z Systems:
The Cloud Server

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Electrohome
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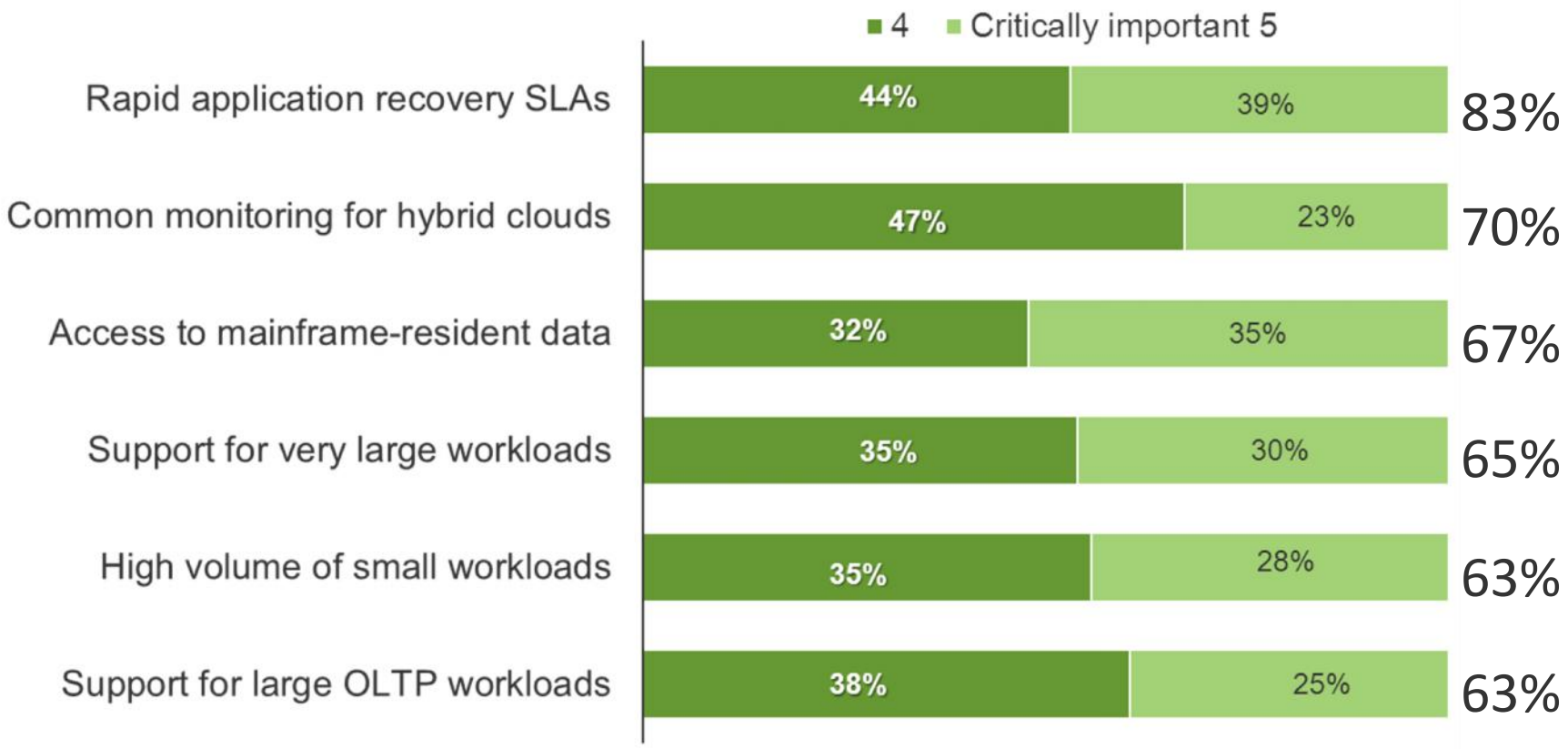
Forrester shows importance of mainframe infrastructure services in support of cloud workloads

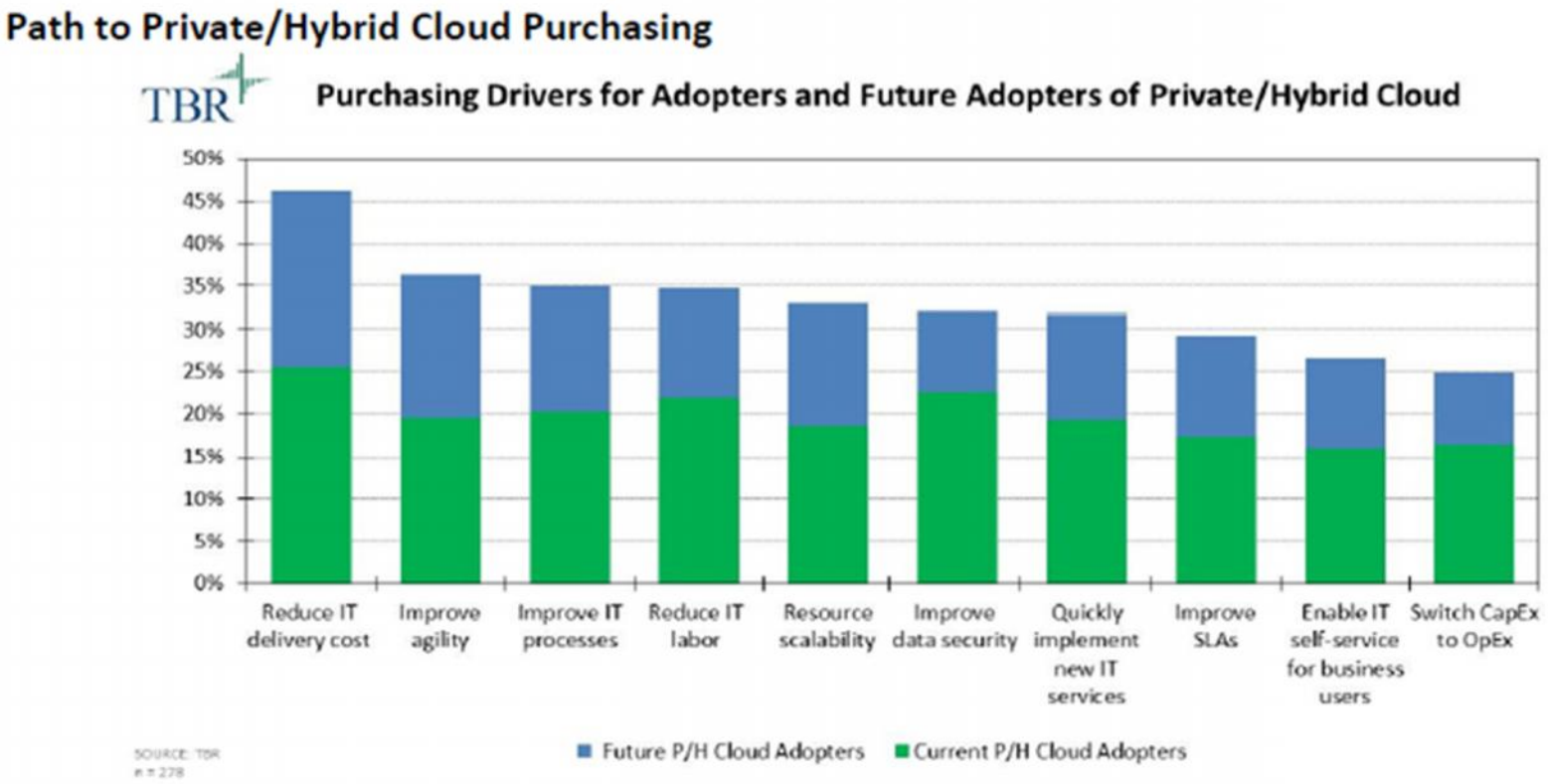
How important is it for your cloud platform to have the following *workload* characteristics? (Top 6 factors)



