Workshop

Building Containerlab with cEOS-lab

How to build a lab environment with Containerlab and cEOS-lab

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CONTAINERlab

Credits and References

> Credits to Roman Dodin and other cLab contributors for making the world a better place!

This repository is based on many awesome open source repositories and some free/commercial Github features:

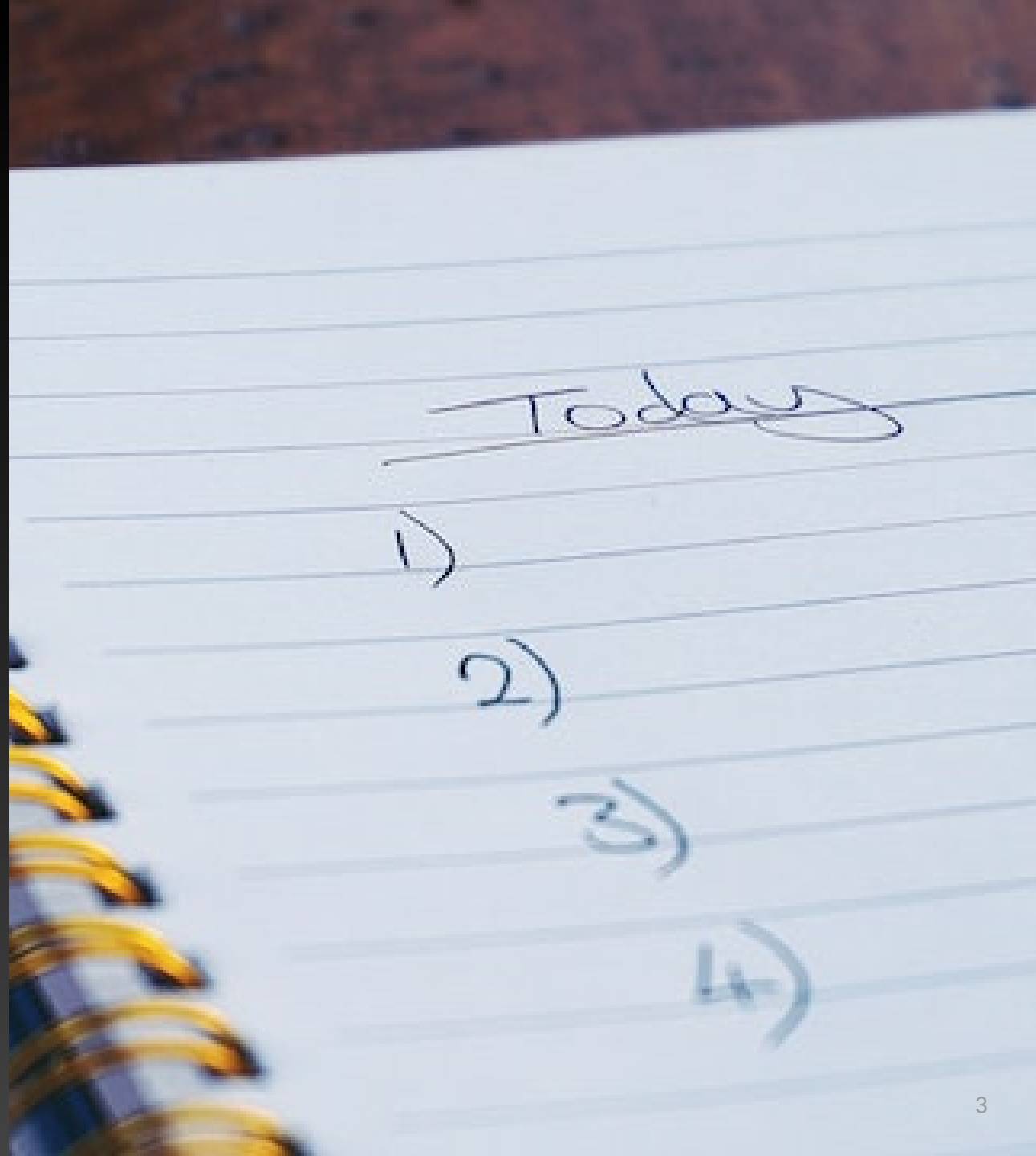
- Containerlab
- VS Code
- DevContainers
- Marp
- Excalidraw VS Code Plugin
- Github Actions
- Github Pages
- Github Codespaces
- Carbon
- And many more...

All photos are taken from Pexels and Unsplash. Excellent free stock photos resources. It's not possible to reference every author individually, but their work is highly appreciated.

Agenda

- Setup Docker on the host
- Install Containerlab and import cEOS-lab image
- Clone this repository and deploy the lab
- Inspect and destroy the lab
- Deploy the lab with a custom startup config
- Make a packet capture
- cLab in a Container
- Possible caveats

> This workshop is a step-by-step guide explaining how to build a lab environment with Containerlab and Arista cEOS-lab. It is focusing on essential and cEOS-lab specific features. Please check Containerlab documentation for details.



Prerequisites

- This workshop requires:
  - Ubuntu LTS 22.04 or later
  - 8 GB RAM and 4 vCPUs
- Only x86 architecture is supported. It is technically possible to run Container lab on ARM, but there are no network images available for ARM as of Aug 2023.
- You can use Github Codespaces or VSCode devcontainer for this workshop. The detailed procedure is described in the appendix.
- The appendix also provides instructions for creating a KVM VM with Ubuntu Cloud Image.
- There is also Vagrant file available in this repository. Use it at your own risk.

Setup Docker on the Host

> Check if Docker is already installed. In this case you can skip the steps below.

1. Install Docker on the host. The detailed instructions are available here. You can used one-liner script for that.
2. Add your user to the `docker` group.
3. Logout and login again to apply the changes.
4. Check the Docker version and run `hello-world` container to test functionality.

```
# install Docker
sudo curl -fsSL https://get.docker.com | sh
# add user to the docker group
sudo usermod -aG docker ${USER}
# test docker
docker --version
docker run hello-world
```

Download cEOS-lab Image

1. Login to Arista Software Download portal. You need to have an account to download the image.
2. Select `EOS > Active Releases > 4.30 > EOS-4.30.2F > cEOS-lab`.
3. Download `cEOS-lab-4.30.2F.tar.xz` image.
4. Upload the image to your lab VM. For example, you can use SFTP to transfer the image:

```
sftp ${REMOTE_USER}@${UBUNTU_VM_IP}:/home/${REMOTE_USER}/${IMAGE_DIR} <<< $'put cEOS-lab-4.30.2F.tar*'
# for example:
# sftp user@10.10.10.11:/home/user/images <<< $'put cEOS-lab-4.30.2F.tar*'
```

> NOTE: if you are using Vagrant, add the image to `.gitignored` directory. It will be automatically copied to the VM.
> If Github Codespace is used and token is set, the image will be pulled from arista.com automatically.