# AWB Bootcamp
# Red Hat OpenShift and IBM Cloud Paks

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Luca Floris
IBM Cloud Technical Consultant

IBM

# Agenda

**OpenShift + Cloud Paks**
**Common Services**
Introduction to IBM Cloud Pak Common Services

**Introduction to Cloud Pak for Applications**
Business value
Overview of Components

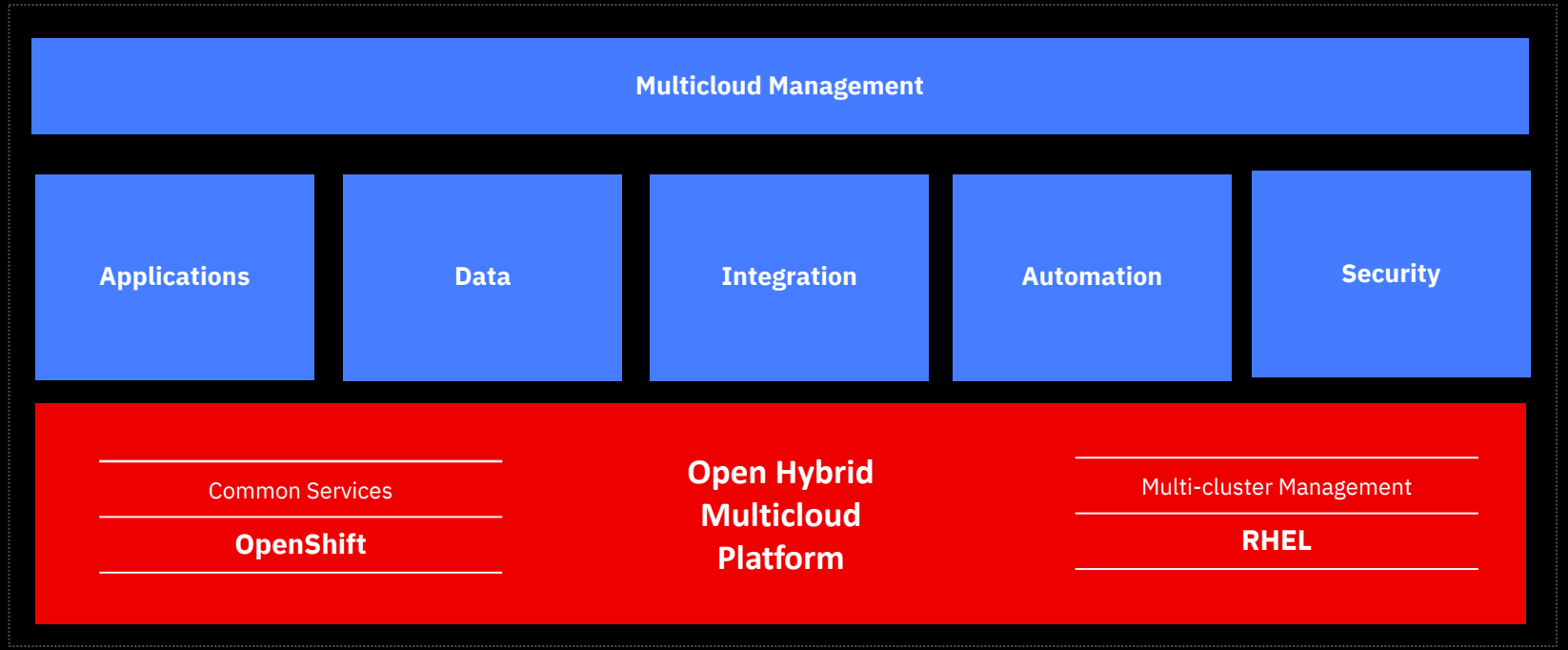
**IBM Accelerators for Teams**
The challenges
What are Kabanero's main players?
Overview of Kabanero components

