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11435
CICS Platform and Applications Basics

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SHARE in Anaheim 2012

Cloud-style CICS development, deployment, and operations Sessions

SHARE Lunch & Learn “CICS Transaction Server V5.1 open beta”

11435 CICS Platform and Applications Basics

11437 CICS Platform and Applications Advanced Concepts

“CICS TS V5.1 open beta”

“introduces cloud-style CICS development, deployment, and operations.”

“delivering new Platform as a Service (PaaS) capabilities that can be used to host Software as a Service (SaaS)-based CICS applications.”

“The combination of new Application, Platform, and Policy definitions …, delivering many of the characteristics found in private-cloud systems..”

http://www.ibm.com/software/cics/openbeta/

Pain Points

Deploying and un-deploying applications is a high skill complex job due to the number of separate artifacts

Customers would like to see usage / charging, availability / SLA at the application level

Elastic scale is a requirement, but it needs to be managed within the constraints of the customers resources and business environment

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New Platform as a Service (PaaS)
~~Concepts~~ Resources

Application

Platform

Policy

Application

A collection of one or more CICS bundles

Life-cycle as a single entity

Measure and control resource usage

Develop in Eclipse/Rational

Share and promote through SCM

Application Package

Name

org.maw.banking.Loans

Version

1.2.1

Resources

LIBRARY, PROGRAM, TRANSACTION, URIMAP, (EVENTBINDING, OSGIBUNDLE, …)

Dependencies

DB2CONNECTION, JVMSERVER, TCPIPSERVICE, …

Entry points

operation: browse, update, …

resource: PROGRAM

Policy

Application Lifecycle

Deploy Application bundle to zFS

INSTALL Application onto a Platform

ENABLE Application

DISABLE Application

DISCARD Application

ENABLE/DISABLE CICS bundle

Application status (DISABLED, ENABLING, …)

Application Context

- Manage Application
- Measure & control resource usage
- Associate Task with Application operation
  - PROGRAM
- Flow from Task to Task & Region to Region
  - MRO, IPIC
- Recorded in monitoring data
  - Platform, Application, Version (major.minor.micro), Operation

Version

- Semantic versioning
  - major: backward incompatible change
  - minor: backward compatible change
  - micro: bug fix
- Resources
  - Application
  - CICS bundle
  - OSGi bundle
- Life-cycle
  - Development
  - Deployment
  - Operations
  - Planning

http://www.osgi.org/wiki/uploads/Links/SemanticVersioning.pdf

CICS Application vs. CPSM BAS

Offline representation of an Application

Separation of DevOps* roles

Complete lifecycle

Versions

Management, measurement and control

* "… communication, collaboration and integration between software developers and information technology(IT) professionals …"

http://en.wikipedia.org/wiki/DevOps

Application Questions

Can I define single application package that moves from development, through test to production unchanged?

Yes

Can I tell what's changed between two versions of the same application at any point in the life-cycle?

Yes

Can I use source code management (SCM) to manage application lifecycle?

