

IBM Cloud Services Portfolio Positioning Overview

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Disruptors are reinventing business processes and leading their industries with digital transformations

Frontline Decision Making

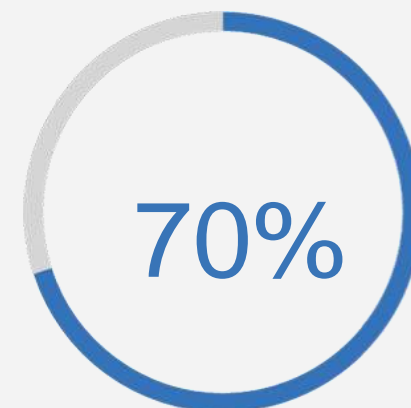
Business Leaders go Mobile First



of the LOB apps in customer-facing roles will be built for mobile-first consumption by 2017¹

Real Time Insight Driven Processes

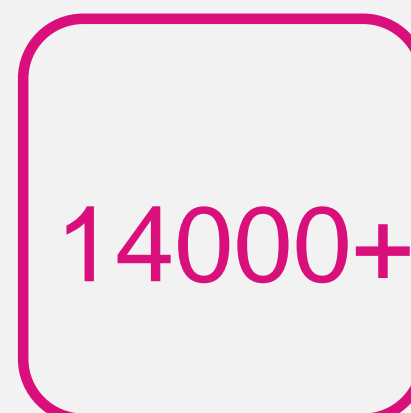
CIOs enable fast insight-driven decisions



of CIOs say analytics and big data drive innovation at their firm²

Digital Innovation

Developers are rewriting the world in code



APIs published today, public APIs doubled in the past 18 months³

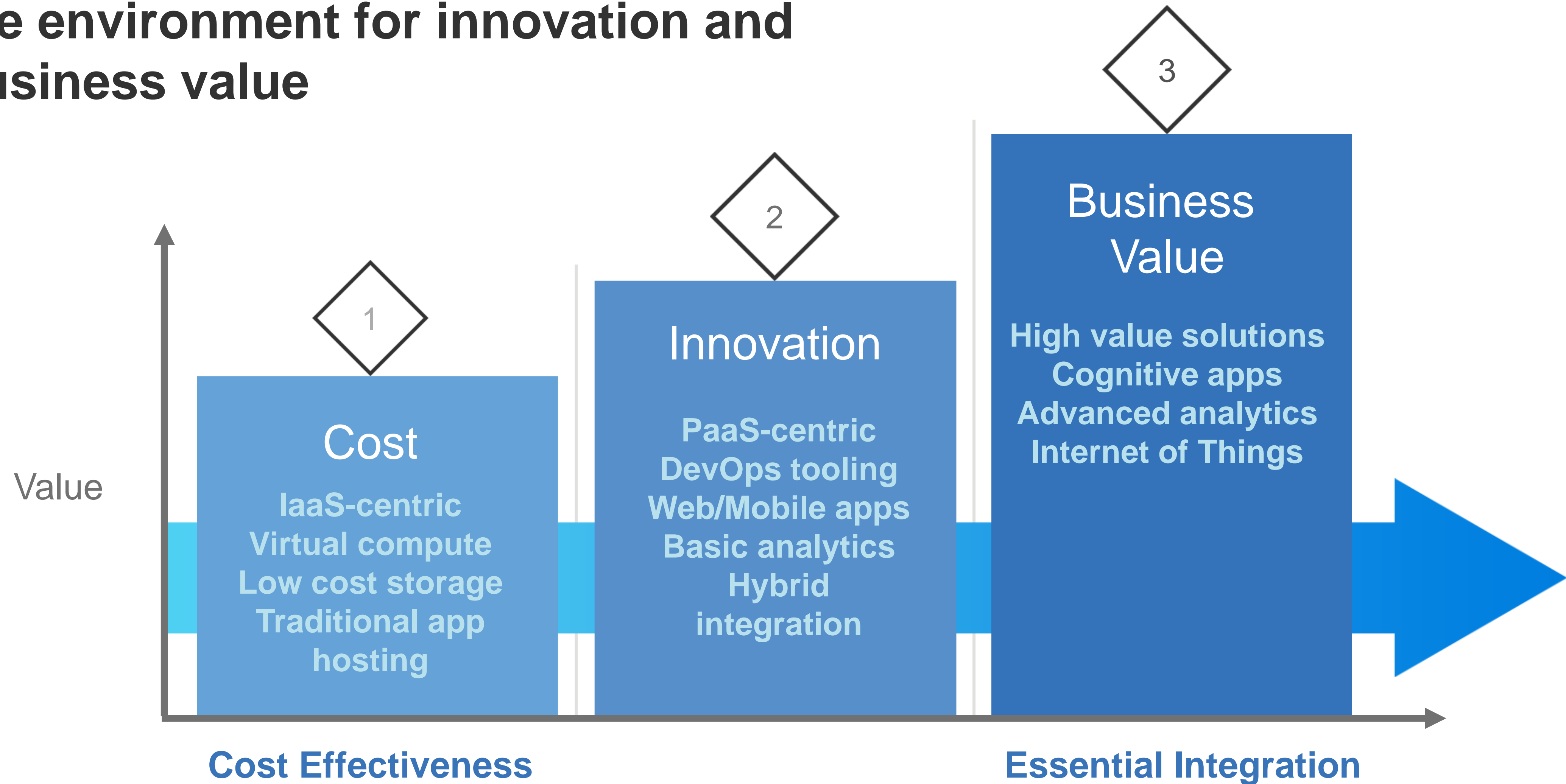
1) The Customer-activated Enterprise, *Insights from the Global C-suite Study*, IBM Institute for Business Value, 2013

2) IDC Directions, "How SaaS Gets Built" Doc # DR2014_T3_RM March 2014

3) See ProgrammableWeb, http://www.programmableweb.com/category/all/apis?order=field_popularity.

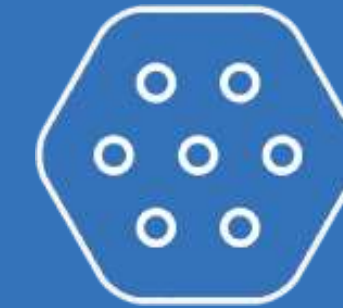


The role of the cloud is maturing into the environment for innovation and business value



IBM Point of View

4 Guiding Principles



**Choice with
Consistency**



**Industrialized
Hybrid Cloud**

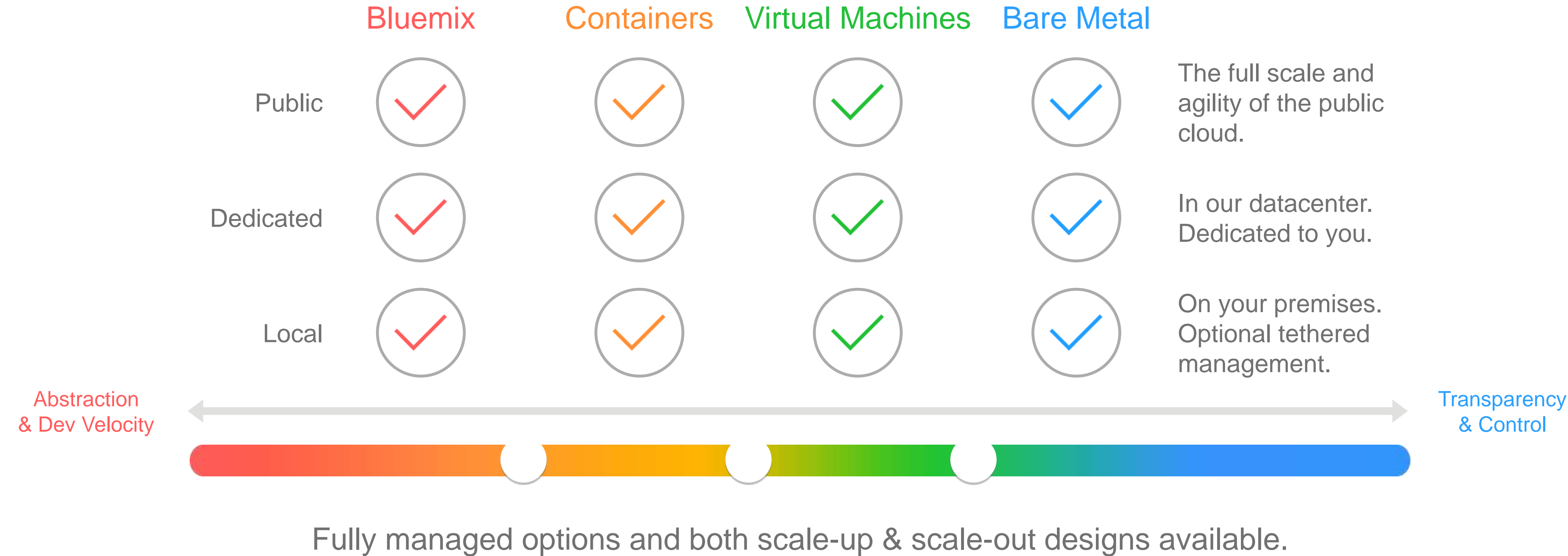


**DevOps
Productivity**



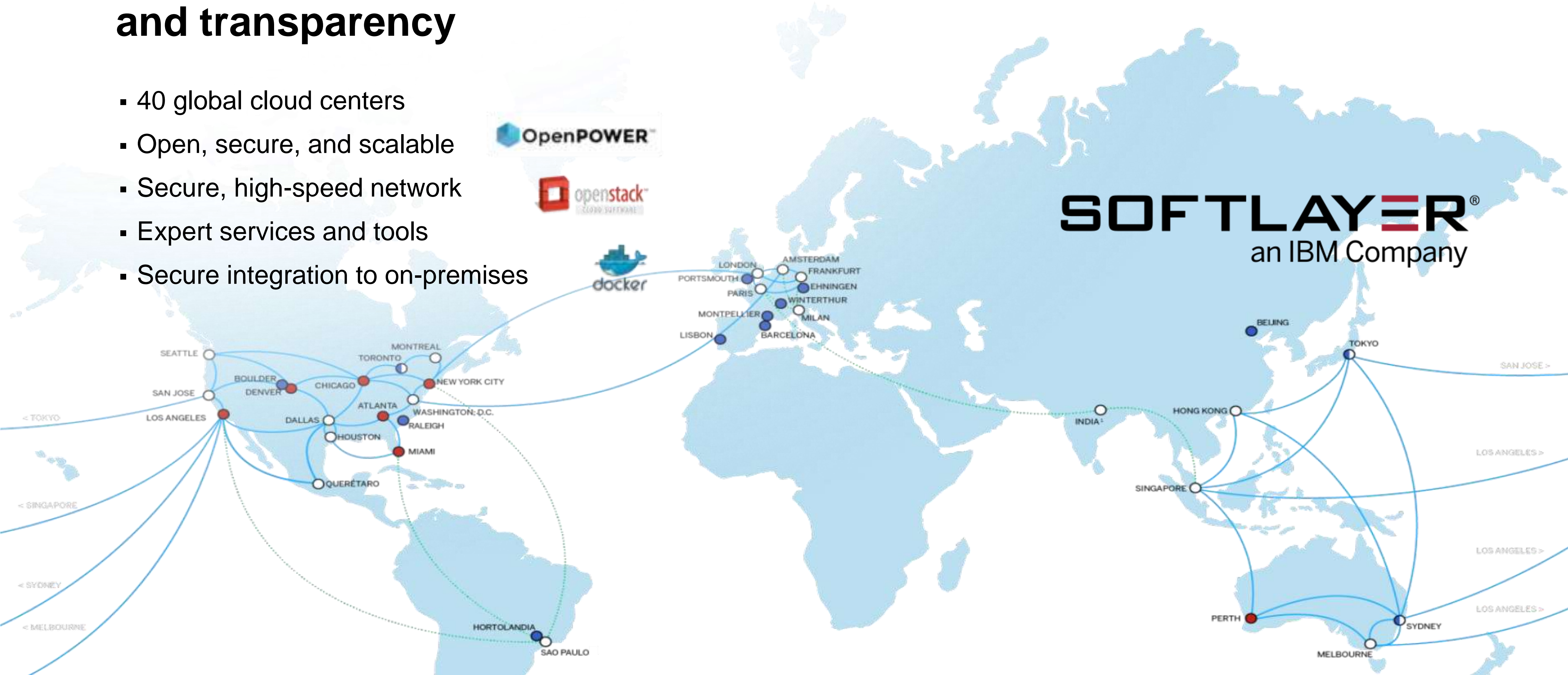
**Powerful, Accessible
Analytics with Cognitive**

Run times and delivery models to suit the full spectrum of enterprise needs

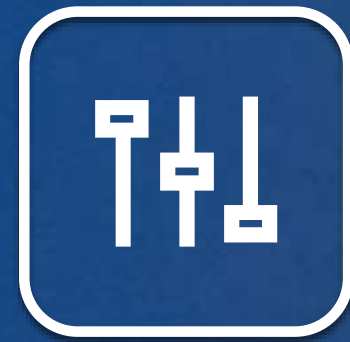


IBM SoftLayer: total access, control and transparency

- 40 global cloud centers
- Open, secure, and scalable
- Secure, high-speed network
- Expert services and tools
- Secure integration to on-premises



