



Milesight DeviceHub

Installation Guide



Preface

This guide teaches you how to install Milesight on-premises DeviceHub platform.

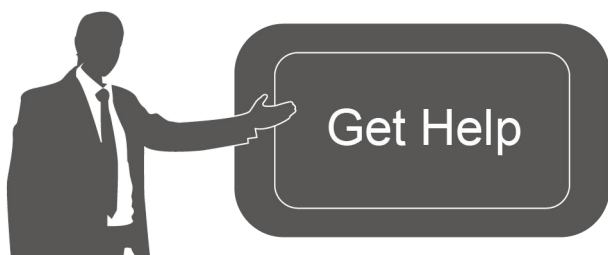
Readers

This guide is intended for the following users:

- Distributors
- Network Planners
- On-site technical support and maintenance personnel
- Network administrators responsible for network configuration and maintenance

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Revision History

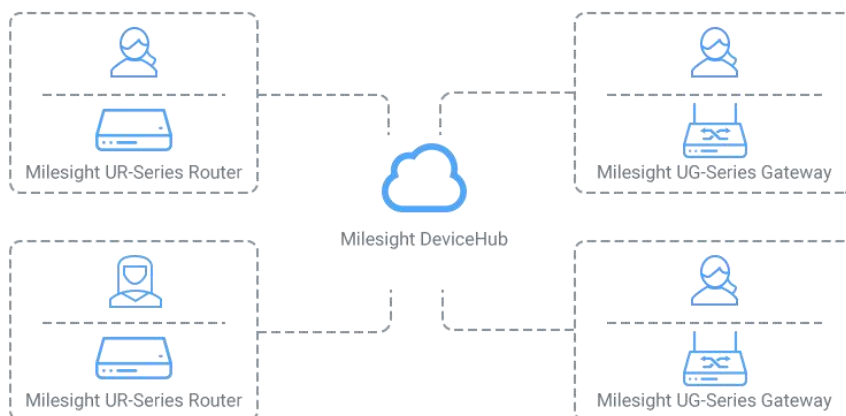
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Introduction

Milesight DeviceHub provides a high-efficiency, low maintenance On-Premises solution to allow easily deployment of Milesight IoT devices across multiple locations, reducing complexity and increasing productivity. This guide will describe how to install DeviceHub program.



(*Milesight routers and gateways compatibility are under development.)

System Requirements

Hardware

It is suggested to use a server that fits the following requirements:

For 500 devices and 2000 LoRaWAN end devices

- CPU: 4 Cores, 3.2 GHz
- RAM: 8 GB
- Disk: 512 GB
- Bandwidth: $\geq 100\text{MBps}$

For 1000 devices and 2000 LoRaWAN end devices

- CPU: 8 Cores, 3.2 GHz
- RAM: 16 GB
- Disk: 1 TB
- Bandwidth: $\geq 100\text{MBps}$

Note: the RAM should be more than 4GB, otherwise the DeviceHub will not work well.

Software

- Operating System: Ubuntu Server 22.04
- Recommended Browser: Chrome

Operation Guide


Requirements

- Ubuntu Server
- DeviceHub Installation Package: downloaded from Milesight Website
- WinSCP
- Putty (or other SSH tool)

