

CONFIGURATION GUIDE

How to Run Softing's  
*edgeConnector* Products  
on Windows



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## 1. Preliminary Remarks

This configuration guide describes how to deploy and use Softing’s various *edgeConnector* Docker container applications in a Windows environment.

### NOTE:

Additional *edgeConnector* information can be found at the according product web pages:

- *edgeConnector* Siemens: <https://industrial.softing.com/products/docker/edgeconnector-siemens.html>
- *edgeConnector* 840D: <https://industrial.softing.com/products/docker/edgeconnector-840d.html>
- *edgeConnector* Modbus: <https://industrial.softing.com/products/docker/edgeconnector-modbus.html>

### NOTE:

Special attention must be paid to the ports used for OPC UA communication between the *edgeConnector* Docker container application and individual OPC UA clients. Here the following steps are suitable:

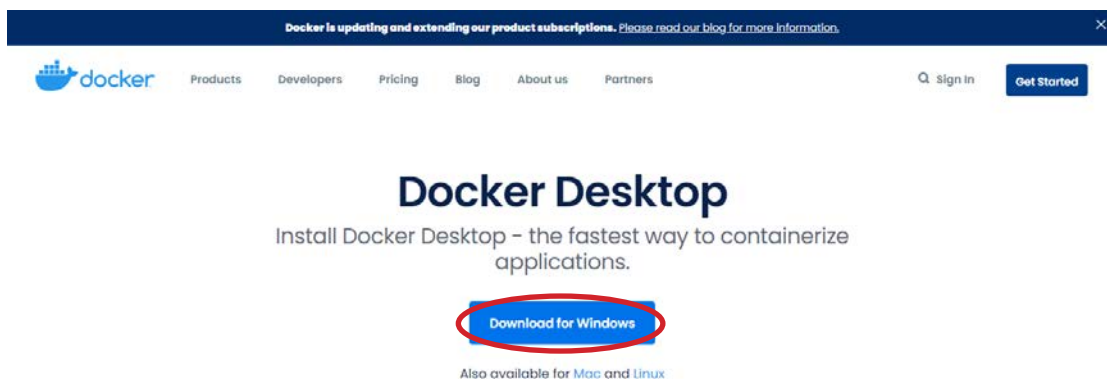
1. In advance, define the individual ports to be used for OPC UA communication for the various *edgeConnector* Docker container applications. This information is required for sections 3. and 4.
2. Map these ports when starting the *edgeConnector* Docker container application (see section 3.).
3. Make sure the identical ports are defined for the OPC UA endpoints when configuring the *edgeConnector* Docker container application (see section 4.).

### NOTE:

Within the scope of this configuration guide the image of a specific *edgeConnector* Docker container application as chosen by the user is shown by the string `<edgeConnector>`.

## 2. Install and Start Docker Desktop

- In Internet browser, open <https://www.docker.com/products/docker-desktop> page



- Press *Download for Windows* button
- Execute downloaded *Docker Desktop Installer.exe* file, if installation doesn’t start automatically

