

# Demystifying the Maximo to Maximo Application Suite Upgrade

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# Agenda

- Maximo Application Suite (MAS) Overview
- NASA's MAS Implementation
- MAS Modernization entry points
- Maximo EAM migration :
  - Key phases
  - Scope and key activities
  - Assessment results
  - High level implementation steps
  - System arch and Components changes from Maximo to MAS Manage
- Q&A

# IBM Maximo Application Suite

Winning in maintenance requires a solution that brings **operations**, maintenance and **reliability** together.

There is a new breed of **intelligent assets** that will use advanced technologies to **manage** themselves.

- Market-leading enterprise asset management, mobility, add-ons and industry models
- AI-powered monitoring, inspection and predictive maintenance
- Simplified licensing
- Multicloud deployment for greater flexibility



## Manage

Asset management



## Monitor

Monitor and detect anomalies



## Health

360-degree view of assets



## Predict

Predictive failures



## Visual Inspection

Visual anomaly detection



## Scheduler

Schedule work and resources



## Mobile

Technician work execution



## Assist

Prescriptive assistance



## Safety

Actionable insights for worker safety

# Maximo Application Suite - Catalog

**MAS Applications**

<b>Manage</b> Sch Lin Cal	<b>Monitor</b>	<b>Health</b>	<b>Predict</b>	<b>Visual Inspection</b>	<b>Assist</b>	<b>Safety</b>
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**MAS Industry Solutions**

<b>Manage Transportation</b>	<b>Manage Nuclear</b>	<b>Manage Utilities</b>	<b>Manage Oil &amp; Gas</b>	<b>Manage Aviation</b>	<b>Manage Civil Infrastructure</b>	<b>Health &amp; Predict Utilities</b>
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**MAS Add-on Solutions**

<b>Manage Asset Configuration Manager</b>	<b>Manage Health, Safety &amp; Environment</b>	<b>Manage Service Provider</b>	<b>Manage Maximo Mobile Anywhere</b>	<b>Manage Spatial</b>	<b>Manage ERP Connector for SAP</b>	<b>Manage ERP Connector for Oracle</b>
<b>Manage WorkDay Connector</b>	<b>Manage Cognos Analytics</b>					

**MAS Integrations and Add-ons – separate part purchase**

<b>Maximo Scheduler Optimization</b>	<b>Maximo MRO Inventory Optimization</b>	<b>IBM Digital Twin Exchange</b>	<b>Parts Identifier</b>	<b>Omnio Edge</b>	<b>Willard Smart Exit Sign</b>	<b>Maximo IT</b>
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# EAM Industry Evolution

Activity	Then (until 2017)	Now (after 2017)	Soon (2021)
Work planning	Time based	Risk and Financially Optimized	Predictive Risk, Financially and Performance Optimized
Work execution	Paper or mobile lists	Context and dynamic form-based execution	Augmented assisted and location awareness execution
Work steps	Template based on tribal knowledge	Template based on Industry and organizational knowledge	Template based on Industry, organizational and AI knowledge (with constant learning)
Technician	Kit and phone	Kit, tablet, AI Assistant	Kit, tablet, AI, Connected to Supervisor, Safety first
IT System	Multiple J2EE instances	Hybrid Cloud, run anywhere	Multicloud and Edge systems
License	User	Concurrent	Concurrent Peak Usage

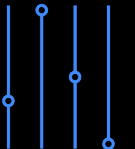
# Deployment flexibility



IBM Hosted Service



IBM Maximo as single offering



Controlled and secure in IBM Datacenters

- Run Maximo workloads where it makes sense
- Development velocity through consistency
- Simplified management
- End-to-end security



IBM Cloud Pak System



Red Hat Marketplace  
Operated by IBM



Watson AI



# Licensing Approach

*Flexibility in deployment model, locations, quantities and components*

## **Flexibility in deployment model – on Prem or managed on Cloud or SaaS**

### **Flexibility in deployment location**

- Licenses float across geographies any time (daily, hourly)
- Follow the sun (reuse licenses in other locations when technicians are asleep)

## **Flexibility in overall quantity – up and down on annual basis**

### **Flexibility in consumption of product components** (EAM, Monitor, Health, Predict, Safety, etc)

- Licensed on overall capacity via App Points
- No need to license individual products

# Shared Pool of AppPoints

## Concurrent Application Users



Check in/out AppPoints on a regular occurrence as users' login/out of the Suite.

