

ALTA LABS CONTROL™ INSTALLATION GUIDE

- Minimum Firmware: Please ensure that your APs are updated to firmware 2.0g or higher, and switches are updated to 2.1c or higher. If you would like to update them without requiring setup into manage.alta.inc, simply hold down the reset button for five seconds while powering on the device, then release, and wait 1 minute for APs, and 3 minutes for switches. Ensure that the device has an ethernet connection with Internet access prior to this.
- Keep in mind that there are many variations of how an LXD/Docker image and network can be deployed, and that these instructions will not cover all use cases. Comments in **purple** indicate running commands from a shell. Anything highlighted in **purple bold** will likely be different in your setup.
- Two architectures are supported: amd64 (i.e. x86) and arm64. Replace amd64 with arm64 below if you are running the controller on an arm64 host.
- Minimum System requirements: 2 GHz processor with 2 GB RAM and 8 GB storage.

1. Download and install the controller of your choice:

a. LXD image: <https://dl.alta.inc/do-not-distribute/access/alta-control-amd64-1.0d.tar.gz>

b. Bridge your wired ethernet interface into a new bridge named "br0":

i. `ip link show eth0`

1. eth0 may be enp2s0 or enp3s0, etc.
2. Grab the MAC address after link/ether, to use in the next step

ii. Edit /etc/netplan/01-network-manager-all.yaml (replace 00:11:22:33:44:55 with the MAC address from the previous step):

```
version: 2
renderer: NetworkManager
ethernets:
  eth0:
    match:
      macaddress: 00:11:22:33:44:55
    dhcp4: false
bridges:
  br0:
    dhcp4: true
    macaddress: 00:11:22:33:44:55
    interfaces:
      - eth0
    parameters:
      forward-delay: 0
      stp: false
```

iii. Apply the configuration (sudo netplan apply), or reboot.

- c. Create your lxc bridge network:

```
lxc network create br0 parent=br0
```

- d. Import and start the container:

```
lxc image import alta-control-amd64-1.0d.tar.gz --alias control
lxc launch control -n br0 control
lxc exec control bash
ip a (to get the IP address)
```

- e. Using macvlan instead of bridging to a host bridge interface is also supported, in case you are unable to bridge to a host interface (to be run after creating the “control” container):

```
lxc config device add control eth0 nic nictype=macvlan
parent=<host-interface> name=eth0
```

2. Docker: altalabs/control:1.0d-amd64

- a. `docker pull altalabs/control:1.0d-amd64`

- b. Set up macvlan in order for the controller to set devices on the LAN (substitute with your own subnet, desired controller IP, and gateway):

```
docker network create -d macvlan --subnet=192.168.0.0/24
--ip-range=192.168.0.10/32 --gateway=192.168.0.1 -o
parent=eth0 control_net
```

- c. Start the container:

```
docker run -it --security-opt seccomp=unconfined --cgroupns host
--add-host local.manage.altalabs.com:0.0.0.255 --net=control_net
--restart=unless-stopped -v /sys/fs/cgroup/access.scope:/sys/
fs/cgroup:rw --tmpfs /run --tmpfs /run/lock --name control
altalabs/control:1.0d-amd64
```

(Please leave the 0.0.0.255 IP address as is)

- d. Detach from the container (CTRL-P, CTRL-Q), then start a shell in the container:

- i. `docker exec -it control bash`
- ii. `ip a` (to get the IP address)

3. Go to the IP address of the controller, and use your product activation code to register.

4. After you’ve clicked on the link in the email, your browser should automatically redirect to the new dynamic DNS URL.

5. Once you see the login screen on your new controller, create an account, validate it, and then use the controller as normal. Please let us know if you have any issues or questions!

Notes

If you don't bridge/macvlan the container to your LAN, it will not automatically detect and set up APs. You will need to go to the web server of the unconfigured AP, and set the URL to match your controller's hostname (including https://).

If you'd like to import the image into Hyper-V, ESXI, or any other virtualization host, the raw root filesystems can also be found at:

<https://dl.alta.inc/dev/control-amd64-1.0d.tar.gz>

<https://dl.alta.inc/dev/control-arm64-1.0d.tar.gz>

Docker issues

At present, the docker container is architected like a traditional Linux system using apt for package maintenance. This means (with the --restart=unless-stopped option) that configuration and device management will persist through host and container reboots, but not through container restarts and docker image updates. We are working to improve this.

Common Issues

If you get an error like:

Docker: **Error response from daemon: error while creating mount source path '/sys/fs/cgroup/access.scope' ...**, then your kernel or distribution may be older, and may not have cgroups v2 enabled. To enable it, add this to your kernel command line:

```
systemd.unified_cgroup_hierarchy=1
```