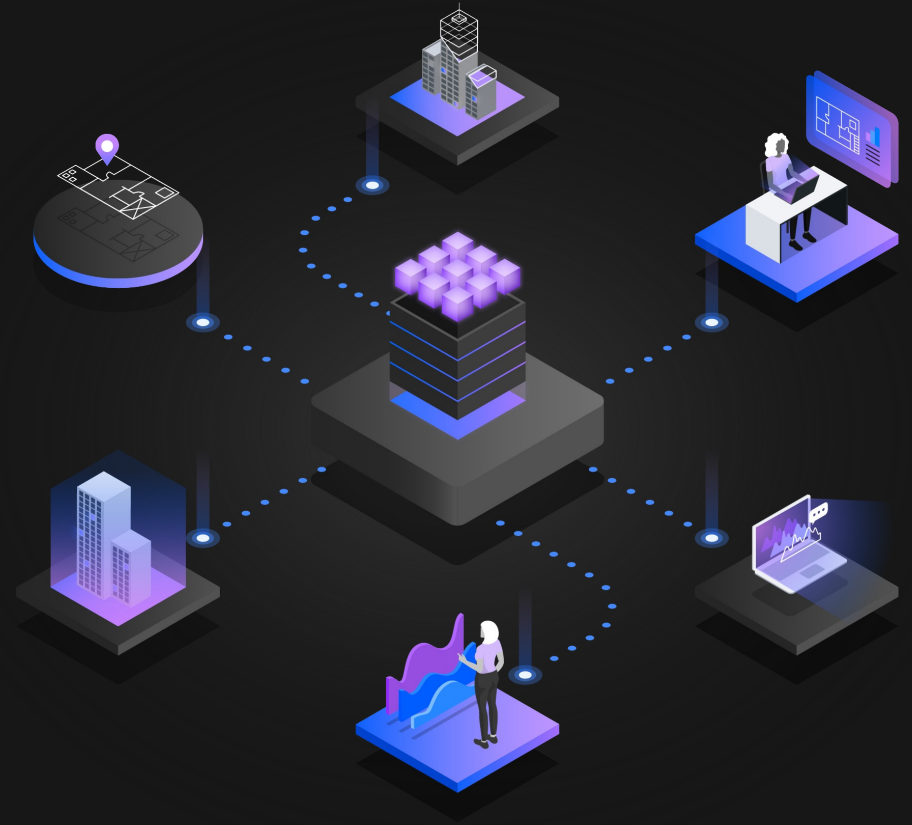


TRIRIGA Application Suite

IBM TRIRIGA Product Management

December 2022



Please note

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

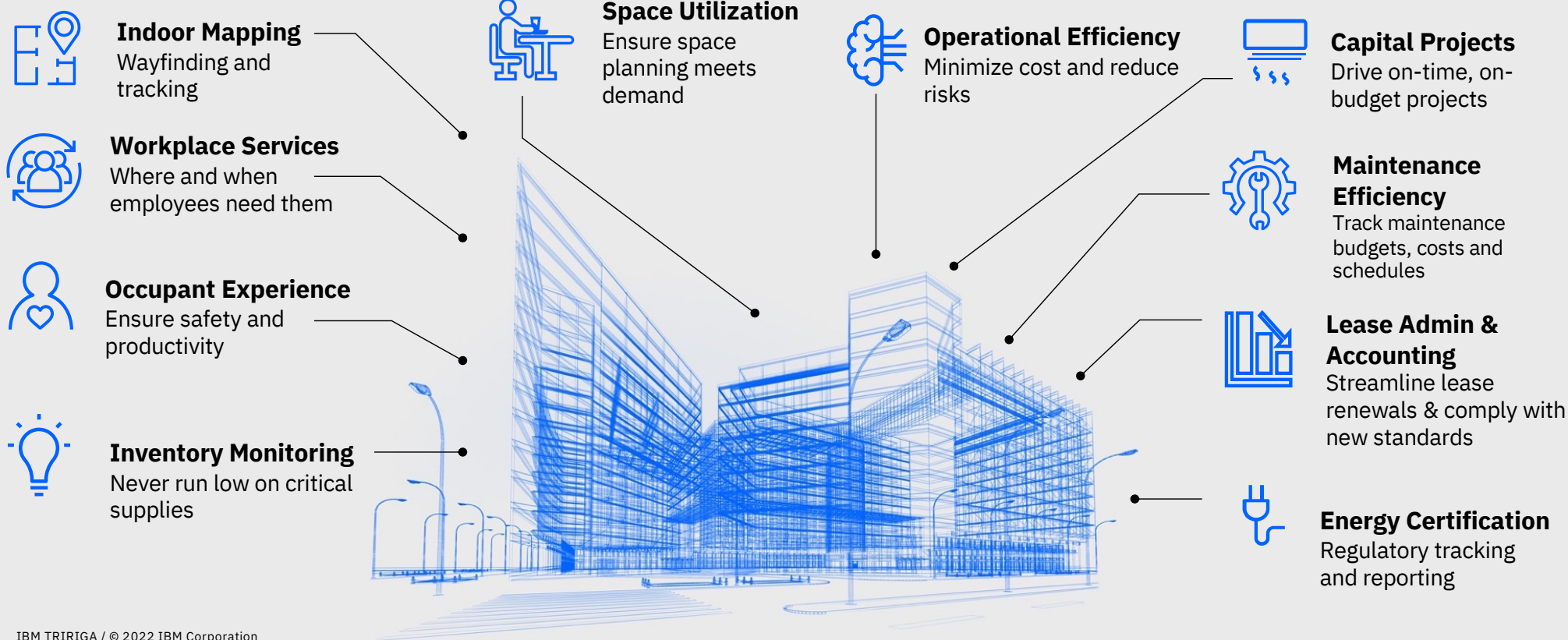
Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.

The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract.

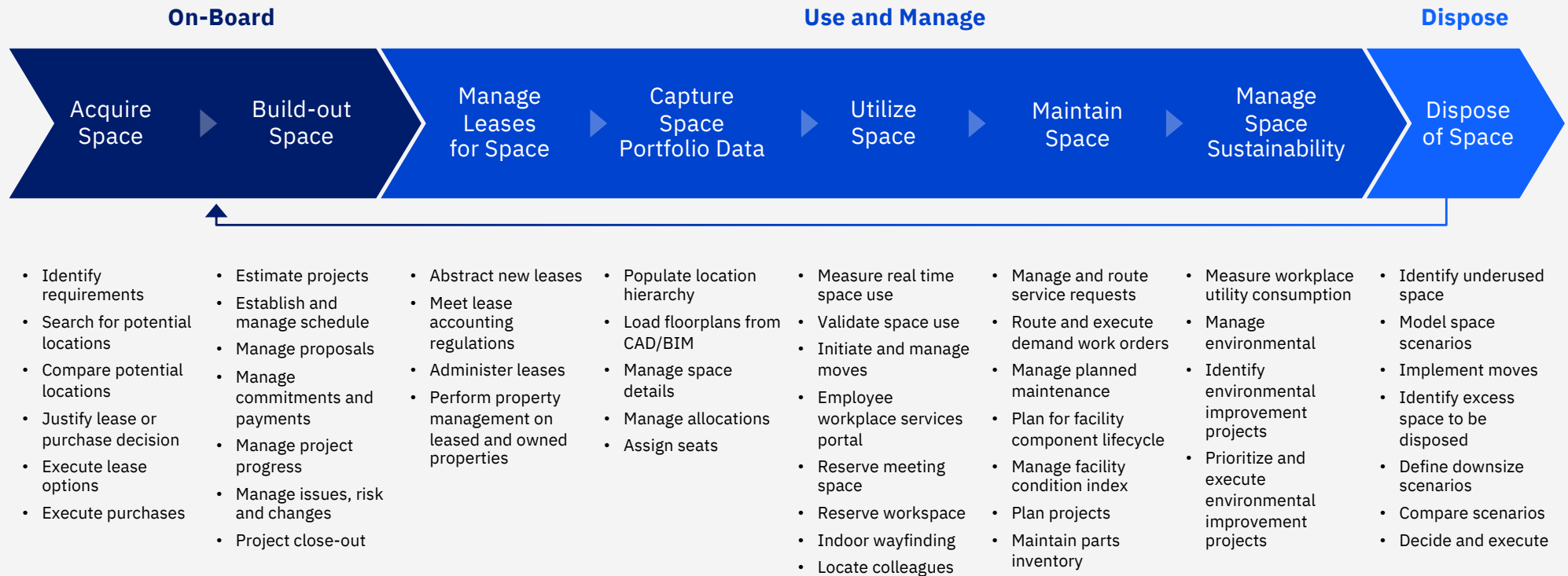
The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

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TRIRIGA enables **productive working environments** and **drives greater efficiency** across all Facilities and Real Estate domains



TRIRIGA manages the workplace through its lifecycle



There are three options for licensing and deploying TRIRIGA's suite of applications



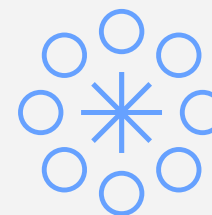
On Premise

Enterprises can continue to deploy On Premise running TRIRIGA on their own servers



SaaS

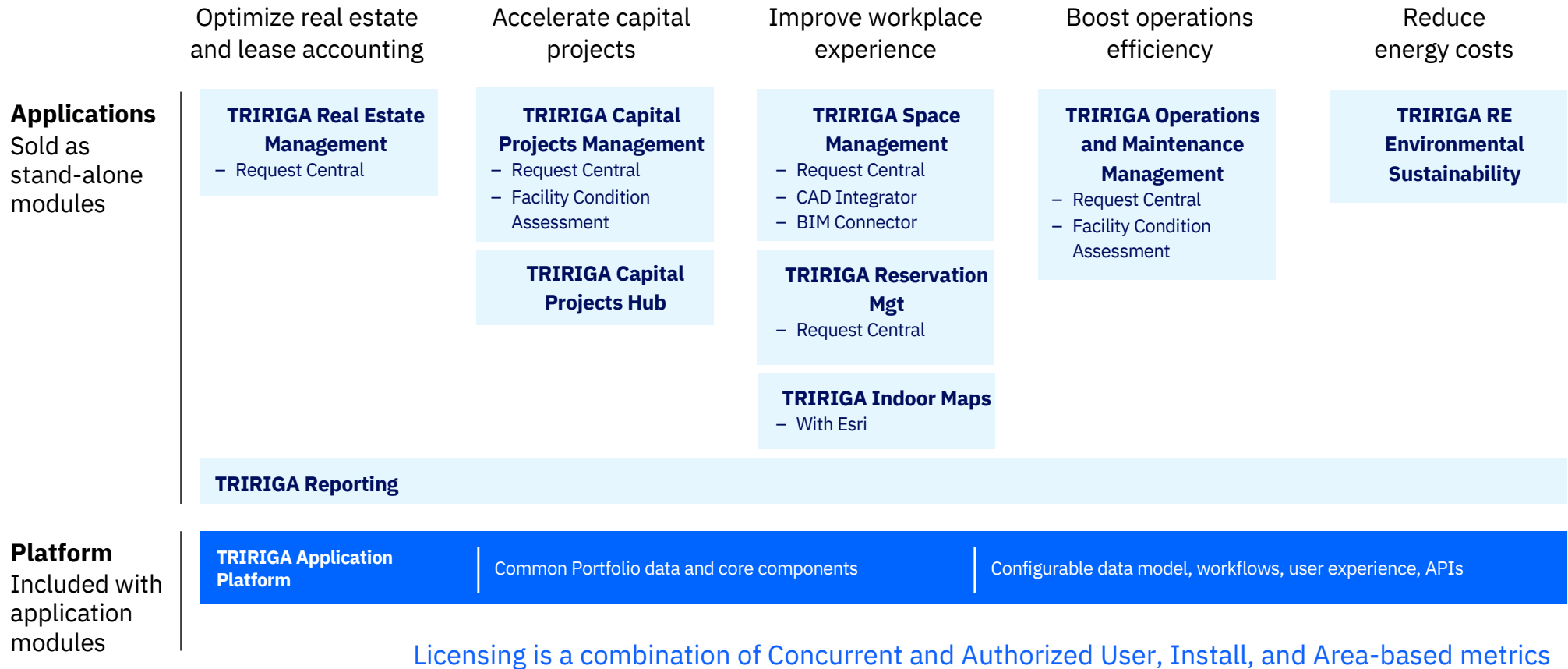
SaaS will remain an option running on IBM Cloud