IBM Bluemix: create, deploy and manage applications in the cloud



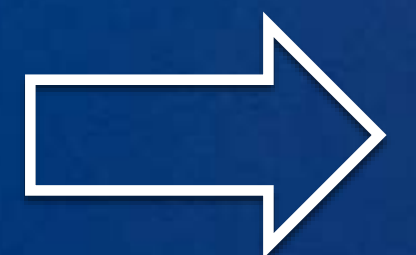
Build modern apps that thrive on data



Easily and securely leverage existing APIs, services and data



Foster a culture of continuous innovation and delivery

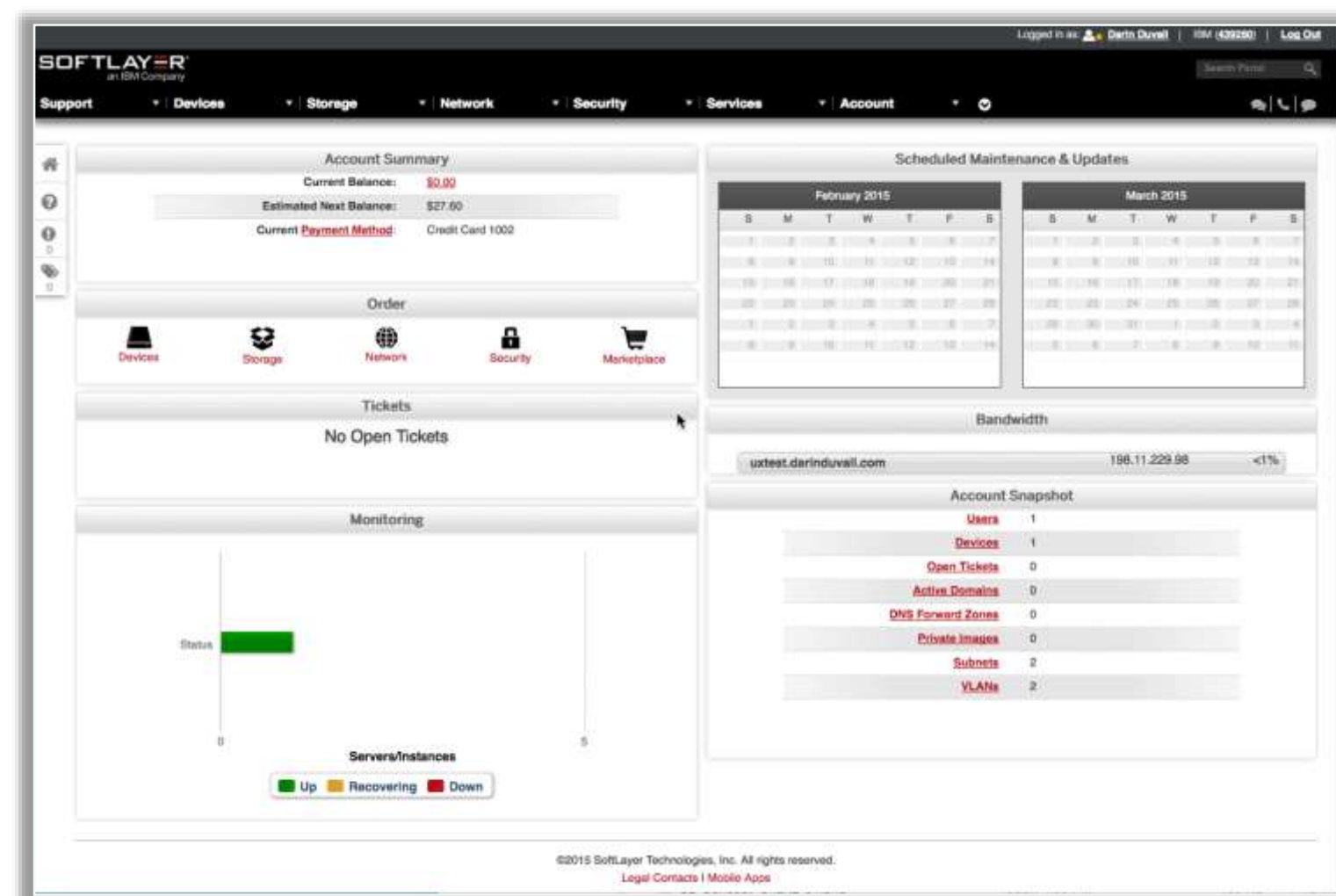


Clients can get started **free**

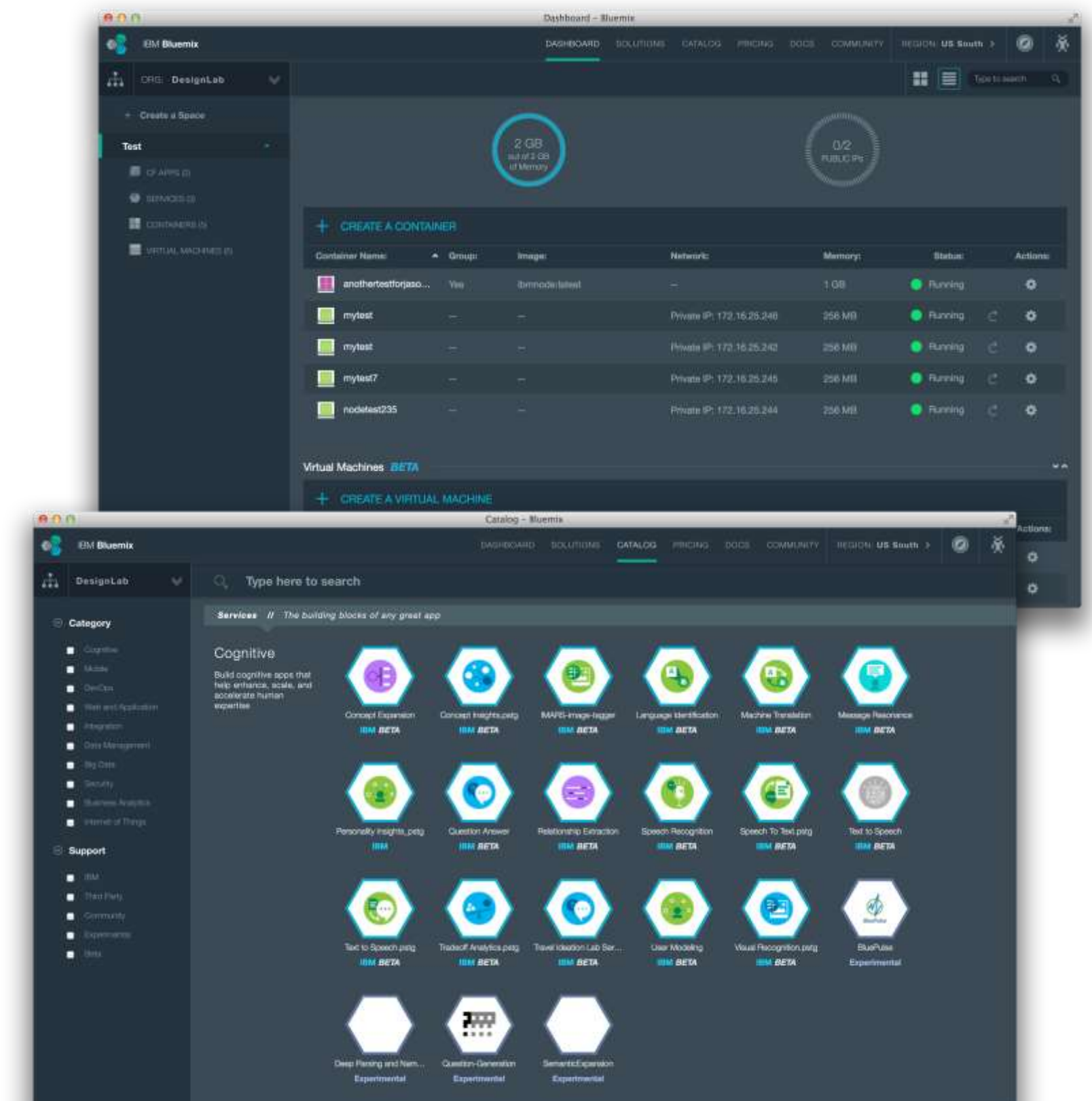


SoftLayer and IBM Bluemix today are two distinct solutions with overlapping offerings

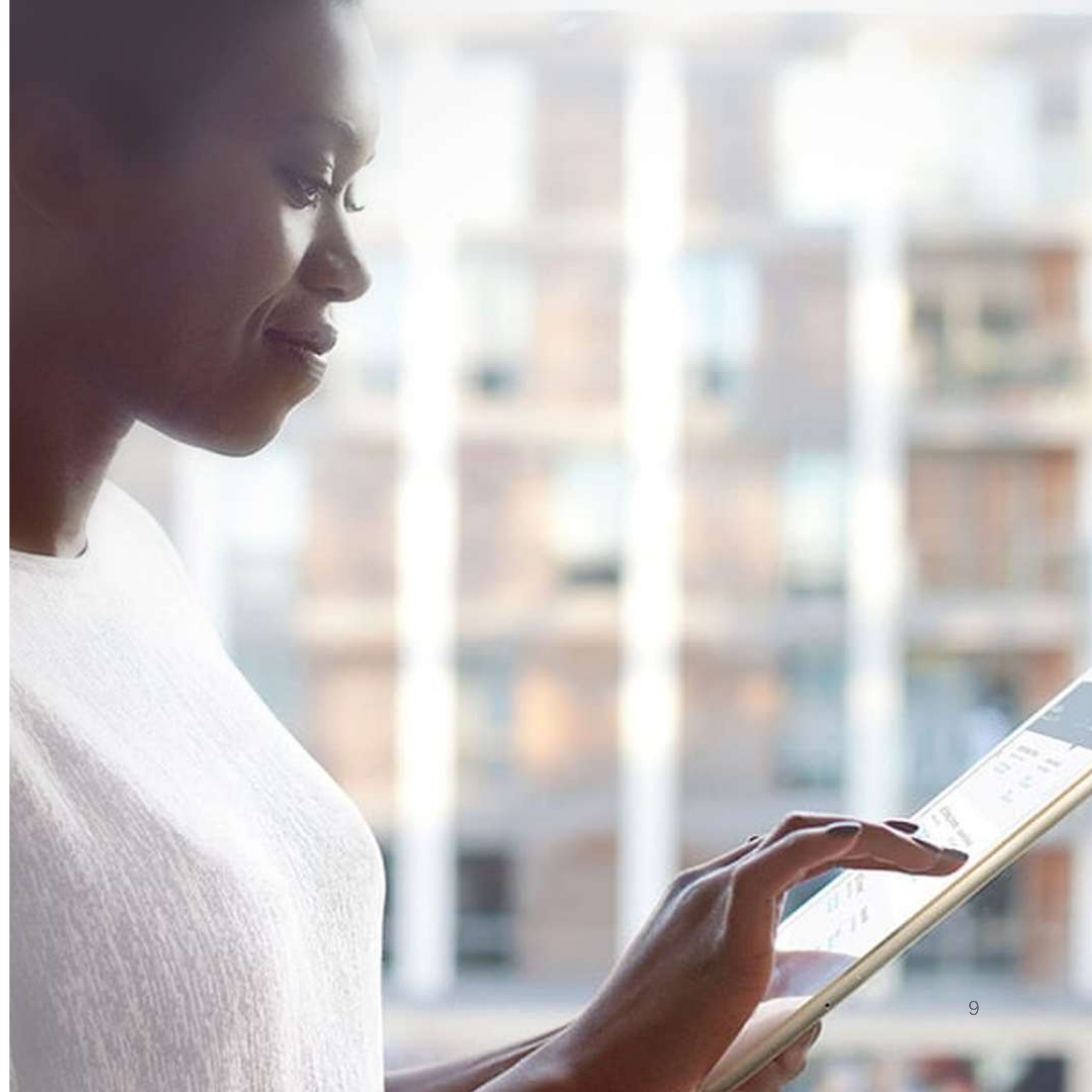
SOFTLAYER®
an IBM Company



- Two separate experiences: front doors, logins, bills, monitoring, logging, etc.
- Overlapping offerings: VMs, containers, object store, NoSQL, etc.
- Different SLAs, support, contracts, inside sales org



IBM Cloud Managed Services offers complementary IaaS and PaaS with integrated managed services across essential workloads including SAP and Oracle



Integrated services help clients deploy system-of-record and system-of-engagement workloads

Infrastructure services

Managed services

- ITIL compliant
- High, guaranteed SLA
- E2E and application management
- Turn key SAP/Oracle application services
- Modular services

Foundation services

Operations, security, networking, storage, compute, containers, data, integration, delivery

Infrastructure services

- Vertical scaling
- Horizontal scaling
- Tier 1 storage
- Consistent OpenStack layer
- Expansive service portfolio

Public

Multi-tenant public cloud.

