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Evolution of Cloud Services and Integrating Cloud into your SOA

If you have any question, please contact Vietnamese team:

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Agenda

- Cloud Computing Level Set
- Value of Application-aware Cloud Computing
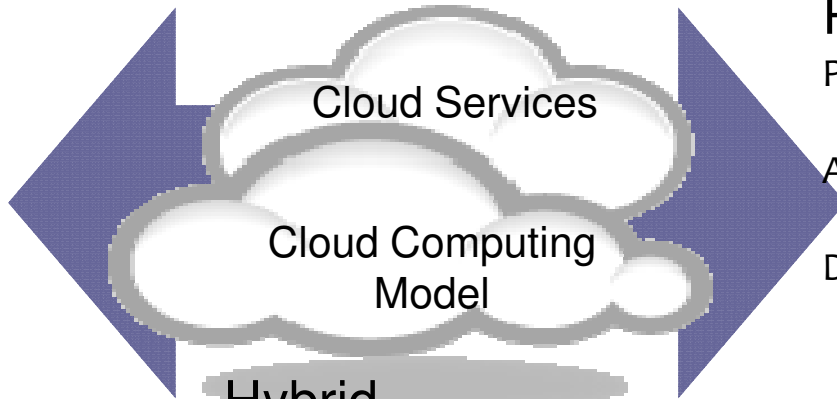- Required Capabilities
- Getting Started Today

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Cloud Computing Delivery Models

Flexible Delivery Models

Public …

Service provider owned and managed.

Access by subscription.

Delivers select set of standardized business process, application and/or infrastructure services on a flexible price per use basis.

Cloud Services

Cloud Computing Model

Hybrid …

Access to client, partner network, and third party resources

Private …

Privately owned and managed.

Access limited to client and its partner network.

Drives efficiency, standardization and best practices while retaining greater customization and control

…. Standardization, capital preservation, flexibility and time to deploy

…. Customization, efficiency, availability, resiliency, security and privacy

ORGANIZATION   CULTURE   GOVERNANCE

…service sourcing and service value

The Three Faces of the Cloud

Application Cloud

Application Platform Cloud

SaaS

PaaS

Infrastructure Cloud

IaaS
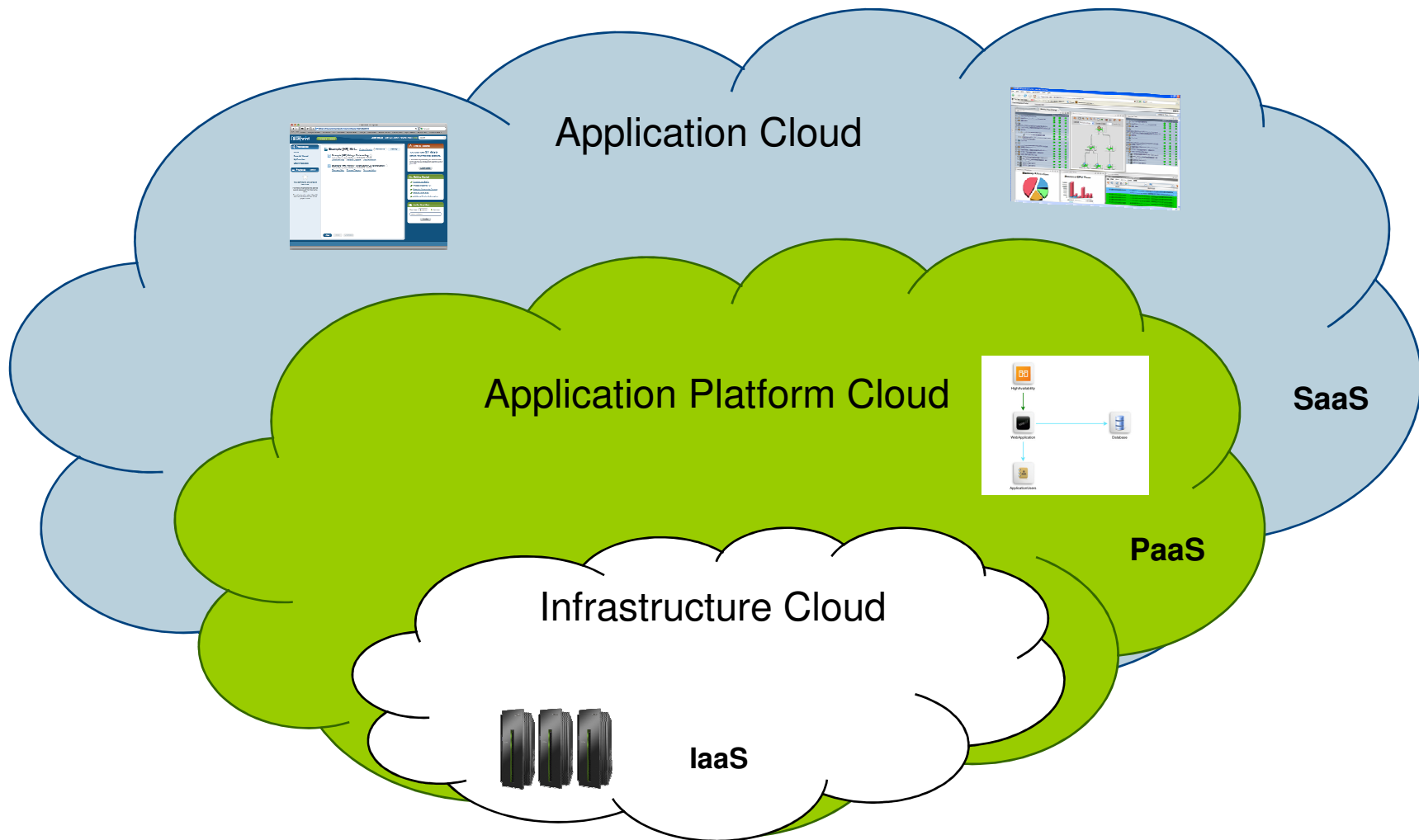
An IBM architectural view of cloud computing

