IBM Management and Platform

A complete and composable solution for application deployment and management

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IBM

IBM **Cloud**

disruption

dɪsˈrʌpʃn/
noun

Business. a **radical change** in an industry, business strategy, etc., especially involving the introduction of a **new product or service** that creates a **new market**

Disruption is new reality
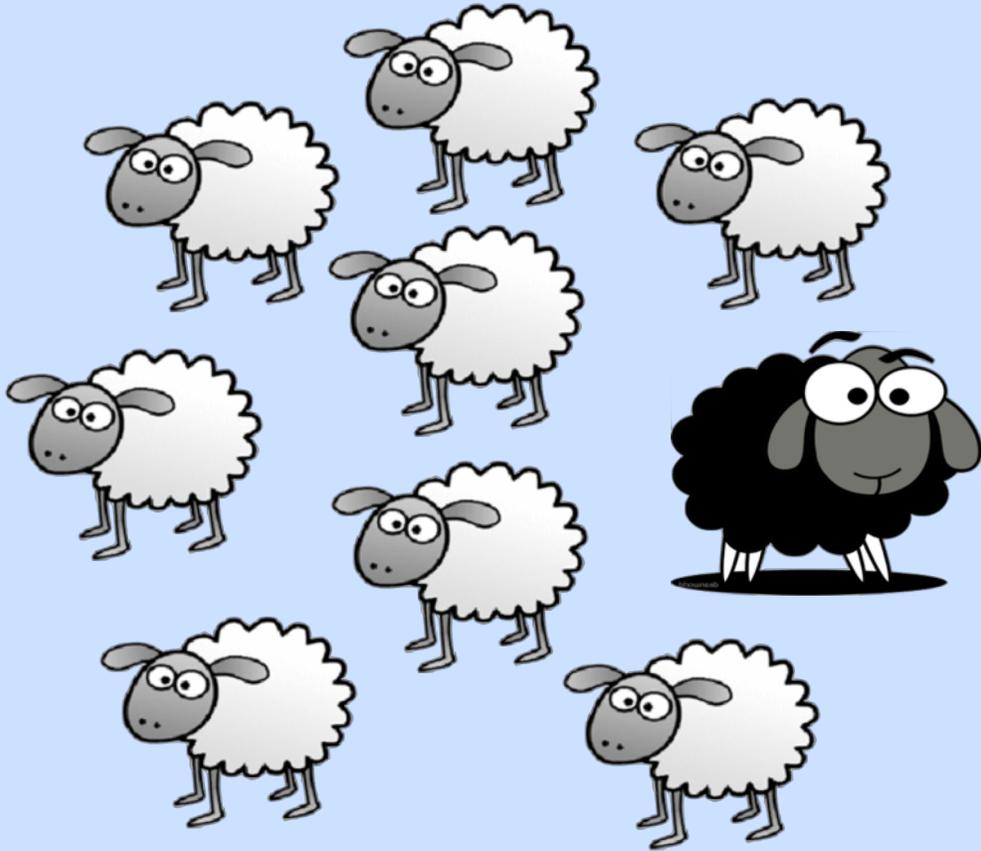

## disruption
dɪsˈrʌpʃn/
noun

Business. a **radical change** in an industry, business strategy, etc., especially involving the introduction of a **new product or service** that creates a **new market**

Digital Transformation is the new normal

How do you achieve digital transformation?

Adopt new **Processes**

Continuous Integration

Continuous Build

Continuous Deploy

Agile Dev Models

Adopt new **Technologies**

Architectural patterns (Microservices)

Frameworks (Java MicroProfile, Spring ...)

Node.js , Swift

Adopt new **Tools**

Git, Github, Gitlab

Jenkins

UrbanCode

Docker

Kubernetes

Adopt **Usages**

Docker, Kubernetes

Virtualization, VMs

Monitoring, Dashboards, Alerts

IBM Cloud

Deep Data Governance	Data Policy Management	Asset Catalog	Data Policy Enforcement

Data, Analytics & AI

Data	Connect	Collect	Ingest	Curate	Enrich	Train	Analyze	Infer	Deploy

Runtimes & Orchestration	Container Orchestration & Networking	Environment Templates	VMWare Runtime	Cloud Foundry Runtime

Platform Services	Logging	Messaging	IAM	Monitoring	Key Mgmt.	Data Stores	Containers	Certificate Mgmt.	Event & Function	Auto-scaling	...

	Virtual Compute		Virtual Network			Virtual Storage		
IaaS	Virtual Machines	Bare Metal	Isolated Virtual Network	Load Balancing	Firewalls	File Storage	Block Storage	Object Storage
Infrastructure	x86, Power CPU, GPU Compute Sleds		Programmable Mesh Network			Flash & Spinning Storage		

Deployment	Private	Public/Dedicated

| Security & Compliance	Identity & Access	Data Security	Network Security	Application Security	Security Visibility

IBM

IBM **Cloud** - Hybrid Model

Consistency in...

