Version: 1.1

Net_Practice

Summary

This document is a System Administration related exercise.

#Network #System #Administration

42

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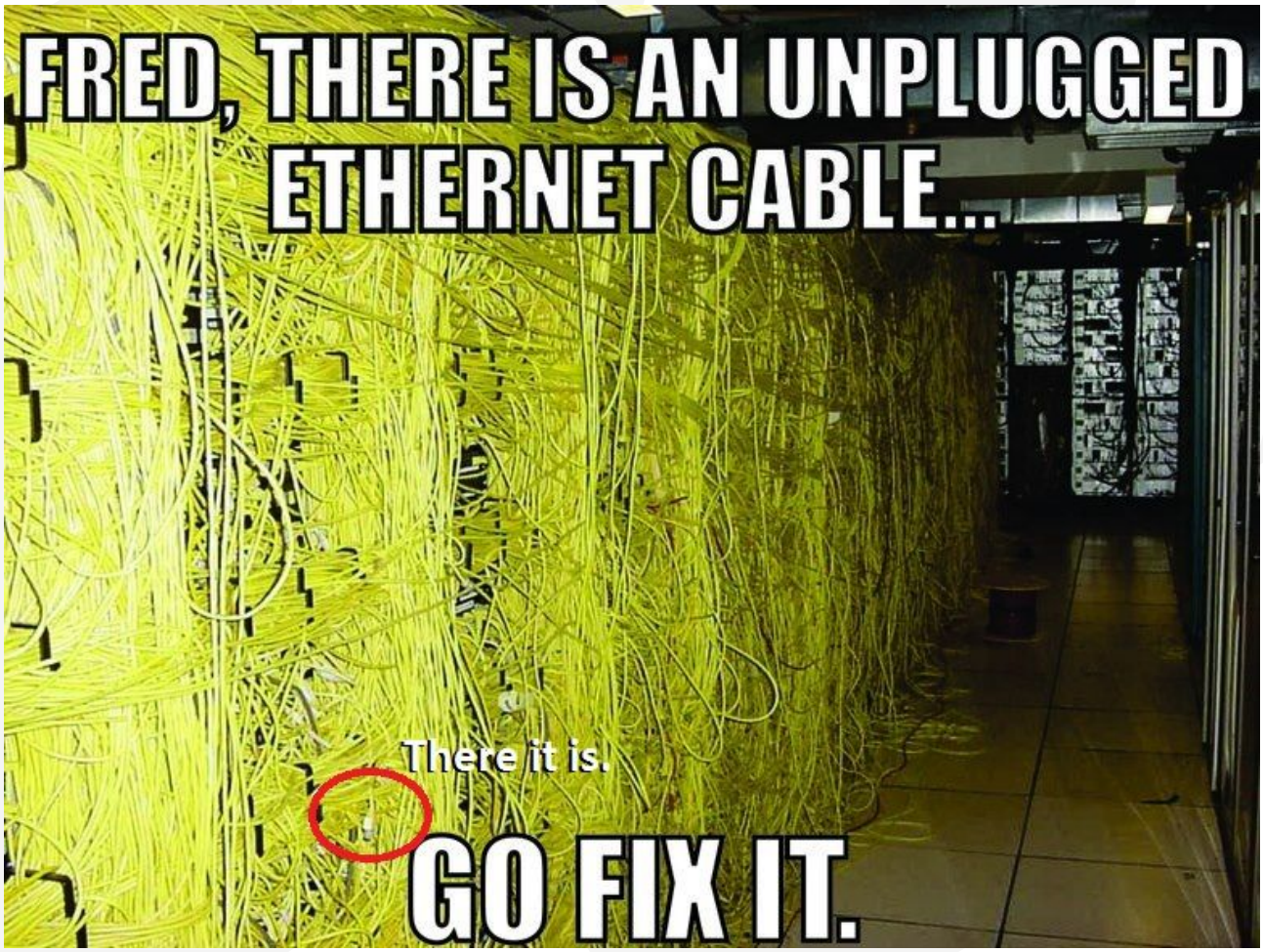
Chapter 1

Preamble



Chapter 2

Introduction

This activity is a general practical exercise designed to introduce you to the basics of **computer networking**. You will learn how to configure **IP addresses**, connect devices through a **router**, and understand the role of a **gateway** within a network.