Additional Partner Supplied Capabilities

Cloud Applications

Process Management

Collaboration

Analytics

...

Shared Middleware

Infrastructure

Integrated Service Management

Lifecycle & Business Support Services
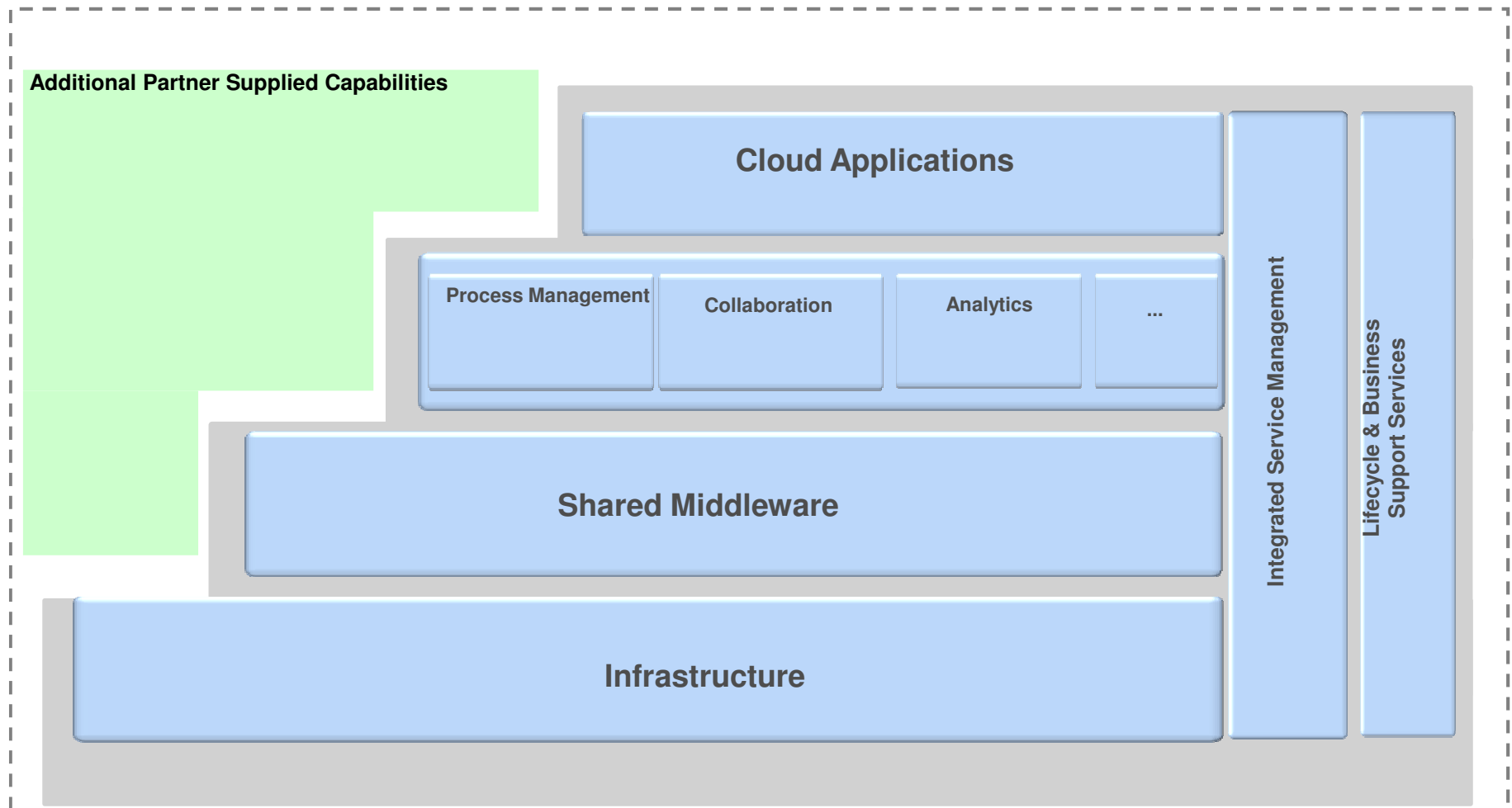
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The Value of Application Aware Cloud Computing