Platform

Deployment

Code Portability

Management

Hybrid Data
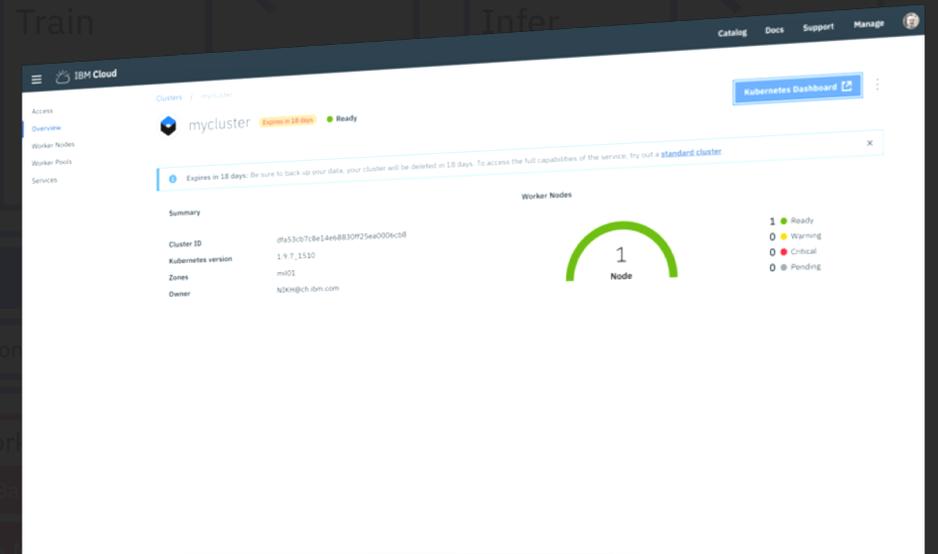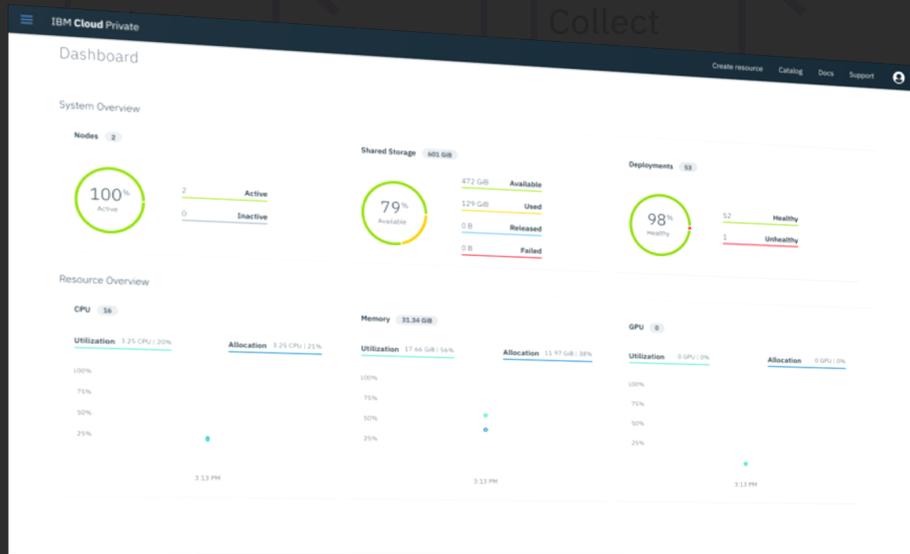
ON-PREMISES

OFF-PREMISES

Cloud Adoption - Use Cases

Lift and Shift
Optimize legacy apps with cloud

- Self-service Experience
- Next Generation Middleware, Data & Analytics
- Automation & Orchestration
- Private Cloud Platform
  Containers & VMs
  Common Services

Cloud-enabled middleware

Integrate
Open your datacenter to work with cloud services

- APIs
- Integration Services & Cloud Native Programming Models
- Automation & Orchestration
- Private Cloud Platform
  Containers & VMs
  Common Services

