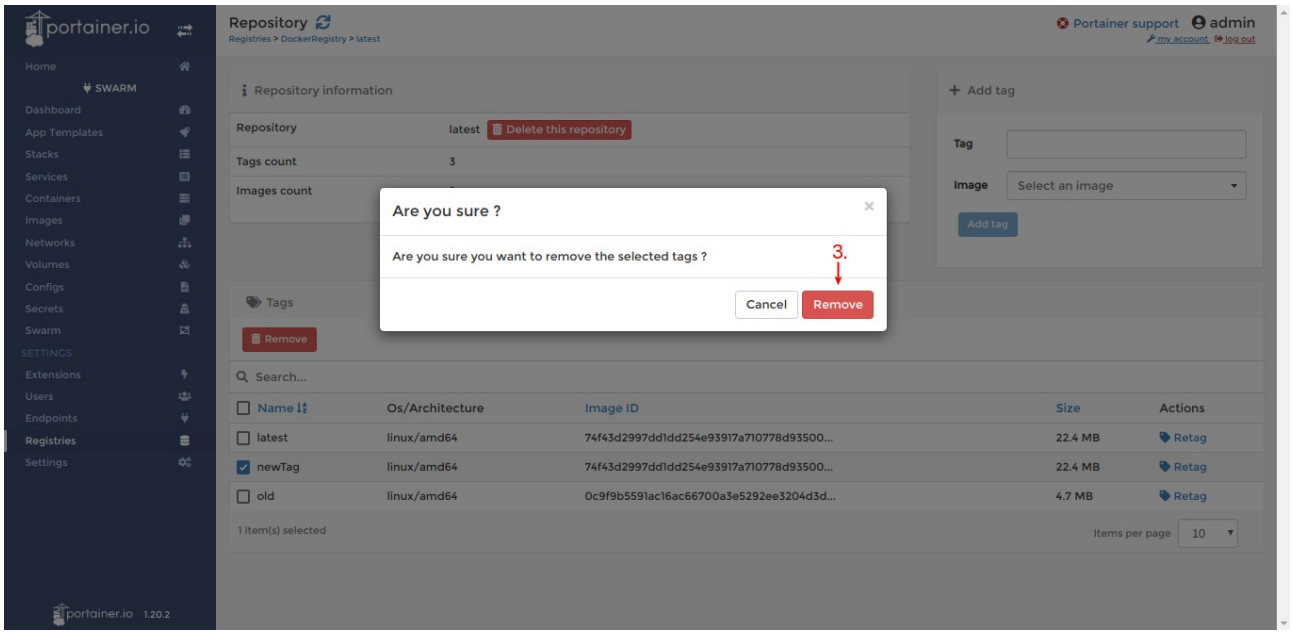
Removing a tag

- **Step 1:** Click the checkbox beside the tags you would like to remove (you can click the top checkbox to select all).
- **Step 2:** Click the remove button to remove all selected images.



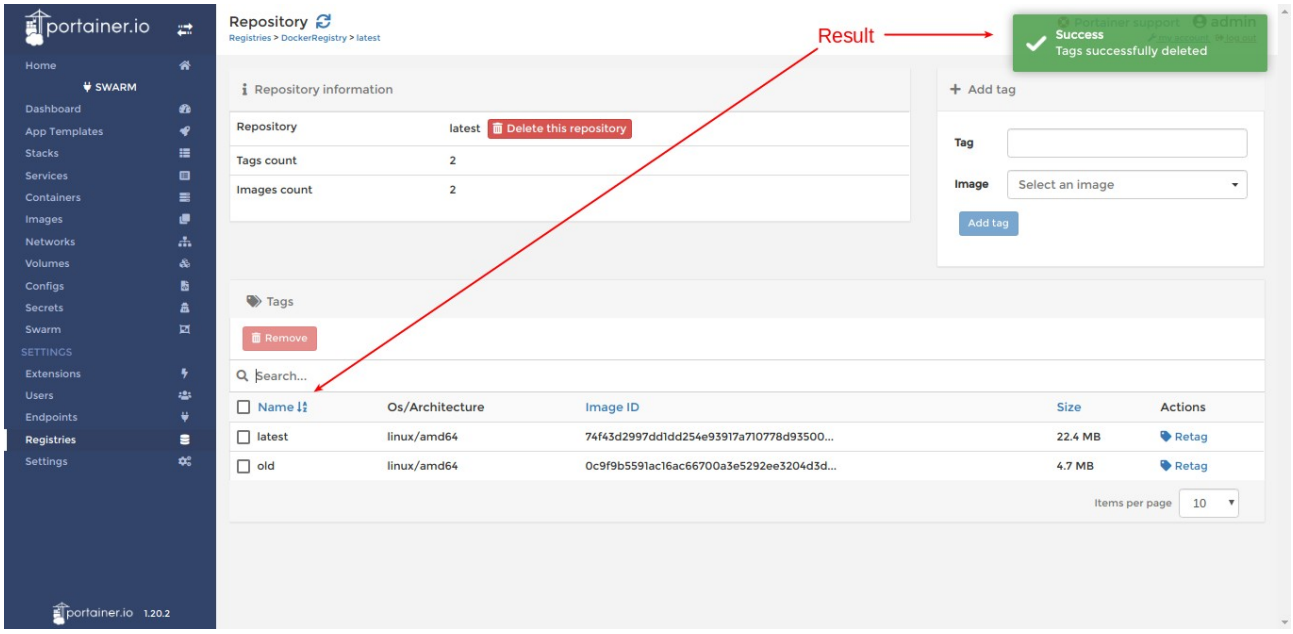
Selecting tag to remove from image repository

