

# Deployment Instructions

## EdgeLink - IoT Gateway Software Container Version

Revision 1.0    Date: January 26, 2022

**ADVANTECH**

*Enabling an Intelligent Planet*

# Revision History

Date	Version	Author	Reviewer	Description
Jan. 26,2022	1.0	Lili.Zheng	Greta Lieske-Dumelle	Initial Release

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# 1. EdgeLink (Container Version)

## 1.1 Packages Included

Package Name	Content	Function
CONTAINER-edgelinek-docker-2.8.X-xxxxxxx-amd64.deb	Agent	Download EdgeLink Studio projects and start EdgeLink Container.
edgelinek_container_2.8.x_Release_xxxxxxx.tar.gz	EdgeLink Runtime	Run EdgeLink Runtime.

**Recommended environment:** Docker environment (supports Ubuntu 18.04 i386)

**Description:** Up to 100 tags can be added for a 2-hour trial of EdgeLink container as default.

**Activation method:** EdgeLink container should be activated in a physical machine rather than a virtual one. For activation method details, please contact Advantech.

## 1.2 Description of Host Port Occupation

Port Type	Port	Application	Status
UDP	6513	Agent	Occupied after the agent deb package is installed
TCP	6001	Agent	Occupied after the agent deb package is installed
TCP	502	Modbus Server	Occupied if the Modbus server is enabled
TCP	2404	IEC104 Channel 1	Occupied if the IEC104 Server(channel 1) is enabled
UDP	47808	BACnet Server	Occupied if the BACnet Server is enabled
TCP	504	WASCADA	Occupied if the WASCADA server is enabled
TCP	51210	OPC UA	Occupied if the OPC UA Sever is enabled
TCP	443	WebService	HTTPS occupies this port
TCP	41100	eclr	Occupied if the eclr is enabled

## 1.3 Instructions

### 1. Build a Docker environment for EdgeLink Runtime

#### 1) Install Docker in Ubuntu system

Reference link: <https://docs.docker.com/engine/install/ubuntu/>

#### 2) Install EdgeLink Runtime Docker image

##### Step 1: Download EdgeLink-Docker Agent

<https://www.advantech.com.cn/zh-cn/support/details/firmware?id=1-28S1J4D>



##### Step 2: Install the Agent package. (If failed, repeat this step after Step 5)

```
Apt install ./CONTAINER-edgelinek-docker-2.8.0-202112290544-amd64.deb
```

*Note: CONTAINER-edgelinek-docker-2.8.0-202112290544-amd64.deb is your file name.*

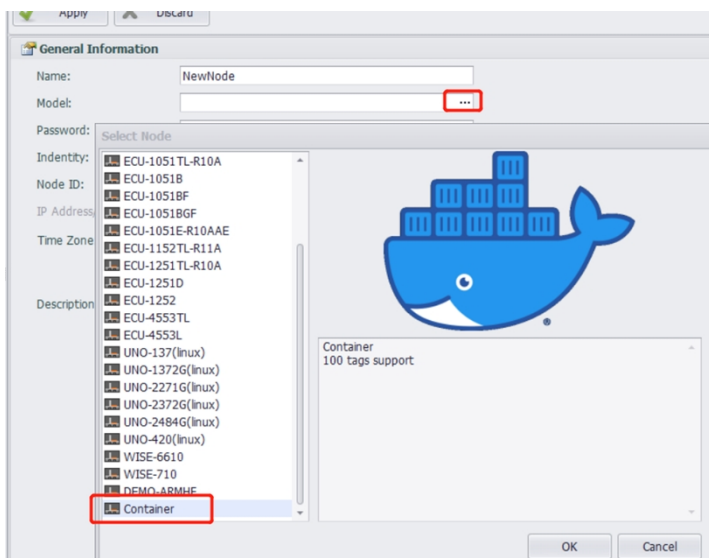
##### Step 3: Set up soft links for serial ports

For EdgeLink, /dev/ttyAP0 is COM1, /dev/ttyAP1 is COM2 and so on.

For example, I want /dev/ttyS0 to be EdgeLink COM1. I should use "sudo ln -s /dev/ttyS0 /dev/ttyAP0" to set up the soft link. (Please make sure there is no /dev/ttyAP0 in you system before you set up the soft link)

### 2. Download project file by EdgeLink Studio

#### 1) Create a project and set the project node type to 'Container.'



The IP address is the Ubuntu OS IP running the Docker environment.

The screenshot shows a configuration window titled "General Information". It contains several fields: "Name" (NewNode), "Model" (Container), "Password" (masked with asterisks), "Identity" (IP Address/Domain Name), "IP Address/Domain Name" (192.168.23.132, highlighted with a red box), "Time Zone" ((UTC) Coordinated Universal Time), "Docker Repository" (wisedgelink/1386), "Docker Tag" (v2.8.0), and "Description" (empty text area). There is a "copy" button next to the Docker Tag field.

