IBM Tivoli – fundament efektywnych rozwiązań IT w architekturze „cloud”

Piotr Pietrzak
Chief Technologist
Business Analytics & Optimization SME

Co to jest Cloud Computing

Co to jest Cloud Computing według U.S. National Institute of Standards and Technology:

"Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction."

Characteristics

- Resource pooling
- Broad network access
- Rapid elasticity
- Measured service
- On-demand self service

Service Models

- Software as a Service
- Platform as a Service
- Infrastructure as a Service

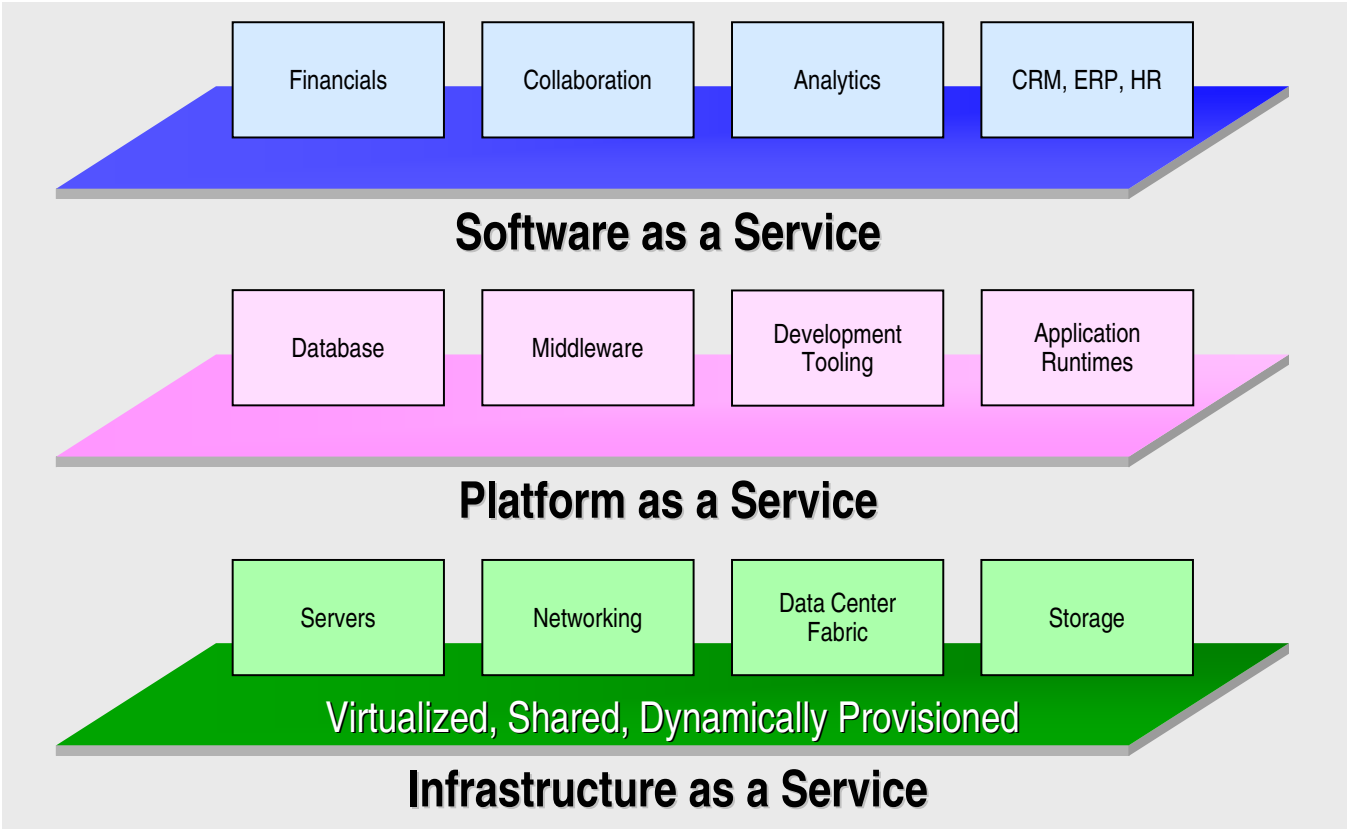
Deployment Models

- Private cloud
- Public cloud
- Hybrid cloud
- Community cloud

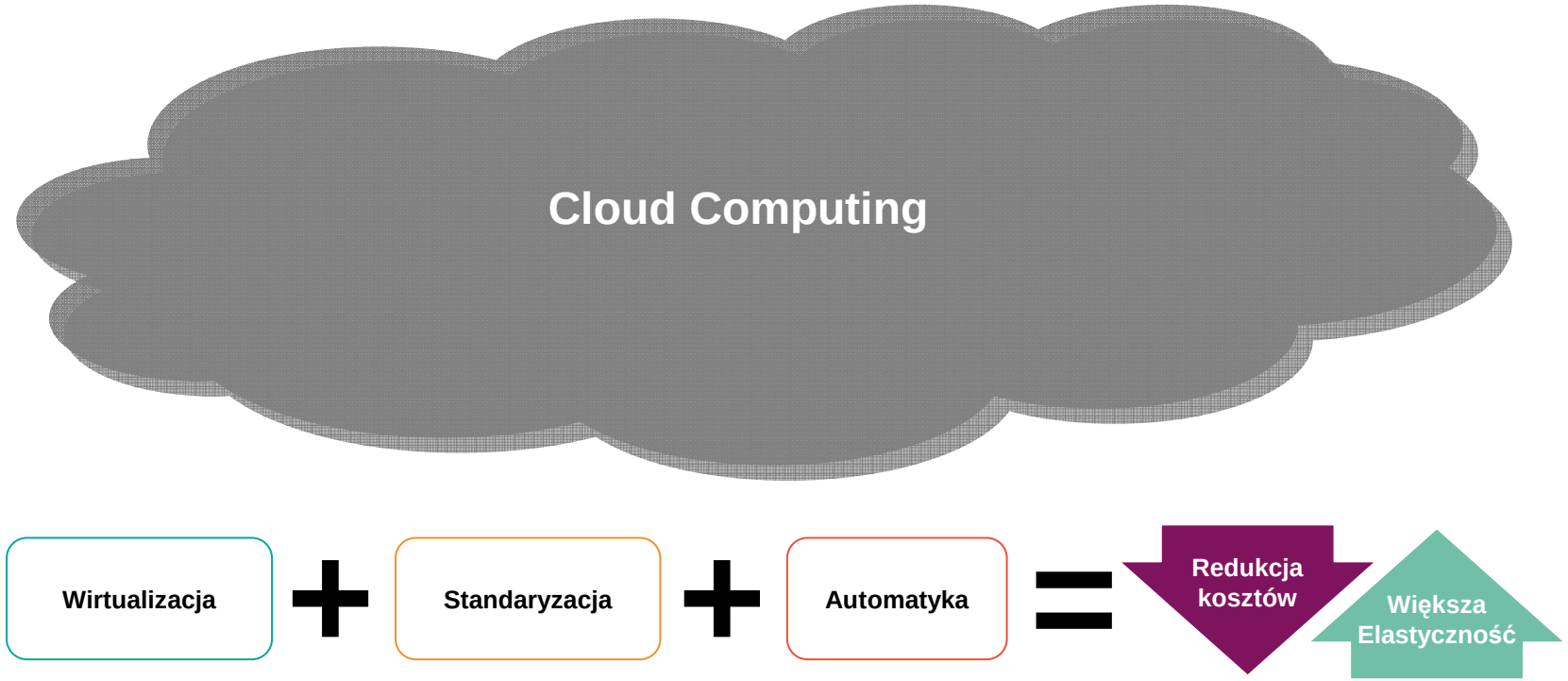
Read more at: http://csrc.nist.gov/groups/SNS/cloud-computing/index.html

4 modele świadczenia usług

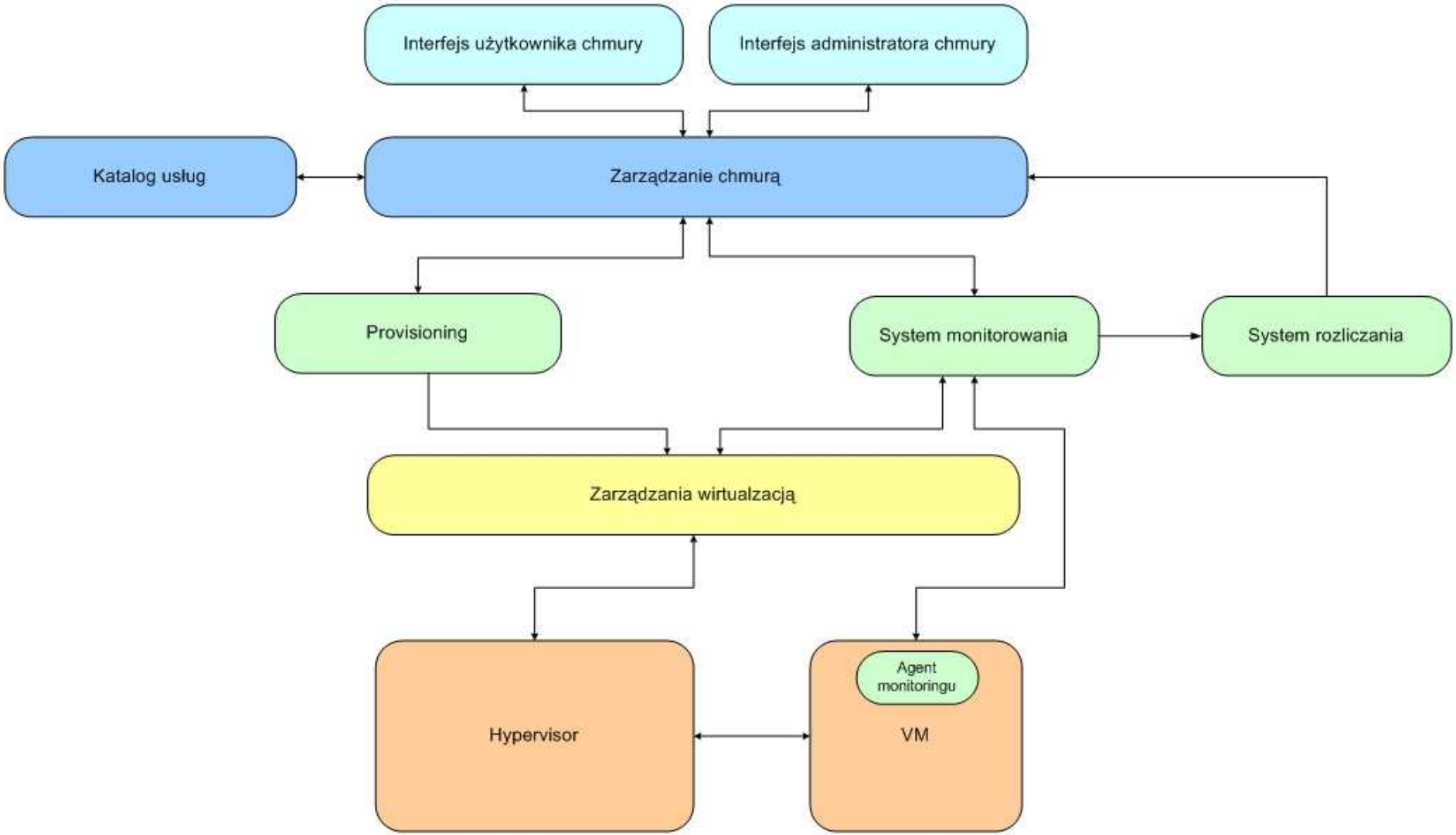
- ***BPaaS***
- ***SaaS***
- ***PaaS***
- ***IaaS***



