DSZ-3732
Secure Mainframe Development in the Cloud has Arrived

Stan King CTO, Information Technology Company
sking@p390.com

Chris Trobridge, Product Manager, IBM
chris.trobridge@uk.ibm.com

IBM

InterConnect 2015
The Premier Cloud & Mobile Conference

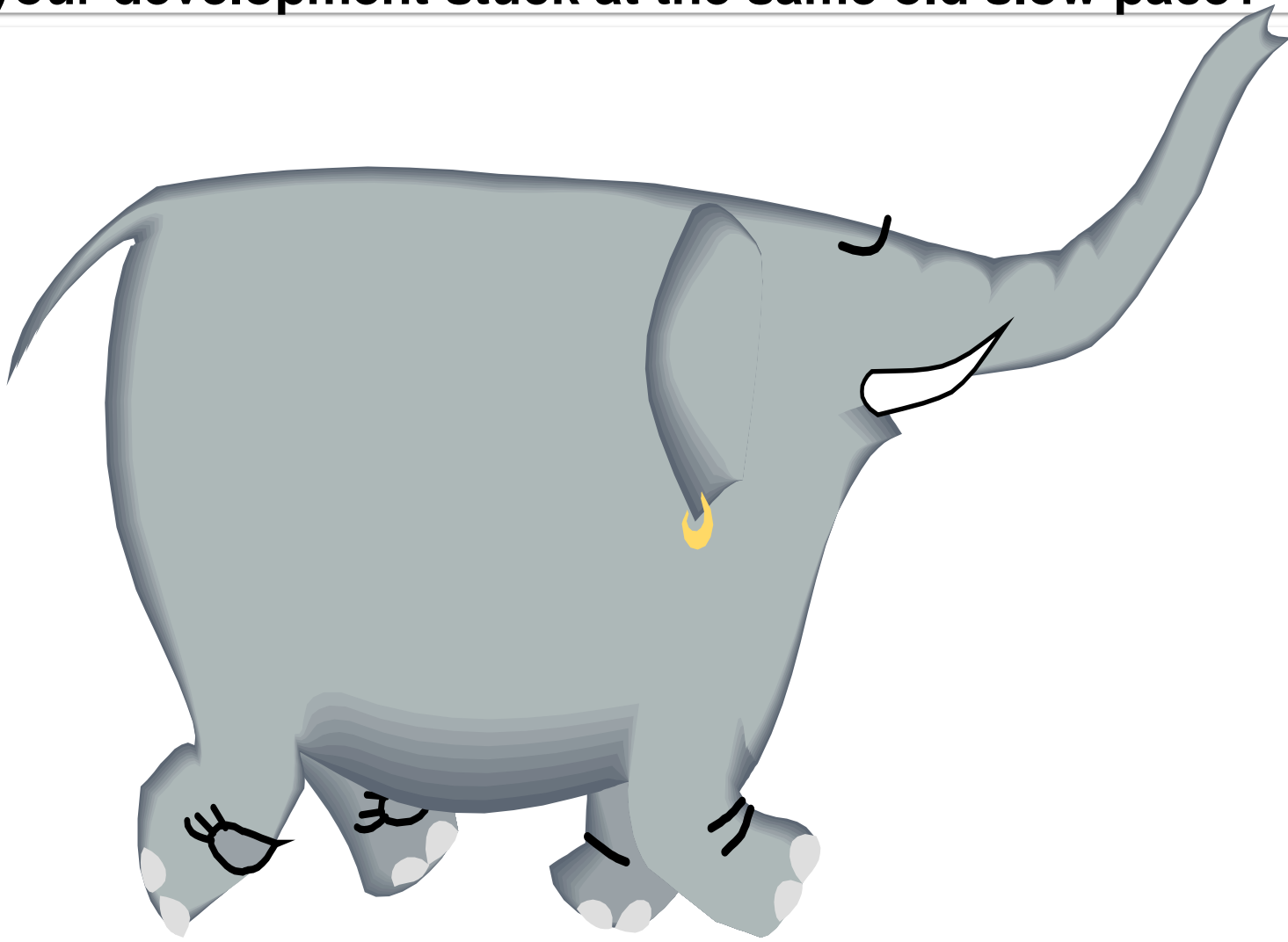**February 22 – 26**
MGM Grand & Mandalay Bay | Las Vegas, Nevada

Agenda

- Mainframe Cloud Challenges
- Cloud and what is offers to development organizations
- Managed DevOps
- System z Development and Testing Environments in the Cloud

