



Sustainable IT Services

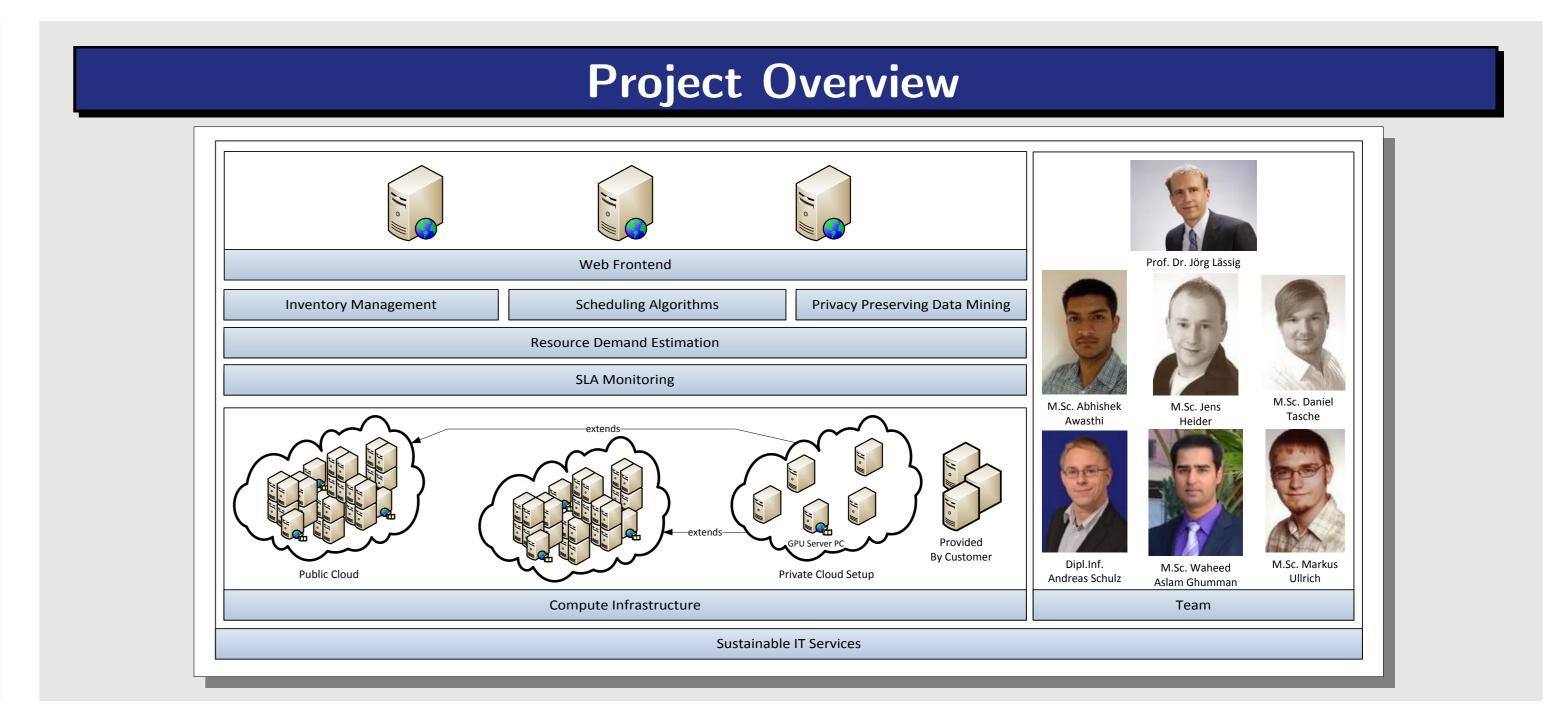
Sustainable & service-based cloud solutions for the Small or Medium-sized Enterprises(SME)

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Introduction

- Planning and optimization are an essential component of entrepreneurial activity
- Efficient planning and optimization of business processes increase business value



 Finding optimal solutions is reasonably time & cost consuming thus resulting in sub-optimal solutions for SMEs

 SustainableITServices project addresses these issues and provides a practical solution using different service based cloud solutions

Resource Demand Estimation Service

- \circ Main goal is to use as much resources as necessary to meet QoS requirements but not more than required to not waste resources
- Ovel methods for resource demand estimation:
- -combining existing research with new ideas
- -application classification to select proper estimation strategy
- Enables better understanding of current challenges and problems
- Enables comparison of resource demand estimation algorithms