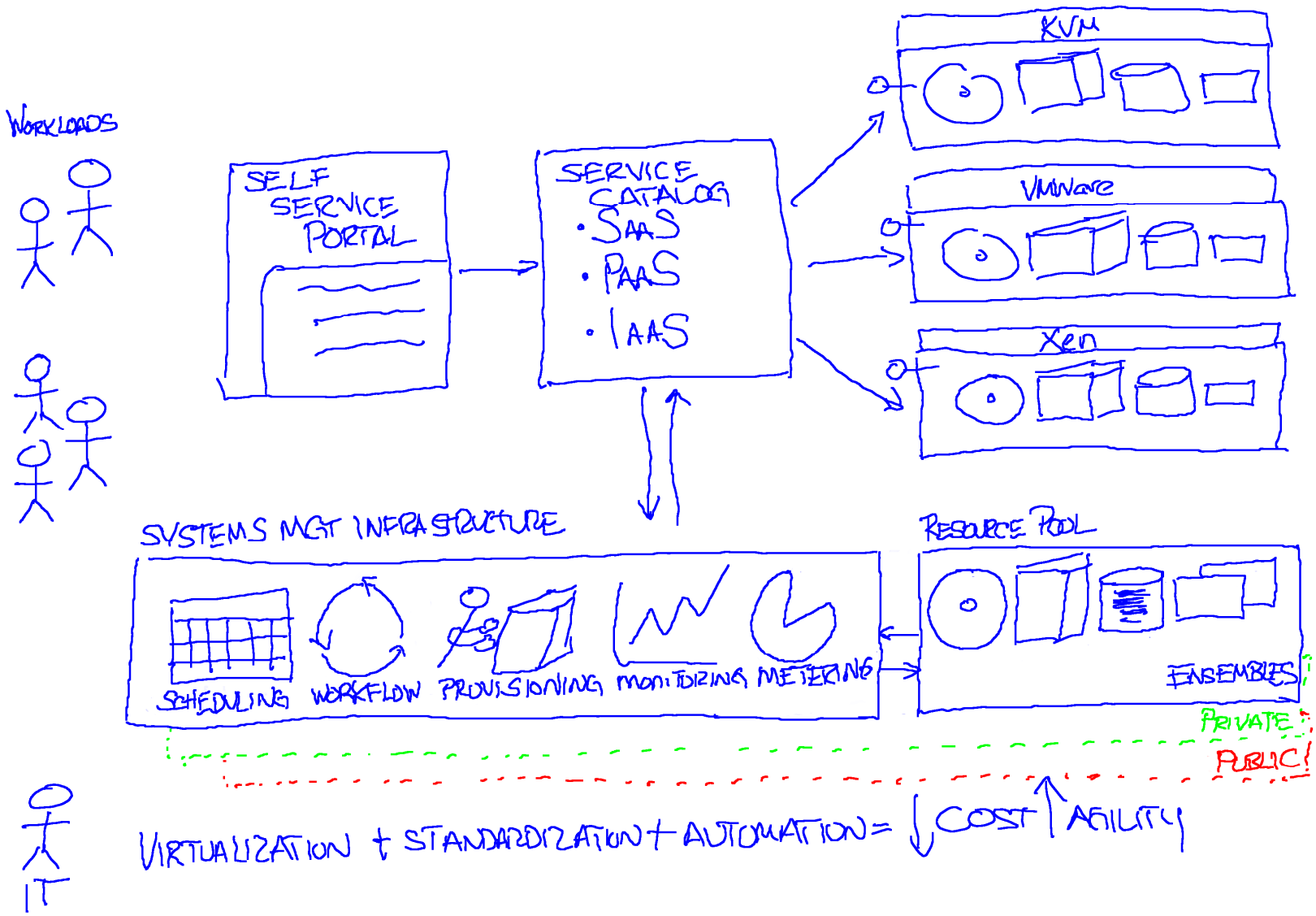
Założenie


Cloud Computing
Wirtualizacja
+
Standaryzacja
+
Automatyka
=
Redukcja kosztów
Większa Elastyczność

Komponenty modelu Cloud Computing



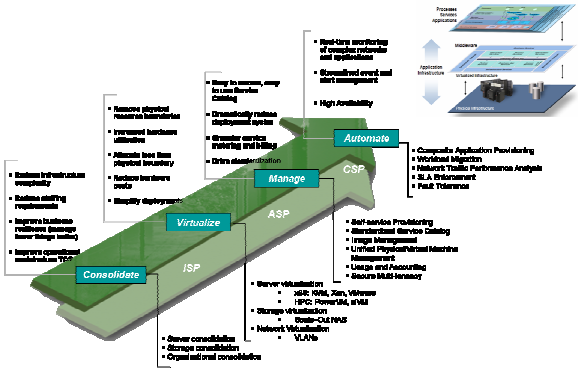
Cloud Computing na jednym rysunku



6 kroków do Cloud Computing

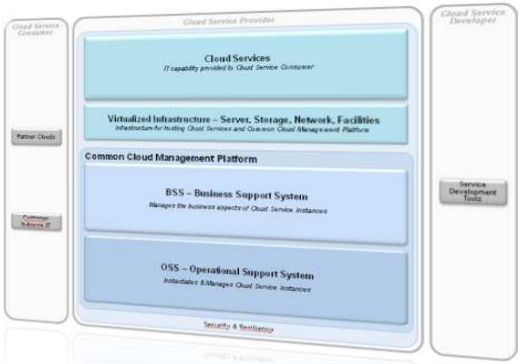
1

Mapa drogowa



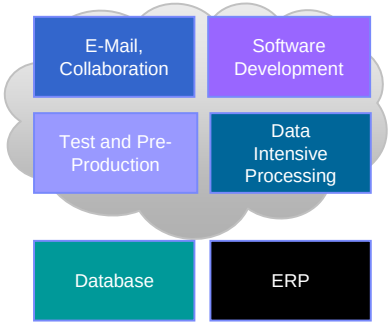
2

Dostosowanie architektury referencyjnej



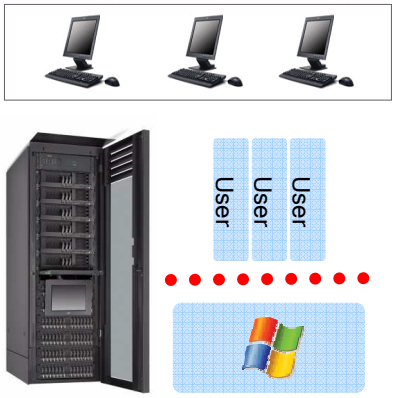
3

Inwentaryzacja zadań



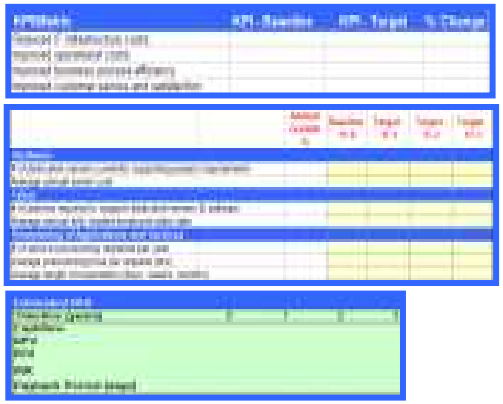
4

Określenie i identyfikacja KPI



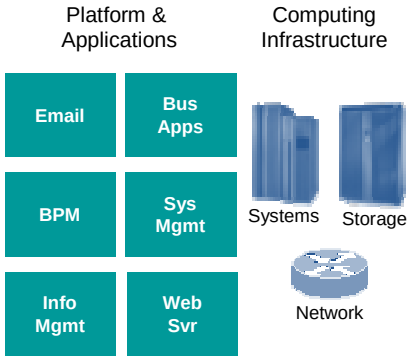
5

Kalkulacja ROI

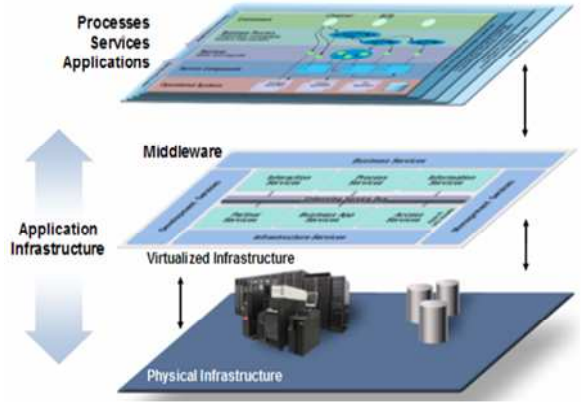


6

Definicja planu migracji



Mapa drogowa



- Reduce infrastructure complexity
- Reduce staffing requirements
- Improve business resilience (manage fewer things better)
- Improve operational costs/reduce TCO

