**Case Study 2 - Project Plan**

**Media storage service**



Project Members & Student Numbers:

* Francisco Marcó (4467752)
* Sava Vasilev (4663438)
* Kaloyan Andreev (4408020)

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Group 10

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# Project Definition

## Background

The project aims to develop and provide an IT SaaS, able to store and manage files for large-scale media companies. The software manages the files stored in a remote server (managed by us), which then can be viewed and organized in a web application.

The following are the minimum requirements we will follow:

* **Develop**:
  + *Flask web application*
  + *Tkinter application*
  + *Database*
  + *Container for applications and database*
* **Comply with GDPR**
* **Install and setup a pen-tested network with:**
  + *IDS/IPS*
  + *Monitoring tools*
  + *Analysis of log and event files*
  + *RADIUS*
  + *RAID*
* **Follow security guidelines (CIA triangle, application and structural security)**

## Problem definition

Our clients for this project are companies that are looking to securely store their media files in a remote server. We propose to deliver an easy-to-use application which, when used with our servers, will provide a flexible, simple, and effective media storage management experience. Our aim is to reduce storage costs for companies, while fulfilling any security expectations they may have.

## Project Goal

The main goal of this project is to develop and provide the aforementioned tool, while also developing a proper secure infrastructure.

Because we are dealing with private, confidential, company files, security is one of our main points of focus. To achieve this, the network will be devised with a configured firewall, RADIUS, IDS/IPS, GDPR compliant systems, and more. This network will also be pen-tested to protect it from external malicious attacks.

The clients will connect to our network, and using the provided tool, will be able to store remotely their desired files. The ‘Tkinter’ application we will develop is used for uploading and deleting the files located in our server. The web application will be used for managing and updating these same files.

To keep the system up and running and to prevent unexpected crashes an informative dashboard is planned to be implemented to our infrastructure which will monitor the status of the system and hopefully will foresee any problems that need to be handled.

## Expected result

We expect to successfully develop the already mentioned applications, applying our knowledge from the course lectures. We also expect to develop stable, functioning security implementations to our network. Naturally, we want to achieve this result by following and applying the minimum requirements for the project.

Our minimum expectations are to provide the full product with most basic features, while having some degree of security compliance.

## Way of working

We will hold weekly meetings to discuss the work on the project. We plan to have 2-3 meetings per week on Monday, Tuesday and Friday (with our Tutor). On Monday to discuss progress on project, to adapt the schedule if needed and divide the work for the following week. The meeting on Tuesday will be for internal purposes and on Friday will be for a short meeting with our project tutor.

The rest of the work depending on the type and amongst how many people will be done either during the week or during the weekend (depending on a person’s preferred working time)

Meetings with the project tutor will be to share our progress on the project and ask questions if any arise during the week and to receive feedback and guidance.

## Scope

In the following 6 weeks a fully configured server infrastructure and applications will be delivered. Additionally, we will implement two clients to serve as a demonstration for potential clients. A third client will also be implemented for administrator purposes. A dashboard displaying live statistics of the server will be created as well, in conjunction with a system logs and event tracker. For documentation, we will devise a Project Plan, Design Document, Process Report and User Manual.

## Agreements – made with the tutor

### Professional agreements

At the beginning of the project, the team and the tutor make an agreement about the days when the mandatory meetings will take place every week. The exact time of holding and the place are specified as well. Moreover, it is decided that the materials which will be needed for every conference will be determined a week earlier. An essential part of every meeting will be the “agenda” which will be created the day before the talk. It will include the work that is done through the certain week and details of the meeting. The developers will take turns to make it. In addition, for every meeting there will be 3 roles split among the team members: Role 1 – Chairman – the person who is going to present the weekly completed tasks; Role 2 – Note taker – the one who is going to write down the changes that the team needs make (if there are any); Role 3 – Timekeeper – the team member who will keep track of the time. Additionally, the team developers will have in-person meetings to iron out details of the project, plan meetings with the tutor, and work on the network. These meetings will ideally be held every Tuesday and/or every Thursday, but this is subject to change depending on time constraints as the project develops.

|  |  |  |  |
| --- | --- | --- | --- |
| *Meeting calendar* | | | |
| Time | Date | Place | Materials |
| 10:00 | Every Tuesday/Thursday | Room 3.39 / Third floor / R10 building | Agenda |
| 13:00 (Time subject to change according to tutor’s schedule) | Every Thursday – ONLINE  Or  Every Friday – IN PERSON | OIL 3.40 / Third floor / R10 building | Agenda |

### Technical agreements

During each meeting, both sides – the team and the tutor will discuss the completed weekly milestones and define where changes and improvements have to be made. If the team members have any questions about the project, the software or they are stuck at some point, they are free to ask the tutor for advice. The tutor could give the team guidelines for installation of a specific software that will be used. Technical agreements also include questions about the structure of some of the documentation files.