Chapter 3

AI Instructions

Context

During your learning journey, AI can assist with many different tasks. Take the time to explore the various capabilities of AI tools and how they can support your work. However, always approach them with caution and critically assess the results. Whether it's code, documentation, ideas, or technical explanations, you can never be completely sure that your question was well-formed or that the generated content is accurate. Your peers are a valuable resource to help you avoid mistakes and blind spots.

Main message

- Use AI to reduce repetitive or tedious tasks.
- Develop prompting skills — both coding and non-coding — that will benefit your future career.
- Learn how AI systems work to better anticipate and avoid common risks, biases, and ethical issues.
- Continue building both technical and power skills by working with your peers.
- Only use AI-generated content that you fully understand and can take responsibility for.

Learner rules:

- You should take the time to explore AI tools and understand how they work, so you can use them ethically and reduce potential biases.
- You should reflect on your problem before prompting — this helps you write clearer, more detailed, and more relevant prompts using accurate vocabulary.
- You should develop the habit of systematically checking, reviewing, questioning, and testing anything generated by AI.
- You should always seek peer review — don't rely solely on your own validation.

Phase outcomes:

- Develop both general-purpose and domain-specific prompting skills.
- Boost your productivity with effective use of AI tools.
- Continue strengthening computational thinking, problem-solving, adaptability, and collaboration.

Comments and examples:

- You'll regularly encounter situations — exams, evaluations, and more — where you must demonstrate real understanding. Be prepared, keep building both your technical and interpersonal skills.
- Explaining your reasoning and debating with peers often reveals gaps in your understanding. Make peer learning a priority.
- AI tools often lack your specific context and tend to provide generic responses. Your peers, who share your environment, can offer more relevant and accurate insights.
- Where AI tends to generate the most likely answer, your peers can provide alternative perspectives and valuable nuance. Rely on them as a quality checkpoint.

✓ Good practice:

> I ask AI: "How do I test a sorting function?" It gives me a few ideas. I try them out and review the results with a peer. We refine the approach together.

✗ Bad practice:

> I ask AI to write a whole function, copy-paste it into my activity. During peer-evaluation, I can't explain what it does or why. I lose credibility — and I fail my activity.

✓ Good practice:

> I use AI to help design a parser. Then I walk through the logic with a peer. We catch two bugs and rewrite it together — better, cleaner, and fully understood.

✗ Bad practice:

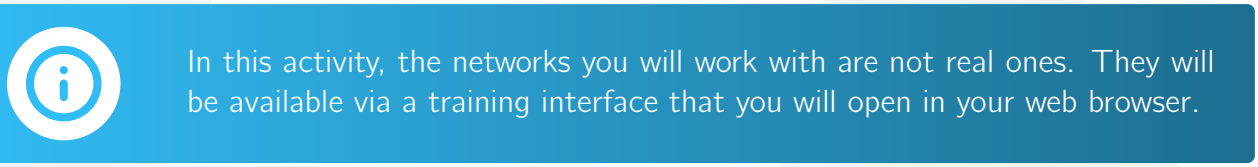
> I let Copilot generate my code for a key part of my activity. It compiles, but I can't explain how it handles pipes. During the evaluation, I fail to justify and I fail my activity.

Chapter 4

General guidelines

You will configure small-scale networks. To do so, it is necessary to understand how **TCP/IP addressing** works, including concepts such as **subnet mask** and **default gateway**.

You must complete 10 levels (i.e., 10 exercises) and submit them in your `Git` repository.

