How to Setup and Configure a Physical Managed Appliance

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Prerequisites

This lesson assumes that you already have an account for the Cybus Portal and that you are authorized to pull Connectware images. If you have no valid credentials, please contact our Sales Team.

This lesson is about the installation of the Connectware on a physical device which is intended to be managed remotely. You will need a device that meets the system requirements mentioned below. In this lesson you will also need a memory stick of at least 4 GB for the installation. If you want to install and manage the connectware locally, check out the lesson on Installing a Self Hosted Connectware.

To understand the basic concepts of the Connectware, please check out the Technical Overview lesson.

Which hardware is applicable for the Connectware?

The device you want to install the Connectware on should be an IPC (Industrial PC) which has to meet the following system requirements:

- x86 architecture based system
- 4 GB RAM
- 32 GB of free space

Please note: ARM-based computing platforms such as RaspberryPi do not meet this requirement and are not supported at this point in time.

What is a Managed Appliance?

A managed appliance is an instance of the Connectware which reports its status to the Cybus Portal, where the system can be monitored as well as remotely updated or restarted. In contrast to the managed appliance, a self hosted Appliance is not supervised by the Cybus Portal and requires direct access to manage or update the Connectware. Deploying multiple managed appliances comes with the advantage of having a single up-to-date dashboard reporting connection or system errors of all instances.

Install a Physical Managed Appliance

Installing your managed appliance will commence in the Cybus Portal. Cybus Portal is a website that enables customers to manage their Cybus licenses and appliances and is also the springboard for installation of the Connectware. If you want to learn how to get access to Cybus Portal and obtain a Connectware license, please get in touch with the Sales Team.

1) Once you have logged in to Cybus Portal switch to *Managed Appliances.* If this is your first installation you will see an empty list. To create a new one click the `(+)` button in the upper right corner.

2) Fill out the Create Appliance form. Give it a name and choose the Connectware License to apply for this installation. If there is no item in the drop-down list, no license is available. Next choose the Connectware Version. If you are not sure, which version is suitable for your case, choose the recommended version or contact the Customer Support. Since this lesson is about physical managed appliances we choose `Physical` as *Appliance Type*. Choose `Virtual` if you want to run your Connectware in a virtual machine.

Click *Create* to confirm this dialogue.

Create Appliance

Name

Demo Appliance

Connectware License

MA_License_200706 ▼

Connectware Version

1.0.2 ▼

Appliance Type

Physical ▼

CANCEL   CREATE

3) The newly created appliance does now appear in the list. Click it to open its details view.

4) Your appliance is not available since it has not yet been installed. Click the *Install*-button (highlighted in the image below) to open the dialogue which will guide you through the installation.

Managed Appliance

Demo Appliance

Appliance has not yet been installed, to install click the install button in the appliance toolbar in the right hand corner.

Status	Last Seen	Connectware Version	OS Version	Associated License
Offline	Never seen	1.0.2	N/A	MA_License_200706
Health	Type			
Unavailable	Physical			

Metadata Tags

Key	Value

5) The dialogue will present the section *Create Installer USB stick* to you. Download the Installer Image for your appliances and download Etcher, to write the image to your USB stick.

6) Mount your USB stick, start Etcher and choose the downloaded image and the target device. Start flashing and wait until complete.
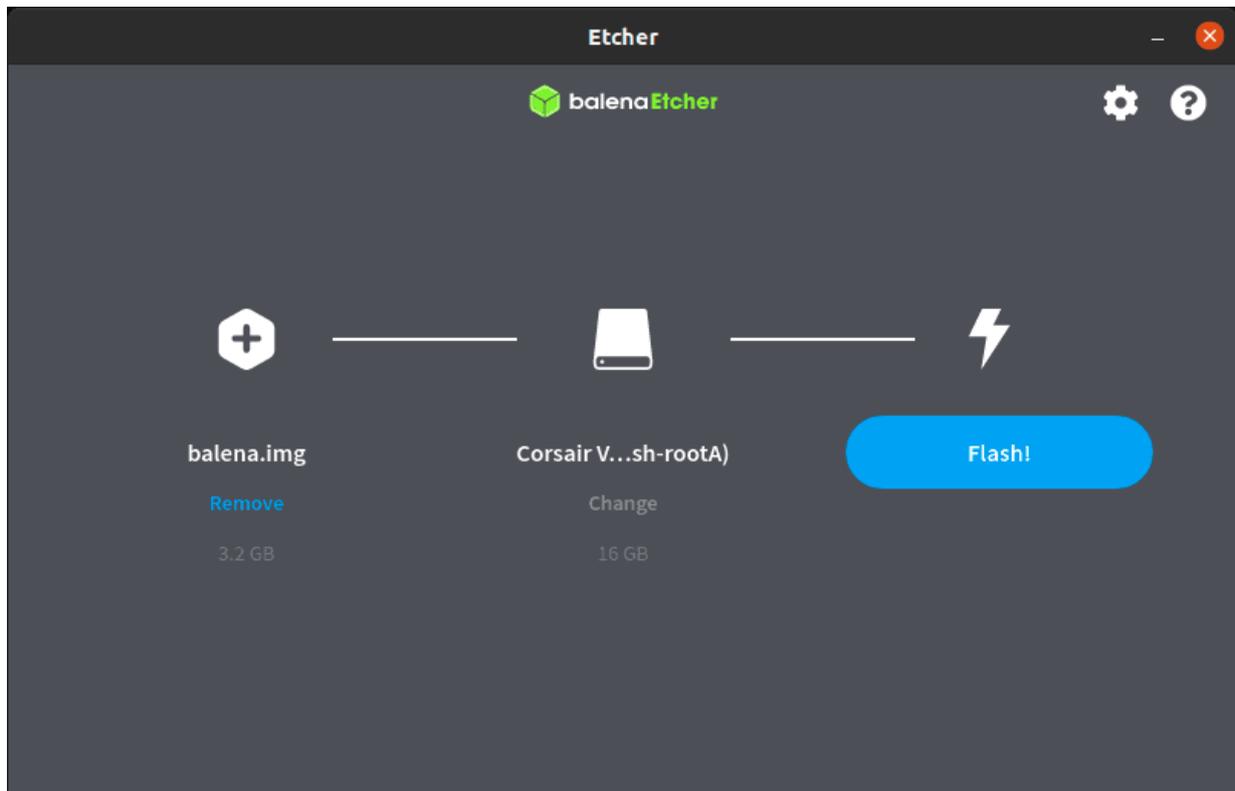
7) Next click the section *Configure Appliance* in the installation dialogue and download the configuration file. Replace the file *config.json* you will find at root path of the USB stick with the just downloaded file.