 Prediction methods for optimized resource allocation in private and hybrid cloud environments

SLA-based Cloud Service Monitoring

- This service provides unparalleled flexibility in service level monitoring for both internal and external cloud services
- Monitor the performance of external SaaS applications and web services to enforce service levels:
- -in real time with alerts
- -and for detailed analysis with historical data
- $\circ\,{\rm Keep}$ employees and customers happy by monitoring cloud service performance at remote locations
- Quickly determine whether issues are internal or external. Diagnose where to look for the problem

Prototype 🚮 Start 🛛 🔤 Kontakt 🖀 Start 🛛 🖂 Kontakt Sustainable IT Service Web Portal **Cloud Services Monitoring Client** in cooperation with the Hochschule Zittau/Görlitz Amazon S3 Cloud Service in cooperation with the Cloud Service Tools Optimization Tools Data Processing Tools Resource Demand Estimation Service Scheduling and Optimization Services Privacy Preserving Data Analysis Virtualization in cloud computing already enables the Scheduling against due-dates is a recurring and a The analysis of huge amounts of data from different + Start new S3 bucket 🛛 🕑 Download Object 🔄 🕑 Upload Object 🛛 🗡 Keys Configuration 🔹 🔓 Reports 🗸 Monitoring Messages 4 efficient utilization of existing compute infrastructure. The general scheduling problem which the production and sources causes in general problems which have to be efficient utilization of virtual instances however, which transportation industries have to tackle with. We offer a treated with specific methods and approaches under the involves selecting the right instance type for a specific set of efficient Scheduling services for both small and headlines big data and big analytics, the focus of our List of Existing S3 Buckets for ABC International application is still an ongoing research topic. To support medium scale business data processing tools is mainly the privacy concerns in the selection of the instance type, resource demand this context. More information estimation helps to narrow down the amount of Cross-company privacy preserving data analysis resources necessary to execute an application. This is Inventory Management Services Bucket Name Created by possible for specific application types already, but not for Illustrative reporting arbitrary applications. We propose that application 💙 Interactive platform for managing multiple hszgbucket1 waheed Open Bucket Delete Bucket classification can help to select the proper resource inventories Administration services hszgbucket2 waheed Open Bucket Delete Bucket demand estimation strategy for an application ✓ Support for transshipments between different More information Launch.. locations hszgbucket3 waheed Open Bucket Delete Bucket Cloud Monitoring Services Visualisations and reporting for comparing results hszgbucket4 waheed Open Bucket Delete Bucket Main Monitoring Dashboard CLaunch... Heavy jobs run on a cluster environmen hszgbucket5 waheed Open Bucket Delete Bucket 🖊 SLA Management Engine 🗹 Launch.. More information Open Bucket Delete Bucket hszgbucket6 waheed Cloud Service Monitoring Client CLaunch. hszgbucket7 waheed Open Bucket Delete Bucket Social Monitor 🗗 Launch. testbucketusa waheed Open Bucket Delete Bucket Open Bucket Delete Bucket usabucket2 waheed SLA Monitoring Client © 2014 | Datenschutzerklärung Impressum Administration Enterprise Application Development Group - HSZG © 2014 | Datenschutzerklärung Impressum Administration

Web front-end of Sustainable IT Services

Amazon S3 Cloud Service Monitoring Interface

Inventory Management Services

Services for Optimization of NP-Hard Scheduling Problems

Interactive platform for managing multiple inventories

Support for transshipments between different locations

• Simulation supporting different optimizations:

-PSO (particle swarm optimization)

-GA (genetic algorithms)

• Visualisations & reporting for comparing results

• Heavy jobs run on a cluster environment

 Efficient & minimal usage of compute, storage and network resources for optimized inventory management Algorithmic solutions to combinatorial optimization problems

 \circ Polynomial algorithms for scheduling and heuristics for sequencing

 Parallel algorithms utilizing graphical processing Units (GPUs) on Nvidia CUDA

 Comparison of heuristic algorithms for the NP-Hard problems on several platforms

 $\circ \mbox{Achieved speed up of } 25 \mbox{x},$ within a deviation of 10%

• Problems dealt with, include:

-Aircraft Landing Problem

-Common Due-Date Problem (CDD)

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