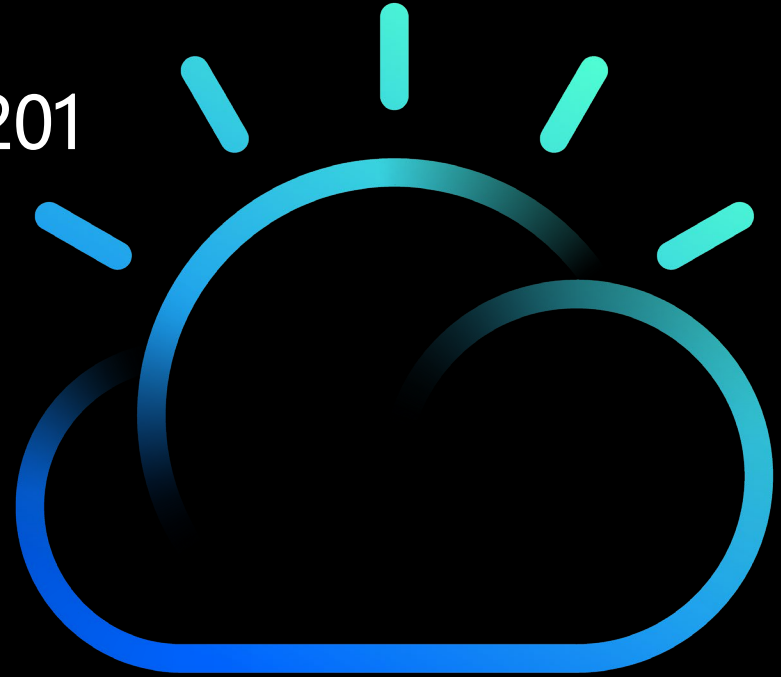


IBM Cloud Pak for Multicloud Management 201



New Era of business transformation is dawning

Organizations are facing an unprecedented demands for unique
client experiences and must move faster

*ize with cloud and do so
vironments*

Business Needs to Meet Market Demands



“I need applications to be more agile in order to adjust and shift in response to rapidly dynamic market demands.”



“I need diverse and easy to use tools & capabilities to build anywhere, at any pace”



“I need my applications to scale dynamically, achieve peak performance and adhere to security requirements regardless of where they are deployed”

71% of CEOs say improved agility and faster time to market is top priority -McKinsey

<https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/unlocking-business-acceleration-in-a-hybrid-cloud-world>

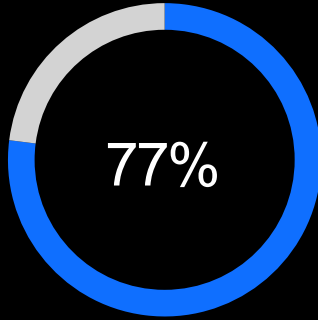
"From 2018 to 2023

500 million

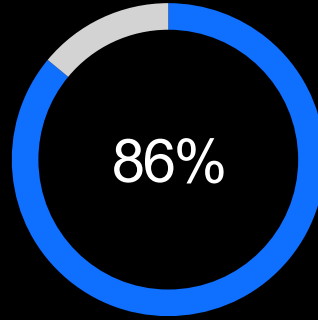
new logical apps will be
created, *equal to the number
built over the last 40 years.*" ²

How?

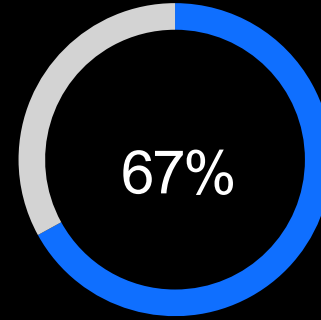
The enterprises that build cloud native applications will outperform others



Of enterprises say they
develop and deploy
applications faster



Of organization report
improvement in application
performance



Of enterprises say they
respond to market
changes and demands
faster

70%

of enterprises will integrate cloud management — across their public and private clouds — ***by deploying unified hybrid/multicloud management technologies, tools, and processes.***

Why?



In order to Achieve
Business Goals
on the Journey to
Cloud...