Dedicated

Isolated private cloud

Local

Managed service in your data center

IaaS or PaaS—deployable on-premises or off-premises—built on an industrialized infrastructure

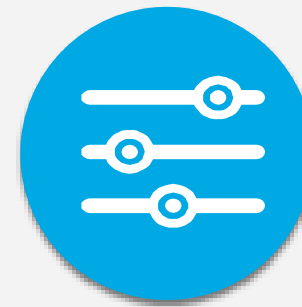
Managed Services



Disaster recovery
and availability
with failover
and fallback



Compliance services
for privacy
and protection



**Highly flexible, scalable
and available**
network and
storage
configurations



Best-practice security
with vulnerability
scanning and
protection from
physical intrusion



**Solutions for
SAP, SAP HANA, Oracle**
and other ERP¹ and CRM²
workloads

Global deployment on or off-premises

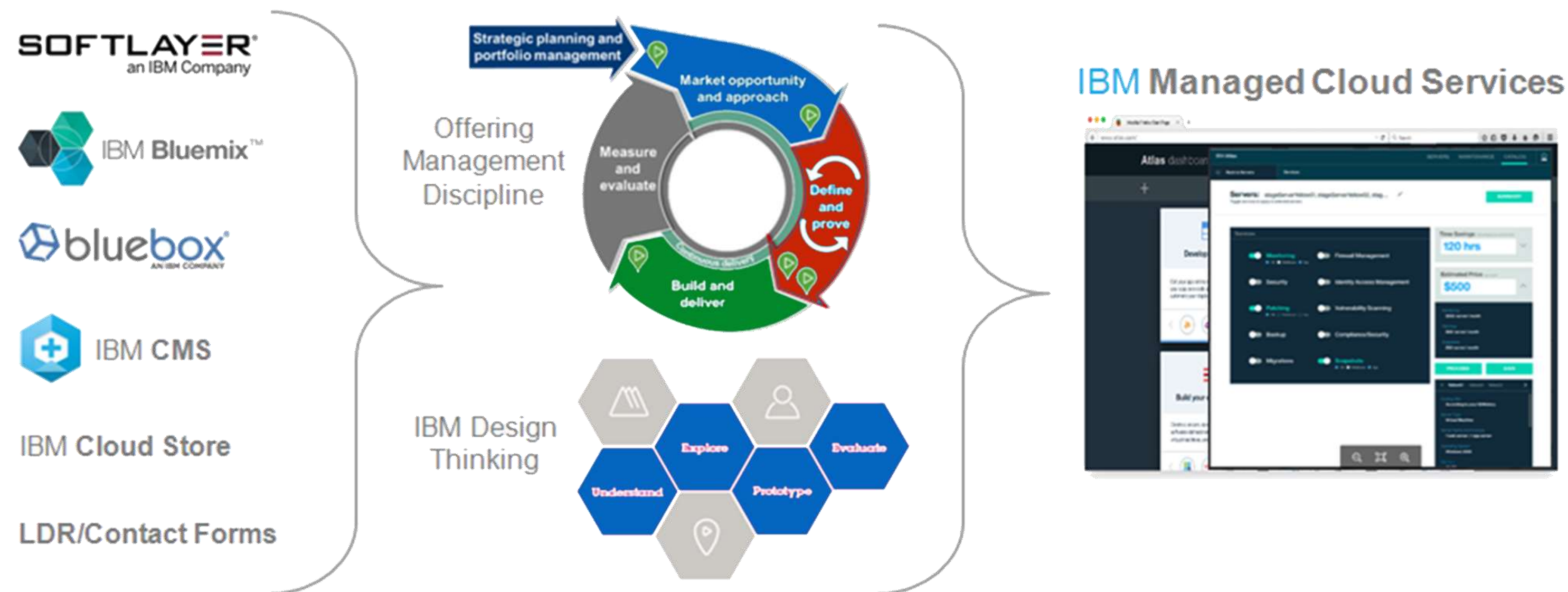
IaaS

Cloud Managed Services infrastructure – deployable in 13 geographic locations – supporting Windows, Linux and AIX

¹ Enterprise resource planning (ERP); ²Customer relationship management (CRM)

What we will achieve

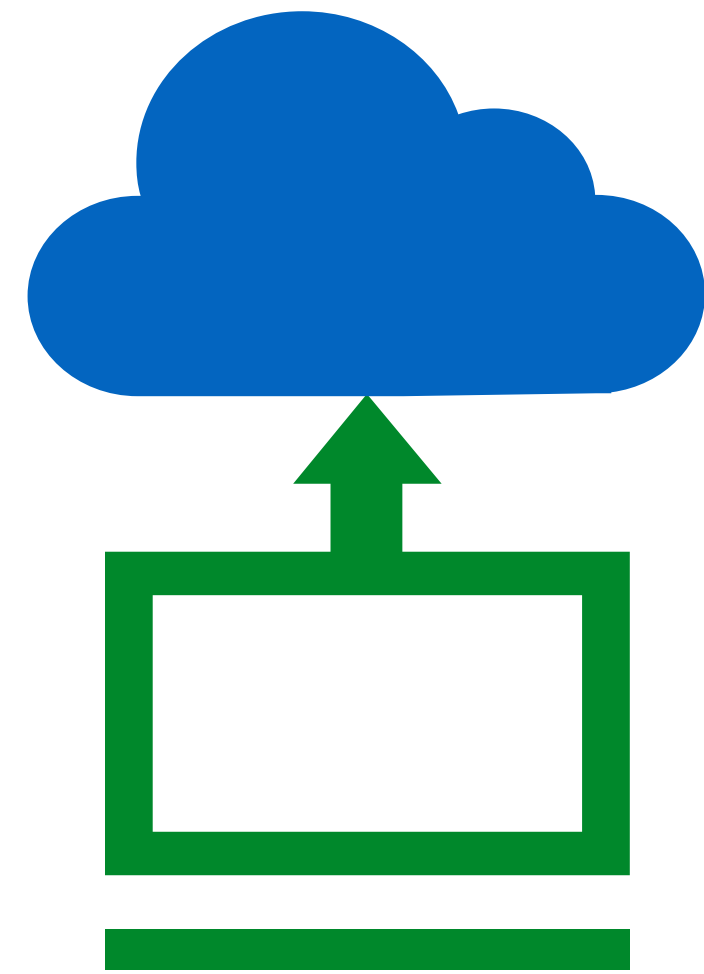
- End-to-end, seamless user experience of IBM Managed Cloud Services regardless of the underlying IaaS
- Managed Services revenue growth in our own underserved SMB IaaS customer segment



- A pre-integrated, global solution for born-in-the-enterprise AND cloud-native workloads...
- with seamless IT operations management...
- available through a cloud-native experience...
- and providing clients direction throughout their cloud transformation journey with built-in management tooling, patterns and best practices.

IBM Cloud Automated Modular Management: managed migration service

Available as a fully managed service



Helps **reduce the cost and time** of workload migration with easier-to-use and more efficient data transfer management features

Automated, push-button process for migrating physical and virtual workloads into SoftLayer

Support public, private, bare metal and VMWare on bare metal targets in SoftLayer

No manual agent deployment on source or target environments to simplify migration

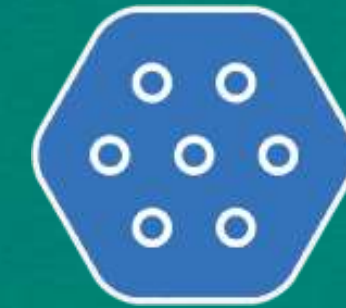
Security-rich transfer of workloads one at a time or in groups

Initiate and monitor status of migrations from a single dashboard

Reduces production server downtime via “live capture” and “incremental data sync”

IBM Point of View

4 Guiding Principles



**Choice with
Consistency**



**Industrialized
Hybrid Cloud**



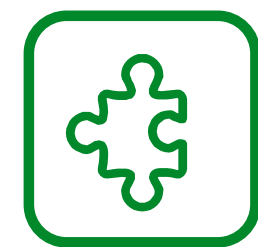
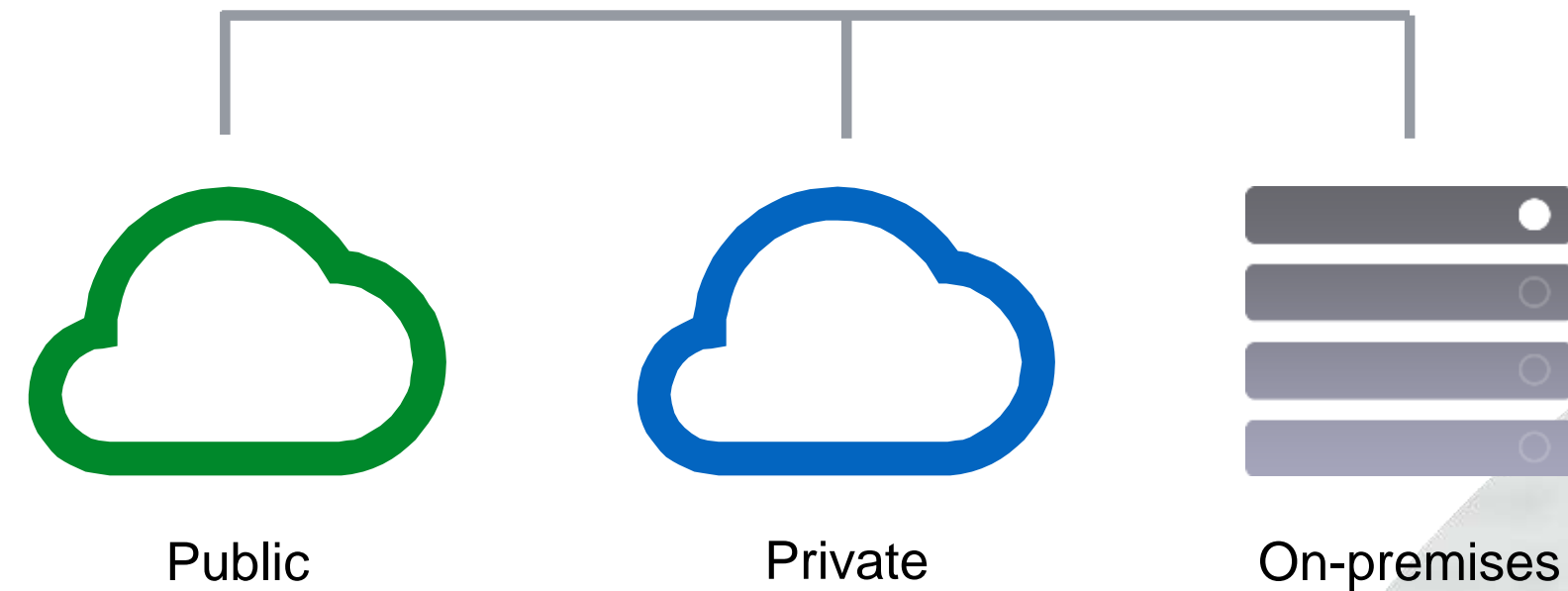
**DevOps
Productivity**