Discover. Interact. Optimize.

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What is Shared Middleware?

•Infrastructure View

•Central abstraction: **Virtual Machine**.

•Cloud provides:

— Compute hardware
— Network
— Storage

•IaaS does not understand or care about the software running inside the virtual machine.

Shared Middleware (aka PaaS)

Central Abstraction: **Application**

Cloud provides:

- Middleware runtimes
- Security
- Databases, Connectivity, Queues
- Caching
- Routing
- Storage

PaaS has a **viewpoint** on application, supporting a particular set of programming models and **understanding** the execution of the application deeply.

Running Your Application - Native Hardware

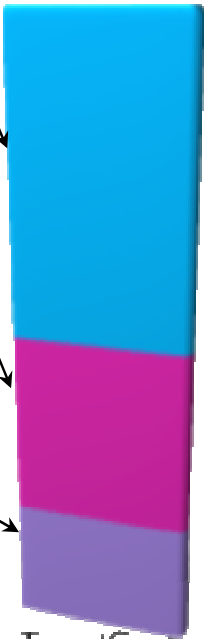**Tune/Admin/Maintain Environments**
(Performance, Security, Patches, etc)

Install Application and Connect Tiers
(Different Procedures, lots of config)

Configure Middleware Topology
(Clusters, Active/Standby, Capacity, etc)

Install Middleware
(Install, Patch, OS Dependencies)

WebSphere. software

DB2 software

Setup Operating System
(Install, Patch, Configure)

AIX

Acquire and Setup Hardware
(Power, Network, Racking, etc)

Time Cost

8

Running Your Application - Infrastructure Cloud

Tune/Admin/Maintain Environments
(Performance, Security, Patches, etc)

Install Application and Connect Tiers
(Different Procedures, lots of config)

Configure Middleware Topology
(Clusters, Active/Standby, Capacity, etc)

Select Middleware from Catalog
(Includes OS and Installation)

WebSphere. software

DB2 software

Run an Instance
(Select instance size)

