

Assignment 4 - E-mail security (part 1)

Security

Sébastien Vaucher
sebastien.vaucher@unine.ch

30 October 2017

1 Assignment instructions

In this assignment, you will develop an SMTP gateway to filter e-mails before forwarding them to a fully-featured SMTP server. From the perspective of the user, your gateway will be the one acting as his/her SMTP server.

Your server will analyze the e-mails it receives and modify them according to one or many filters. In this assignment, you will develop the first filter, which is a simple keyword-based filter. You should design your program in an extensible way, as additional filters will be added in the next assignments.

1.1 Part 1: keywords-based filter

This first filter will be based on a list of unauthorized keywords. They will be stored in a text file, with one keyword per line. Optionally, the keywords can be replaced with regular expressions.

An e-mail containing a keyword in its title or body will be rewritten with **[redacted]** in place of the text that matches.

Your program will need to accept the following parameters as command-line flags:

- Filter(s) in use
- Listening port
- SMTP server to relay e-mails to

Depending on the filter(s) in use, there may be additional parameters to be added. For the keywords-based filter, the path of the file that contains the keywords has to be configurable.

2 Hand-in

The time allotted for this assignment is 1 week. The deadline is on 2017-11-08T13:59:59 local time. Late submissions are not accepted.

- To be submitted to Ilias¹:
 - Source code of **your** assignment
 - Readme file briefly mentioning how to compile and run your program, which dependencies it requires, etc.
 - All the files have to be packed in an archive in a standard format², named following this exact pattern (in lowercase letters only):
security17-as<assignment number>-<your family name>.<extension>.
For example, if your name were to be *Homer J. Simpson*, you would use the following filename for this assignment: **security17-as3-simpson.tar.gz**
 - Please use the “Upload File” button when handing-in your assignment in Ilias. Do **not** use “Upload Multiple Files as Zip-Archive”.
- You have to present a demonstration of the program in class (to the TA).
 - It is **mandatory** for each student to demonstrate his or her submission!
 - The sooner you present your assignment, the better (even before the deadline).

Your grade will depend on both the presentation and the code.

3 Notes

You can use your favorite programming language for the assignments of this course, so long as it is a programming language readily available on the GNU/Linux operating system³. The suggested language for this assignment is Python.

Should you have additional questions, please direct them to the TA at sebastien.vaucher@unine.ch.

¹Or sent by e-mail for external students

².tar, .tar.gz, .tar.bz2, .tar.xz, .zip

³You can use any of the languages in the following list. If you want to use another language, please check with the TA first. List in alphabetical order: Bash, C, C++, Go, Java, Kotlin, Perl, PHP, Python, Ruby, Rust, Scala