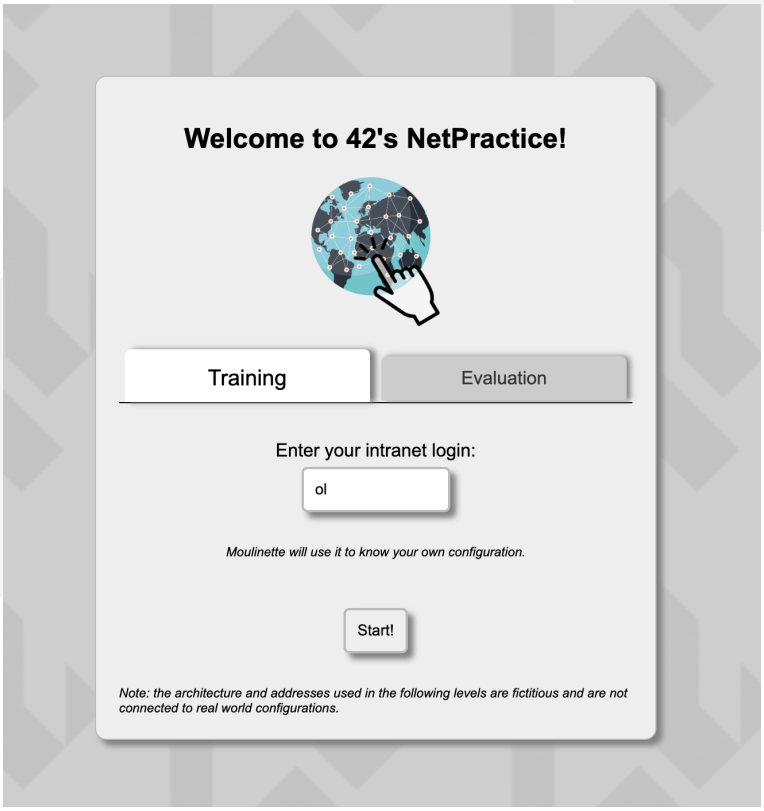


Chapter 5

Mandatory part

This activity involves solving **networking problems** to make a network function properly.

- First, download the file attached to the activity's page.
- Then, extract the files to any folder you prefer.
- In this folder, open the `index.html` file.
- This interface should open in your web browser:

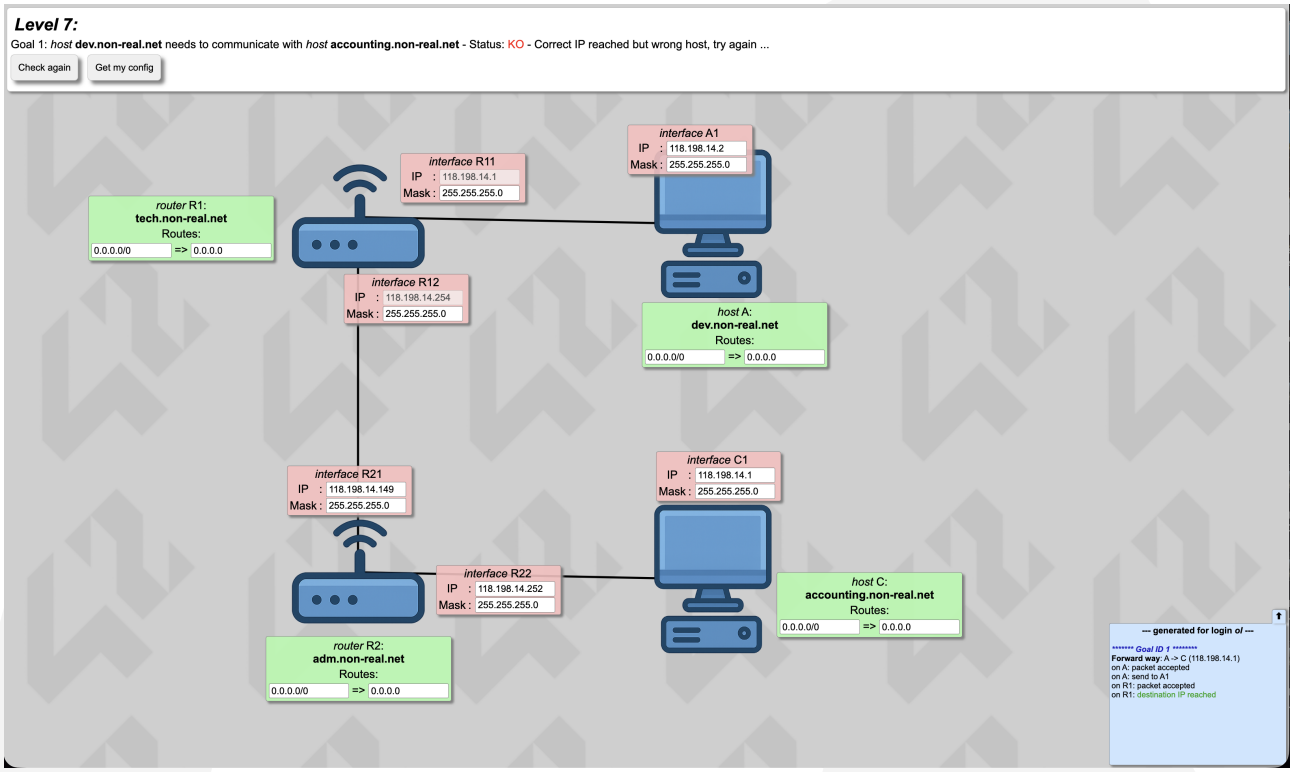


Welcome to NetPractice! :)

As mentioned on the page:

- You can practice by entering your login in the field
- Or you can try the 'review' version by leaving the field empty.