AIX

Time Cost
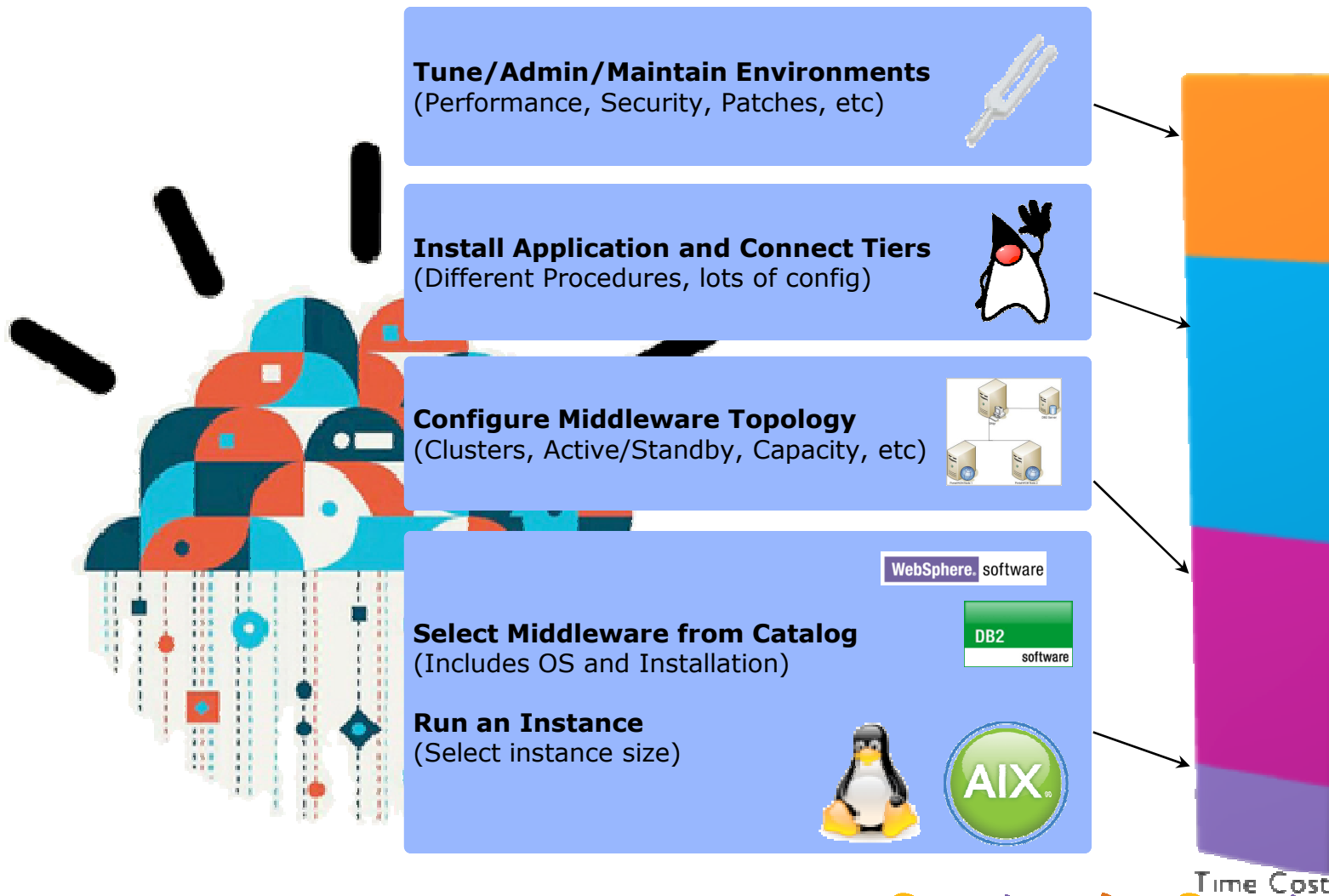
Running Your Application - Middleware-Aware Cloud

Tune/Admin/Maintain Environments
(Performance, Security, Patches, etc)

Script Application onto Pattern
(Standardized Patterns, Automation)