Yes

Platform

Set of one or more region types

Life-cycle as a single entity

Hides complexity of underlying topology

Provides services for Applications

Control Applications through Policy

Platform Lifecycle

Name

- org.maw.production.Banking

zFS home

Region types

- ID
- name

Resource & Dependencies

Policy

DevOps Roles

Application Developer

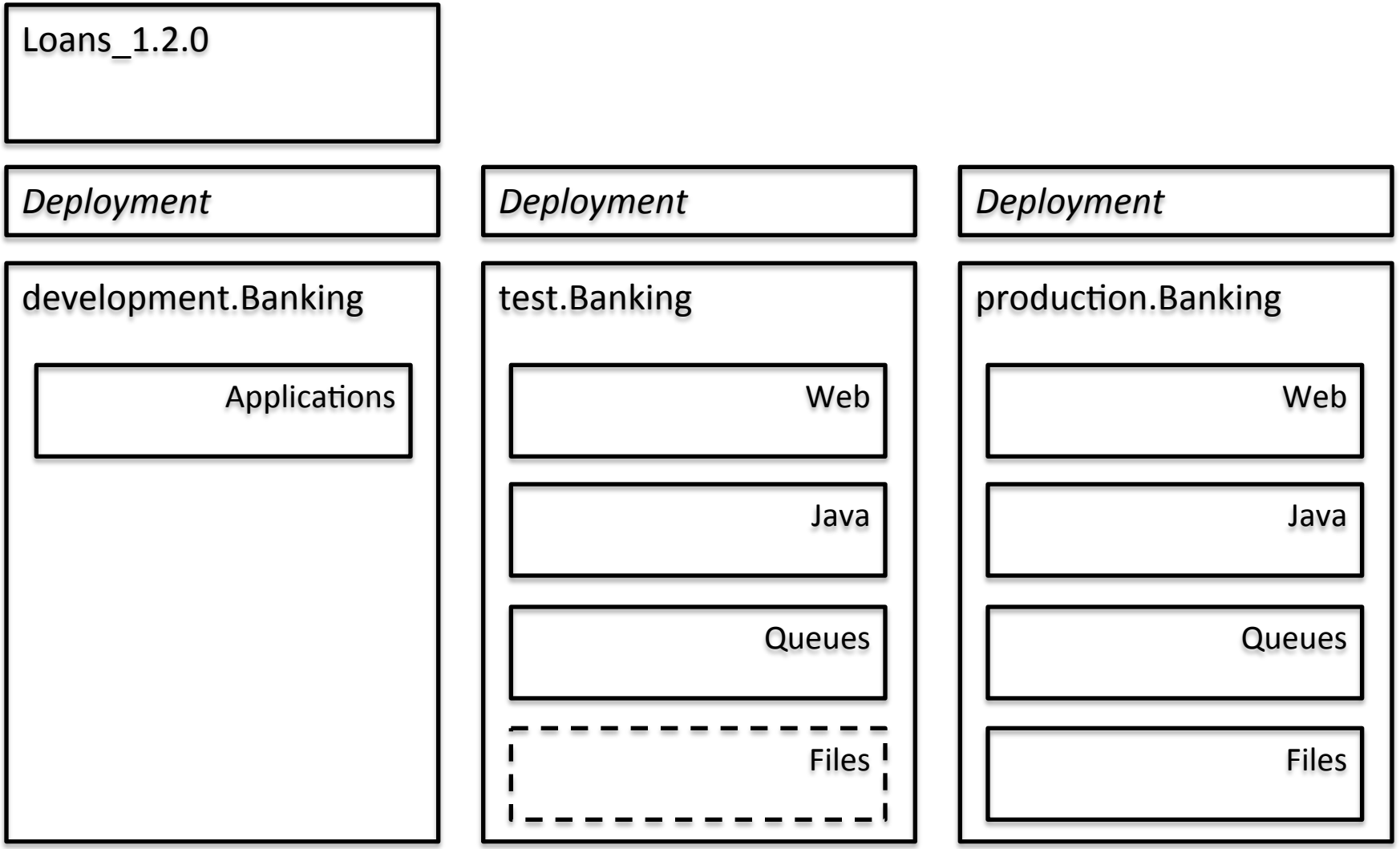
System Programmer

Application Deployer

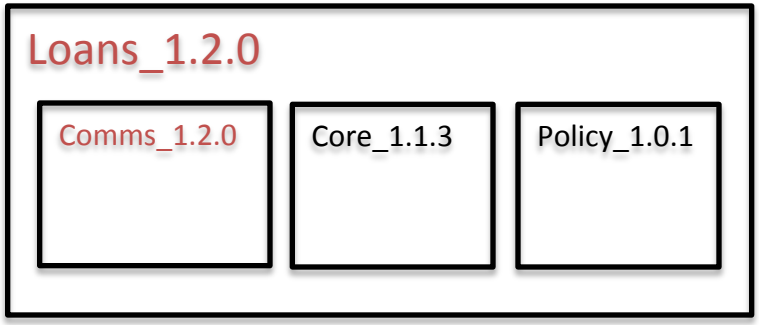
DevOps Roles

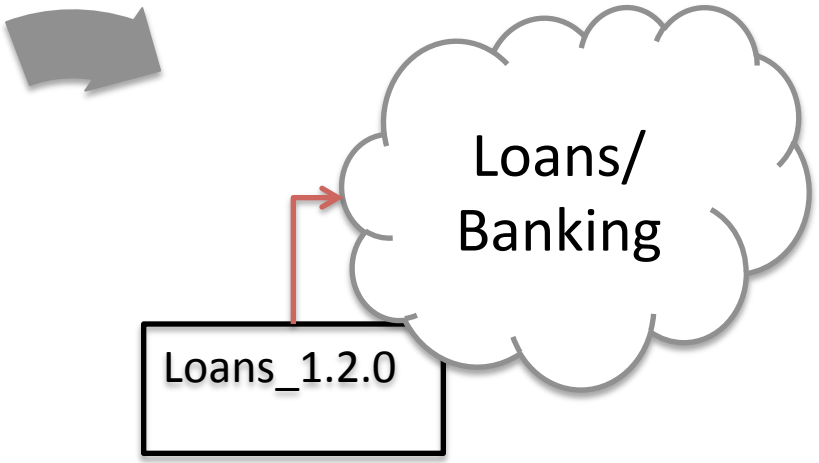
- Application Developer
  - Resources
  - Dependencies
  - Entry points
  - Policy
- System Programmer
  - Topology
  - Services
  - Policy
- *Application Deployer*
  - *Deployment*
  - *Resources*
  - *Policy*

Development Lifecycle

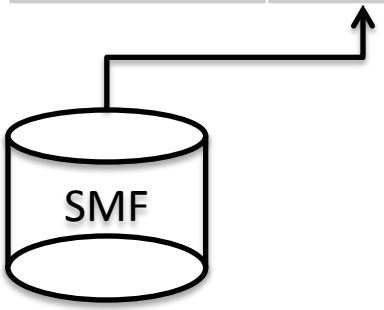


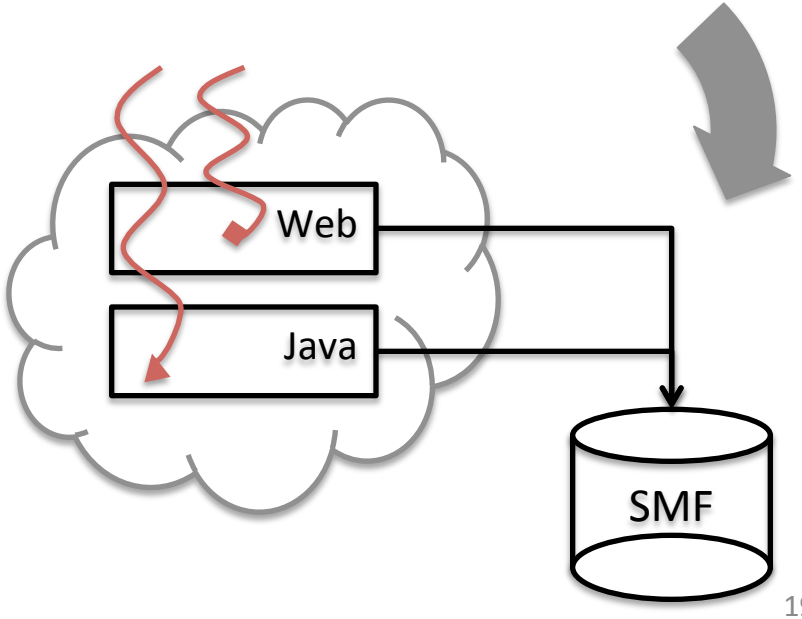
Deployment Lifecycle





	CPU	Database
Loans 1.1.3	100	10
Loans 1.2.0	110	12





NIST Definition of Cloud Computing

Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model promotes availability and is composed of ***five essential characteristics, three service models, and four deployment models****.*

http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf

Four Deployment Models

Private cloud

Community cloud

Public cloud

Hybrid cloud

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Private cloud

Community cloud

Public cloud

Hybrid cloud

Three Service Models

Cloud Software as a Service (SaaS)

Cloud Platform as a Service (PaaS)

Cloud Infrastructure as a Service (IaaS)

