

The Maximo Application Suite and EAM

Why IBM and Why Now

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Maximo Application Suite
IBM Sustainability Software

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Maximo EAM to MAS upgrade

Why MAS?

- MAS New Architecture – Open shift
- EOL for Maximo 7.6.X

Making the move

- Deployment Options

 - On-prem / Cloud / Hybrid

- Upgrade Process

Sizing calculator tool

- On-prem

- Managed

Next Steps

- Sales

- Expert Lab

- Partners

Driving the Automation Journey

Monitor

Manage and detect anomalies



Manage

Understand and manage maintenance



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Health

Manage asset health



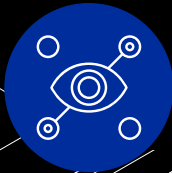
Predict

Use data to predict failures



Mobile

Inspect Work Execution
AI/Remote Assist



Visual Inspection

Visual anomaly detection



Digital Twin Exchange


Digital content


← List View >

Available Queries

-  New Asset
-  Save Asset
-  Clear Changes
-  Change Status
-  Move/Modify Assets
-  Swap Assets
-  Associate Users and Custo...
-  Create Report
-  Unlink GIS Feature
-  Application Import
-  Application Export
-  Import Digital Data
-  Delete linked GIS Feature

- Define Maintenance Schedule
- Manage Maintenance Schedule
- Define Operational Schedule
- Manage Operational Schedule
- Asset Details
- Report Downtime
- Manage Downtime History
- Add/Modify Linear Referencing ...
- Create

 View Work Orders and Tickets that are open for this asset. Additional details are available in Work Details.

Work Orders Tickets 

[illegible]

Driving the Automation Journey

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Understand and manage maintenance



IBM AI Applications / © 2020 IBM Corporation



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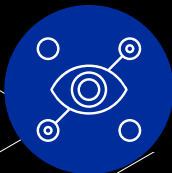
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Waste Management Complex

Last 7 days



Pump Status

Last 24 hours



PRESSURE

Last 7 days

● PRESSURE_Pump_last

92.87

WINDINGTEMP

Last 7 days

WINDINGTEMP

64.242

LOAD

Last 7 days

● LOAD_Pump_max

402.68

MOTORTEMP

Last 7 days

MOTORTEMP

4.995

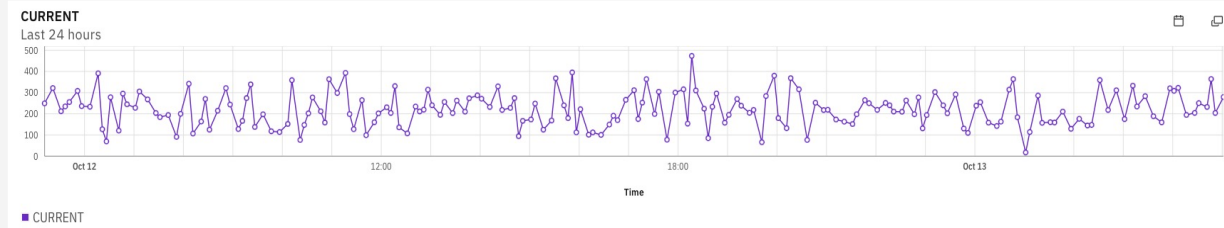
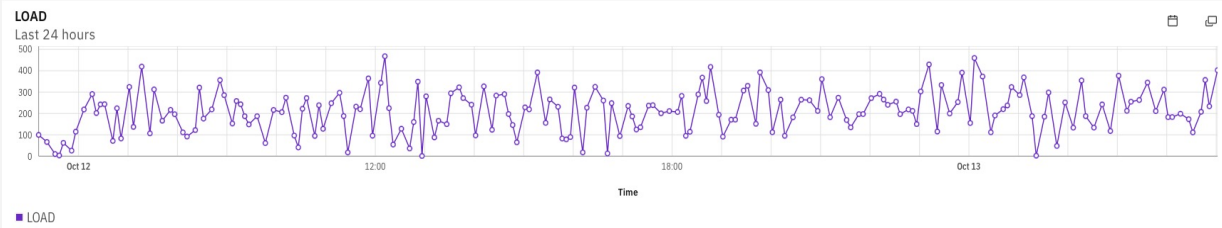
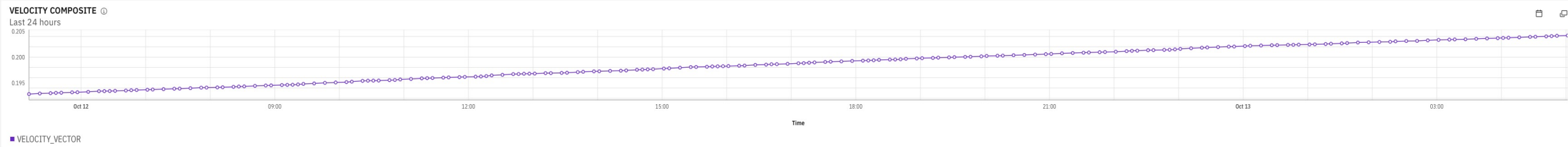
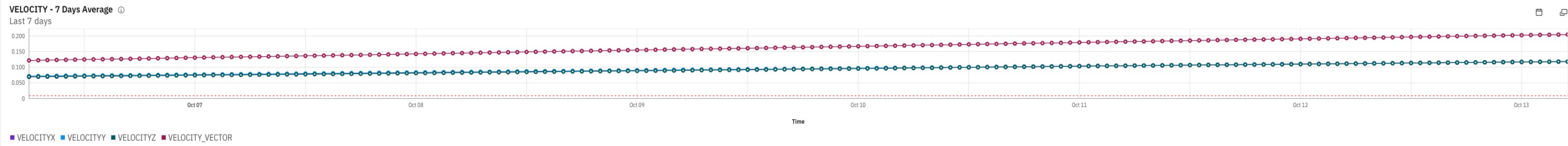
ALERTS

