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Configuration management and monitoring of heterogeneous, inter-organizational cloud infrastructures

Use Case: Munich Hybrid Cloud in the Munich Higher Education Network (Excerpt)

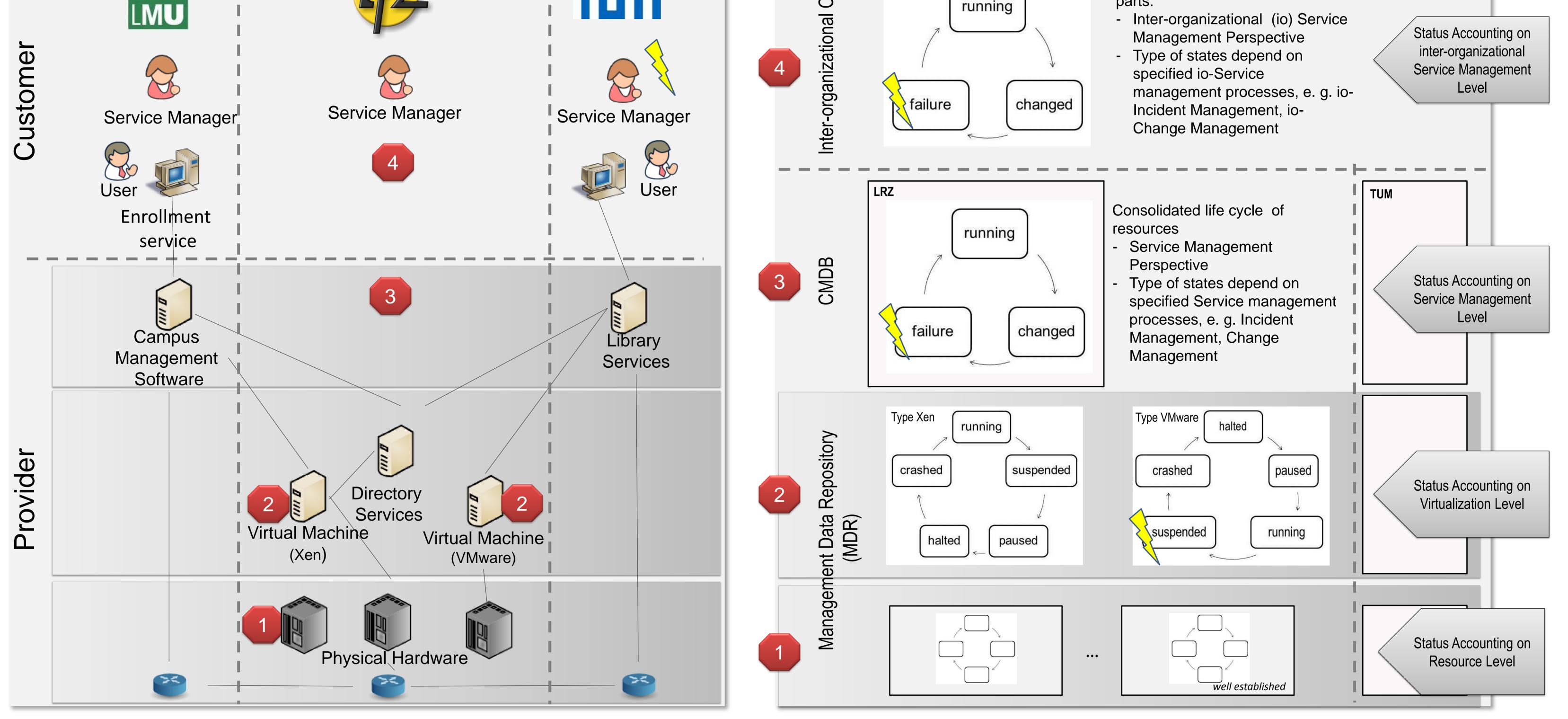




Example: Status Accounting of Virtual Machines



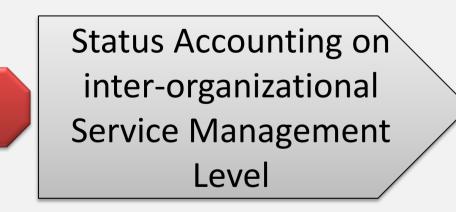
Consolidated life cycle of service parts:



Challenges:

- Composition of services necessitates multiple different input types for each service manager.
- Service Asset and Configuration Management for hybrid cloud services requires Status Mapping both across organizations and across the different service management levels.