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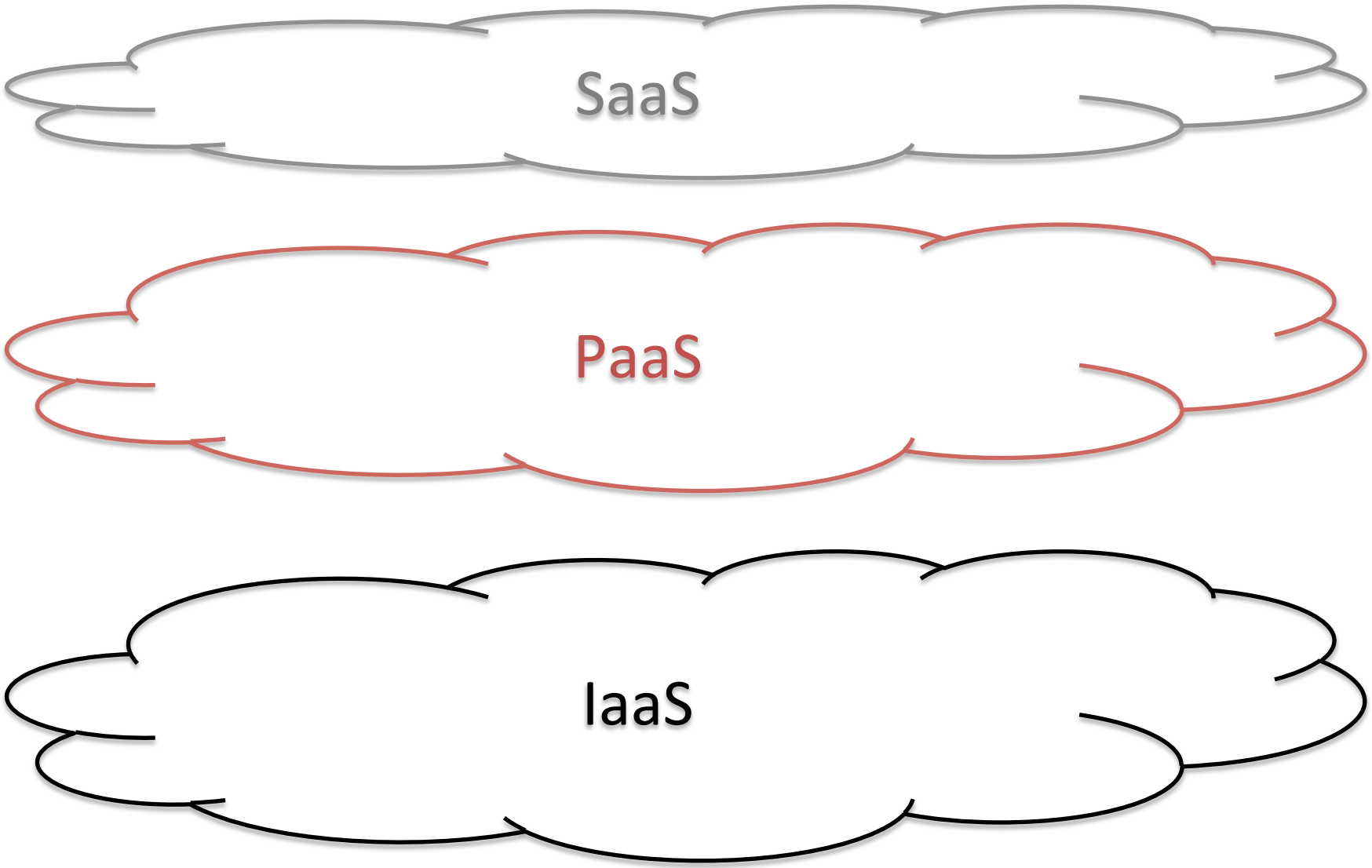
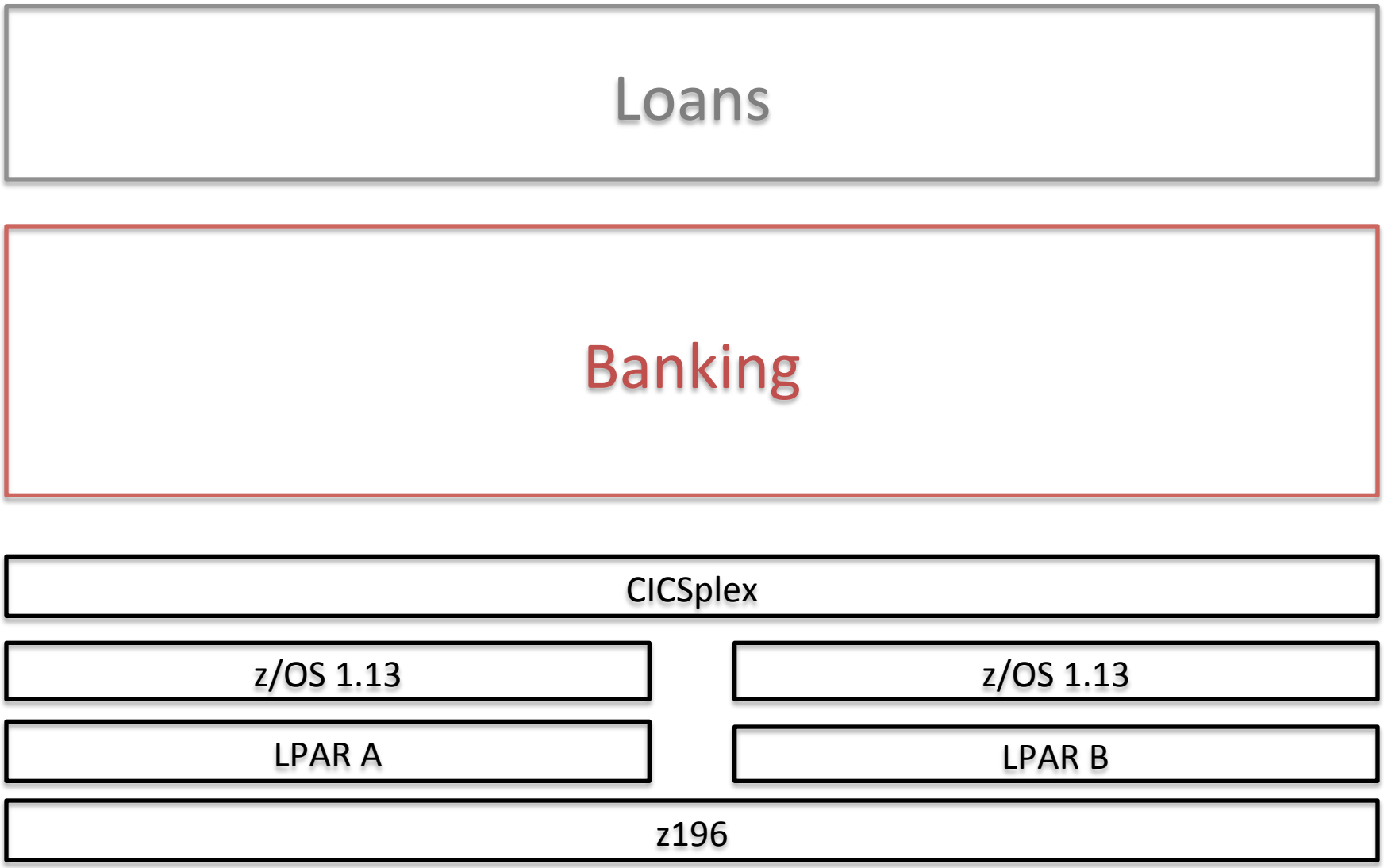
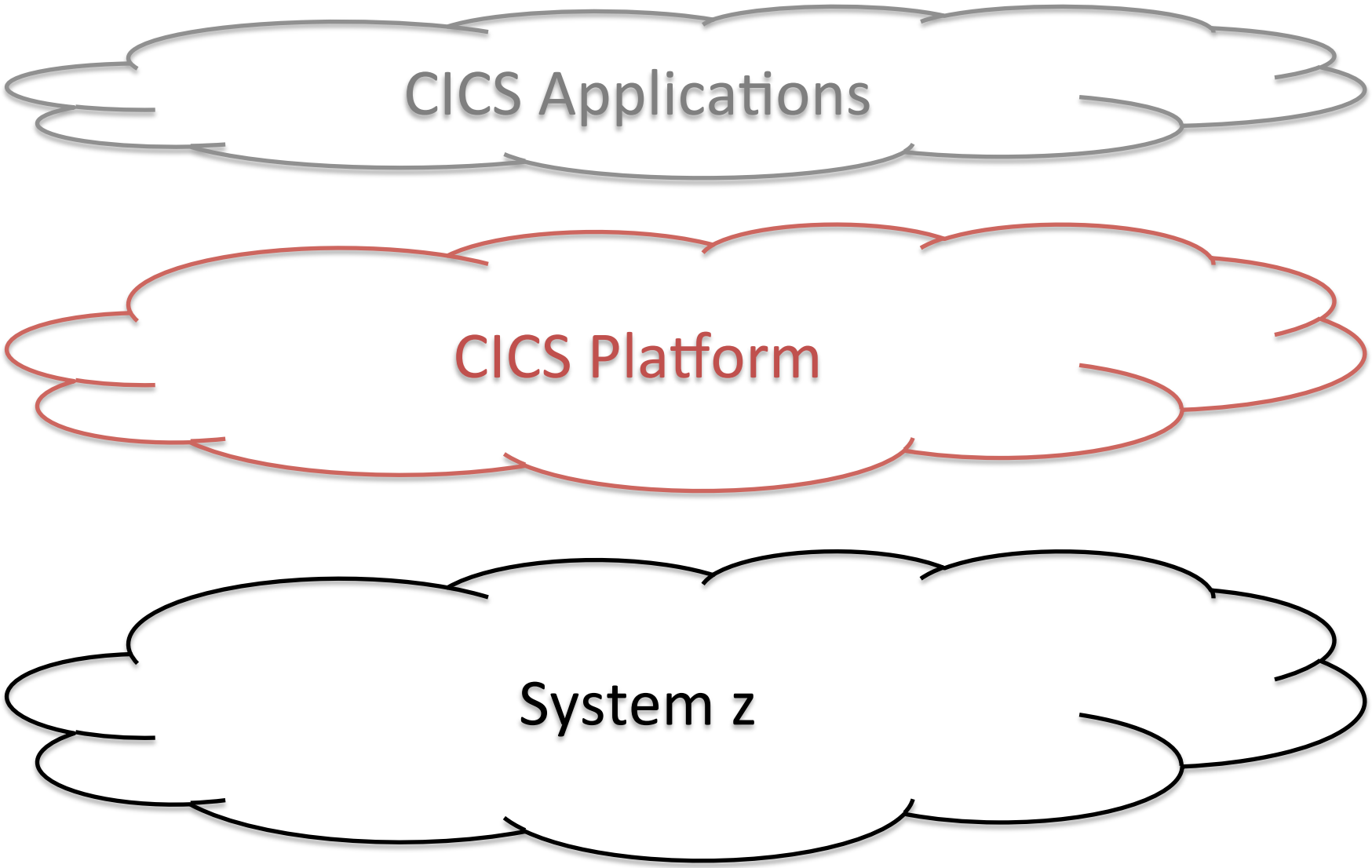
Cloud Service Models