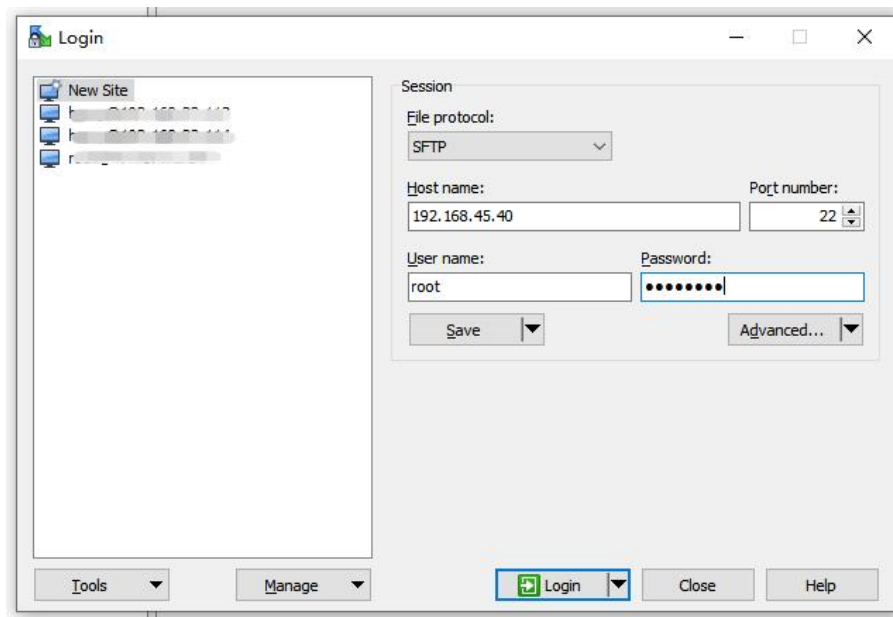
DeviceHub Installation

Note: Take “Devicehubv2_ubuntu22.04-1.0.1.tar.gz” as an example in providing the the commands below, please use the commands according to real installation package name.

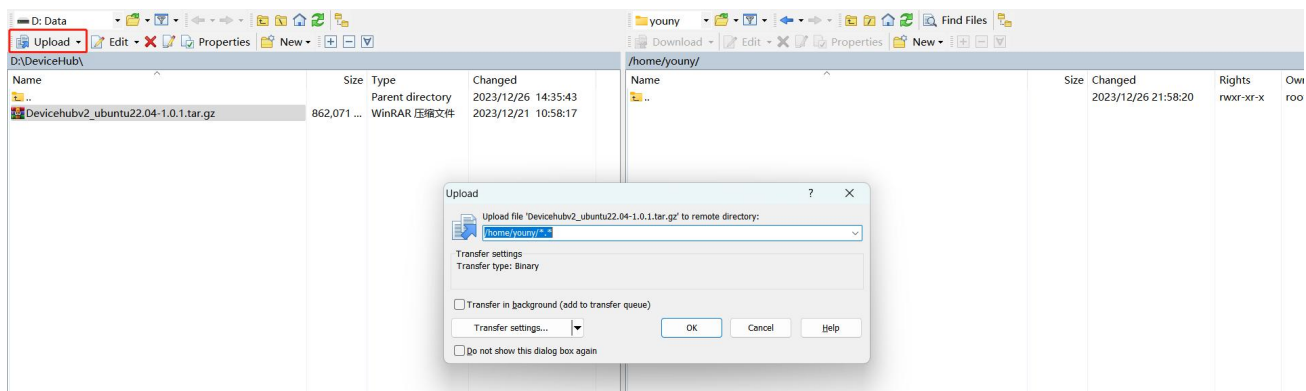
1. Download the DeviceHub and install package in your computer.

 Devicehubv2_ubuntu22.04-1.0.1.tar.gz

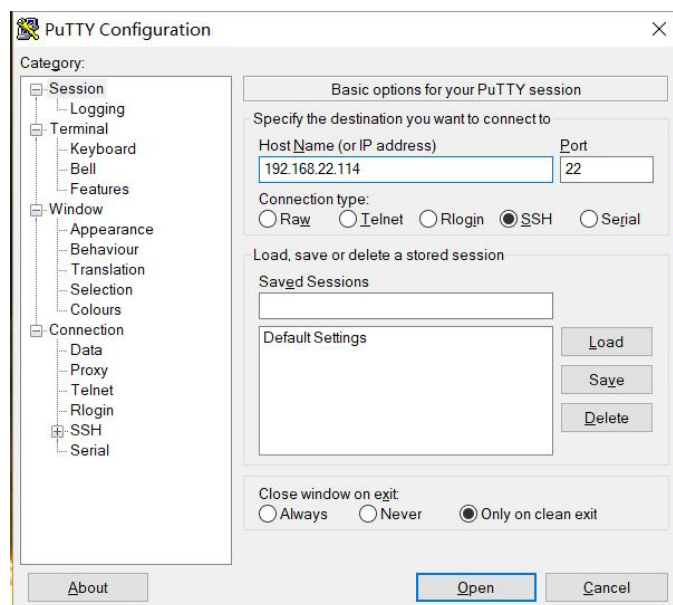
2. Open WinSCP and set up a session between WinSCP and server.