Always rotating the amount of AppPoints in the pool.

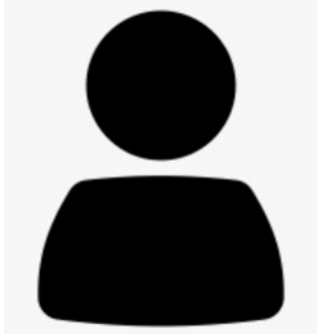


## Installs

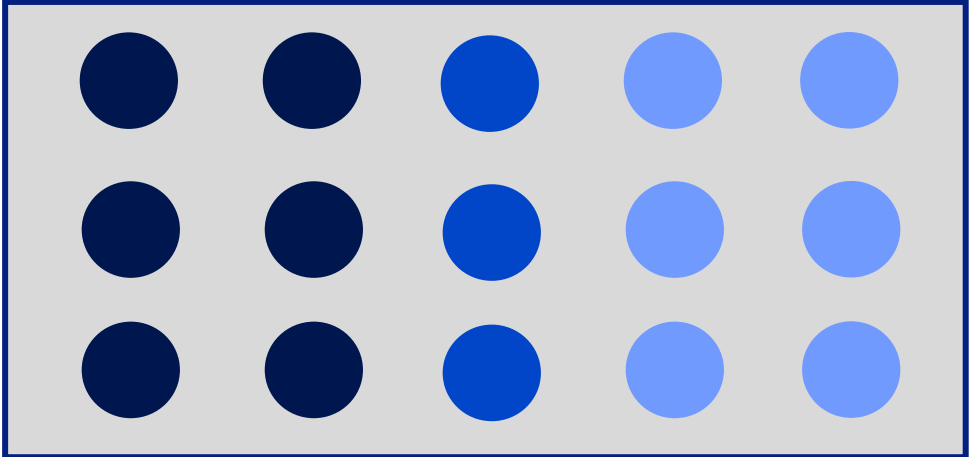


These AppPoints are required for each MAS instance and are "reserved" on install of application.

## Authorized Application Users and Administrators



These AppPoints are "reserved" to ensure Admins and Authorized users always have access to the application suite.



*units available for use*



# Let's create ↻

## What do we offer?

A no-cost IBM multi-disciplinary team and expertise to jointly innovate and rapidly prove solutions to your business needs, leveraging IBM technologies.

## What value do you get?

Confidence in a technical solution to your compelling business needs and accelerating time to value.

## What is your commitment?

Your business and technology context, sponsorship, subject matter experts, and data.