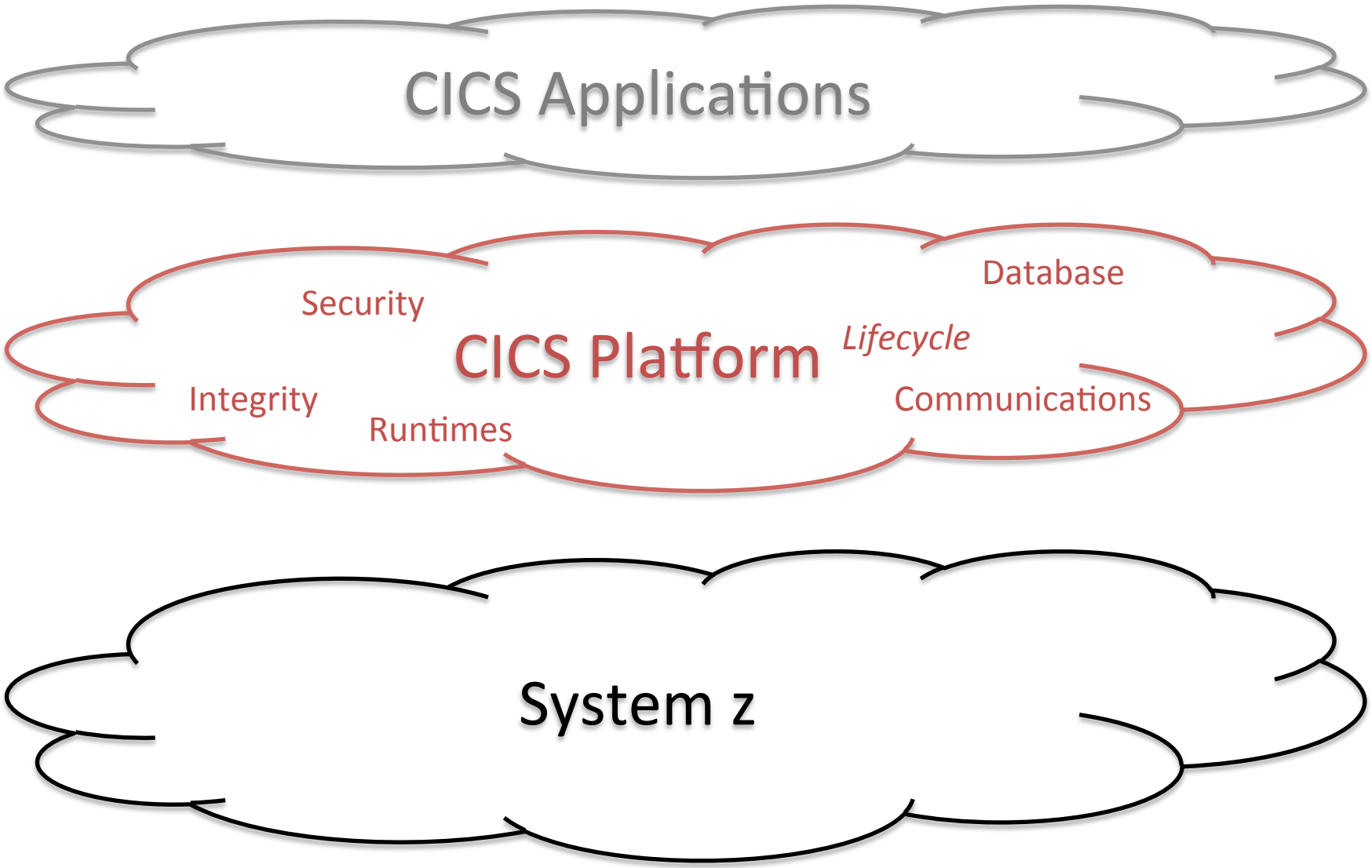
New CICS Platform as a Service (PaaS)