Consistent, Simple
and Integrated
Management is a
Must

Management & Operations Strategies Feel Burden of Hybrid Environments

by repetitive, low value tasks with unclear benefit to the business

Reduce Repetitive & Low
Value Tasks



Reduce
Cost

Integrate Diverse Processes
& Tools



Reduce
Risk

The typical team has more than 12 operations tools

1/3 of clients have leveraged **30+** services across **16** service providers ⁽¹⁾

Drive Excellence in IT Ops in a Fast Paced, App Centric, Landscape

Organizations can gather metrics in a single place so you can track & deliver on availability commitments (SLAs) and bring excellence to IT Ops (ex: Cloud admin, SRE) even in hybrid IT architectures

Cloud Pak for Multicloud Management becomes the rally point for Development, Security and Operations

So how does IBM help
clients solve these
challenges?



Modern Management Accelerates Digital Transformation

Development, Security,
Operations **in silos**



Merged workflows to **enable DevSecOps** velocity

Separate tools for VM's,
Containers & COTS



Open-standards & unified tooling in
one **complete automation** solution

Many point products that don't
add up to a complete solution



Integrated, pluggable core –
extendable with your own
capabilities (BYO)

75% improvement in overall IT efficiency

Modernizing Hybrid Cloud Management

Open Hybrid Management Platform

Application Modeling, Automation, Container & VM Management, Cost Management, Governance & Compliance, Observability, Pluggable Ecosystem

Modernize Infrastructure

Infrastructure journey from a VM and Traditional IT Environment to Cloud Native environment.

Manage Hybrid Applications

Full application lifecycle management across deployment models and clouds.

Leverage Intelligent Cloud Operations

Leverage Cloud Native practices, AIOps & Chat Ops to drive intelligent automation into managing applications across clouds and on-premises.

Automate With Business Analytics and ML

Connecting IT Operations teams with business KPIs.

Business Outcomes

1



2



3



4

So how are our clients
entering this
modernization journey?



Entry points into hybrid cloud management

Visibility Across Hybrid
Environment

IT Ops Transformation

Application Modernization and
Management

Governance and Compliance
Management

Cloud Pak for Multicloud Management

Cloud Pak for Multicloud Management



Visible Hybrid Environment



ITOps Transformation



Application
modernization



Governance and Compliance
Management

Visibility Across Hybrid Environment

- How long does it take to provision new virtual infrastructure?
- Are new specifications defined for a deployment or are they applied automatically?
- How are workloads being managed at a significant scale?

ITOps Transformation

- How is automation enabled for redundant, everyday tasks?
- How are events remediated automatically with configured actions?
- How are teams enable to manage and respond to unpredictable scaling requirements?

Application Modernization and Management

- How is application visibility maintained regardless of deployment?
- How do applications scale on demand from zero to right-sized?
- How are applications' performance going to be optimized?

Governance and Compliance Management

- How is identity managed across a hybrid architecture?
- How is the overall compliance and risk management controls understood and enforced?
- How are keys and certificates managed for access and revocation?
- How are security policies enforced at scale?

Visibility and Management Across Hybrid Environment

Visibility Across Hybrid Environment

IT Ops Transformation

Application
Modernization and
Management

Governance and
Compliance
Management



Full visibility to
Hybrid Environment



Single Control
Plane

Manage both cloud native and VM environments together as your enterprise evolves

Single console driving environmental observability and control

Cost tracking & analysis to understand cloud resource charges

Search capabilities span inventory of all hybrid application components

Enabling IT Ops Transformation

Visibility Across Hybrid
Environment

**IT Ops
Transformation**

Application
Modernization and
Management

Governance and
Compliance
Management



**IT Ops
Automation**

Create pre-defined templates to accelerate provision time with market leading open source tools such as Ansible and Terraform

Accelerate root cause analysis with auto remediation tools

Address dynamic scaling requirements automatically and on demand

Application Modernization and Management

Visibility Across Hybrid Environment

ITOps Transformation

**Application
Modernization and
Management**

Governance and
Compliance
Management



**Application
Management**



**Event
Management**

Deploy and move applications seamlessly across cloud deployments

Automatic incident routing, bringing together DevSecOps teams to resolve complex faults fast

Proactively prevent application bottlenecks and performance issues with real time metrics

Modernize Governance and Compliance Management

Visibility Across Hybrid Environment

ITOps Transformation

Application Modernization and Management

Governance and Compliance Management



**Security &
Compliance
Management**

Enforce policies and ensure compliance across hybrid infrastructures and applications

Build more reliable, secure applications with DevSecOps brought together in one place

