CLI-based access

Estimated reading time: 3 minutes

> **These are the docs for UCP version 2.2.18**
>
> To select a different version, use the selector below.
>
> 2.2.18 ▾

Docker UCP secures your swarm by using role-based access control, so that only authorized users can perform changes to the cluster.

For this reason, when running docker commands on a UCP node, you need to authenticate your request with client certificates. When trying to run docker commands without a valid certificate, you get an authentication error:

```
docker ps

x509: certificate signed by unknown authority
```

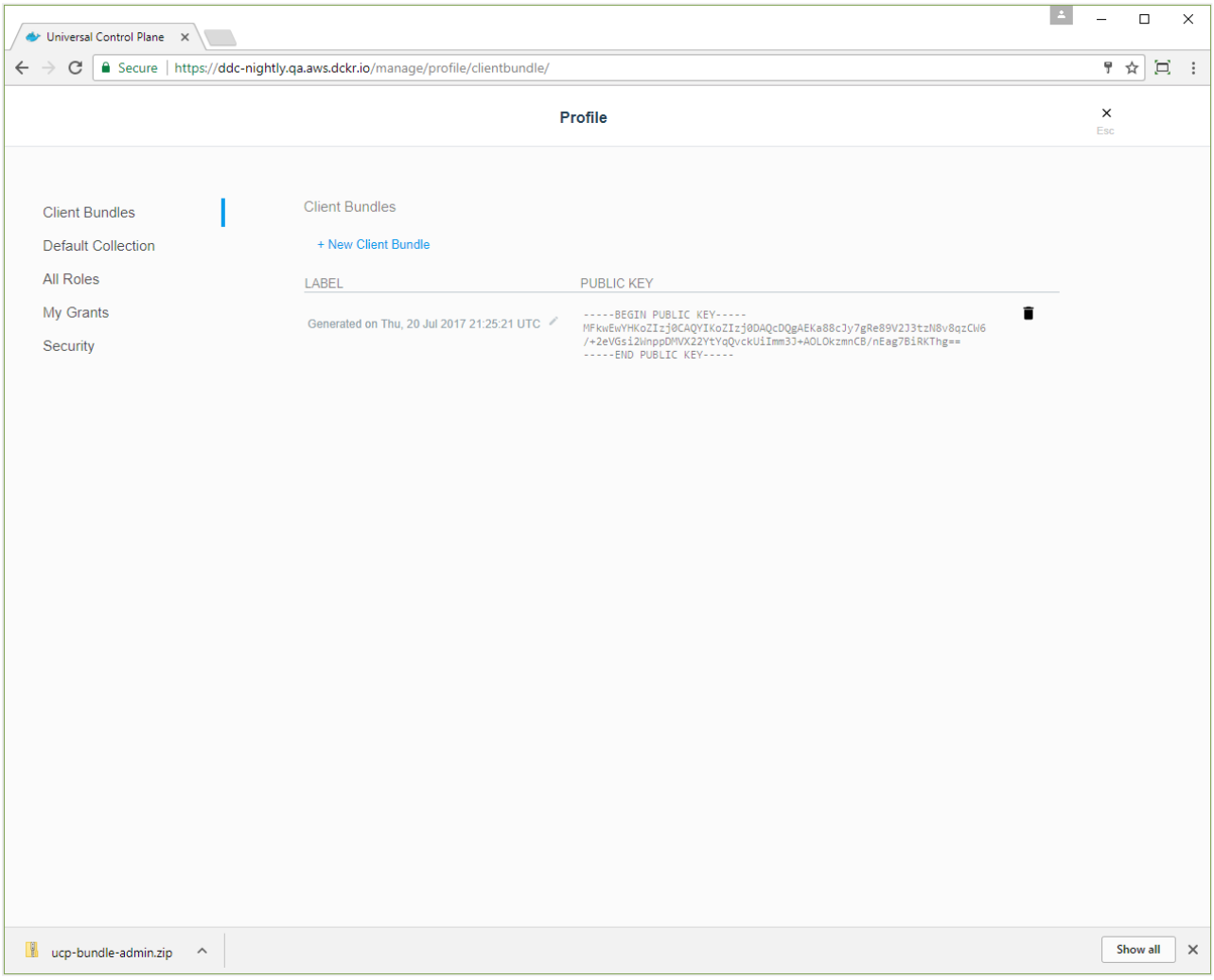
There are two different types of client certificates:

- Admin user certificate bundles: allow running docker commands on the Docker Engine of any node,
- User certificate bundles: only allow running docker commands through a UCP manager node.

Download client certificates

To download a client certificate bundle, log in to the UCP web UI and navigate to your **My Profile** page.

In the left pane, click **Client Bundles** and click **New Client Bundle** to download the certificate bundle.



Use client certificates

Once you've downloaded a client certificate bundle to your local computer, you can use it to authenticate your requests.

Navigate to the directory where you downloaded the user bundle, and unzip it. Then source the `env.sh` script.

```
unzip ucp-bundle-dave.lauper.zip
eval "$(<env.sh)"
```

The `env.sh` script updates the `DOCKER_HOST` environment variable to make your local Docker CLI communicate with UCP. It also updates the `DOCKER_CERT_PATH` environment variable to use the client certificates that are included in the client bundle you downloaded.

> **Note**: The bundle includes scripts for setting up Windows nodes. To set up a Windows environment, run `env.cmd` in an elevated command prompt, or run `env.ps1` in an elevated PowerShell prompt.

To verify a client certificate bundle has been loaded and the client is successfully communicating with UCP, look for `ucp` in the `Server Version` returned by `docker version`.

```
docker version --format '{{.Server.Version}}'
ucp/2.2.18
```

From now on, when you use the Docker CLI client, it includes your client certificates as part of the request to the Docker Engine. You can now use the Docker CLI to create services, networks, volumes, and other resources on a swarm that's managed by UCP.

Download client certificates by using the REST API

You can also download client bundles by using the UCP REST API (https://docs.docker.com/datacenter/ucp/2.2/reference/api/). In this example, we use `curl` to make the web requests to the API, and `jq` to parse the responses.

To install these tools on a Ubuntu distribution, you can run:

```
sudo apt-get update && sudo apt-get install curl jq
```

Then you get an authentication token from UCP, and use it to download the client certificates.

```
# Create an environment variable with the user security token
AUTHTOKEN=$(curl -sk -d '{"username":"<username>","password":"<password>"}' htt

# Download the client certificate bundle
curl -k -H "Authorization: Bearer $AUTHTOKEN" https://<ucp-ip>/api/clientbundle
```

On Windows Server 2016, open an elevated PowerShell prompt and run:

```
$AUTHTOKEN=((Invoke-WebRequest -Body '{"username":"<username>", "password":"<pa

[io.file]::WriteAllBytes("ucp-bundle.zip", ((Invoke-WebRequest -Uri https://`<u
```

Where to go next

- Access the UCP web UI (https://docs.docker.com/datacenter/ucp/2.2/guides/user/access-ucp/)

ucp (https://docs.docker.com/glossary/?term=ucp), cli (https://docs.docker.com/glossary/?term=cli), administration (https://docs.docker.com/glossary/?term=administration)