Select and Customize Topology Pattern

Includes OS & Middleware, Clustering, HA and other characteristics
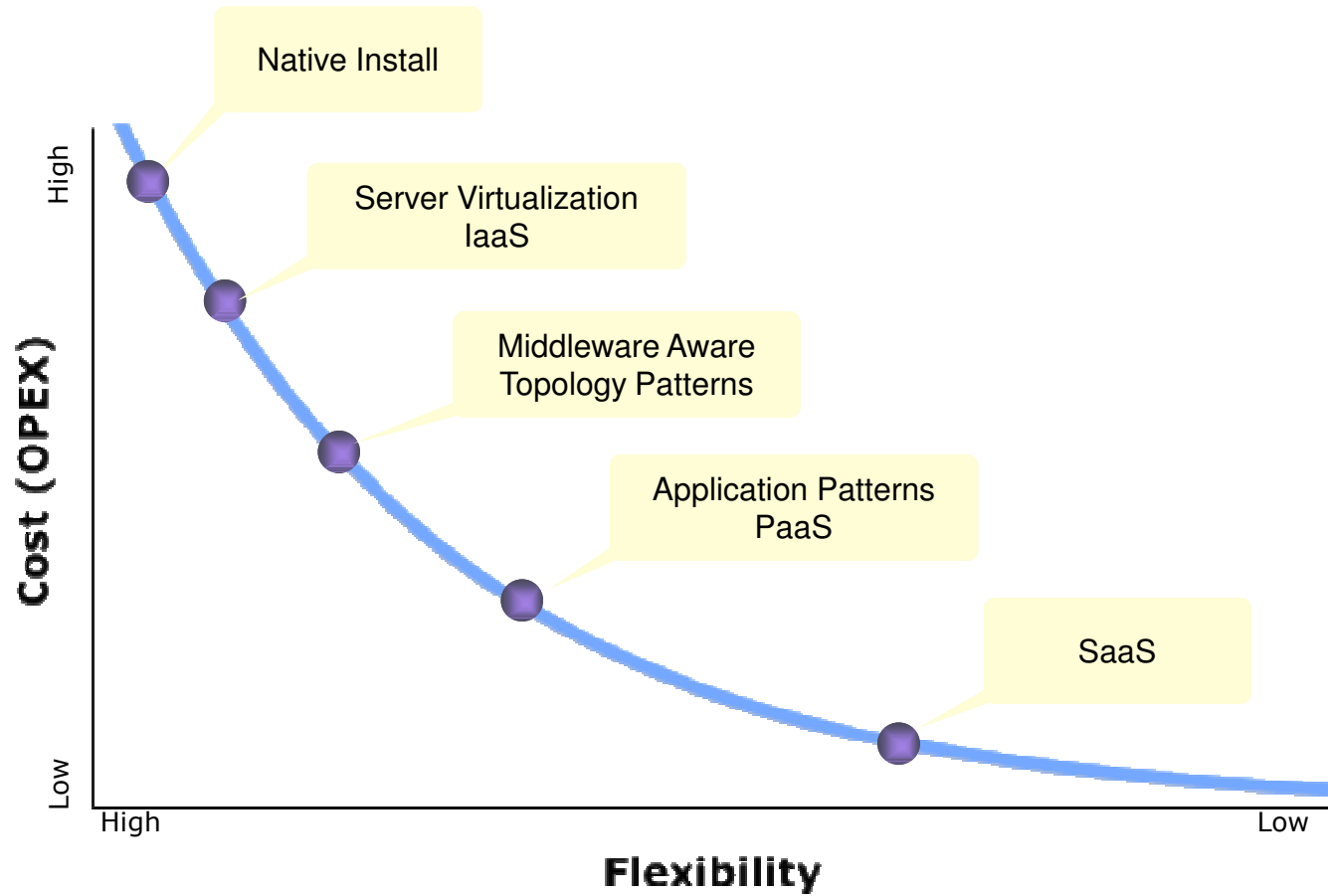
WebSphere. software

AIX DB2 software

Time/Cost

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Nothing is Free...

Native Install

Server Virtualization
IaaS

Middleware Aware
Topology Patterns

Application Patterns
PaaS

SaaS

Cost (OPEX)

High

Low

Flexibility

High

Low

Unexpected Effects...

Ease of Deployment

Low ——————————————————— High

High (# of Deployments)

Cost (OPEX)

