Systems and Network Management Tools

The objective of this work is to sensitize the student to the potentialities in the use of freeware public tools for the management of equipment or services, and in particular in the monitoring component. To do this, it is suggested to use freeware network management platforms **Nagios** and **Zabbix**.

The work consists of using Nagios and Zabbix to monitor a network in production, with the servers and services available on it. This will be simulated on the workbench.

1. Consult the documentation available on the official Nagios website (https://www.nagios.org) and evaluate its potential. Install this tool on one of your bench servers, using the pre-configured package for the Unix distribution running on these servers or generating the binaries from the source code.
2. Configure on the remaining available servers the following set of services that are normal to exist on a production network: a Web server, an FTP / sFTP server, an NTP server, an E-mail server and a DNS cache server. Present the result of a consultation to each service, as a demonstration of good functioning.
3. Configure Nagios to monitor all the equipment on your bench and the network services configured in the previous point. Present the monitoring results. As a demonstration of good operation, cause equipment and service failures.
4. As in step 1 with Nagios, install the Zabbix tool (https://www.zabbix.com) and configure it to monitor the same equipment and services as in point 2. Repeat the tests in point 3.
5. Evaluate in particular and present the findings for the following tools:
    a. Grafana (https://grafana.com/grafana)
    b. openDCIM (https://www.opendcim.org)

    Presents a comparative analysis of the functionality of the four tools.
6. As a conclusion of the work, prepare a short report with the answers to the questions above and send it by e-mail to < joao.neves at fe.up.pt >.