Consolidate

- Server consolidation
- Storage consolidation
- Organizational consolidation

- Remove physical resource boundaries
- Increased hardware utilization
- Allocate less than physical boundary
- Reduce CAPEX, Space and Power Costs
- Simplify deployments

Virtualize

- Server virtualization
  - x86: KVM, Xen, VMware
  - HPC: PowerVM, z/VM, zEnterprise
- Storage virtualization
  - Scale–Out NAS
- Network Virtualization
  - VLANs

- Easy to access, easy to use Service Catalog
- Dramatically reduce deployment cycles
- Granular service metering and billing
- Drive standardization

Manage

- Self-service Provisioning
- Standardized Service Catalog
- Image Management
- Unified Physical/Virtual Machine Management
- Governance
- Secure Multi-tenancy

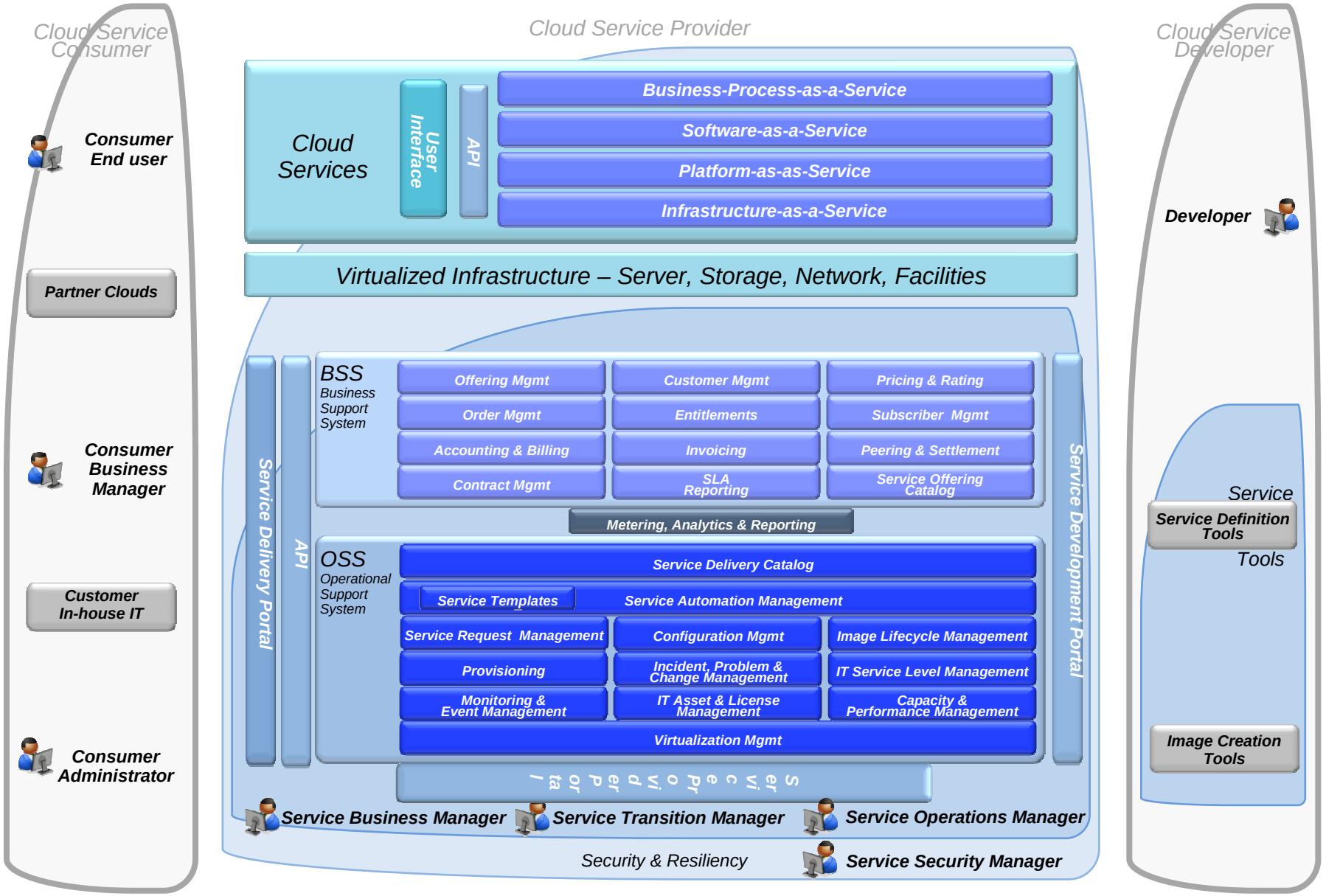
- Real-time monitoring of complex networks and applications
- Streamlined event and alert management
- High Availability

Automate

- Composite Application Provisioning
- Workload Migration
- Network Traffic Performance Analysis
- SLA Enforcement
- IT Asset Management
- Fault Tolerance