3. Select the DeviceHub installation package and click “Upload”, select the server path and click “OK” to upload.



4. Log in the server via Putty or other SSH tools.



5. Ensure the network tool is installed in the server. You can type *ifconfig* to double check. If not found, execute *apt install net-tools* to install it.

```
root@yuxy:/etc/netplan# ifconfig

Command 'ifconfig' not found, but can be installed with:

apt install net-tools

root@yuxy:/etc/netplan#
```

6. Navigate to the path including DeviceHub installation package to unzip it:

```
tar -zxvf Devicehubv2_ubuntu22.04-1.0.1.tar.gz
```

```

youny@youny:~$ ls
Devicehubv2_ubuntu22.04-1.0.1.tar.gz
youny@youny:~$ tar -zxvf Devicehubv2_ubuntu22.04-1.0.1.tar.gz
Devicehubv2_ubuntu22.04-1.0.1/
Devicehubv2_ubuntu22.04-1.0.1/gen_cert.sh
Devicehubv2_ubuntu22.04-1.0.1/docker-compose.yml
Devicehubv2_ubuntu22.04-1.0.1/redis/
Devicehubv2_ubuntu22.04-1.0.1/redis/config/

```

7. Navigate to the DeviceHub folder, execute the deploy script:

```

cd Devicehubv2_ubuntu22.04-1.0.1
./deploy.sh

```

Select option 7 to install docker. If the server has already installed docker, skip this step.

After installing, the following message will show.

```

youny@youny:~$ cd Devicehubv2_ubuntu22.04-1.0.1
youny@youny:~/Devicehubv2_ubuntu22.04-1.0.1$ ./deploy.sh
docker is not installed, please install docker first.
docker compose or docker-compose are not installed, please install or update docker-compsoe first
You can use the method we provide for offline installation of Docker.
If you have installed Docker using our provided method and wish to uninstall it later, please use the uninstallation method we provide as well.
choice:
1. install
2. upgrade
3. export log
4. backup
5. restore
6. uninstall
7. install docker
8. uninstall docker
9. restart container
10. reload container
q. exit
please input your choice: 7
start installing docker
[sudo] password for youny:
docker/
docker/docker
docker/docker-init
docker/dockerd
docker/runc
docker/ctr
docker/containerd-shim-runc-v2
docker/containerd
docker/docker-proxy
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /lib/systemd/system/docker.service.
finish installing docker

```

8. Execute the deploy script again, select option 1 to install DeviceHub.

```

youny@youny:~/Devicehubv2_ubuntu22.04-1.0.1$ ./deploy.sh
choice:
1. install
2. upgrade
3. export log
4. backup
5. restore
6. uninstall
7. install docker
8. uninstall docker
9. restart container
10. reload container
q. exit
please input your choice: 1