**Introduction to Appsody**
View of a Solution Architect
View of a Developer

**Introduction to Tekton**
Pipelines with Tekton

# Red Hat OpenShift Container Platform + IBM Cloud Paks

# Next Generation Hybrid Multicloud Platform




Infrastructure

IBM Cloud

aws

Azure

Google Cloud

Edge

Private

Systems
IBM Power & Z

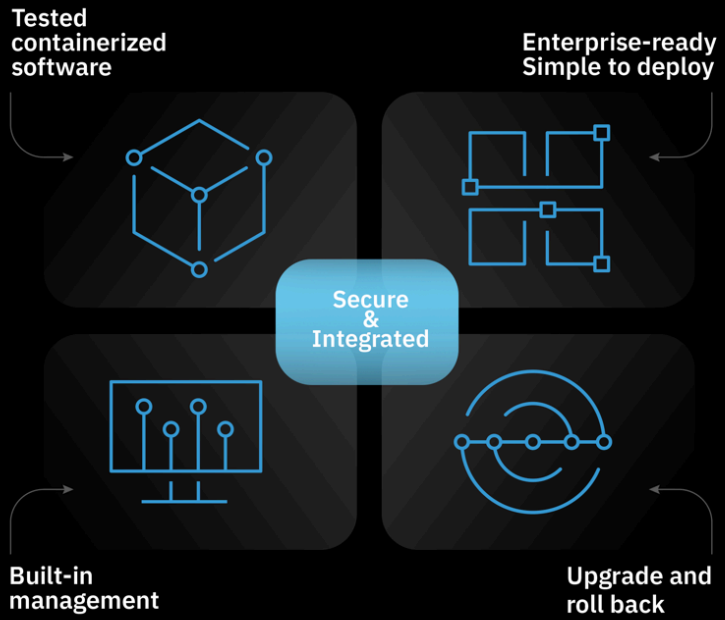
# IBM Cloud Paks

# IBM Cloud Paks provide certified middleware for Kubernetes-based platforms that address enterprise clients needs

**Providing containers is NOT enough for the Enterprise.**

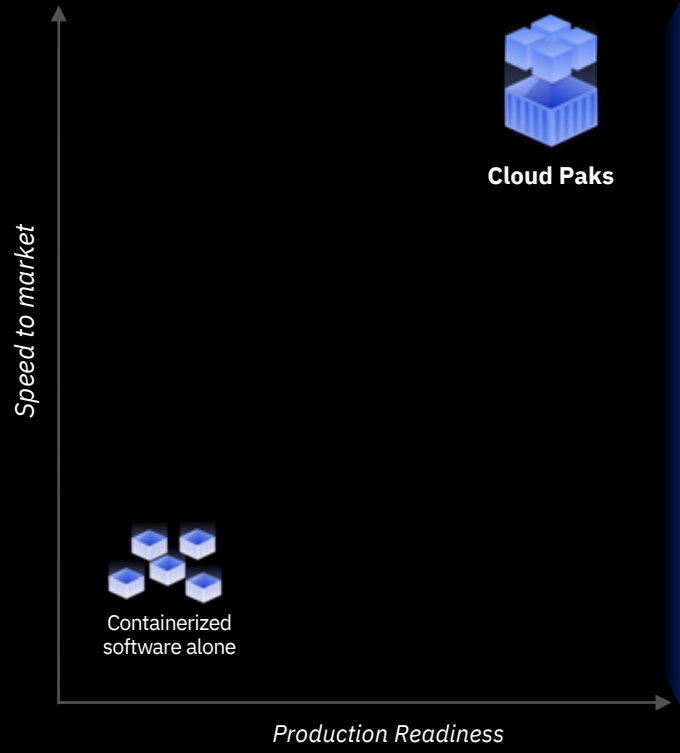
**IBM Cloud Paks**

- ✓ Provide enterprise capabilities for deployment, lifecycle management, and production use cases
- ✓ Unlock the value of OpenShift, out-of-the-box integration with core operational services
- ✓ Accelerate Time to Production for Enterprise client use cases




*Certified IBM Containers are the next step in our container content strategy*

# Cloud Paks – IBM certified and production-ready




| | Containers Alone<br>Client creates containers or receives software as standalone container(s) | IBM Cloud Paks<br>Complete solutions certified for enterprise use cases |
|---|---|---|
| **Runs anywhere** | Yes | Yes |
| **Vulnerability scanned** | Yes | Yes |
| **Red Hat container certification** | Depends on product | Yes |
| **Complete solution w/ container platform** | No | Yes |
| **Flexible & modular: Pay for what you use** | No | Yes |
| **IBM certified/orchestrated for production**<br>(Built for Kubernetes by experts; certified against 250+ criteria) | No | Yes |
| **Multicloud validation** | No | Yes |
| **Integrated deployment experience** | No | Yes |
| **Full stack support by IBM**<br>(Base OS, software, and container platform) | No | Yes |
| **License metering integration** | No | Yes |
| **Scalable and resilient** | No | Yes |
| **Encrypted secrets / limited privileges** | Do it yourself | Yes |
| **Management and operations** | Build your own | Yes |
| **Lifecycle Management** | Manage it yourself | Yes |

# Cloud Pak Common Services

# Cloud Pak Common Services

The Common Services provide a uniform base layer for all Cloud Paks to adopt and leverage the components it needs to get up and running with minimal effort.