Low — High

High — Low

Flexibility

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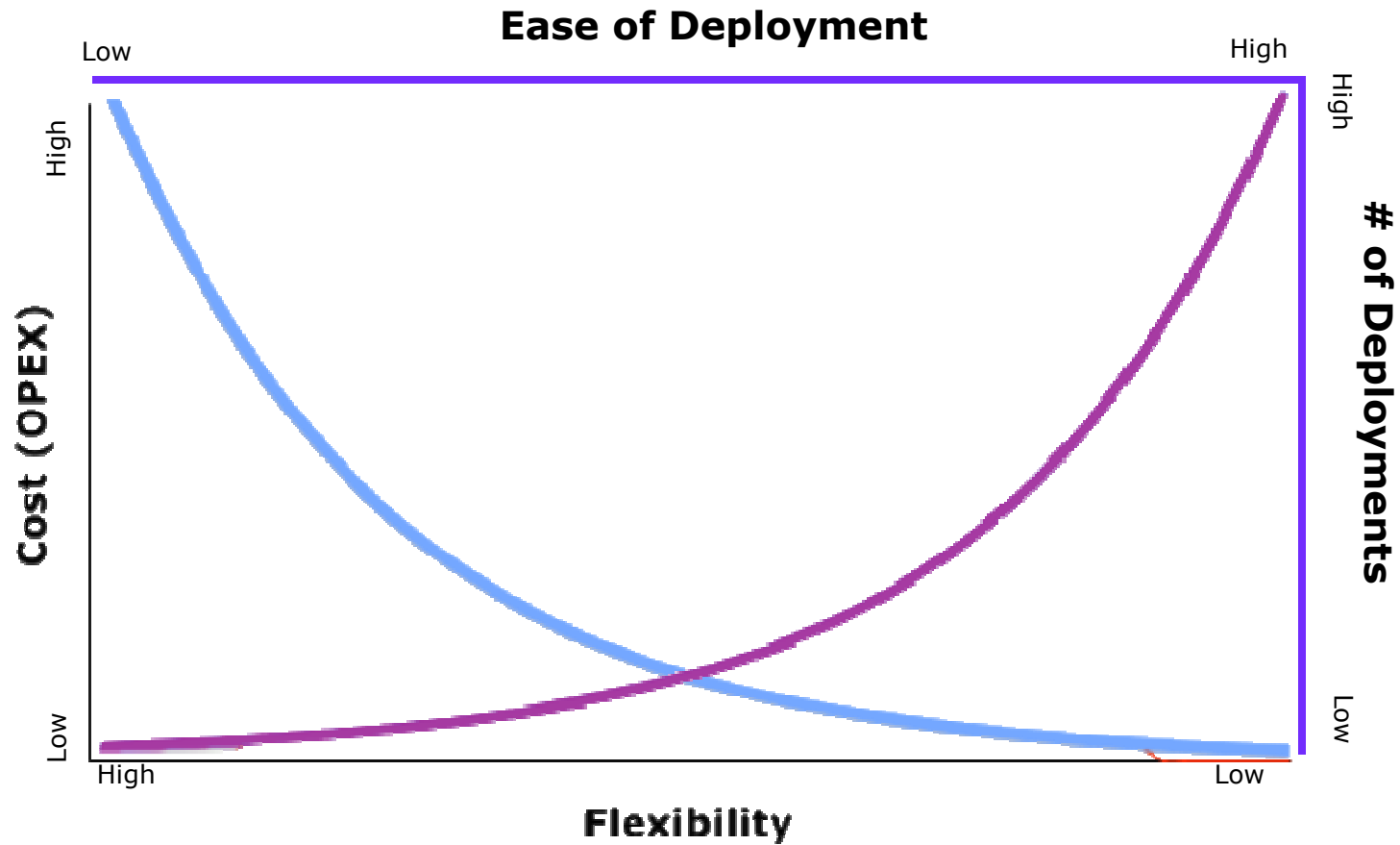
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Required Capabilities

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Shared Middleware Layer Desired Capabilities - Today

- Standardized Patterns for Workloads with automated deployment

  - Topology patterns in WebSphere Cloudburst Appliance (WCA)

- Automated Application lifecycle management, including maintenance/patching/upgrades

  - WCA has fixpacks and Emergency fixes

  - WebSphere Virtual Enterprise (WVE) has application editions   WebSphere. software

- Standardized and automated QoS (High availability, elastic scaling, etc)

  - Clustered patterns in WCA

  - Dynamic clusters in WVE   WebSphere. software

- Self-service user model
  - Allow application owners to deploy and manage applications

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Getting Started Today

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Getting Started on the Public Cloud

- Moving from native installations on private hardware to shared public infrastructure is an easy first step