### NOTE:

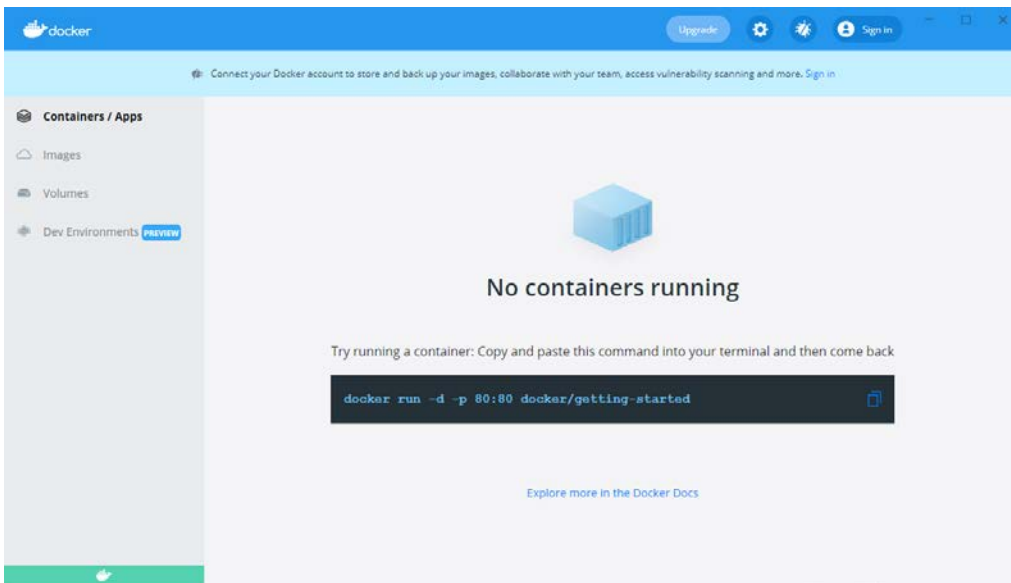
By default Docker Desktop requires the activation of the Windows Hypervisor Hyper-V (see next page). As an alternative it is also possible to run Docker Desktop in the Windows Subsystem for Linux WSL-2 (available since Windows 10 2004). This can be installed by entering the command

```
wsl --install
```

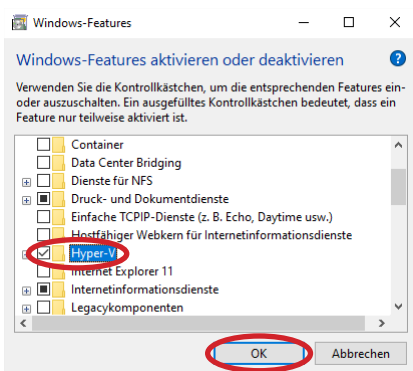
in *Windows Command-Line Interpreter* or *Windows PowerShell*.

Here the *Install required Windows components for WSL 2* option has to be activated during Docker Desktop installation.

- Press *Close* button once installation has been completed successfully
- Open *Docker Desktop* application from Windows start menu



- Open *Windows Control Panel/Programs/Programs and Features*
- Click *Turn Windows features on and off* link



- Activate *Hyper-V* checkbox, if not activated already
- Press *OK* button

### 3. Deploy and Run *edgeConnector* Applications

**NOTE:**

Besides in other repositories, *edgeConnector* Docker container applications are available for download at Docker Hub. They can be found there using the following information:

- ***edgeConnector Siemens:***

Image name: *softingindustrial/edgeconnector-siemens*

URL: <https://hub.docker.com/r/softingindustrial/edgeconnector-siemens>

- ***edgeConnector 840D:***

Image name: *softingindustrial/edgeconnector-840d*

URL: <https://hub.docker.com/r/softingindustrial/edgeconnector-840d>

- ***edgeConnector Modbus:***

Image name: *softingindustrial/edgeconnector-modbus*

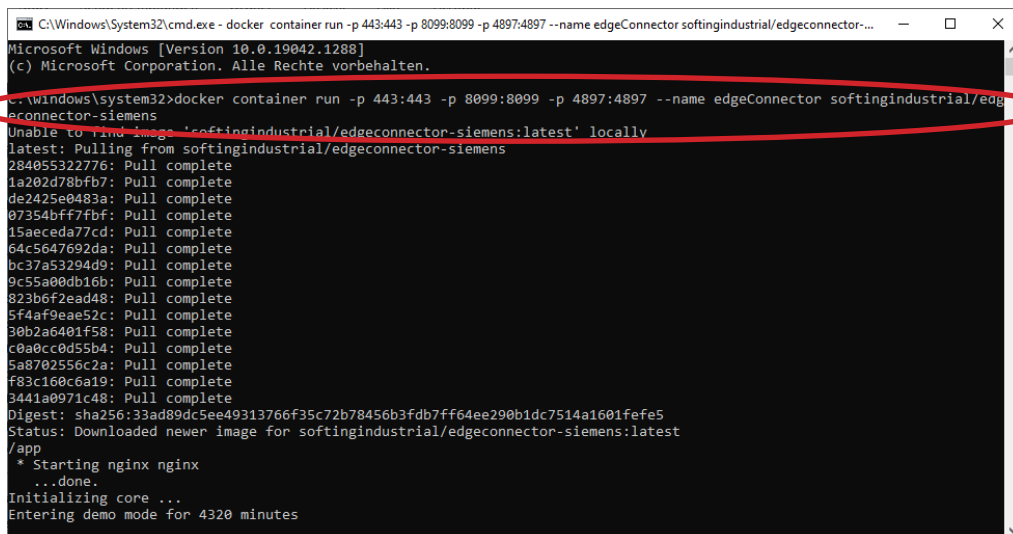
URL: <https://hub.docker.com/r/softingindustrial/edgeconnector-modbus>