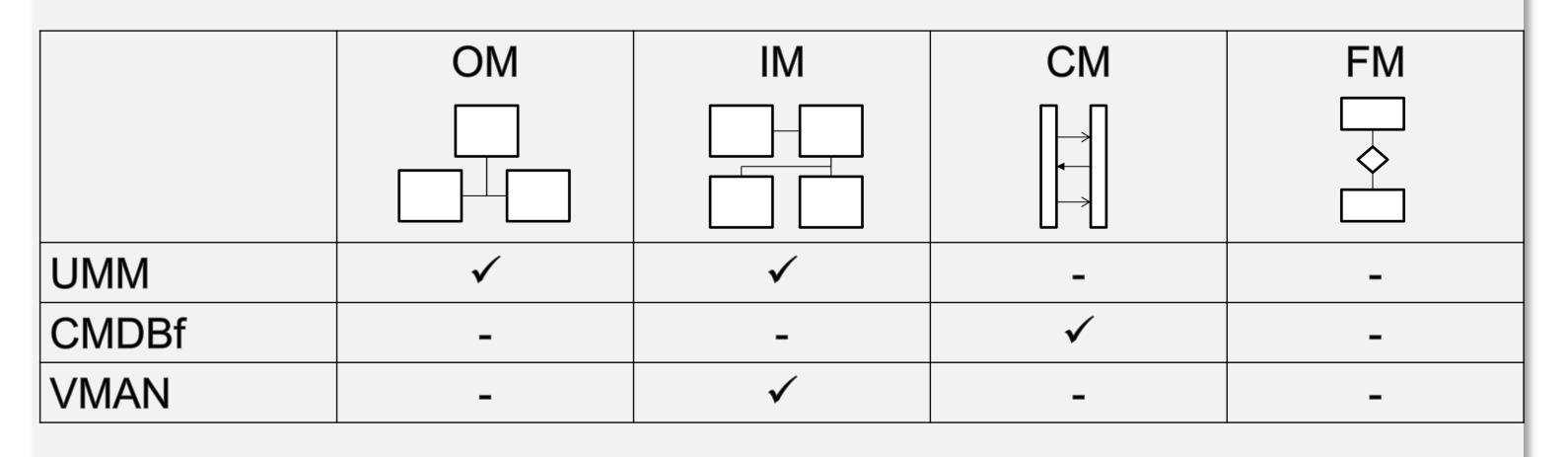
Our Approach: Standards form the basis on all levels



- UN/CEFACT's Modeling Methodology (UMM)
 - UN/CEFACT = United Nations Center for Trade Facilitation and Electronic Business
 - Information modeling of business requirements of interorganizational business processes
 - Platform independent
 - Core Components Library (CCL): Definition of reusable building blocks
- DMTF's Configuration Management Database Federation

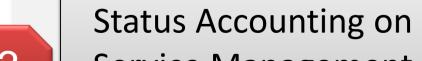
Open Issues

• To enable Status Accounting for hybrid cloud deployments corresponding tools must enable modeling of organizations (OM), information and it's relationships (IM), communication (CM) and functional (FM) aspects



IT Service Management Perspective

- Specification of inter-organizational IT Service Management (ITSM)



Service Management

Level

(CMDBf) standards:

- Facilitates sharing of information between configuration management databases (CMDBs) and other management data repositories (MDRs)
- Enables to federate and access information from complex, multi vendor infrastructures.
- Simplifies the process of managing related configuration data stored in multiple CMDBs and MDRs
- DMTF's Virtualization Management (VMAN) standard
 - Set of specifications for the management lifecycle of a virtual environment.
 - Open Virtualization Format (OVF): Standard format for packaging and describing virtual machines and applications for deployment across heterogeneous virtualization platforms
 - VMAN profile: standardize many aspects of the operational management of a heterogeneous virtualized environment

Status Accounting on Resource Level is well established, no further investigation done here

processes influences possible service states, e. g. io-Problem Management -> State "problem"

- ITSM on intra- and inter-organizational level needs to be aligned
- Orientation on standards like ITIL or ISO 20000 could ease alignment because of widespread international degree of familiarity
- FM could be modeled according ITIL for CDMB and io-CMDB
- Proposed Standards are developed "Stand-alone", thus holistic integration efforts necessary
- Emergence = complex patterns and systems might arise out of a multiplicity of relatively simple interactions:
- Observable in inter-organizational service scenarios?
- Small cause might have large effect: root cause analysis has to be done now inter-organizational
- MDR versus CMDB: replace or integrate decision for any MDR necessary

7th International DMTF Academic Alliance Workshop On Systems and Virtualization Management: **Standards and the Cloud**

Status Accounting on Virtualization Level

Status Accounting on **Resource Level**