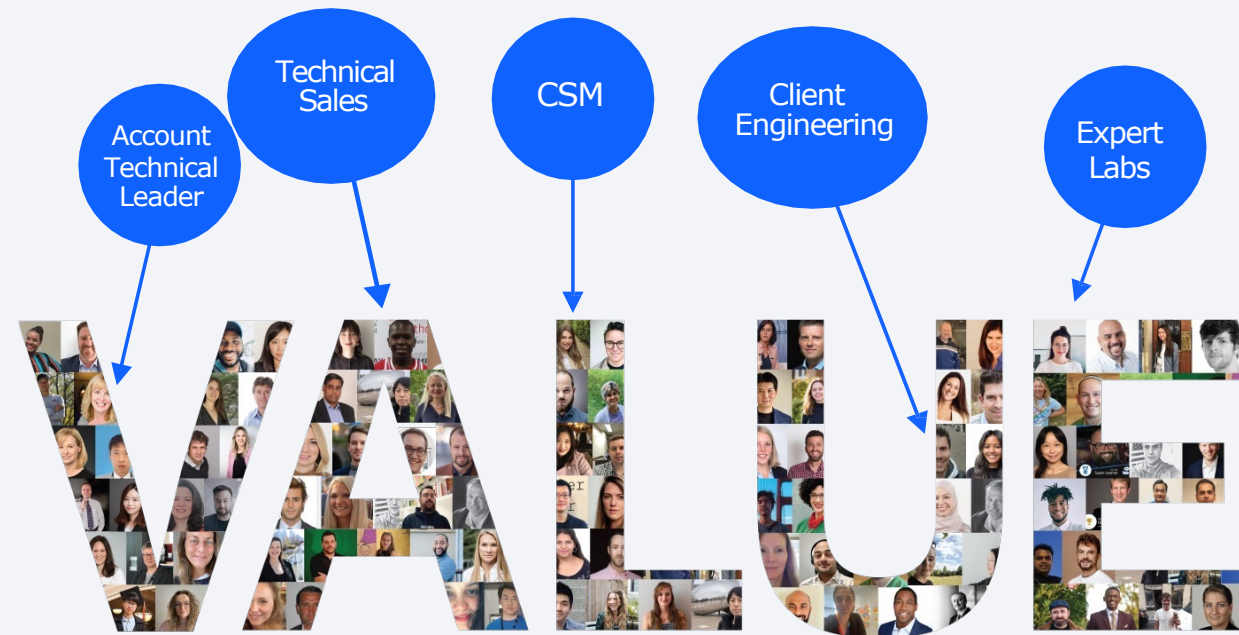
# IBM Technology

2000+  
Client Projects

100s  
Use Cases

1700+  
Client Engineers

50+  
Countries



# Client Success Managers

A CSM will help increase the business value you experience with IBM AI Applications Solutions



Continually monitors and manages client health and satisfaction



Helps to drive time to value through adoption of offerings as well as features within offerings



Deeply understand client metrics to proactively identify issues and needs



Quickly respond to issues that client brings forward, marshalling resources across IBM as needed



Identify and encourage participation as an IBM Client Reference



Advocate internally for customers by being the voice of the customer

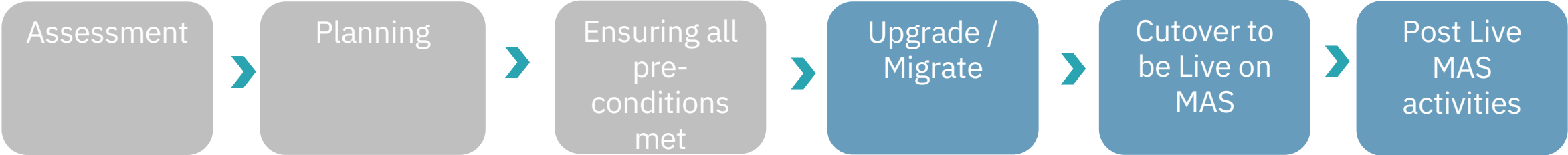
# Maximo Application Suite (MAS) – IBM and NASA

- NASA is a long time Maximo customer. 29+ sites and thousands of users leverage Maximo today
- NASA upgraded their Active Maximo Estate to MAS App Points in Q2 2022
- NASA is “Dual Entitled” to use MAS 8 and Max 7.6.1.x
- NASA also secured IBM Expert Labs to assist them with the upgrade from 761X to MAS
- The IBM Maximo sales team and various sites at NASA meet weekly to
  - Help plan and support MAS pilot activities
  - Answer Maximo/MAS questions
  - Resolve issues and escalate cases
  - Demo new MAS capabilities
- IBM Expert Labs is supporting an initial pilot around the MAS 8 install and upgrade process.
  - Expert Labs will create a ‘runbook’ that creates a streamlined path for success based on NASA’s needs, architecture and lessons learn from the pilot
  - Different Maximo user groups across NASA are shadowing to learn and gain experience with MAS
  - The focus is on the upgrade to MAS Manage, but various groups across NASA are planning to test Monitor and Health during their initial testing

# Maximo EAM migration key phases

Begin

Complete



What is needed to be ready and a high-level project plan

- Project Planning
- Based on the assessment
  - Budget
  - Timeframes
  - Personnel assigned
  - Project plan defined

- Ensure EAM to the right version
- If migration, deploy the new environment(s)
- Make sure the network security conditions are met

- Perform the steps to migrate / upgrade / convert
- Remediate issues
- Test
- Document steps
- Take close timings

- Cutover production weekend

- Backflow to non-production instances
- Hypercare for 1 week after cutover

# EAM Technical Assessment & Planning : Overview

## IBM Expert Labs

Technical Assessment for MAXIMO /SaaS Flex upgrade and migration to MAS (on-prem or Managed Services)

### Key Activities:

- Focus on application layout and technical configurations using the IBM Maximo Sizing questionnaire as a starting point
- Identify areas of impact for upgrade and migration to MAS
- Assess data structure
- Identify customizations and assess the gap from leveraging the out of the box adapters