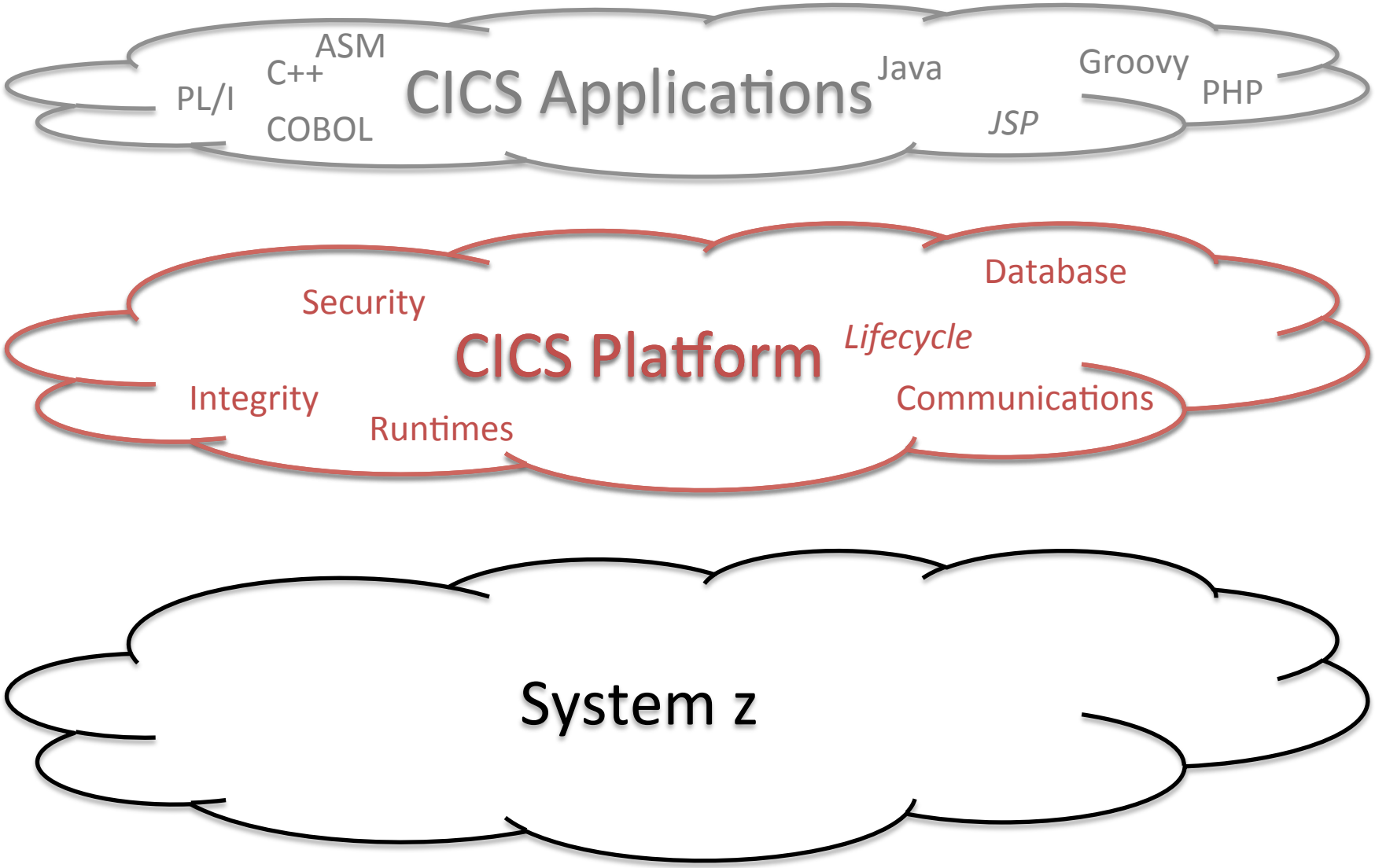
Cloud Service Models



Cloud Service Models



Cloud Service Models



Five Essential Characteristics

On-demand self-service