# Project Structure

## Development Team

Our development team consist of our 3 group members:

* **Francisco Marcó (Developer & Project Manager)**
* **Sava Vasilev (Developer & Janitor)**
* **Kaloyan Andreev (Developer & Network Engineer)**

Francisco Marcó is a high school graduate in Natural Sciences, age 20, born and raised in Argentina. He worked as an Intern in the IT Support department of the Luxembourgish company Talkwalker, where he developed himself in the networking, administration, and operations fields. You can contact him at the email address: f.marco@student.fontys.nl

Sava Vasilev is a 20-year-old student from Bulgaria. He graduated a language high school. Sava has no professional experience, but he spent a year in TU Delft and completed courses in the field of IT and is proficient in Java, JS, C#, C and HTML and CSS. You can contact him via email address: s.vasilev@student.fontys.nl

Kaloyan Andreev, age 19, born in Varna, Bulgaria. Graduated First Language School, he successfully achieved student level credential for completing several IT courses: Cisco IT Essentials, Programing Basics with Python, C# Fundamentals. He also has experience in creating and developing websites. You can contact him via email address: k.andreev@student.fontys.nl

As Infrastructure students, we are looking forward to expanding our skillset by successfully achieving our goals for the project.

We will be working on the project properly as a team. We will be working using GitLab to assign responsibilities and will cooperate and help each other as all three of us possesses very similar skillsets and capacities to successfully develop the project.

We will conduct a rotating system of roles while presenting during the review meetings with our project tutor, consisting of a secretary (in charge of notetaking and keeping track of the agenda), director (in charge of being the spokesperson during the presentation) and assistant (in charge of providing extra assistance if necessary.)

## Tutor

The tutor for our project is Andrius A. Kuprys. We expect that after each meeting for feedback we will receive the guidance needed to fulfill our project.

* **Email:** [**a.kuprys@fontys.nl**](mailto:a.kuprys@fontys.nl)
* **Phone: 0885076989**

# Deliverables

Our proposed deliverables are:

* **A Project Plan detailing a rundown of the project.**
* **A Design Document providing our setup, configuration, and more information regarding the project.**
* **User Manual.**
* **Tkinter application to upload and delete files.**
* **Web application to manage and get info from the files.**
* **A working Infrastructure according to all requirements needed for our applications to work.**
* **Proper Research Report.**
* **The given weeks to work on the project will be divided in “Sprints”, each comprised of two weeks. The following are our deliverables by sprints**:
* *Sprint 1:*
  + - Develop project plan.
    - Start configuring the network.
    - Research into Flask web application, Tkinter application.
* *Sprint 2:*
  + - Develop USR.
    - Devise design document.
    - Finish network configuration. Develop manual
    - Start applications development.
    - Research pen-testing.
* *Sprint 3:*
  + - Finish applications development. Develop manuals
    - Pen-test the network. Develop manual.
    - Devise Security manual.
    - Test the system. Develop manuals.
    - MVP release.
* *Sprint 4:*
  + - Final adjustments.
    - Documentation check.
    - Presentation and demo.

# Risk assessments

|  |  |  |
| --- | --- | --- |
| **Question** | **Response** | **Details** |
| Unable to synchronize files | high | * Consult Sync Thing documentation * Do a check in all the synchronized hosts * Verify network integrity |
| Unable to upload/delete files | Very high | * Check database interaction * Check transfer protocols * Verify network integrity * Verify file integrity |
| Unable to edit files | Medium | * Check code error logs * Check code: formatting, parsing |
| Unable to send files | Low | * Check code error logs * Verify network integrity * Verify hosts network/sys details |
| Monitoring not working | Medium | * Verify Zabbix installation * Check Zabbix documentation * Re-install agent on host |
| VPN not working (not accessible remotely) | High | * Check pfSense settings * Check OpenVPN profile * Check code |
| Tkinter app not working | Low | * Check code * Verify network implementation * Verify DB interaction |
| IDS/IPS not working | Medium | * Check pfSense settings * Check Suricata settings * Verify Suricata installation |
| Network is not secure (pen-test fail) | Medium | * Verify network structure * Check network settings * Attempt different pen-testing |
| File-transferring is not secure | High | * Check used protocols * Analyze traffic * Check code * Research to implement specialized tool |

# Diagram Description automatically generatedDiagram Description automatically generatedPERT Chart