InterConnect 2015

Is your development stuck at the same old slow pace?
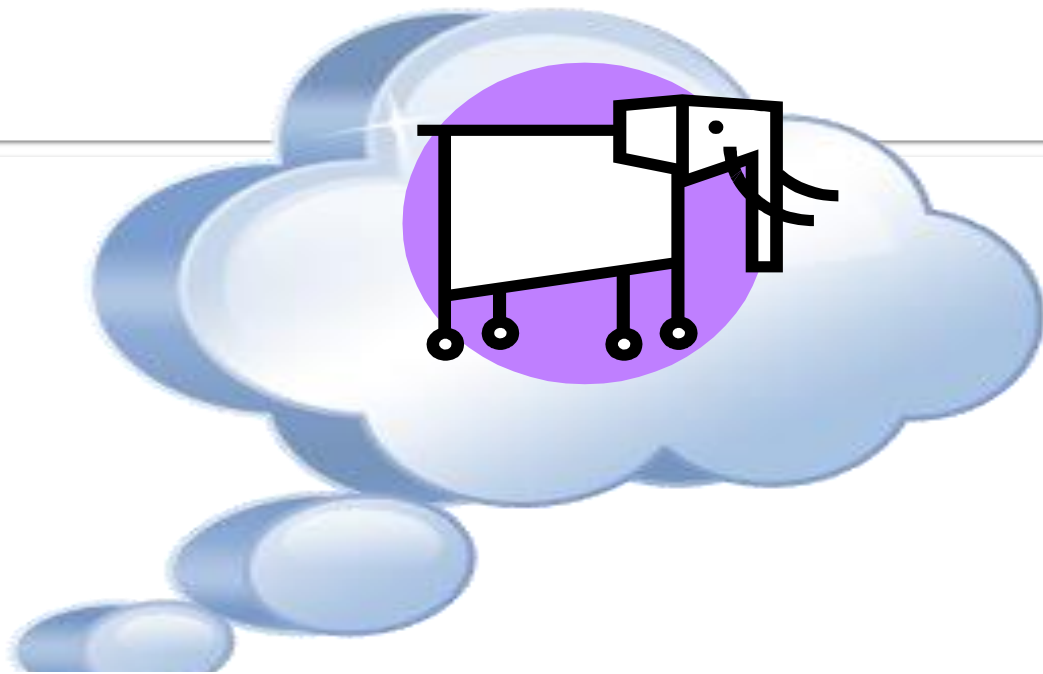
Innovation

Latest Ideas
Latest Techniques
Latest Technology

Can transform your Development

Key business benefits from Cloud managed services

- Lower costs
- Improved responsiveness
- Optimized resources
- Best use of development skills
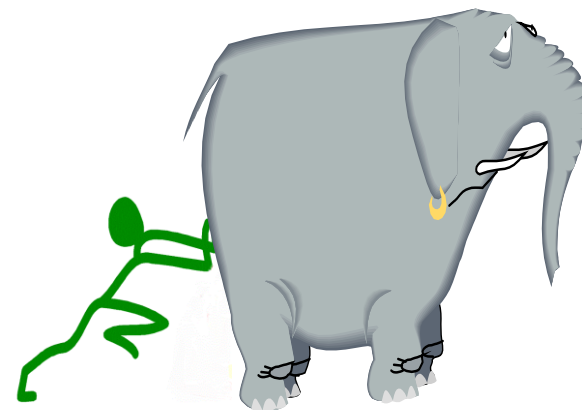
Mainframe Cloud Challenges

- Security

- Complexity

- Size
- Legacy

make it very difficult to move to the cloud

The Security Challenge

Single tenant

Private

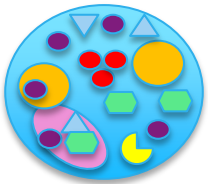Local

The Size and Legacy Challenges

Storage

Cloning and Provisioning

Existing and New Tooling

The Complexity Challenge

True Environment

Environment Expertise

Cloud Platform Expertise

Key business benefits from cloud managed services
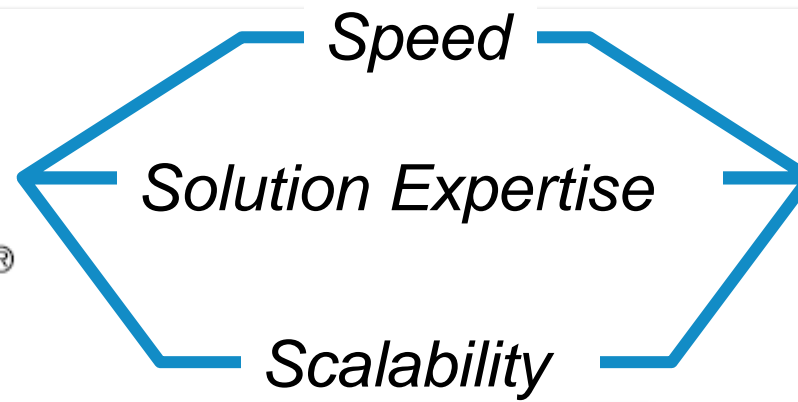
Speed

Solution Expertise

Scalability

Lower costs

Improved responsiveness

Optimized resources

Best use of development skills

Consider the *significant business value** companies gain by using IBM managed services:

224%	**three-year return on investment**
88%	reduction in server and network downtime
42%	increase in IT staff productivity
24%	reduction in IT infrastructure costs

According to the 2014 IDC/IBM study, "Business Value of Managed Services"

IBM Cloud Managed DevOps :
The core DevOps solution on a virtual private cloud, without the setup and maintenance costs