**Powerful, Accessible
Analytics with Cognitive**

Industrialized hybrid cloud

Legacy to cloud / Cloud
to cloud with six
connectivity points



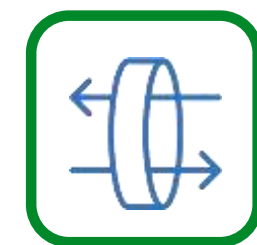
Integration



DevOps



Visibility and
Control



Portability



Security

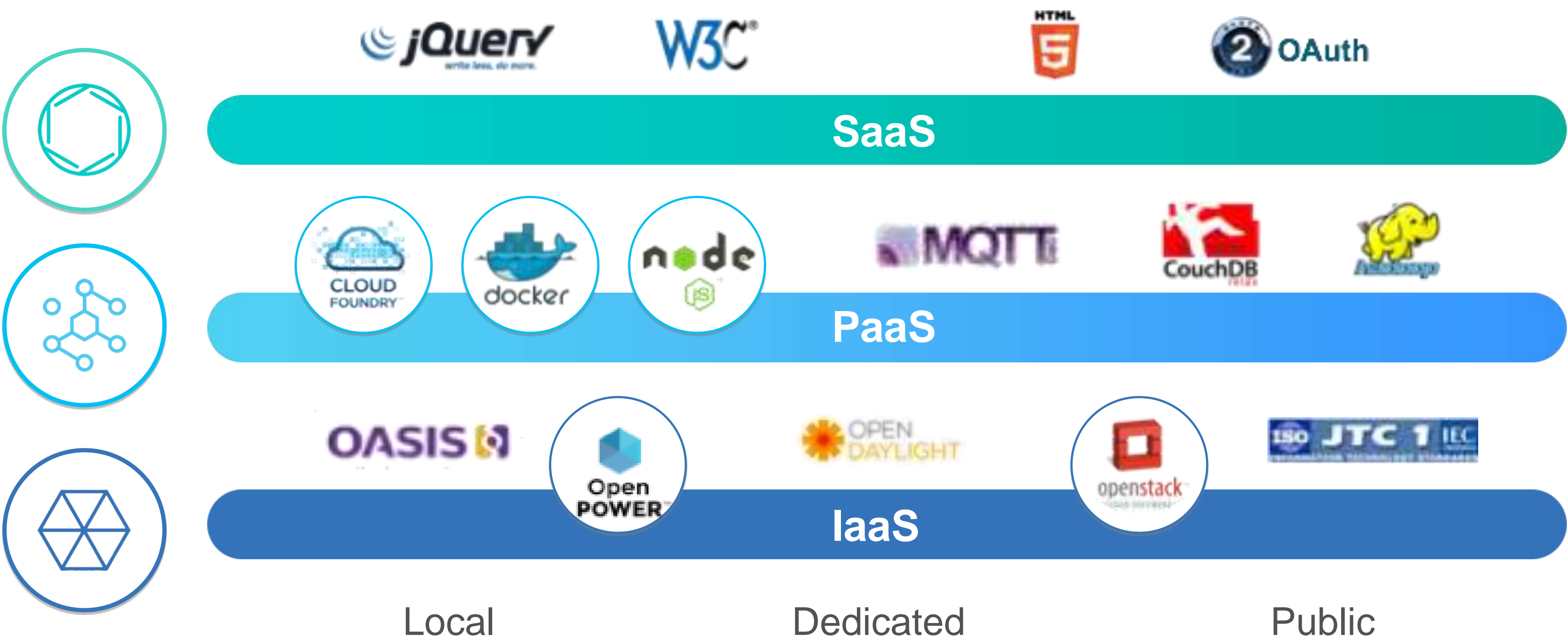


Data Management



Industrialized Hybrid Cloud

Open *by design*™



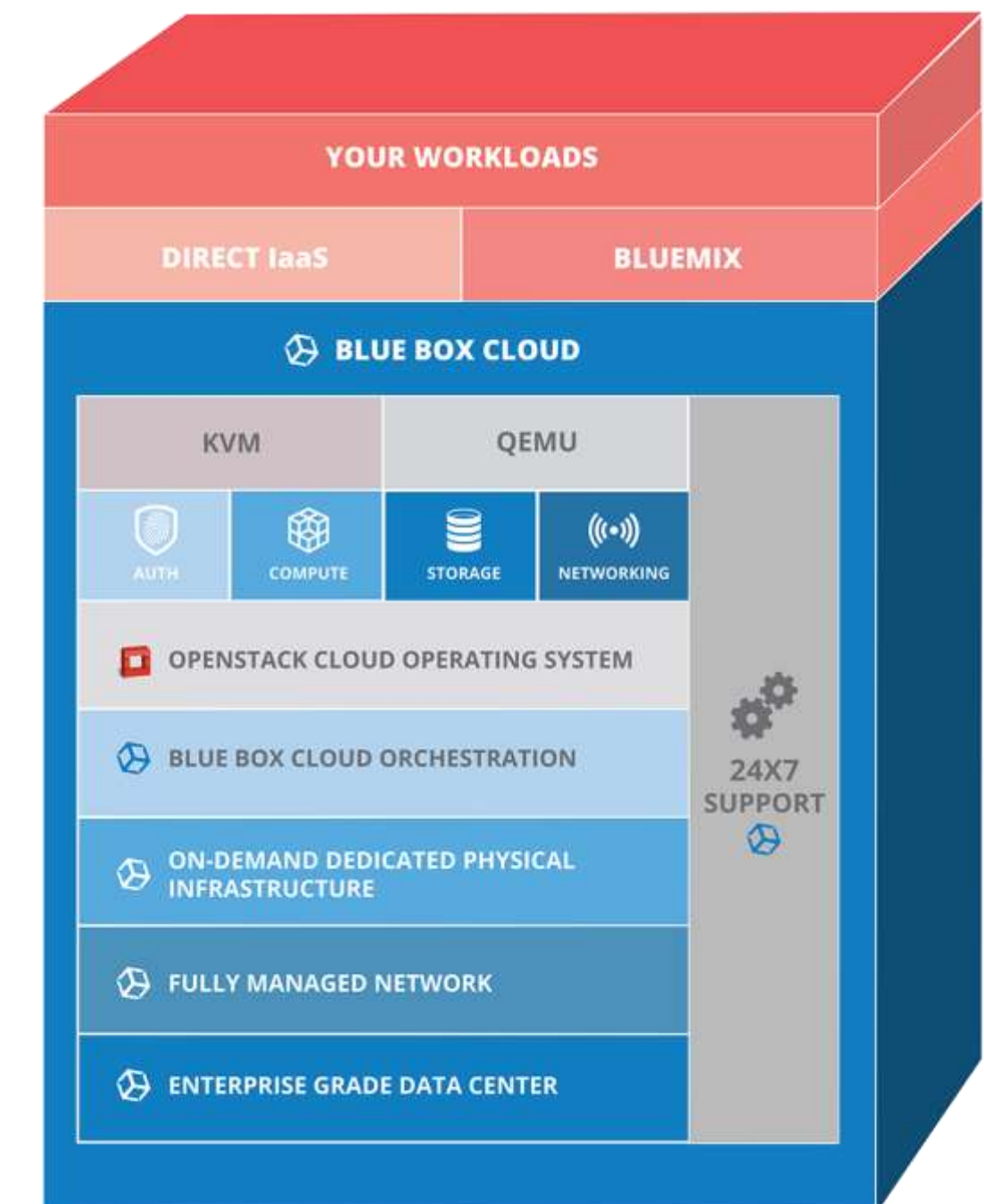
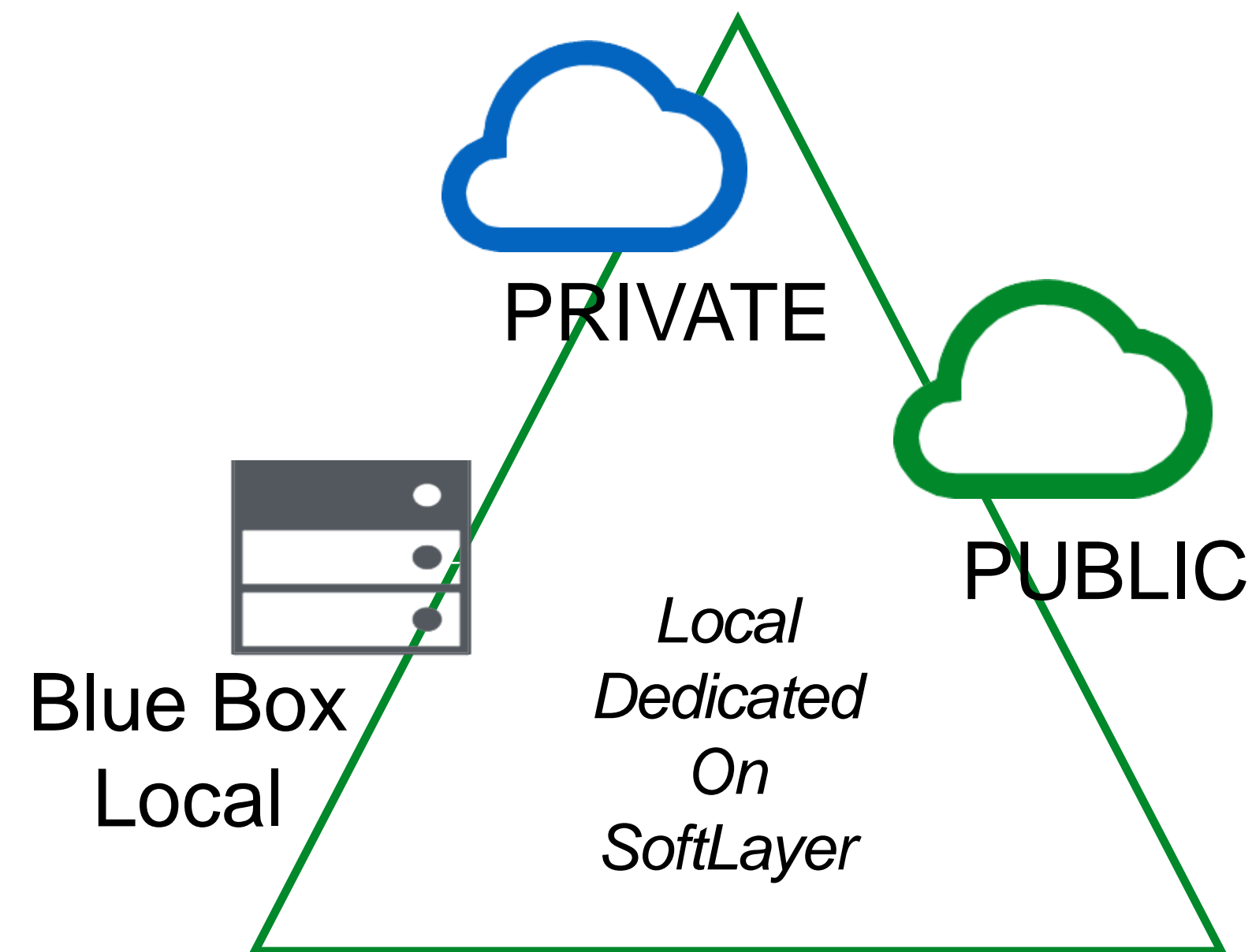
Clients want cloud on their own terms

Clients want cloud to address a range of workloads and flexibility to maximize investments

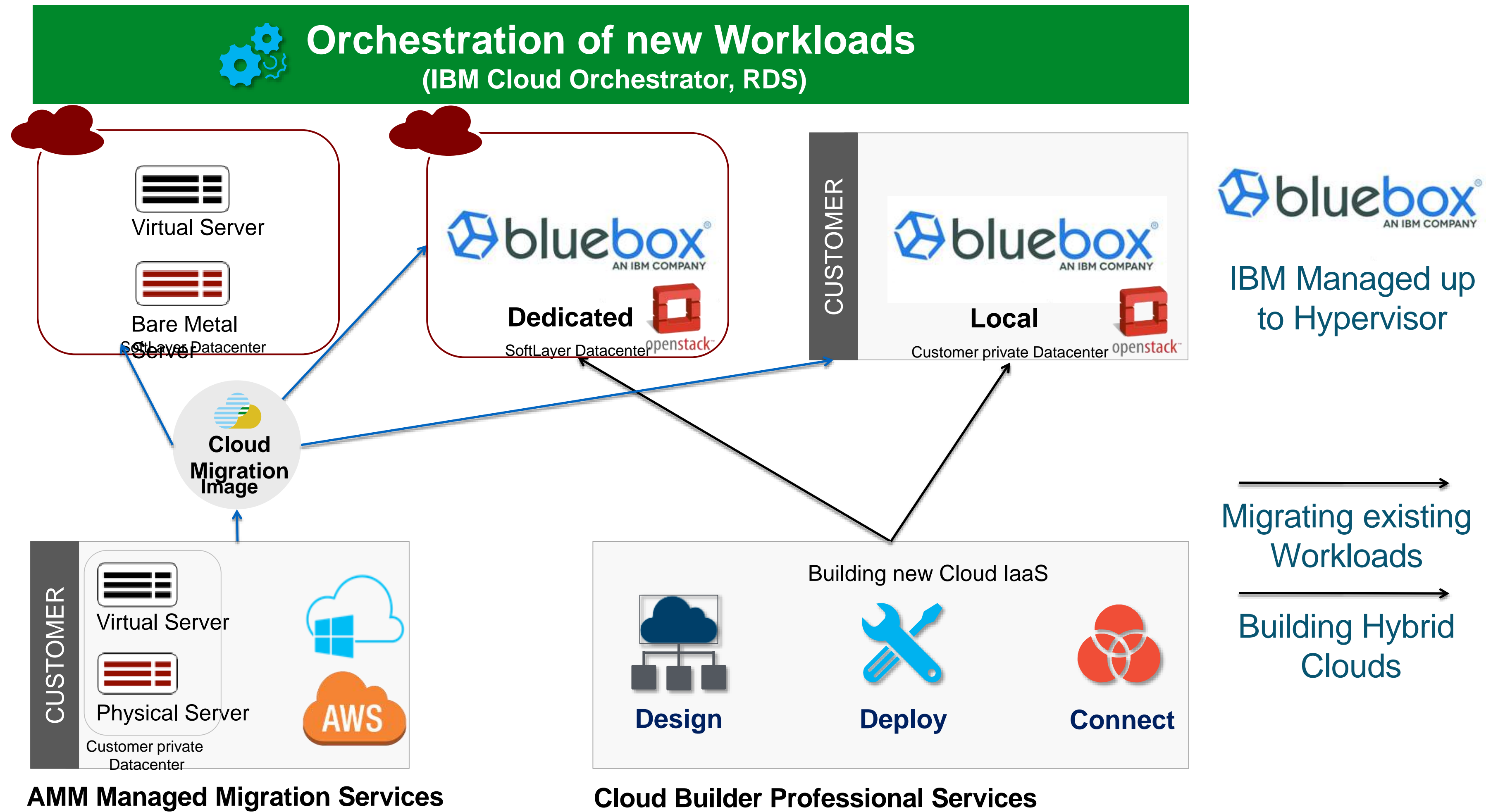
OpenStack enables the integration, management and portability for an effective hybrid cloud

Blue Box

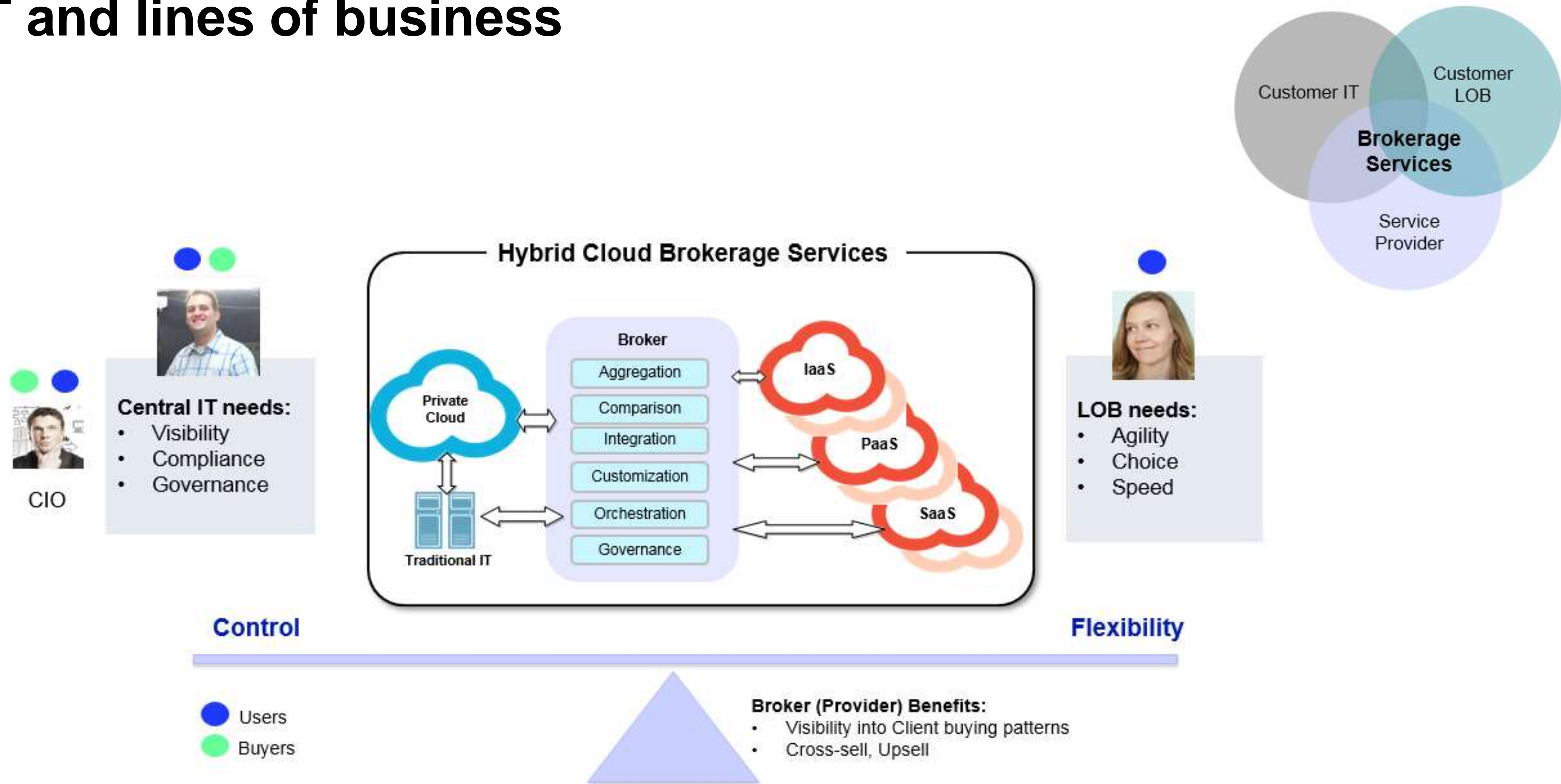
Turn-key, remote managed private cloud powered by OpenStack that makes it easy for clients to embrace the cloud and leverage hybrid cloud environments



Building new and migrating existing workloads to the hybrid cloud


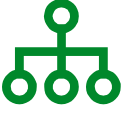









Cloud brokers balance the needs of IT and lines of business



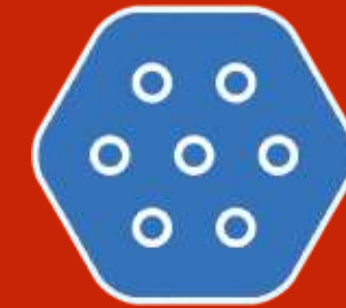
Benefits of having a cloud broker



-  **Reduce the costs of cloud services** (30-40% estimated savings by using cloud brokers)
-  **Integrate multiple IT environments**—existing and cloud environments...e.g. establish hybridity—as well as integrate services from multiple cloud providers
-  **Understand what public cloud services are available** via a catalog
-  **Policy-based services catalog** populated with only the cloud services that an enterprise wants their employees to purchase
-  **Unified purchase cloud services** (broker) and helps those services selected (by clients) better together
-  **Assess current applications** for cloud readiness
-  Ensure cloud services **meet enterprise policies**
-  **Ensure data sovereignty** laws are followed
-  Cloud brokers
 - **Cover all layers of the cloud stack** (IaaS, PaaS, and SaaS)
 - **Offer multiple deployment models:** on-premises (local); off-premises (dedicated or shared). IBM supports all of these “as a Service” deployment models, but does not currently offer a traditionally licensed software product.