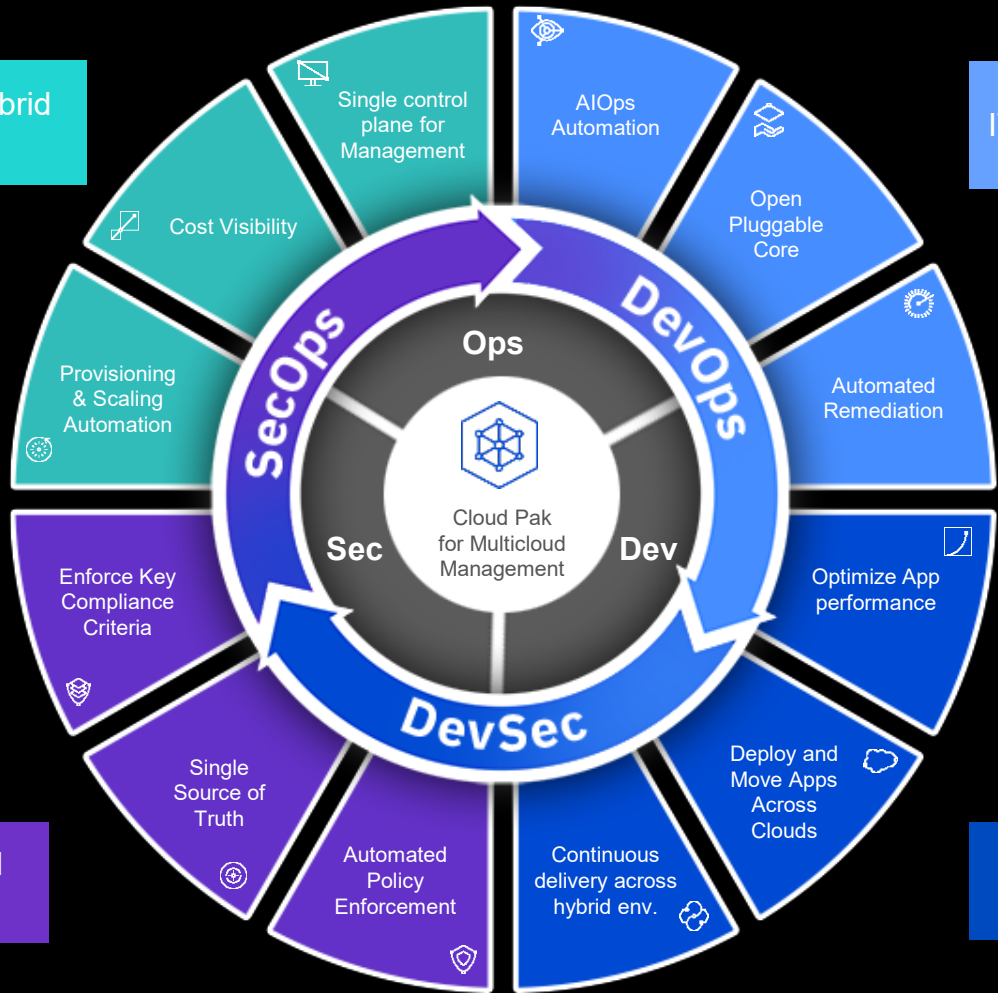
Auditability of all policies, known vulnerability exposures and regulatory requirement tracking

Visibility across Hybrid
Environments

ITOps Transformation

Governance and
Compliance

Application
Modernization



So how does this look
in practice?

Cloud Pak for MCM Breaks Down Silos

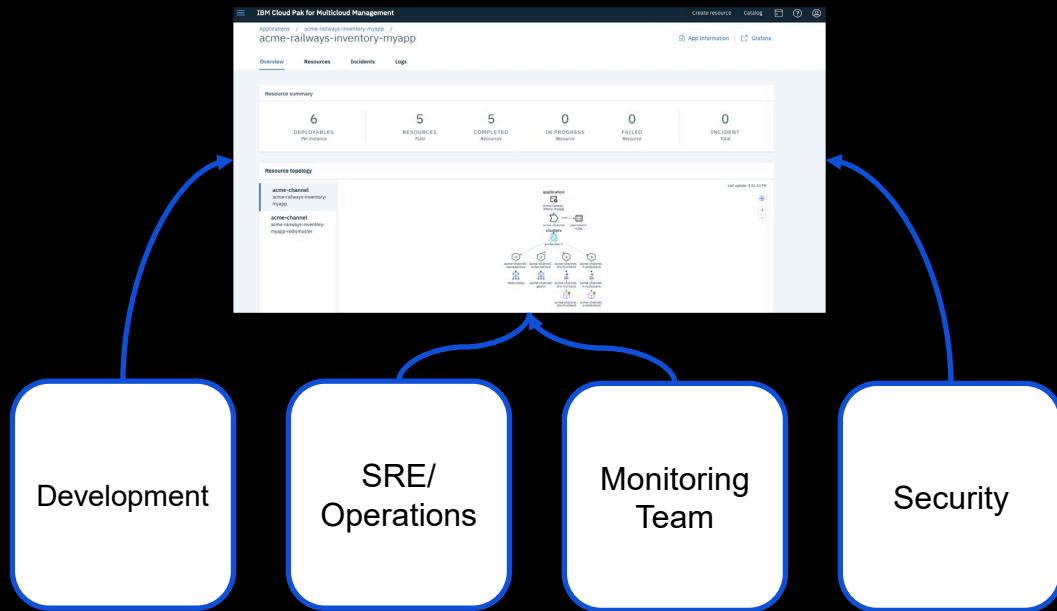
The common language for hybrid modern management