Base: 200 North American and European hardware and infrastructure decision-makers

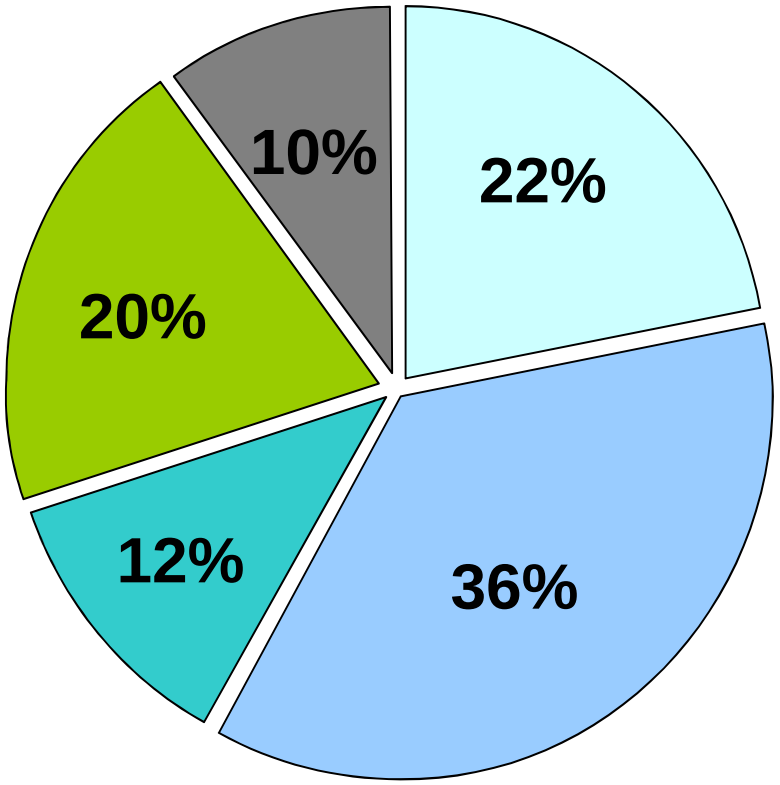
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, October, 2012

What are we hearing: top cloud adoption drivers



- Reduce IT Delivery Cost
- Improve Agility
- Improve IT processes

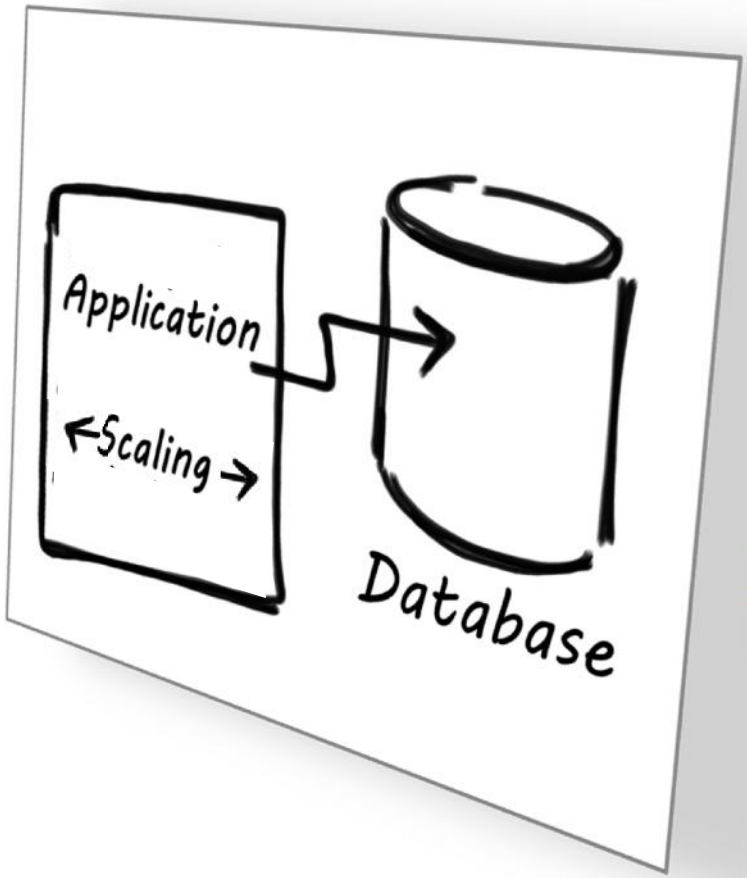
IT spends valuable resources managing applications and infrastructure instead of innovating