- IBM has two solutions for the public clouds hosting WebSphere Middleware
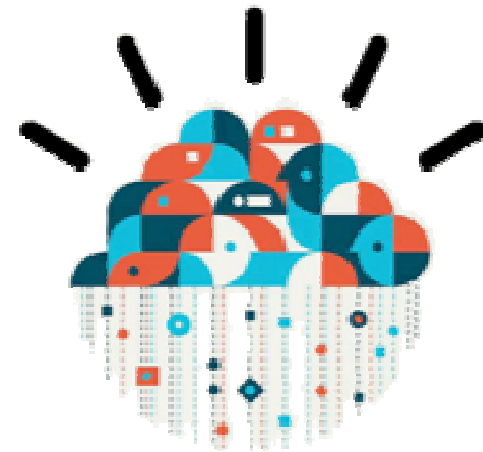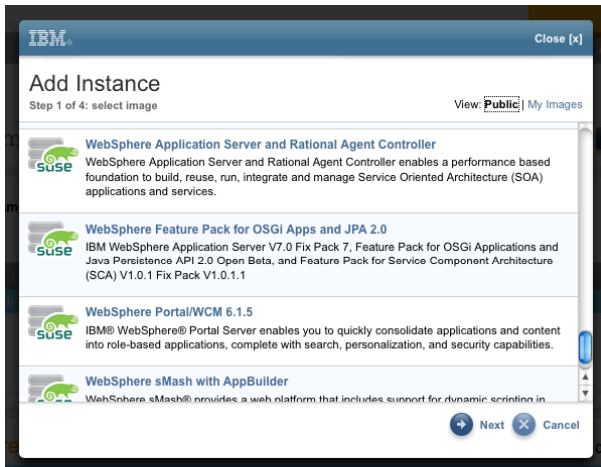 - IBM Smart Business Development & Test on the IBM Cloud
  - IBM Software on Amazon EC2
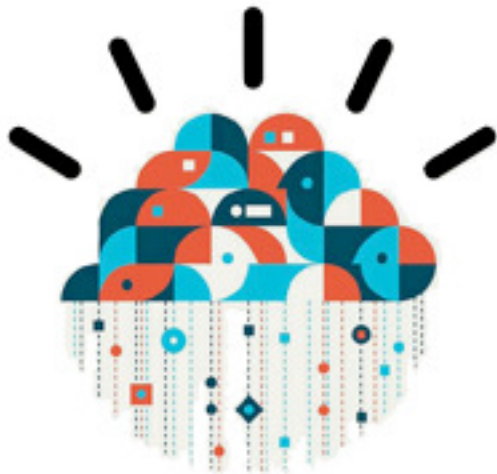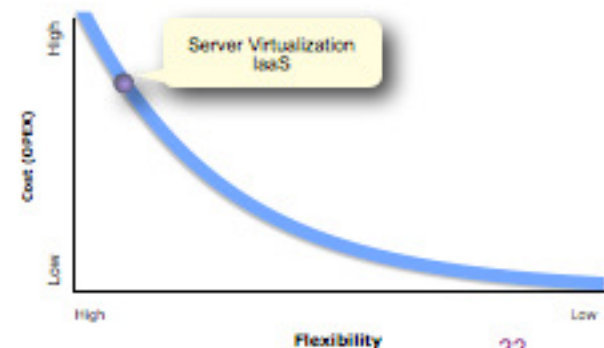
IBM Smart Business Development & Test on the IBM Cloud

- Excellent for PoCs, Dev/Test, Capacity Scale-up and Steady state usage
- Bring your existing IBM software licenses or pay-as-you-go
- Numerous products available with existing images
  - IBM WebSphere Application Server
  - IBM WebSphere sMash
  - IBM WebSphere Portal
  - Rational Software Architect
  - Rational Application Developer
  - more....

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WebSphere on IBM Cloud

IBM Software on Amazon EC2

- Excellent for PoCs, Dev/Test, Capacity Scale-up and Steady state usage

- Bring your existing IBM software licenses or pay-as-you-go

- Numerous products available with existing AMIs
  - IBM WebSphere Application Server
  - IBM WebSphere sMash
  - IBM WebSphere eXtreme Scale
  - IBM DB2 Express and Workgroup
  - IBM Tivoli Monitoring
  - more....

amazon.com

Getting Started on the Private Cloud

- Moving from native installations on private hardware to a private cloud environment can save you time and money