IBM Point of View

4 Guiding Principles



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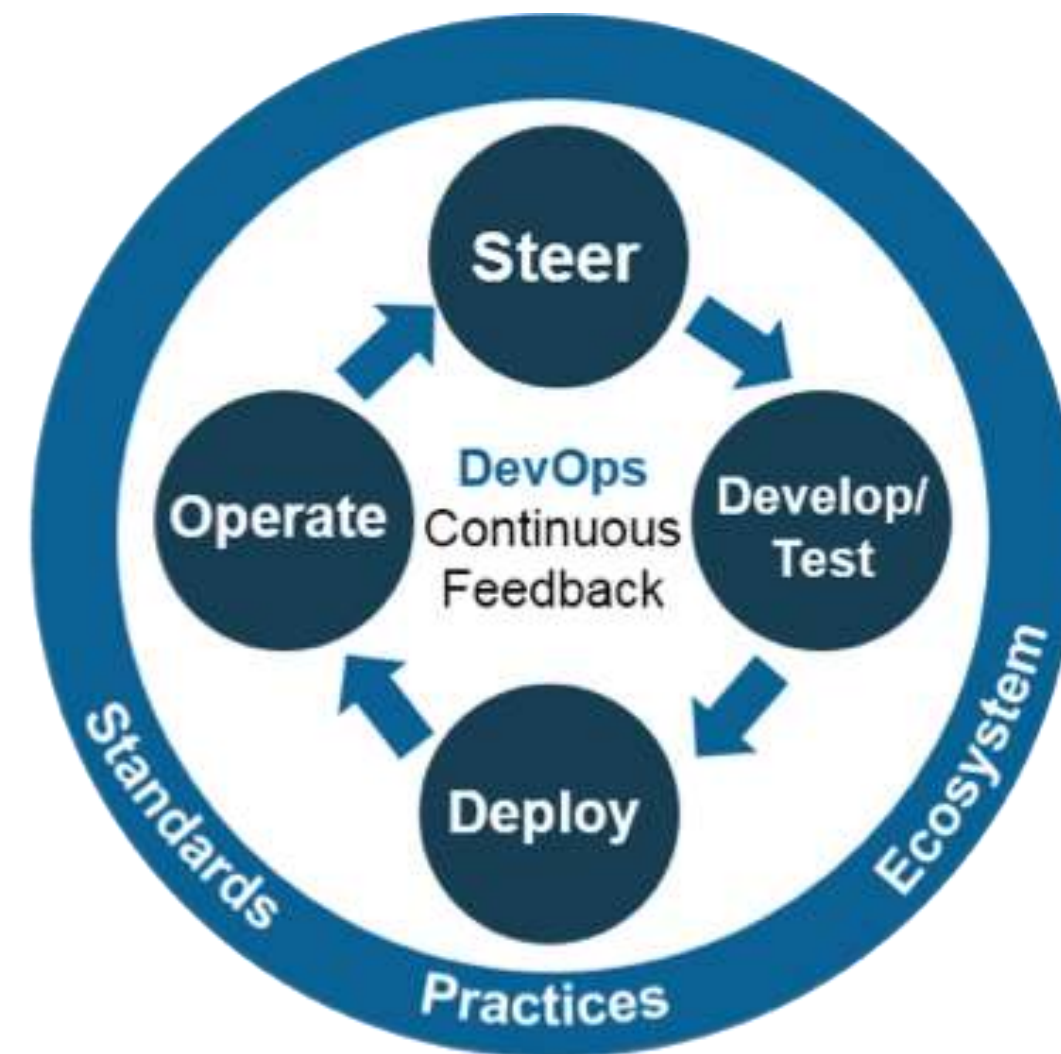


**DevOps
Productivity**

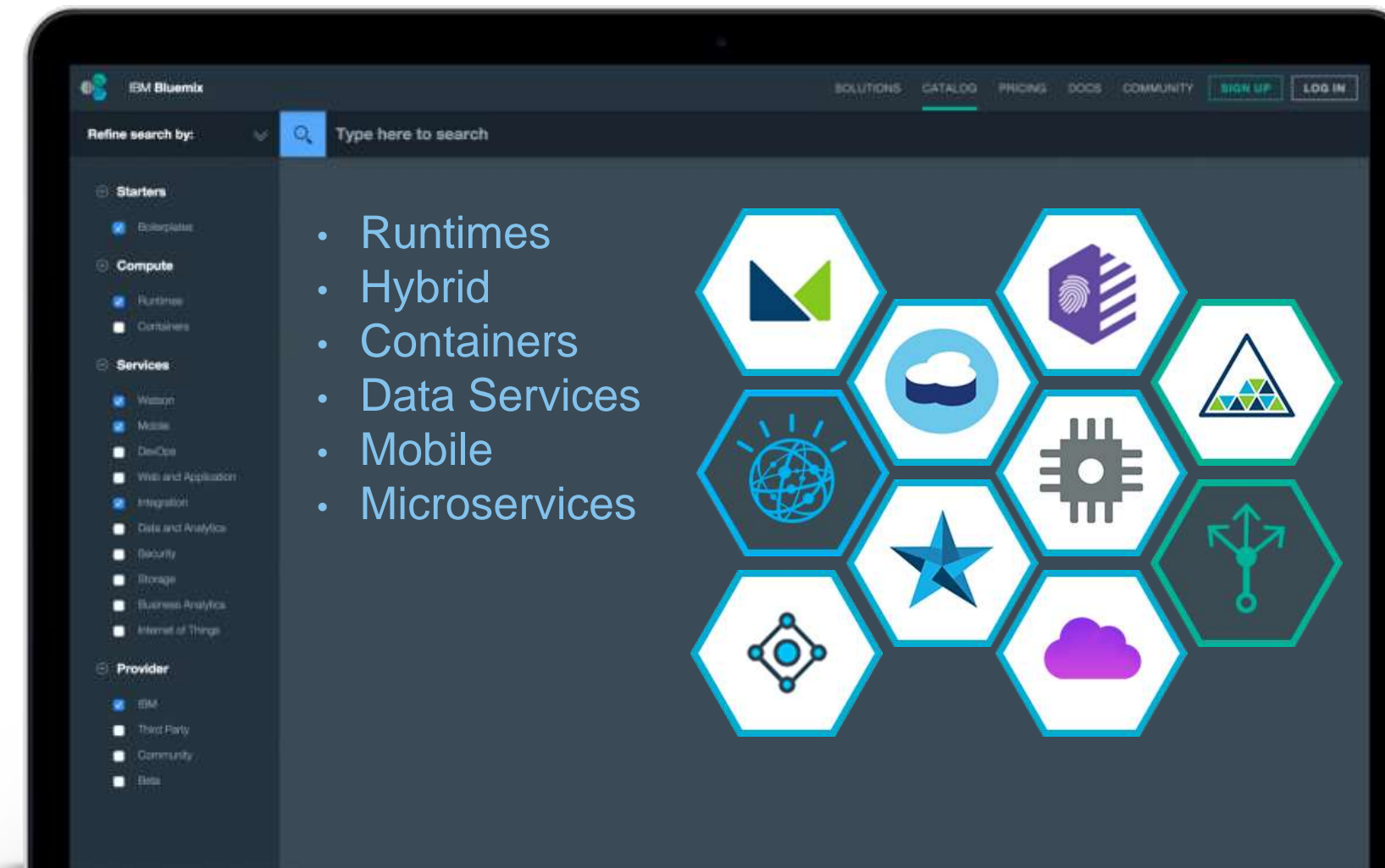


**Powerful, Accessible
Analytics with Cognitive**

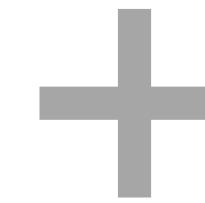
World-class tooling and the broadest catalog of composable services for DevOps productivity



The Best Tools



The Broadest Catalog



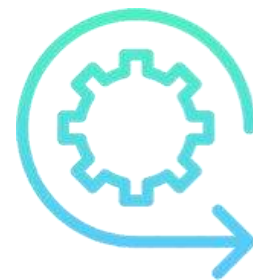
The Most Choices for Delivery Model



Make good apps great with IBM MobileFirst platform

IBM MobileFirst platform delivers rich services and then integrates them for an end-to-end experience for mobile development and operations teams

Continuously
Improve



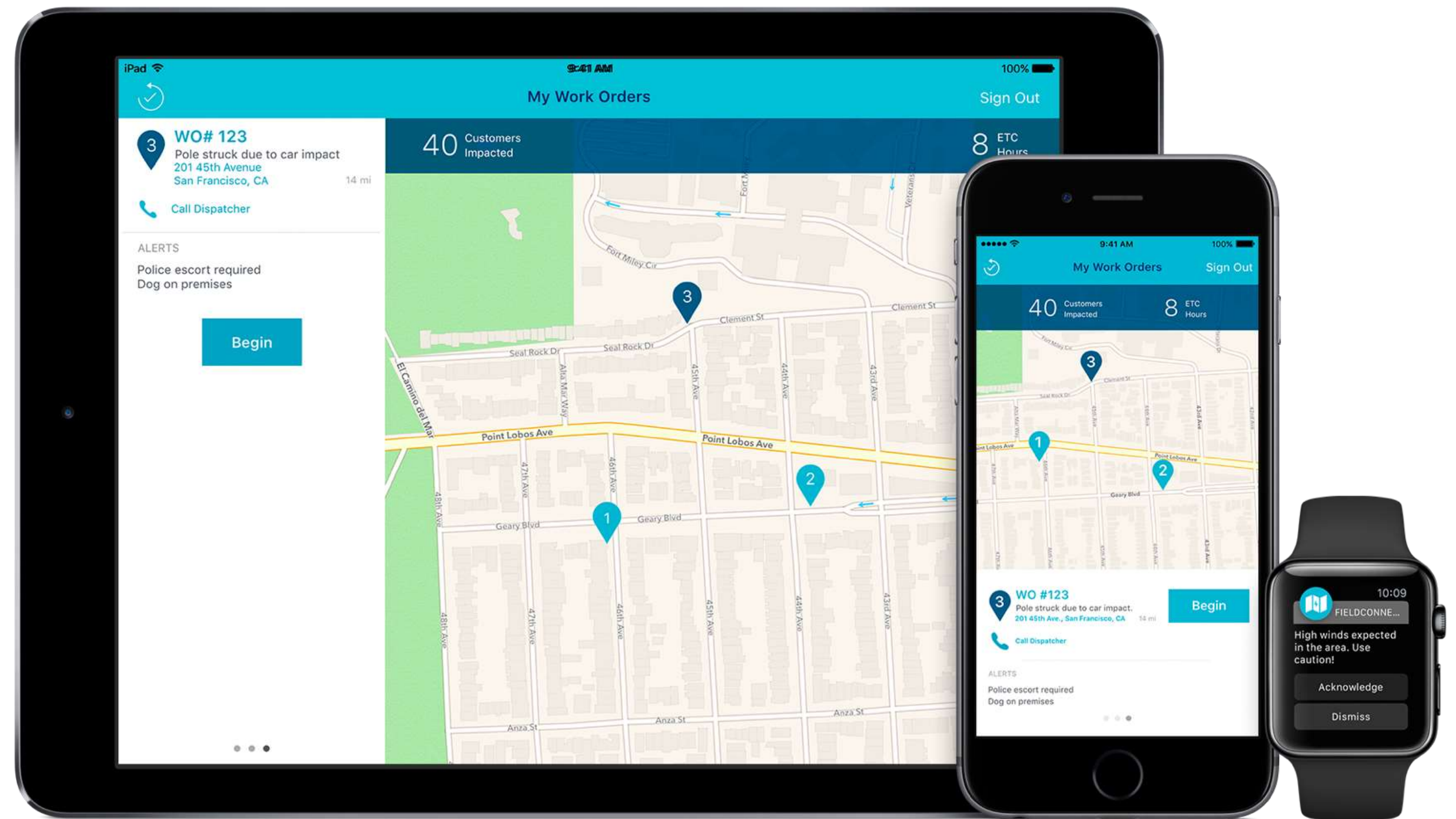
Secure



Contextualize and
Personalize

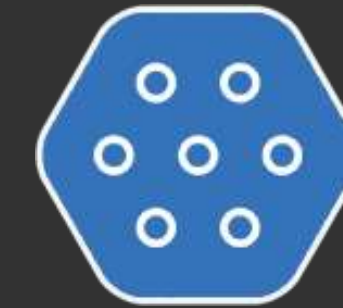


Enrich with
Data



IBM Point of View

4 Guiding Principles



**Choice with
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**Industrialized
Hybrid Cloud**



**DevOps
Productivity**



**Powerful, Accessible
Analytics with Cognitive**

The most comprehensive analytics portfolio



Analytics Platform

Full range of analytics and data capabilities using open source innovation for real-time actionable insights