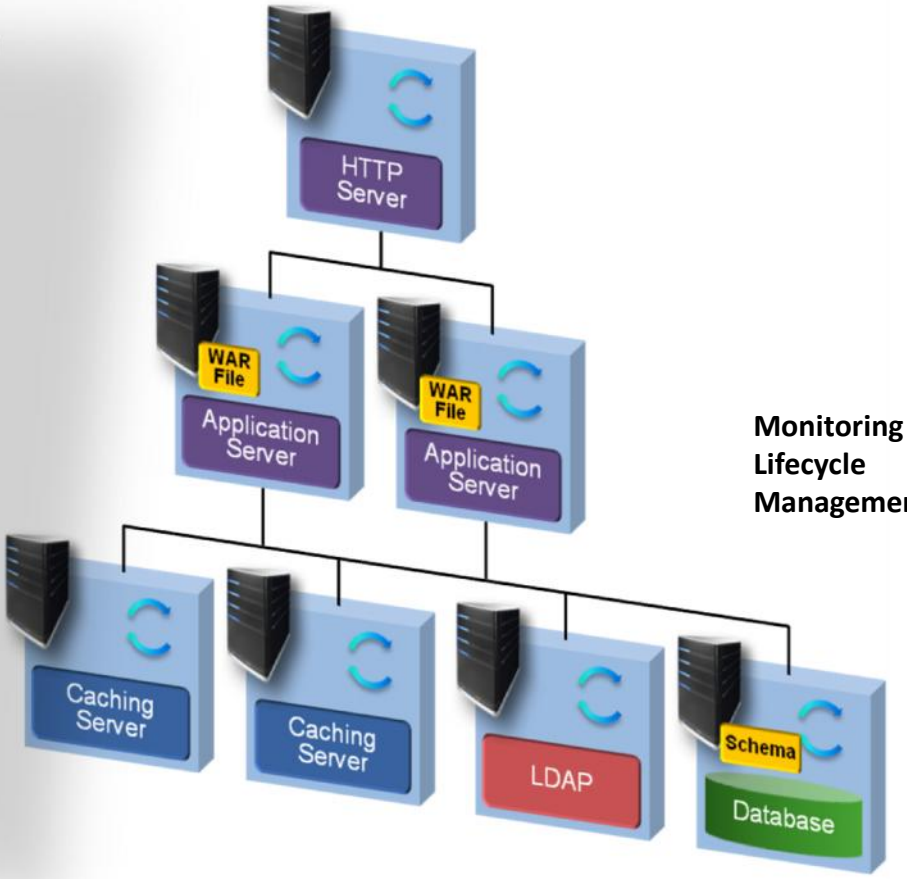
Typical percentage of time spent on each task category

- **Deployment Management**
  - *Hardware set-up and software deploymen*
- **Incident/Capacity Management**
  - *Monitor and respond automatically*
- **Asset Management**
  - *Hardware and software asset tracking*
- **Security Management**
  - *Access control*
- **Change Management**
  - *Hardware and software changes*