Search

	Time	Name	Asset ID	Owner	Severity	Status	Service Request
<input type="checkbox"/>	10/06/2022 05:11:29	WINDINGTEMP_Alert_Low_Value	PMPDEVICE001	Select owner	▲ Medium	New	Create service request
<input type="checkbox"/>	10/06/2022 05:21:32	WINDINGTEMP_Alert_Low_Value	PMPDEVICE001	Select owner	▲ Medium	New	Create service request
<input type="checkbox"/>	10/06/2022 05:36:30	WINDINGTEMP_Alert_Low_Value	PMPDEVICE001	Select owner	▲ Medium	New	Create service request

1-10 of 1000 items

11 of 100 pages



Assets

Criticality ⓘ

3

Health ⓘ

60%

▲9%

Risk ⓘ

0.7

RUL ⓘ

39.8%

Age ⓘ

5.4 years

Next PM ⓘ

42 days

MRR ⓘ

Ratio is 0.3%

Next failure ⓘ

25 days

⌵

Create service request

⌵

Create work order

⌵

Recalculate health score

⌵

Edit source asset record

Health details as of 12:00 AM on 7/17/21 ⓘ

Score	Name	Weight
<div>⌵</div> <div>● 40</div>	RUL	60%
<div>⌵</div> <div>● 81</div>	Open WO	20%
<div>⌵</div> <div>● 100</div>	Meter Health	20%

Asset details

Type

NON-OEM

Model

Unspecified

Serial number

3249873745GA845

Installation date

3/1/16

Predictions

⌵

Estimated time to failure ⓘ

Last calculated: 7/16/21 at 7:00 pm

PUMPS/STOPPED

25 ± 1 days

Failure probability ⓘ

Last calculated: 7/16/21 at 7:00 pm

0 %

Anomaly detection ⓘ

Last calculated: 7/12/21 at 7:00 pm

Threshold 3.5

3.7 ⓘ

Date of training data

08 Jan 2008 - 05 Aug 2008

Time window

5 days

⌵

Group average

1%

Last anomaly detected

4.1 11 Jul 2021

Failure probability trend ⓘ

5 days

⌵

Last 12 months

⌵

daily_failure_...

50

Anomaly detection history ⓘ

Last 12 months

⌵

80,000

Driving the Automation Journey

Monitor

Manage and detect anomalies



Manage

Understand and manage maintenance



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Health

Manage asset health



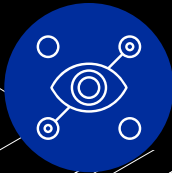
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Digital Twin Exchange

Digital content

Focusing on key capabilities for 2022 and 2023



Expand deployment options, install, upgrade and management

Expand offerings via hyperscalers, introduce and expand SaaS, 1-Click installation, and improve operations through Software Operations Maturity Model.



Data and AI @ Scale

Significant improvement of ingestion and rendering of sensor and operational data.

AI where valuable and when needed.



Continually improve ease and value of EAM → MAS migration

Continual improvement to the migration experience, ensure legacy function is available and easy to access, and provide new value in Manage and the Suite.



Modernize to improve effectiveness

Expand the new user experience aligning asset management roles with AI enhanced processes for managers, schedulers, dispatchers and mobile users.