Application Suite

IBM provides a new flexible deployment and consumption model through the TRIRIGA Application Suite

On-premise licensing model offers TRIRIGA through stand-alone modules

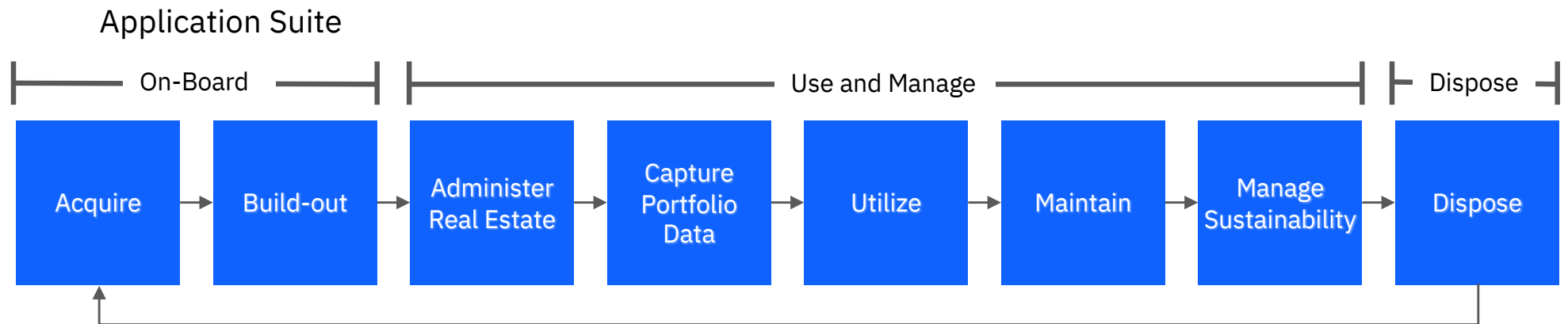
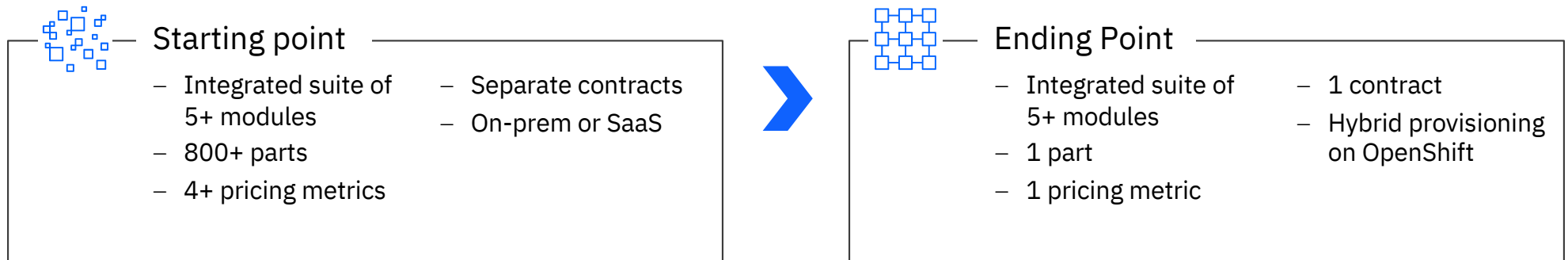


IBM TRIRIGA SaaS Licensing Model

User has entitlement to use all apps/components in assigned tier

	Workplace Experience	Space Management	Lease Administration & Accounting	Operations and Maintenance Management	Capital Projects Management	RE Environmental Sustainability
No-charge	• Service Requests	• Service Requests	• Service Requests	• Service Requests	• Service Requests	• Service Requests
Self-Service Authorized User	• Locate, • News • Room Reservations • Desk Reservations • Room Panel	• Move Requests	• RE Requests	• Service Requests	• Product Requests	
Approvals & Reporting Authorized User		• Self-Service + • Read-only access • Basic reporting • Approvals • Performance Metrics	• Self-Service + • Read-only access • Basic reporting • Approvals • Performance Metrics	• Self-Service + • Read-only access • Basic reporting • Approvals • Performance Metrics	• Self-Service + • Read-only access • Basic reporting • Approvals • Performance Metrics	• Self-Service + • Read-only access • Basic reporting • Approvals • Performance Metrics
Field Services Authorized and Concurrent User		• Self-Service + • Move/Reserve tasks • Floor Plan reports • Space Assessment	• Self-Service + • Contract requests	• Self-Service + • Work Task execution • Contact Center	• Self-Service + • Vendor bid response • Change requests • Project tasks	• Self-Service +
Enterprise User Authorized and Concurrent User Occasional Authorized User		• Self-Service + • Space Planning • Drawing/Model mgt • Move Management • Reserve coordination • Facility Project mgt • Strategic Planning • Performance Metrics	• Self-Service + • RE Lease Admin • AR Tenant tracking • Payment Processing • Create Journal Entries • Advanced scenarios • Transaction Management • Portfolio Planning • Performance Metrics	• Self-Service + • FCA Inspections • O&M Management • Model management • Asset Lease Admin • Facility Project Mgt • Facility Condition Assessment • Performance Metrics	• Self-Service + • Cost management • Schedule management • Purchase order approvals • Procurement mgt • Program management • Facility Condition Assessment • Performance Metrics	• Self-Service + • Energy/waste log management • Utility Invoice tracking • Opportunity Analysis • Energy Star Benchmarking • Work Request from SNMP Alerts • Energy Metrics
	Sys Admin / Application Builder (with Authorized User)					
Premium licenses	Con. for Indoor Maps (\$/25k Sq Ft)				Projects Hub (Auth/Conc)	
	TRIRIGA Building Insights (\$/25k Sq Ft)					
	TRIRIGA Reporting (\$/Install)					

TRIRIGA Application Suite significantly simplifies a complex portfolio

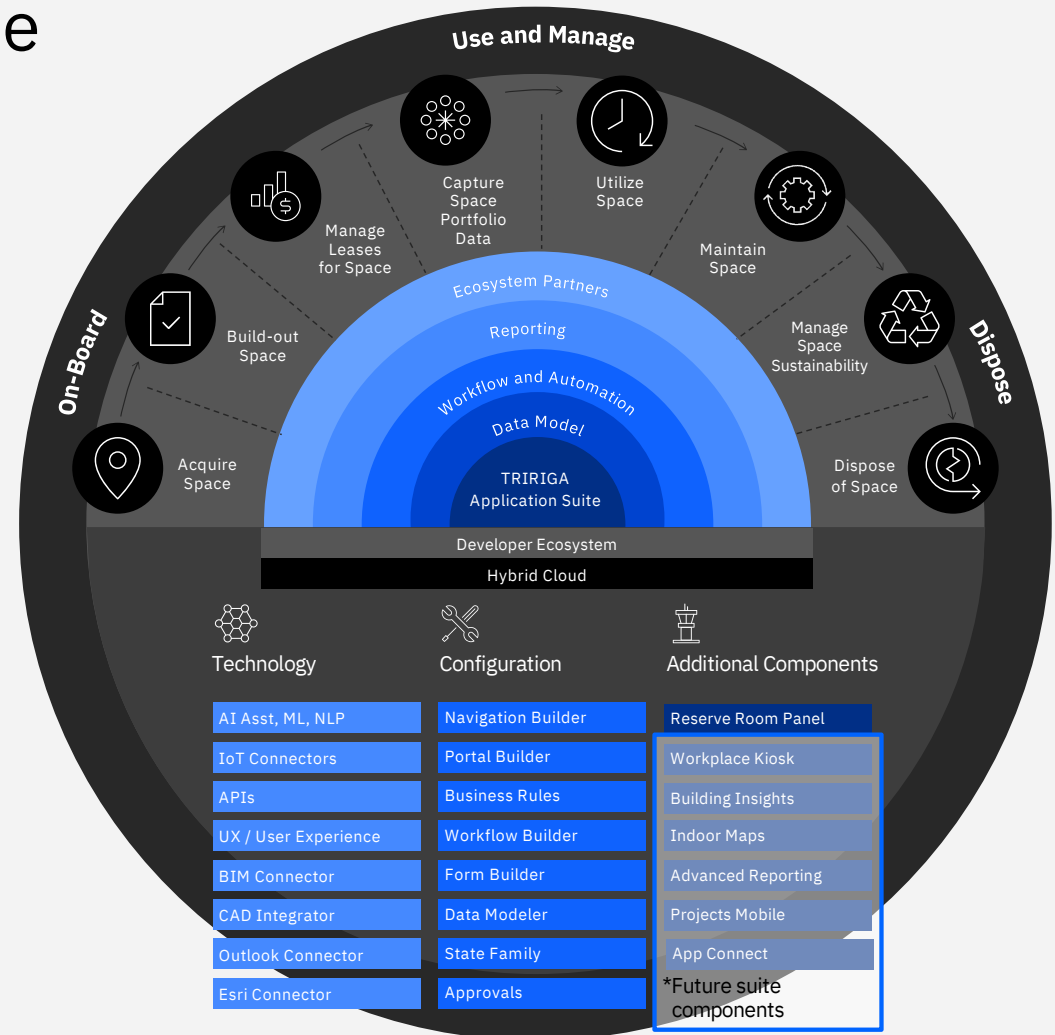


IBM TRIRIGA Application Suite

Powered by Integration and Automation

TRIRIGA Application Suite(TAS)

- Integrates data and automates processes through the complex lifecycle of the workplace.
- Simplifies licensing through an all-new AppPoints licensing model
- Supports hybrid cloud deployment with an OpenShift containerized architecture



Simplified licensing and usage

TAS AppPoints can be used across suite

Entitlement covers the entire suite. AppPoints are expended based primarily upon different authorized user types