Public Cloud Services

- Machine Learning on p/z
- Blockchain
- Business Process
- Data & Apps

Integration & Hybrid Cloud
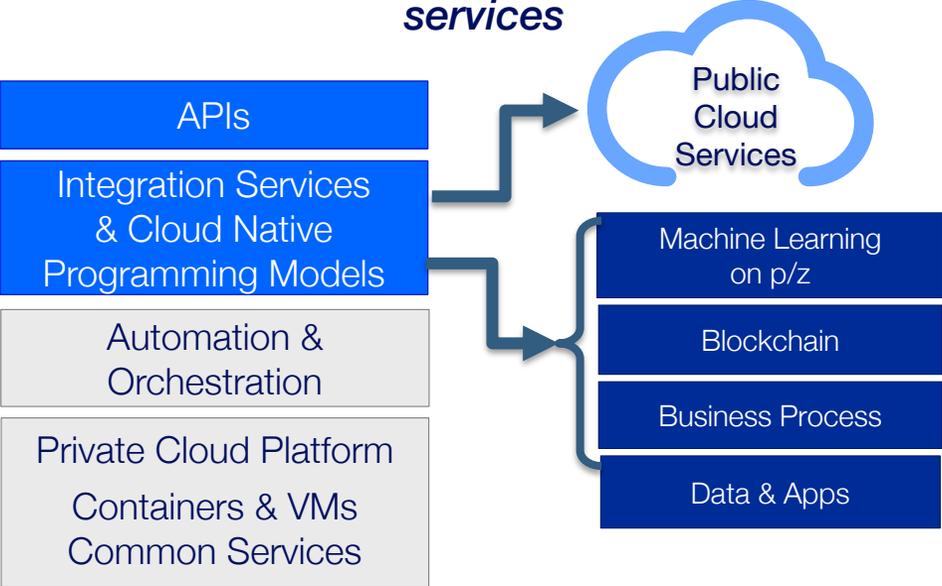
Refactor / Create
Cloud native applications

- New Applications
- Cloud Native Services & Runtimes
- Automation & Orchestration
- Private Cloud Platform
  Containers & VMs
  Common Services
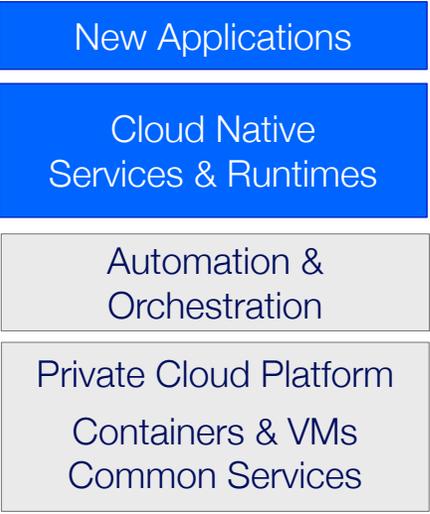
New Applications

Terminology – Key Words You Need to Know

Microservices	Containers	Orchestration
Microservices decompose monolithic applications into independent single function modules	Lightweight, stand-alone, executable package (containers) of software that includes everything needed to run it	Platform for automating deployment, scaling, and management of containerized applications
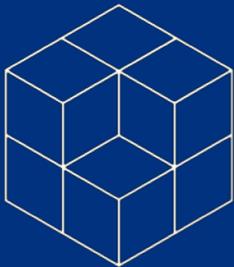
Docker

kubernetes

IBM **Cloud** Private

| **Kubernetes based container platform**	**Common Services**	**IBM Middleware, Data & Analytics Services**
Industry leading container orchestration platform across private, dedicated & public clouds	To simplify operations management, DevOps and hybrid integration	Cloud enabled middleware, application runtimes, messaging, databases and analytics to optimize current investments and rapidly innovate

IBM Cloud Private is a **software based, customer managed application platform** for developing and managing on-premises, containerized applications, built on **open** container and data services **technologies** able to run on **existing on-premises infrastructure.**