Modernize and extend Industry Solutions

Bring modernized user experience to key roles and expand Industry Solutions to leverage MAS capabilities of value to industry customers.

Ease and Value of EAM to MAS Migration

Why Now?

Ensure your competitive advantage with access to additional capabilities and industry models which provide the foundation for intelligent asset management.

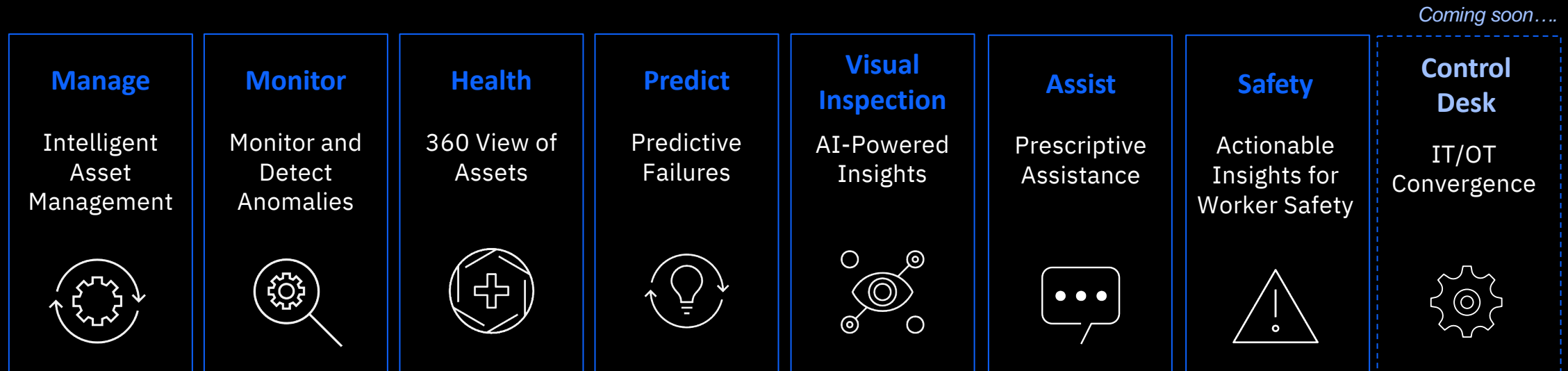
MAS delivers immediate improvements:

- **15%** maintenance cost reduction with elimination of unneeded maintenance and improved remaining repair efficiencies
- Support data driven cross-functional decisions with root cause failure analysis



Maximo Application Suite

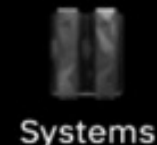
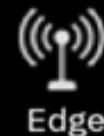
Best of class capabilities to provide complete view of your assets



IBM Cloud Pak for Data | IBM Watson Studio | IBM Watson ML | IBM Watson Discovery