Cloud Pak for MCM provides a consistent app model, across containers and VMs

What is our app? Normalizing the parts to get everyone talking the same language

Accelerates

1. Ability to Trust your Data
2. Deployment of code
3. Identification, triaging and remediation of problems
4. De-risking the operational environment



1. Single console for hybrid environments
2. Any cloud, on prem
3. All your applications

Visibility across Hybrid Environments

CloudForms

Overview > Chargebacks > Reports > Chargeback: VM allocation - Accounting

▼ Reports

▼ Saved Chargeback Reports

▼ Chargeback: VM allocation - ... >

- 2020-04-03 14:02:09 UTC
- 2020-04-02 20:14:58 UTC
- 2020-04-02 19:56:53 UTC
- 2020-04-02 19:46:15 UTC

- > Chargeback: VM metrics - Ac...
- > Total VM Spend

> Rates

> Assignments

Saved Chargeback Report
"Chargeback: VM allocation - Accounting"

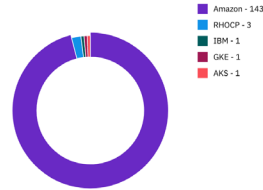
	Run On	Name
🕒	2020-04-03 14:02:09 UTC	Chargeback: VM allocation - Accounting
🕒	2020-04-02 20:14:58 UTC	Chargeback: VM allocation - Accounting
🕒	2020-04-02 19:56:53 UTC	Chargeback: VM allocation - Accounting
🕒	2020-04-02 19:46:15 UTC	Chargeback: VM allocation - Accounting

Overview ⓘ

Cloud providers

Cloud provider types

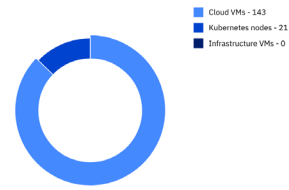
5



Compute resources

Kubernetes clusters

6



Virtual machine pools

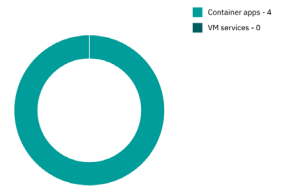
1

1 Cloud instances
0 Infrastructure instances

Applications

Applications

4



Applications

Container applications 4

Virtual machine services 0

Visibility across Hybrid Environments (Other Cloud Paks!)

1. Eliminate MQ admin tasks
2. Automate actions & create config & security policies on MQ
3. Inventory MQ environment span VMs & containers
4. Move apps and/or MQ without disrupting service

1. License Advisor Exposes License Limits to other Cloud Paks
2. Manage your ILMT limits directly in CP4MCM

CP4MCM– License Advisor Tech Preview

Aggregates license usage data across Hybrid multicloud environments. Both on premise and on public clouds
Gathers source of metered license usage data from ILMT and License Service

IBM Cloud Pak

Products /
VPC for Cloud Paks in April

Product Name	Value/Threshold	
IBM Cloud Pak for Applications	11/100	✓
IBM Cloud Pak for Integration	21/50	✓

Provides visibility of licensed used vs a custom threshold license limit

New threshold

Setting value for IBM Cloud Pak for Integration

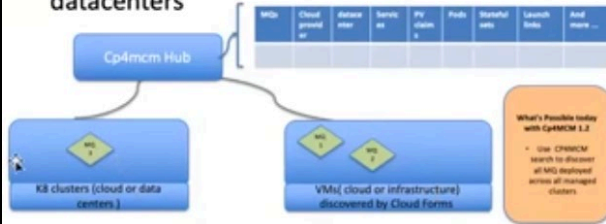
Threshold

50

Cancel Set threshold

Visibility

- The administrator can use cp4mcm search to discover MQ(s) deployed across all managed K8 clusters and VMs across multi cloud and datacenters