Common Services consists of the following capabilities

- IAM (Identity and Access Management)
- License Service (license-manager)
- Metering
- Certificate management (cert-manager)
- Common Web UI
- CLI tools
- System Healthcheck
- Audit logging
- Logging
- Monitoring
- Helm Catalog
- Helm REST APIs

IBM Cloud Paks require some base services that are not often installed in OpenShift by default, especially if a dedicated OpenShift cluster is installed for a Cloud Pak.

# Evolution

Enterprise Certification, Operator Driven Capabilities, Optimum Size by Use Case

**Application Services**

API Catalog

Blueprint Builder

Gateway/Front door

Automation Command Line

Application Model

**Security Services**

Identity & Access User Management RBAC

Vault

Certificate Management

Workload Protection

Threat Management

**Operational Services**

License Management

Metering UI

Monitoring UI

Logging UI

Serviceability

**User Experience**

Consistent Navigation

Notification

UI Standards

Job Management

Serviceability

**Data Services**

SQL NoSQL

Connections

Event Streams

Engines (Spark)

Caching

Openshift: Monitoring, Logging, Metering, Certificate Management, Operator Lifecycle Mgmt

# Cloud Pak Common Services

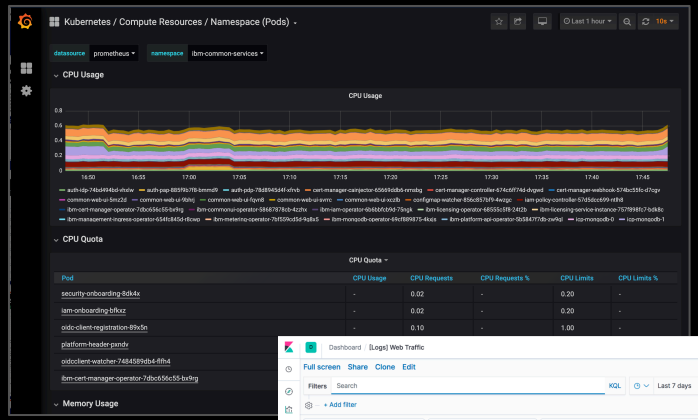
Why?

It’s about standardisation.

# Monitoring/Logging

***Value & Use Cases:***

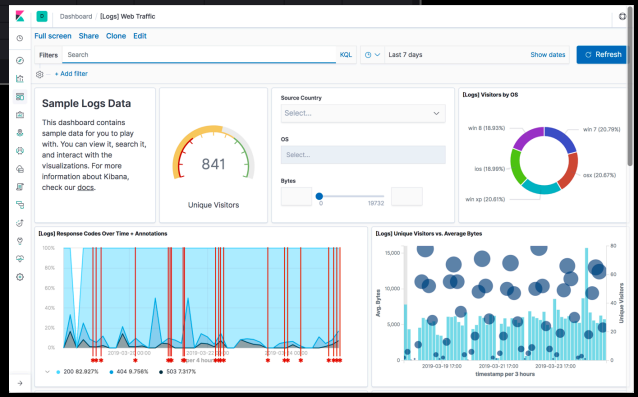
- *Cloud paks consistently deliver pre-configured dashboards that help my administrators tune their deployments and ensure that cloud pak capabilities are installed and running correctly.*
- *My SREs can easily view real-time resource utilization from cloud pack capabilities and applications, helping them isolate and resolve application issues quickly.*
- *My SREs and developers can view application logs in a consolidated location with search and aggregation to help them isolate problems and resolve them quickly.*
- *Monitoring and logging information is integrated into access control so that my teams only see what they are authorized to see.*