Infrastructure Independent
Common Operating Environment

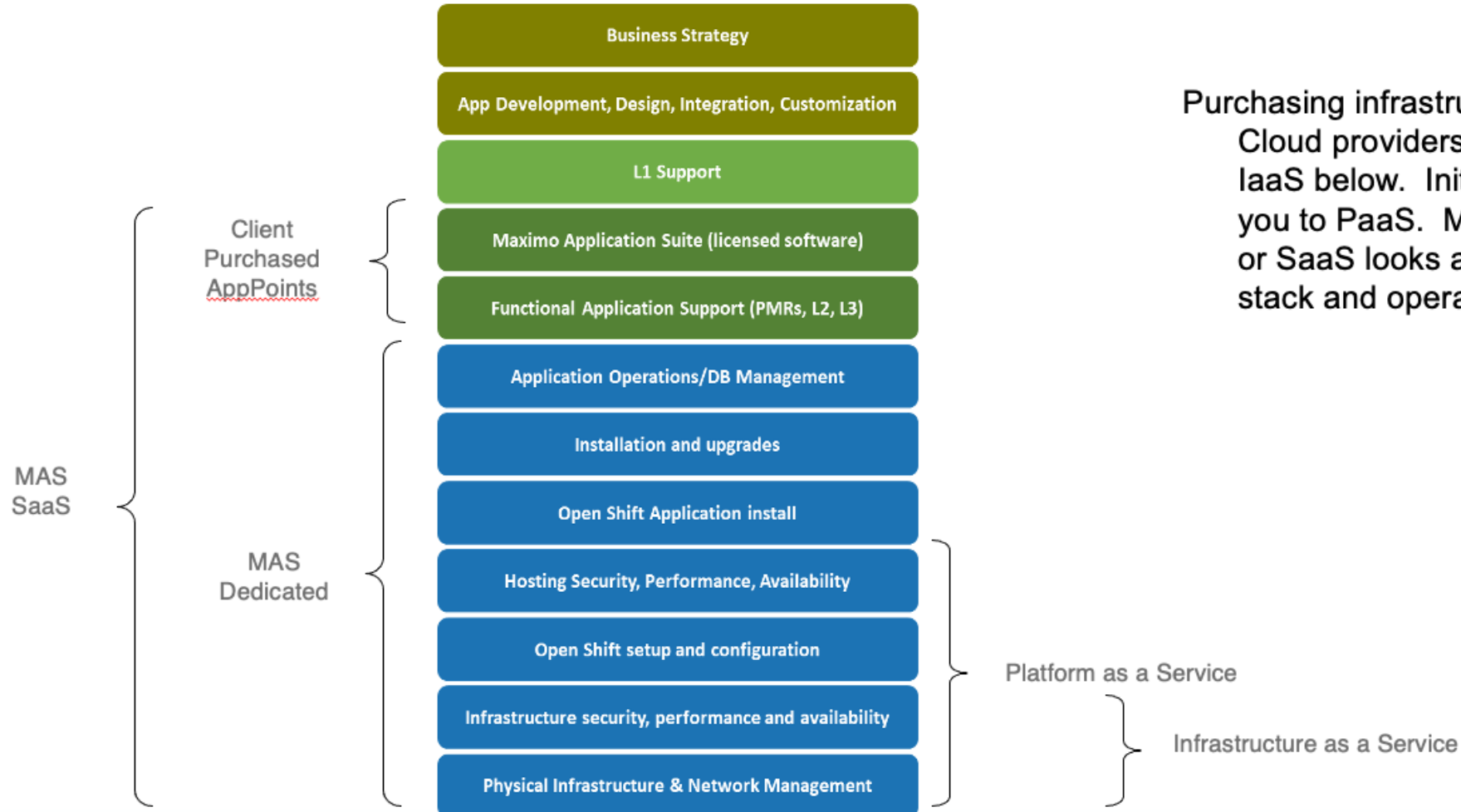


MAS Deployment Options

Deployment	Availability	Procure	Provision & Operate	Client Benefits
On Premise	Now	Client purchases MAS from IBM Client provides infrastructure	Client provisions, manages, and operates full stack	<ul style="list-style-type: none"> • Maximum operational flexibility
Hyperscalers	Now AWS 1Q22 Azure 2Q22	BYOL Client purchases software from IBM and infrastructure from Hyperscalers	Client runs IBM-provided automation scripts to deploy MAS on Hyperscalers' cloud Client manages and operates both software and infrastructure	<ul style="list-style-type: none"> • Simplifies procurement and deployment • Allows client to select their Hyperscalers • Flexibility for clients to manage and operate their environment
	Now AWS 3Q22 Azure 4Q22	Paid (Marketplace listing) Client purchases software and infrastructure from Hyperscalers		
SaaS	Now AWS 3Q22	Client purchase single part (includes software, infrastructure, and operations) from <u>either</u> IBM or AWS Marketplace	IBM provisions, manages, and operates Client 's MAS environment on AWS Cloud using IBM's AWS cloud account	<ul style="list-style-type: none"> • Reduced time-to-value • Reduced operational costs • Allows clients to focus on business priorities
Dedicated (Managed Service)	Now IBM 2021 AWS 1Q23*	Client purchases software and managed service (including infrastructure) from IBM	IBM provisions, manages, and operates Client 's MAS environment on IBM Cloud or AWS in an IBM owned account	<ul style="list-style-type: none"> • Simplifies deployment and operations • Provides more flexibility, than SaaS, to customize environment • Provides more operational flexibility than SaaS

MAS Deployment Options

MAS SaaS vs. MAS Dedicated



Purchasing infrastructure from Cloud providers only covers the IaaS below. Initial set up takes you to PaaS. MAS Dedicated or SaaS looks after the whole stack and operates it.

Path to moving Maximo EAM customers to MAS

Start



Is this an Existing
Maximo
Customer?

(Perpetual, Token, SaaS)

No

New footprint

Buy STL or
Perpetual Part;
Deploy Suite

- Suite AppPoints
- License Key Server deployed within OpenShift.

Yes



Do they want
other Suite
functionality?