1. Client choice in automation tooling
2. Any cloud, on prem
3. All your applications on any infrastructure

ITOps Transformation

 TOWER

VIEWS

 Dashboard

 Jobs

 Schedules

 My View

RESOURCES

 Templates

 Credentials

 Projects

 Inventories

 Inventory Scripts

ACCESS

 Organizations

 Users

 Teams

[JOBS](#) / 4 - Demo Job Template

DETAILS

STATUS ● Successful  

STARTED 4/6/2020 7:21:22 PM

FINISHED 4/6/2020 7:21:27 PM

JOB TEMPLATE [Demo Job Template](#)

JOB TYPE Run

LAUNCHED BY [kubeadmin](#)

INVENTORY [Demo Inventory](#)

PROJECT ● [Demo Project](#)

REVISION 347e44f 

PLAYBOOK hello_world.yml

CREDENTIAL  [Demo Credential](#)

ENVIRONMENT /var/lib/awx/venv/ansible

EXECUTION NODE ansible-tower-0

INSTANCE GROUP [tower](#)

Library

[Templates](#)

[Services](#)

All namespaces 

All Templates (171)

 Search Templates 

Create Template 

Import Template 





My Templates (0)

Middleware (77)

Integration (7)

Import Existing (2)

Starterpacks (85)

Name ▾	Provider	Created ▾	
VMware vRealize Automation single node catalog deployment <i>Globally Accessible</i>	VMware vRealize Automation	03/30/2020 10:26 AM	
VMware NSX-T Sample to create a logical switch <i>Globally Accessible</i>	VMware NSX-T	03/30/2020 10:26 AM	
Tomcat on a Single VM <i>Globally Accessible</i>	VMware vSphere	03/30/2020 10:26 AM	
Strongloop 3 Tier Deployment on VMware <i>Globally Accessible</i>	VMware vSphere	03/30/2020 10:26 AM	

Governance and Compliance

Governance and risk

Policies Security findings

Highlights

8

ACTIVE
CONTAINER
POLICIES

3

POLICY
VIOLATIONS

2

CLUSTER
VIOLATIONS

9

ACTIVE
VIRTUAL
MACHINE
POLICIES-----
VIRUTAL
MACHINE
VIOLATIONS

Container policies (8)

Summary Standards

NIST CSF

2 / 3

CLUSTER VIOLATIONS

3 / 8

POLICY VIOLATIONS

Virtual machine policies (9)

Find policies

Policy name	Active	Policy description
prevent smartstate analysis from running	Yes	Prevent SmartState Analysis from running
run smartstate analysis on new vms	Yes	Run SmartState Analysis on new VMs
tag a vm if smartstate analysis failed	Yes	Tag a VM if SmartState Analysis failed

Summary Standards

Want to see less information? Collapse summary

MITRE

18 / 120

CLUSTER FINDINGS

18 / 18

HIGH SEVERITY

PCI

52 / 120

CLUSTER FINDINGS

13 / 52

HIGH SEVERITY

NIST CSF

32 / 120

CLUSTER FINDINGS

4 / 32

HIGH SEVERITY

FISMA

1 / 120

CLUSTER FINDINGS

0 / 1

HIGH SEVERITY

HIPAA

9 / 120

CLUSTER FINDINGS

0 / 9

HIGH SEVERITY

Other

17 / 120

CLUSTER FINDINGS

0 / 17

HIGH SEVERITY

1. View entire landscape of governance posture in one place
2. Remediate violations directly from console
3. Ingest BYO security tools

Application Modernization

1. Update/Move apps with placement rules (policy as code!!)
2. Understand metrics from applications
3. Remediate application bottlenecks quickly

Channel

acme-channel

YAML

0

Subscriptions in this channel

2

Subscriptions in this channel

2

Subscriptions in this channel

Subscription

acme-railways-ticketing-gbapp

Namespace: acme

[Placement Rule: acme-railways-ticketing-gbapp](#)

0%

Resources completed

0%

Resources in progress

0%

Resources failed

Subscription

acme-railways-ticketing-gbapp-redismaster

Namespace: acme

[Placement Rule: acme-railways-ticketing-gbapp-redismaster](#)

0%

Resources completed

0%

Resources in progress

0%

Resources failed

Edit placement rule

Changing the placement rule might affect the subscriptions or other objects that reference the rule.

