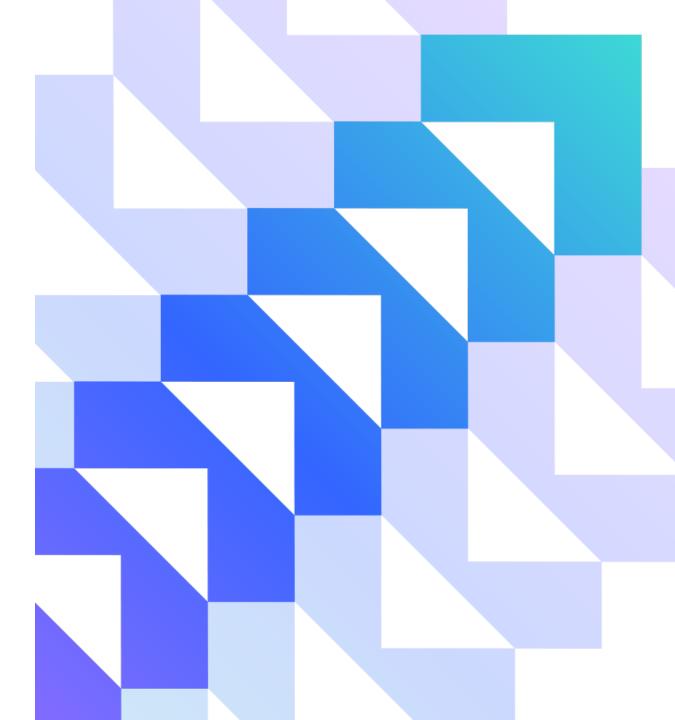
# IBM Maximo Application Suite

Roadmap & Strategic Direction

Dave Gasdia Maximo Product Management Product Leader

January 2024

IBM Sustainability Software / © 2024 IBM Corporation



## Please note

- 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.
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- 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.

## IBM Sustainability: Turning ambition into action

IBM helps companies achieve their sustainability goals by infusing data with AI into daily operations enabled by expertise to deliver profit and purpose.

Sustainability Strategy, Data & Reporting



Co-create roadmaps that capture business value and leverage the power of generative AI to accelerate clients' realization of their sustainability agendas. Curate, report and operationalize data to unlock competitive insights, improve performance, and meet regulatory requirements.

Envizi ESG Suite OpenPages | Planning Analytics



#### Energy transition & climate resilience

Support electrification with grid efficiency and modernization of energy infrastructure to expedite transition to renewables and build resilience to climate impacts.

Maximo Environmental Intelligence Suite (incl fm.geospatial)

#### IBM Technology

Scale and accelerate impact with hybrid cloud and watsonx

	3
44	

## Intelligent assets, facilities & infrastructure

Build more efficient physical operations to increase productivity, advance decarbonization and reduce cost, waste and emissions.

Maximo TRIRIGA

#### **IBM** Consulting

Embed strategy, experience, technology, thought leadership, provision of managed services

1	~
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#### Responsible computing & green IT

Optimize infrastructure and computing with AI at the core to enable more efficient, less energy intensive IT and drive social impact.

Turbonomic z16 | LinuxONE | Power | Storage IBM Cloud Apptio

#### **IBM** Research

AI and climate research, accelerated sustainable materials discovery



## Sustainable supply chains & circularity

Design and manage intelligent workflows for equitable, transparent supply chains to enable a just transition, Scope 3 emissions management, and circularity. Envizi Supply Chain Intelligence Sterling Order Management Engineering Lifecycle Management

**Ecosystem Partners** 

Collaborate with a diverse network of strategy, technology and services partners

## Why Maximo?

Inspections

effectiveness.

Reduce the cost of your

increasing frequency and

inspections, while

An innovation leader in Asset Lifecyle Management



#### Maintenance

Achieve higher first-time fix rates, reduce PMs and improve productivity and use of resources.



#### Reliability

Extend asset life while reducing downtime and asset costs.