```

After installing, the following message will appear.

```

d89441f83ad5: Loading layer [=====>] 10.75kB/10.75kB
d7276986b5a2: Loading layer [=====>] 4.151MB/4.151MB
59982b672e23: Loading layer [=====>] 60.16MB/60.16MB
4878d82c6612: Loading layer [=====>] 1.536kB/1.536kB
5f70bf18a086: Loading layer [=====>] 1.024kB/1.024kB
a165421a97e2: Loading layer [=====>] 4.096kB/4.096kB
Loaded image: redis:7.2.1
63290f9c9e52: Loading layer [=====>] 84.03MB/84.03MB
781f046ab200: Loading layer [=====>] 5.12kB/5.12kB
d6f8893d981d: Loading layer [=====>] 159.1MB/159.1MB
cac5acac741b: Loading layer [=====>] 9.216kB/9.216kB
47ee15af792b: Loading layer [=====>] 4.153MB/4.153MB
5f70bf18a086: Loading layer [=====>] 1.024kB/1.024kB
5412cbb18fa0: Loading layer [=====>] 159.5MB/159.5MB
Loaded image: emqx/emqx:5.1.6
[+] Running 4/0
  Network devicehubv2_default Created
  Container emqx Started
  Container mysql Started
  Container postgres Started
  Container redis Started
  Container devicehub Started
  Container lns Started
  Container nginx Started
All containers are running.
wait for initialization of devicehub 0 s
wait for initialization of devicehub 5 s
wait for initialization of devicehub 10 s
wait for initialization of devicehub 15 s
wait for initialization of devicehub 20 s
wait for initialization of devicehub 25 s
wait for initialization of devicehub 30 s
wait for initialization of devicehub 35 s
wait for initialization of devicehub 40 s
devicehub start successfully
Devicehubv2 is installed to /var/lib/devicehubv2, you can delete currenct directory now.

```

Users can also use command below to check if the DeviceHub is installed well.

```

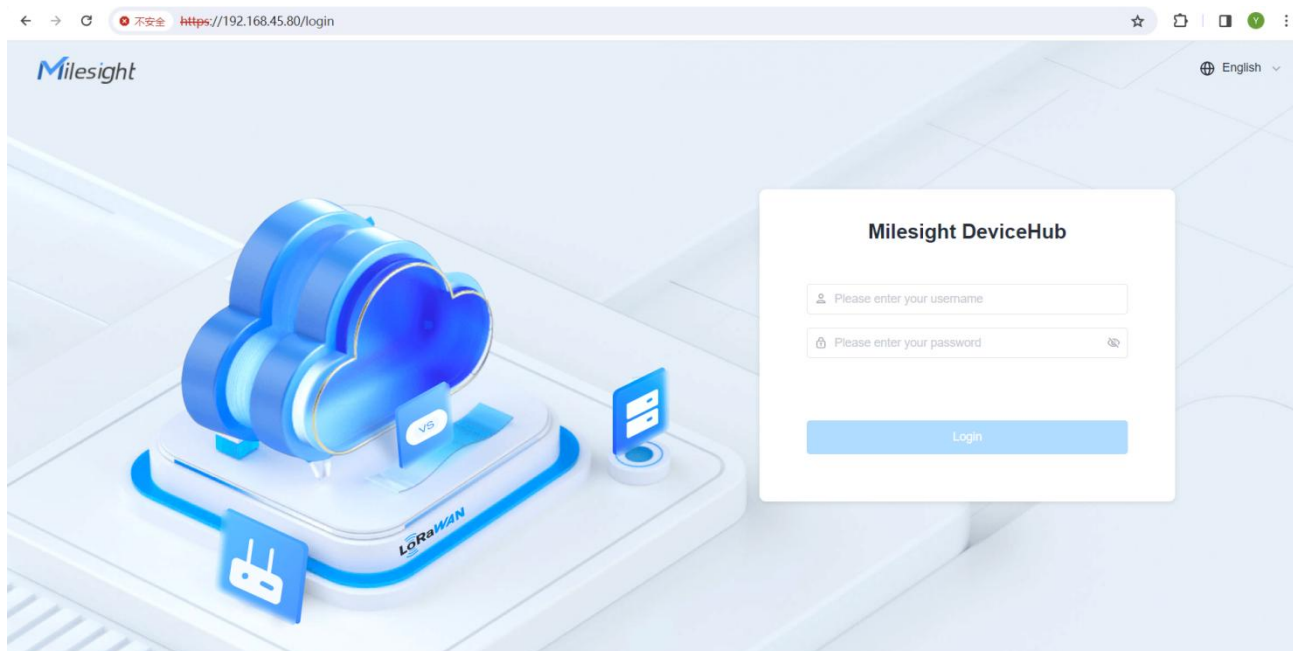
youny@youny:~/Devicehubv2_ubuntu22.04-1.0.1$ sudo docker image ls
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
lns                  1.0.1              479e8d398daa       5 days ago         189MB
devicehub            1.0.1              1b748edab2a1       5 days ago         412MB
mysql                8.0                96bc8cf3633b       2 months ago       582MB
nginx                1.25.2-alpine3.18  661daf9bcac8       2 months ago       42.6MB
redis                7.2.1              5b0542ad1e77       3 months ago       138MB
emqx/emqx            5.1.6              369cf6d7ddb0       4 months ago       399MB
postgres             9.6.8              7df8faa6c830       5 years ago        234MB