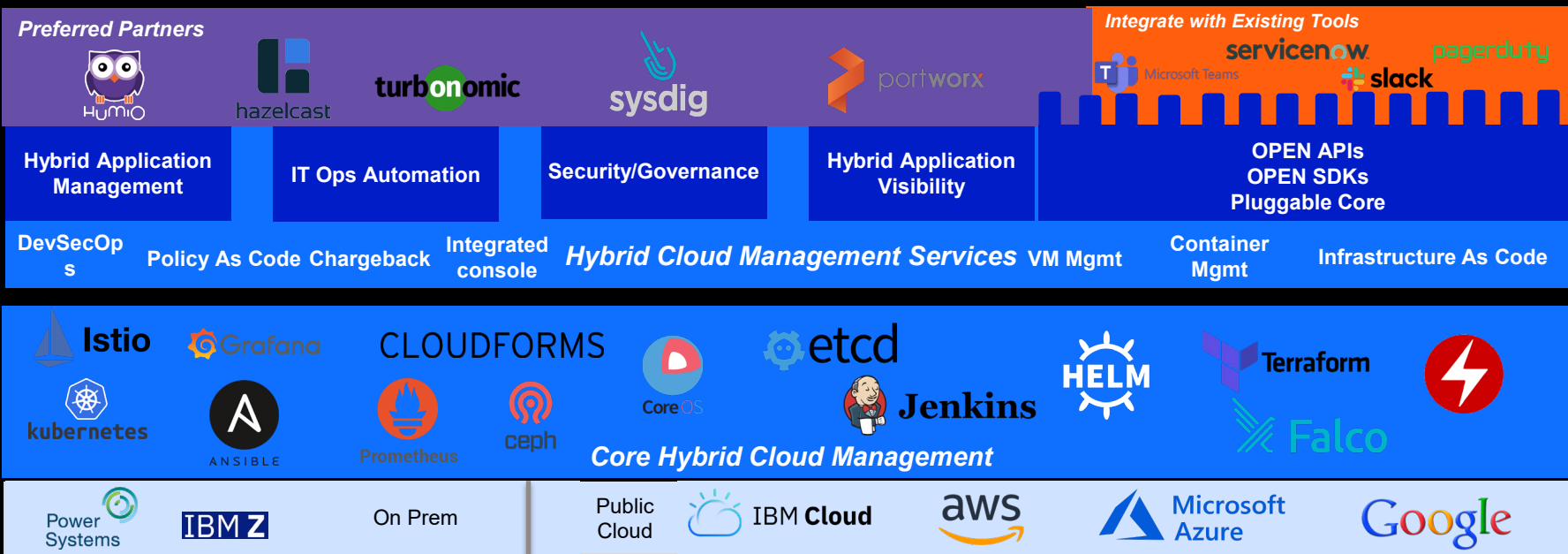
```
1 apiVersion: app.ibm.com/v1alpha1
2 kind: PlacementRule
3 metadata:
4   name: acme-railways-ticketing-gbapp
5   namespace: acme
6   generation: 4
7 labels:
8   app: gbapp
9   chart: gbapp-0.1.0
10  heritage: Tiller
11 release: acme-railways-ticketing
12 resourceVersion: "10762867"
13 spec:
14   clusterLabels:
15     name: web-prod-13
16     clusterReplicas: 1
17   status:
18     decisions:
19       - clusterName: web-prod-13
20         clusterNamespace: web-prod-13
```