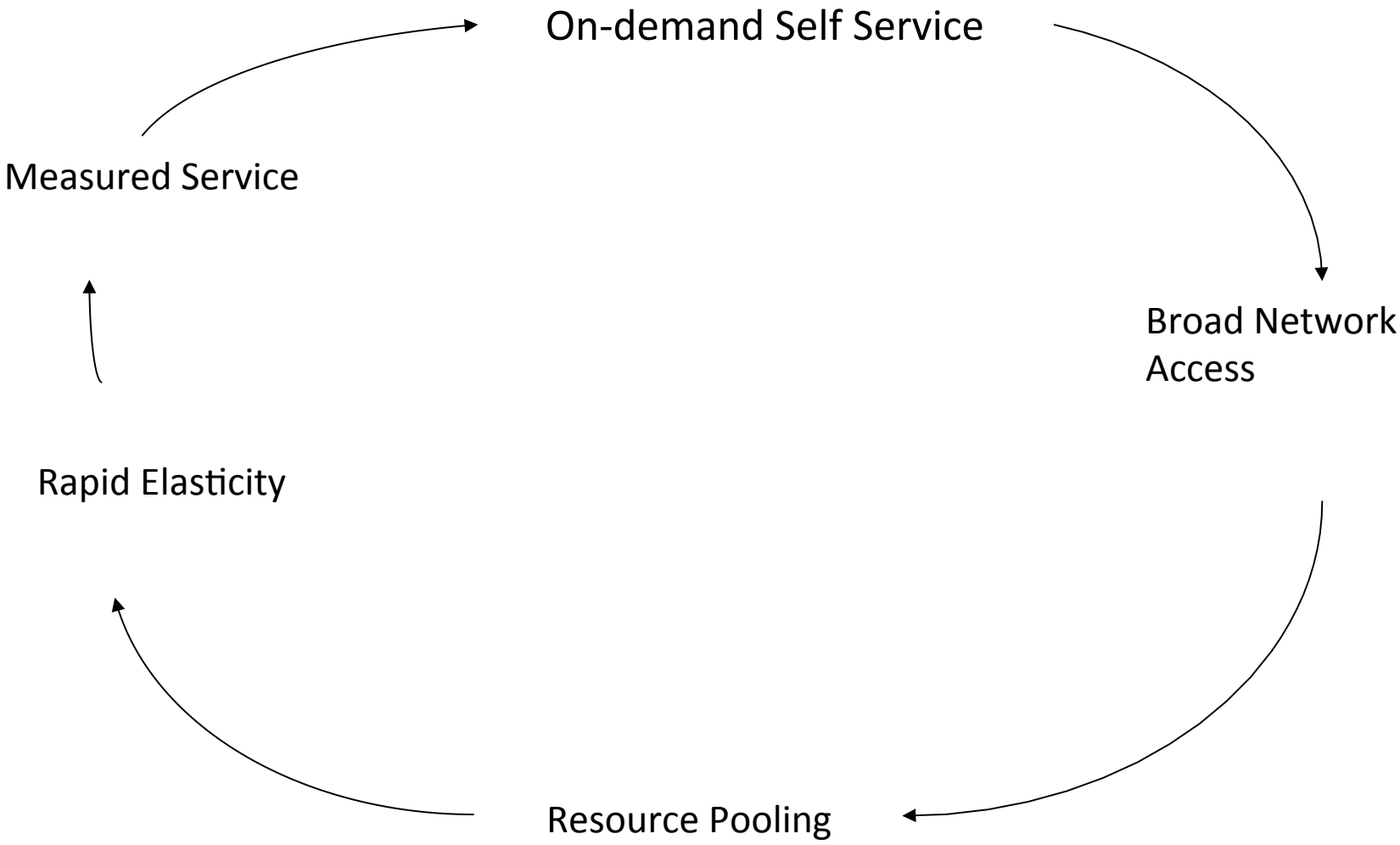
Broad network access

Resource pooling

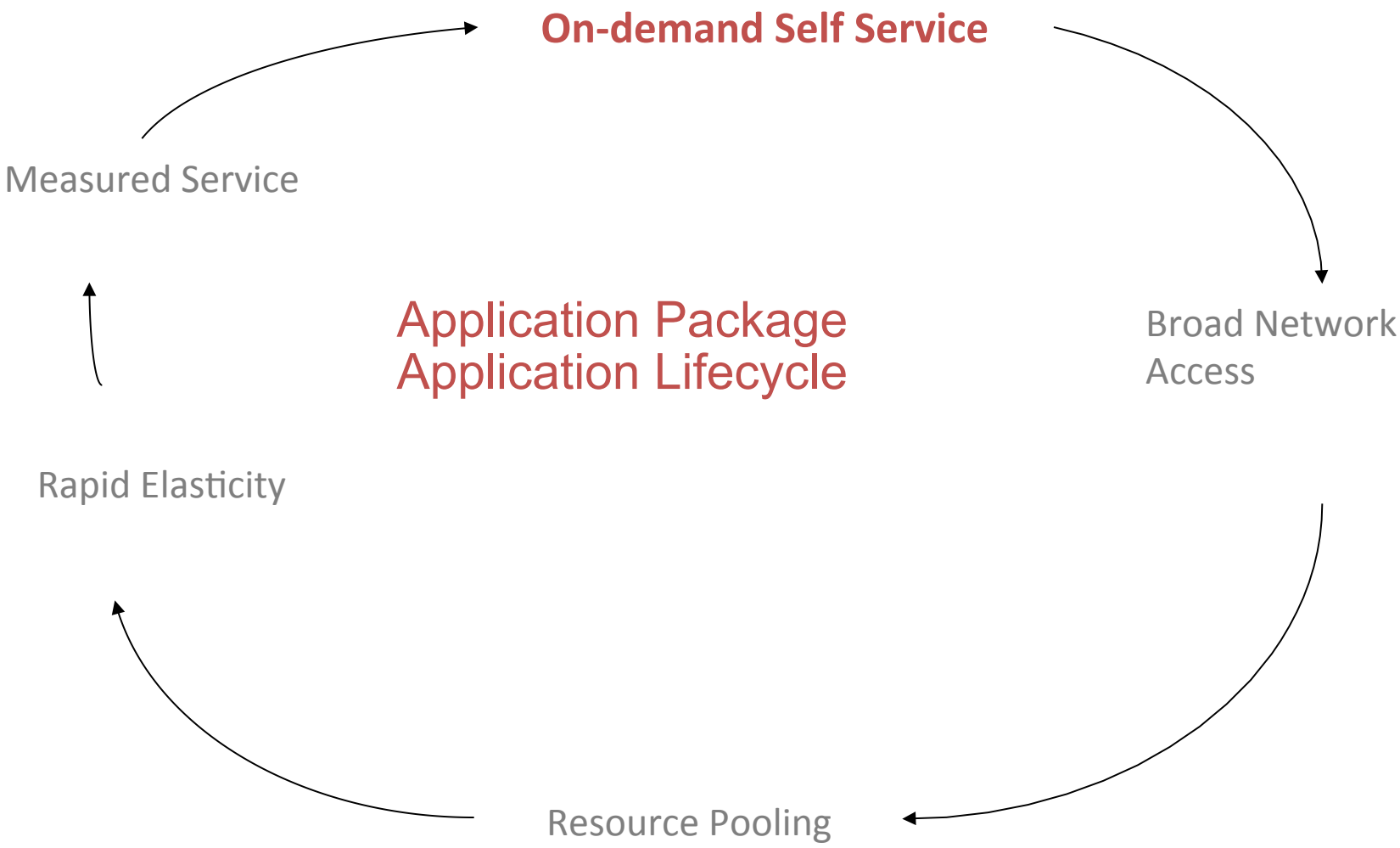
Rapid elasticity

Measured Service

SaaS Lifecycle



SaaS Lifecycle