Kubernetes
Assemble vs. Operate

istio
https://github.com/istio/istio

kubernetes
https://github.com/kubernetes/kubernetes

grafana
https://github.com/grafana/grafana

etcd
https://github.com/coreos/etcd

calico
https://github.com/projectcalico/calico

13
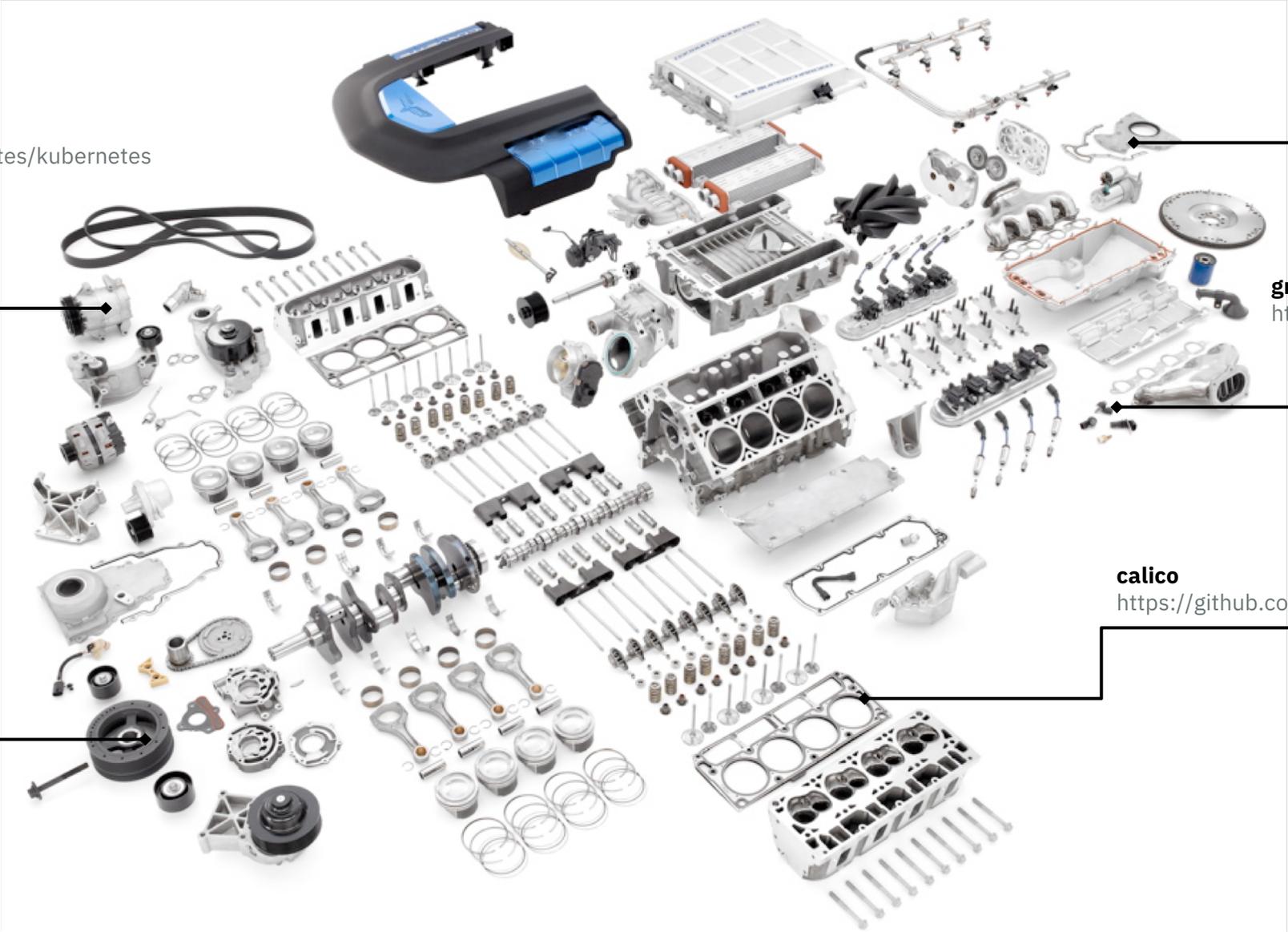
Kubernetes
Assemble vs. Operate

IBM **Cloud** Private

IBM Cloud Private is a **software based, customer managed application platform** for developing and managing on-premises, containerized applications, built on **open** container and data services **technologies** able to run on **existing on-premises infrastructure.**

IBM **Cloud** Private - Architecture

HYBRID MANAGEMENT, ORCHESTRATION & SECURITY

IBM MIDDLEWARE, IBM CLOUD PRIVATE FOR DATA, and now AI (WATSON)

IBM CLOUD PRIVATE
PLATFORM SERVICES

INTEGRATED CATALOG

DEVELOPMENT & OPERATIONAL EXPERIENCE

IBM CLOUD PRIVATE
RUNTIMES

VM	*Containers*	*Instant Runtimes*	*Event Driven*	*Service Reuse*
Cloud Automation Manager	Kubernetes	Cloud Foundry	Open Whisk	Open Service Broker

External API

CHOICE OF HYBRID INFRASTRUCTURE

Bare Metal   Virtual Machines   IBM Power   IBM Z   IaaS

IBM **Cloud** Private – Open by Design

Enterprise grade. **Open** by design.

IBM **Cloud** Private – Open by Design

IBM **Cloud** Private

Enterprise grade. **Open** by design.

Use Cases

IBM Cloud Private for Data
Helps make your data ready for AI
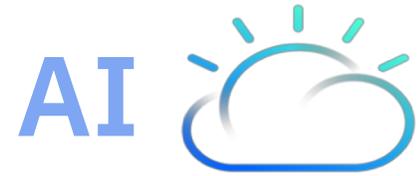
AI

Embed machine learning everywhere

Analyze insights on demand

Organize data so it can be trusted

Collect relevant data and make it simple & accessible

(2) **Ladder to AI**

(1) **Strong Foundation –** Built on "IBM Cloud Private"

IBM Cloud Private for Data

Open, Extensible API Platform

App Developers Business Partners

Personalized, Collaborative Team Platform

Data Engineers Data Stewards Data Scientists Business Users

Instant, Pre-assembled Provisioning **Admin & Ops Dashboards**
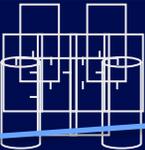
Cloud-native Data Micro Services

Collect Data	Organize Data	Analyze Data
o Databases on-demand o Data warehousing o Fast data ingest / Streaming data o Federated query	o Data integration and Transformation o Data curation o Governance, privacy: policies & rules o Data asset lifecycle management	o Data visualization & exploration o Machine learning & deep learning o Model management & deployment o Dashboards & business reporting