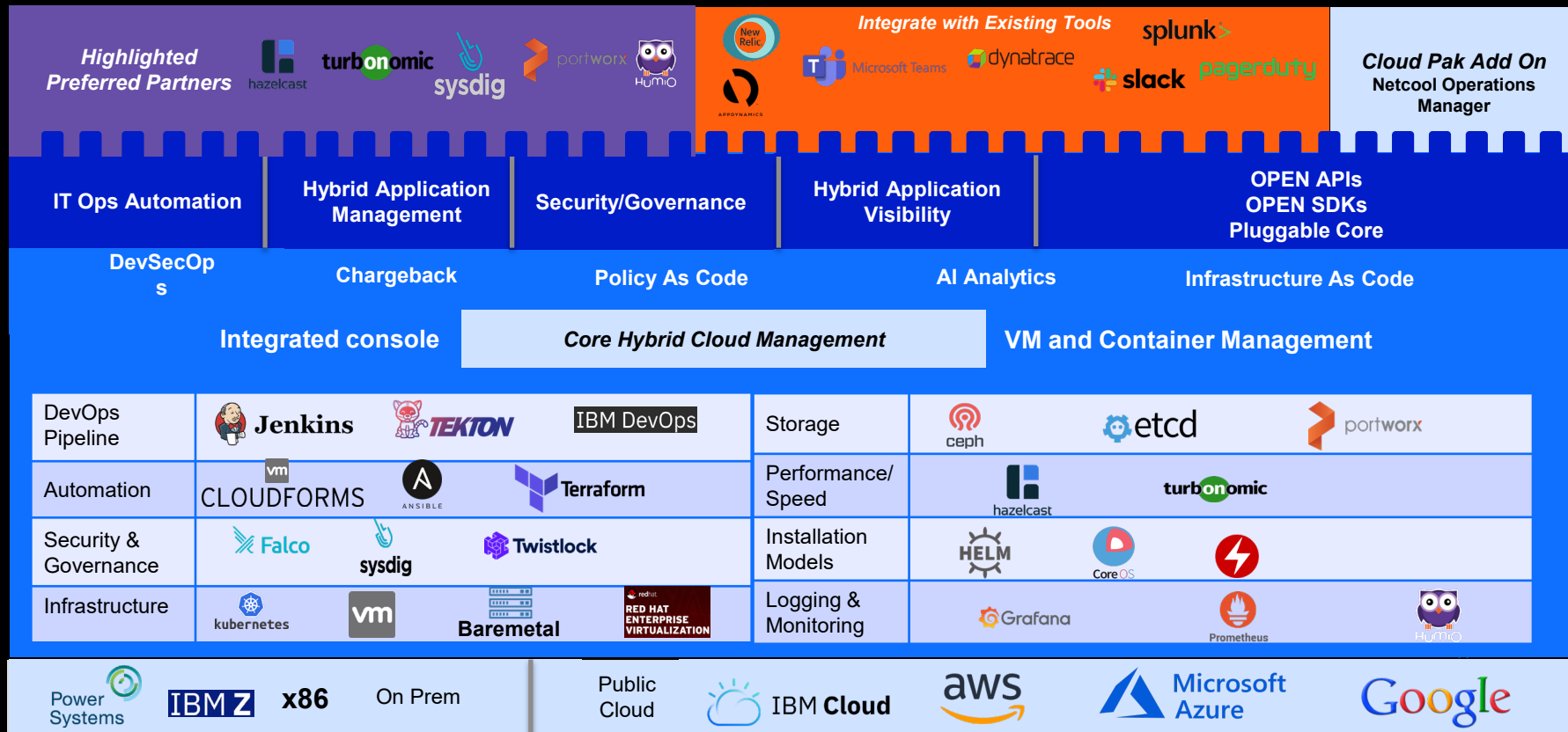
What does an Open Core Model enable?