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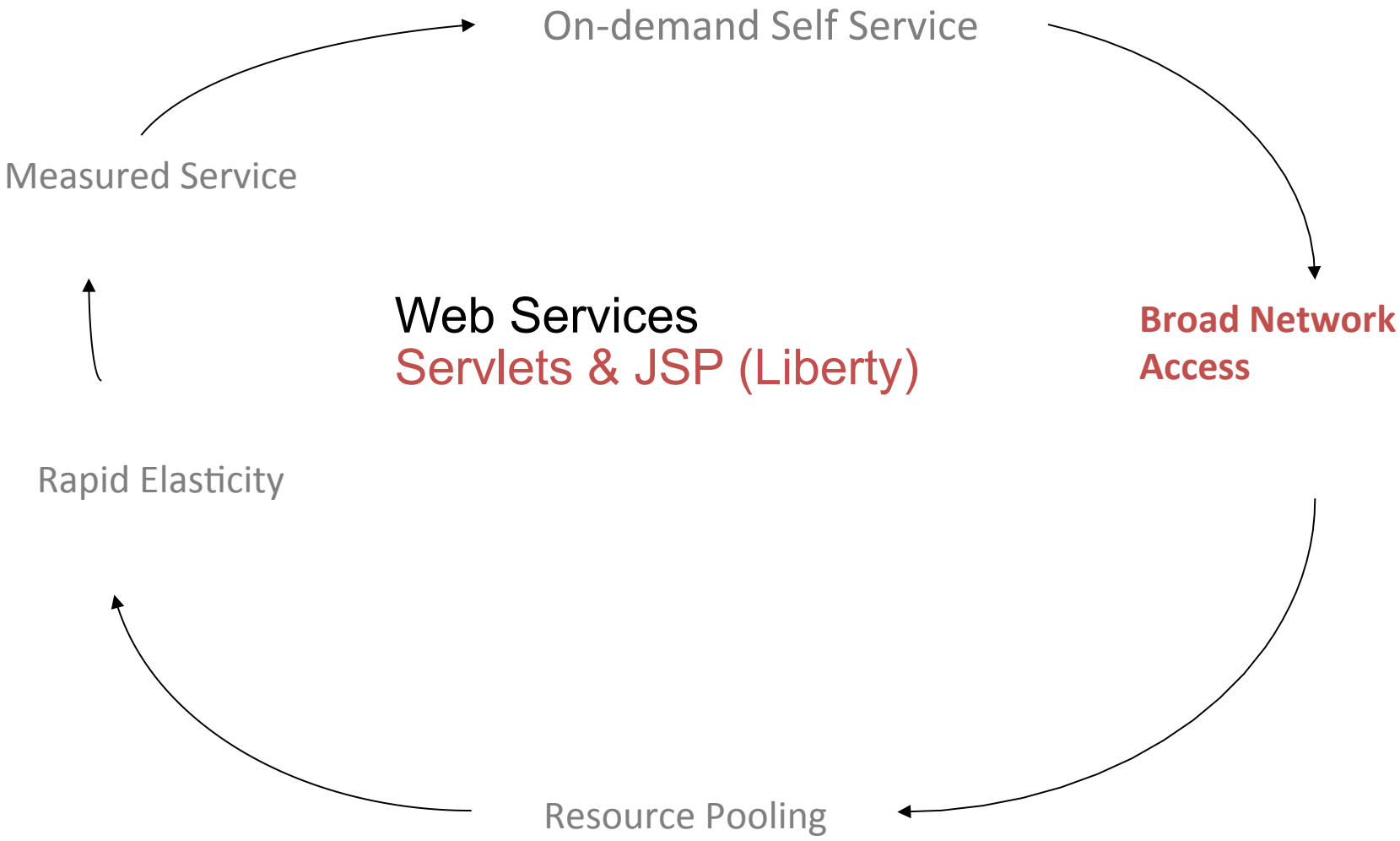
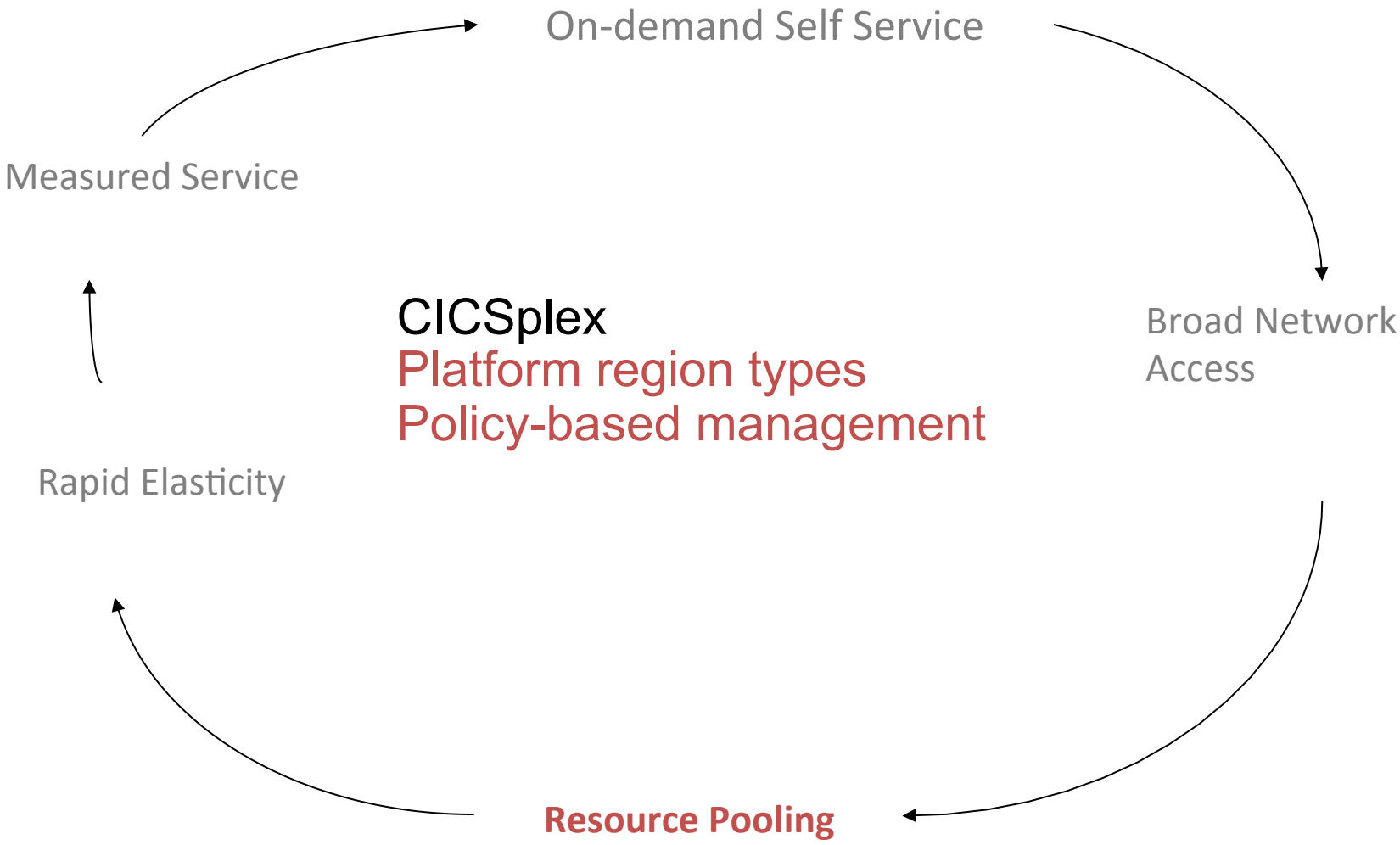
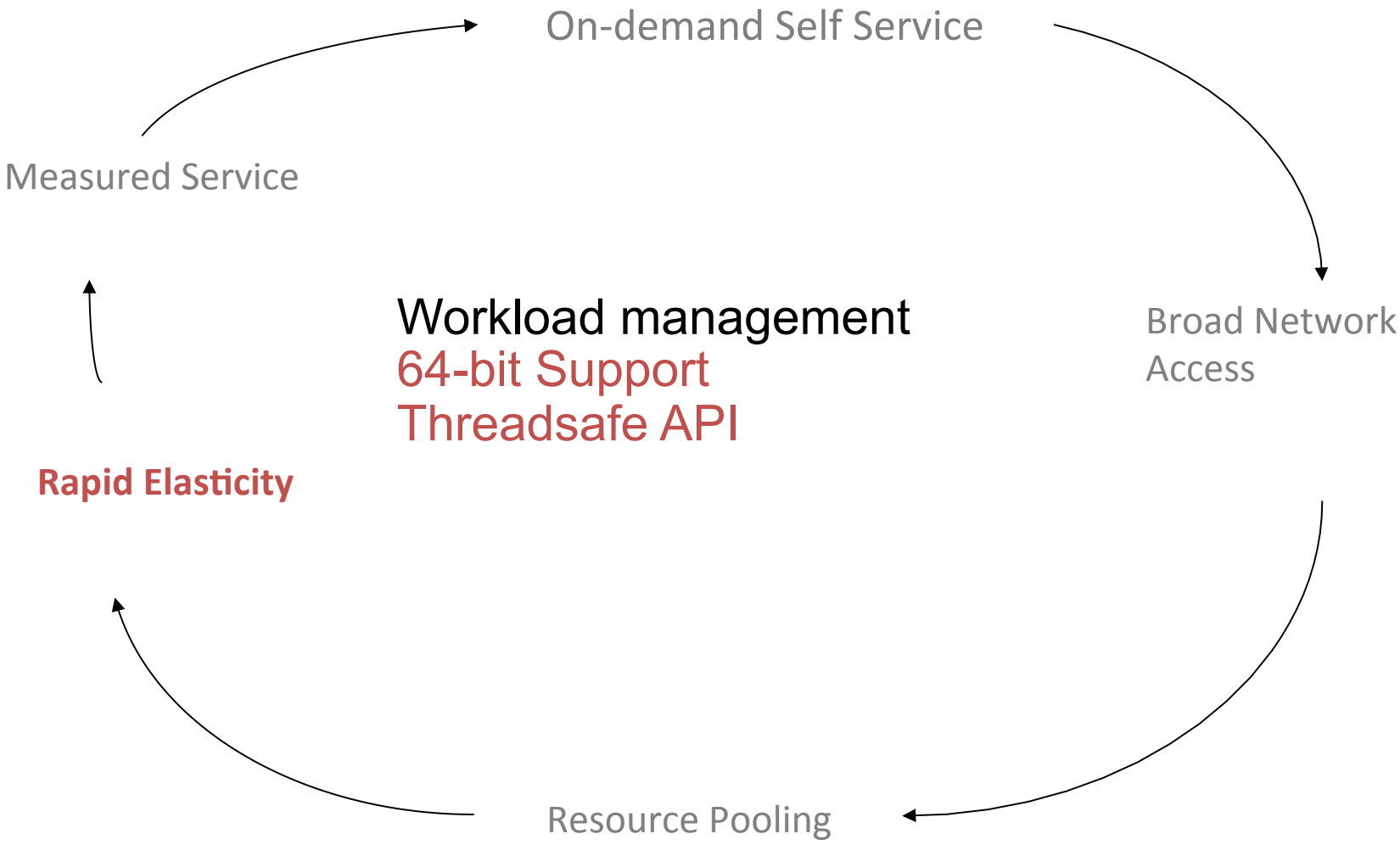