What the business wants…

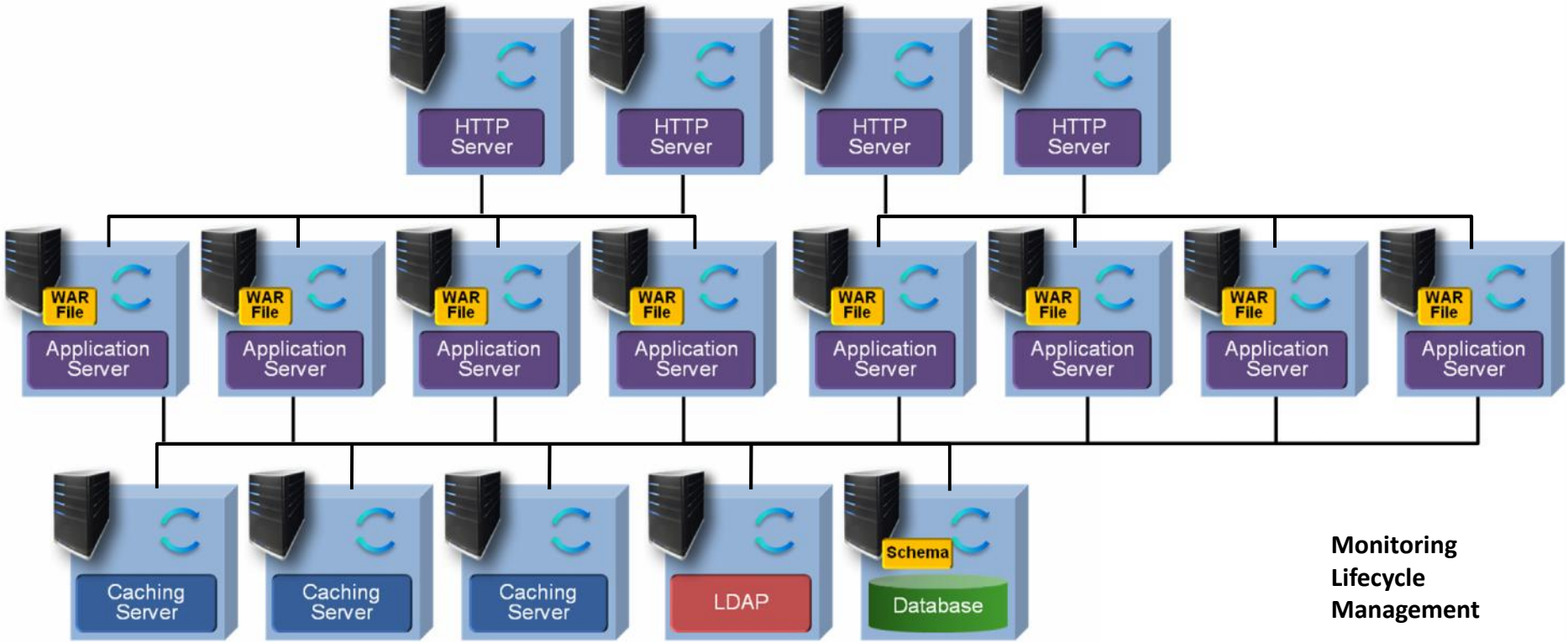


What's required…



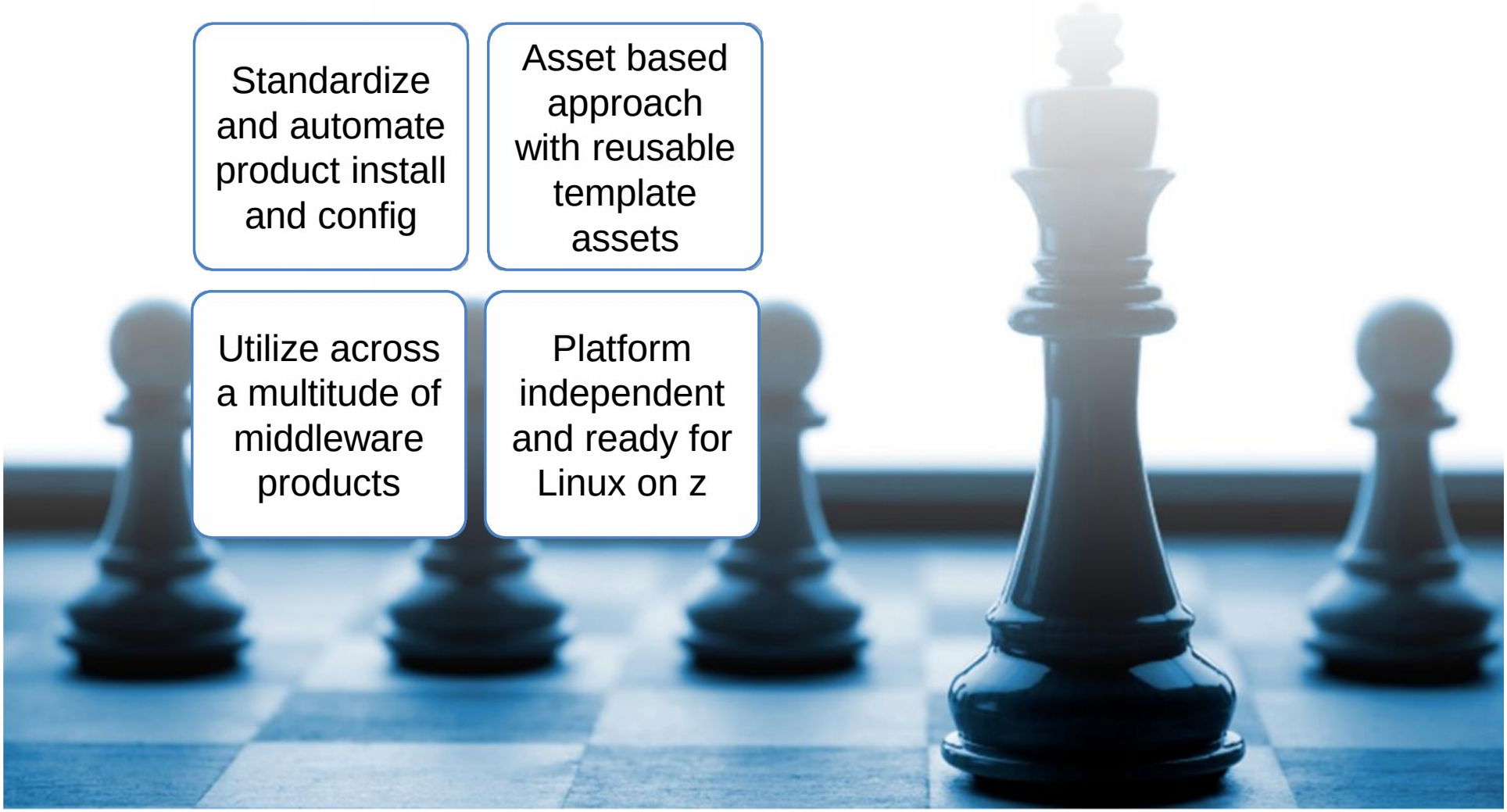
Monitoring
Lifecycle
Management

What will be needed tomorrow…



Monitoring
Lifecycle
Management

Cloud strategy supported by technology



Announcing Custom Patterns for Linux on z Systems

You asked – We delivered!

- ✓ ***One dozen patterns covering 50% of Linux on z Systems portfolio revenue***
- ✓ ***Clear commitment from IBM to pattern-enable middleware products for Linux on z Systems***
- ✓ ***Organizations will be able to build out complex Cloud workload instances on z Systems in a fraction of the time***

Time Savings		*Quality and Efficiency*	
Reduces multi-product deployment durations by up to 80%	*Reduces deployment error/fix durations*	*Reduces need for deep product skills*	*Improves quality of delivery*

z13 Launch Pattern List

January 14th announcement – Custom Patterns significantly increases the patterns available for Linux on z

- WAS Network Deployment
- WAS Liberty Core
- DB2 Enterprise Server Edition
- WebSphere MQ
- IBM Integration Bus

- IBM Operational Decision Manager
- IBM Business Process Manager
- IBM Business Monitor
- MobileFirst Platform Foundation
- WebSphere Portal

Orderable parts created for each product enabling base product plus custom pattern capability