1. Single license

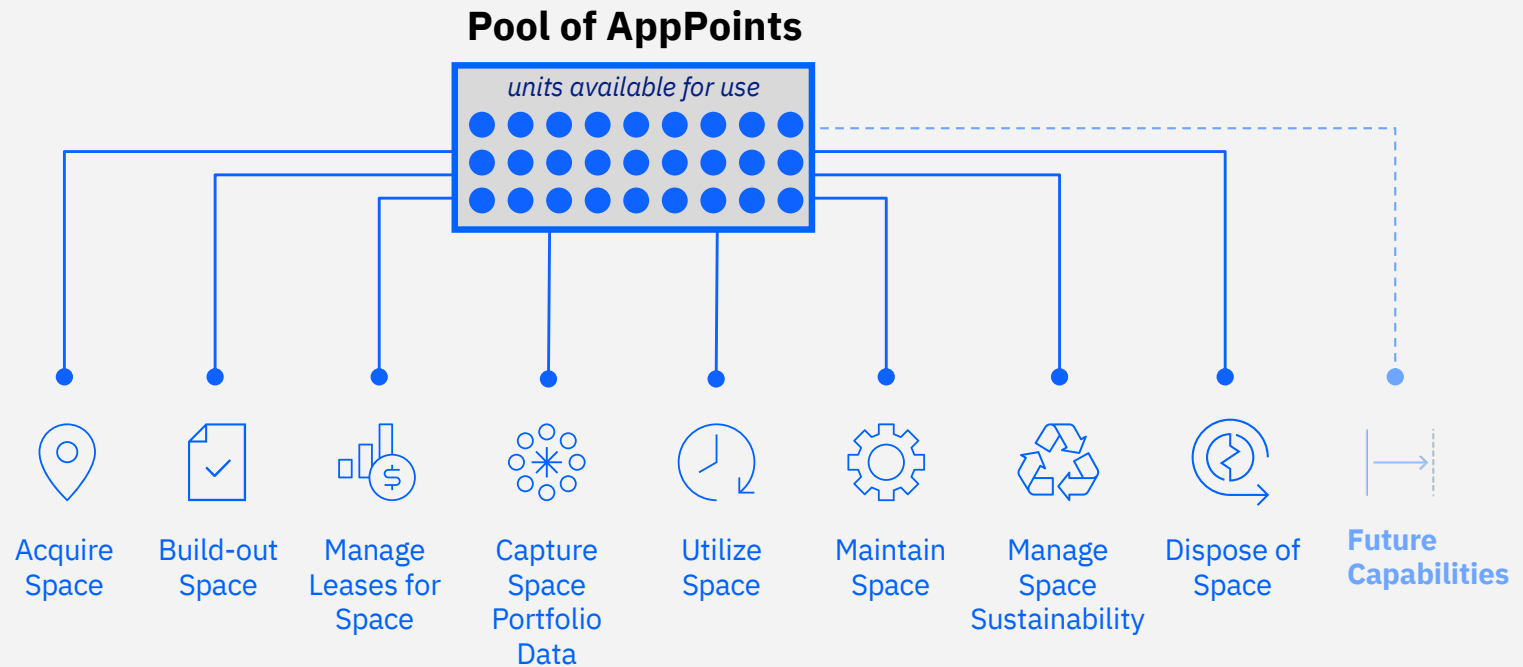
One entitlement to entire Suite

2. Flexible consumption

AppPoints can be allocated to different authorized user tiers

3. Simplified usage

Access applications without additional provisioning



Now available

TAS AppPoint Consumption Tiers

User has entitlement to use all apps/components in assigned tier	Acquire Space	Build-out Space	Manage Leases for Space	Capture Space Portfolio Data	Utilize Space	Maintain Space	Manage Space Sustainability	Dispose of Space
Self-Service No-charge						• Service Requests		
Self-Service Limited Pack 2 AppPoints / pack of 500 users	<div><div></div><div></div></div> <ul style="list-style-type: none">• SS No-charge +• News• RE requests	<ul style="list-style-type: none">• SS No-charge +• News• Project requests	<ul style="list-style-type: none">• SS No-charge +• News• RE requests		<ul style="list-style-type: none">• SS No-charge +• Locate• News• Move requests	<ul style="list-style-type: none">• SS No-charge +• News• Product requests		<ul style="list-style-type: none">• SS No-charge +• News• RE requests
Self-Service Base Pack 10 AppPoints / pack of 500 users	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>				<ul style="list-style-type: none">• SS Limited +• Room / Desk Reservations			
Limited 2 AppPoints / authorized user	<div><div></div><div></div></div> <ul style="list-style-type: none">• SS Base +• Reports, metrics• Approvals• Contract requests• Offline Forms	<ul style="list-style-type: none">• SS Base +• Reports, metrics• Approvals• Vendor bid resp• Change requests• Project tasks• Offline Forms	<ul style="list-style-type: none">• SS Base +• Reports, metrics• Approvals• Contract requests• Offline Forms	<ul style="list-style-type: none">• SS Base +• Floor Plan reports	<ul style="list-style-type: none">• SS Base +• Reports, metrics• Approvals• Move/Reserve tasks• Space Assessment• Offline Forms	<ul style="list-style-type: none">• SS Base +• Reports, metrics• Approvals• Work Task Exec• Contact Center• Offline Forms	<ul style="list-style-type: none">• SS Base +• Reports, metrics• Approvals• Offline Forms	<ul style="list-style-type: none">• SS Base +• Reports, metrics• Approvals• Contract requests• Offline Forms
Base 5 AppPoints / authorized user	<div><div></div><div></div><div></div><div></div><div></div></div> <ul style="list-style-type: none">• Limited Tier +• Advanced scenarios• Transaction Management• Portfolio Planning	<ul style="list-style-type: none">• Limited Tier +• Cost Mgt• Schedule Mgt• Purchase order approvals• Procurement mgt• Program Mgt• Facility Cond Assessment	<ul style="list-style-type: none">• Limited Tier +• RE Lease Admin• AR Tenant tracking• Payment Processing• Generate Journal Entries	<ul style="list-style-type: none">• Limited Tier +• Drawing/Model mgt	<ul style="list-style-type: none">• Limited Tier +• WX Ex Base +• Space Planning• Move Mgt• Reserve coordination• Facility Project Mgt• Strategic Planning	<ul style="list-style-type: none">• Limited Tier +• FCA Inspections• O&M Mgt• Model Mgt• Asset Lease Admin• Facility Project Mgt• Facility Cond Assessment	<ul style="list-style-type: none">• Limited Tier +• Energy/waste log management• Utility Invoice tracking• Opportunity Analysis• Energy Star BM• Work Req from SNMP Alerts	<ul style="list-style-type: none">• Limited Tier +• Portfolio Planning
Configure 10 AppPoints / authorized user	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>				<ul style="list-style-type: none">• Base Tier +• Configuration Tools			
Additional components								
Reserve Room Panel (2 AppPoints / 100 rooms)		✦ Building Insights (x AP* / 25k sq ft)				✦ Advanced Reporting (x AP* / instance)		
✦ Indoor Maps (x AP* / 25k sq ft)						✦ Projects Mobile (+x AP* / authorized user)		
✦ components planned to be included in future versions of TAS								
* AppPoint values yet to be determined								

License migration to TRIRIGA Application Suite



On Premise



SaaS

Subscription License Upgrade

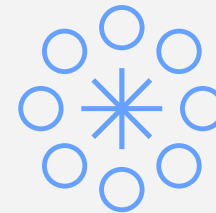
Or

Perpetual License Trade-up

Subscription License (new)

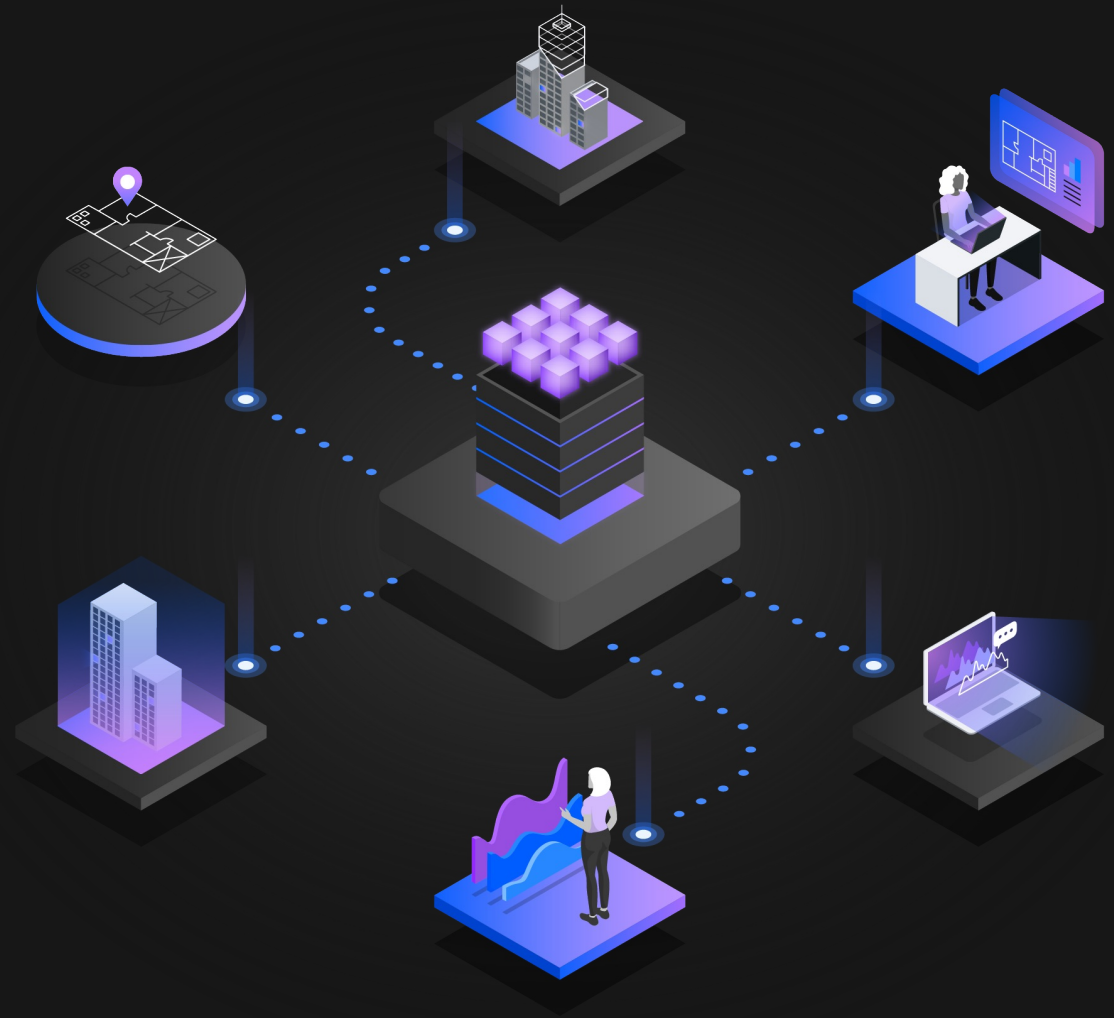
Or

Perpetual License (new)



Application Suite

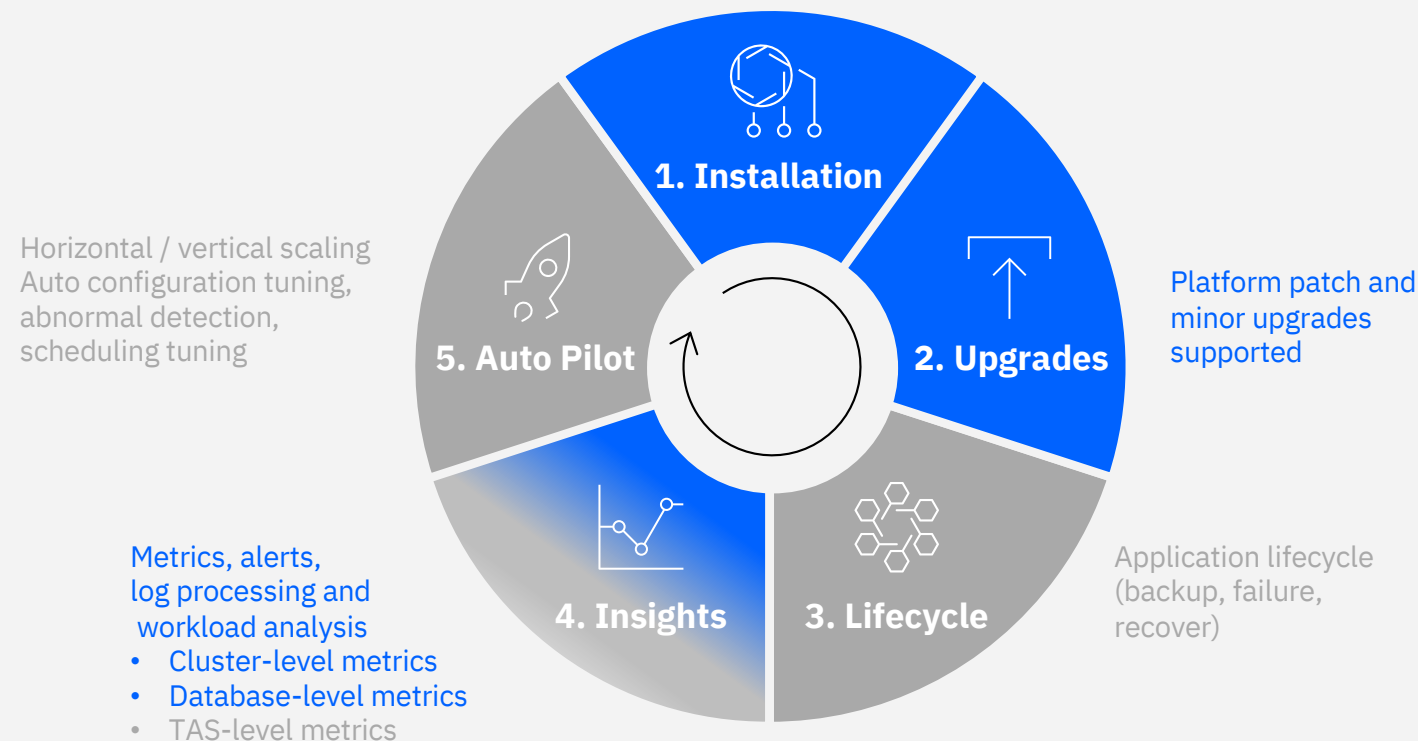
TAS Architecture






OpenShift provides a new containerized model for deploying and maintaining TRIRIGA