- Provides the core DevOps solution, customized and configured for each client

- On a scalable IBM SoftLayer Infrastructure

- Provides 99.9% availability (SLO)

- IBM Systems services solution

Continuous business planning

Collaborative development

Continuous monitoring

Steer

Operate — DevOps continuous feedback — **Develop and test**

Deploy

Standards

Practices

Ecosystem

Continuous customer feedback and optimization

Continuous testing

Continuous release and deployment
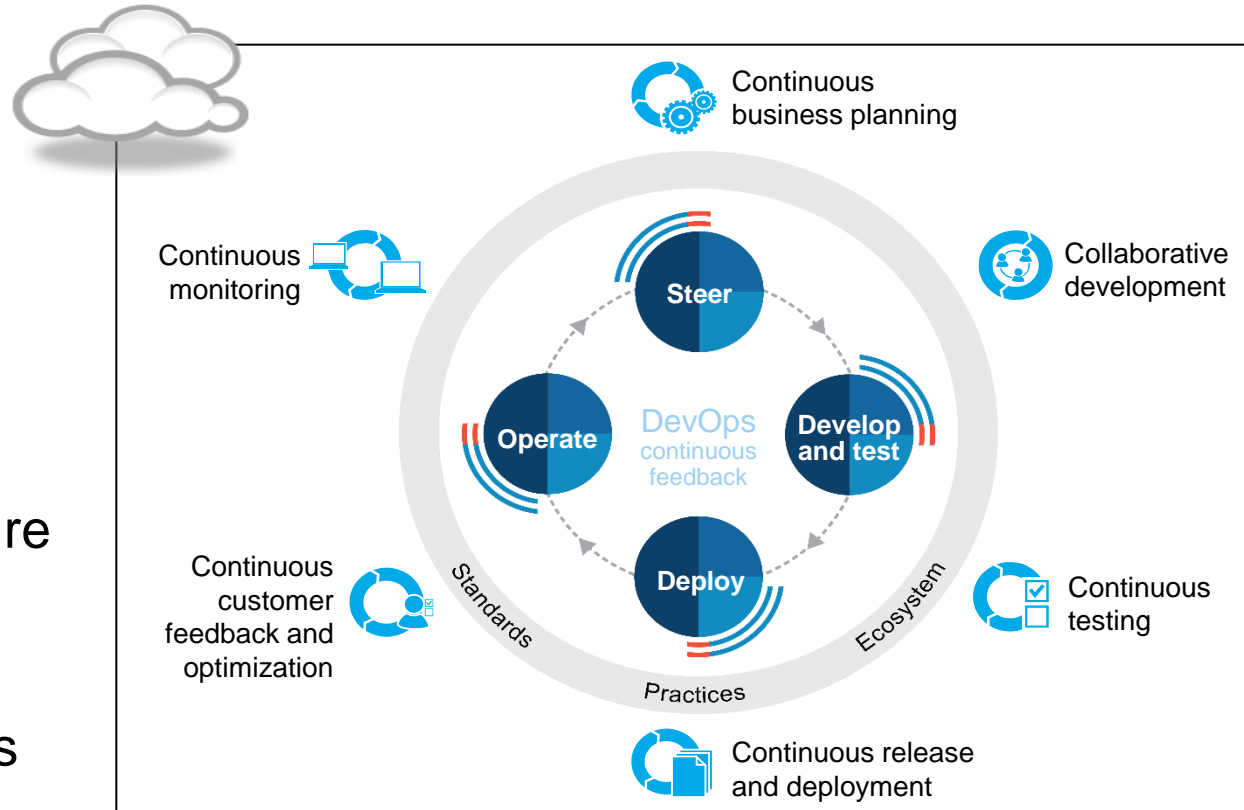
IBM SoftLayer Infrastructure