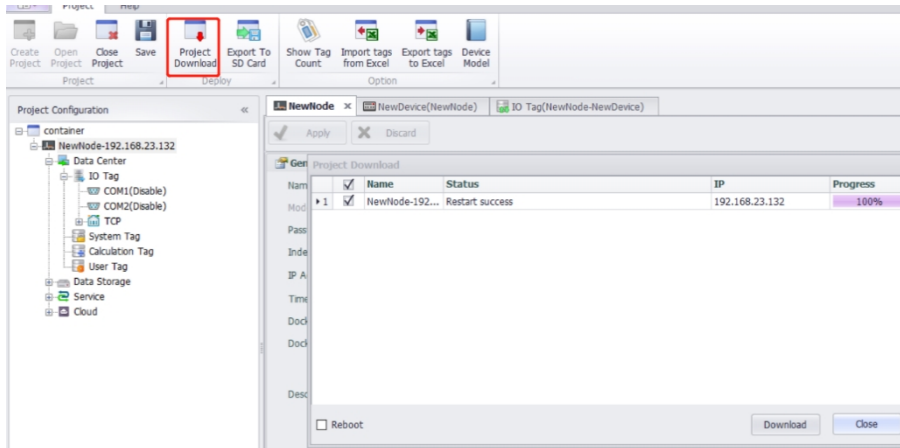
- 2) Configure the required functions in the project. (For help, refer to the Project Implementation section).

The following is an example of collecting data from a Modbus/TCP slave device:

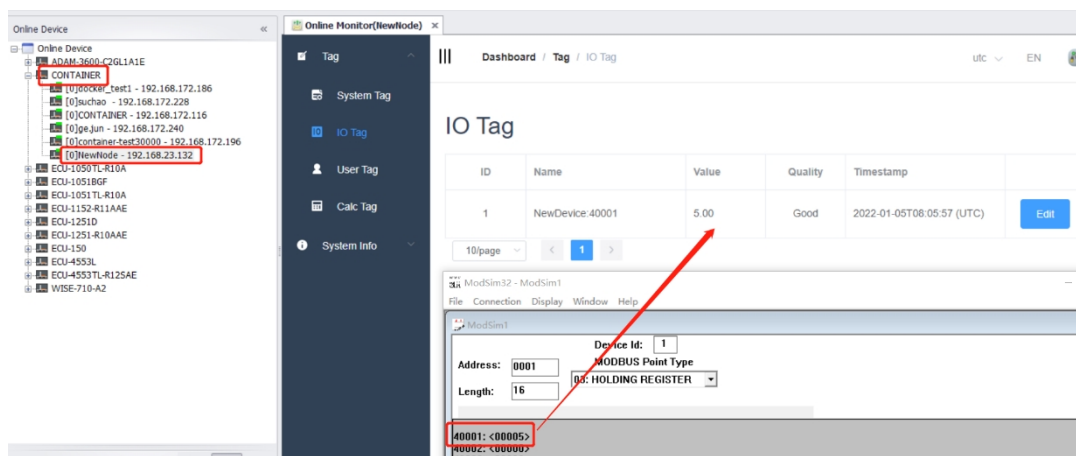
It simulates a Modbus/TCP device by Modsim on the PC, and then collects data by EdgeLink (Container version).

The screenshot shows a configuration window titled "NewDevice(NewNode)\*". It has a tree view on the left and a configuration panel on the right. The tree view shows a "container" with a "NewNode-192.168.23.132" node, which has a "Data Center" sub-node containing "IO Tag", "COM1(Disable)", "COM2(Disable)", "TCP" (highlighted with a red box), "System Tag", "Calculation Tag", and "User Tag". Below the tree are "Data Storage", "Service", and "Cloud" nodes. The configuration panel has "Apply" and "Discard" buttons at the top. It is divided into sections: "General Information" (with "Enable" checked, "Name" as NewDevice, "Device Type" as Modicon Modbus Series (Modbus TCP), "Unit Number" as 1, "Tag Write Type" as Single Write, and "Add device name as prefix to IO tags" checked), "TCP/IP" (with "IP/Domain" as 192.168.23.1 and "Port Number" as 502), and "Extention Properties" (with "Device Address (if other than Unit Number)" unchecked).

- 3) Download the project after the configuration is complete.



### 3. View the results



### 4. Container checking command

#### 1) edgelinek-docker service management

1 stop edgelinek-docker

`systemctl stop edgelinek-docker`

2 start edgelinek-docker

`systemctl start edgelinek-docker`

3 restart edgelinek-docker

`systemctl restart edgelinek-docker`

4 boot disable edgelinek-docker

`systemctl disable edgelinek-docker`

5 boot enable edgelinek-docker

`systemctl enable edgelinek-docker`

#### 2) Check Container status

`docker ps`

- 3) Enter the container in the host computer.

Because container share the network with the host computer (this Ubuntu). Needs the command below to enter.

```
docker exec -it edgelink /bin/bash
```

```
fuyu@ubuntu:~$ docker exec -it edgelink /bin/bash
root@ubuntu:/#
```

Using "exit" to exit the container to the host PC.

```
fuyu@ubuntu:~$ docker exec -it edgelink /bin/bash
root@ubuntu:/# exit
exit
fuyu@ubuntu:~$
```

- 4) Check the system log of container (you should enter the container first)

```
tail -F /var/log/syslog
```

```
root@ubuntu:/# tail -F /var/log/syslog
Jan  6 05:58:23 ubuntu DataCenter: [elic_mgr_sdk.c:339:elic_mgr_entity_validate
] no validate_result field
Jan  6 05:58:30 ubuntu DataCollector: DevWebAccess comm_stop: StopDriver on MOD
_DEV
Jan  6 05:58:31 ubuntu DataCollector: DevWebAccess comm_start: StartDriver on M
OD_DEV
Jan  6 05:58:33 ubuntu DataCenter: [elic_mgr_sdk.c:339:elic_mgr_entity_validate
] no validate_result field
Jan  6 05:58:40 ubuntu DataCollector: DevWebAccess comm_stop: StopDriver on MOD
_DEV
```