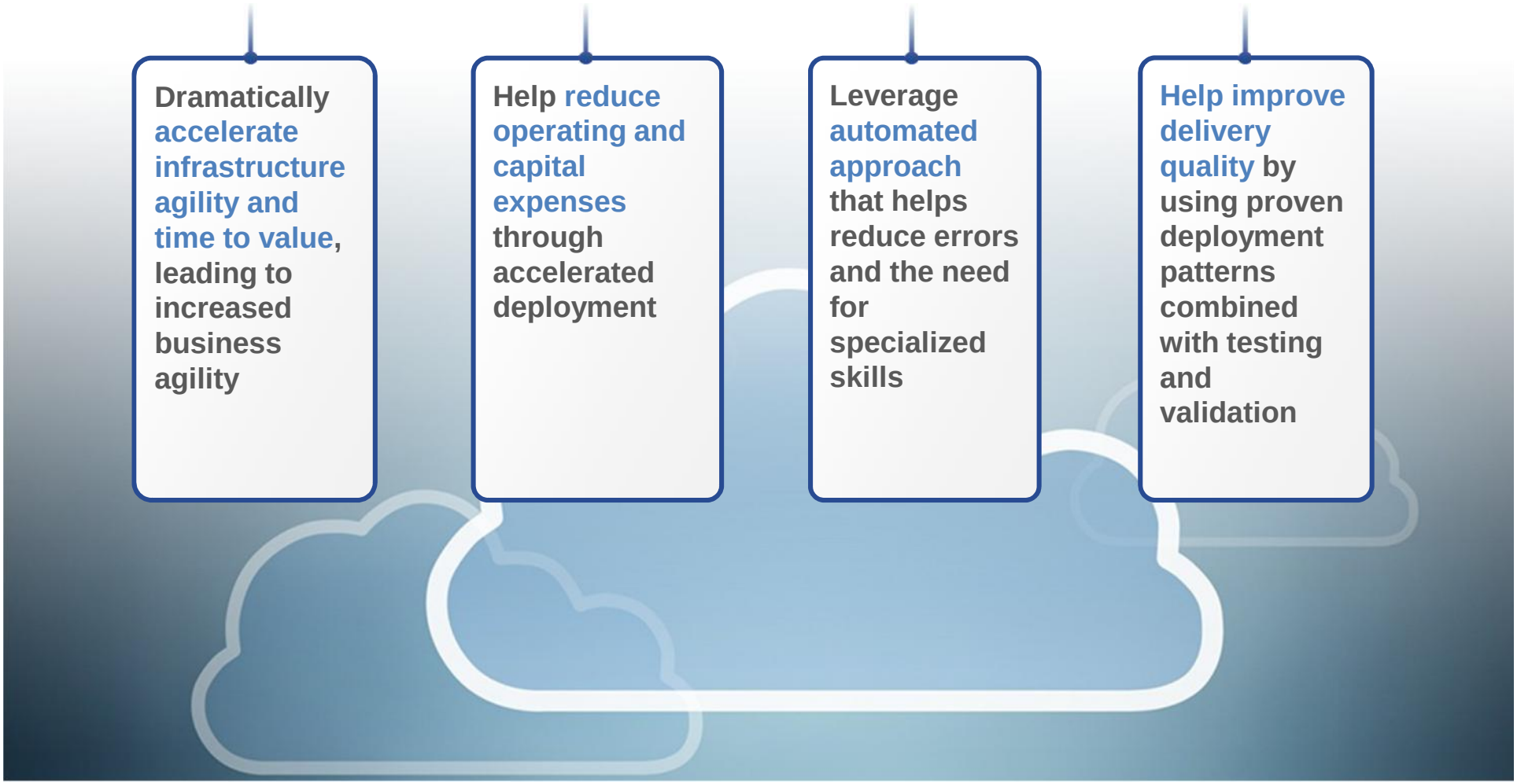
Highlights

Patterns drive efficiencies and cost reductions while improving agility

- ✓Reduces operating and capital expenses through accelerated deployment
- ✓Leverages automation to limit errors and the need for specialized skills
- ✓Reduces cost due to leveraging shared infrastructure and global resources
- ✓Standardizes patterns and proven test cases with reporting capability
- ✓Enables flexible access to infrastructure to scale test environment as needed
- ✓Designed to maintain continuous improvement in service levels

Custom Patterns for Linux on z Systems

With Custom Patterns for Linux on z Systems you can dramatically improve infrastructure agility by reducing environment and workload provisioning times while increasing quality through automation that reduces the chance of human error when deploying business critical workloads.



Exploiting Cloud on System z provides significant business value day one and increased value over time

Customers can move across roadmap as business requirements grow

Today

Infrastructure Teams

1 **Virtualization Optimization**

Image Management

Dev & Operations Teams

2 **Workload Optimized Cloud**

Workload Optimized Patterns

DevOps

CIO / IT Executive

3 **Cloud Enabled Data Center**

Self Service Provisioning