Enterprise Data Catalogs

IBM Cloud Private

Kubernetes Platforms

✓ Elastic Runtimes   ✓ Product Ready Operations   ✓ Built-in Continuous Delivery   ✓ Secure to the Core

IBM Cloud Private for Data
Top 4 Use Cases

Accelerate Data Monetization	Operationalize Data Science & AI	Shift to Next-Gen workloads	Smarter Compliance

1. Manage all your enterprise data regardless of where it lives
 	
(*Data Virtualization*)
 	
2. Gain control & leverage your data from connected devices
 	
(*Streaming analytics*)
	Build, deploy, manage & govern models & data @ scale to improve business outcomes
	
	(see following slides for details)
	
	e.g. a. Customer Churn
	
	       b. Cross Sell / Up Sell
	
	       c. Predictive Maintenance
		Shift to Cloud Native
		
		a. Provision & scale in minutes
		
		b. Build once, deploy anywhere – multi cloud support
		
		c. Built in automation & collaboration to increase productivity
			Accelerate transformation for compliance
			
			a. GDPR Compliance
			
			b. Banking Regulatory Compliance : Basel III, BCBS 239 etc.

IBM Cloud Private – Application Modernization

Accelerate the journey to application modernization

Transformation Advisor

Assess & Manage traditional apps; Expose, Refactor, Shift, Extend
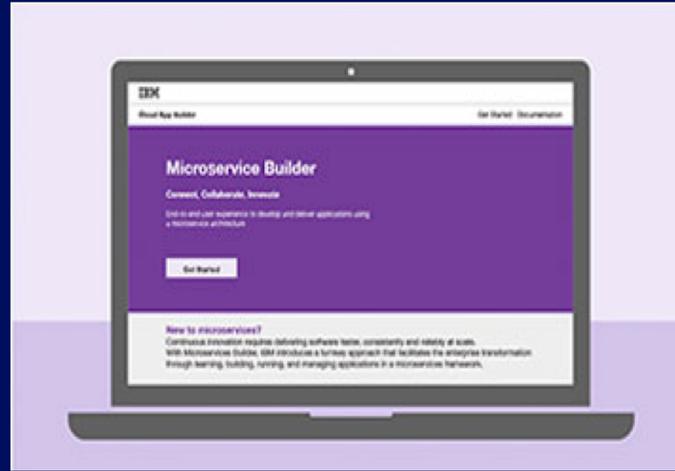
Microservice Builder

Turn-key approach to building applications in a microservices framework
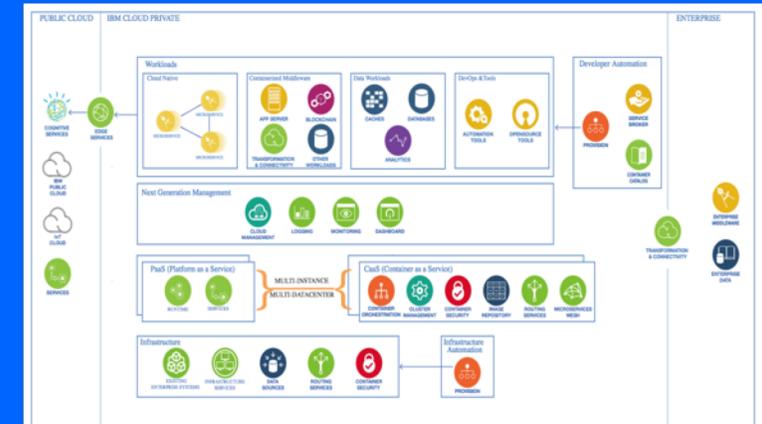
Garage Method

Architectures, best practices, and toolchains to jump-start modernization

Watson ICP Roadmap   *Subject to change*

Q3 2018

Watson Assistant
- *Available Now*
- Initial Capabilities:
  - Classification (intents)
  - Entities
  - Dialog
- Languages: All Public Cloud Languages

Watson Speech-to-Text: Customer Care
- *Available Now*
- Initial Capabilities:
  - Speech Transcription
  - Language/Acoustic Customization
  - PCI Redaction
- Language Support:
  - U.S. English, Japanese, Korean out-of-the-box w/ customization for fine tuning
  - Other currently supported languages may require customization and/or account service support to achieve desired quality levels.

Compare & Comply
- New Features: *Available Now*
  - Element Classification model enhancements
  - Comparison API
  - Table Understanding
  - OCR/scanned document intake

Q4 2018

Watson Discovery

New product TbA

Watson Speech Analytics: Customer Care

Compare & Comply

1H 2019

Many others

IBM Watson Assistant for IBM Cloud Private

Provides simplified toolset for rapidly building conversational AI solutions on-premises and in self-managed cloud

Overview

Watson Assistant is an enterprise grade, cloud based technology that enables business users and developers to collaborate to build conversational AI solutions. Watson Assistant is highly flexible, allowing you to deploy small, focused solutions or to scale to enterprise deployments supporting millions of conversations. With simplified tooling, it allows collaboration between business SMEs and developers to build conversational solutions and advanced dialog flows, without needing to be an expert in machine learning.