```

9. After installing, log in the DeviceHub with IP address <http://xx.xx.xx.xx>. The default login info:

Username: **admin**

Password: **password**



DeviceHub Uninstallation

1. Navigate to the DeviceHub folder, execute the deploy script:

```
cd /var/lib/devicehubv2/
./deploy.sh
```

Select option 6 to uninstall the DeviceHub. After uninstalling, the following message will appear.

```
Untagged: postgres:9.6.8
Deleted: sha256:7df8faa6c830fc39b3bce792dab3a2426b6e987fa75785b649b712ca68b53f82
Deleted: sha256:9b1b43c0b005e04de5faca213c22c49e96962c8d357cc89626e13d3f34df2a8f
Deleted: sha256:9bed08874e903a5da29fb00c7781f6f6dc54cff9fbd3a9b32aff9231e23669db
Deleted: sha256:f61ed5778d1ab3fd7c510a5406d07426296eda815a5d288b1af8e01d5e8f7b91
Deleted: sha256:c5b2e891049c7c3d23b484ff0481681262d0ae56c269687ab335673d75518f9c
Deleted: sha256:03adbfb497f41b236905c103b4874e771c5aed7729cf478c889feaffe23a52ec
Deleted: sha256:72bbbb43a8a99eeb01d779ec63199c6f7387795eee931a305f8f49c10c23cb27
Deleted: sha256:0d7aab5e593df8fe2082c690f8193c43fecc44f89178d8853098ee73a6009b35
Deleted: sha256:c42dd1ff7d415fbf50c84640388a90fdf5c4a7b1a7cde7cd34d91968e3ebdb73
Deleted: sha256:176c6fd9ed3db015036a8acf5bcbe159ff6d4aaa18a12ab69d70d35ebc99c401
Deleted: sha256:3bdc7a6a4a6a355769b54352a7368ec43d1693495bdb11c17b40af875591b9d
Deleted: sha256:12bc7f2daa19b36bb8701e1bb99c4c6592d8e2c19c59583f2f618054dba68aeb
Deleted: sha256:97145ad59e826dc7a9bee0dde677ef47aa3a07e7e770657b6fea823792975edf
Deleted: sha256:d626a8ad97a1f9c1f2c4db3814751ada64f60aed927764a3f994fcd88363b659
All Devicehubv2 docker images has been removed, do you want to uninstall docker too? (yes or no)
```

Type "yes" to continue uninstalling docker or "no" to complete the devicehub uninstallation.

```
no
uninstall devicehub v2 successfully!
```

Users can also use below command to check if the DeviceHub is removed.

```
root@youny:/home/youny/Devicehubv2_ubuntu22.04-1.0.1# sudo docker image ls
REPOSITORY TAG IMAGE ID CREATED SIZE
```

Backup and Restore

When transferring the DeviceHub program from one server to another, please refer below steps to backup the data from old server and restore it to the new server.