- Open Windows Command-Line Interpreter or Windows PowerShell

- Enter

```
docker container run -p 443:443 -p 8099:8099 -p 4897:4897 --name edgeConnector <edgeConnector image>
```

command

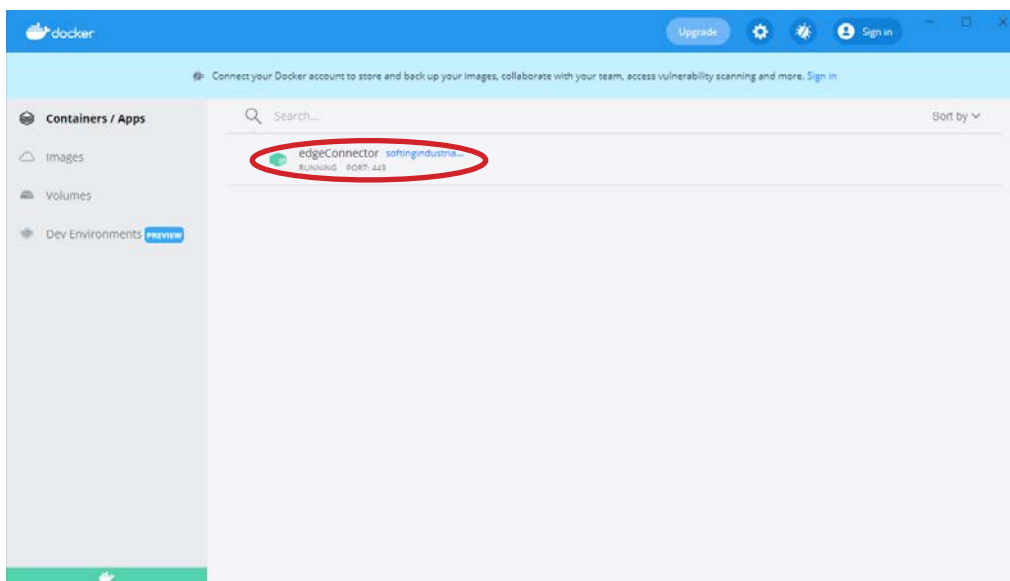


```
C:\Windows\System32\cmd.exe - docker container run -p 443:443 -p 8099:8099 -p 4897:4897 --name edgeConnector softingindustrial/edgeconnector-...
Microsoft Windows [Version 10.0.19042.1288]
(c) Microsoft Corporation. Alle Rechte vorbehalten.

C:\Windows\system32>docker container run -p 443:443 -p 8099:8099 -p 4897:4897 --name edgeConnector softingindustrial/edgeconnector-siemens
Unable to find image 'softingindustrial/edgeconnector-siemens:latest' locally
latest: Pulling from softingindustrial/edgeconnector-siemens
284055322776: Pull complete
1a202d78bfb7: Pull complete
de2425e0483a: Pull complete
07354bff7fbf: Pull complete
15aeceada77cd: Pull complete
64c5647692da: Pull complete
bc37a53294d9: Pull complete
9c55a00db16b: Pull complete
823b6f2ead48: Pull complete
5f4af9eae52c: Pull complete
30b2a6401f58: Pull complete
c0a0cc0d55b4: Pull complete
5a8702556c2a: Pull complete
f83c160c6a19: Pull complete
3441a0971c48: Pull complete
Digest: sha256:33ad89dc5ee49313766f35c72b78456b3fdb7ff64ee290b1dc7514a1601fefe5
Status: Downloaded newer image for softingindustrial/edgeconnector-siemens:latest
/app
* Starting nginx nginx
  ..done.
Initializing core ...
Entering demo mode for 4320 minutes
```