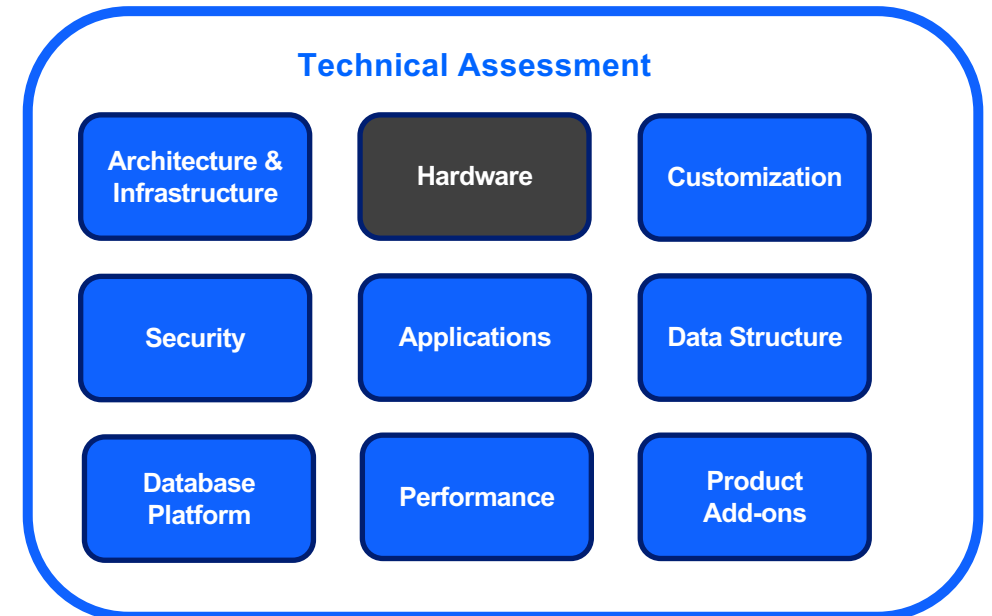
### Expected Outcome:

- Maximo Technical Upgrade Assessment document containing tailored recommendations and a journey map for the upgrade

### Duration:

- 5-7 weeks

### Maximo Assessment Components



# Assessment & Planning results

Assessment results are shared with the customer as a journey map to prepare them for their migration. Key elements of the assessment result report are:

- Area of Maximo functions that classified as **major, minor or no changes** required for migration and complexity is assessed based on used techniques ,large workloads and number of users.
  - Application-level changes -: Java classes and UI changes for Custom and Cloned application. Any new java classes extensions and UI changes in OOB applications.
  - Integrations – It includes End points , Exit classes , data manipulation techniques and methods used while integrate with External applications like XSL mapping , batch scripts, style sheet , data control and schedule tasks etc.
  - Message bus system and Doclinks – In MAS JMS and Kafka are available to leverage. Doclinks migration strategy depends on existing implementation.



# Assessment & Planning results...contd.

Assessment results are shared with the customer as a journey map to prepare them for their migration. Key elements of the assessment result report are:

- Area of Maximo functions that classified as **major, minor or no changes** required for migration and complexity is assessed based on used techniques ,large workloads and number of users.
  - System Arch , Security, Users – Number of VMs and JVM heap size to size the DEV,TEST,PROD MAS env. Number of users and how they are authenticated and authorized/
- Area of Maximo functions that require post migration enhancement.
  - Call out the functions that would and won't be migrated even after the post migration exercise
  - Recommendation , alternatives for functions that are too complex or not possible to migrate
- Guidelines and product documentation links to refer during migration for awareness and future troubleshooting

