**Project Initiation Document**

Client Company: Plaintech

Project VIRT team 6

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Summary

ITopia took on a project offered to them by Plaintech UK called ‘Project Virtualisation’. Plaintech UK gave ITopia a Request for Proposal (RfP), in which they ask if ITopia can make a virtualised platform for their company which Plaintech UK’s clients can use to create and use their own virtual servers. Plaintech UK wishes to use physical servers in combination with virtualization technology to achieve this goal.

The requirements to the virtualisation technology set by Plaintech UK are as follows;

* The software used should be familiar to Plaintech UK’s employees. This should reduce education costs and make it easier for them to understand and implement the software.
* A customer must be able to change their server’s resources, for example through a graphical user interface. If the customer wishes for more resources they should be able to change it and have access to this in a short time span.
* The virtualization software must be easy to work with. This can be achieved through a user-friendly graphical user interface for the (technical) staff and customers of Plaintech.

Table of Contents

[Summary 2](#_Toc42687552)

[1. Introduction 4](#_Toc42687552)

[1.1 ITopia 4](#_Toc42687553)

[1.2 Project Virtualisation 4](#_Toc42687553)

[1.3 Purpose of this Document 4](#_Toc42687553)

[1.4 Prince2 Method 4](#_Toc42687553)

[2. Goals 5](#_Toc42687552)

[2.1 Deliverables 5](#_Toc42687553)

[2.2 Details of the Documentation 5](#_Toc42687553)

[3. Finance 6](#_Toc42687552)

[3.1 Costs 6](#_Toc42687553)

[3.1.1 Servers 6](#_Toc42687554)

[3.1.2 Storage 6](#_Toc42687554)

[3.1.3 Operating System 6](#_Toc42687554)

[3.1.4 Total Costs 7](#_Toc42687554)

[3.2 Benefits 7](#_Toc42687553)

[3.3 Return Of Infestment 7](#_Toc42687553)

# Introduction

In this chapter we will give an introduction to Project Virtualisation is, what the purpose of this document is and the method we will use throughout the project.

## ITopia

ITopia is a company with fast experience in the System & Network Engineering field. They often particularly specialise in Open Source and UNIX based solutions.

ITopia is part of the Hogeschool van Amsterdam which allows them to keep up to date with the latest developments in technology.

ITopia’s Team 6 is one of the teams currently working on projects for different companies, in their case Plaintech UK..

## Project Virtualisation

Project Virtualisation is the result of a proposal made by Plaintech UK to ITopia. We were given the task to create a virtualisation platform for Plaintech UK. The purpose of the virtualisation platform is to make it easier for the customer to work with their (virtual) server. Plaintech UK also requested for more than one operating system for the virtual servers so that their clients can choose between a couple of Windows and Linux versions. The result of this project should be a working virtualisation platform which is both flexible and user-friendly with a graphical user interface.

## Purpose of this Document

This document should provide ITopia’s client, Plaintech UK, insight in what we are doing to bring them their requested product in every stage of the project. This will also allow them to review and judge their plans if needed. Once approved by Plaintech UK, this will also be our guideline throughout the project.

## Prince2 Method

Within this project we use the Prince2 method. Prince2 stands for Projects IN Controlled Environments 2. This method allows us to build up a project in a certain structure. Prince2 consists of 7 principles, themes and processes, which we will use as a guidline from the start-up untill the end with a roadmap.

# Project Goals

In this chapter we will discuss the goals of Project Virtualisation. This includes several different deliverables which are due in different stages of the process.

## Project Deliverables

The main goal of Project Virtualisation is creating a working virtualisation environment for Plaintech UK which complies with the requirements set by Plaintech UK in the Request for Proposal. Beside the final product, Plaintech UK also has requested the following products that should be delivered at different stages during the project:

* Project Initiation Document (PID)
* Functional Design (FD)
* Technical Design (TD)
* System Documentation
* Implementation Plan (IP)
* The product itself
* Installation guide
* Prototype(s)
* System management guide

Everything we deliver to Plaintech UK will first be reviewed by the ITopia quality assurance (QA) board.