**NOTES:**

- The given command is the default command for starting the *edgeConnector Docker* container application.  
If the latest image of this *Docker* container application is not available locally, it is downloaded (“pulled”) from Docker Hub.
- The switch *-p <External Host Port>:<Internal Docker Port>* describes the mapping of an internal port in the virtual Docker network to an external port in the local host network.  
The mapping of the following internal ports of the Docker network is required:
  - Port 443 is required for *https* communication (secure local web services).
  - Port 8099 defines the local web service port.
  - Port 4897 is used for OPC UA communication.
 Some indications for an individual customization of the starting command by adapting the command parameter *-p* can be found in later notes.
- The usage of the switch *-- name <Docker application name>* is optional.  
It defines the container name to be shown in Docker Desktop and allows for an easy identification of the *<edgeConnector> Docker* container application.



#### 4. Configure *edgeConnector Docker* Container Application

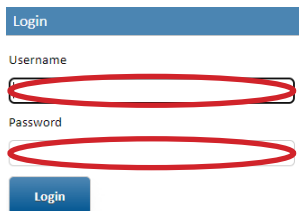
- In Internet browser, open *http://localhost:8099/* page

**NOTE:**

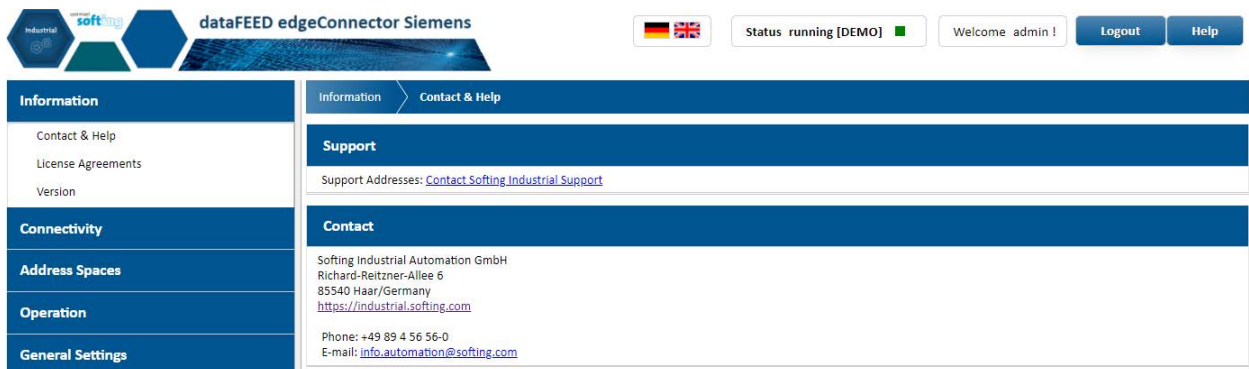
The number *8099* in the URL reflects the local web service port in the host network as defined in the *docker container run* command (see section 3.).

When using a different local web service port in the host network the URL needs to be adapted.