IBM Systems Services

IBM Cloud Managed DevOps
includes these **IBM DevOps** software tools

Steer → **Develop / Test** → **Deploy** → **Operate**

Continuous Business Planning
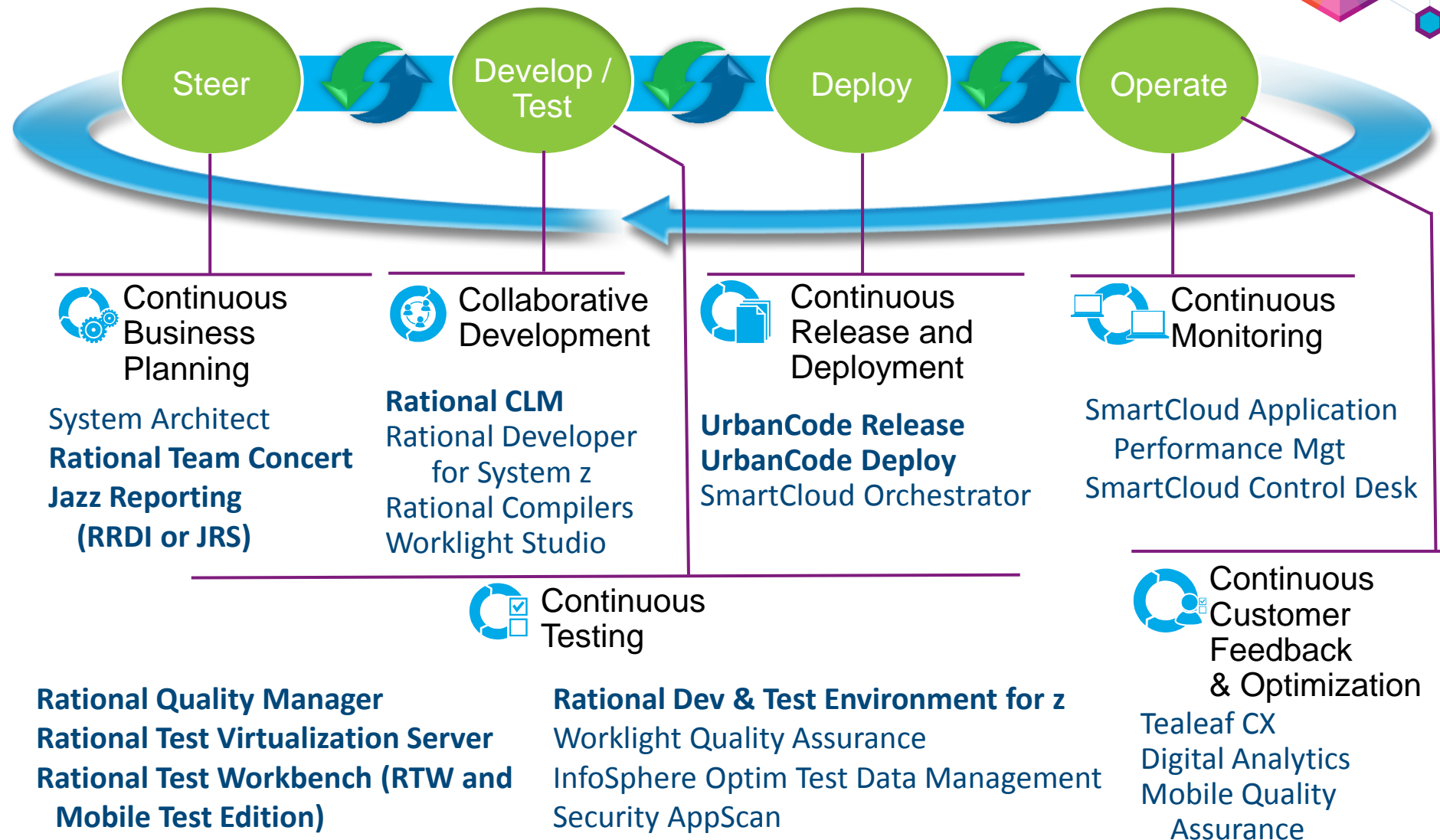System Architect
Rational Team Concert
Jazz Reporting
(RRDI or JRS)

Collaborative Development
Rational CLM
Rational Developer for System z
Rational Compilers
Worklight Studio

Continuous Release and Deployment
UrbanCode Release
UrbanCode Deploy
SmartCloud Orchestrator

Continuous Monitoring
SmartCloud Application Performance Mgt
SmartCloud Control Desk

Continuous Testing
Rational Quality Manager
Rational Test Virtualization Server
Rational Test Workbench (RTW and
Mobile Test Edition)

Rational Dev & Test Environment for z
Worklight Quality Assurance
InfoSphere Optim Test Data Management
Security AppScan

Continuous Customer Feedback & Optimization
Tealeaf CX
Digital Analytics
Mobile Quality Assurance

InterConnect 2015

#ibminterconnect

Pay only for the tools you use, follow your own DevOps adoption path.