- **Step 3:** A prompt should appear asking if you are sure you want to remove the selected tags, click yes.



Confirming choice to remove selected tag from the image repository

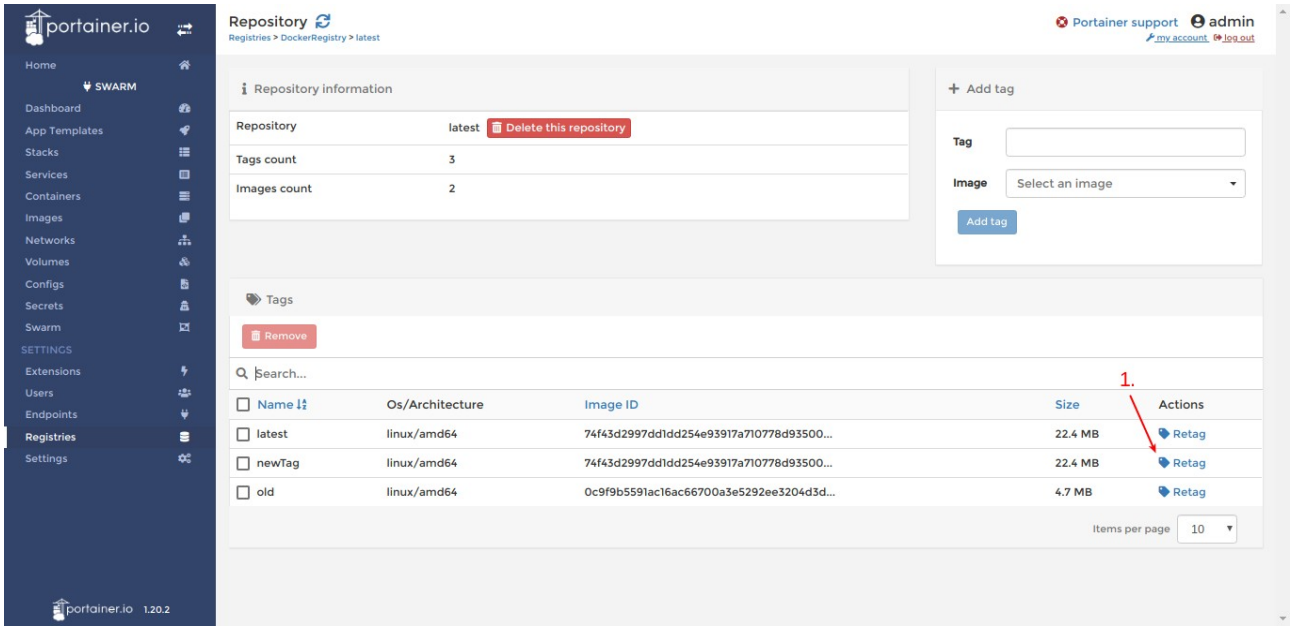
Result: You should see a green confirmation message appear in the top right of the screen if the tag was successfully removed. You should now also see the tag is no longer present in the tags list.