OpenShift functionality will be phased into TAS over time

Install
Automated provisioning & configuration management



-  OpenShift benefit in TAS 11.3
-  Partial OpenShift benefit in TAS 11.3
-  Future OpenShift benefit in TAS

Manage Deployment Lifecycle through a single pane of glass

TRIRIGA Application Suite 11.3 eases deployment, monitoring, tuning, and scaling

Now available

Deployment and Upgrades

- OpenShift operator deploys preconfigured TRIRIGA containers onto OpenShift cluster
- OpenShift operator deploys upgrades of new TRIRIGA platform versions and fix packs

Monitoring

- TRIRIGA admin console enables monitoring of application system performance
- (BETA) TRIRIGA admin APIs expose access to application system status and attributes
- Cloud Pak for Data management console enables monitoring of database performance
- OpenShift console enables monitoring of cluster performance

Tuning

- TRIRIGA admin console enables manual tuning of select application system performance attributes
- (BETA) TRIRIGA admin APIs expose access to TRIRIGA admin console actions such as agent restarting, cache clearing, and triggering of cleanup processes
- Cloud Pak for Data management console enables monitoring of database performance
- OpenShift console enables monitoring of cluster performance

Scaling

- TRIRIGA admin console enables agent configuration and database thread management
- Cloud Pak for Data management console enables database resource management
- OpenShift console enables manual cluster configuration, including allocation and configuration of additional TRIRIGA pods for horizontal scaling of system capacity



IBM TRIRIGA Application Suite

11.3.0 provided by IBM

Install

Latest version

11.3.0

Capability level

- ☒ Basic Install
- ☒ Seamless Upgrades
- ☐ Full Lifecycle
- ☐ Deep Insights
- ☐ Auto Pilot

Source

ibm-operator-catalog

Provider

IBM

IBM® TRIRIGA Application Suite

Introduction

The TRIRIGA Application Suite Kubernetes Operator manages TRIRIGA

Details

TRIRIGA Application Suite is an integrated workplace management system for real estate and facilities applications, with flexibility to start with an agent and expand into other areas. This release offers a simplified, suite-based installation and a single point of access to the full suite of real estate and facilities management applications.

Prerequisites

OpenShift operators automate orchestration of system monitoring, tuning, and scaling

Phased delivery across multiple future releases

Deployment and upgrades

- OpenShift operator to orchestrate backup of database prior to upgrade

Monitoring

- New centralized TRIRIGA admin console to provide optimized access to application system status and performance across multiple servers/pods
- Fully-documented admin APIs enable consolidation of TRIRIGA system status into other systems
- OpenShift console to enable monitoring of TRIRIGA system status across full cluster

Tuning

- New centralized TRIRIGA admin console to provide optimized access to TRIRIGA system admin actions
- Fully-documented admin APIs enable exposure of TRIRIGA system admin actions into other systems
- Manual tuning of TRIRIGA system across full OpenShift cluster
- Automated, operator-based tuning of system attributes across full OpenShift cluster

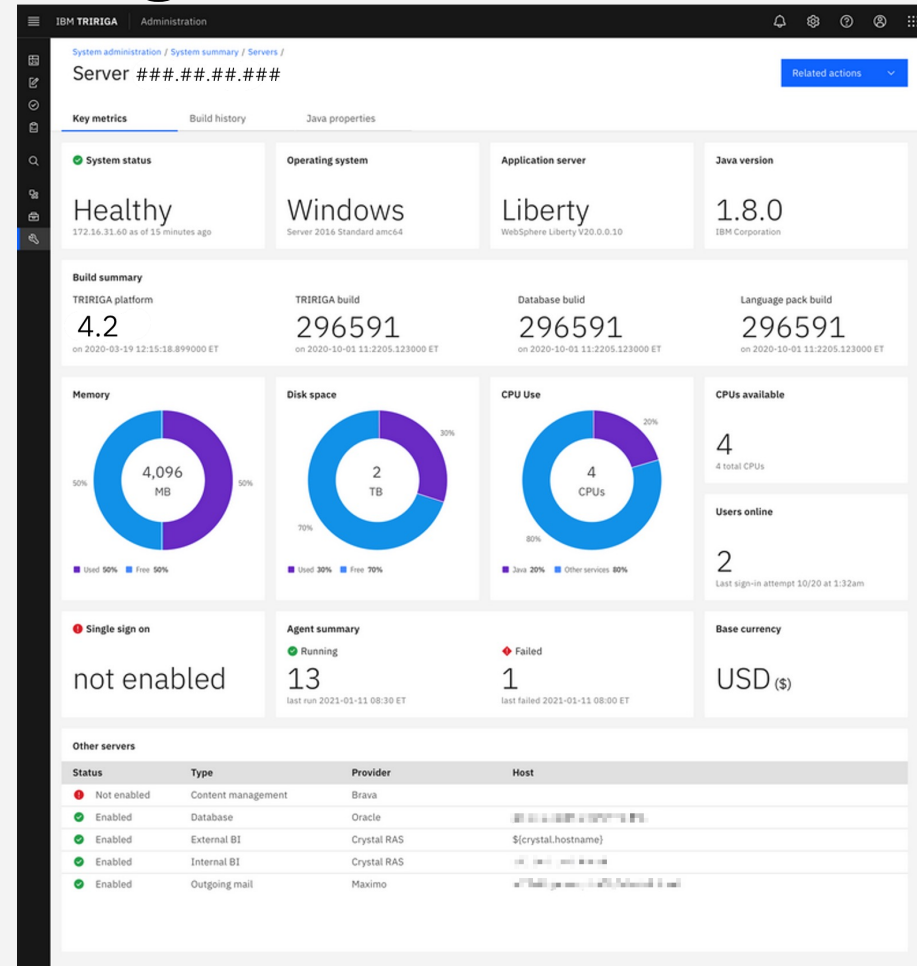
Scaling

- New centralized TRIRIGA admin console to optimize user interface for establishing additional TRIRIGA agents to meet performance needs
- Fully-documented admin APIs enable orchestration of multiple agents
- OpenShift operator to orchestrate deployment and configuration of appropriate TRIRIGA agents on additional pods as needed to meet performance needs
- OpenShift operator to enable scheduled, dynamic scaling of system resources to meet planned shifts in resource needs

Automated orchestration

- OpenShift operators to enable automated tuning and scaling from information gathered through centralized, cross-cluster monitoring of system performance

IBM TRIRIGA / © 2022 IBM Corporation



TAS Operator is accessible through the OpenShift OperatorHub

The screenshot displays the OpenShift OperatorHub interface. On the left is a dark sidebar with navigation links: Administrator, Home, Operators (expanded), OperatorHub (selected), Installed Operators, Workloads, Networking, Storage, Builds, Monitoring, and Compute. The main content area has a top header with the Red Hat OpenShift Container Platform logo and a project dropdown set to 'openshift-marketplace'. Below this is the 'OperatorHub' title and a descriptive paragraph about discovering and installing operators. A category filter on the left lists various domains like AI/Machine Learning, Application Runtime, Big Data, etc. A search bar at the top right of the results area contains the text 'tririga'. One result is displayed: the 'TRIRIGA Application Suite' provided by IBM, with a description stating that the operator manages TRIRIGA Application Suite instances.

Project: openshift-marketplace


OperatorHub

Discover Operators from the Kubernetes community and Red Hat partners, curated by Red Hat. You can purchase commercial software through [Red Hat Marketplace](#). You can install Operators on your clusters to provide optional add-ons and shared services to your developers. After installation, the Operator capabilities will appear in the [Developer Catalog](#) providing a self-service experience.

All Items All Items

tririga 1 items

AI/Machine Learning
Application Runtime
Big Data
Cloud Provider
Database
Developer Tools
Development Tools
Drivers And Plugins
Integration & Delivery
Logging & Tracing
Modernization & Migration


TRIRIGA Application Suite
provided by IBM

The TRIRIGA Application Suite Operator manages TRIRIGA Application Suite instances

TAS Operator is used to install TRIRIGA

The screenshot displays the Red Hat OpenShift Container Platform console interface. On the left, a dark sidebar contains navigation links: Administrator, Home, Operators (selected), OperatorHub, Installed Operators, Workloads, Networking, Storage, Builds, Monitoring, and Compute. The main content area shows the 'TRIRIGA Application Suite' operator page, version 11.3.0, provided by IBM. A blue 'Install' button is prominent. Below the button, the 'Latest Version' is listed as 11.3.0. The 'Capability Level' section shows 'Basic Install' and 'Seamless Upgrades' as selected options, with 'Full Lifecycle', 'Deep Insights', and 'Auto Pilot' as unselected options. The 'Provider Type' is listed as 'TAS Operators' and the 'Provider' is 'IBM'. The right side of the page contains links for 'Introduction', 'Details', 'Prerequisites', 'Resources Required', and 'Installing'.

Red Hat OpenShift Container Platform

Administrator

Home

Operators

OperatorHub

Installed Operators

Workloads

Networking

Storage

Builds

Monitoring

Compute

Project: Oper

Discover Red Hat M installation

All Items

AI/Machi

Applicatio

Big Data

Cloud Pro

Database

Develop

Develop

Drivers A

Integratio

Logging &

Moderniz

TRIRIGA Application Suite

11.3.0 provided by IBM

Install

Latest Version

11.3.0

Capability Level

Basic Install

Seamless Upgrades

Full Lifecycle

Deep Insights

Auto Pilot

Provider Type

TAS Operators

Provider

IBM

Introduction

The TRIRIGA Application Suite Kubernetes Operator manages TRIRIGA Application Suite instances