An Ecosystem of Partners

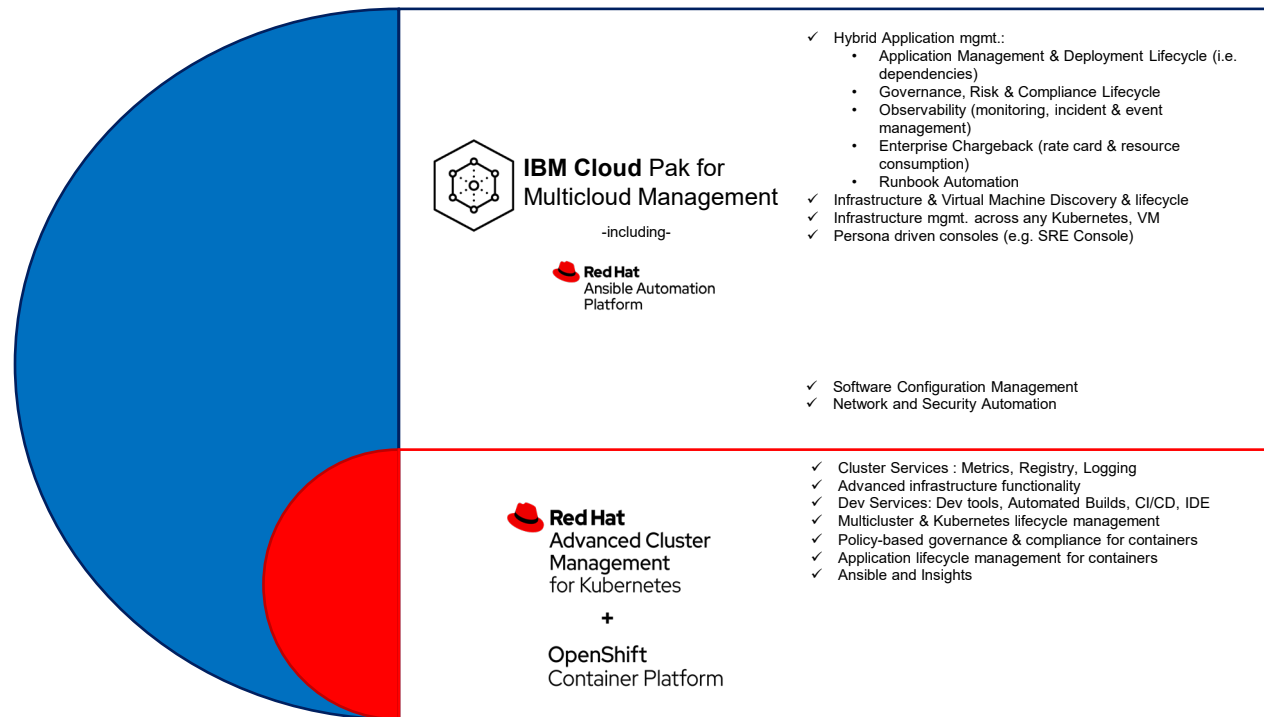
Cloud Pak for Multicloud Management



Cloud Pak for Multicloud Management Platform Services



IBM + Red Hat: Management Offerings



Hybrid Cloud Management Platform

(Application Operations across VMs, Containers & Cloud Services)

Hybrid Cloud Container Platform

(for Kubernetes Management across clouds)

How do clients put it
into practice?

A leading auto manufacturer in the US



Employs a cloud strategy to accelerate delivery

• **Business Challenge:**

A leading automotive enterprise in North America recognized the importance of DevOps practices to the company's overall cloud strategy. To gain the most value from the flexibility of cloud, the manufacturer wanted to make sure its development and delivery were as agile as possible.

Solution:

The company implemented an IBM hybrid cloud and multicloud management solution to unify configurations and deployments across its multiple cloud platforms.

Outcome:

- Faster responsiveness to business needs
- Streamlined IT operations management

"How I can make operations more responsive? Multicloud Manager gives me the capability. Through one panel, through one console, I can manage configuration across all of my IBM clouds which are running my mobile platform, and then, even my deployment pipeline, they go through the multi-cloud channel. So that means we can deploy through these multiple clouds through one channel and we can manage through one channel."

Senior Manager
A leading automotive manufacturer

Solution Components:

- Cloud Pak for MCM



A major bank in China



Modernizes its IT for agility in a multicloud environment

• **Business Challenge:**

A leading bank in China sought to modernize its IT architecture to support containerized developments and promote business agility with multicloud services.

Solution:

The bank implemented Cloud Pak for MCM software to establish a primary management hub and a backup management hub at two separate datacenters. Each hub provides centralized management of four containerized applications in production and two containerized application test environments. The applications and test environments are containerized on the incumbent IBM Cloud Private platform. The bank is now exploring how to increase its DevOps and app management capabilities with IBM Cloud Pak™ for Multicloud Management.

Outcome:

- Simplifies IT management
- Increases efficiency
- Accelerates application deployments
- Boosts reliability

Solution Components:

- Next step: IBM Cloud Pak for Multicloud Manager

A global pharmaceutical conglomerate

Automating and centralizing app management across a global multicloud environment



• **Business Challenge:**

A worldwide group of research-driven pharmaceutical companies had business applications scattered across a multitude of platforms, including IaaS and PaaS technologies. The group lacked centralized control and visibility to enforce governance, quality and cost control.

To gain operational and business insights, the group launched an initiative to gather all relevant information and automate placement and consolidation strategies.

Solution:

To combine the management of container-based workloads automated by Kubernetes with the management of virtual machines for those applications that cannot be containerized, the group chose to implement IBM® Cloud Pak™ for Multicloud Management on Red Hat OpenShift software. The solution facilitates an integrated and consolidated management approach across technologies and cloud platforms.

Outcome:

- Resolves majority of issues
- Consolidates tooling and processes
- Improves productivity of staff

"It is absolutely critical to automate to the max to both match business expectations and stay competitive."

Corporate Vice President
Corporate Strategy & internal consulting

Solution:

IBM Cloud Pak for Multicloud
Management
on Red Hat OpenShift



Thank you!