(Monitor, Health, Predict)

Not Yet

Phased
Approach

Remain on Existing
License
Entitlement for
now
(Perpetual,
Tokens, SaaS)

No Changes. Existing
Token customers
continue to use current
Fixed Term Entitlement
& Maximo Tokens.

Yes



Are they moving
to STL Model
(Suite AppPoints,
OpenShift)

Not Yet

Coexistence

EAM remains on
current license
entitlement and
integrates with
Suite

For Maximo Perpetual & SaaS
customers: No change to
existing Maximo.

Maximo Token customers:
maintain two non-
interoperable Flexera LKS
instances. Users pull from
one or the other LKS
depending on function
they're using. No
interchangeability between
Maximo tokens and Suite pts.

Yes



Migrate to Suite
Customer

EAM
upgrade/trade-up
to MAS
entitlement;
Deploys OpenShift
Suite Components

For Maximo Perpetual, use
STL Upgrade or Trade-up
parts.

SaaS & Token customers run
out contracts.

Point to new Suite LKS; No
more use of Maximo tokens.
All Suite 'AppPoint' based.

Implications

MAS AppPoint Consumption

Self Service, Limited, Base, Premium Users, Installs

Self Service User

Free

0 AppPoints

Self Service Applications

- Service Requests
- Desktop Requisitions
- Requests (Oil & Gas)
- Create/Review Incidents (HSE)
- Vehicle Requests (Transportation)
- Graphical Appt Book (Scheduler)
- Bill review (Service Provider)
- Data Transfer via devices and sensors (Safety)

Limited User

Concurrent

5

AppPoints

Authorized

2

AppPoints

3 Modules:

- Manage
- Manage Industry Solutions
- Manage Add-ons

Mobile

- Maximo Mobile
- Assist
- Anywhere
- 3rd Party

Monitor

Base User

Concurrent

10

AppPoints

Authorized

3

AppPoints

Manage

Includes:

- Linear
- Calibration
- Spatial (requires install)

Scheduler

Health

Safety

Premium User

Concurrent

15

AppPoints

Authorized

5

AppPoints

Manage

Industry Solutions

- O&G, Aviation, Transportation, Utilities, Nuclear, Civil Infrastructure

Add-ons

- ACM, SP, HSE

Predict

Health and Predict - Utilities

Visual Inspection

Install – 1 AppPoint
(x multiplier)

SAP/Oracle Connector
(x80)

Spatial
(x20)

Civil Infrastructure
(x50)

Visual Inspection
(x45) Edge (1 pkg 5)

Assist
(x150)

Health & Predict - Utilities
(x60)

Maximo EAM to MAS upgrade

Sizing calculator tool

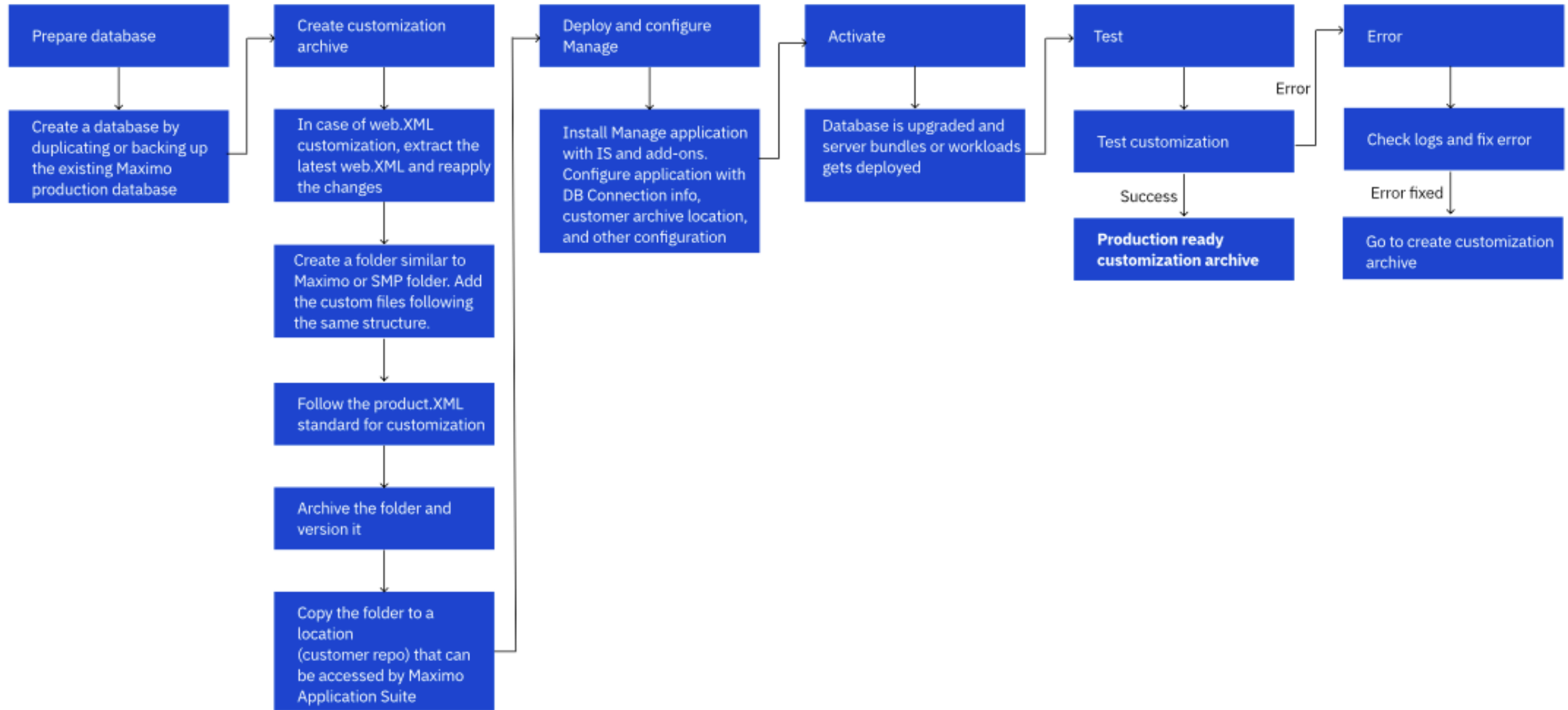
IBM has tools to help you determine how many points you will need based on current usage in 7.6.1.x