#### Supports ESG objectives: Advance decarbonization and avoidance

- Improving carbon capture through lifecycle extension
- Reducing asset energy usage
   20% through optimization
- Reducing chemical and water usage/waste
- Transitioning the next generations of knowledgeable workers

### Maximo Application Suite Accelerate your transformation journey while lowering total cost of ownership



Improved usability with a unified look and feel



Single entitlement across the suite

Ease of implementation with OpenShift containers o ⊨o o o o Provides industry-leading capabilities and functionalities

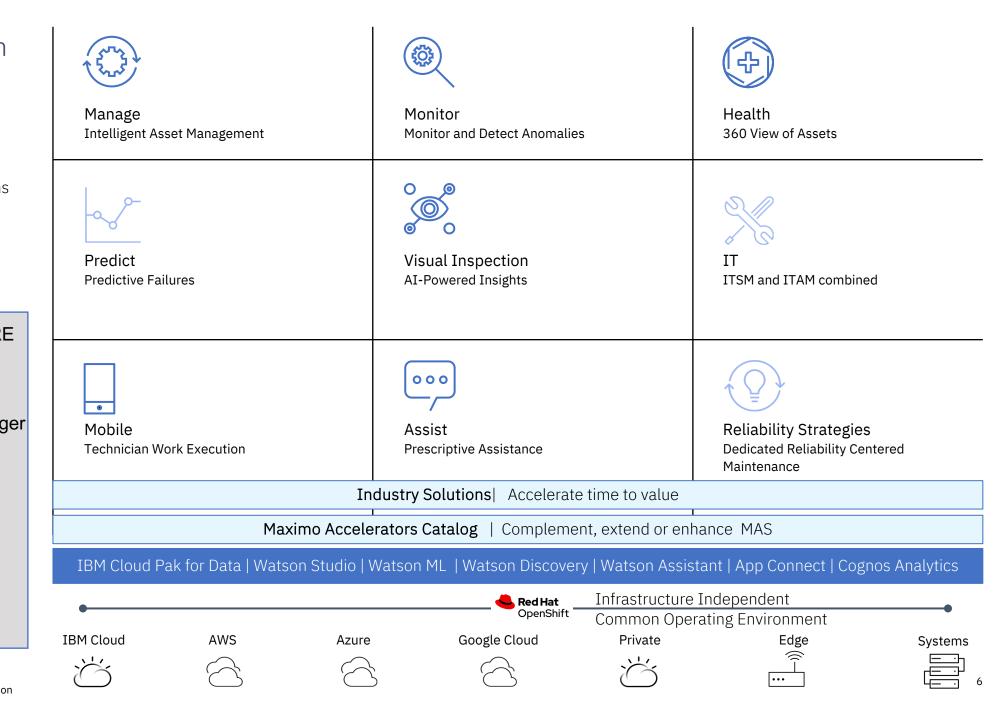
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#### Maximo Application Suite

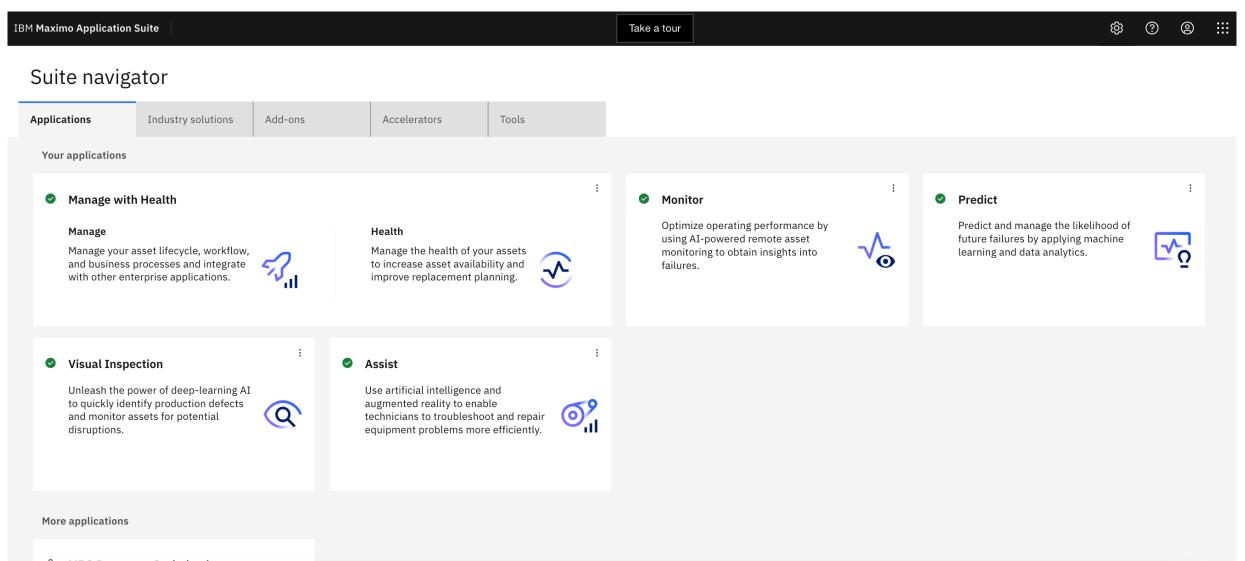
- 1. Manage assets, infrastructure, and resources
- 2. Monitor and measure operations
- 3. Improve product and service quality