ICP Benefits

Watson Assistant for IBM Cloud Private provides organizations with the capability to run IBM's robust, conversational platform on their own hardware, behind their own firewall, maintaining the security measures and controls that enterprises have in place for their applications and data.

IBM Watson Speech to Text Customer Care on IBM Cloud Private

Transcribes customer care audio to help deliver meaningful insights and analytics.

Overview

To effectively manage service professionals, as well as assure a positive customer experience , team leaders across the customer care community have to understand the details of all service calls. As a result, they spend tens of hours weekly parsing through and listening to recordings, rather than using that time to gain valuable and actionable business insights. By using its advanced transcription and unique ability to extract keywords and customize vocabularies to user-specific environments, Watson™ Speech to Text: Customer Care on IBM Cloud Private takes this manual process and automates it, providing team leaders more efficient analysis for quicker actionable insight into their team productivity and customer experience.an expert in machine learning.

ICP Benefits

With the addition of Watson Speech to Text: Customer Care on IBM Cloud Private, customer care leaders can strengthen their customer engagement process, improve their service quality, and respond and analyze calls with an efficient use of resources.
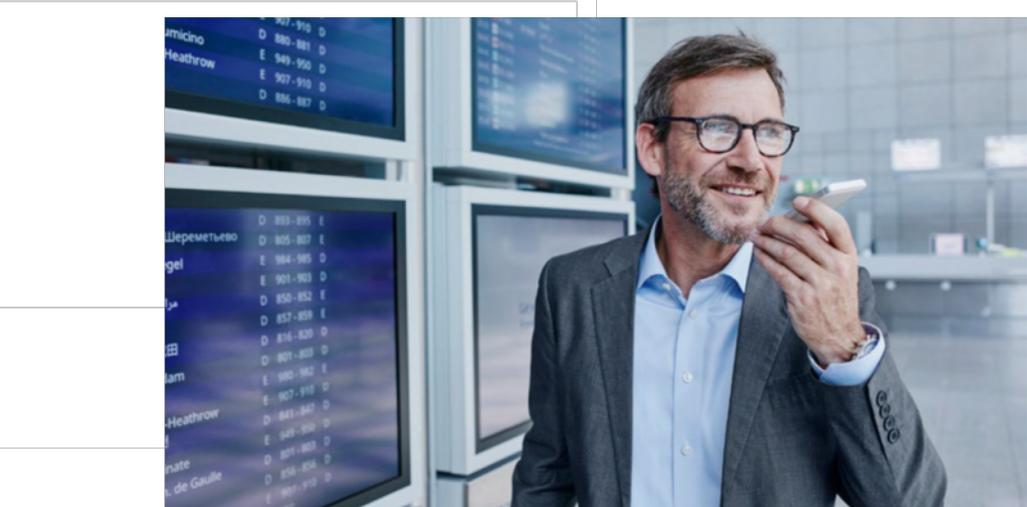
IBM Watson Compare & Comply:
Element Classification on IBM
Cloud Private

Parses dense legal language, at scale, turning contractual content into actionable insights.

Overview

Across industries, the workload of legal, procurement, and regulatory professionals is growing and becoming more complex. This results in increasing maintenance and compliance costs. IBM Watson Compare & Comply augments human intelligence by extracting the semantics within governing documents, such as contracts and regulations, and can help these professionals better understand them – making workers more effective and efficient. It can do this by quickly identifying the responsible parties, types of actions required, and categories included in their governing documents, improving their ability to do analysis and reviews.

ICP Benefits

Watson Compare & Comply: Element Classification allows companies to bring Watson to where their data is in a way that enterprises are familiar and comfortable with by respecting the security measures and controls they have in place for their applications and data. Whether set up by in-house experts or complemented by IBM's team of advisors, it offers a pre-trained and tailorable solution to meet their needs.

Inspur selects IBM Cloud Private to deploy their industrial cloud solutions

Business Needs

- Enterprise grade Platform as a Service

- Support across x86 and Power platforms

- Support for multiple development languages and runtimes

Solution

- IBM Cloud Private, UrbanCode Deploy, MQ

- Open Source tools, innovation projects (Hyperledger)