8) Click the next section *Configure Network Settings*. If you are using a DHCP server in your network you can omit this section and continue with the next step.
Otherwise fill out the form with your desired network settings. Make sure to configure the right *Interface Name* which will probably follow the Predictable Interface Naming Scheme. Define the static IP address of the device and the CIDR subnet mask as well as the Gateway and DNS, all according to your network specifications.

After filling out the form click the button *Download Static IP Config* and copy the file ip4conf to your installer USB stick on path `/system-connections`.

9) Click the next section *Configure HTTP Proxy* Settings. If your appliance requires a proxy, use the configuration here. If your appliance does not then skip this section.

Fill in the details of your proxy, then click the button *Download HTTP Proxy Settings* and add this file to your installer USB Stick at path `/system-proxy`.

10) Click the next section *Flash Physical Appliance*.

Follow the steps displayed by the installation guide. The device will automatically be flashed with the image from the USB stick as soon as you power it on. This will take some minutes. During the installation the Cybus logo will be displayed on white background. When the screen turns black again, the device is shut down.

Verify Installation

After having removed the USB stick, power on the device again. While booting it will present the Cybus logo on white background. Afterwards the system overview screen will be displayed and should look similar to this:

Device successfully registered at Cybus Portal		
Configuration files used		
□□/mnt/boot/config.json		

https://hub.docker.com/	Reachable				Supervisor State	OK		
https://registry.cybus.io	Reachable				IP Address	192.168.0.87		
https://portal.cybus.io	Reachable				OS Version	balenaOS 2.31.2+rev1		
https://api.mas.cybus.io	Reachable				Device Name	Marius Test		
https://vpn.mas.cybus.io	Reachable				Application ID	1390049		
https://registry.mas.cybus.io	Reachable				Application Name	null		
https://delta.mas.cybus.io	Reachable				Device ID	2652809		
https://registry2.balena-cloud.com	Reachable				System Time	5/11/2020, 6:38:56 AM		
https://vpn.balena-cloud.com	Reachable				Up Time	11 hours 23 minutes 21 seconds		
https://api.balena-cloud.com	Reachable				Time Zone	Coordinated Universal Time		

Interface	IPV4	Type	Status	Routes -	- Routes	DNS servers	Domains	Tx	Rx
enp2s1	192.168.0.87/24	ethernet	100 (connected)	dst = 0.0.0.0/0, nh = 192.168.0.1, mt = 100 dst = 192.168.0.0/24, nh = 0.0.0.0, mt = 100		192.168.0.1		13.2 MB	37.9 MB
resin-dns	10.114.102.1/24	bridge	10 (unmanaged)	dst = 10.114.102.0/24, nh = 0.0.0.0, mt = 0				1.55 MB	0 B
resin-vpn	10.240.11.70/32	tun	10 (unmanaged)	dst = 52.4.252.97/32, nh = 0.0.0.0, mt = 0				133 kB	77 kB

Essentially if the device successfully registered at Cybus Portal, all endpoints are *Reachable* and the *Supervisor State* displays *OK*, the device is healthy and good to go.

Summary

This lesson really was a quick shot, just as quick as setting up a managed appliance can be with the Connectware. We had a short introduction to managed appliances and then jumped into the Cybus Portal which also assisted us with our mission and in the end led us to the system overview screen where we could confirm that everything was running smoothly.

Where to go from here

The Connectware offers powerful features to build and deploy applications for *gathering, filtering, forwarding, monitoring, displaying, buffering*, and all kinds of *processing* data… why not build a dashboard for instance? For guides check out more of Cybus Learn.

Cybus is a specialist for secure IIoT Edge software, headquartered in Germany. Cybus Connectware serves smart factories as a universal Edge and DevOps hub. Machine builders and providers of IIoT services use the Cybus Connectware as a software-based gateway. As early as 2017, Cybus published the first secure industrial connector for machine data according to today's DIN SPEC 27070 standard. Industry analyst Gartner named Cybus a worldwide "Cool Vendor". Today, the company counts medium-sized and large companies from numerous industrial sectors such as mechanical engineering, automotive and aviation among its customers.

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