Details

Various Details

Prerequisites

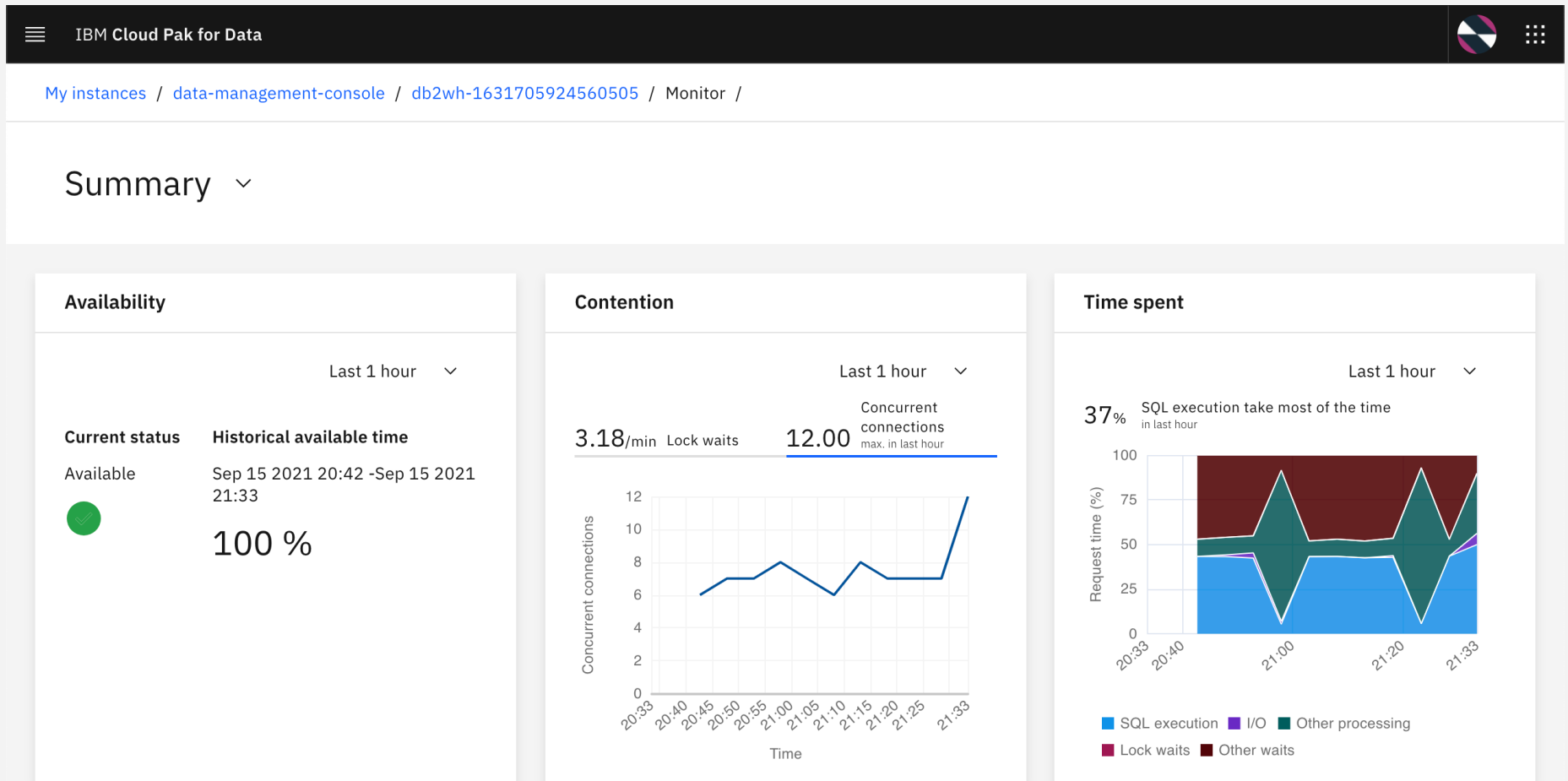
Various prerequisites

Resources Required

Various Resources Required

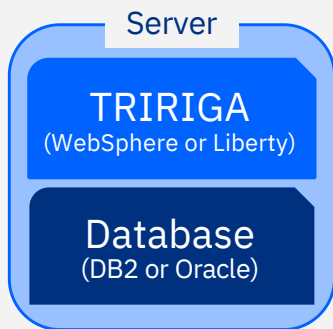
Installing

CP4D monitoring provides insights into Database Usage

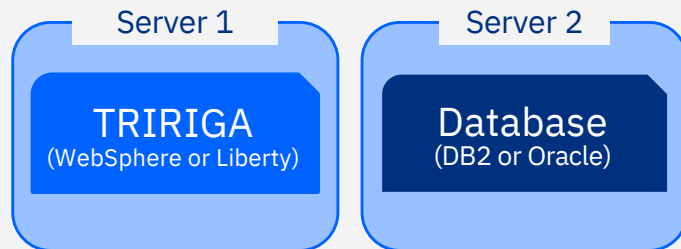


Traditionally, a TRIRIGA implementation is architected based on the size of the deployment

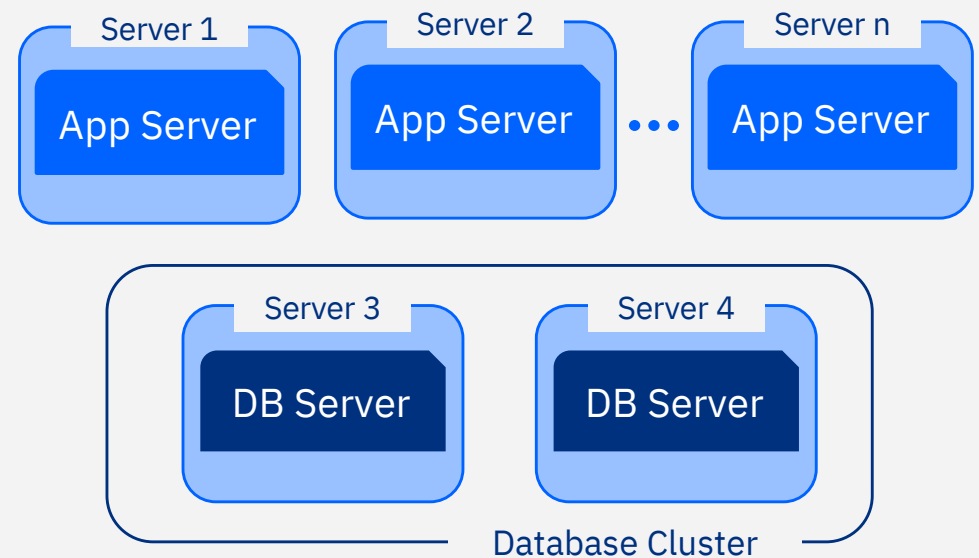
Small Deployment



Medium Deployment



Large Deployment

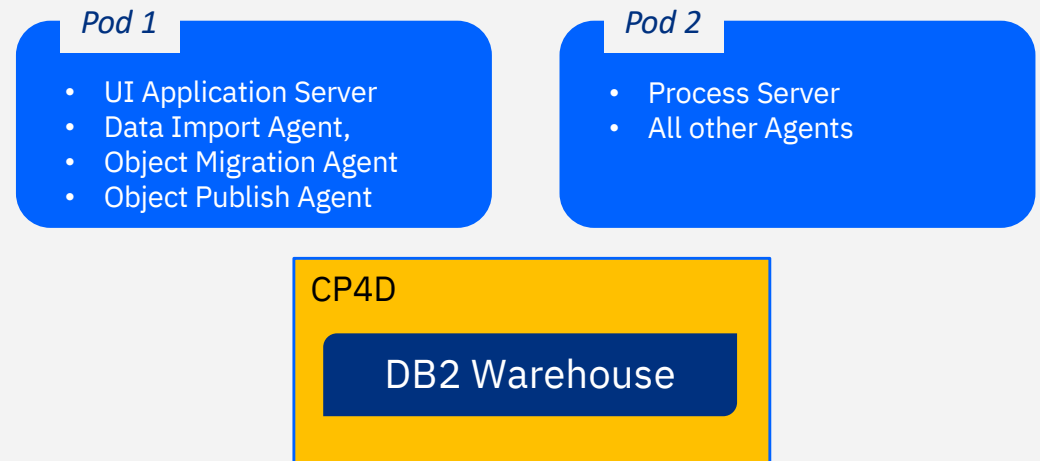


This moves to a new containerized architecture under TAS with OpenShift

Small Deployment (1 Pod)

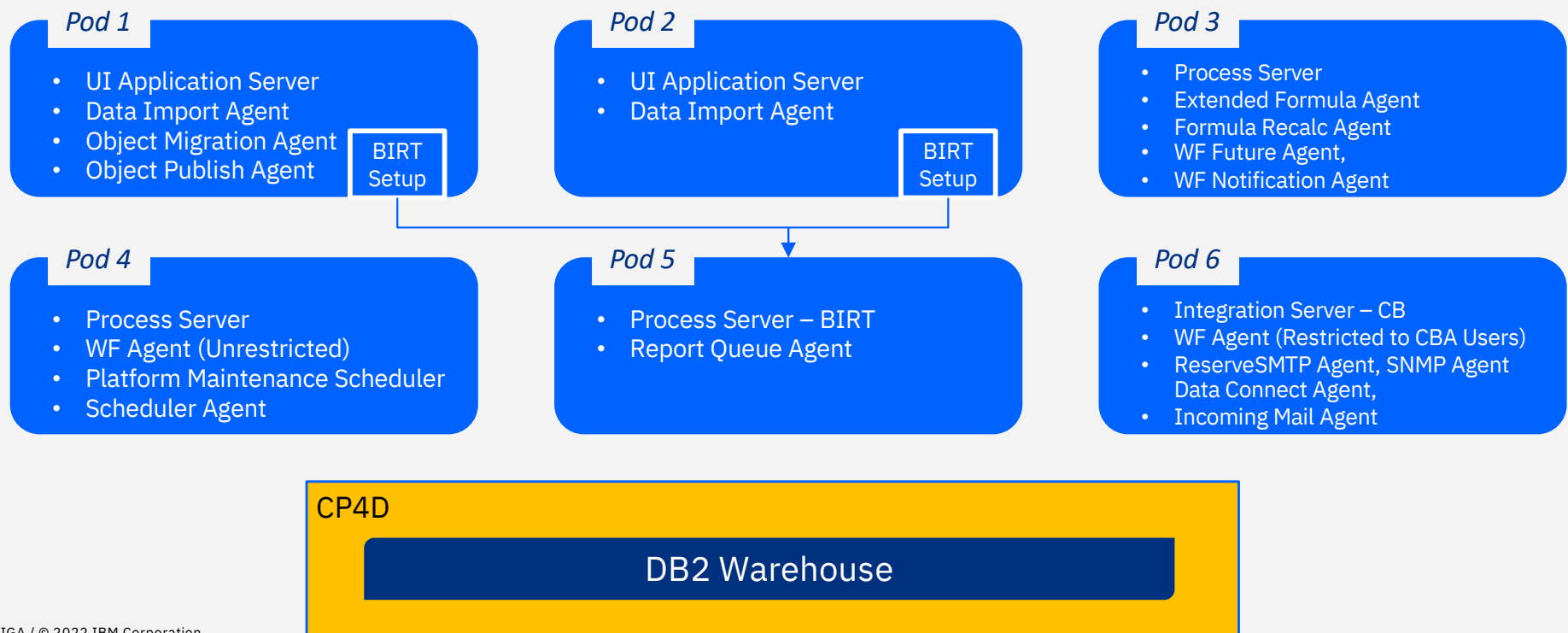


Medium Deployment (2 Pods)



Large TAS deployments have substantially greater complexity

Large Deployment (6 Pods)



TAS 11.3 provides more control over pod configuration to run additional workflow agents, as needed