#### MAXIMO IS EVERYWHERE

- Technicians
- Technician Supervisor
- Asset Maintenance Manager
- Plant Manager
- Fleet Manager
- Operations Manager
- Reliability Engineer
- Quality Manager
- Planners / Schedulers
- Dispatchers
- Purchasing Managers
- Inventory Managers



## Maximo Application Suite (MAS) – High level applications



#### A MRO Inventory Optimization

## New MAS SaaS deployment models

#### Maintenance & Inspection Essentials

#### STANDARD

#### **Current MAS SaaS offering**

- Mid-priced option suitable for most clients
- Select additional purchase options available
- Traditional SaaS operational policies
- Communication exclusively via support tickets & CCC
- Best option for most SaaS Flex clients

#### PREMIUM

#### Advanced options for clients with specific requirements

- Selection of advanced purchase options<sup>1</sup>
- Broad operational flexibility options<sup>1</sup>
- Tailored configurations for complex deployments
- Communication initiated via tickets; has assigned personnel
- SaaS alternative to MAS Dedicated

#### ESSENTIALS

#### **Entry level offering for new SaaS clients**

- Starting at less than \$40K per year
- Fixed configurations at a fixed price
- Traditional SaaS operational polices
- Communication exclusively via support tickets & CCC
- Best for new entry-level & small on-premises clients