Watson

Cognitive computing systems with the ability to learn, that enhance, scale and accelerate, human expertise



Internet of Things

A platform designed to build disruptive, data-rich solutions that are secure and intelligent



Insight Cloud Services

Industry apps and solutions built in partnership with The Weather Company and Twitter that deliver new insights



Cloud Data Services

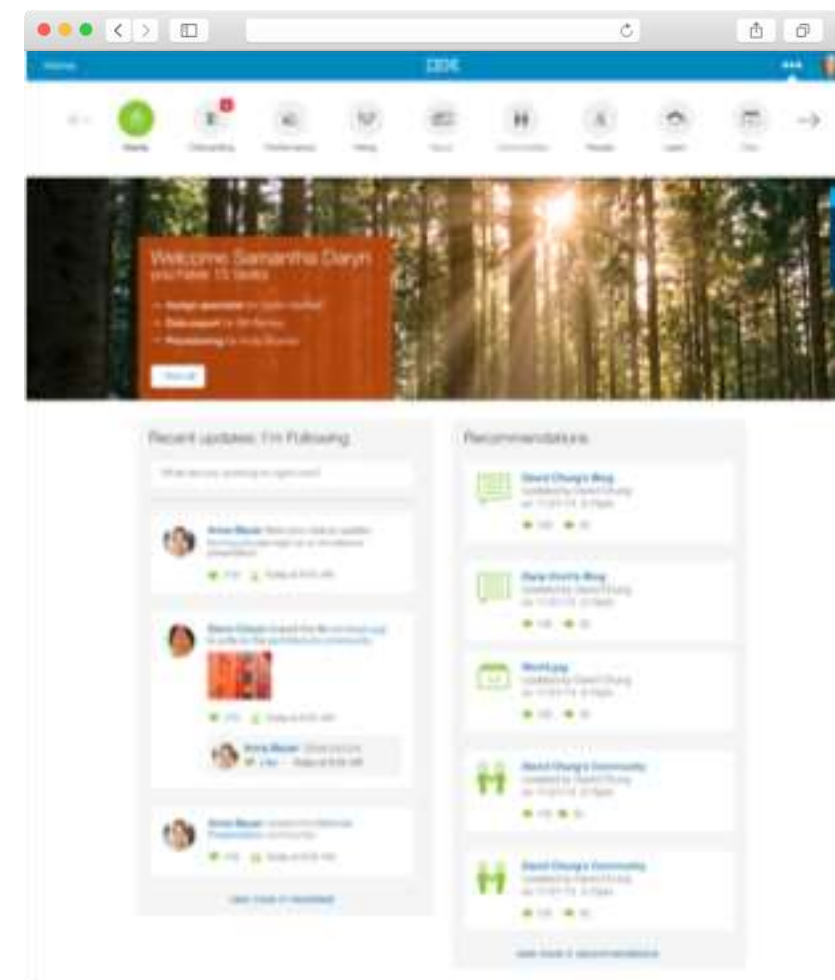
Cloud-based experience that enables developers to use the right platform-as-a-service tools for mobile and web app development

Leaders need access to cloud business apps in their hybrid cloud to drive competitive advantage

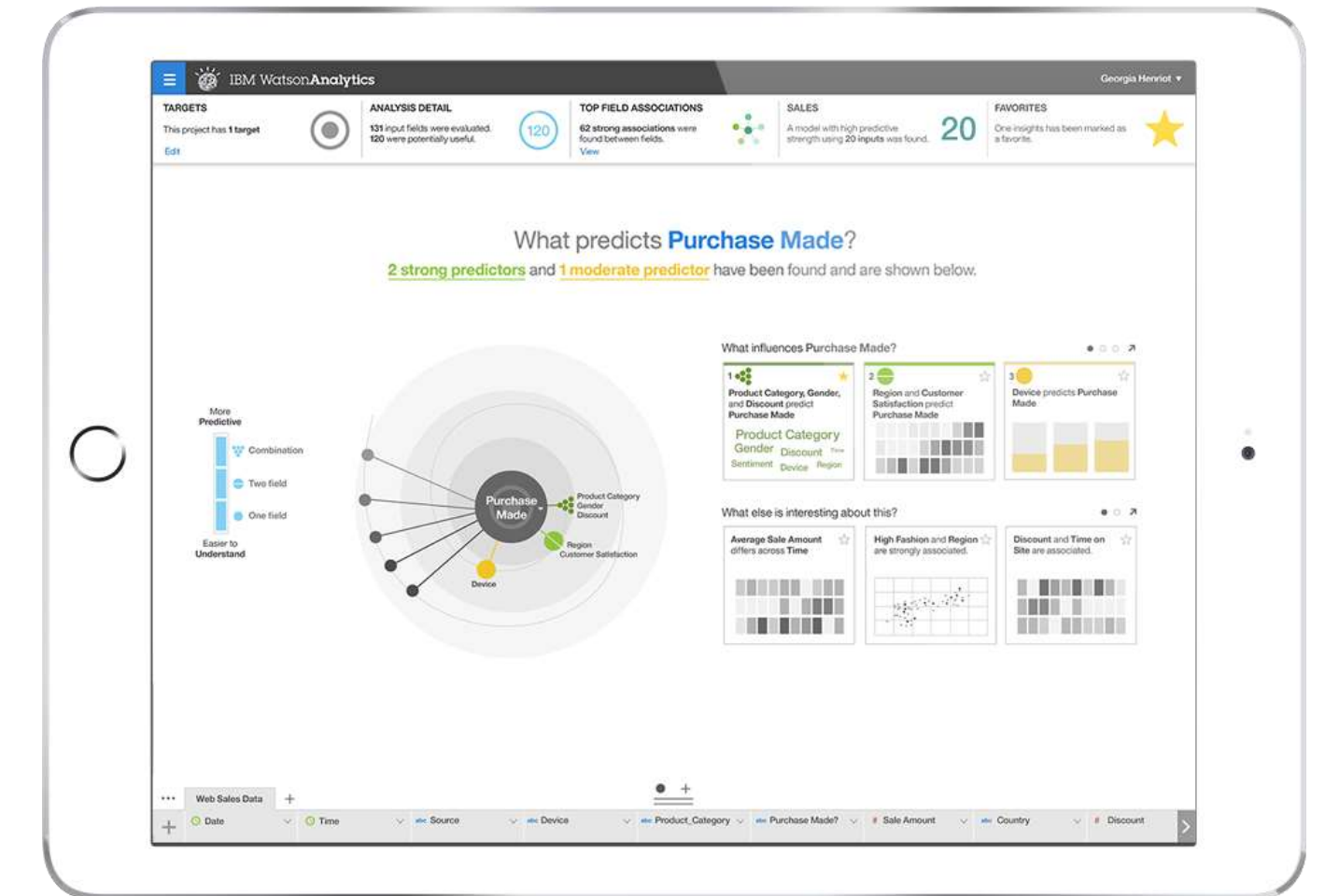
Software-as-a-Service (SaaS)

- Accelerate business innovation
- Engage and collaborate
- Connect business processes fueled by powerful analytics

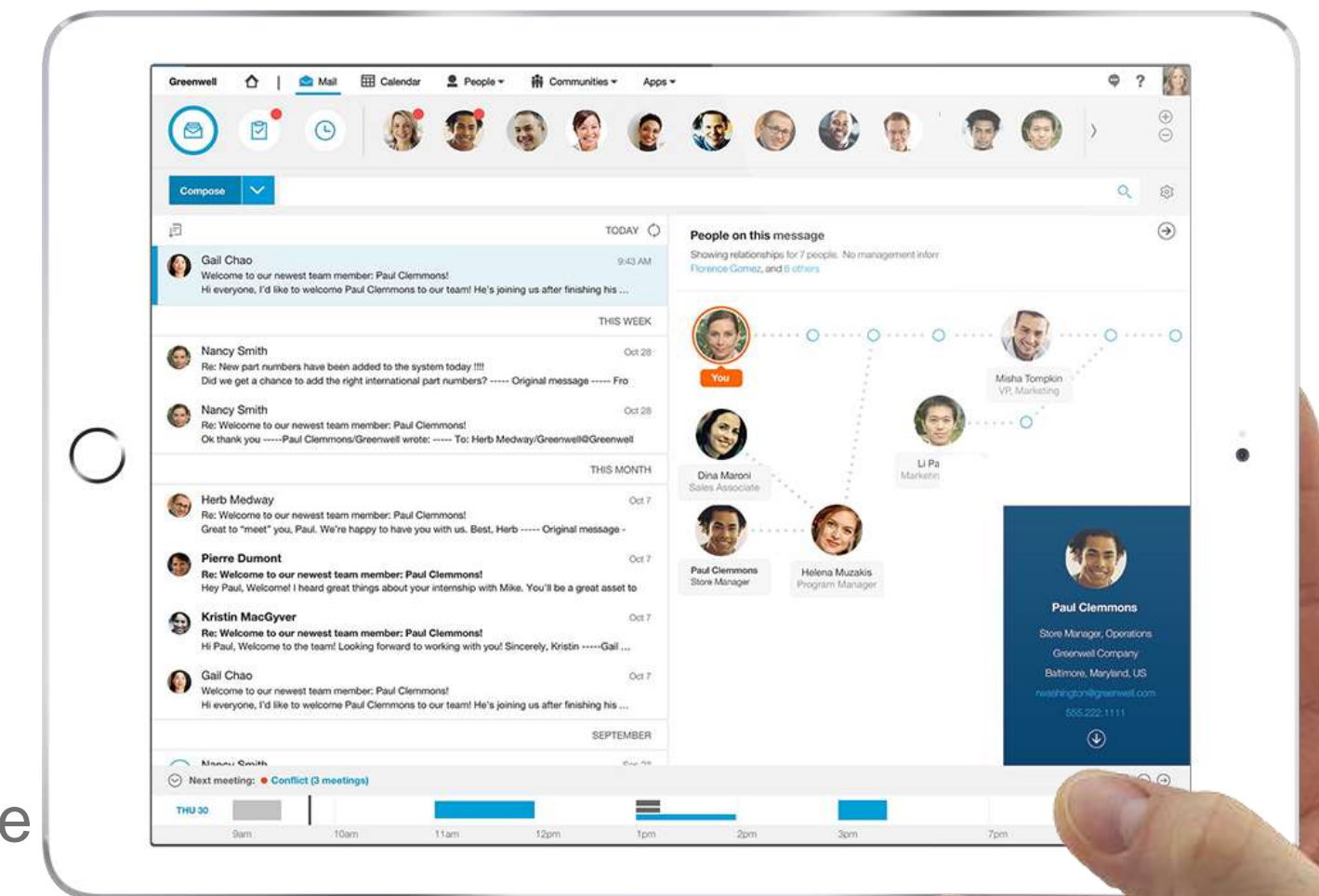
100+ SaaS offerings aligned to business and IT



Kenexa Talent Suite



Watson Analytics



IBM Verse

IBM is #1 in Hybrid Cloud

“IBM is ranked as the #1 hybrid cloud provider for the enterprise.”

Synergy Research Group
Wall Street Journal

Only IBM Cloud provides:

- Full hybrid cloud transparency
- Fast hybrid app development and full orchestration of business processes
- The right access and relevant insight across all hybrid cloud data

IBM Cloud supports 47 of the top 50 Fortune 500 Companies.

IBM offers not just cloud services and technology but a full complement of proven expert services to assure effective deployment to align with business objectives

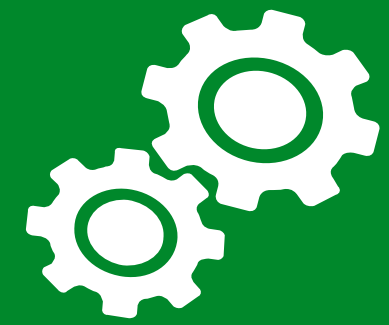
IBM Cloud Professional Services is a key enabler of IBM Cloud solutions, offering full complement of advisory, strategy, design, transition, and implementation services to help the client derive the most value from cloud

Turn cloud strategies to action



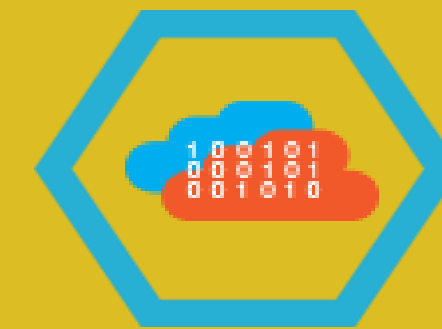
- Design and architect cloud transformation roadmap
- Gap analysis
- Workload transformation analysis

Automated hybrid cloud platform in less than one day



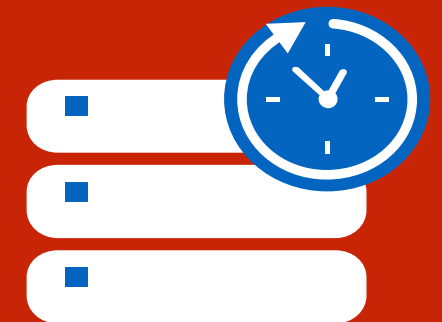
- Choose your hybrid cloud on-premises or off-premises
- Automated provisioning, self-service portal
- 250-plus platform app patterns
- Up to thousands of virtual machines (VMs)