Steer

Develop / Test

Deploy

Continuous Business Planning

Collaborative Development

Continuous Release and Deployment

1 IBM Collaborative Lifecycle Management

Continuous Testing

2 Rational Development and Test Environment for System z

3 CLM

Rational Test Workbench

IBM UrbanCode Release
IBM UrbanCode Deploy
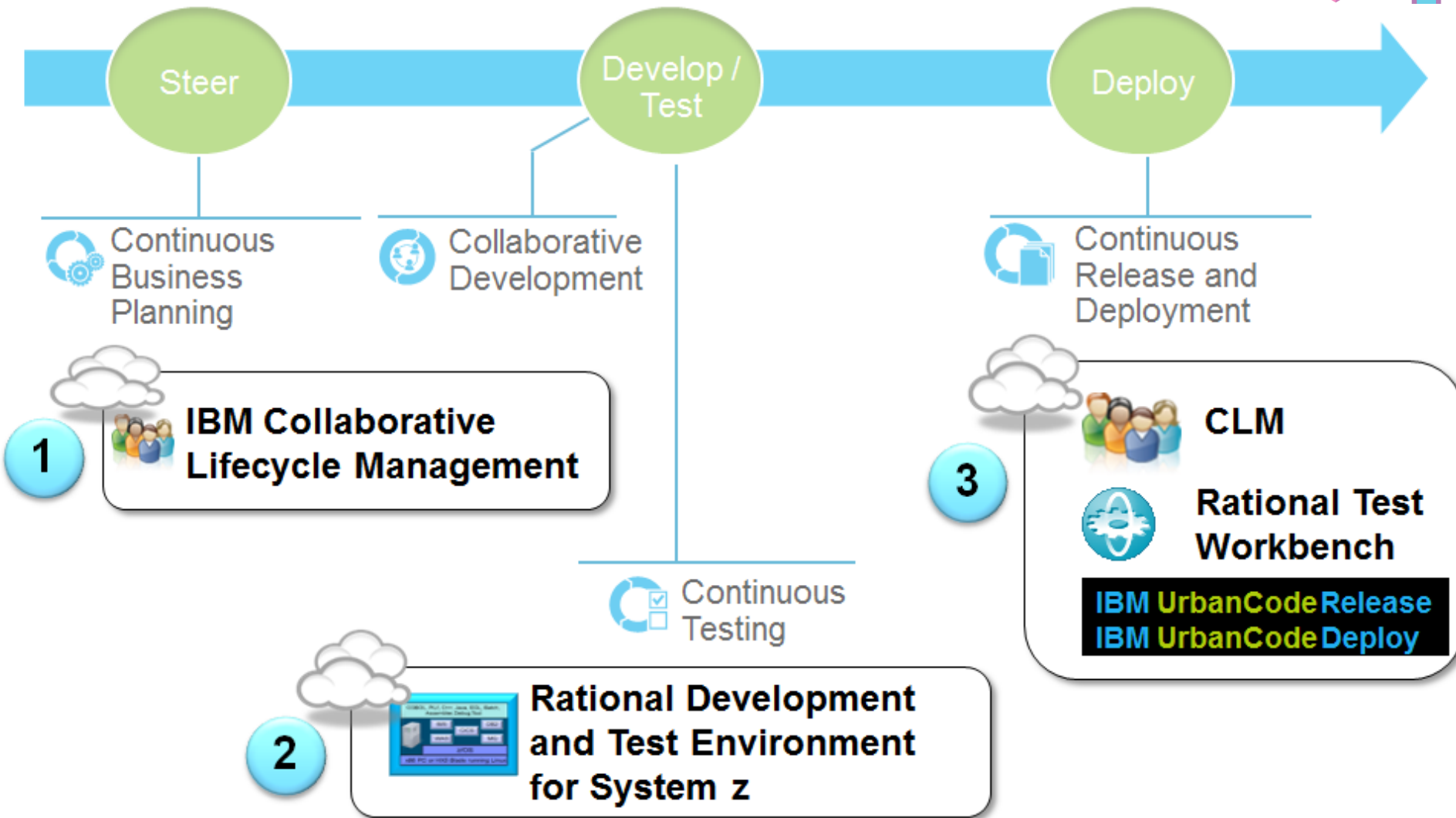
IBM Cloud Managed DevOps provides infrastructure and services for licensed IBM products (BYOL)

Bring Your Own License (BYOL)