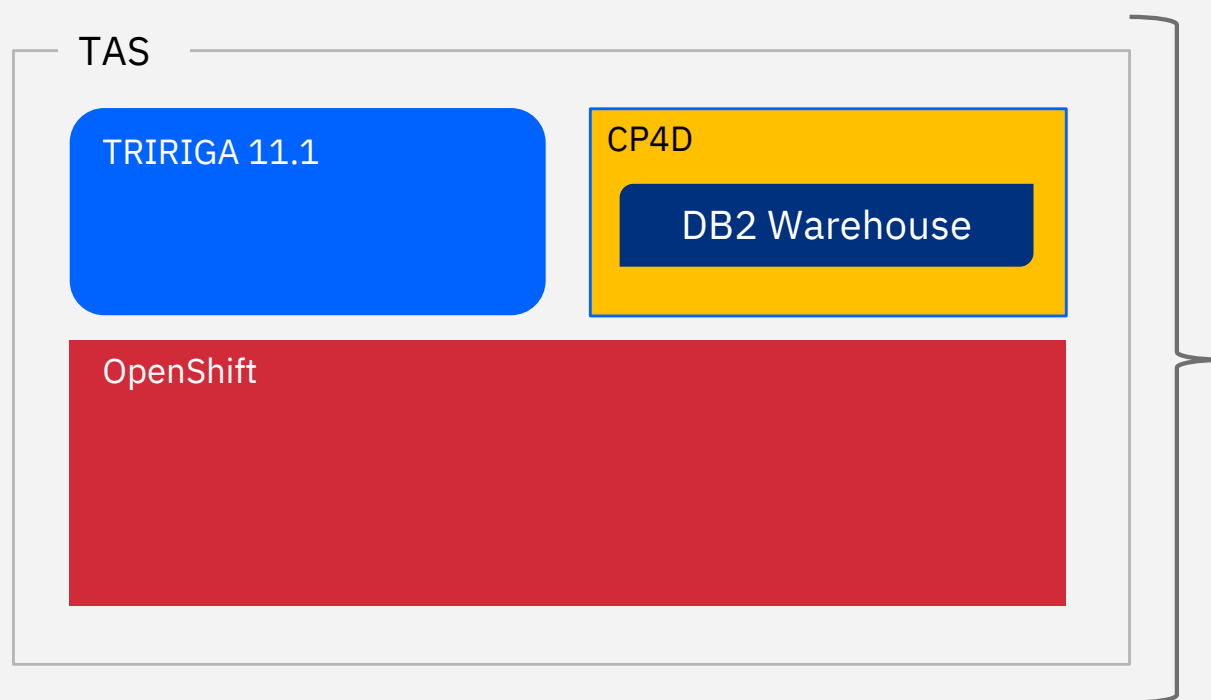
X-Large Deployment
(n Pods)



The plan in future releases is to also enable the ability to add additional pods for other agents (as supported)

TAS licensing provides entitlement for CloudPak for Data (including DB2) and OpenShift

Using CP4D and DB2 Warehouse

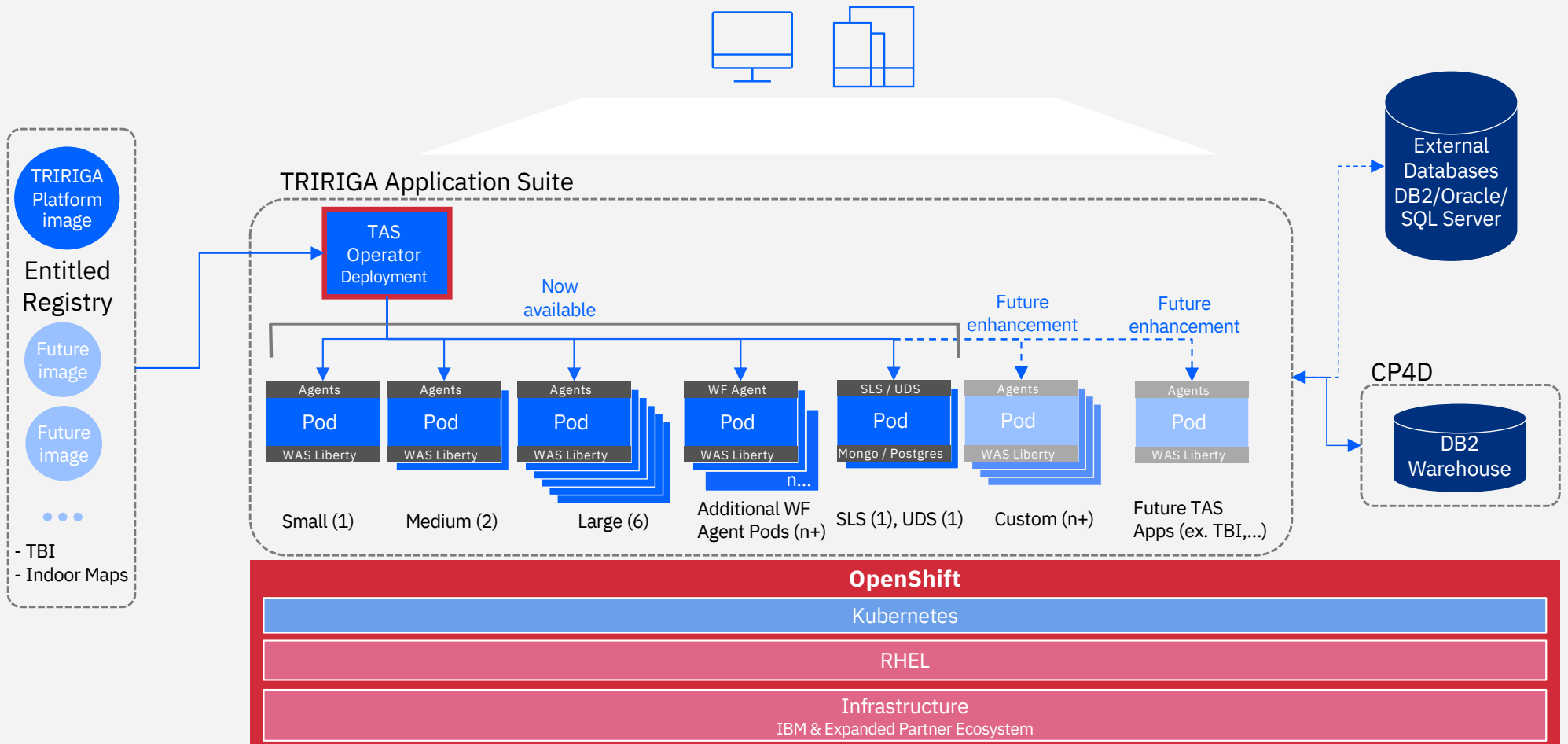


Using External Database



TRIRIGA Architecture on OpenShift

Now available

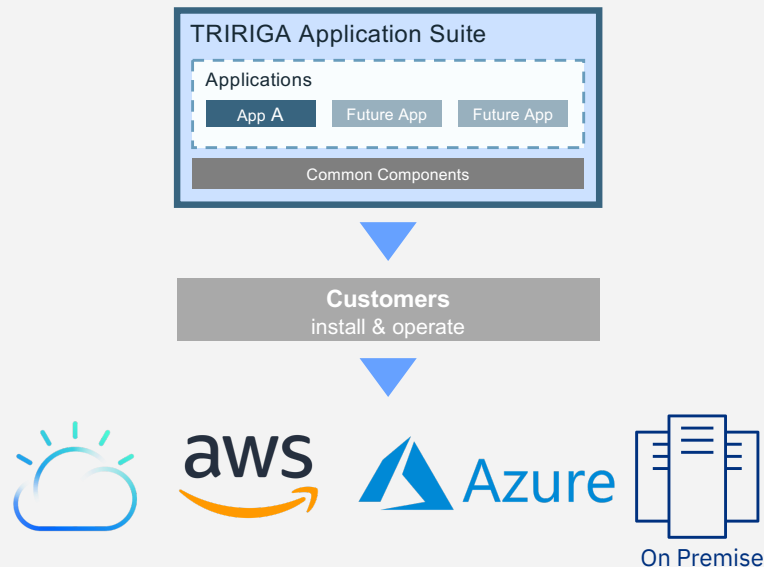


Two deployment options for maximum flexibility

With single entitlement to all applications available via Perpetual or Subscription Licenses

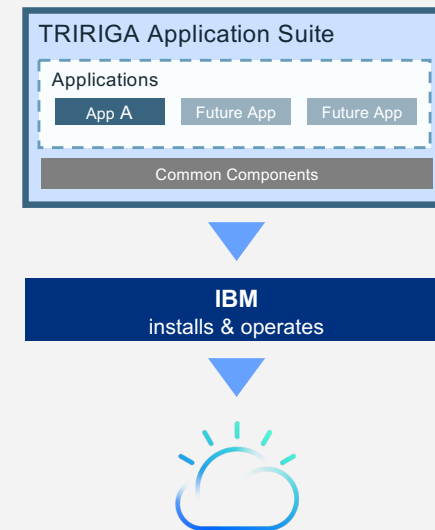
Managed by you

- Purchase software only
- Hosted in a cloud or environment of choice



Managed by IBM

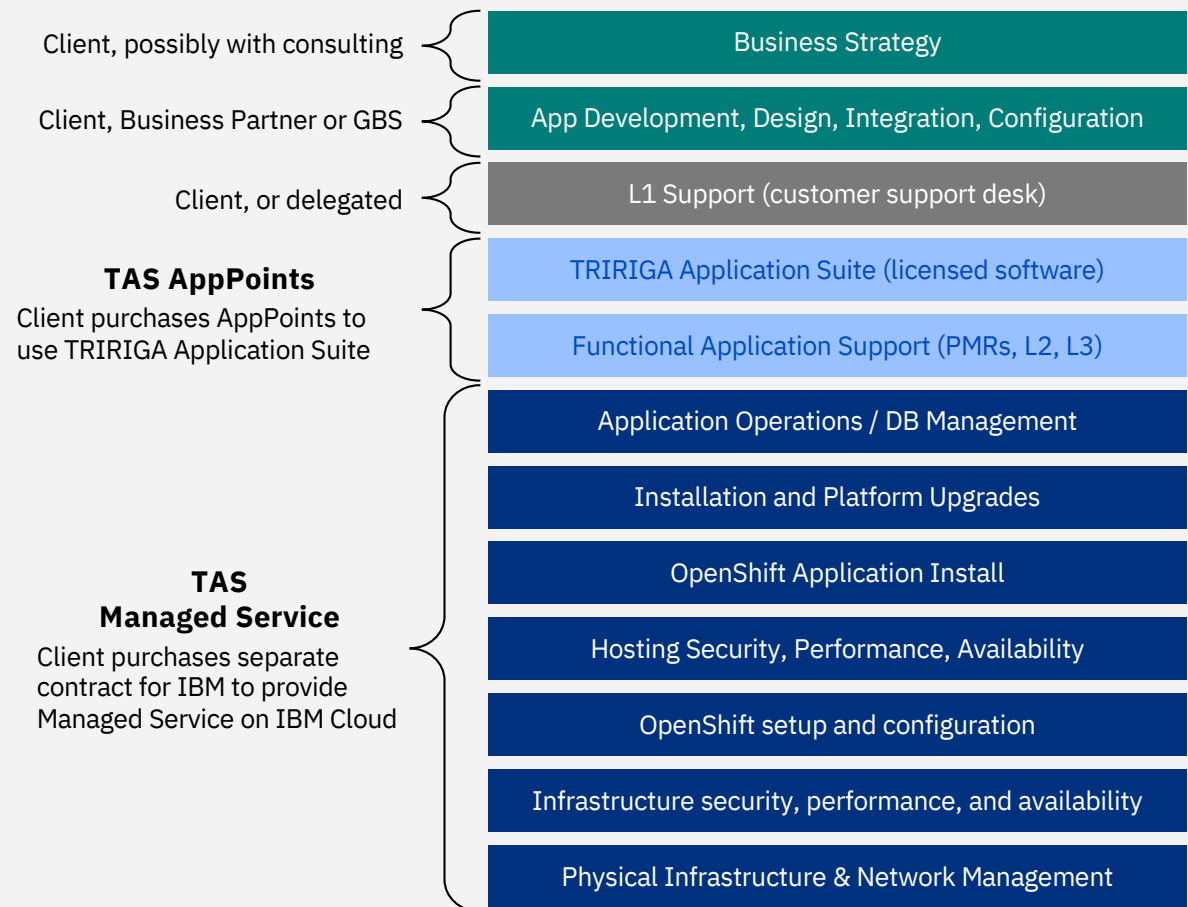
- Purchase software and hosting separately
- IBM's trusted team takes care of hosting



TAS Managed Service offers a high availability hosted environment managed for customers by IBM