Grafana

Prometheus
Monitoring

Kibana




Elasticsearch
Fluentd
Logging

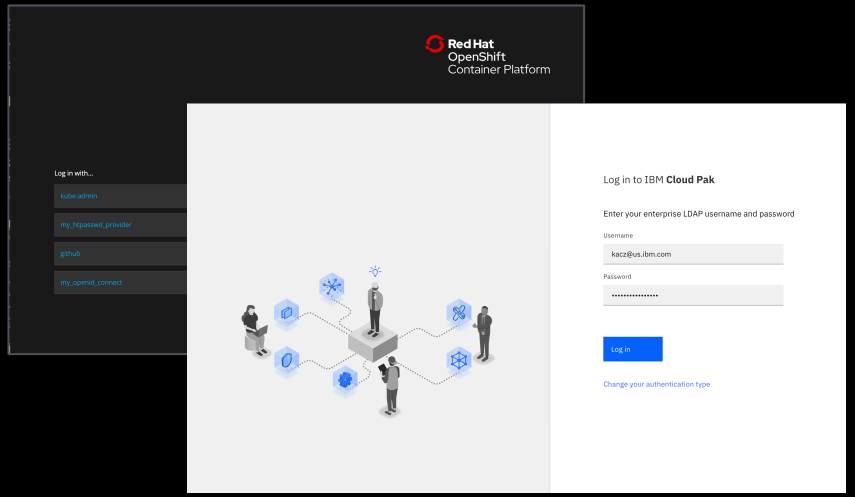
Cloud Pak Custom Dashboards
Role-based Access Control

# Identity, Access and Certificate Management

***Value & Use Cases:***

- *My users can log in once and navigate between various cloud paks, common services and OpenShift without ever being presented with another login screen,*
- *I can easily integrate my enterprise directory into authentication and use management for cloud pak capabilities.*
- *I can locate users and manage their access to resources and services.*
- *I can view and filter IAM content to show items relevant to a particular cloud resource*
- *I can easily issue and manage certificates using my preferred certificate authority and know that services will utilize the right standards for secure interactions, including certificate expiration and renewal.*

Identity and Access Manager (IAM)