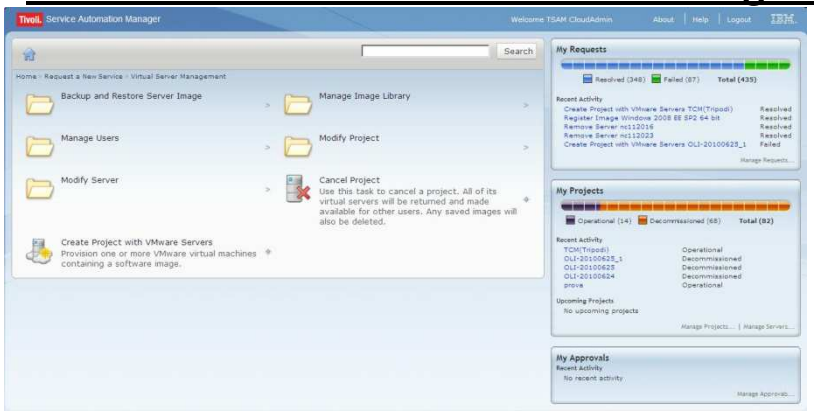
Standardize Service Delivery

Architektura referencyjna



Podstawowe komponenty zarządzania usługami

Tivoli Service Automation Manager

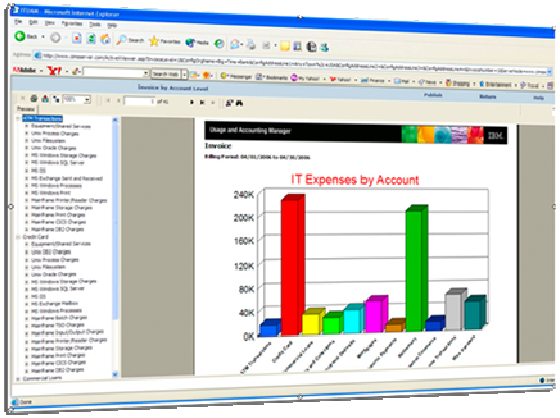


Portal, Katalog usług, automatyczny provisioning, zarządzanie obrazami

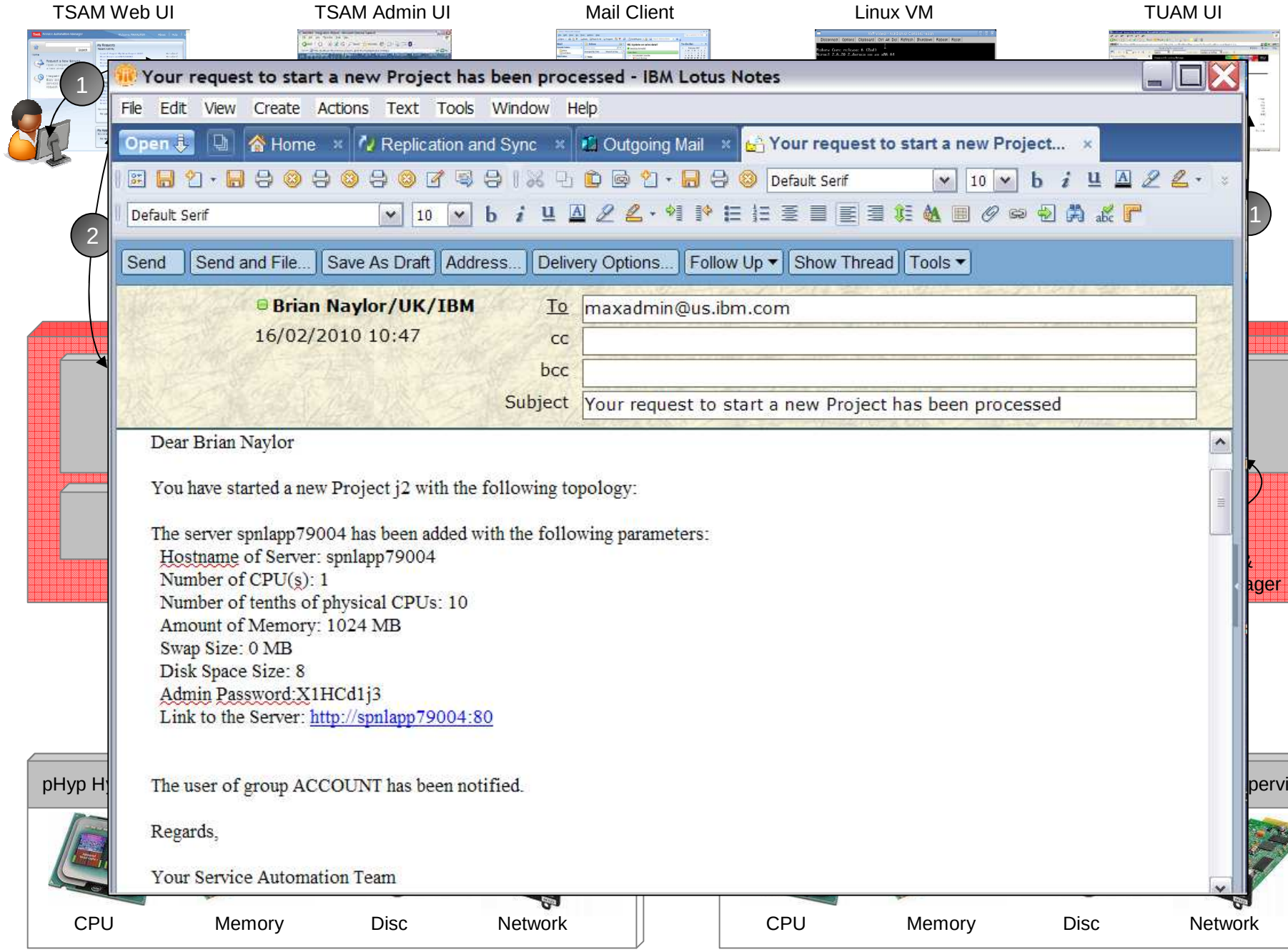
Tivoli Monitoring

Monitoring

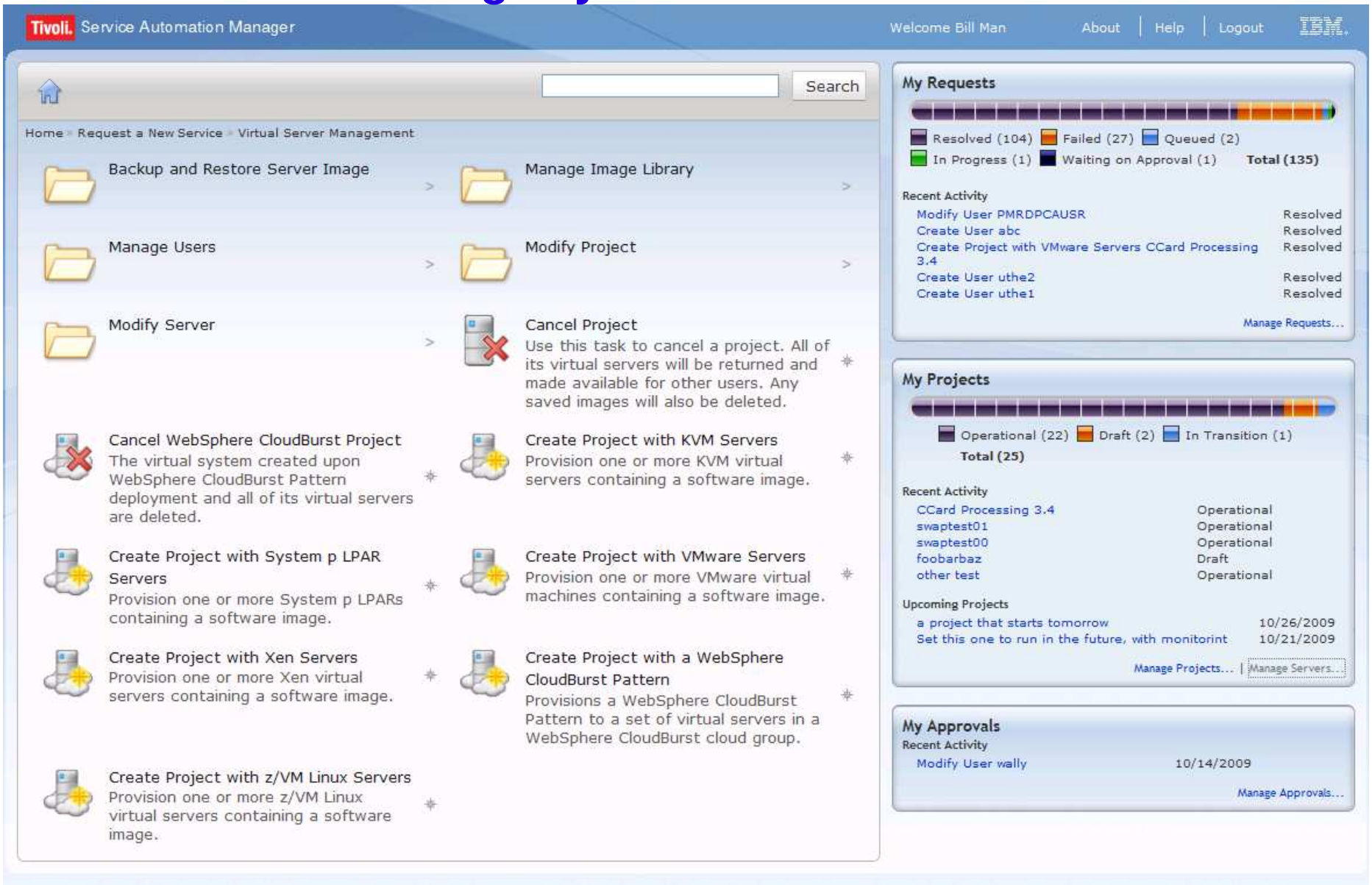
Tivoli Usage and Accounting Manager



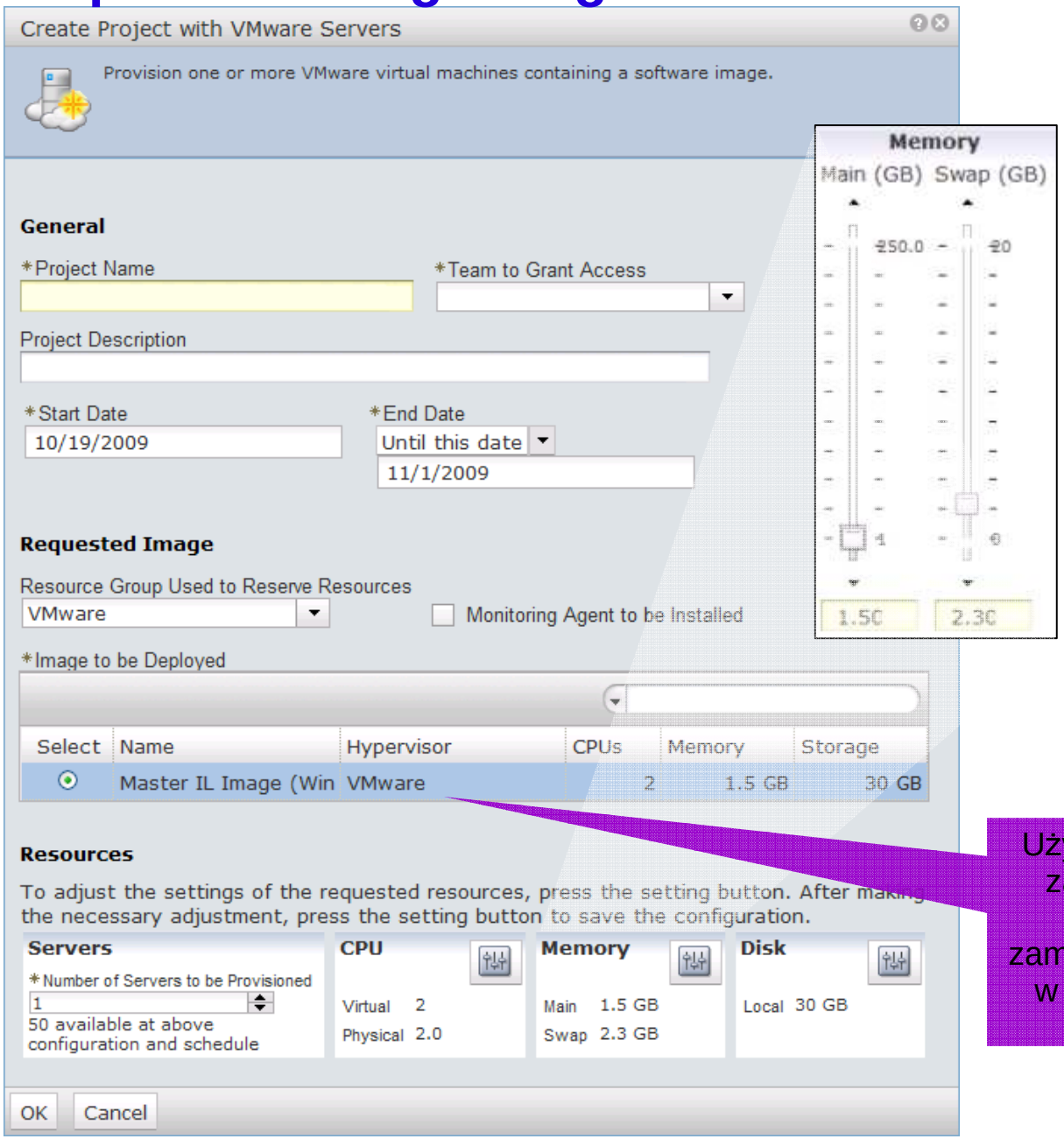
Pomiar


TSAM Web UI
TSAM Admin UI
Mail Client
Linux VM
TUAM UI
1
2
Your request to start a new Project has been processed - IBM Lotus Notes
File Edit View Create Actions Text Tools Window Help
Open
Home
Replication and Sync
Outgoing Mail
Your request to start a new Project...
Default Serif
10
Send
Send and File...
Save As Draft
Address...
Delivery Options...
Follow Up
Show Thread
Tools
Brian Naylor/UK/IBM
16/02/2010 10:47
To maxadmin@us.ibm.com
cc
bcc
Subject Your request to start a new Project has been processed
Dear Brian Naylor
You have started a new Project j2 with the following topology:
The server spnlapp79004 has been added with the following parameters:
Hostname of Server: spnlapp79004
Number of CPU(s): 1
Number of tenths of physical CPUs: 10
Amount of Memory: 1024 MB
Swap Size: 0 MB
Disk Space Size: 8
Admin Password:X1HCd1j3
Link to the Server: http://spnlapp79004:80
The user of group ACCOUNT has been notified.
Regards,
Your Service Automation Team
pHyp H
pervisor
CPU
Memory
Disc
Network
CPU
Memory
Disc
Network