IBM Cloud Managed DevOps

=

Managed services

+

IBM SoftLayer (IaaS)
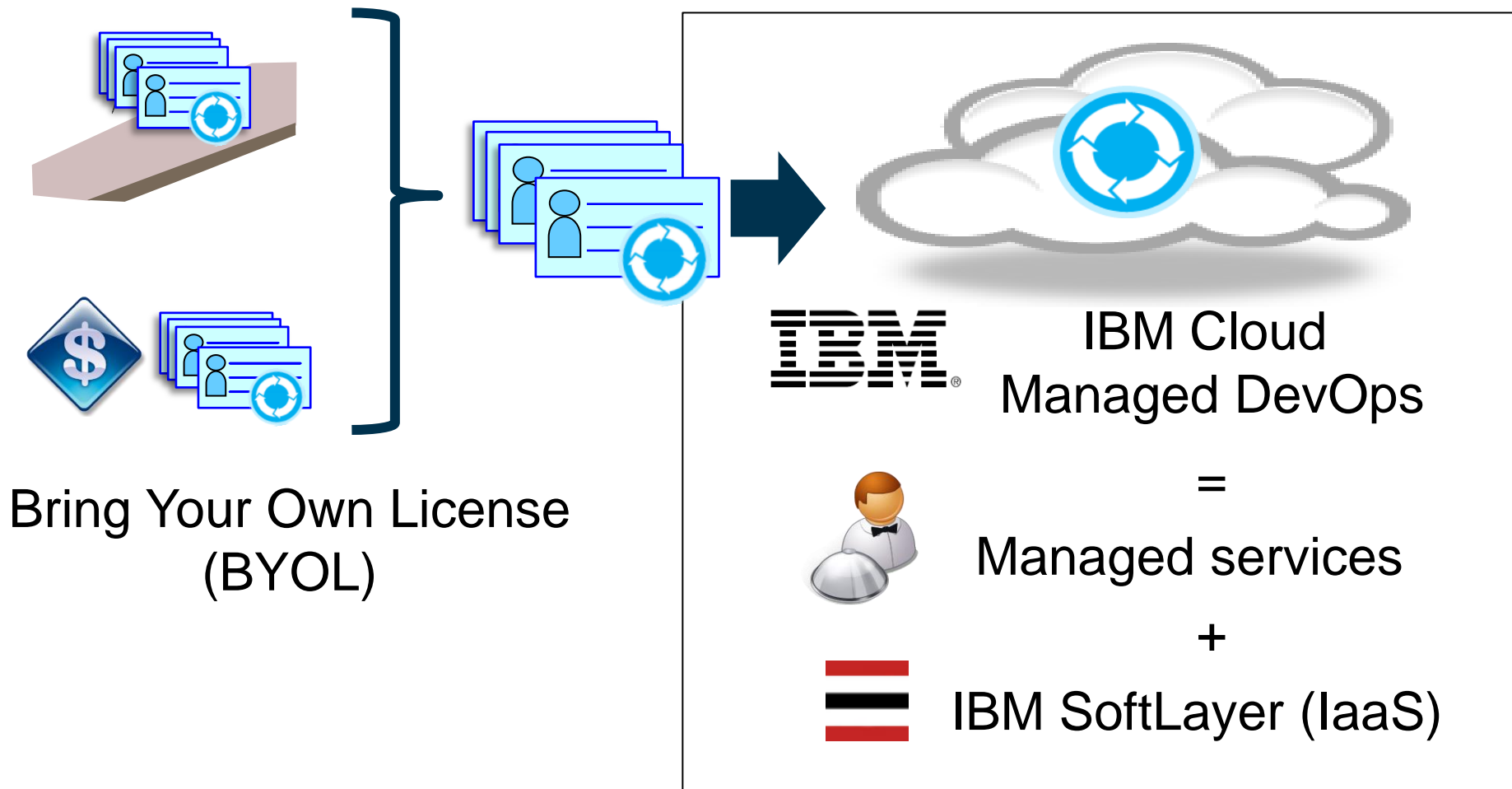
Featured managed services with
# IBM Cloud Managed DevOps:

- Monthly Billing
- Full custom Installation and configuration
- Ongoing maintenance
  - Install optional upgrades 2x/year
    - With 1 month of availability for testing
  - OS support and maintenance
- Ongoing monitoring and recovery
  - Daily back-ups
  - Disaster Recovery
  - Security monitoring
  - Performance monitoring
- Customer success and support
  - Options that fit your needs
- Add-on services available:
  - Additional environments
  - Additional tools and integrations
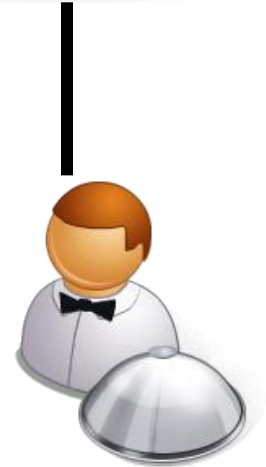
Managed
Services

Key value points from
IBM Cloud Managed DevOps service
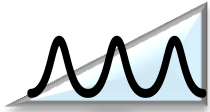
Elasticity and scalability

Utility billing

Secure platform

Shorter time to value

Ongoing maintenance

User experience same as on-premise solution

Lower total cost of ownership
Business agility

Base and Add-on Features (1 of 2)

Feature	Base	Add-On
Security Compliance		
IPSEC site-to-site VPN connection	✓	
Use of customer LDAP for CLM user authentication*	✓	
Choice of data center	✓	
Dedicated IT infrastructure		✓
FISMA compliance		✓
Hosted image set-up		
Solution deployment architecture to address customer needs	✓	
Creation & provisioning hosted image	✓	
Lifecycle customization (CLM)		✓
Specific integrations with customer dev/test tools		✓
Application and data migration		✓
Setup services		
IES Network connectivity - Transparent server access	✓	
Use of Dedicated Managed Service Provider LDAP for user authentication (if applicable)	✓	
User on-boarding assistance	✓	
Project startup assistance	✓	
Training & Mentoring		✓

Feature	Base	Add-On
License Key Management (RD&T only)		
Connect to customer license server	✓	
Host license key server		✓
Infrastructure & CLM hosted image support		
24x5 support	✓	
Availability SLO - 99.9%	✓	
Monitoring services and gathering metrics for capacity planning	✓	
Disaster recovery	✓	
Patch and upgrade installation	✓	
Daily back-up	✓	
Project and User administration	✓	
24x7 support	sev 1 outages	✓
Client Success Management		
Client Success Management	✓	
Dedicated Client Success Management		✓