Magic Scripts

IBM has tools to help you determine how your environment should be sized.

Maximo Upgrade Process

EAM to Manage



Maximo EAM to MAS upgrade

Next Steps

Talk to your IBM Brand Specialist (Sales Rep.)

Talk to your IBM Brand Technical Specialist (Sales Engineer)

Talk to you IBM Business Partner

Talk to your IBM Expert Labs Representative

MAS Modernization

First

Multi-national mining who has been using Maximo SaaSFlex for Aftermarket services for 5 years.

Modernized their maintenance platform **and migrated** to MAS in 2021. Activating new capabilities to help field services with:

- Mobile
- Assist
- Visual Inspection

Customer Managed

Total: 387

Commercial: 322

New Logo: 65

IBM Managed

Total: 71

Commercial: 14

New Logo: 57

Latest

TEP in Arizona with 438K customers migrated from Maximo to MAS Manage 8.8.1 in 2022 [\(Link\)](#)



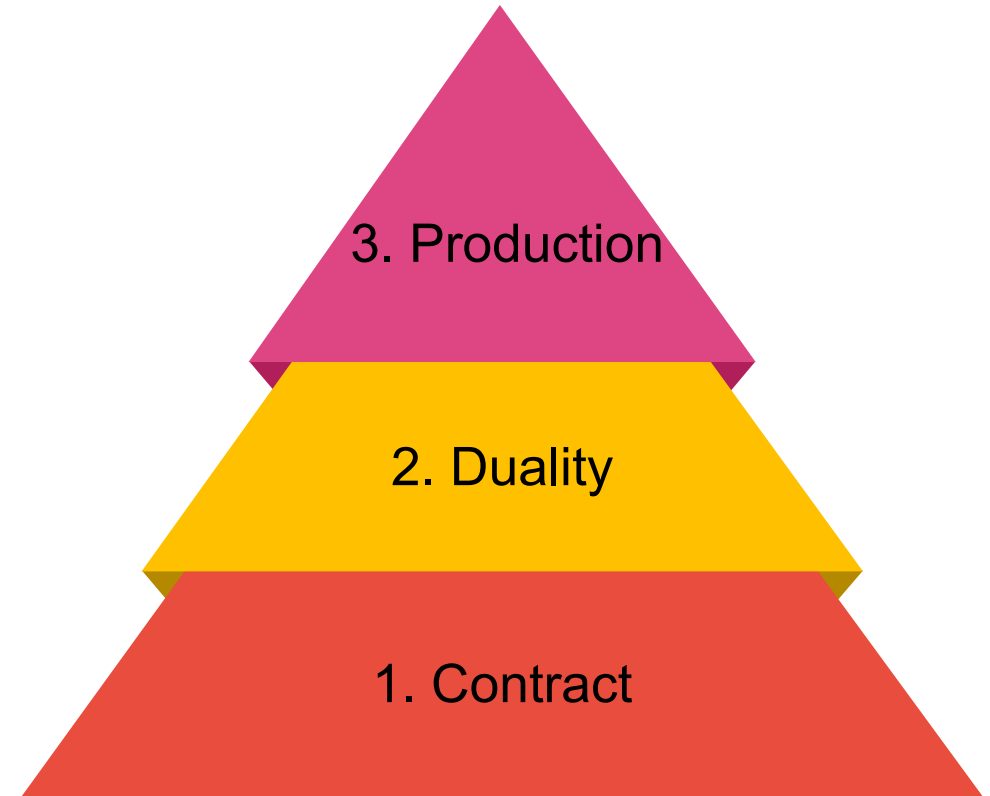
Jaime Barnett
Supervisor, T&D Applications • IS Customer Application
Tucson Electric Power