TSAM Portal Samoobsługowy



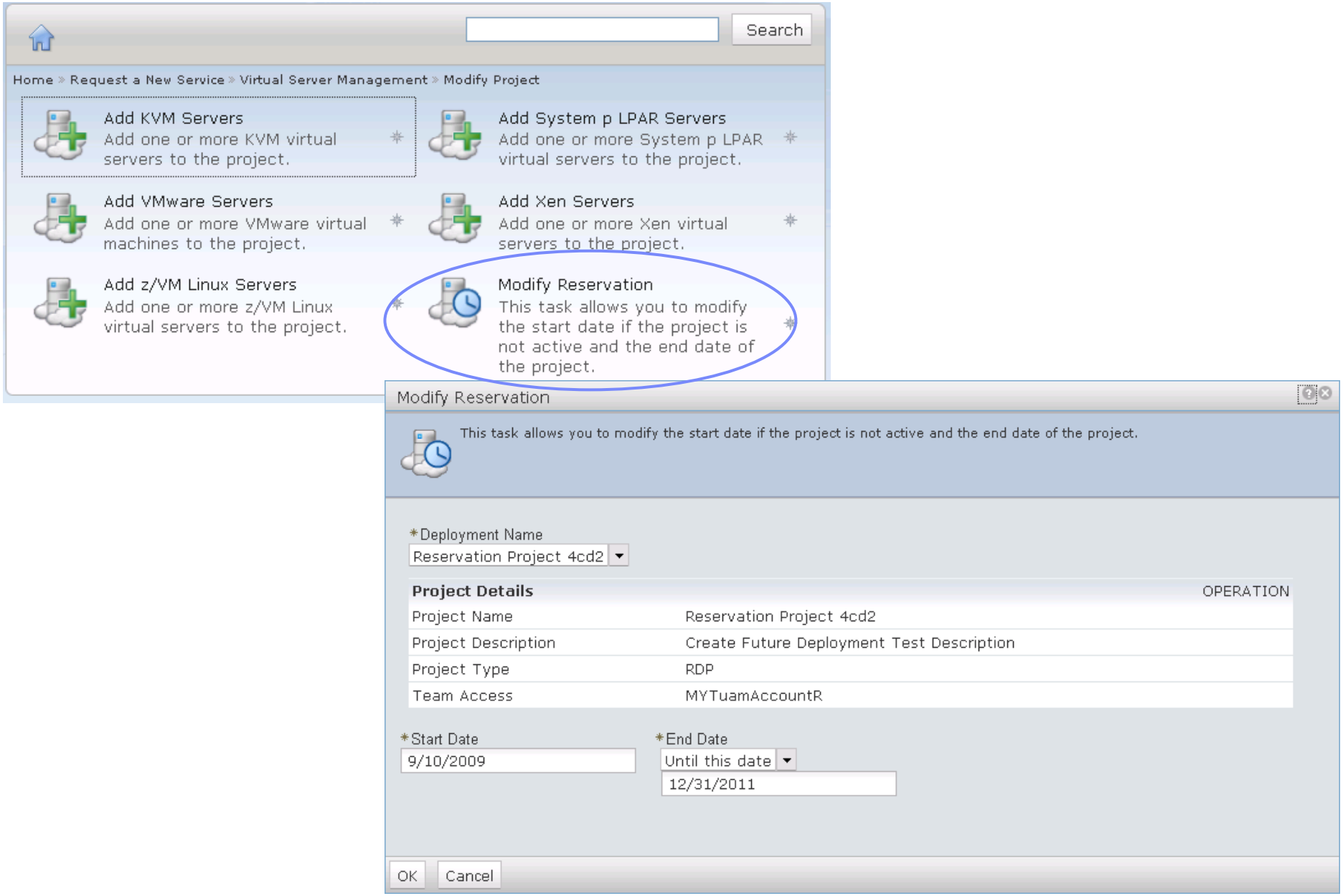
Zamówienie przez katalog usług



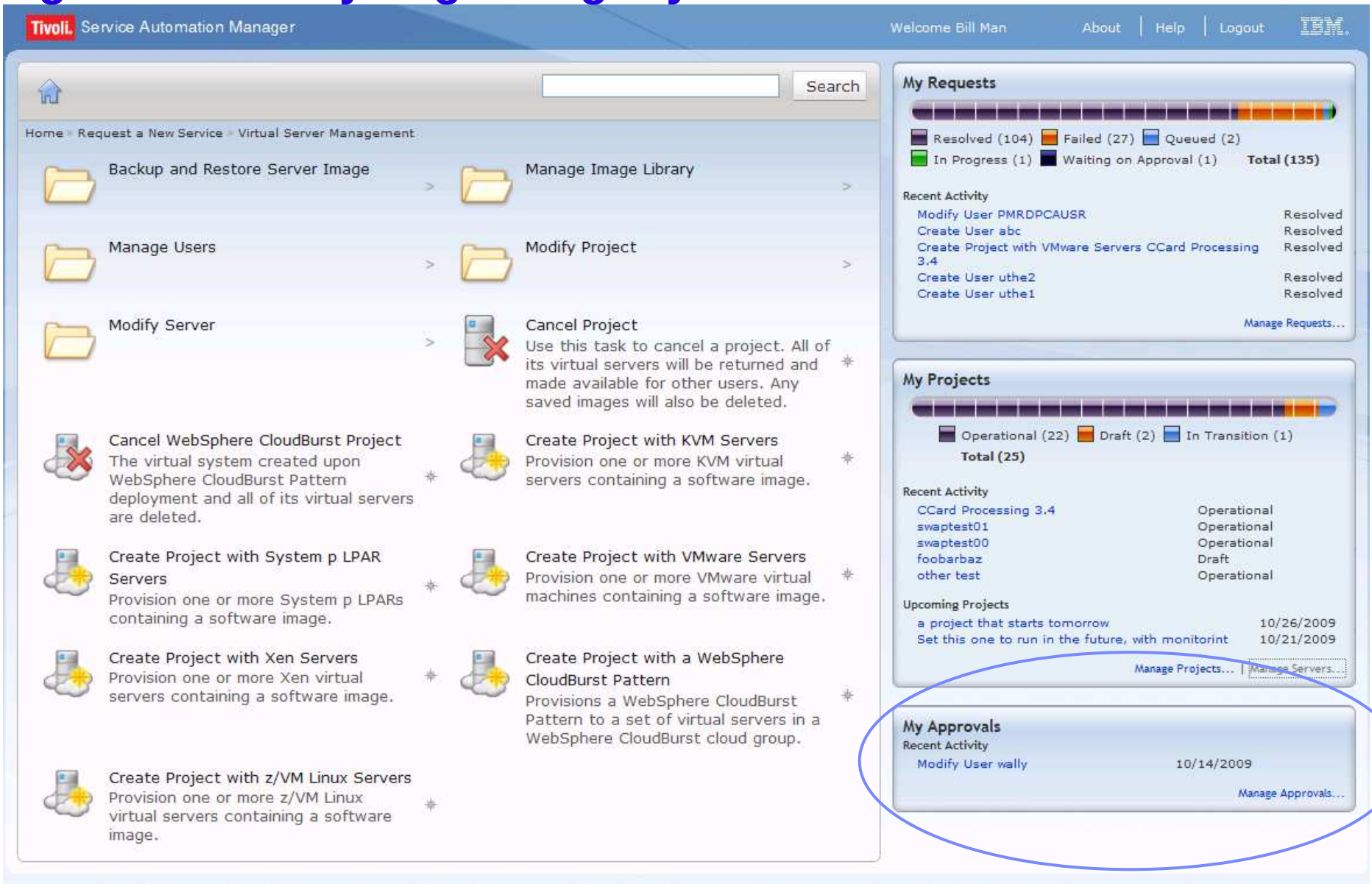
Rezerwacja zasobów

Użytkownicy mogą zobaczyć, jakie zasoby są dostępne w katalogu usług, posiadają możliwość zamówienia usługi i jej uruchomienia w czasie w którym jej potrzebują.

