System And Network Administration 2019

Lab 2

Basic networking with docker, SSH and documentation

Deadline: **1 week, Tue 3 sept 23:59**

Reporting requirements: Make a PDF file. Describe shortly **all** your key steps in a report. Screenshots and copy/pasting of console output of your configuration files, settings, commands and logs are accepted. It is recommended to leave out unnecessary information in the report.

You can choose any network and system documentation tools.

1. **System preparation:**
   1. Install Docker CE on your VM (*University VM or your personal VM*). **Show Docker Version in your report**.
   2. Create or pull from docker-hub two images. The first one is OpenSSH Server. The second one is WEB Documentation service. (Example: WIKI). **Show Dockerfiles** (if it exists), **list of images in the report**. *(Is it possible to make your images smaller? If yes, try it(Bonus task))*
   3. Create two docker network bridges (*Prefix of subnets /27*). The first with Internet access. The second bridge without internet access (internal network). Inspect these networks, **show output of inspection with a routing table in the report**.
2. **Running containers:**
   1. Up the first container based on OpenSSH image. Map a Host interface and port with the container port. Connect the container to the two bridges (Created in the previous section). Mount configs to a folder on the Host VM. Modify SSH configuration (Upload your key, switch off password authentication and etc…). **Show a running container in the report**.
   2. Up the second container based on WEB documentation Service. Connect it to the Internal bridge only. Mount Data to a folder on the Host VM. Make sure that this container has no internet access, but is accessible from the first container . **Show it in the report**.
3. **SSH tunneling.**
   1. Make a local SSH tunnel to the WEB container through the first container from your PC. **Show settings of the tunnel in the report**.
   2. Open in the browser WEB documentation service. **Show screenshot in the report**.

4. **Documentation**
   Describe your network in your documentation service:
   1. Map of the entire network
   2. Server information such as data on the individual servers
   3.Software information such as current versions, dates, licensing and support
   4.Vendor and contractor information
   5. Configuration files, backups, etc…

Upload **Only the network diagram** onto the report.

Bonus:

- Docker compose
- Automation scripts, link to a git repository (The script will be checked on another VM).
- Make a docker image smaller.