Demystifying the Move to Maximo Application Suite -
Featuring Special Guest: Tucson Electric Power

Join us alongside Tucson Electric Power as we demystify your move to MAS. TEP will share their experiences migrating from Maximo to MAS, challenges they were able to overcome, and additional best practices/considerations throughout the process.

How do you get to MAS?

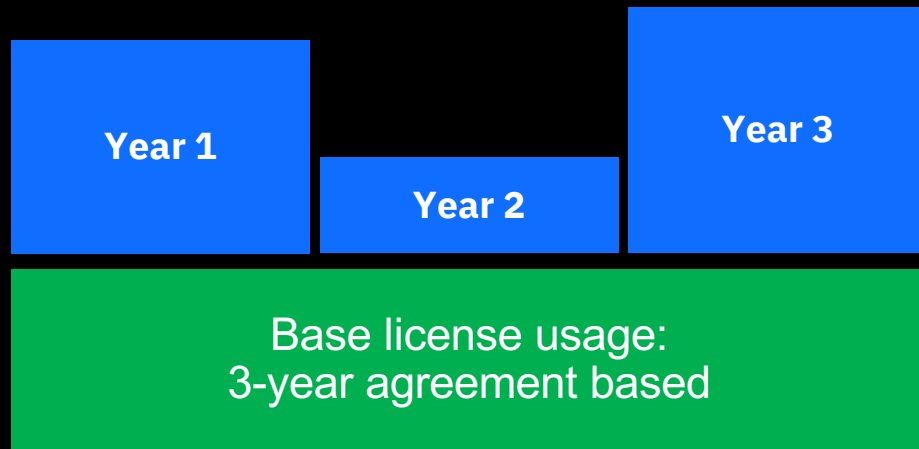
1. Contractual Migration: Keep running 7.6.1 but as AppPoints
2. Duality: Create MAS Sandboxes to help with estate migration
3. Be on MAS Containers before September 2025 or pay Maximo 7.6.1 Extended Support



Licensing Approach

... 1

Flexibility in deployment model, locations, quantities and components



Shift licenses instantly across locations

Shift licenses instantly across Maximo components

Annual quantity variability above the base license usage

- License amount (App Points)
- Managed Services hosting / on prem

Licensing Approach

... 2

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

Step 1 – Contractual Migration by mapping existing 7.6.1 estate to AppPoints.
This is a real-life mapping where customer name is greyed out

How AppPoints where calculated?

(a) Run Script (b) Calculate Concurrency and map to (c) concurrent SaaSFlex users

1. SaaSFlex as a Concurrent licensing model
2. Scripts executed in current environment to capture concurrency
3. Mapped AppPoints in contract

	SaasFlex Concurrent Model							Peak SaaSFlex Concurrency	MAS Concurrent AppPoints				Peak Users
	Express	Limited	Authoriz	Sceduler	Health	Industry	Total		Limited	Base	Premium	Total	
	50	667	37	50		667	1471	2.89	1240	173	3459	4875	800
	1000	1500	65			65	2630	2.84	4399	229	344	4975	1130
	820	580	160			160	1720	1.50	4656	1065	1597	7320	1140
	485	2	142	2	90		721	1.14	2145	2043		4190	230
	367	34	59		5		465	0.98	2046	653		2700	460
Total	2722	2783	463	52	95	892	7007	1.87	14486	4163	5400	24060	3760

- Question: Does it all add up?
- On SaaSFlex there are 7007 entitlements, and the peak usage is 3747 users in the system
 - On MAS there is a pool of 24060 AppPoints and the peak usage will be 3760 users in the system