There are 10 levels available for training. Below is an example:

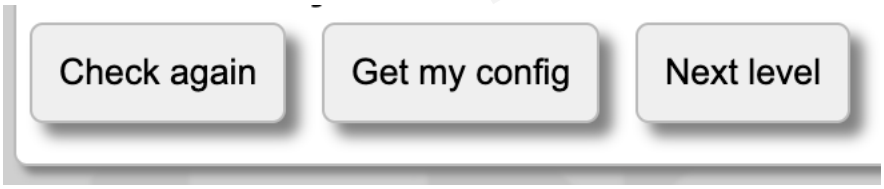


For each level, a non-functioning **network diagram** appears.

At the top of your window, you will see a goal to achieve: adjust the available configuration so that the network functions properly. There are two buttons you can use:

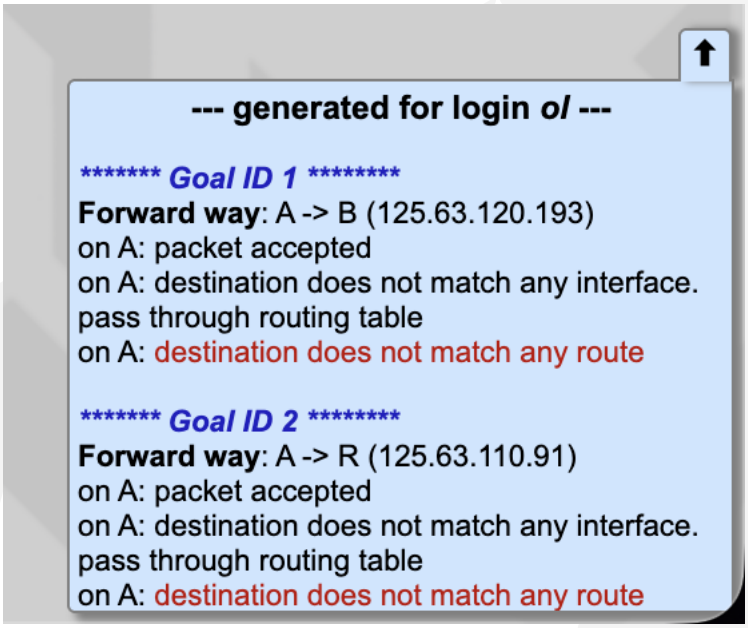
- `Check again` to verify whether your configuration is correct or not.
- `Get my config` to download your configuration whenever you need it. This will be useful for submitting your assignment.

When you have successfully completed a level, a new button will appear. Click on this button to get to the next level.