Harmonogramowanie

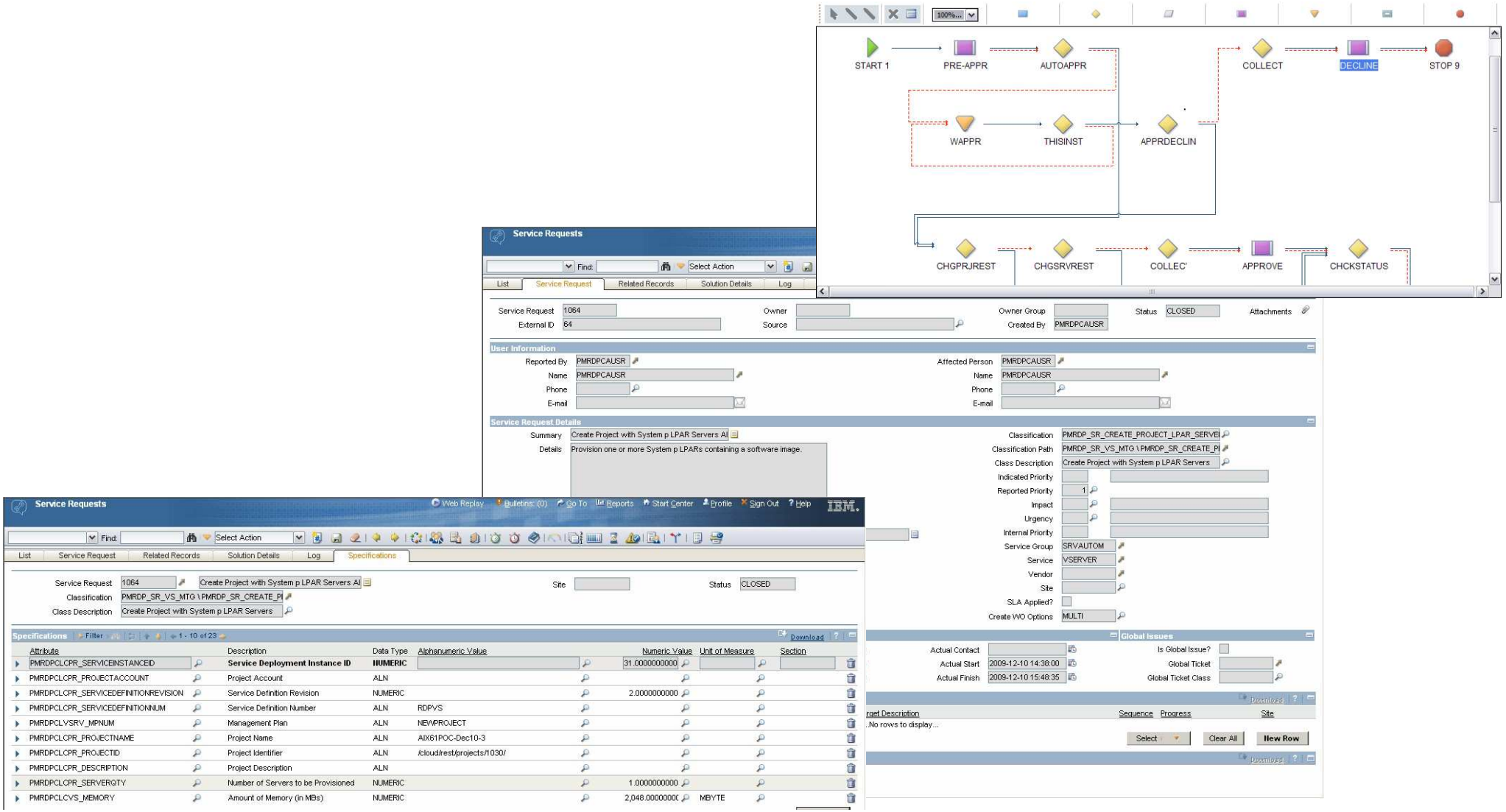


Obieg zlecenia i wymagane zgody

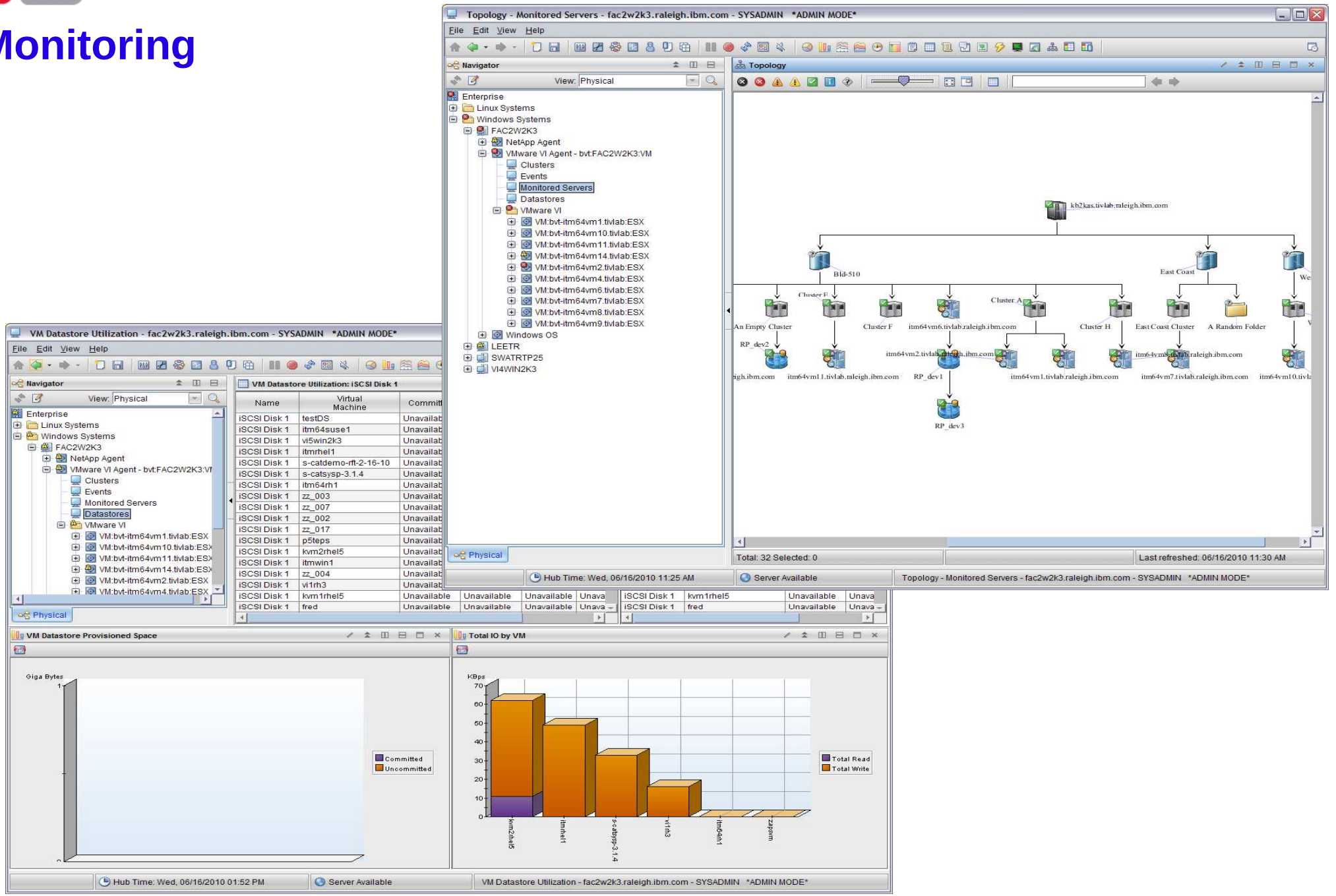


Zlecenie serwisowe

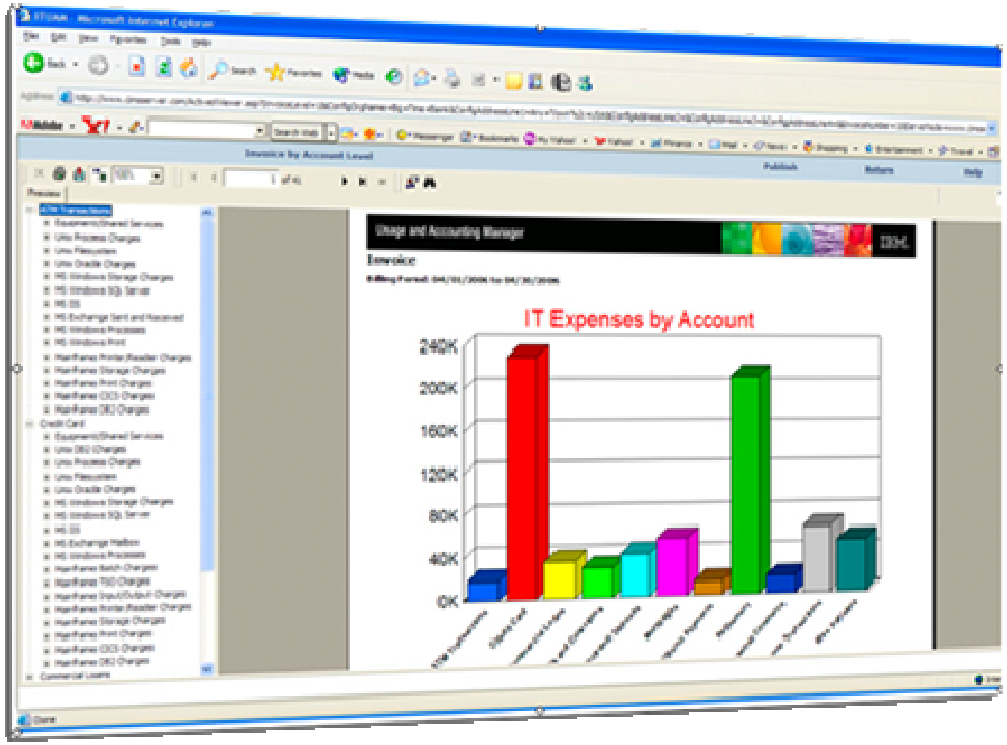
Obieg zgodny z ITIL prosto z pudełka z możliwością personalizacji ustawień