- And does it add up for each unit?
- Yes, BUT MAHI on SaaSFlex are RVU based and in MAS it is user based.
 - AppPoints are also the most flexible license metric to date on Maximo, so Peak Usage will have additional stretch

Step 2a - Sandboxes

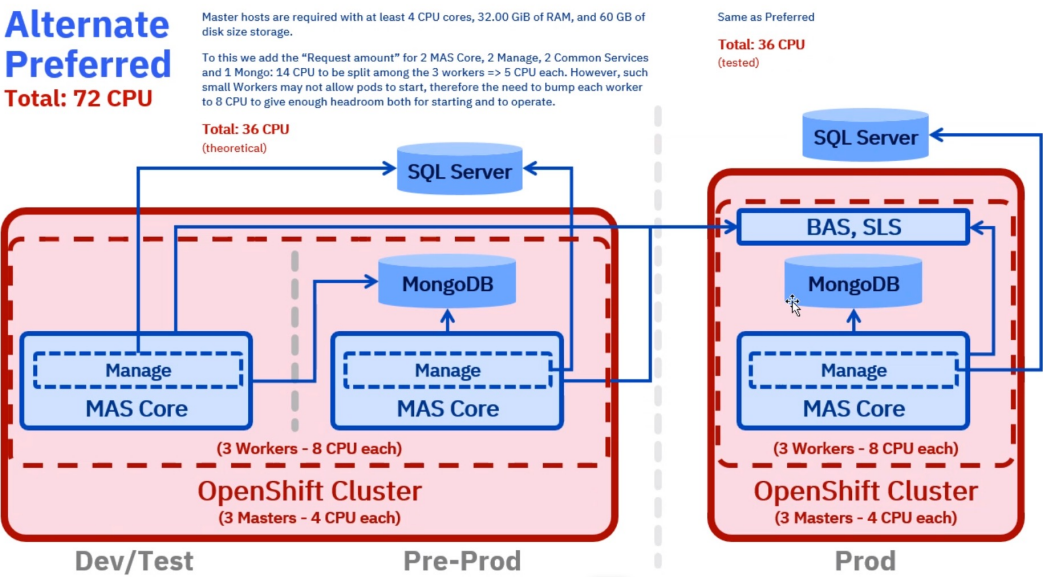
Where do I start?

Today: Cluster configuration:

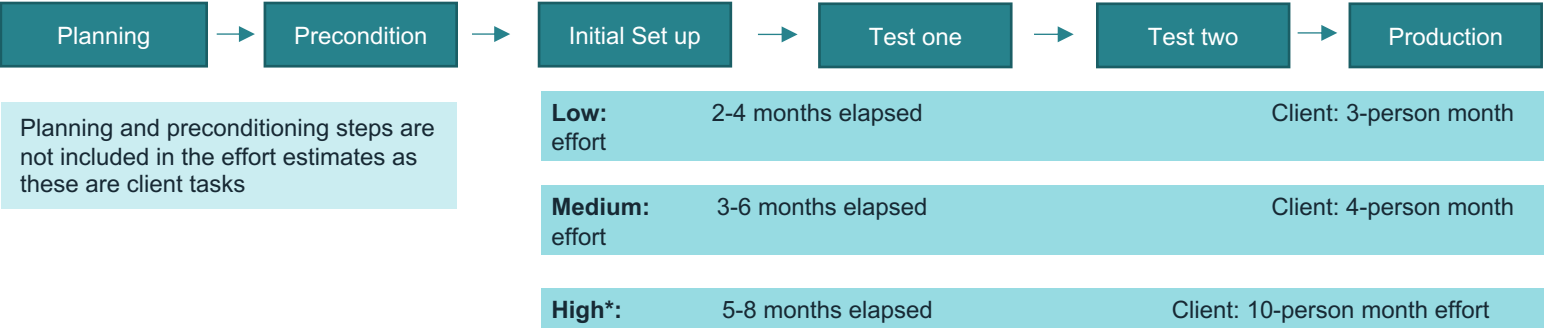
- 1. Ansible Playbook for Single Click Install ([Link](#)) starts from Openshift
- 2. Step by Step guide on IBM Cloud with Openshift

USING FREE TECHZONE CLUSTERS FOR INSTALL OF MAS 8.8.X USING ANSIBLE ONE-CLICK METHOD	1
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Tomorrow: Single Click with Single Node Support



Step 2b – Process of migration



*: To date have not found a customer requiring high

Technical Remediation Items
All RMI replaced with REST API's
All integrations using apikeys
JMS queues updated and replaced with Kafka.
SCIM replaces all VMM sync.
All SOAP 1.1 replaced

Thank You