- Two WebSphere solutions provide the foundation for getting started
  - IBM WebSphere Cloudburst Appliance
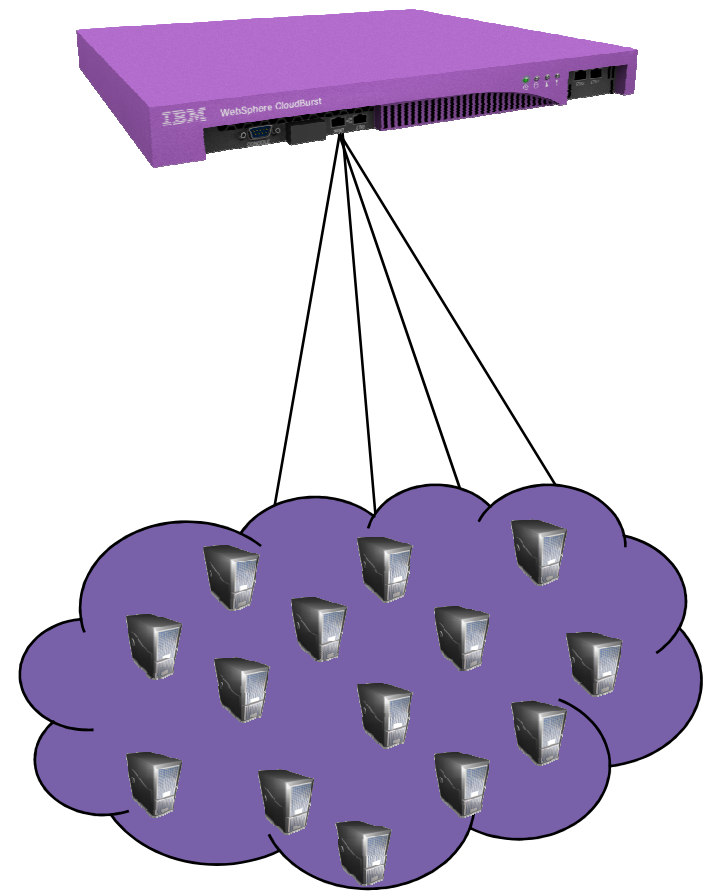 - IBM WebSphere Virtual Enterprise

Middleware Aware Topology Patterns

Cost (OPEX)

High

Low

High   Flexibility   Low
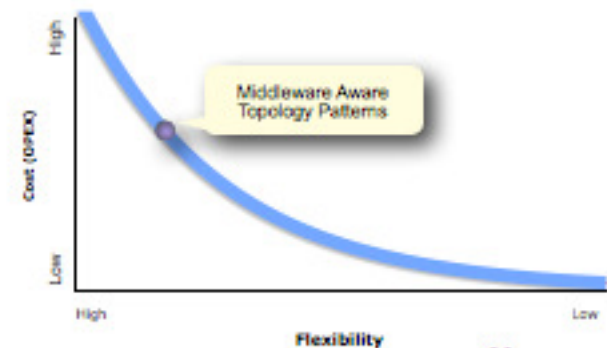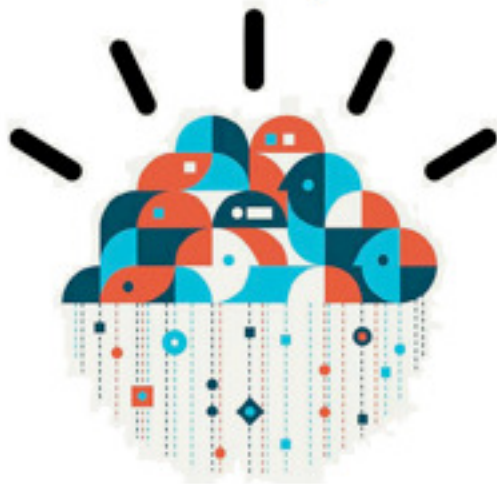
26

WebSphere Cloudburst Appliance

- Secure, self-service cloud management hardware appliance
- Unmatched WAS management (apply maintenance, federate cells, etc. - not black box)
- Dispenses hardened WAS patterns into a pool/cloud of virtualized hardware running a supported hypervisor
- Enables consistent & repeatable deployment of application environments based on patterns

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Middleware Patterns in WebSphere Cloudburst

WebSphere Virtual Enterprise

WebSphere Virtual Enterprise allows organizations to optimize their infrastructure investment and to prioritize their applications in a mission-critical manner

Resource Optimization

High Availability

Production Management

Application Editions

Health Management

Operational Insight

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