Rapidly bring products and services to market at lower cost



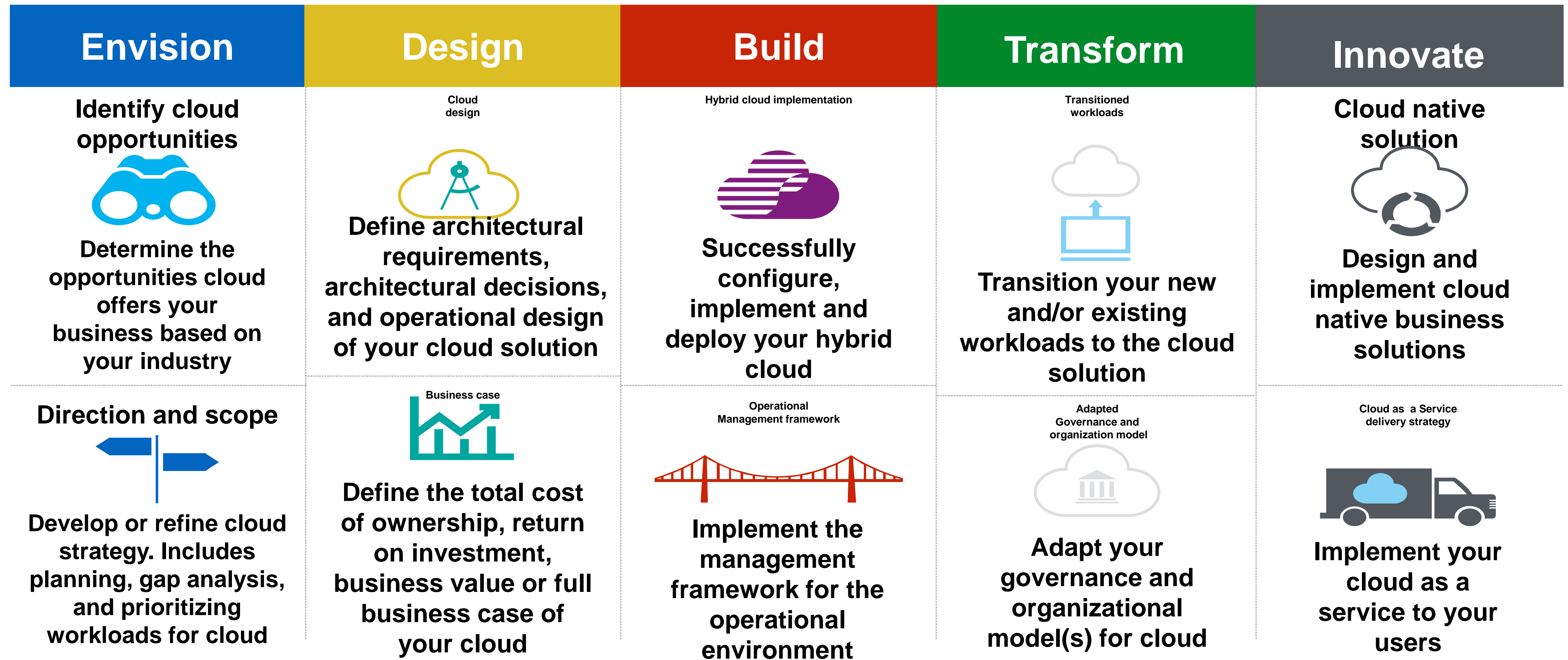
Go from zero to running code in a matter of minutes.

Streamline the time and costs of workload migrations



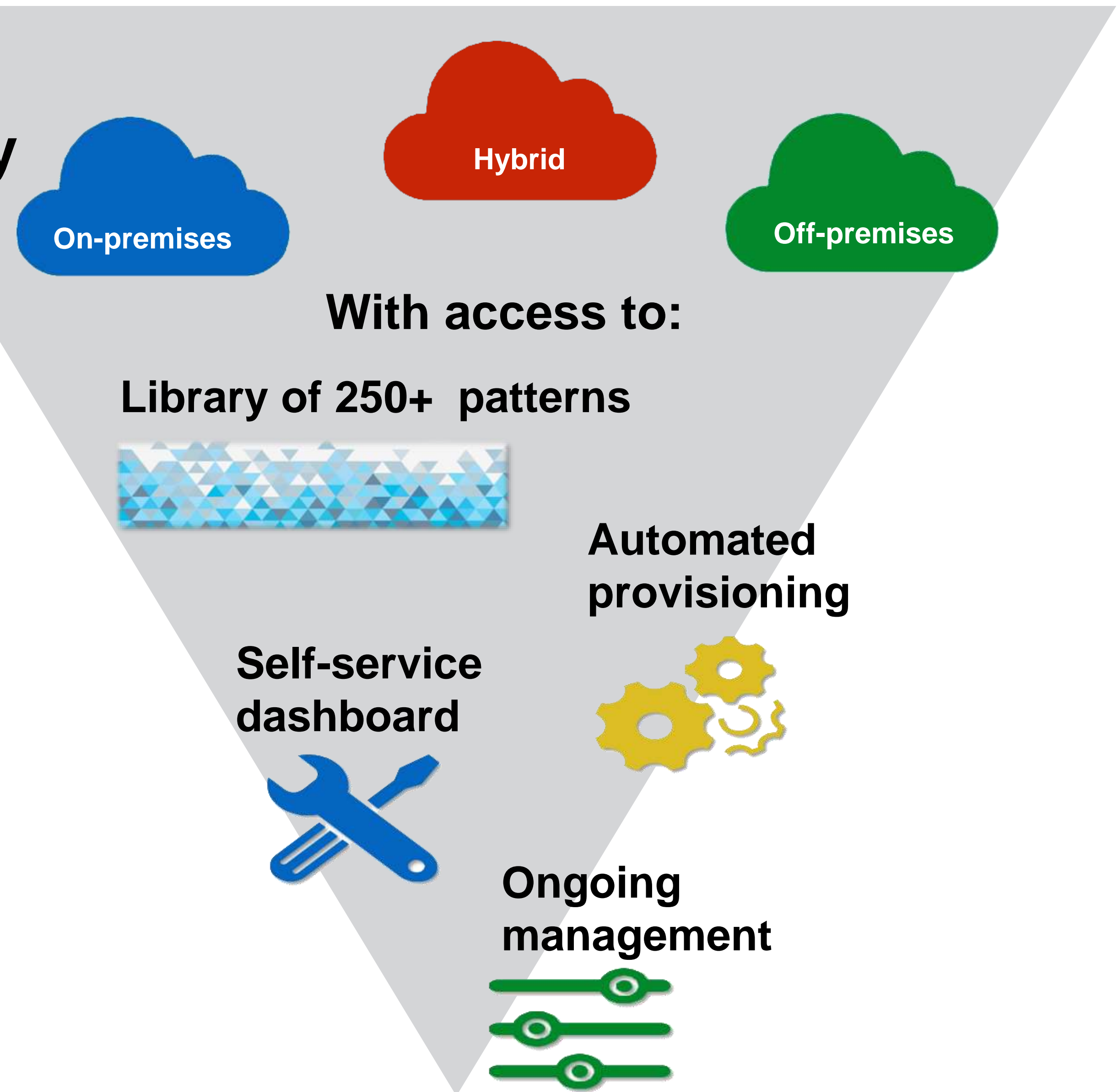
Helps significantly reduce migration times and virtually eliminate downtime for your production servers

Successful cloud initiatives are comprised of steps that produce these key outcomes



IBM Cloud Builder Professional Services can help clients deploy private cloud in less than a day

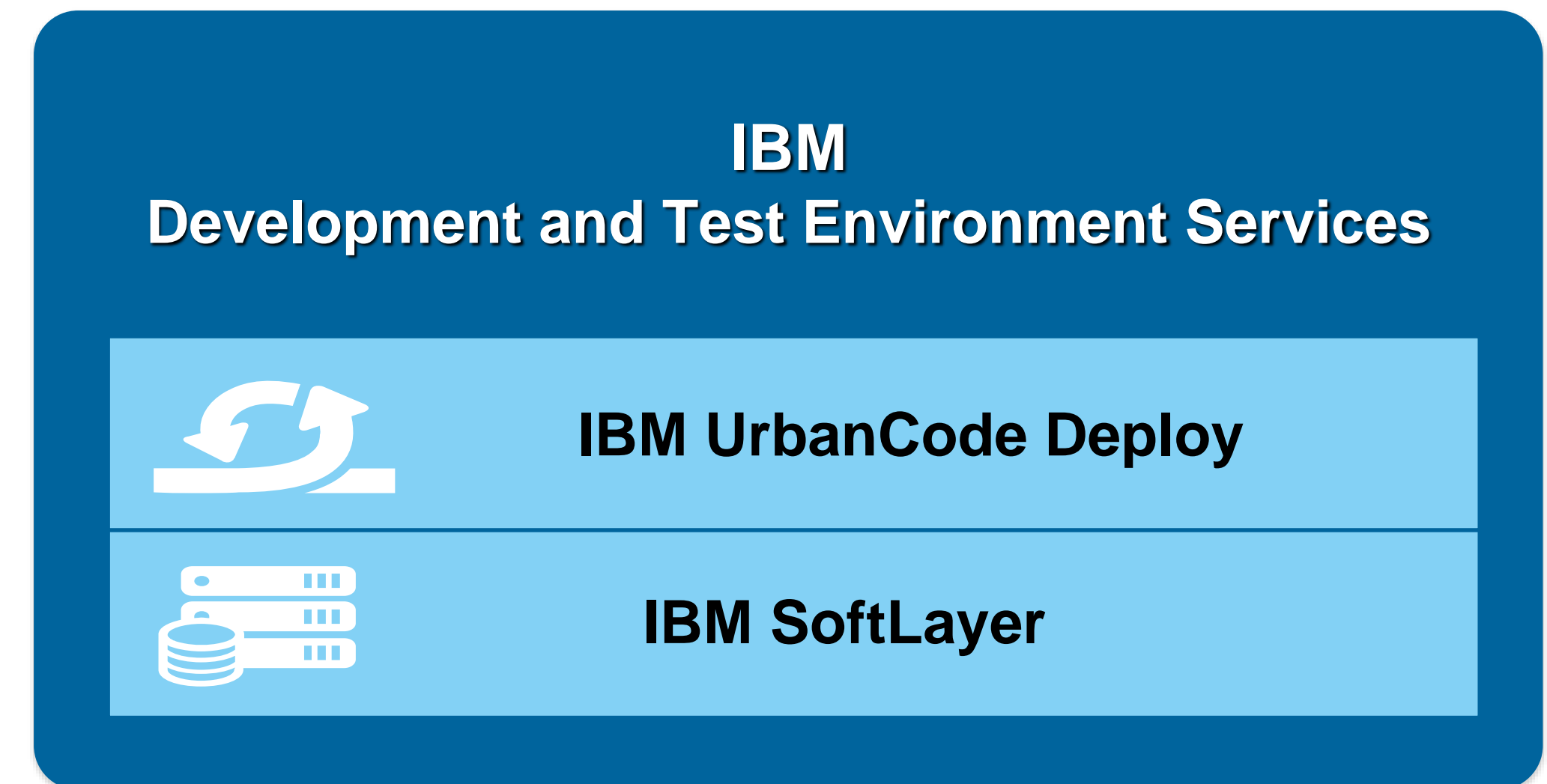
- **Automation** - Provision patterns in minutes, not weeks, with 250+ patterns ready for automated deployment
- **Rapid scalability** - start now with smaller cloud blocks, then scale up as needed to as many as 10,000 VMs.
- **Simplified maintenance** - Apply patches and upgrades to middleware in minutes
- **Flexible management** – IBM can enable the client to manage the cloud through a simple dashboard or we can manage all or part of the private cloud, onsite or remotely



IBM Development and Test Environment Services

On-demand, comprehensive development and test environments built on SoftLayer

- Self-services access to development and test environments on SoftLayer infrastructure
- Enables multiple, parallel, complete development and test environments for quicker releases
- Increases test coverage and ability to reproduce and resolve defects quicker
- Improved productivity and costs savings via a consumption based licensing model

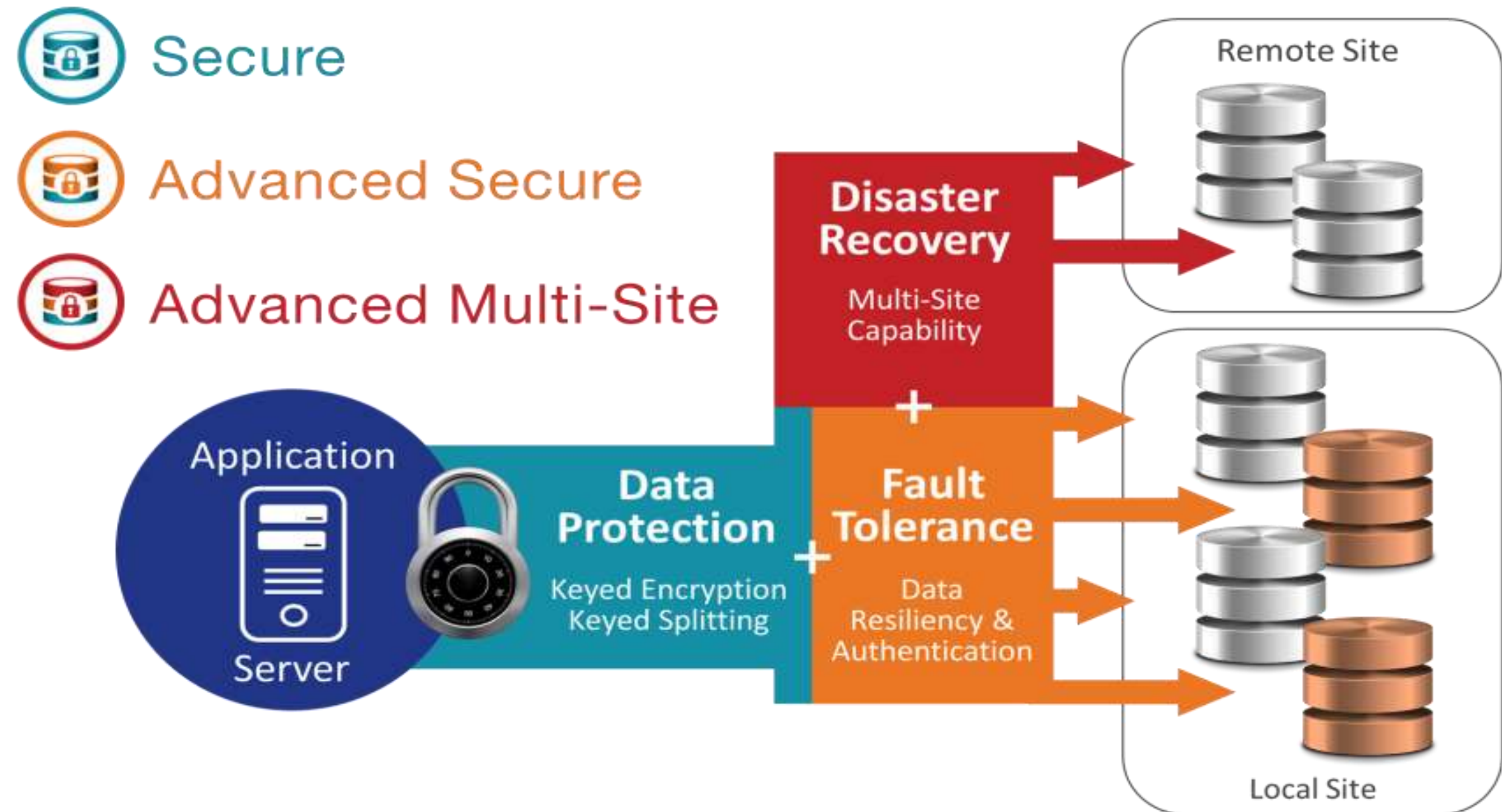


Providing environment-as-a-service for more efficient development and test

IBM Cloud Data Encryption Services is a software-defined solution built on SoftLayer to protect data across the client's environment

