Diploma Thesis

University of Applied Science Cologne

---


TÜV Rheinland Group

# Enterprise Datacenter Virtualization with VMware

## Evaluation and implementation at TÜV Rheinland Japan

---


| | |
|---|---|
| Submitted by: | Hrvoje Husić |
| Supervisor: | Prof. Dr. Erich Ehses |
| Supervisor: | Prof. Dr. Frank Victor |
| Version: | 29. August 2006 |

# Abstract

This Thesis shows the steps taken to evaluate and implement a VMware based virtual infrastructure for the data center at TÜV Rheinland Japan.

The market of virtualization was left to VMware for some years, but as of 2006 various alternative products and technologies entered the spotlight. In order to successfully implement the virtual infrastructure, this Thesis analyses the available technologies and products. The alternatives are discussed and compared in their individual advantages and drawbacks.

The solution covering the requirements of TÜV Rheinland Japan best is VMware's virtual infrastructure, based on VMware ESX and VMware VirtualCenter.

The previous configuration in the data center of TÜV Rheinland Japan is based on a mixed setup of physical and virtual servers. This Thesis shows how to implement a virtual infrastructure that is based on VMware ESX. The implementation is divided into the parts: server hardware, network, storage, software and backup. The existing infrastructure will be migrated to the new configuration designed in this Thesis.

Besides the pure setup of the virtual infrastructure this Thesis will also focus on remarkable issues. Certain details demonstrate the impact of using a virtual infrastructure in contrast to a physical one.

Based on this implementation this paper analyses the technical and economical performance of the system. The technical performance shows the overhead of virtualization, which is a base for capacity planing. Economical performance shows where it is justified to purchase expensive hardware and software to implement a virtual infrastructure.

# Table of Contents