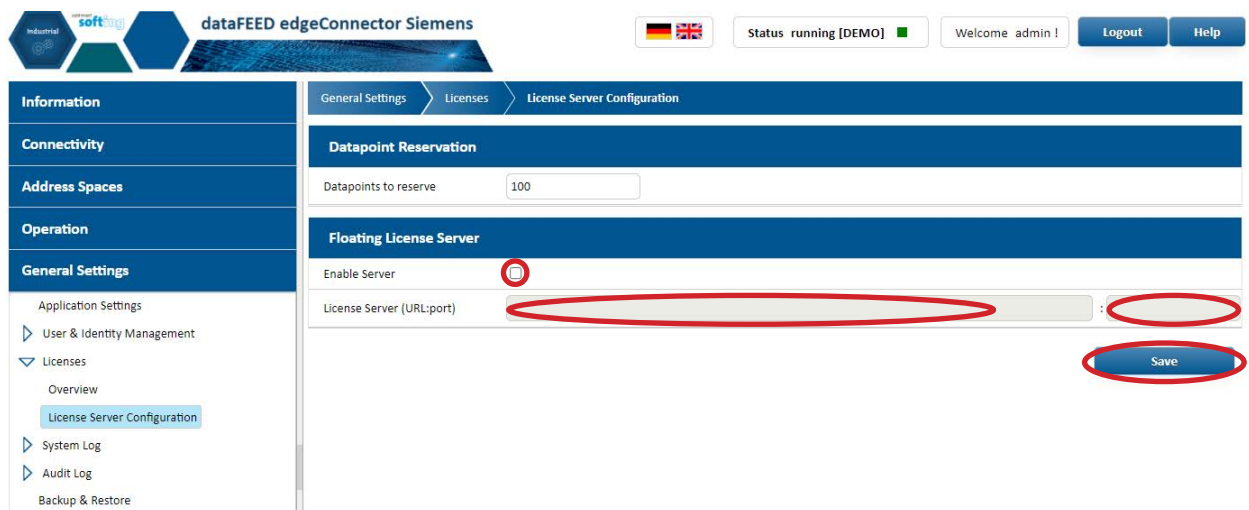
The login screen of the *edgeConnector Docker* container application is shown.



- For gaining administrator access rights enter *admin* in *Username* field and *admin* in *Password* field  
The user interface of the time-limited *edgeConnector Docker* container application demo mode is available for configuration purposes.



- Navigate to *General Settings/Licenses/License Server Configuration*



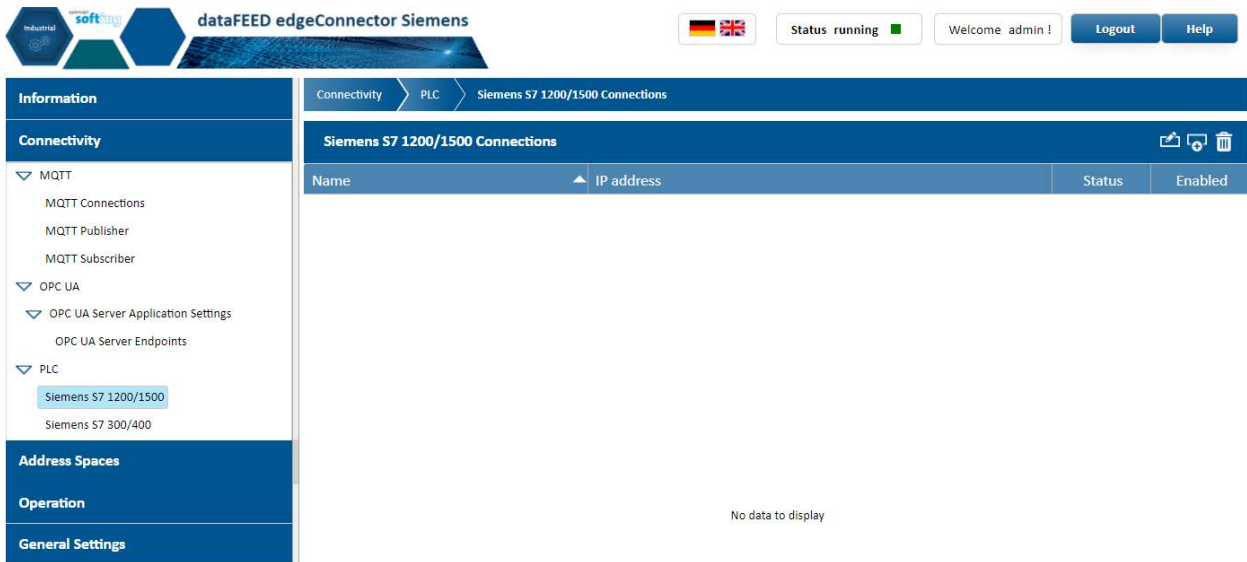
- Activate *Enable Server* Checkbox
- Enter URL of floating license server and port number *6200* in *License Server* fields
- Press *Save* button