- Protects and encrypts data across hybrid environments, including private cloud, public cloud
- Advanced security with cryptographic splitting rendering data invulnerable to attacks
- Built-in resiliency enabling data high availability and disaster recovery
- With a built-in simplified key management system, it provides added security of unique encryption keys for each file without the need or hassle of maintaining an expensive external key store

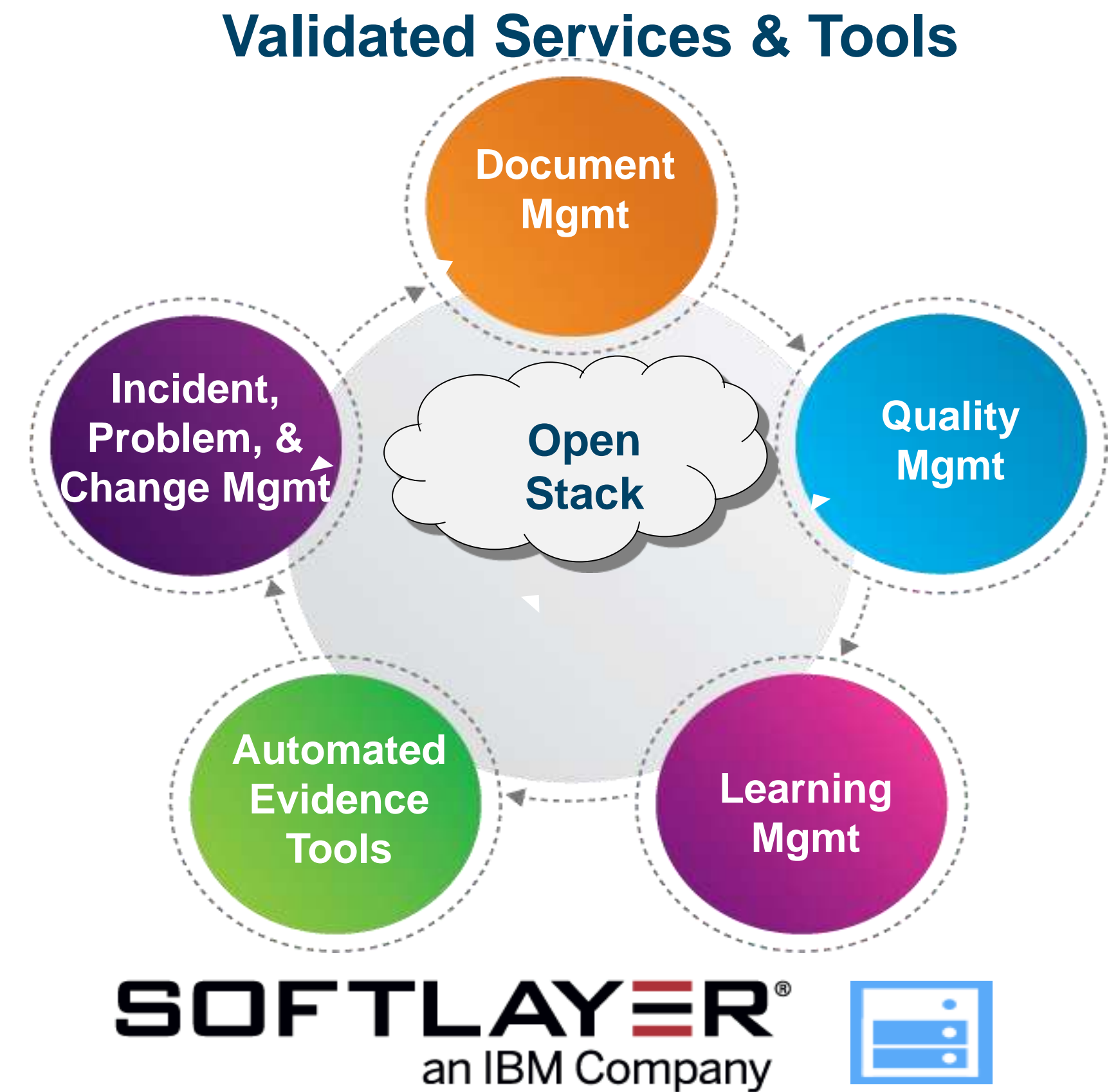
IBM Cloud Data Encryption Services



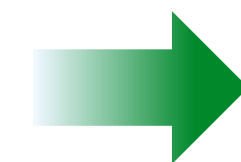
IBM Watson Health Cloud for Life Sciences Compliance helps accelerate moving regulated workloads to the cloud with confidence

- Centralizes and establishes GxP core operational tools and infrastructure:
- Provides validated tools for change control; document, quality, and learning management; and automation tools to help you expedite provisioning of new virtual machines
- Delivers dedicated bare metal, security-rich, and qualified cloud servers on SoftLayer's infrastructure
- Offers managed services by highly skilled cloud specialists with current regulatory compliance expertise

Helping life sciences organizations speed time to market, reduce cost, and achieve compliance

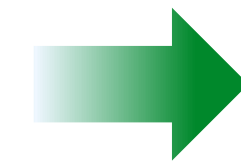


Web-scale requires a new storage architecture



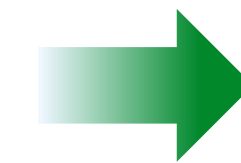
Objects 1000x larger

- HD videos/images/audio
- Genomic/seismic data
- Internet of Things/social media



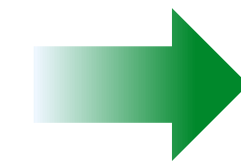
Large and growing storage requirement

Up to exabytes with always-on availability and zero-touch, carrier-grade security



Legacy storage won't scale and is less cost-effective

- Traditional storage requires copies, replication, mirroring and disaster recovery (DR) to protect data—Cleversafe can help eliminate those requirements, and can help lower both cost and complexity
- Can also reduce requirements for power, cooling and management for lower TCO
- Cleversafe provides web-scale performance/capacity at any time with zero downtime operations



Multiple Interface: customer deployment flexibility

Industry standard object API compatibility including Swift, Amazon S3

IBM and Cleversafe: providing choice and flexibility

That data needs a home. A home from which organizations can develop innovative, cognitive -SMAC applications - mobile devices, web enabled, that will tap unprecedented potential

IBM and Cleversafe capabilities can help businesses cost-effectively embrace the growth in data—particularly unstructured content—for next generation mobile, social, cloud, cognitive and IoT applications

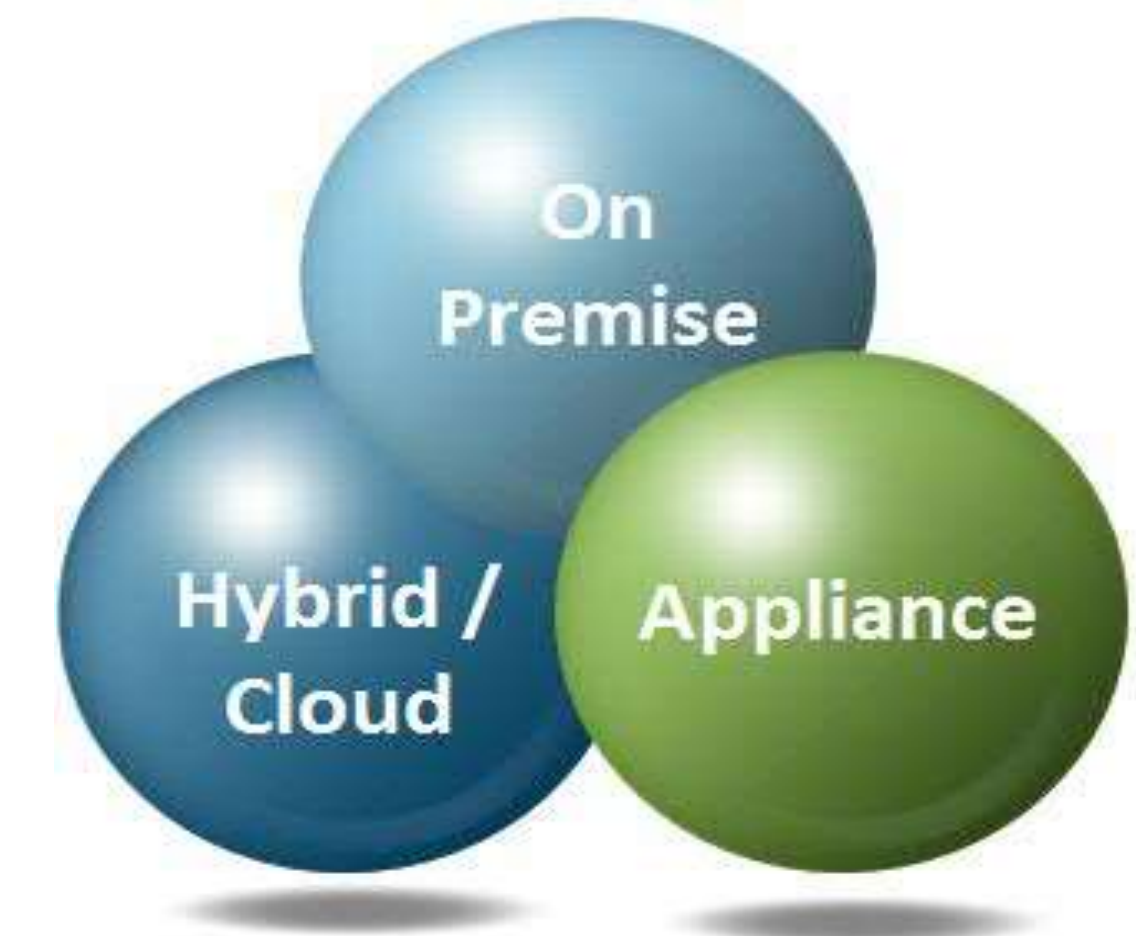
Solutions for traditional workloads such as backup and archive – but drive business innovation or new business models through Enterprise Collaboration, Storage-as-a-Service or Content Repository

On premise: From the smallest set of objects to billions of files and exabytes of capacity, IBM has a storage system to client needs

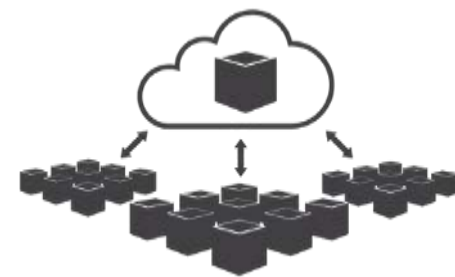
Hybrid Cloud: Leverage on-premise data, the elasticity and cost benefits of the cloud using the same API, low maintenance and reliability

Appliance: A pre-provisioned set of optimized hardware and software for “plug-n-play” usage inside a customers datacenter

“We produce over 2.5 quintillion bytes of data everyday and 80% of it is unstructured. Therefore, it’s invisible to current technology.”



Aspera: the value



Size & Volume

Send, share, and sync large files and very large sets of small files...



Speed

at maximum speed by fully using available bandwidth...



Distance

over the entire WAN that spans global distances across the public internet, MPLS corporate networks, and wireless,...



Control

without impacting other traffic, with excellent transfer control and security to move files reliably to employees, customers, vendors, and external data centers...

Aspera Deployment Options and Value

On-Premises

- Server software with Web, Desktop and Mobile client options
- Perpetual Software License with annual support and maintenance, based on aggregate bandwidth
- Send, share, exchange and sync large files and data sets from any location, to anywhere, with anyone quickly, reliably, and securely

On-Demand / SaaS

- Server software and virtual machine images with Web, Desktop and Mobile client options
- Monthly or annual Subscription Service based on amount of GB or TB transferred, no limits on instances or users
- Realize the benefits of on-demand cloud infrastructure and move data to, from, and across the cloud at maximum speed

Hybrid

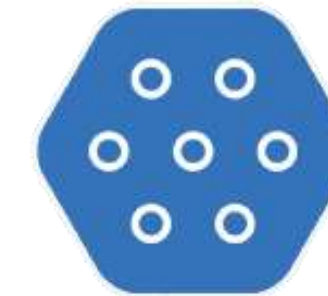
- Combination of license and subscription services
- Freedom to choose the best location to store data: on-premises, in the cloud, or any combination of hybrid infrastructure
- Eliminates the typical trade offs of data location, access, infrastructure, cost, and security: organizations choose the right deployment options to meet their needs

IBM provides a broad cloud portfolio based on 4 Guiding Principles

**Cloud Business Apps
(SaaS)**

**Digital Innovation Platform
(PaaS)**

**World Class Cloud Infrastructure
(IaaS)**



**Choice with
Consistency**



**Industrialized Hybrid
Cloud**



**DevOps
Productivity**



**Powerful, Accessible
Analytics with Cognitive**

IBM Cloud®



IBM®