Benefits

- Increased speed of app development and deployment

- Platform flexibility
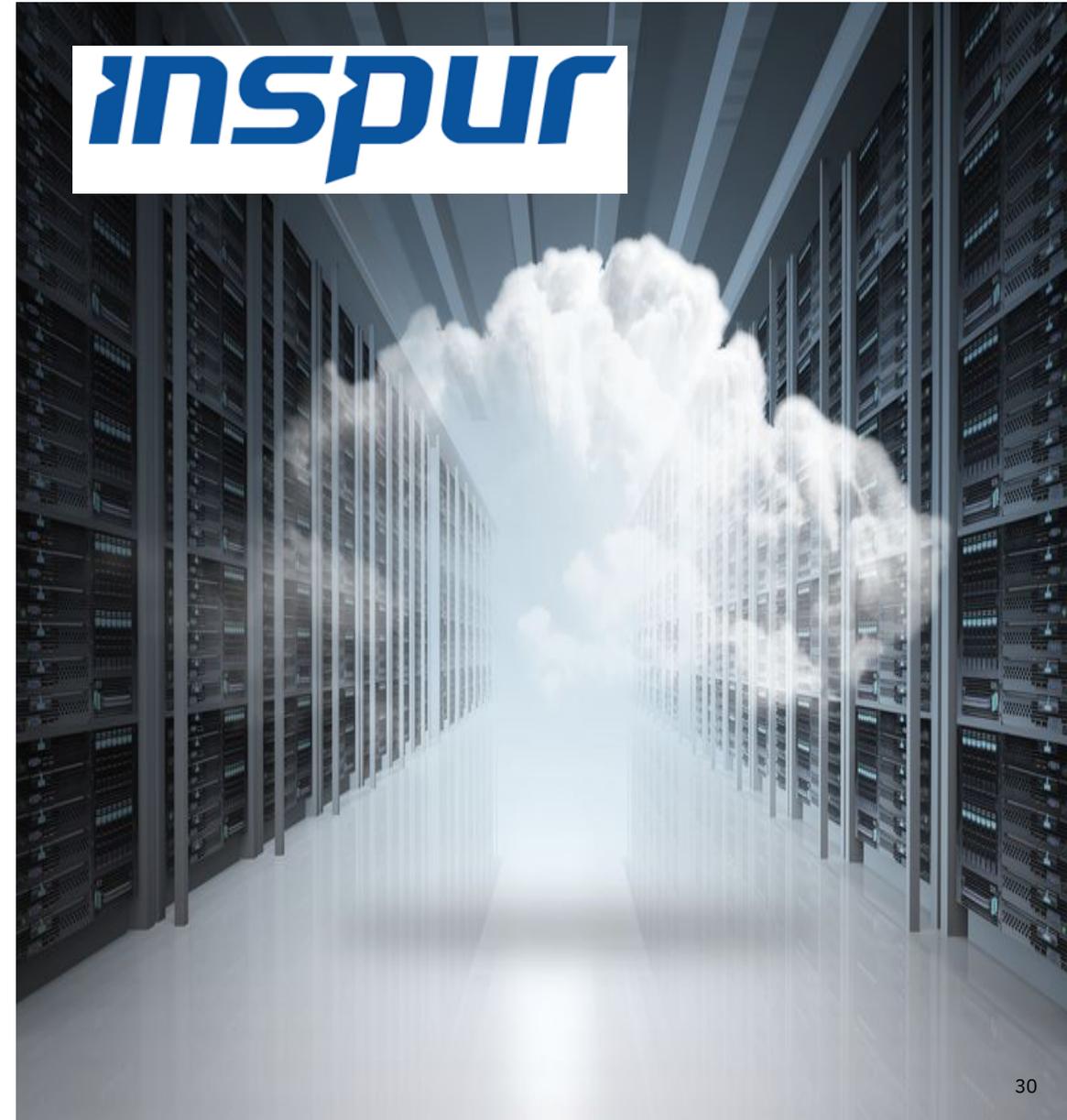
Swiss government organization

Business Needs

- Development of microservices applications in a cross-cloud architecture

- Management of workloads across multiple Hardware-platforms (e.g. Power, x86)

Benefits

- Reduced costs of managing and maintaining their WebSphere environment

- Speed of public cloud combined with the security of private

- Flexibility of 3rd party cloud support

- Supported migration of applications leveraging IBM Transformation Advisor

IBM **Cloud** Private - Editions

Community	Power Systems Entry for ICP	Cloud Native	Enterprise
Use Case Create cloud-native applications in a non-production environment	**Use Case** Low entry cost / 12-month term*. Available when ordered with Power servers.	**Use Case** Create cloud-native applications in a non-production environment	**Use Case** • Modernize and optimize existing applications - enterprise data centers

Platform
- Kubernetes
- Core services (Security, logging, monitoring, etc)
- Catalog of containerized content

Community	Power Systems Entry for ICP	Cloud Native	Enterprise
	IBM Enterprise Software • Microservice Builder • WebSphere Liberty • IBM SDK for node.js • Cloud Automation Manager	**IBM Enterprise Software** • Microservice Builder • WebSphere Liberty • IBM SDK for node.js • Cloud Automation Manager	**IBM Enterprise Software** • Everything in Cloud Native, plus: + MQ Advanced (Containers) + WAS ND (VMs) + API Connect Professional (VMs)
• Limited use: 1 Master Node, 1 Cluster • Non production use • Non warranted, community support	• Entitled for production use / HA • Support included • Single management cluster, 3 HA masters and 32 worker cores	• Entitled for production use / HA • Support included	• Entitled for production use / HA • Support included
Free	12 Month term	VPC per month	

* after 12 months need to migrate to one of the ICP Editions

Why IBM **Cloud** Private?