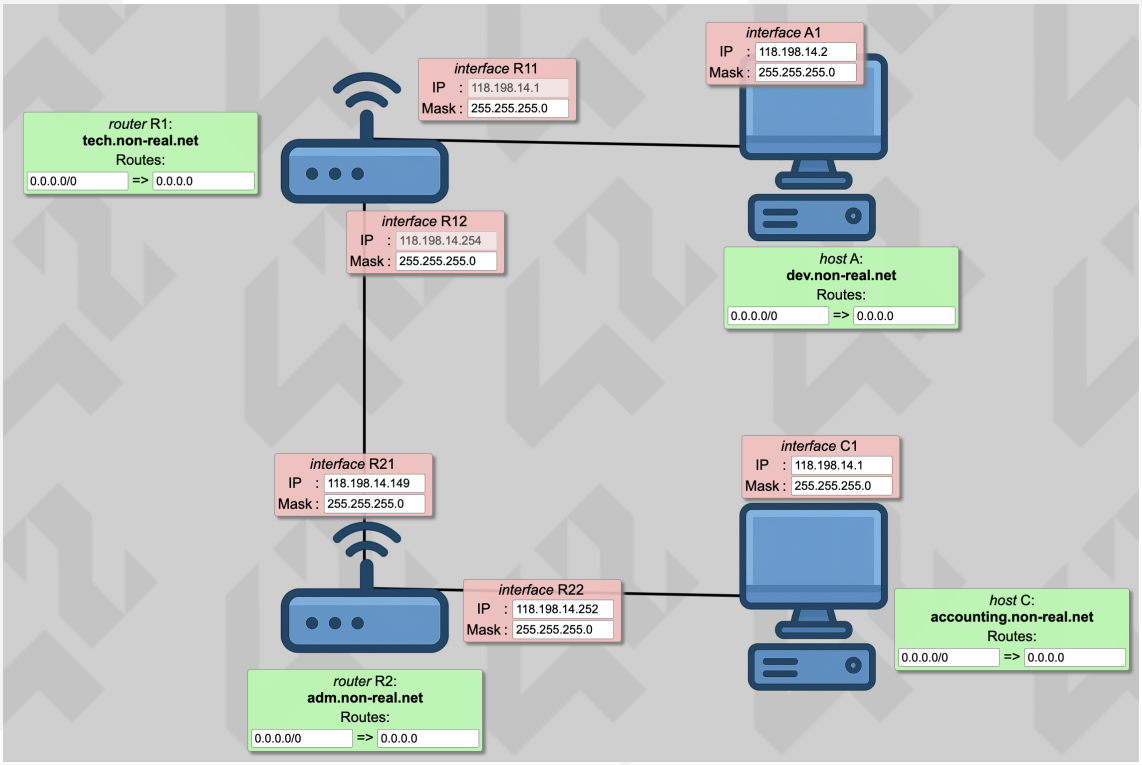


Before moving to the next level, don't forget to export your configuration using the `Get my config` button so you can add it to your Git repository.

At the bottom of the page, you will see logs. They can be helpful to understand why your configuration is wrong, for example if a **gateway** is missing or an **IP address** is invalid.



Here is an example of what kind of exercise you will get:



To succeed, modify the unshaded fields until your **network configuration** is correct.

To complete this assignment, it is strongly recommended to understand how **addressing** works in a network in which there are devices such as **routers** and **switches**. Read about **TCP/IP addressing**.

Chapter 6

Readme Requirements

A README.md file must be provided at the root of your Git repository. Its purpose is to allow anyone unfamiliar with the activity (peers, staff, recruiters, etc.) to quickly understand what the activity is about, how to run it, and where to find more information on the topic.
The README.md must include at least:

- The very first line must be italicized and read: *This activity has been created as part of the 42 curriculum by <login1>[, <login2>[, <login3>[...]]].*
- A "**Description**" section that clearly presents the activity, including its goal and a brief overview.
- An "**Instructions**" section containing any relevant information about compilation, installation, and/or execution.
- A "**Resources**" section listing classic references related to the topic (documentation, articles, tutorials, etc.), as well as a description of how AI was used — specifying for which tasks and which parts of the activity.

➠ **Additional sections may be required depending on the activity** (e.g., usage examples, feature list, technical choices, etc.).

Any required additions will be explicitly listed below.

- The **Resources** section must explicitly mention the networking concepts studied, such as **TCP/IP addressing**, **subnet mask**, **default gateway**, **routers and switches**, **OSI layers**, etc.
- The **Instructions** section must explain how to run the training interface (e.g., open index.html), how to export configurations, and submission requirements.
- **Submission details** must state that 10 exported configuration files (one per level) must be placed at the repository root.

You are free to choose the language of this section. Writing in English is recommended, but not strictly required.

Chapter 7

Submission and peer-review

Submit your assignment in your `Git` repository as usual. Only the work inside your repository will be evaluated during the defense. Don't hesitate to double-check the names of your files to ensure they are correct.

Because 10 levels are available in the training interface, you must submit 10 files in your repository (1 file per level). Place them at the root of your repository.
Don't forget to enter your login in the training interface. Export one file per level using the `Get my config` button.

It is very important that you enter your login in the interface.

During the defense, you must successfully complete 3 random levels (from levels 6 to 10) as mentioned on the training platform. Of course, you will have a limited time to do so.

You are not allowed to use external tools during your review. The use of a simple calculator such as "bc" is tolerated, but that will be the limit.