- Navigate to *Operation/Status*



- Press *Stop* button
- Press *Start* button

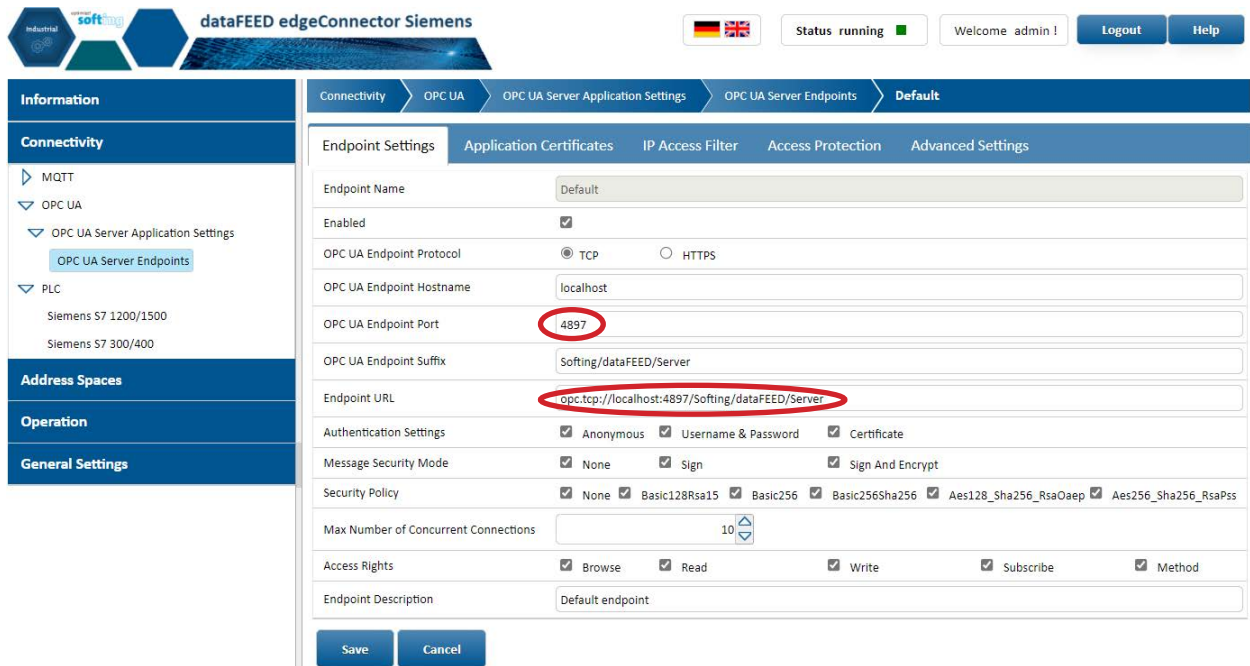
The license as available in the floating license server is applied to the *edgeConnector Docker* container application. As a result the string *[DEMO]* is not shown in the Status field any longer.



The *edgeConnector Docker* container application is available for configuration by navigating to the appropriate menu items in the *Connectivity* and *Address Spaces* sections.



- Navigate to *Connectivity/OPC UA Server Application Settings/OPC UA Server Endpoints*



- Enter port number in *OPC UA Endpoint Port* field

**NOTES:**

- The default port number in the *OPC UA Endpoint Port* field as set by the **edgeConnector Docker** container application is 4897. This port number is intended to be used for communication with a first OPC UA Server endpoint.  
If further OPC UA Server endpoints are configured by the **edgeConnector Docker** container application different port numbers have to be used. Thus, the **edgeConnector Docker** container application adapts the default setting of the *OPC UA Endpoint Port* field for further OPC UA Server endpoints.
- All individual port numbers defined in the *OPC UA Endpoint Port* fields for the various OPC UA Server endpoints configured by the **edgeConnector Docker** container application have to match the ports defined for the OPC UA communication of the internal Docker network using the *-p* switch in the *docker container run* command (see section 3.).