Integrated DevOps & Management
Open DevOps Toolchain | Hybrid Cloud Management

Cloud Optimized Software & Services
Middleware | Data | Analytics | Machine Learning | Blockchain

Kubernetes-based Platform
Developer Productivity | Operational Efficiency

Catalog | Built-in Elasticity | Multi-tenant | Consistent Management

Open Technology | Runs anywhere

Flexible Choice of Infrastructure
VMware | Openstack | Hardware

- **Single platform** for new cloud-native application development and optimization of existing applications

- **Staying current** with an integrated and secure open source platform - code drop every 3 months

- **Get IBM support** for your Kubernetes cluster to drive outcome and minimize risk

- **Runs on existing infrastructure** on-premises to address security, compliance, risk & cost

- **Portability & Open Ecosystem** to avoid vendor lock-in and provide a true hybrid cloud experience

- **Integrate within the enterprise and to public cloud** services using API connectivity & management

Getting Started with Cloud
Cloud Adoption and Transformation

Your cloud adoption journey is rooted in the seven **dimensions of digital transformation**

1 Culture + Organization

Culture that encourages innovation, aligns with business goals, and accelerates execution

2 Architecture + Technology

Overall cloud technology vision, considering desired state and enterprise goals for workload and data

3 Security + Compliance

Key considerations for holistic cloud operations, including risk, security and compliance

4 Emerging Innovation Spaces

Leverage, showcase and validate new and emerging technologies

5 Methodology

Agile practices for software planning, development, delivery, and operations

6 Service Management + Operations

Cloud management framework, process and practice for operational environment

7 Data Science + Governance

Data science insights, governance frameworks and catalysts for cloud acceleration

Cloud Adoption - Further reads

The de facto guide to
improving your
 enterprise with the cloud,
created
by distinguished members
of our
Solution Engineering team

*IBM Cloud Private
for Dummies*
http://ibm.biz/BdZedY

*Cloud-Native refresh for
The Twelve-Factor App*
http://ibm.biz/BdYcRT
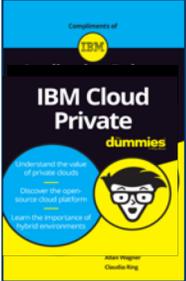
*Cloud Adoption and
Transformation Consultancy*
http://ibm.biz/BdYFCx
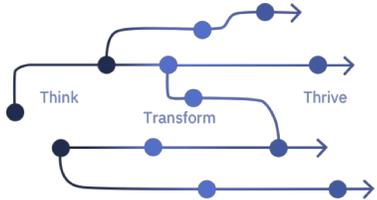
IBM Reference Architectures
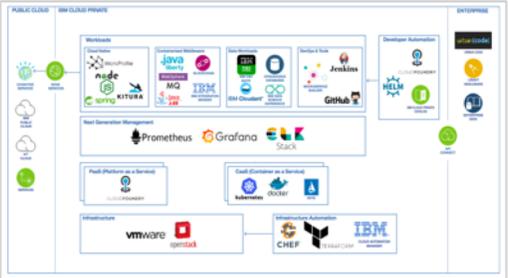
Private cloud reference architecture
http://ibm.biz/BdYF9S

Microservices reference architecture
http://ibm.biz/BdYF9e

IBM Cloud Garage Method
http://ibm.biz/BdYF9u
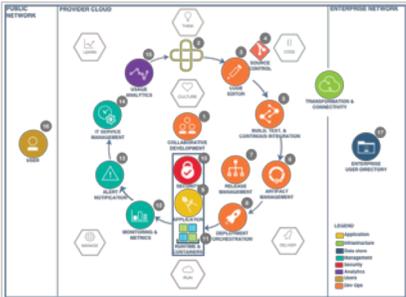
DevOps reference architecture
http://ibm.biz/BdYF9T

Learn more and try the IBM Cloud Private Community Edition

Product website

http://ibm.biz/IBM-Cloud-Private

Community edition

https://hub.docker.com/r/ibmcom/icp-inception/

https://ibm.biz/BdZedY

Guided Demo
- Demo in 5 minutes
- Link: https://ibm.biz/BdjSYK

Proof of Technology
- Three scenarios with guidance on Garage Method
- Link: https://ibm.biz/BdjSYn

Proof of Concept
- Requests through IBM Cloud Sales representative
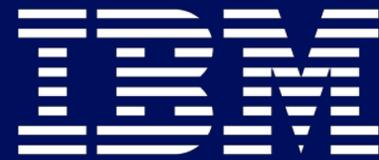
C'est fini, ça continue là:
IBM Cloud Private