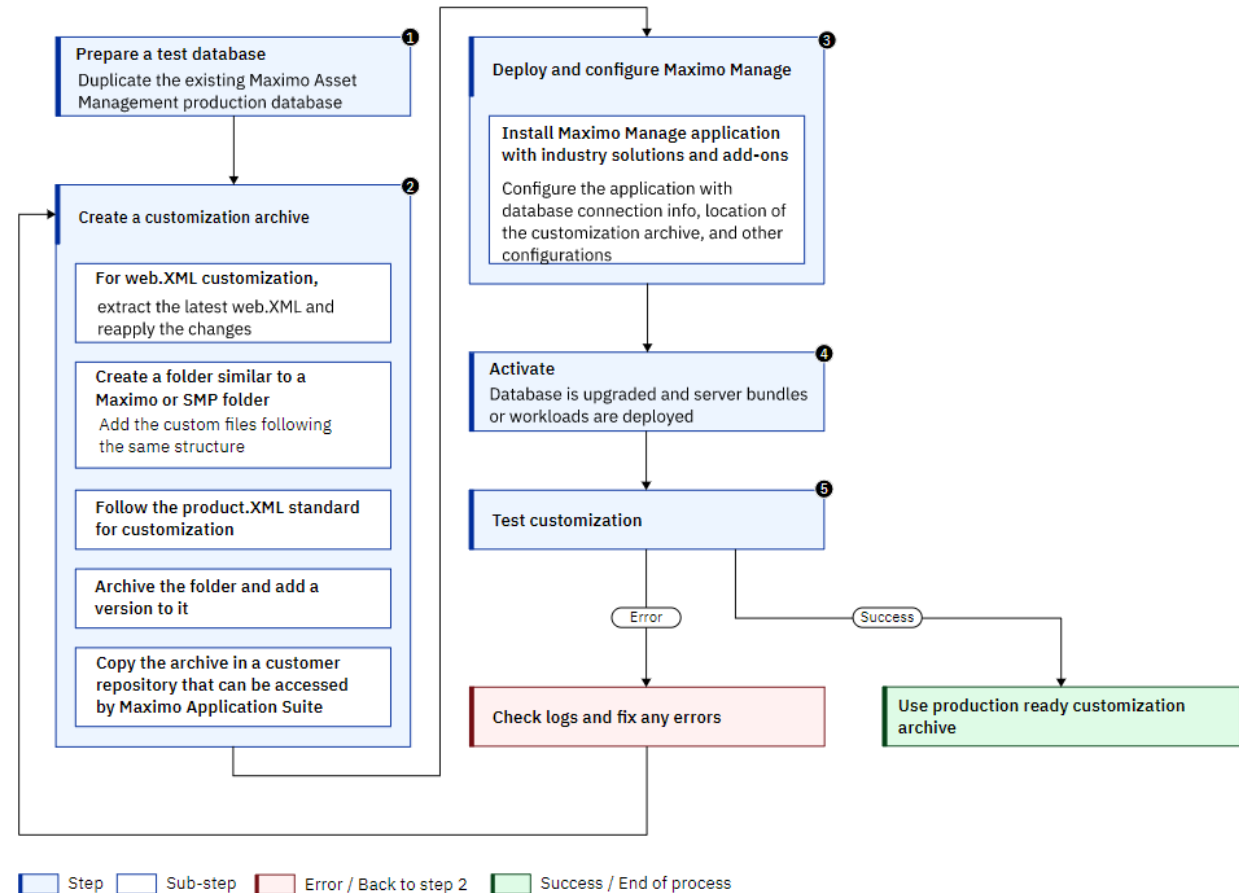


# High level Maximo to MAS Manage Migration steps (on-prem)

MAS Manage can be provisioned with cloned MySQL, DB2, Oracle Database of existing 7.6.1.2 or 7.6.1.3 instance or new database instance with sample data shipped with MAS Manage. Key migration steps are:

- Deploy MAS Manage operators, subscription
  - Update the configuration for MAS Manage database connection
  - Select required components (Industry Solutions, Add-ons) such as spatial, health, utilities etc.
  - Configure Server bundles to match existing Maximo deployment
- <https://www.ibm.com/docs/en/maximo-manage/continuous-delivery?topic=customizing-configuring-server-bundle-properties>
- Create customization archive of the custom Maximo artifacts from current Maximo install base
  - Create PVC for mounting the directory for documents such as WO attachments.
  - Activate MAS Manage
  - Observe the Activation status for exceptions that may occur during the
    - build - Maximo Manage image is created, the ear or war files are generated to deploy the application in the Server Bundle later , DB upgrade (maxinst pod) , startup of the application servers (server pods)
    - maxinst/updatedb process starts
    - the server bundles are started, deploying the Maximo Manage war or ear files
  - Login with maxadmin credentials to view MAS Manage Dashboard.

