LowTech GMmBH Techincal Transformation Milestone 1

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Abstract LowTech GMmBH is a wooden furniture retailer that went public with an online store several years ago. To do so they implemented an on-premise solution. Which not only drives the online store, but all the auxiliary applications i.e. warehouse, customer service, finance and HR software. As demand increases, they are looking to modernize the current infrastructure using a private cloud. This document provides an in depth analysis of of the current infrastructure, including energy consumption metrics, the proposed roadmap and technologies to perform the technical transformation, and finally, a list of potential benefits of the approach, including a simple cost analysis.

This is where the introduction (the prologue or foreword) comes in. The introduction should also be short and concise. The reader should be prepared for the text that follows. Of course, the introduction should also be formulated in an interesting way.

1 Overview of the problem

2 Objectives of the technological transformation

3 Assessment of the current (As-is) infrastructure

3.1 Current traffic and usage

3.2 Energy consumption and approximate cost

Energy consumption calculation for the as-in infrastructure of Low Tech GmbH is as follows :

Total Energy Consumption (Annual) : 151,548 KWh (151.548 MWh)

According to Eurostat published data of electricity prices for non-household consumers, Low Tech GmbH falls under the annual energy consumption band 'IB (20 MWh to 499 MWh)' with energy price 0.3244 € per KWh.

Total Cost for Energy Consumption (Annual) : 151,548 KWh x 0.3244 € = 49,162.17 €

Departments	Server (Qty x Power)	Client (Qty x Power)	Laptop (Qty x Power)	Total Power Consumption	Annual Energy Consumption(KWh)
Finance	1 x 1000W	4 x 500W	-	3000W	26,280
HR	1 x 1000W	3 x 500W	-	2500W	21,900
Warehouse	1 x 1000W	10 x 500W	-	6000W	52,560
Sales	1 x 1000W 1 x 1200W	-	10 x 50W	2700W	23,652
Operations	1 x 1200W	-	4 x 50W	1400W	12,264
Customer Service	-	-	5 x 100W	500W	4,380
Webshop	1 x 1200W	-	-	1200W	10,512

Table 1. Power Consumption by Department and Device Type

3.3 Scalability, availability and security analysis

4 Client Requirements

5 Assessment of potential technological components

5.1 Hardware

5.2 Virtualization technologies

5.3 Application components

5.4 Platforms

5.5 Security components

6 Migration to a private-cloud context

6.1 Selected technologies

6.2 Architecture

6.3 Roadmap

6.4 Operation considerations

References

1. Eurostat. (2023). *Electricity prices for non-household consumers - bi-annual data (from 2007 onwards)*. Retrieved November 16, 2023, from `https://ec.europa.eu/eurostat/databrowser/view/nrg_pc_205_ _custom_13581723/default/table?lang=en`
2. Mell, P. and Grance, T. (2011). *The NIST definition of cloud computing.* National Institute of Standards and Technology, Special Publication 800-145, Gaithersburg, MD. `https://nvlpubs.nist.gov/nistpubs/Legacy/ SP/nistspecialpublication800-145.pdf`