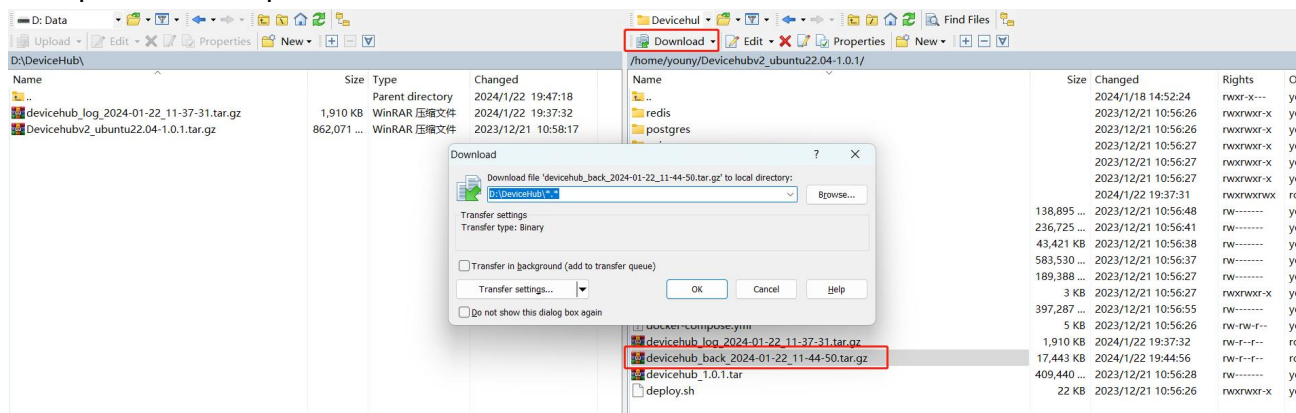
1. Navigate to the DeviceHub folder of old server, execute the deploy script:

```
cd /var/lib/devicehubv2/  
./deploy.sh
```

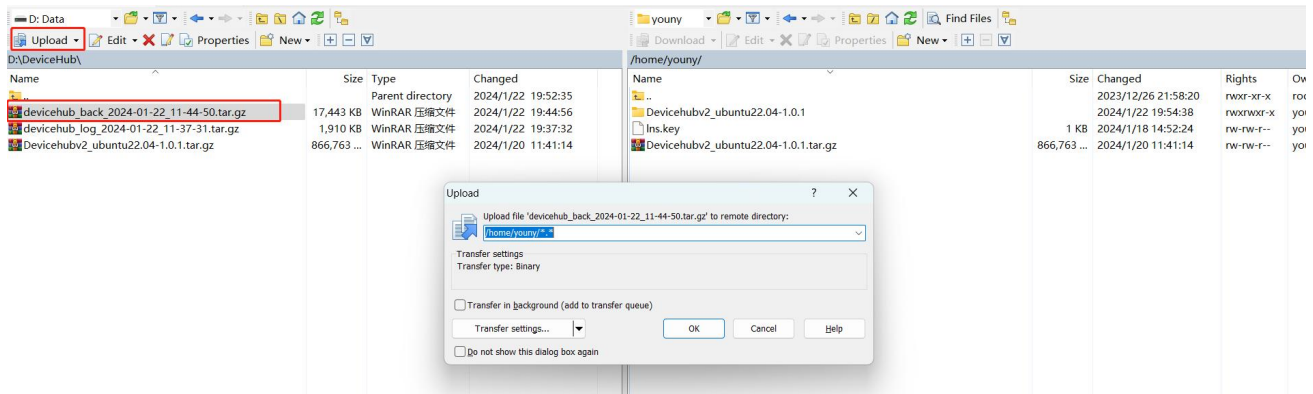
Select option 4 to backup the data. After backing up, the following message will appear.

```
root@youny:/home/youny/Devicehubv2_ubuntu22.04-1.0.1# ./deploy.sh  
choice:  
1. install  
2. upgrade  
3. export log  
4. backup  
5. restore  
6. uninstall  
7. install docker  
8. uninstall docker  
9. restart container  
10. reload container  
q. exit  
please input your choice: 4  
start to backup, please wait...  
backup finished!
```

2. Export the backup data file from old server via WinSCP or other tool:



3. Install DeviceHub program to the new server according to [DeviceHub Installation](#).
4. Import the backup data file to the new server via WinSCP or other tool:



5. Navigate to the DeviceHub folder of new server, execute the deploy script:

```
cd /var/lib/devicehubv2/
./deploy.sh
```

