Step1: Factory Reset

Reset to factory default

If the unit has been installed prior, we should reset it back to default before installing ThingsPro Edge. The commands listed below is for `armhf` and UC-8100A series gateway

```
mx-set-def
```

> Note: Make sure to have a console cable connected to the device or login via ssh

Remove docker folder

```
rm -rf /overlayfs/docker /overlayfs/working/docker
```

> Note: This will wipe out all the data on the device!

Step2: Install Docker for Debain9/Stretch

https://docs.docker.com/engine/install/debian/

Installation methods

You can install Docker Engine in different ways, depending on your needs:

- Most users set up Docker's repositories and install from them, for ease of installation and upgrade tasks. This is the recommended approach, except for Raspbian.
- Some users download the DEB package and install it manually and manage upgrades completely manually. This is useful in situations such as installing Docker on air-gapped systems with no access to the internet.
- In testing and development environments, some users choose to use automated convenience scripts to install Docker. This is currently the only approach for Raspbian.

Make sure you select the right architecture

x86_64 / amd64 | armhf | arm64

```
$ sudo add-apt-repository \
   "deb [arch=armhf] https://download.docker.com/linux/debian \
   $(lsb_release -cs) \
   stable"
```

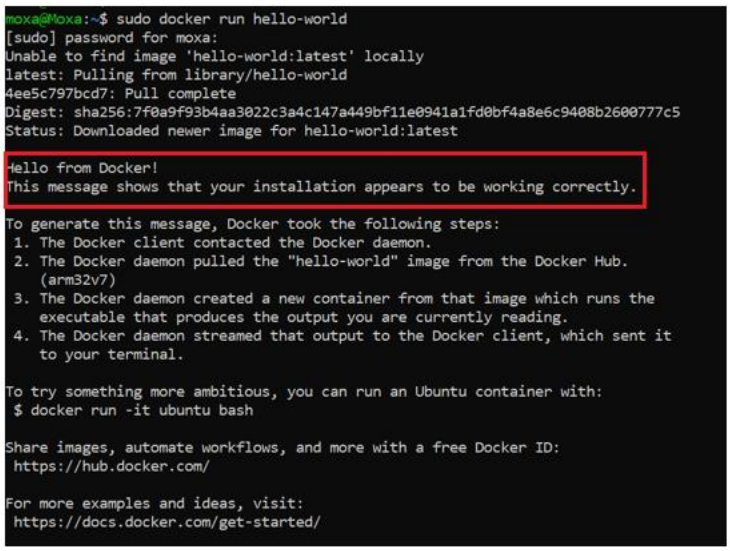
Step3: Verify that Docker Engine is installed correctly by running the hello-world image.

Verify that Docker Engine is installed correctly by running the `hello-world` image.

```
$ sudo docker run hello-world
```

This command downloads a test image and runs it in a container. When the container runs, it prints an informational message and exits.

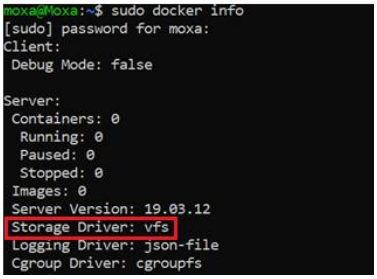
Verify that Docker Engine is installed correctly by running the hello-world image.



Step4: Change Docker Storage Driver

http://docs.docker.oeynet.com/engine/userguide/storagedriver/selectadriver/#docker-ce

The default storage driver is vfs.



vfs is not recommended:

The vfs storage driver is intended for testing purposes, and for situations where no copy-on-write filesystem can be used. Performance of this storage driver is poor, and is not generally recommended for production use.

Overlay2 is the newest one.

The overlay2 driver can be supported from Linux kernel 4.0 onwards. Moxa UC-8112A has Linux kernel 4.4.0.

```
root@Moxa:~# hostnamectl
   Static hostname: Moxa
         Icon name: computer
        Machine ID: a9ef07d28f424900bde31aa7152e76b5
           Boot ID: 21ab8fe4f0614323b13aa4bd5880d9cb
  Operating System: Debian GNU/Linux 9 (stretch)
            Kernel: Linux 4.4.0-cip-uc8100a-me
      Architecture: arm
root@Moxa:~#
```

Overwrite the /etc/docker/daemon.json file (Note: if not exists create a new one)

{"graph":"/overlayfs/docker","iptables":false,"debug":true}
{"graph":"/overlayfs/docker","iptables":true,"debug":true}

Stop/start docker again

sudo systemctl stop docker

sudo systemctl start docker

```
root@Moxa:~# docker info
Client:
 Debug Mode: false

Server:
 Containers: 0
  Running: 0
  Paused: 0
  Stopped: 0
 Images: 0
 Server Version: 19.03.12
 Storage Driver: overlay2
```

If you are running into a daemon that fails to start; always make sure to check the logs as they may provide the information you need to resolve your situation.

journalctl -u docker.service

```
root@Moxa:~# docker info
Client:
 Debug Mode: false

Server:
 Containers: 0
  Running: 0
  Paused: 0
  Stopped: 0
 Images: 0
 Server Version: 19.03.12
 Storage Driver: overlay2
  Backing Filesystem: extfs
  Supports d_type: true
  Native Overlay Diff: true
 Logging Driver: json-file
 Cgroup Driver: cgroupfs
 Plugins:
  Volume: local
  Network: bridge host ipvlan macvlan null overlay
  Log: awslogs fluentd gcplogs gelf journald json-file local logentries splunk syslog
 Swarm: inactive
 Runtimes: runc
 Default Runtime: runc
 Init Binary: docker-init
 containerd version: 7ad184331fa3e55e52b890ea95e65ba581ae3429
 runc version: dc9208a3303feef5b3839f4323d9beb36df0a9dd
 init version: fec3683
 Security Options:
  seccomp
   Profile: default
 Kernel Version: 4.4.0-cip-uc8100a-me
 Operating System: Debian GNU/Linux 9 (stretch)
 OSType: linux
 Architecture: armv7l
 CPUs: 1
 Total Memory: 1007MiB
 Name: Moxa
 ID: 3CHT:Z5UV:PD7B:BMFC:NGNX:Q7AP:ZKNP:EDM3:MS23:DQVH:SFGL:IFX6
 Docker Root Dir: /overlayfs/docker
```