#### https://www.ibm.com/products/maximo/pricing

# Roadmap & Strategic Direction

- Maintenance
- Inspections
- Reliability

## IBM Maximo Application Suite High-level product direction

New Functionality	MAS Core			
New Fullctionality	IVIAS Core			
<ul> <li>Reliability Strategy Library</li> </ul>		MAS Core	MAS Core     Platform Improvements	<ul> <li>MAS Core</li> <li>Customer and Market driven</li> </ul>
(RSL)	Cross MAS application	Improve cross MAS user	Continued Security &	enhancements
• Maximo IT	Dashboard • Operator Maturity	Security	Regulatory Compliance	Improved Reporting and
<ul> <li>Accelerator Catalog</li> </ul>	• Federal Readiness	• Java 17	updates	Data management
Manage IS/Add-ons Updates	Manage IS/Add-ons	Support for Power/Z	Manage	Data management
<ul> <li>Indoor Mapping</li> </ul>	GenAl assistant for Work	Dataloader dashboard	Additional GenAl use-cases	New Industries or Markets
• FISMA/FIPS/Accessibility	Orders	Manage	<ul> <li>Industry Solution and Addon</li> </ul>	Mining
Operational Dashboard	• Field Service Management -	<ul> <li>GenAl assistant for Tickets and MVI</li> </ul>	updates	• others
<ul> <li>Dispatching Dashboard</li> </ul>	dispatching, mobile	• Civil Infrastructure – Defect	<ul> <li>Maximo IT – ITIL v4 updates</li> </ul>	Maximo Managed Service
Civil Infrastructure	• Maximo IT – Service Insights	• Civil Infrastructure – Defect Dashboard	Manage application	Additional applications
<ul> <li>2D Stitching service</li> </ul>	• RSL expanded library	• Maximo IT – ITIL v4, Discovery	enhancements	Continued Security &
<ul> <li>Manual Defect reporting</li> </ul>	Visual Inspections (MVI)	API's	RSL Builder application	Regulatory Compliance
<ul> <li>Usability</li> </ul>	• Edge Appliance	Maximo Mobility		updates Serviceability
Visual Inspections	Maximo Mobile	Industry Solution	Maximo Mobility	GenAl use-case expansion
<ul> <li>Self service enhancements</li> </ul>	<ul> <li>Support for Calibration</li> </ul>	applications	Material Request application	Maximo IT Service Agent
Monitor – <mark>OMNIO adapters</mark>	Configuration tool	<ul> <li>Incident reporting app</li> </ul>	Aviation mobile application	portal
Maximo Mobile	enhancements	Work Assignments	MAS level scheduling	Maximo Mobility
<ul> <li>Inventory Count Books</li> </ul>	<ul> <li>Updates to Inventory apps</li> </ul>	Maximo Application Suite	<ul> <li>Configuration application</li> </ul>	Enhancements to existing
<ul> <li>Receiving/Issues</li> </ul>	Maximo Application Suite	• MVI - scalability	enhancements	applications
<ul> <li>Extended Mapping</li> </ul>	Vegetation Mgmt Solution	• Monitor – for Real Estate &		
Health & Predict	Expand Asset Optimization	Facilities	Maximo Application Suite	Maximo Application Suite
<ul> <li>Investment Project Planning</li> </ul>	Accelerator Catalog	Asset Investment Planning	Optimized Investment	MVI Edge enhancements
MAS Core	Carbon Emissions module	• Health – additional scoring	Planning	Updates to Monitor, Health,
Improved User Management	<ul> <li>Renewables functionality</li> </ul>	methodologies	Updates to Monitor, Health,	Predict, Manage
Login Enhancements			Predict, Manage	
tice: IBM's statements regarding its plans, dire	ctions, and intent are subject to change or withd ied on in making a purchasing decision. The info	Irawal at IBM's sole discretion. Information regai rmation mentioned regarding potential future pro	rding potential future products is intended to out oducts is not a commitment, promise, or legal of	lline our bligation
	formation about potential future products may r	not be incorporated into any contract. The deve		

## Maximo Mobile

#### **Optimized User Experience**

1 application, 1 role-based interface



 $\checkmark$ 

Connected and disconnected

- Intelligent workflows =
   blue button
- P₁ Intelligent forms =
   Configurability



iOS, Android, Windows

Trustworthiness: data quality

is higher, and real-time updates

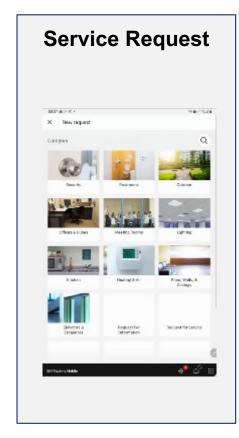
- Mobile users are fundamental to asset and performance management
- Critical applications are available
- Easy to consume Just another user on the system
- Configurable and carry forward through upgrades
- Continued investment in stability and capability
- Established with initial waves of customers