Select option 5 to restore the data, type the path of backup data file, then click **Enter** to restore the data.

```
iot@iot:/var/lib/devicehubv2$ ./deploy.sh
[sudo] password for iot:
choice:
1. install
2. upgrade
3. export log
4. backup
5. restore
6. uninstall
7. install docker
8. uninstall docker
9. restart container
10. reload container
q. exit
please input your choice: 5
Please note that the current operation will erase existing data.
Please make a backup beforehand!
Please input the path of backup:
(input factory to do factory reset)
/home/iot/devicehub_back_2023-12-21_19-49-46.tar.gz
[+] Running 8/8
  ✓ Container nginx      Removed
  ✓ Container lns         Removed
  ✓ Container devicehub   Removed
  ✓ Container mysql       Removed
  ✓ Container redis       Removed
  ✓ Container emqx        Removed
  ✓ Container postgres    Removed
  ✓ Network devicehubv2_default Removed
[+] Running 8/8
  ✓ Network devicehubv2_default Creat... 1.2s
  ✓ Container redis        Started    5.2s
  ✓ Container emqx         Started    5.3s
  ✓ Container mysql        Started    5.1s
  ✓ Container postgres     Started    5.1s
  ✓ Container lns          Started    2.4s
  ✓ Container devicehub    Started    2.4s
  ✓ Container nginx        Started    0.5s
[+] Restarting 1/1
  ✓ Container lns          Started    40.7s
All containers are running.
devicehub start successfully
```

Export Log

DeviceHub program supports exporting logs for troubleshooting.

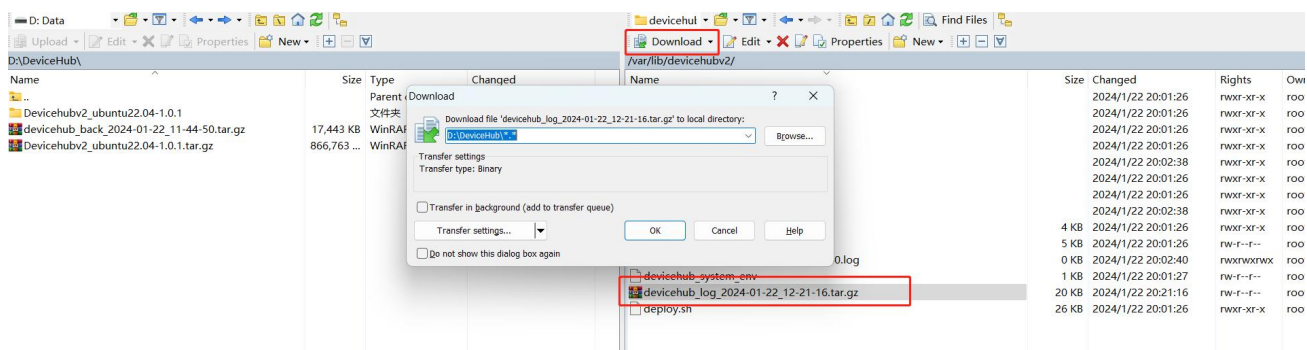
1. Navigate to the DeviceHub folder of old server, execute the deploy script:

```
cd /var/lib/devicehubv2/
./deploy.sh
```

Select option 3 to export the log files. After exporting, the following message will appear.

```
root@youny:/var/lib/devicehubv2# ./deploy.sh
Use 192.168.45.80 as Server Address
choice:
1. install
2. upgrade
3. export log
4. backup
5. restore
6. uninstall
7. install docker
8. uninstall docker
9. restart container
10. reload container
11. uninstall_docker_images
q. exit
please input your choice: 3
How many days of logs do you need?
(empty input means 7 days, all means all logs)
3
pack log successfully
root@youny:/var/lib/devicehubv2#
```

2. Export the log files via WinSCP or other tool:



Services and Ports

In order to ensure the secured communication, here are some ports for the services:

Port	Protocol	Description
80	TCP	HTTP Service
443	TCP	HTTPS Service
1883	TCP	MQTT Service
8883	TCP	MQTTS Service
50000-50100	TCP	Remote Access Service

-END-