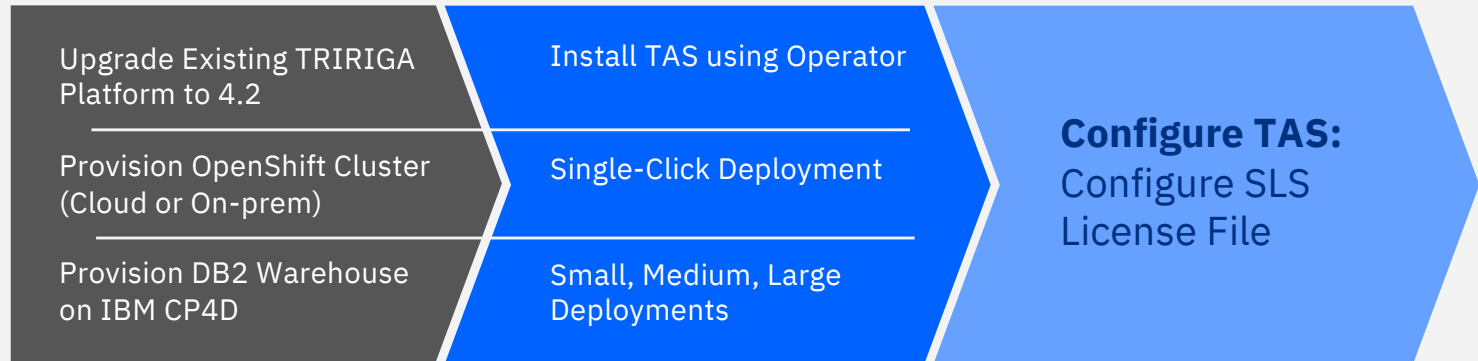
TAS Managed Service provides:

- **Provision:** Create instances in IBM Cloud with OpenShift Cluster
- **Installation:** Install TAS
- **Security/privacy/compliance**
- **Configuration:** Configure system, services & applications
- **Monitor:** Continuous monitoring of performance and security
- **Upgrade:** Patch fixes and upgrades
- **Backup & recovery:** Daily backup & DR support
- **Availability:** 99.9% Availability SLA



Technical migration to TAS

TRIRIGA 4.2 Platform to TAS Upgrade Path

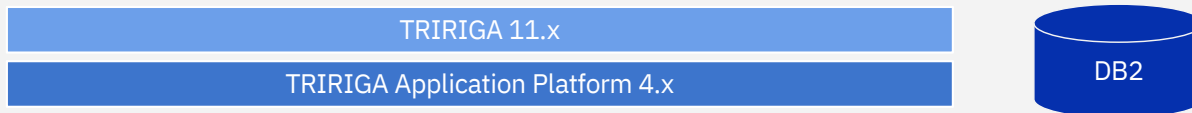


1. Upgrade Existing TRIRIGA to 4.2 platform (Outside of TAS)
2. Provision RedHat OpenShift Cluster (available on AWS, Azure, GCP, IBM Clouds, or On-Prem)
3. Provision DB2 Warehouse via IBM Cloud Pak For Data on OpenShift (OCP) (or DB2, Oracle or MSSQL outside of OCP)
 - Copy upgraded TRIRIGA 4.2 database into DB2 Warehouse
4. Install TAS Operator
 - Choose deployment size: Small, Medium, Large
 - Connect to database
5. Configure TAS
 - Get Host value from Admin Console and Get License File from LKC (License Key Centre)
 - Upload License File to Admin Console

Relationship of TAS and traditional TRIRIGA versioning

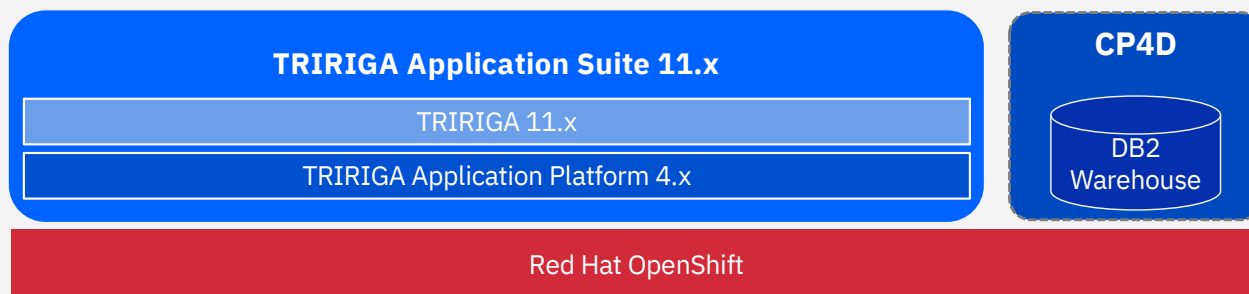
TRIRIGA traditional deployment

- TRIRIGA v11.x and
- TRIRIGA Application Platform v4.x



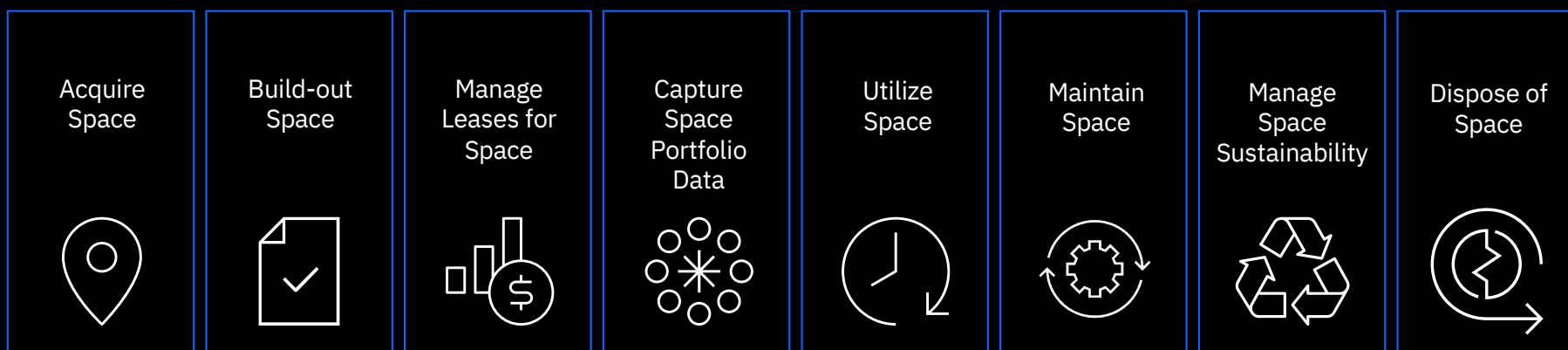
TRIRIGA Application Suite(TAS) v11.x contains

- TRIRIGA v11.x and
- TRIRIGA Application Platform v4.x



TRIRIGA Application Suite

Offers best of class capabilities to provide complete view of your real estate portfolio



IBM Cloud Pak for Data



Infrastructure Independent
Common Operating Environment



Private



Systems

Why TRIRIGA Application Suite?



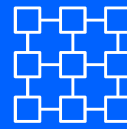
Single source of truth

TRIRIGA has the insights you need - all in an integrated solution.



Market leading

Named a leader in the 2020 IDC IWMS Marketscape, IBM is cited for innovation, functionality, flexibility and expertise.