**Example:**

If the ports 4897 and 4898 should be used as OPC UA endpoint ports by the **edgeConnector Docker** container application, the according *docker container run* command has to include the switch *-p <external OPC UA communication port 1>:4897* and *-p <external OPC UA communication port 2>:4898*.

- Copy *Endpoint URL* field for use in OPC UA Client application

**NOTE:**

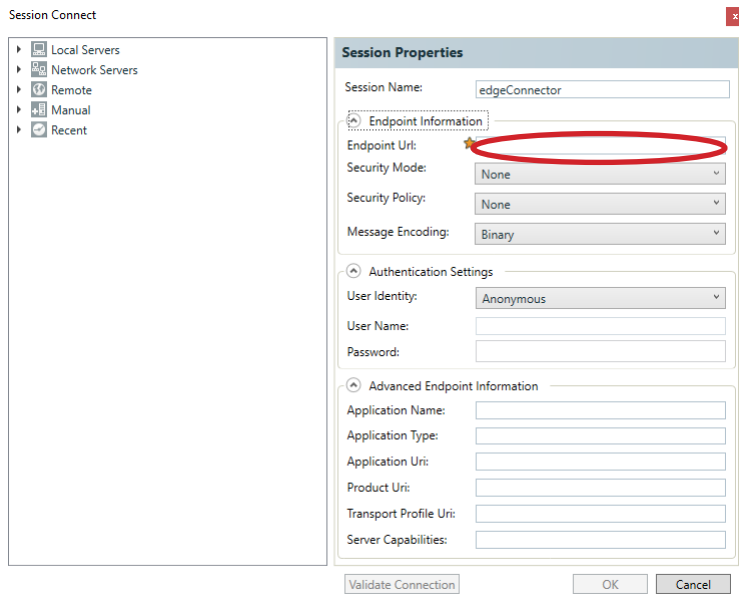
The Endpoint URL field itself cannot be edited. Rather, it is composed of the entries in the previous fields and, in particular, contains the port number defined in the *OPC UA Endpoint Port* field.

## 5. Access *edgeConnector* Docker Container Application Data Using OPC UA

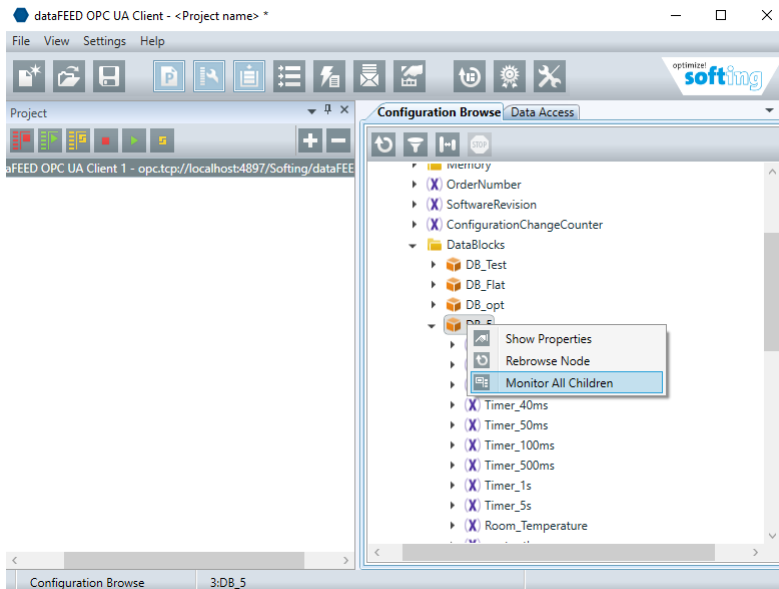
**NOTE:**

The free-of-charge *Softing OPC UA Demo Client* is used in following as an example for an OPC UA Client application.

- Open OPC UA Client



- Enter OPC UA Server endpoint URL as copied from *edgeConnector* Docker container application in *Endpoint Uri* field



- Select individual data items for OPC UA data exchange

- In *edgeConnector Docker* container application navigate to *General Settings/Licenses/Overview*

The screenshot shows the web interface for dataFEED edgeConnector Siemens. The top navigation bar includes the product name, language selection (German and English), status (running), and user information (Welcome admin!). The left sidebar contains a menu with categories like Information, Connectivity, Address Spaces, Operation, and General Settings. Under General Settings, the Licenses section is expanded, and the Overview sub-menu is selected.