Single Sign-on and Role-Based Access Control

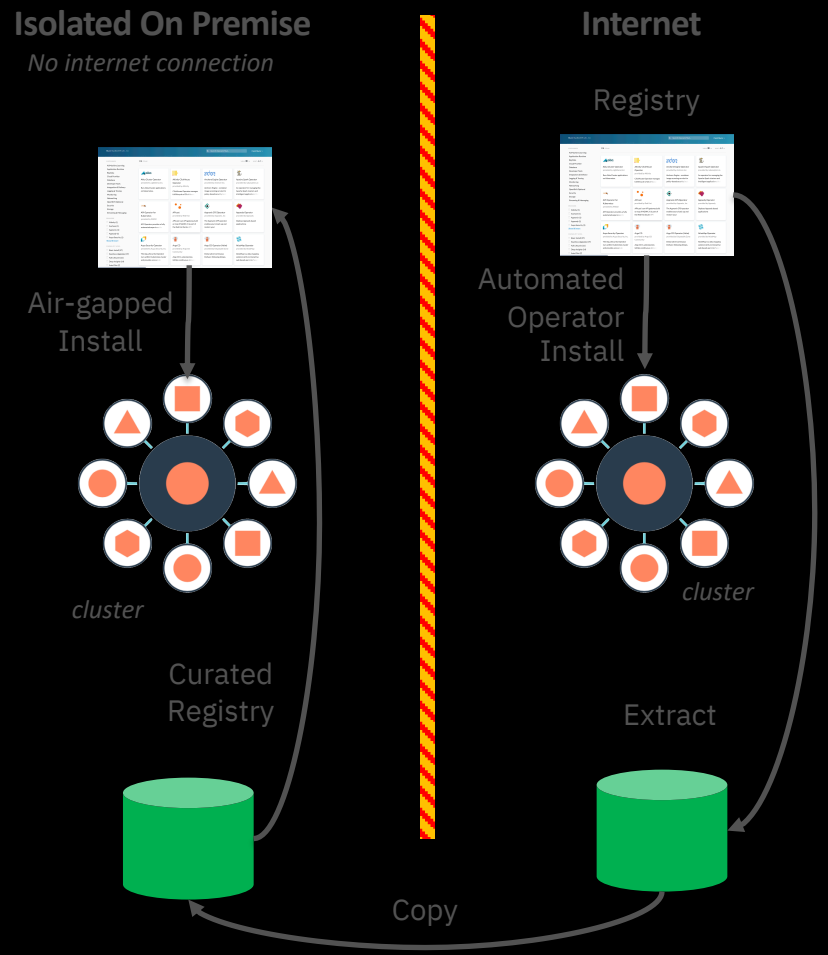
**cert-manager**

Certificate management interfaces to Certificate Authorities

# Operator Installation & Air-gapped support

***Value & Use Cases:***

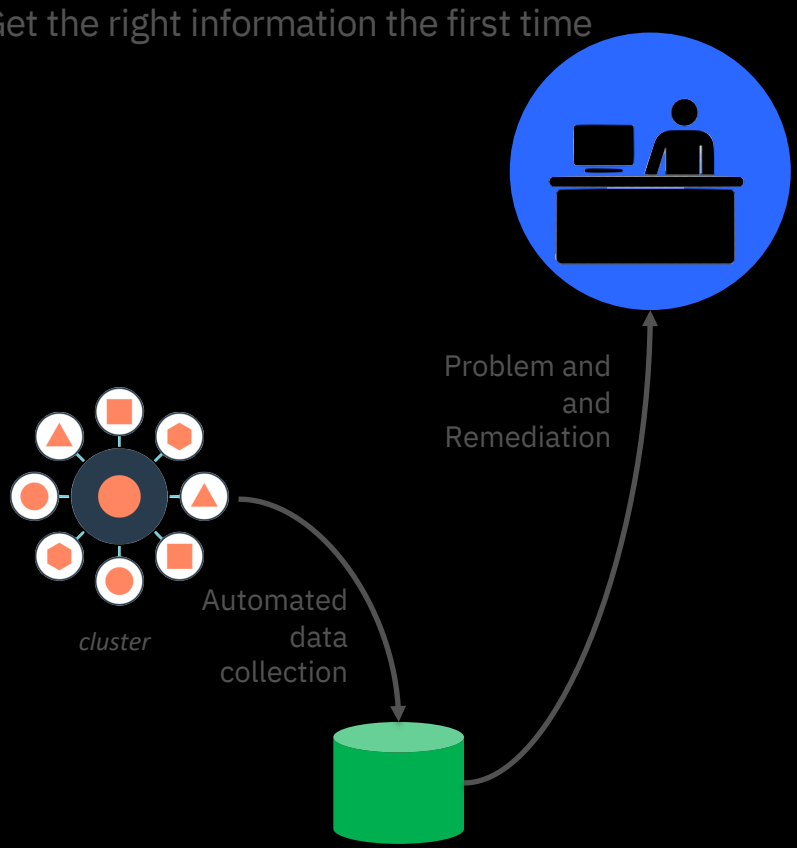
- *As a customer, I don't want to have to manage integrations/services; they should automatically appear when needed and be "invisibly" maintained.*
- *Developers can choose the cloud pak capabilities they want to use directly from the Operator Catalog or a Cloud Pak User Interface. Relevant Common Services are deployed automatically.*
- *I can easy curate Cloud Pak repositories for installation in my critical systems that do not have Internet access*



# Serviceability

***Value & Use Cases:***

- *When I encounter a problem with a Cloud Pak capability, I can automatically collect all pertinent data to send to support and resolve problems quickly. Repetitive on-going support calls are a thing of the past.*
- *When I log an issue, there is a link to docs guide me how to collect logs. (Even better, if there's a step by step guide within the issue submission form that i can quickly follow and complete.)*
- *With one command, can get all the needed logs, don't need go back and force to upload logs.*
- *The doc is clear and easy enough to read.*
- *The doc to collect logs are consistent among Cloud Paks.*