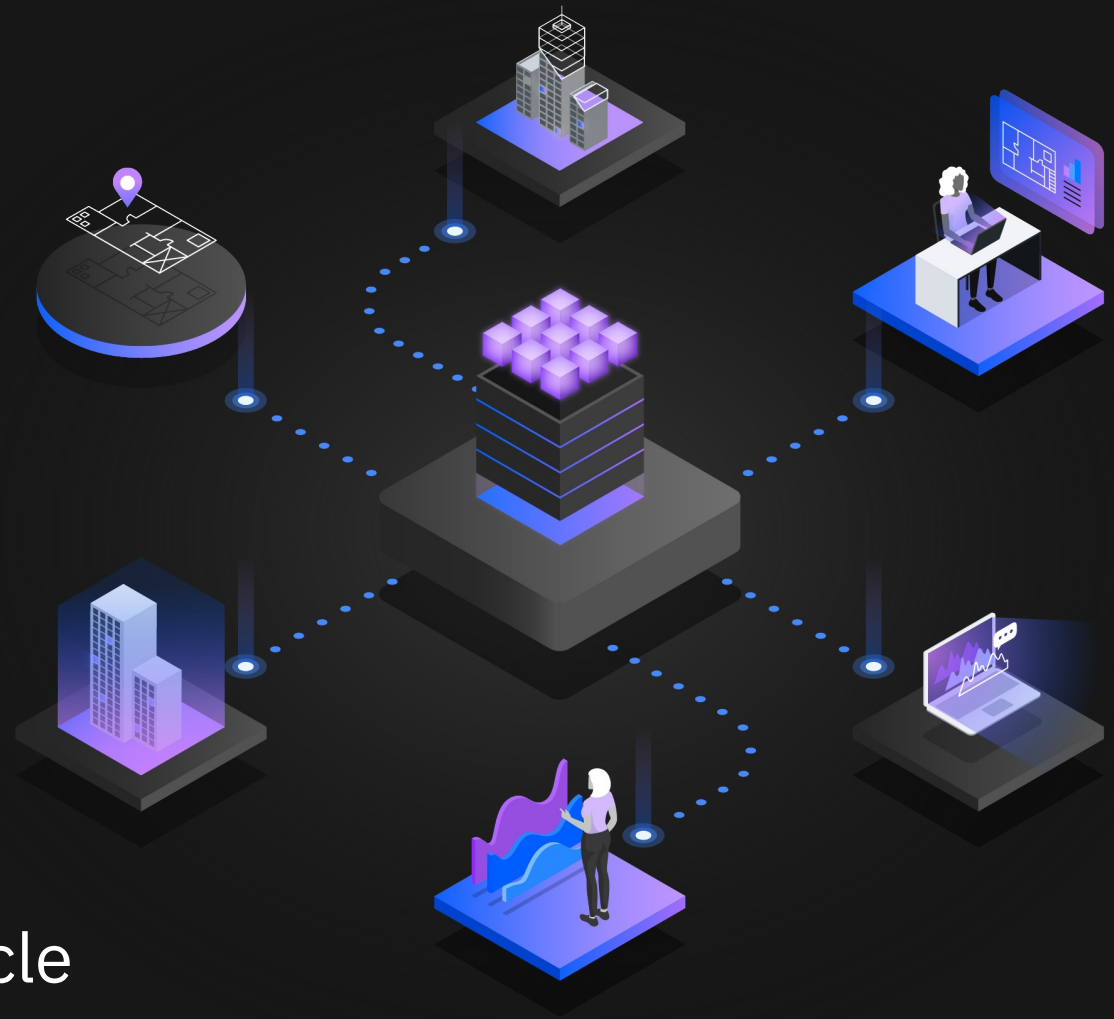
Simplified usage model

A new flexible model that simplifies buying, deployment, usage and management



Managed by IBM

Option to deploy through a high availability hosted environment managed by IBM



TRIRIGA Support Lifecycle

IBM TRIRIGA Continuous-Delivery support schedule

TRIRIGA Application Support



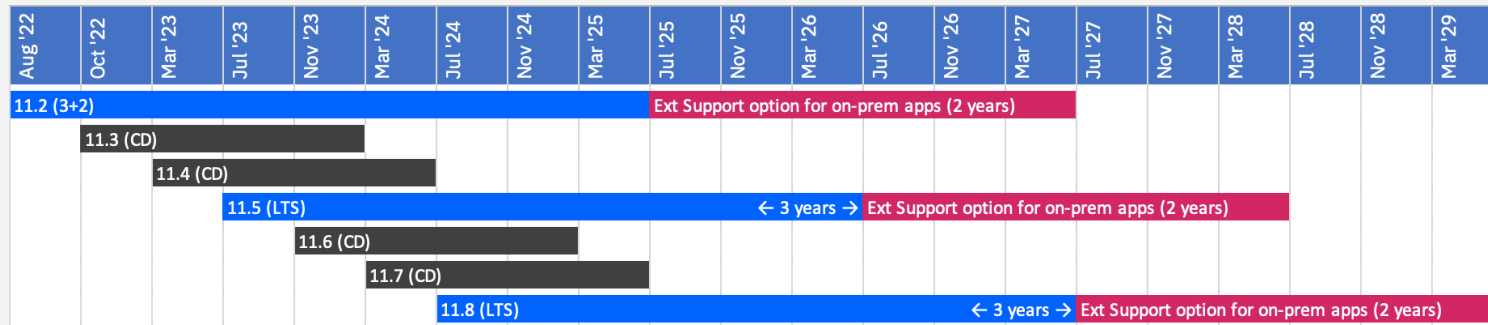
TRIRIGA Platform Support



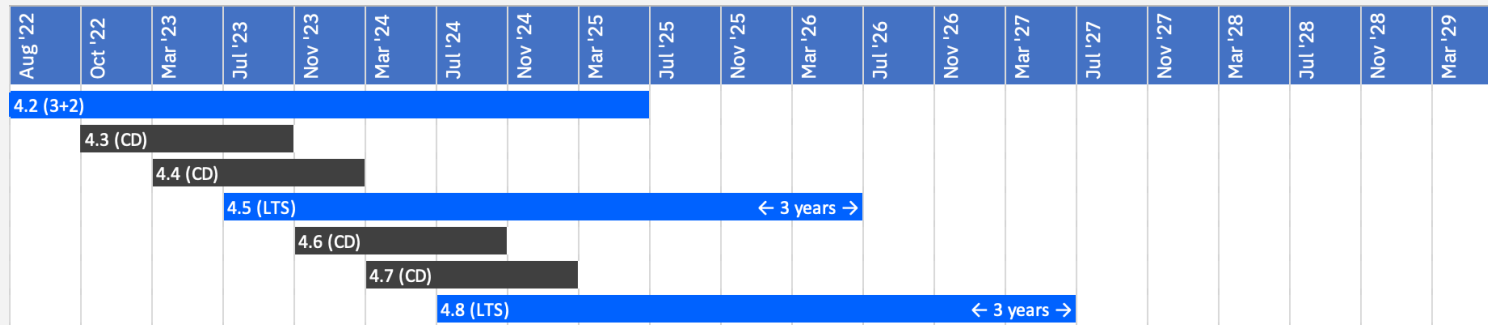
* This illustration, versions, and dates represented are just examples.
Refer to announcement letters for actual release numbers, LTS versions, and dates

IBM TRIRIGA Continuous-Delivery support schedule

TRIRIGA Application Support

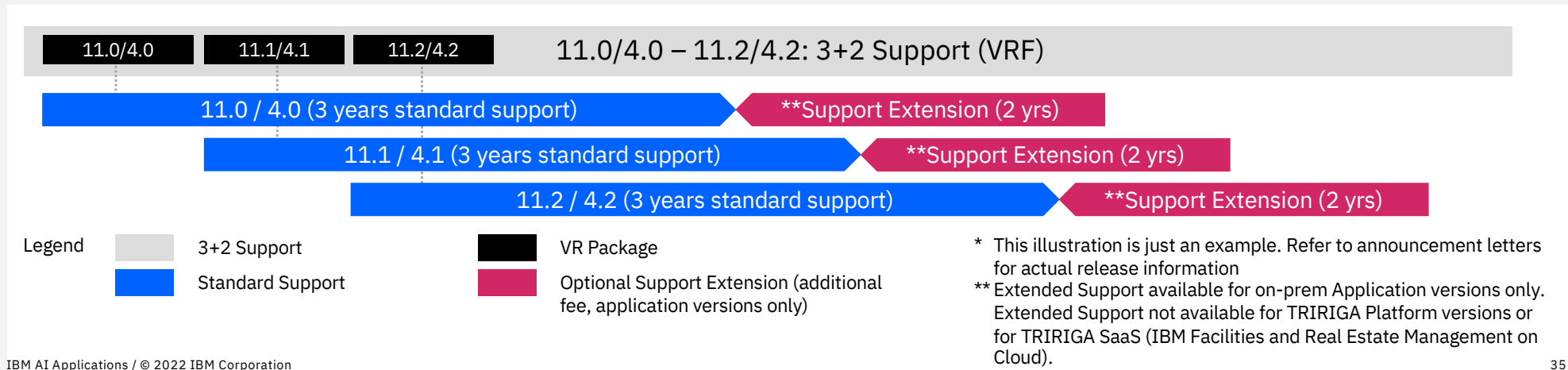
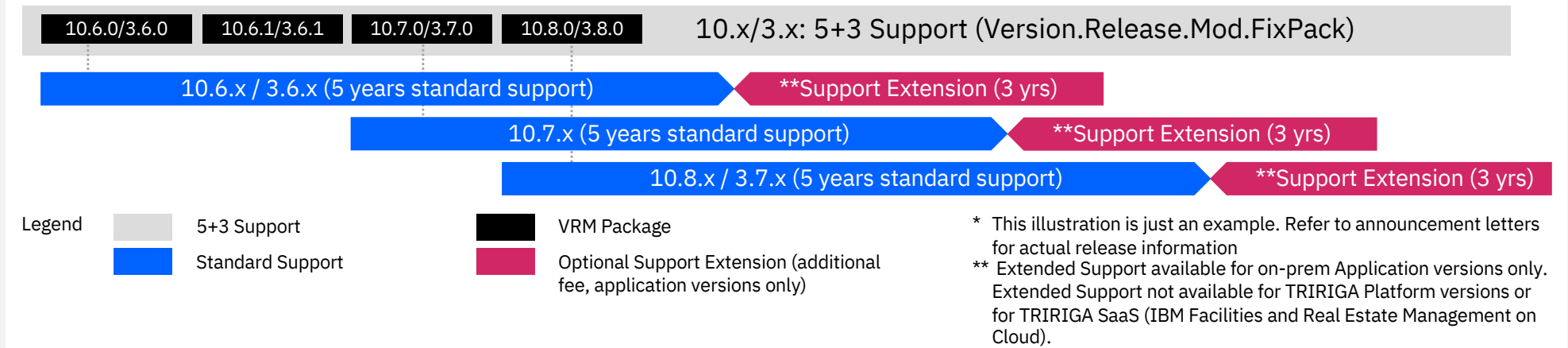


TRIRIGA Platform Support

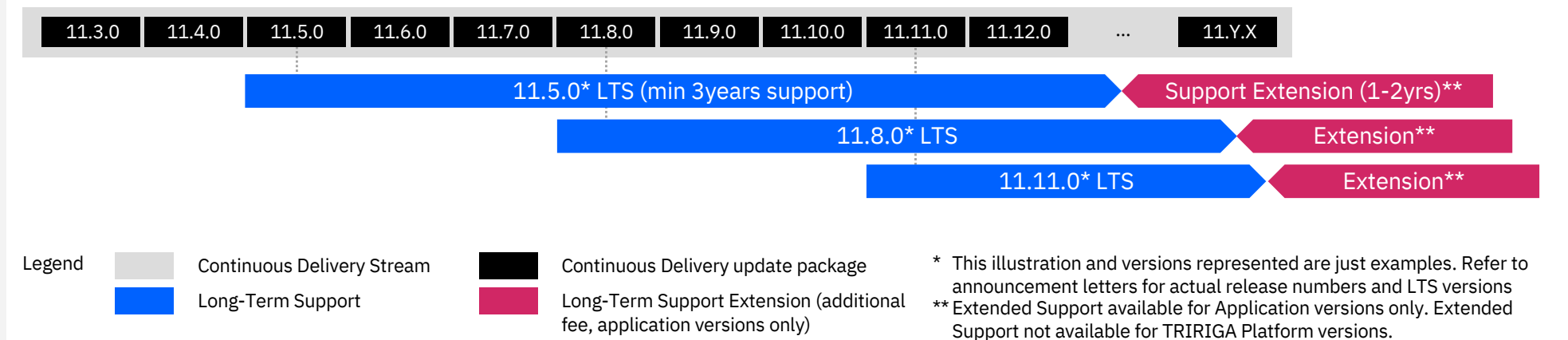


* This illustration, versions, and dates represented are just examples.
Refer to announcement letters for actual release numbers, LTS versions, and dates

IBM TRIRIGA has evolved support lifecycles to better align with industry-standard continuous-delivery models



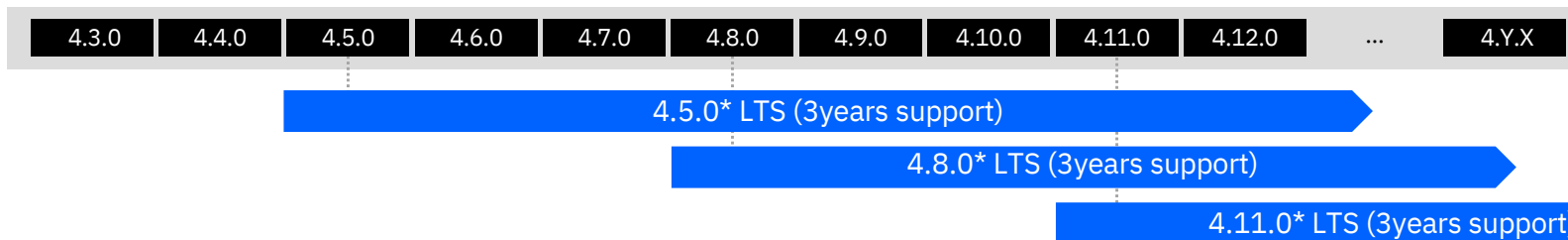
IBM TRIRIGA moves to a Continuous-Delivery support model for TAS 11.3+ and TRIRIGA Application 11.3+ versions



- TRIRIGA Application Suite 11.3 and TRIRIGA Portfolio Data Manager 11.3 introduce a change of lifecycle support policy from 'IBM Standard' to 'IBM Continuous Delivery'
- CD releases (called 'update packages') (e.g., v11.x) incrementally deliver new capability.
- A CD update package may be declared a Long-Term Support (LTS) release, which is supported for a minimum of 3 years.
- LTS releases just receive security and critical defect fixes with no incremental functional enhancements.
- Regular maintenance updates (v11.x.y) deliver defect fixes for the most recent four updates (i.e., n-3, where n is the most recent update).
- If a CD update package is no longer eligible for defect fixes, update to a package that is eligible, and if the critical defect can be recreated, a fix will be provided. Otherwise, defect fixes will be targeted to a future CD update package.

Expectation is for ~ one LTS release per year, with two additional CD feature and fix updates in between, planned twice per year.

IBM TRIRIGA moves to a Continuous-Delivery support model for TRIRIGA Platform 4.3+ and CAD Integrator 13.3+ versions



Legend

Continuous Delivery Stream	Continuous Delivery update package
Long-Term Support	Long-Term Support Extension (not available for TRIRIGA Platform versions)

* This illustration and versions represented are just examples. Refer to announcement letters for actual release numbers and LTS versions

- IBM TRIRIGA Application Platform 4.3 and IBM TRIRIGA CAD Integrator/Publisher 13.3 introduce a change of lifecycle support policy from 'IBM Standard' to 'IBM Continuous Delivery'
- CD releases (called 'update packages', e.g., v4.x) incrementally deliver new capability.
- A CD update package may be declared a Long-Term Support (LTS) release, which is supported for a minimum of 3 years.
- LTS releases just receive security and critical defect fixes with no incremental functional enhancements.
- Regular maintenance updates (v4.x.y) deliver critical defect fixes for the most recent three updates (i.e., n-2, where n is the most recent update).
- If a CD update package is no longer eligible for defect fixes, update to a package that is eligible, and if the critical defect can be recreated, a fix will be provided. Otherwise, defect fixes will be targeted to a future CD update package.

Expectation is for ~ one LTS release per year, with two additional CD feature and fix updates in between, planned twice per year.

Questions?



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