The main content area is divided into two sections:

- License Server Information:** A table with columns: Product, Server, Ver..., Expires, Order ID, Options, Total, and Used. It contains one entry for 'dataFEED edgeConnector edgeData 100' with a server ID ending in ':6200', version 2.0, and 15 total licenses, 1 of which is used.
- Application License Details:** A table with columns: Type, Total, Available, Server Slots, and Server Slots Used. It shows 100 total licenses, 89 available licenses (circled in red), 500 server slots, and 100 server slots used.

The number of data items remaining in the current *edgeConnector Docker* container application license is shown.

## 6. Running Multiple *edgeConnector Docker* Container Applications in Parallel

It is possible to run multiple *edgeConnector Docker* container applications in parallel. Here, several *docker container run* commands have to be executed in *Windows Command-Line Interpreter* or *Windows PowerShell*.

### Example:

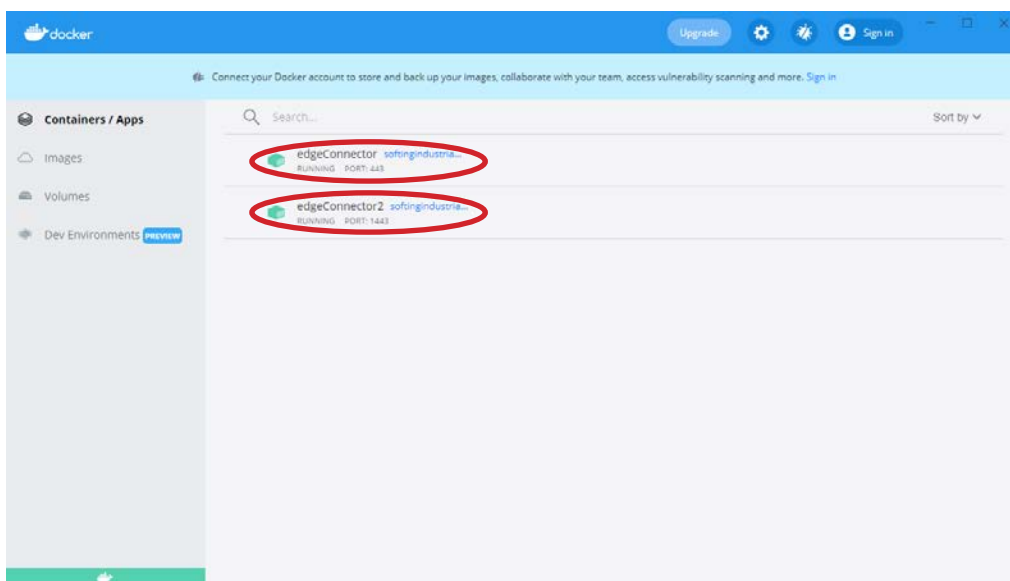
Enter the *Windows Command-Line Interpreter* respectively *Windows PowerShell* commands

```
docker container run -p 443:443 -p 8099:8099 -p 4897:4897 --name edgeConnector <edgeConnector image>
```

and

```
docker container run -p 1443:443 -p 8100:8099 -p 4898:4898 --name edgeConnector2 <edgeConnector image>
```

to start two *edgeConnector Docker* container applications in parallel.



### NOTES:

- When running multiple *edgeConnector Docker* container applications in parallel the port 443 as used for *https* communication in the virtual Docker network has to be mapped to different external ports in the local host network.
- When running multiple *edgeConnector Docker* container applications in parallel the port 8099 as used for web service communication in the virtual Docker network has to be mapped to different external ports in the local host network.
- It is essential that the individual OPC UA communication ports defined in the various *docker container run* commands match the ports of the individual OPC UA Server endpoints as configured by the *edgeConnector Docker* container applications.

### NOTE:

The given URLs have last been checked on Dec 21, 2021.

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