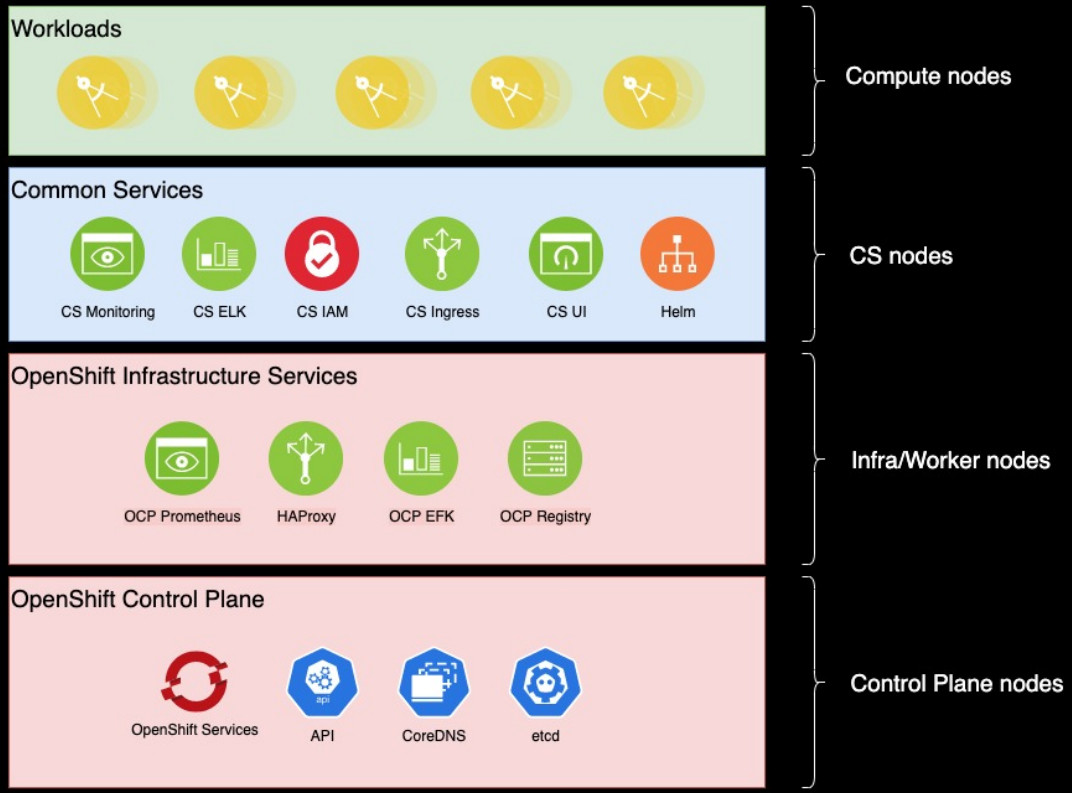

Extends Openshift “Must-gather”
Customized by Cloud Pak
https://docs.openshift.com/container-platform/4.3/support/gathering-cluster-data.html

# Cloud Pak Common Services

Common services deploy to dedicated nodes

Cloud Pak workloads on worker nodes

Potential overlap with OpenShift platform services, but useful when you don't want to expose them to end users



# Cloud Pak Common Services

## Sizing

Sizes given as a base recommendation

Some services may not be required

| | CPU | Memory | Disk space |
|---|---|---|---|
| **Common Services Total** | 8 cores | 32 Gb | 100 Gb |

| Service Name | Daemonset (values are per container) | CPU Request | CPU Limit | Memory Request | Memory Limit | Persistent Volume (value is default) |
|---|---|---|---|---|---|---|
| Audit Logging | | 150 | 300 | 300 | 750 | |
| | audit-logging-fluentd-ds | 25 | 300 | 100 | 400 | |
| Catalog UI | | 450 | 450 | 556 | 556 | |
| Certificate Manager | | 410 | 2020 | 1250 | 2090 | |
| Common Web UI | | 10 | 40 | 25 | 150 | |
| | common-web-ui | 300 | 300 | 256 | 256 | |
| Helm API | | 700 | 700 | 912 | 912 | |
| Helm Repo | | 250 | 250 | 768 | 768 | |
| IAM | | 10m | 25m | 80MiB | 320MiB | |
| Ingress NGINX | | 70 | 250 | 214 | 640 | |
| Installer<br><br>(IBM Common Service Operator<br>and<br>Operand Deployment Lifecycle Manager) | | 5 * 200m | 4 * 500m + 800m | 5 * 200MiB | 6 * 512MiB | |
| Licensing | | 200 | 500 | 356 | 712 | |
| Logging | | No limit specified | No limit specified | 10176 | 10560 | 10GiB |
| | logging-elk-filebeat-ds | No limit specified | No limit specified | 64 | 256 | |
| Management ingress | | 50 | 200 | 300 | 512 | |
| Metering | | 310 | 2020 | 537 | 3624 | |
| Mongo DB (single replica)<br>**Note:** MongoDB is a stateful set; by default, three replicas are deployed. | | Not applicable | Not applicable | 5.25GB | 5.25GB | 20GiB |
| Monitoring Exporters | | 30 | 314 | 64 | 768 | |
| | ibm-monitoring-nodeexporter | No limit specified | No limit specified | No limit specified | No limit specified | |
| Monitoring Grafana | | 820 | 2050 | 1088 | 2560 | |
| Monitoring Prometheus Ext | | 340 | 475 | 1188 | 1050 | |
| Platform API | | 850 | 1000 | 1018 | 1018 | |
| System Healthcheck | | 110 | 1060 | 160 | 1536 | |

# Questions?