Usage Metering and Chargeback

Tomorrow

C Suite/LOB

4 **Enterprise Cloud**

Fit for Purpose Workloads

Disaster Recovery

Enterprise Security

Common Cloud platform built on an open standards reference model

Cloud Standards Customer Council

ISO International Organization for Standardization

W3C

openstack CLOUD SOFTWARE

OASIS Advancing open standards for the information society

IBM Business Partner

Customs patterns for Linux on z Systems Utilize Chef

- Chef is a leading system automation solution that turns infrastructure into code with an architecture that was built for extreme scale.

- Chef has enjoyed broad adoption in the industry, including companies like Facebook, GE, Norstrom, Admeld, Mercado Libre, and Prezi.

- Chef has a vibrant, open community with about 2000 Cookbooks and 60,543 Chefs (contributors)

Chef based patterns have multiple deployment options

- IBM Cloud Orchestrator 2.4 works with Chef today
  - Chef can be downloaded separately and ICO is built to work with it
- PureApplication supports Chef
- More options supporting Chef are coming from IBM soon
- There are multiple 3rd party options available as well, including both commercial and freely available options from the Chef organization itself

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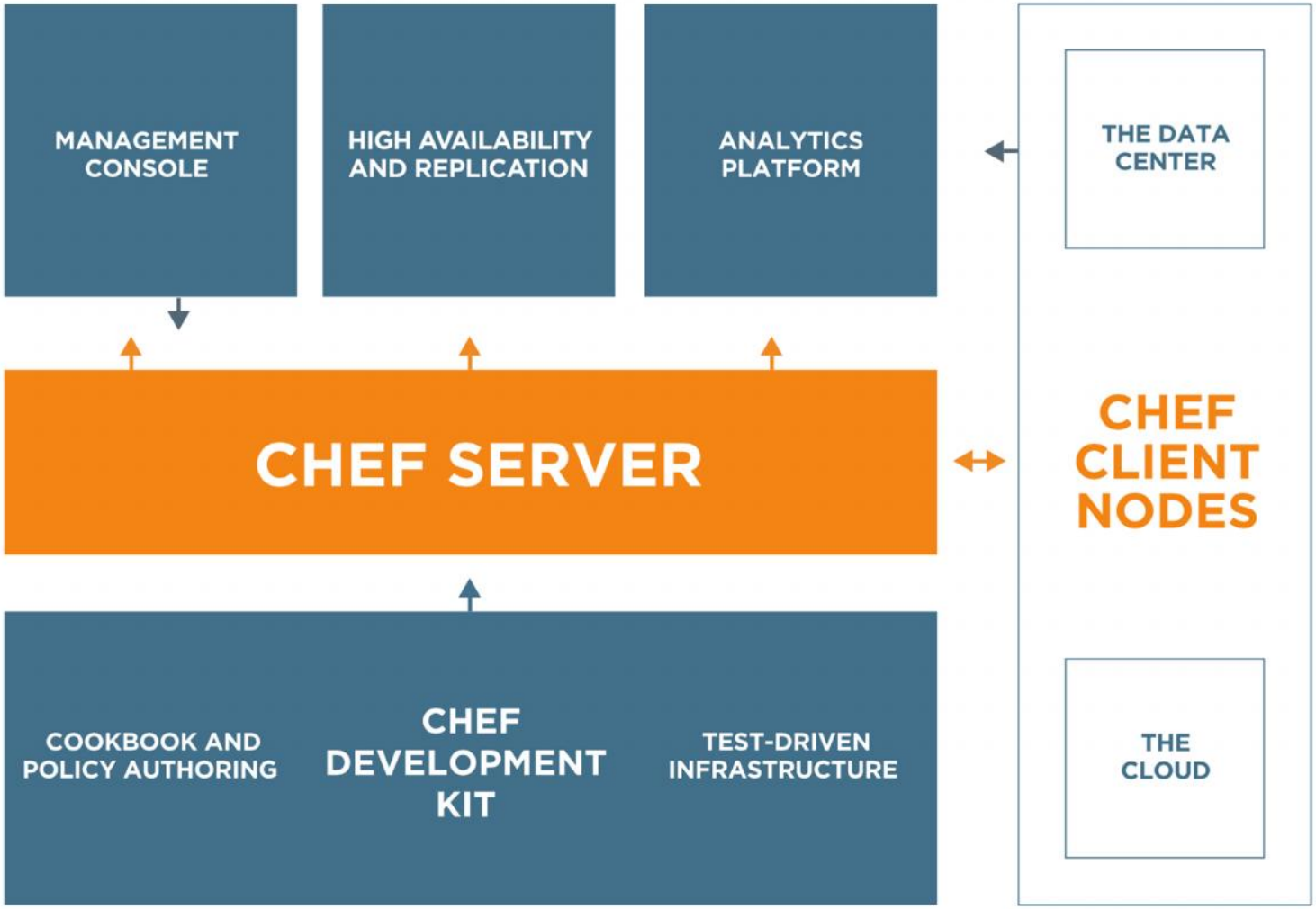