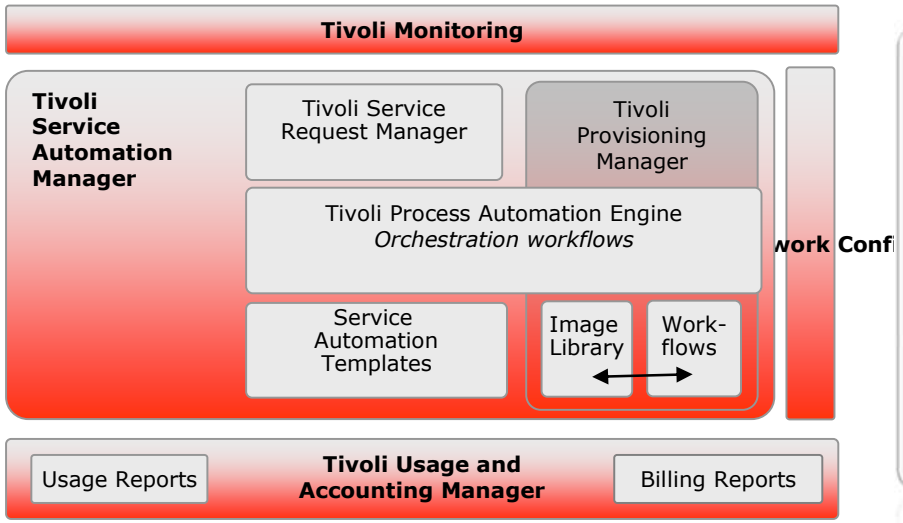
Monitoring

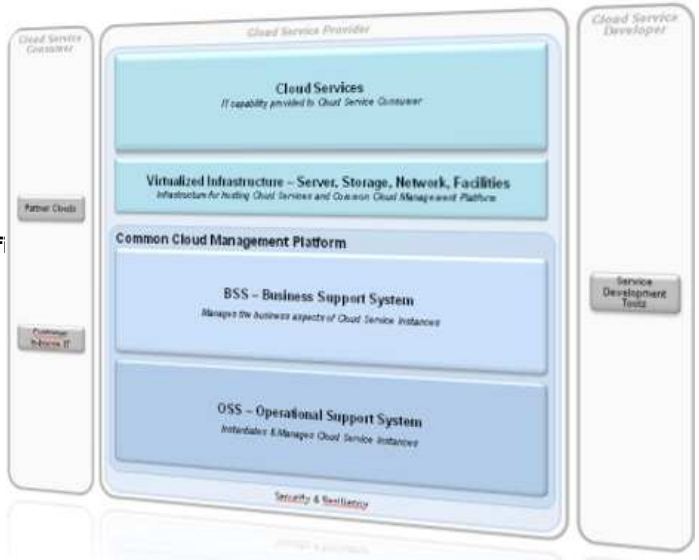

Topology - Monitored Servers - fac2w2k3.raleigh.ibm.com - SYSADMIN *ADMIN MODE*
File Edit View Help
Navigator
View: Physical
Enterprise
Linux Systems
Windows Systems
FAC2W2K3
NetApp Agent
VMware VI Agent - bvt:FAC2W2K3:VM
Clusters
Events
Monitored Servers
Datastores
VMware VI
Windows OS
LEETR
SWATRTP25
VI4WIN2K3
Topology
kb2kas.tivlab.raleigh.ibm.com
Bld-510
East Coast
Cluster F
Cluster A
An Empty Cluster
Cluster H
East Coast Cluster
A Random Folder
RP_dev2
RP_dev1
RP_dev3
Total: 32 Selected: 0
Last refreshed: 06/16/2010 11:30 AM
Hub Time: Wed, 06/16/2010 11:25 AM
Server Available
VM Datastore Utilization - fac2w2k3.raleigh.ibm.com - SYSADMIN *ADMIN MODE*
VM Datastore Utilization: iSCSI Disk 1
Name
Virtual Machine
VM Datastore Provisioned Space
Giga Bytes
Committed
Uncommitted
Total IO by VM
KBps
Total Read
Total Write
Hub Time: Wed, 06/16/2010 01:52 PM
Server Available
VM Datastore Utilization - fac2w2k3.raleigh.ibm.com - SYSADMIN *ADMIN MODE*