## Details of the Documentation

During the project we will write several documents on the project itself and the final product. Plaintech UK requested that we will deliver the documents with the product during different stages of the project.

1. Project Initiation Document
   * In this document many general aspects about the project are explained such as the cost of the entire project and agreements that were made with Plaintech UK.
2. Functional Design
   * The Functional design should give Plaintech UK insight how the system works when it comes to functionality.
3. Technical Design
   * This should allow Plaintech UK to see how the system works technically. Information such as used protocols and network design will be available in this document.
4. Implementation plan
   * The implementation plan will describe how the platform will be implanted in the future and the results of the implementation of the final product.

# Finance

In this chapter we will discuss the financial aspects of the project and what impact it might have on the finances Plaintech UK. The financial aspects that will be discussed in this chapter are the costs that will be generated by the project, the benefits Plaintech UK will get in terms of finance by starting the project and the Return Of Investment.

## Costs

### Servers

Since we do not have any accurate information about what kind of servers Plaintech UK uses or wants to use, we take rack-servers as an example in the price. It is difficult to determine an average price of a server since there are so many different companies that sell them, but in an attempt to determine the average we looked at several different servers that might be possibilities for Plaintech UK.

We determined that the average server that Plaintech UK might use will cost between €1000 and €8000.

An example of a server that costs about €1000 is the [Dell PowerEdge R220](http://configure.euro.dell.com/dellstore/config.aspx?oc=svr220a&model_id=poweredge-r220&c=nl&l=nl&s=bsd&cs=nlbsdt1), and an example of a server that costs about €7000 is the [PowerEdge R630.](http://configure.euro.dell.com/dellstore/config.aspx?oc=per630&model_id=poweredge-r630&c=nl&l=nl&s=bsd&cs=nlbsdt1)

### Storage

The exact amount of disk space needed for the servers depends on the amount of clients Plaintech UK has and how much each client uses, and needs to be changeable whenever they want. Luckily, hard drives are easily changeable and/or easy to install in the servers. The average price of a 500 GB hard drive is €100 and the average price of an 1TB hard drive is €200. Since most servers found in the research have only 500 GB or 1 TB, with few exceptions, We assume that this is the average amount of GB a rack-servers have.

### Operating Systems

The operating systems that Plaintech UK wants to use are mostly variants of Linux and thus free, however since the option to use at least one version of Windows needs to be available for clients there will be costs tied to this as well. The most recent version of Windows Server, Windows Server 2012 R2 Datacenter, will cost ($6155) €4762. We chose the Datacenter version because it has an unlimited amount of virtual instances according to [Microsoft](http://www.microsoft.com/licensing/about-licensing/virtualization.aspx). The servers themselves will have Linux Debian as operating system because this is widely used as server operating system and most likely will be easiest to implement.

### Total Costs

The amount of storage used per client completely depends on the clients and the limits set by Plaintech UK. If clients would only use low amount of storage (e.g. 1 GB to 5 GB p.p.), the total amount of hard drive space would be less than if the clients would use a higher amount of storage (e.g. 50 GB to 100 GB p.p.). To calculate roughly how much storage would be used in total, we assume that every client will get 30 GB of disk space on their virtual machine. The amount of clients is roughly 50000; 50000 x 30 = 1500000 GB (= 1500000 / 1000 = 1500 TB). Since the average rack-server can contain two hard drives of about 1 TB each, we will divide the amount of used space over the hard drives; 1500 / 2 = 750 Servers.

Please refer to the table below for the rough estimate of the total costs.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Amount | Cost Low | Cost High |
| Servers | 750 | € 750000 | € 5250000 |
| Hard Drives | 1500 | € 300000 | € 300000 |
| Operating System | ~ | € 4762 | € 4762 |
| Total |  | € 1054762 | € 5554762 |
| Average Total |  | € 3304762 | |