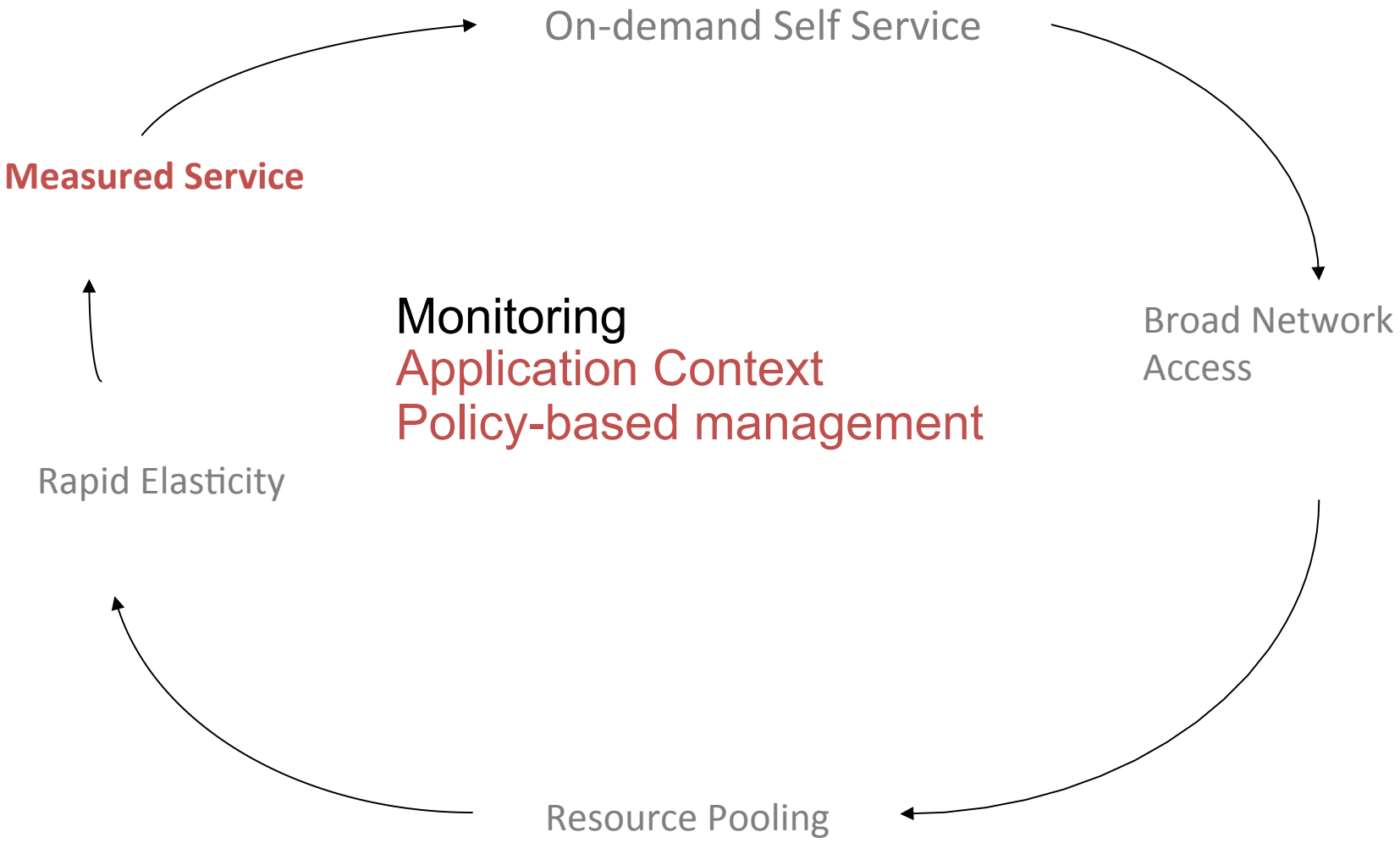
SaaS Lifecycle



SaaS Lifecycle



SaaS Lifecycle



Summary

Introduces Application and Platform as first class entities

Simplifies Application development and deployment lifecycle

Demonstrates five essential characteristics of Platform as a Service (PaaS) in a private cloud deployment

QUESTIONS

Related Cloud-Style CICS Sessions

Monday

- 11417: CICS Project Opening and Product Update

Tuesday

- 11434: CICS Explorer - A System Programmer Perspective
- **11435: CICS Platform and Applications Basics**

Wednesday

- 11437: CICS Platform and Applications Advanced Concepts
- 11439: Event Processing: Insight into Your CICS Systems and Business
- 11441: Managing CICS Resources in a Unix File System: Best Practices
- 11442: CICS and Java: How the JVM Server transforms Java in CICS

Thursday

- 11448: Core Foundations and Scalability

Friday

- 11458: Modernizing CICS -- Hands-on Lab, Part 1 of 2
- 11459: Modernizing CICS -- Hands-on Lab, Part 2 of 2