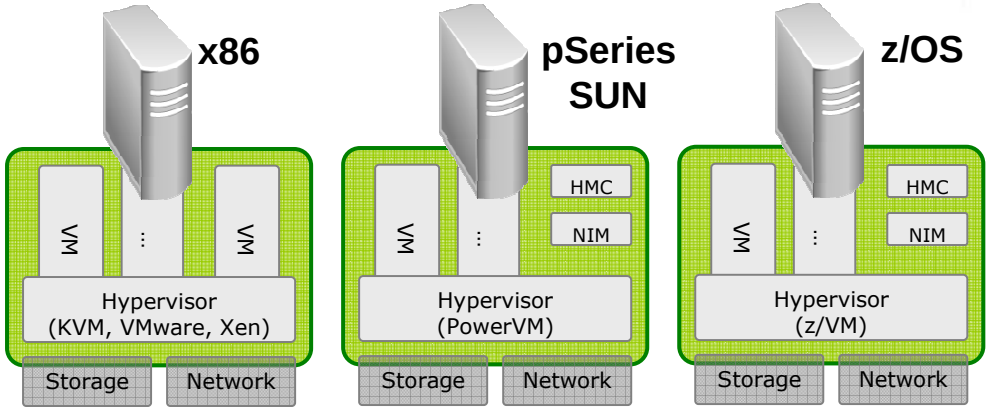
Pomiar: *Rozliczanie za użycie*



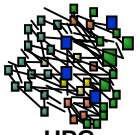
Typowa platforma do zarządzania







Web



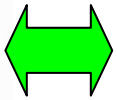
HPC

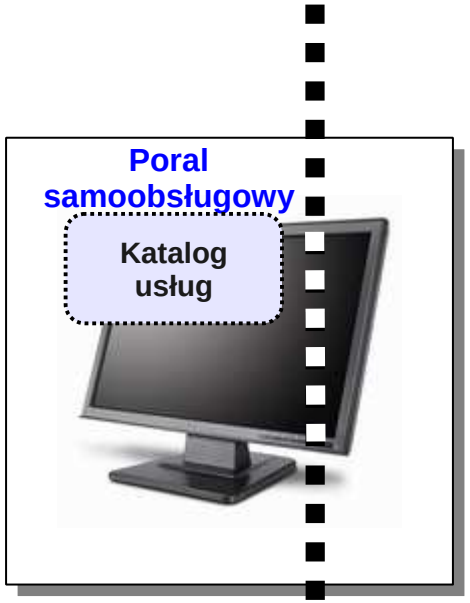
Transakcje

BA

Różne możliwości implementacji

Uzytkownik chmury





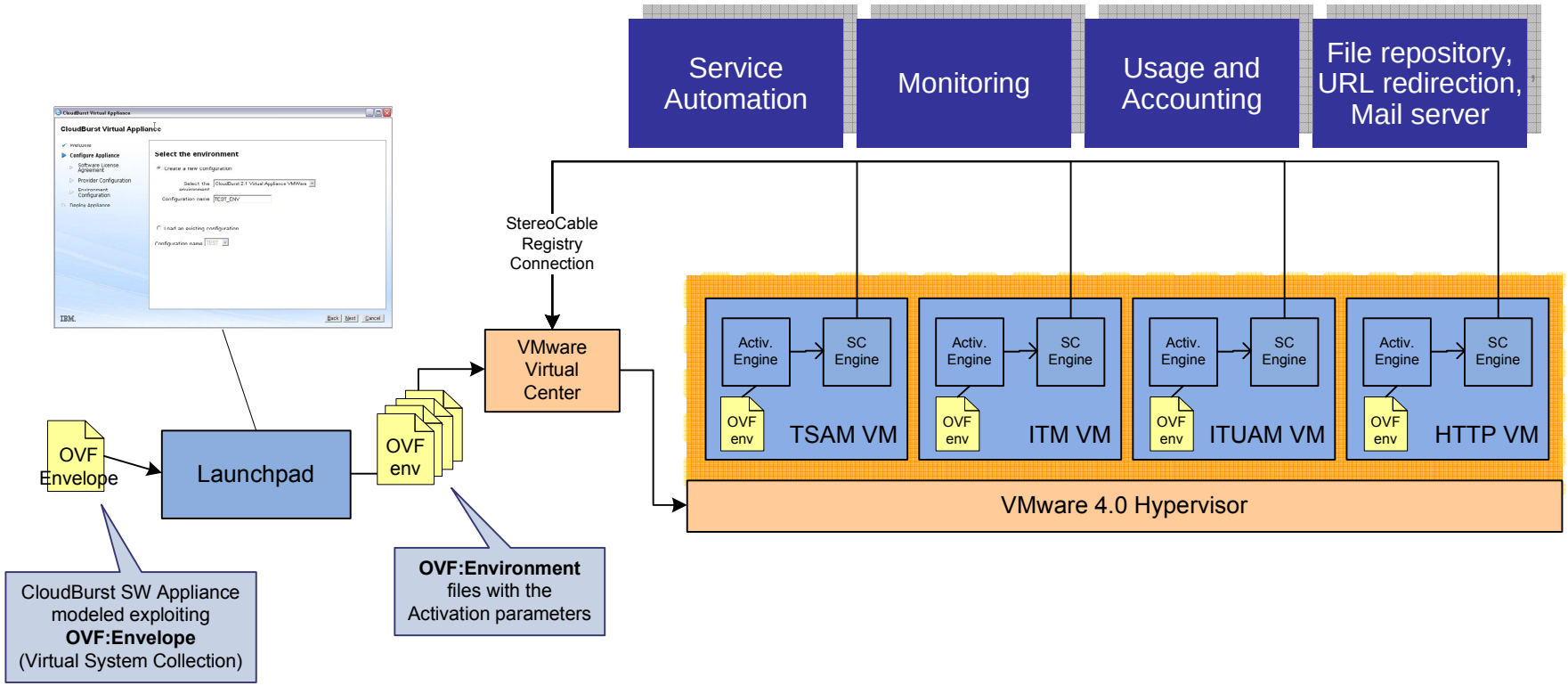
Warstwa abstrakcji

Pre-konfigurowany HW, SW i dyski
IBM Cloudburst

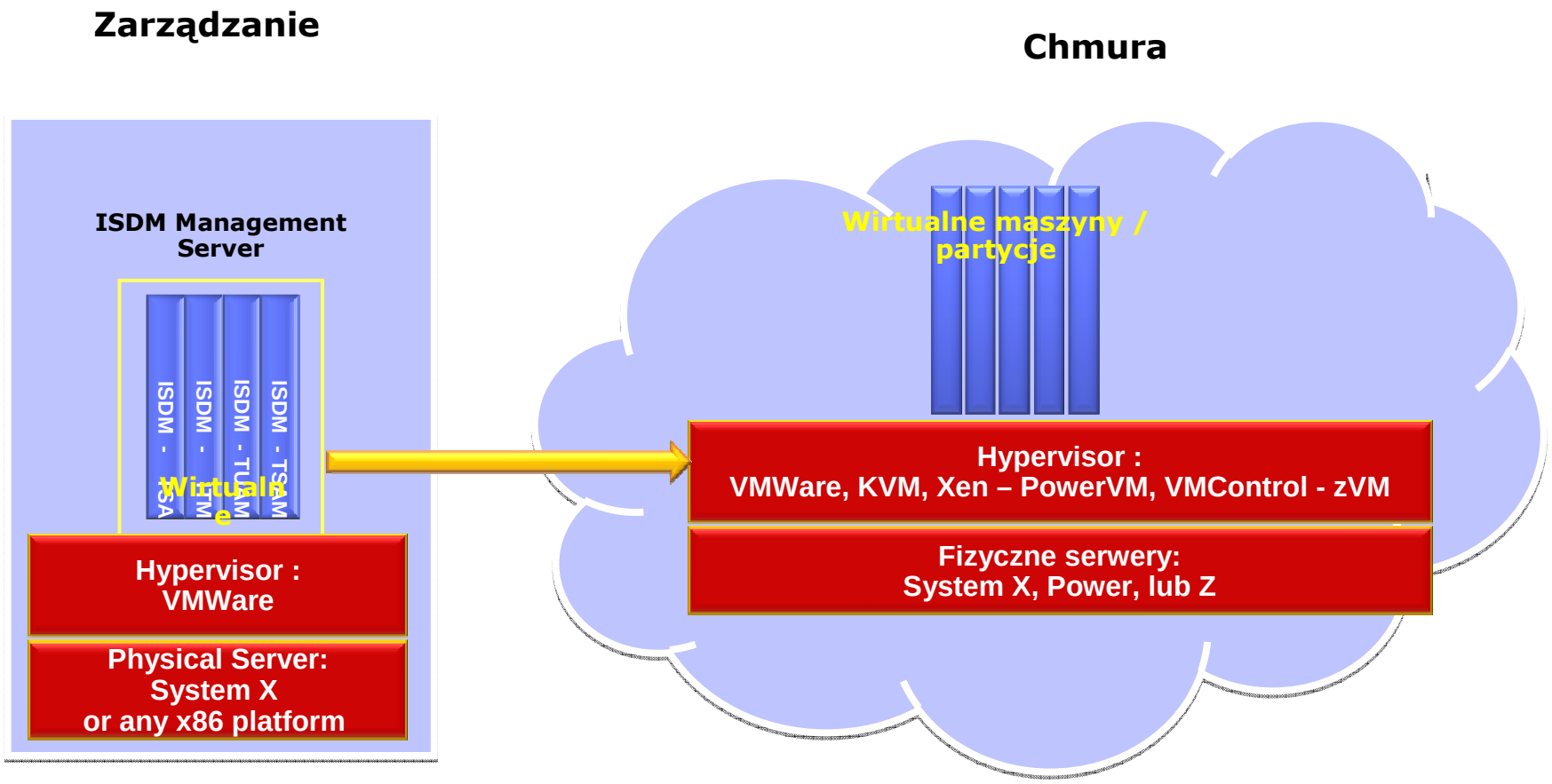
Pre-konfigurowane obrazy VM
IBM Service Delivery Manager

Indywidualne komponenty
Tivoli Service Automation Manager, IBM Tivoli Monitoring, etc.

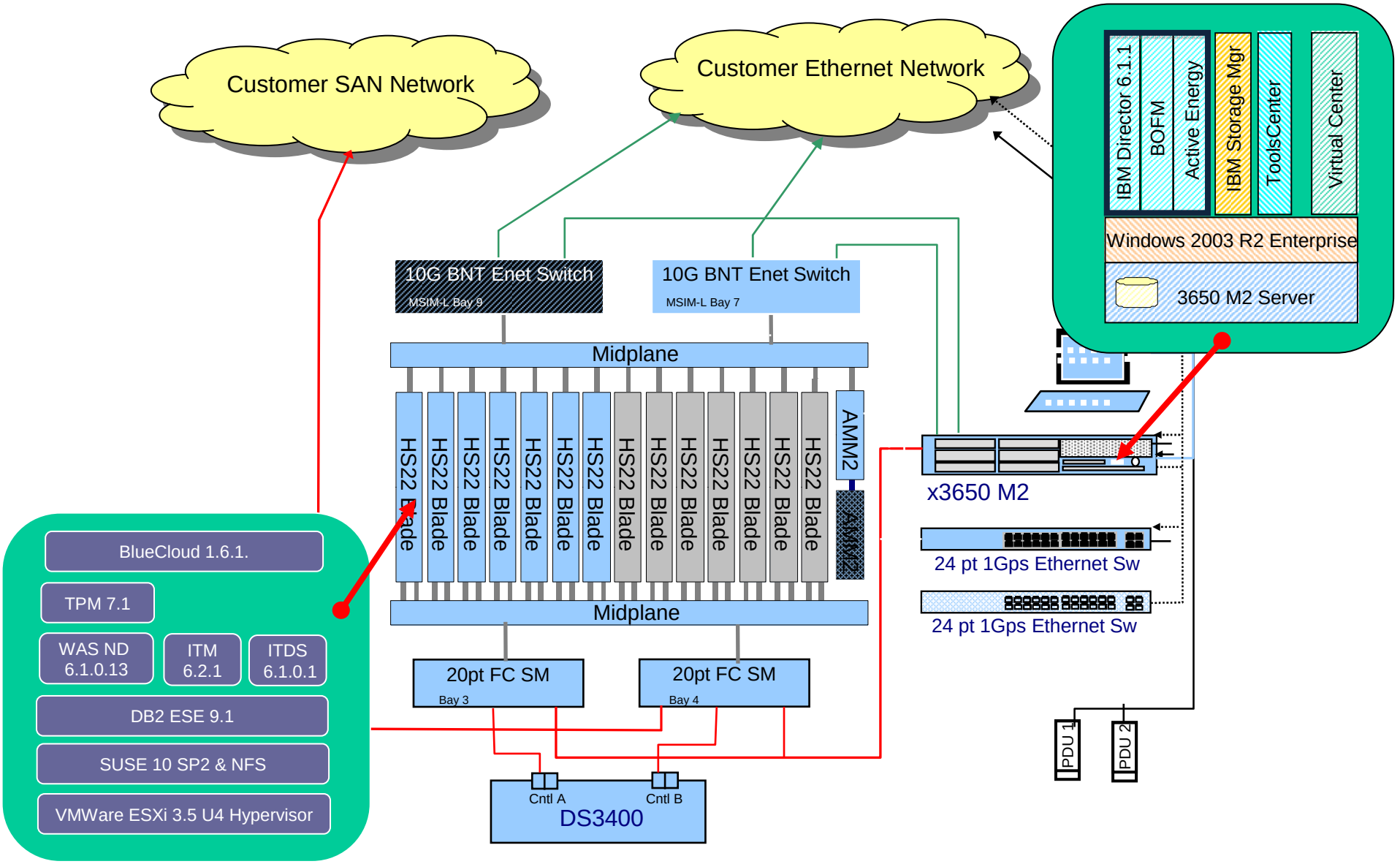
IBM Service Delivery Manager



Zarządzanie

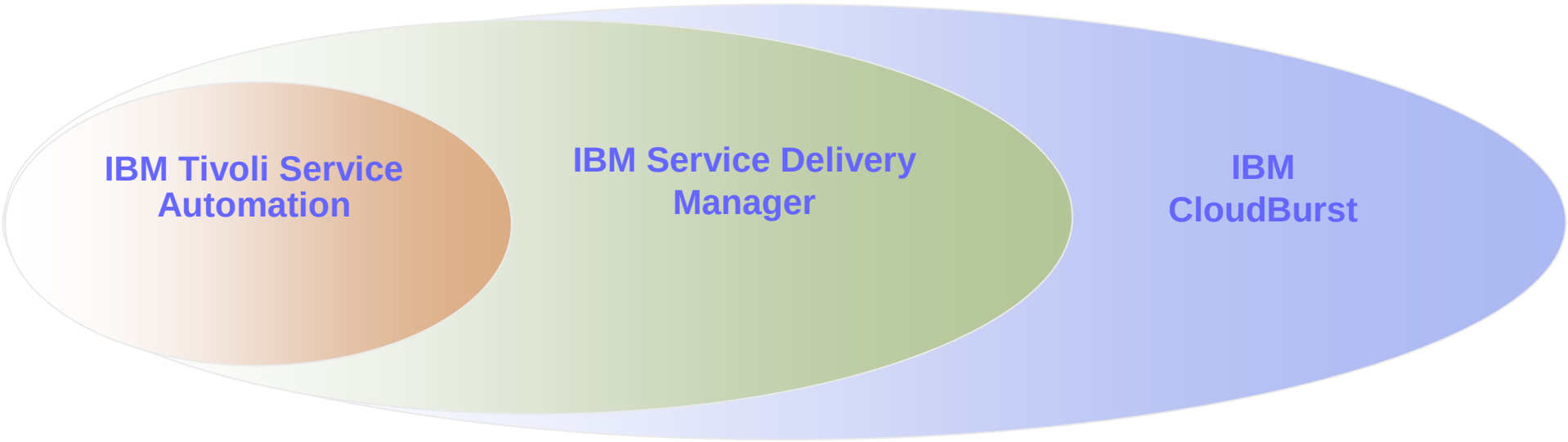


Cloudburst 2.1 - architektura



Jak zacząć ?

Automatyzacja działań, w zależności od zlecenia użytkownika opartego o katalog usług



Pytania…?

Piotr Pietrzak
Chief Technologist
Business Analytics & Optimization SME
piotr.pietrzak@pl.ibm.com