Content Reference: https://www.chef.io/chef/

Chef

- Chef turns infrastructure into code.
  - You can automate how you build, deploy, and manage your infrastructure.
  - Your infrastructure becomes as versionable, testable, and repeatable as application code.

- Chef relies on reusable definitions known as recipes to automate infrastructure tasks.
  - Examples of recipes are instructions for configuring web servers, databases and load balancers.
  - Together, recipes describe what your infrastructure consists of and how each part of your infrastructure should be deployed, configured and managed.

- Recipes use building blocks called resources.
  - A resource describes some piece of infrastructure, such as a file, a template, or a package to be installed.
  - You can use the many resources included in Chef, or create your own to manage unique configurations and legacy systems.

- The Chef server stores your recipes as well as other configuration data.
  - The Chef client is installed on each node in your network.
  - A node can be a physical server, a virtual server or a container instance.
  - The Chef client periodically polls the Chef server for the latest recipes and checks to see if the node is in compliance with the policy defined by these recipes.
  - If the node is out of date, the Chef client runs them on the node to bring it up to date.

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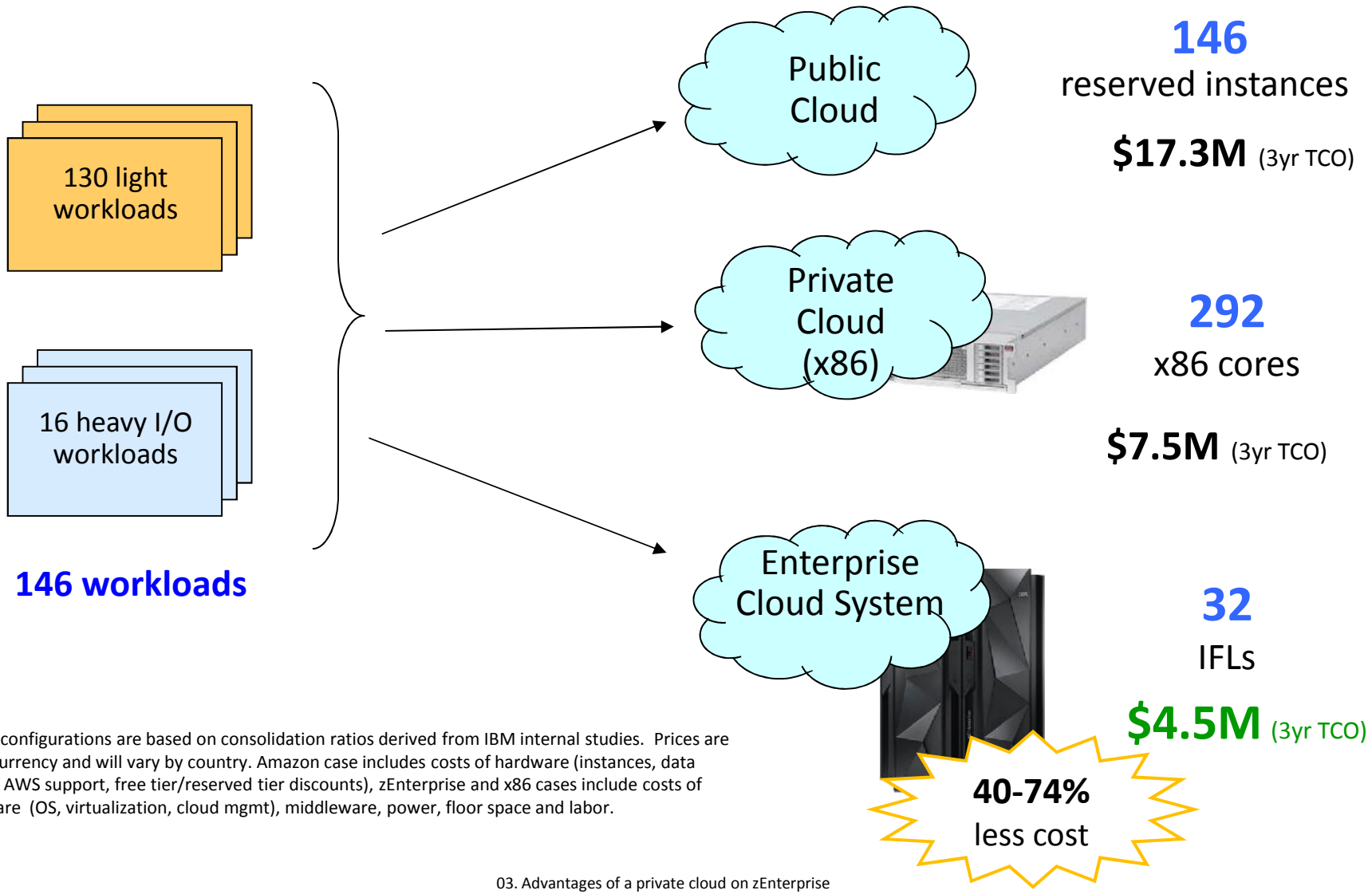
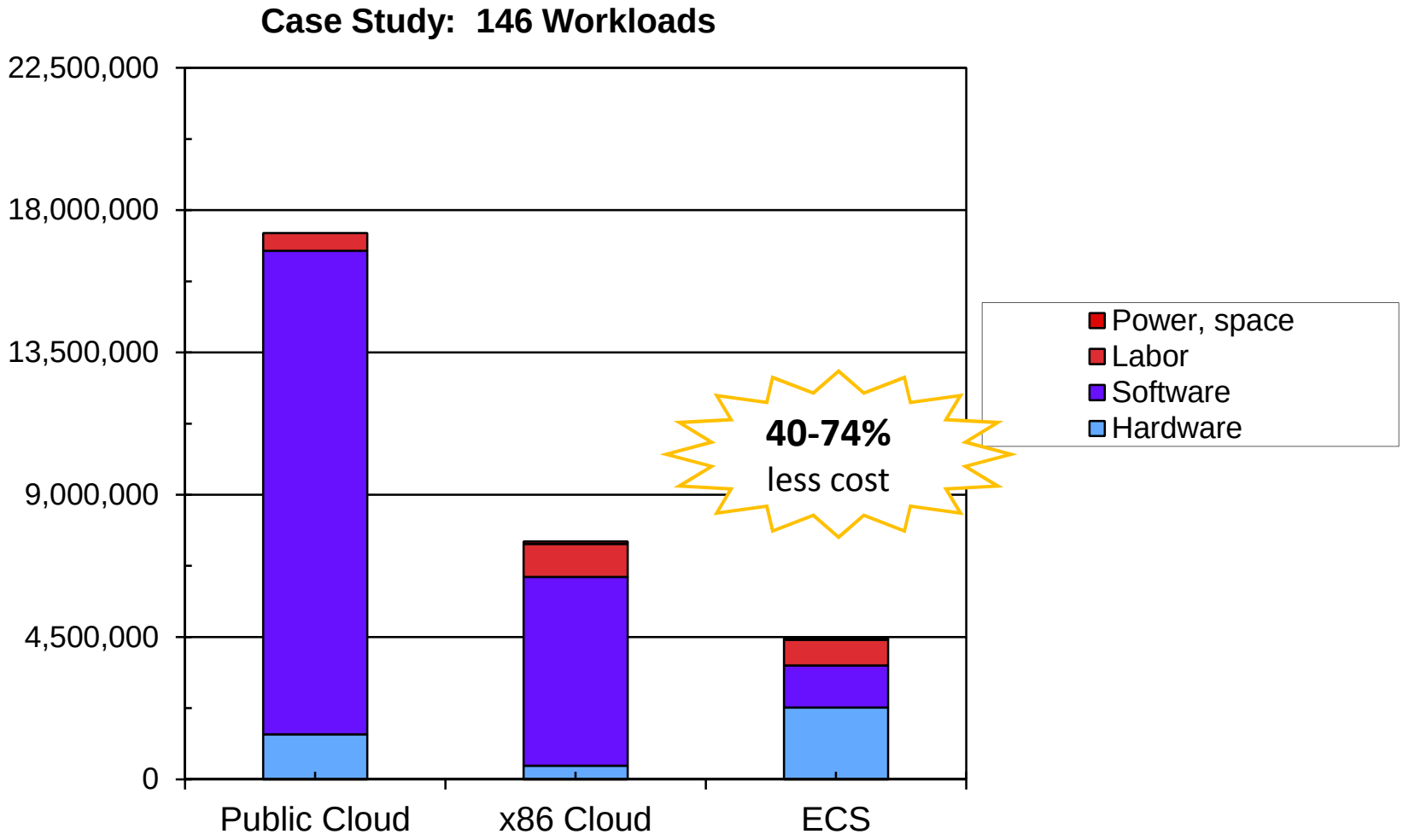
IBM Enterprise Cloud System yields the lowest costs



Server configurations are based on consolidation ratios derived from IBM internal studies. Prices are in US currency and will vary by country. Amazon case includes costs of hardware (instances, data in/out, AWS support, free tier/reserved tier discounts), zEnterprise and x86 cases include costs of hardware (OS, virtualization, cloud mgmt), middleware, power, floor space and labor.