Tag successfully removed

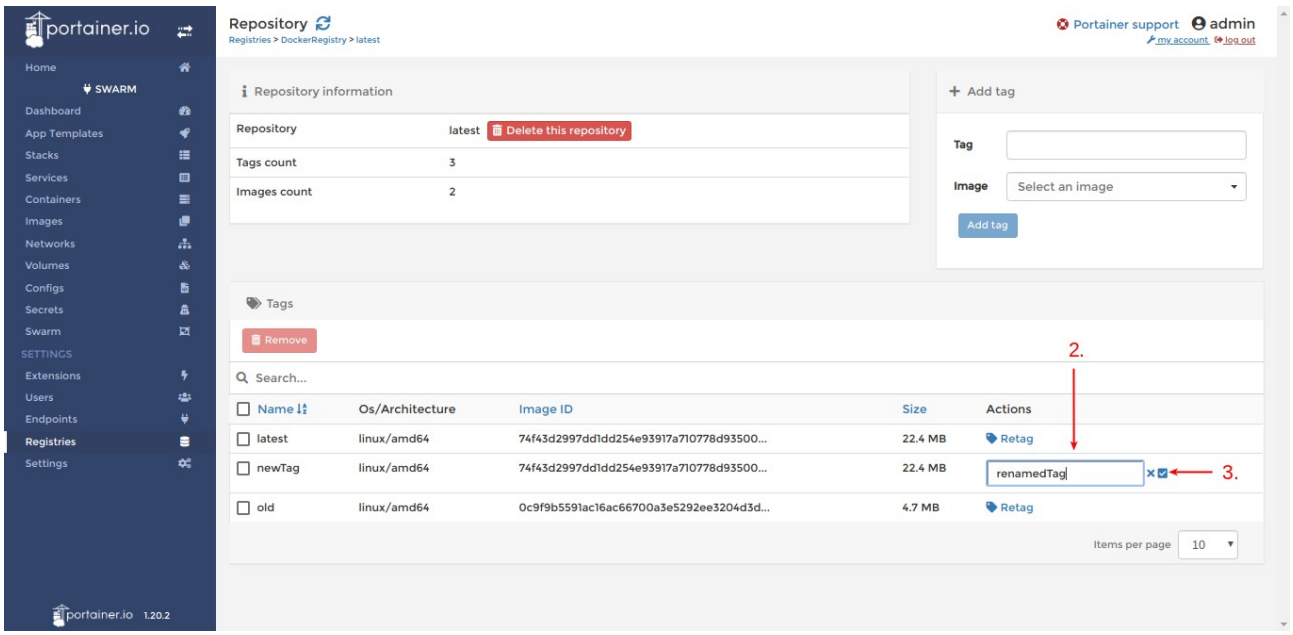
Renaming a tag

- **Step 1:** Click the Retag action button for the image you would like to retag.



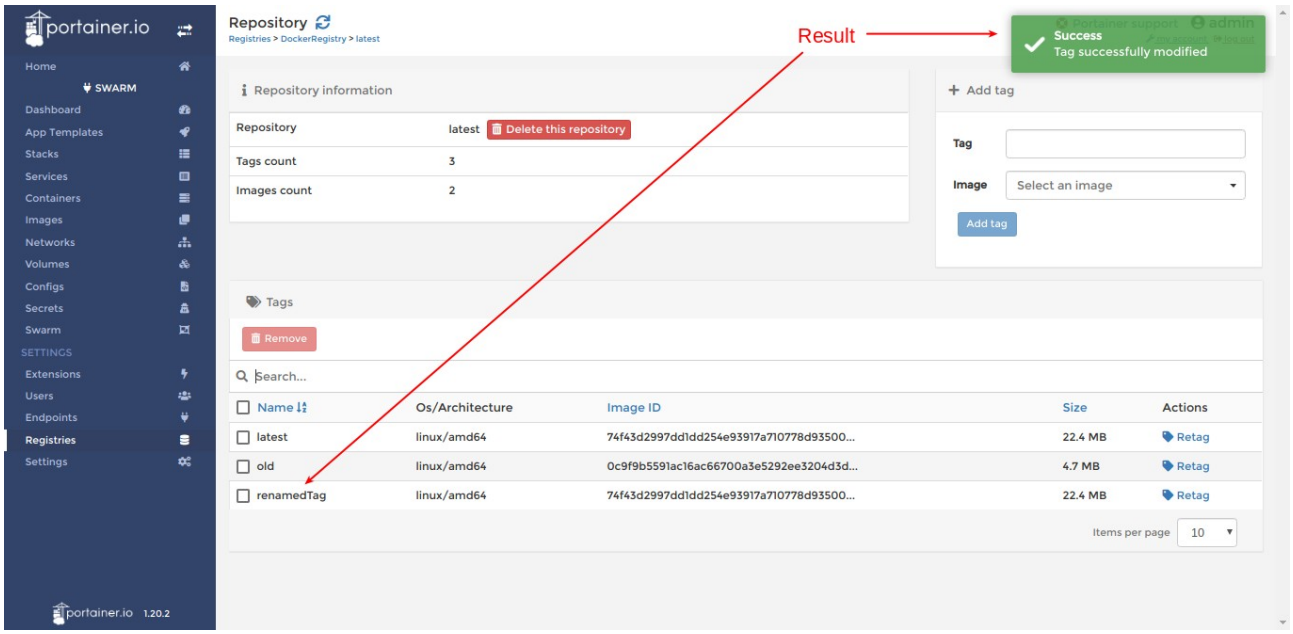
Retagging an image via the Tags section

- **Step 2:** Within the text box that appears, enter the new name for the tag.
- **Step 3:** Click the tick to save the changes to the tag name.



Entering and confirming the new name for the tag

Result: You should see a green confirmation message appear in the top right of the screen if the tag was successfully renamed. You should now also see the updated image in the tags list with the new tag name.



Tag was successfully renamed