Base and Add-on Features for RD&T

Feature	Base	Add-On
z/OS Management Services		
Support customer admin requests, configuration changes and security implementations on-demand from the customer	✓	
z/OS upgrades for AD/CD and new releases, as required or requested by customer	✓	
Installation, upgrading, and patching non-IBM software		✓
Setup and implementation of tape management (DFSMSrmm and DFSMShsm)		✓
Sysplex Implementation		✓
Storage management and administration (DFSMSdfp and DFSMSdss)	✓	
Initial investigation of z/OS and AD/CD issues	✓	
Ongoing problem management of z/OS and AD/CD issues		✓
Recreation/replication of issues on System z hardware		✓
z/OS PTF support	✓	
Problem management/resolution for non-IBM software		✓
How-To Support via email	✓	
24x5 service	✓	
24x7 service		✓

THE **MEAT** & **POTATOES** OF **RD&T** AS A **MANAGED SERVICE**
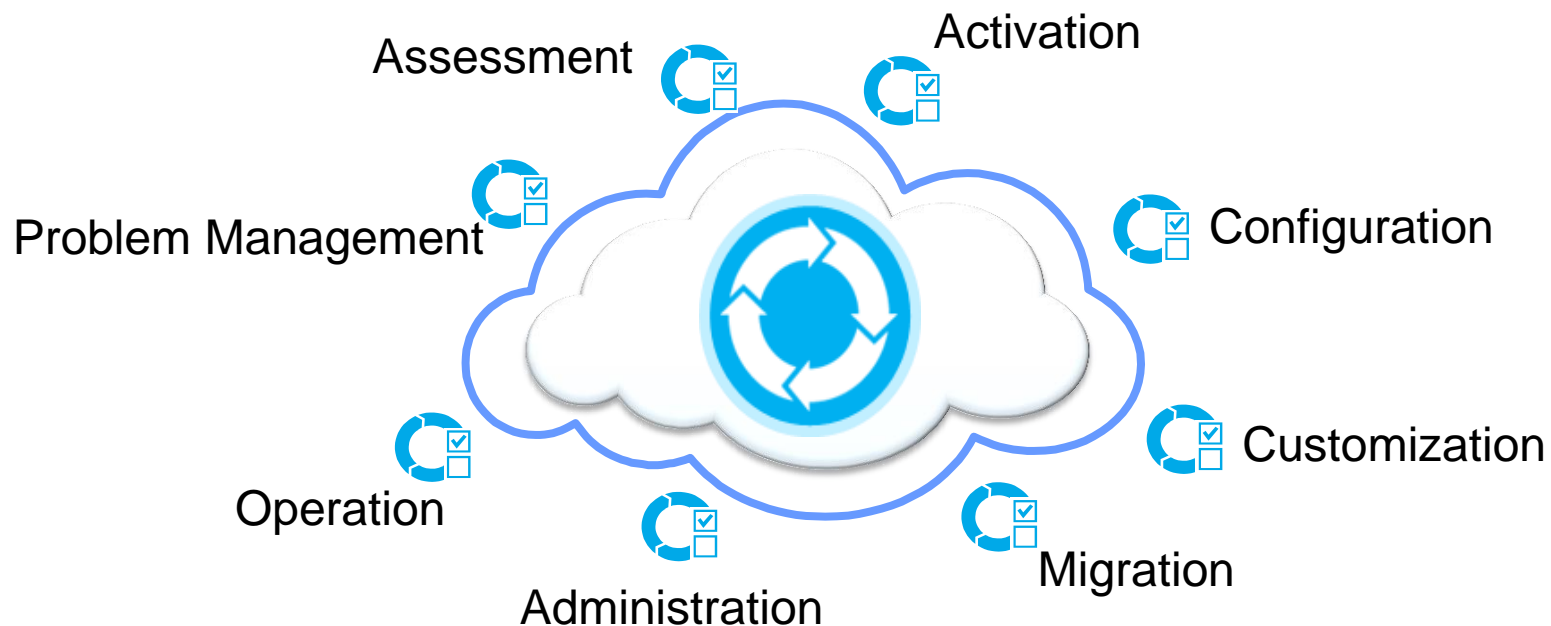
Best of all Worlds

- Rational RD&T as a Managed Service offers quick time to value with expert provisioning and ongoing management;

- It's your environment, you decide what to manage and how to manage it;

- The RD&T Managed Service provides routine support and operation with additional assistance available if required, on-demand;

- Worldwide coverage and availability.

Full Range of Managed Services

- The same services you would want for an in-house mainframe are available to you in the cloud, with the big benefit of having peace-of-mind;

Assessment

Activation

Problem Management

Configuration

Operation

Customization

Administration

Migration

Base RD&T Implementation Service

Most current z/OS ADCD

- Activated with the ITC "Golden Image" modifications for improved operation (SMS,TSO, USS / OMVS);

- Default TSO userids added to RACF with basic options (TSO, SDSF, OMVS); Custom TSO userids available via value-add;

- Subsystem activation based on your needs (CICS, DB2, MQseries, HTTP, IMS); Default IBM ADCD configuration;

- zOS upgrades as required / requested by you;

- zOS PTF support for existing APARs;

- Help Desk & Technical Support.