Reduce TCO with a Enterprise Cloud System



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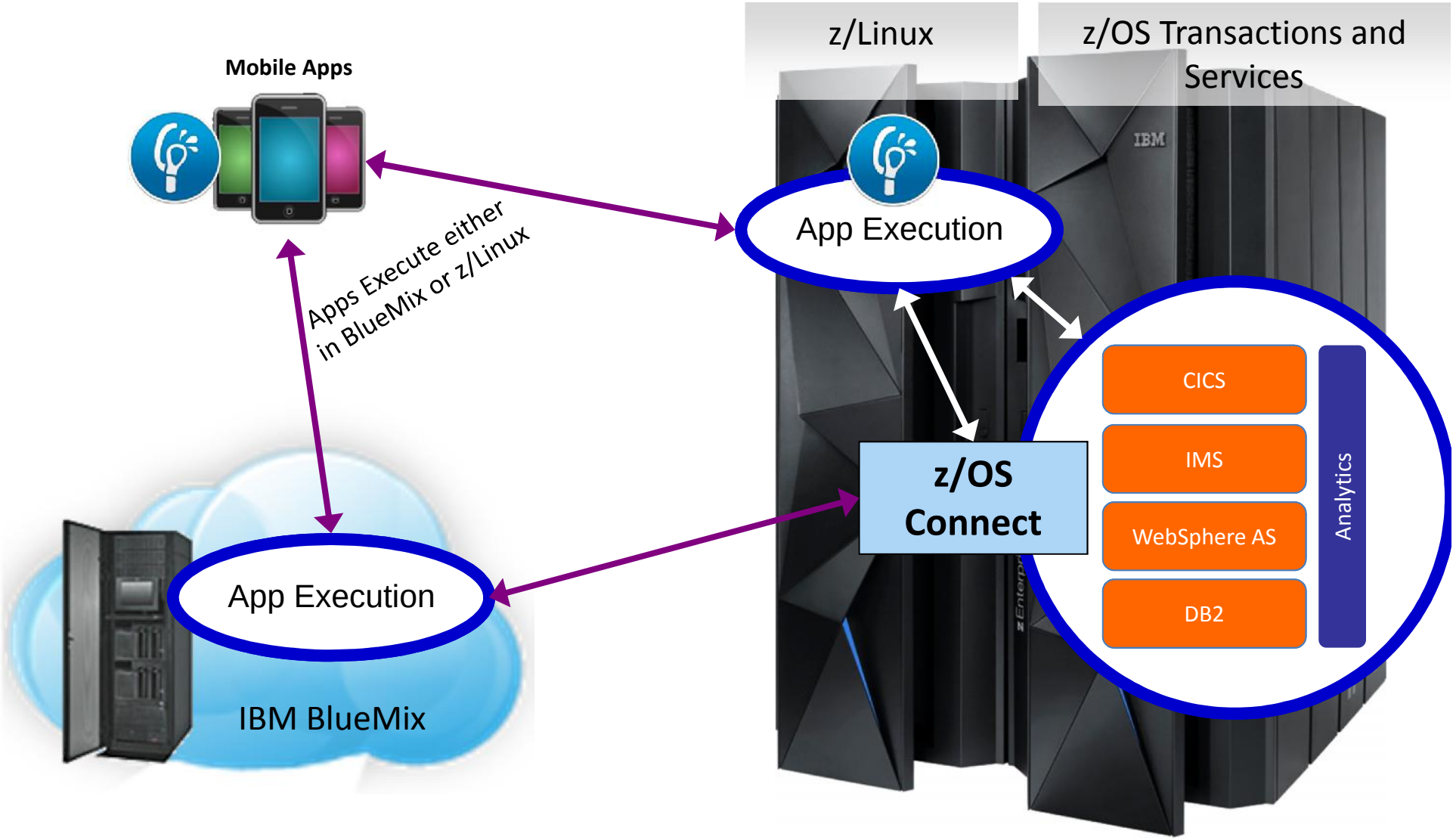
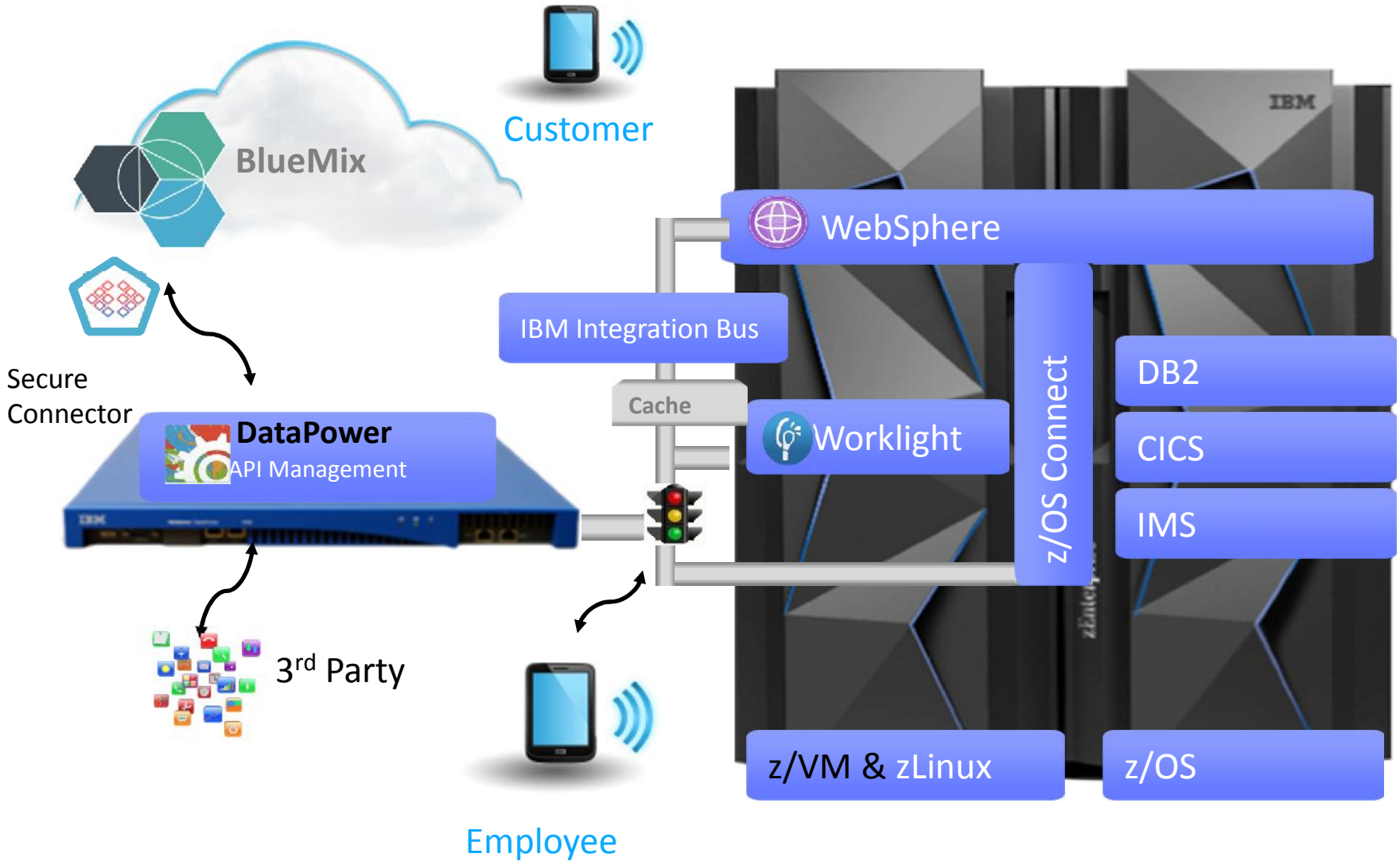
z/OS Connect


Mobile Apps
z/Linux
z/OS Transactions and Services
App Execution
Apps Execute either in BlueMix or z/Linux
z/OS Connect
CICS
IMS
WebSphere AS
DB2
Analytics
App Execution
IBM BlueMix

Systems of Engagement meet Systems of Record



Questions?

Thank You