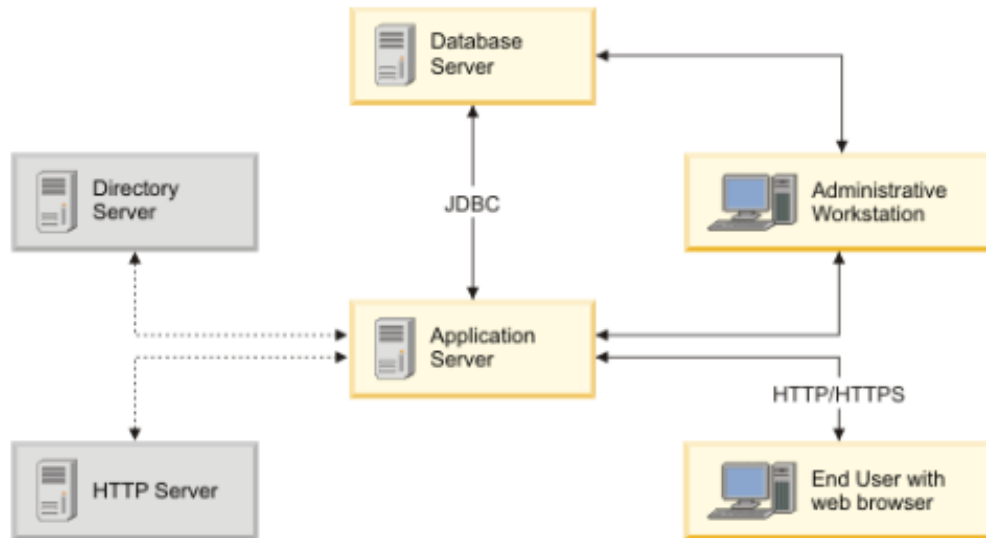
**Reference link for migration:** <https://www.ibm.com/docs/en/maximo-manage/continuous-delivery?topic=upgrading-from-maximo-enterprise-asset-management-maximo-manage>





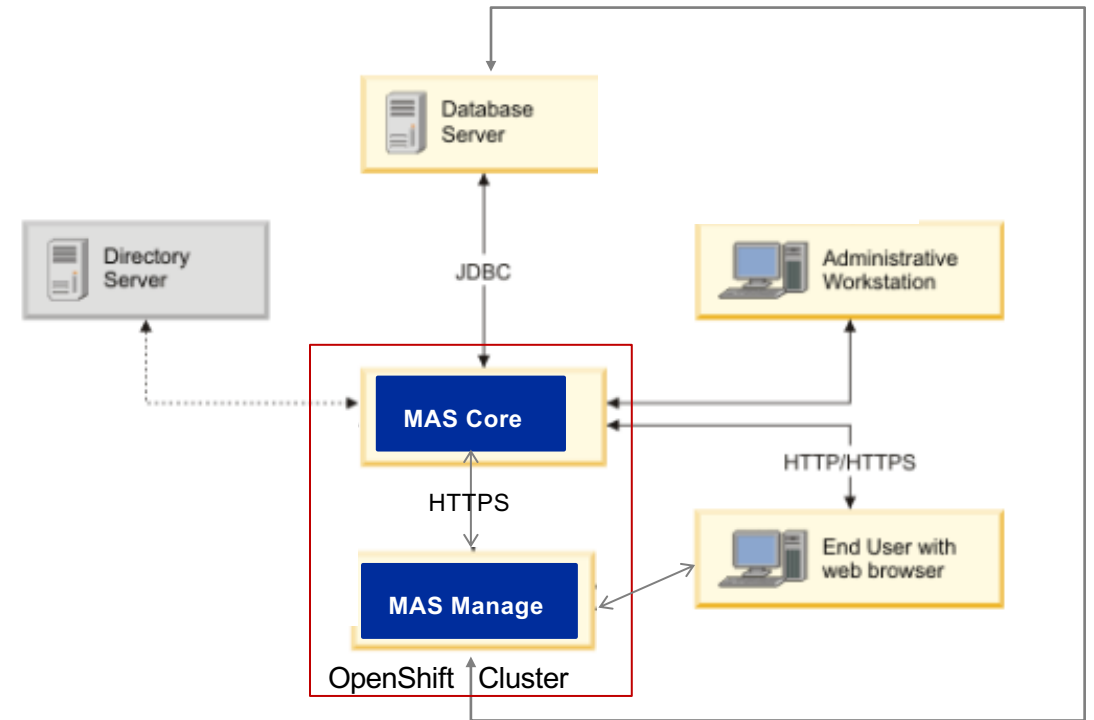
# System architecture and components – Maximo and MAS Manage

## Maximo Asset Management



Post Migration  
➔

## Maximo Application Suite - Manage



- Administration Workstation (Bastion node) – Installs OpenShift Cluster , MAS using ansible scripts
- MAS Core has pods that connects to Directory Server and Database Server. MAS core has configurations to store the user and database info
- MAS Manage has pods that connects to Database Server for migration and data access
- End User connects via OpenShift load balancer to MAS Core and MAS Manage