Value-Add RD&T Services

Customization

- CICS, IMS, DB2, TSO
  - ➢ User definitions, DB and file definitions;

- Data migration (most popular, most desired) service;

- Third-party software installation (licensed as required)
  - ➢ Landmark, CompuWare, SyncSort, Tone ……

- Sysplex
- JES3

Not All Tasks Created Equal

Data Migration

- Full Volume Migration using ADRDSSU
    - With USERCAT – highly recommended

- File Migration using ADRDSSU
    - Identify all HLQs in advance

- File Migration using ADRDSSU to Optical Media (DVD-ROM)
    - Dumped to disk, copied to media via FTP

- Acceptable Media
    - 3490E, 3590, 3592 cartridges
    - DVD-ROM

Typical Customer Size

- Small   (typically one – two days setup)
  - Traditional batch and green screen development process
  - Legacy oriented

- Medium   (typically 1 – 2 weeks)
  - One database environment   (DB2, Informix, Oracle)
  - One transaction processing system (CICS, IMS)
  - RDz integration with legacy development process

- Large (typically 3 – 4 weeks)
  - Sysplex with multiple guests
  - JES3 Enclaves
  - More users, more data, more of everything

Case Study – Full System Migration

- ## U.S. Air Force – Wright-Patterson AFB

  RD&T implementation to move development, test, and training from a constrained production System z; ⭐ *by the numbers* ⭐ :

  - **2 -** ITC Staff members assigned to the project;

  - **3** - Days spent planning;

  - **4 -** Days allocated for the project implementation onsite;

  - **12 -** Third party software applications activated including products from CA® Technologies, Cincom®, Compuware®, FDR®, Landmark®, Serena®, and Syncsort®;

  - **29 -** Hours total time on customer site;

  - **32 -** Spare/Empty 3390-54 volumes for growth;

  - **61 -** 3390 volumes of z/OS system data;

  - **98 -** 3390 volumes of customer data;

  - **159 -** Logical volumes migrated from an IBM DS6800 via FTP using a dedicated OSA port on the z114 in three and a half hours.

Case Study – ROI & Lessons Learned

- Customer was able to move a considerable amount of workload from a soon to be upgraded System z to Rational;

- Migration allowed development, test and training activities to proceed without negative affect from the metal upgrade;

- First year savings was estimated to total $482,000;

- ROI was experienced in 6 months;

- A total of 50 users were defined in RACF, but only a portion of those users active at any one time;

- Data synchronization performed via a combination of an automated FTP and a manual process;

- Success was due in part to customer being actively involved and available throughout each task;

- The need for access to customer technical staff was critical.

Assessment Process – Information Gathering

- Customer Identification and Goal Description;

- Existing or New Environment Details;
  - ➢ What tools used; how is processing performed;
  - ➢ IODF / IOCDS review

- Metric data for existing application environment;
  - ➢ Users, apps, libraries, storage …..

- IBM products in use and configurations;
  - ➢ CICS, IMS, DB2, RDz, MQseries …..

- Third-party products in use and configurations;

- Connectivity access methods in use;
  - ➢ TCPIP, HTML,FTP, TN3270, DDF …..

- TSO and OMVS requirements;
  - ➢ Users, storage, special requirements

- Security requirements;
  - ➢ FISMA, HIPAA, DIACAP, ISO/IEC, FedRAMP

Assessment Process – Data Analysis and Modeling

- Metrics Reduction and Nodal Definition;

- Proforma Design and Functional Requirements;
  - ➢ CPU and memory;
  - ➢ Storage provisioning;
  - ➢ Networking;
  - ➢ User requirements for TSO, USS, DB2, CICS, IMS ….

- Manpower Requirements;
  - ➢ Customer tasks and staffing estimates;
  - ➢ Project schedule and milestones;

- Additional Requirements;
  - ➢ Customization costs, migration costs, value-add requests;
  - ➢ Operational costs, Administration Costs, Support Costs;
  - ➢ Data Synchronization;

Data Analysis
Straight Ahead ↑↑

Assessment Process – Report Publication

- Four to eight days for full assessment;

- Report will describe preliminary requirements, costs associated with each, schedule, manpower;

- Options for customer consideration.

www.ibm.com/software/rational

Additional Sessions you may be interested in

Session	Title	Day	Time	Location
3919	Accenture Adopts Modern Rational Mainframe Tools and Boosts Developer Productivity by 25%	Wed	11:00	Islander F
4451	Compiling and Developing COBOL Programs in the Cloud?	Wed	12:30	Islander F
2544	Fidelity: Building z/OS Test Capacity in a Private Cloud with Rational Development and Test for z	Wed	3:30	Islander C

Learning Resources

- **RD&T Product Page**

- **RD&T Video**
  - How to create your own mainframe application development sandbox with RD&T
  - z/OS Continuous Integration dW article
  - DevOps for the Enterprise tech talks: http://bit.ly/1b4wl18
  - RD&T Product Documentation, including zPDT Redbooks
  - RD&T Hub
  - Request your test drive today: http://www.ibm.com/developerworks/downloads/rdtsandbox_systemz/index.html