## Providing Mobile Applications across roles and functions

#### Maintenance

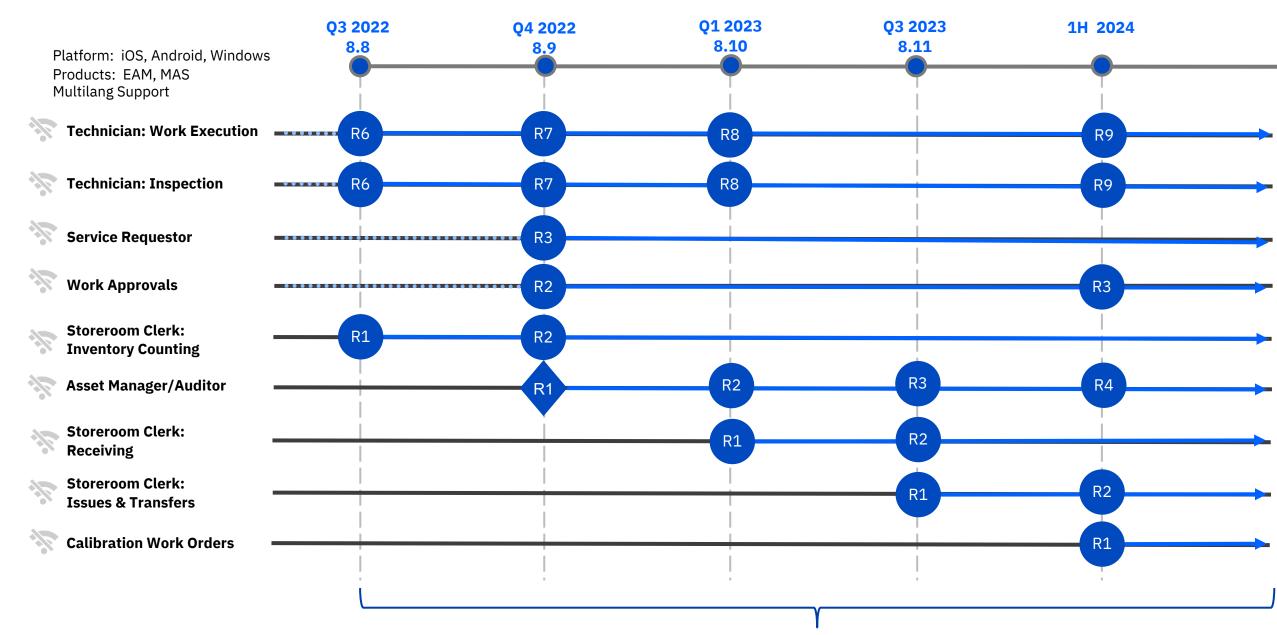
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#### Inventory

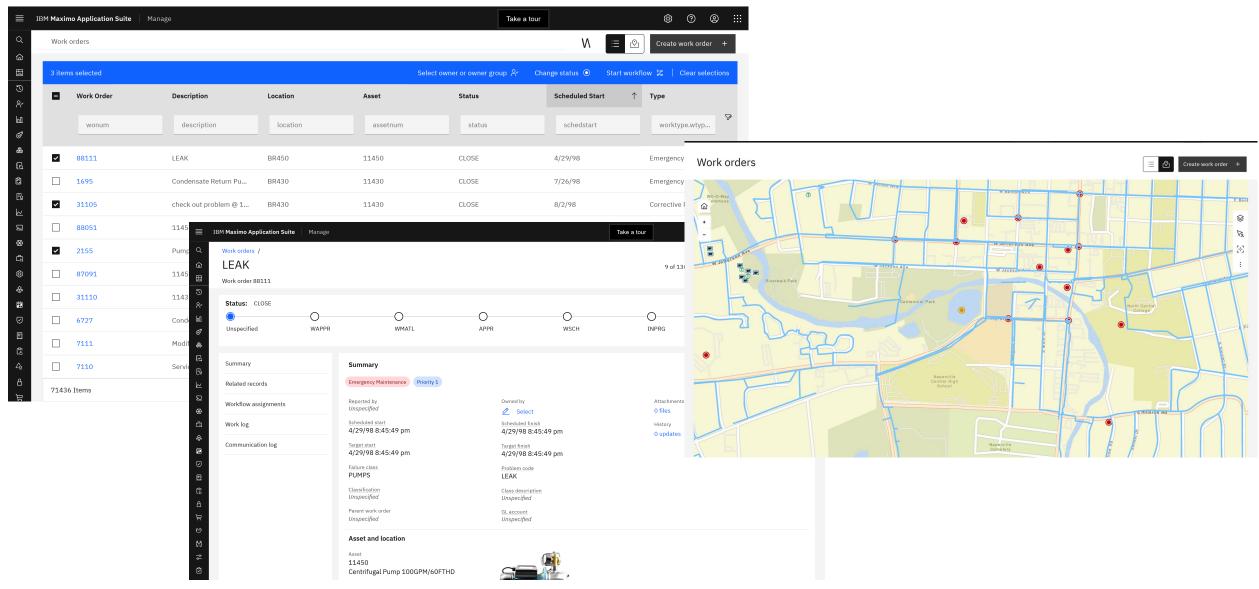
## Roadmap to Expand Maximo Mobile



## MAS Dashboard – Operational Dashboard

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## MAS Dashboard – Workorders application



## MAS Dashboard – Workflow Assignments application

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## MAS Dashboard – Work Queue Manager application

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RR	rrr	1	0	Active	
WOQUEUE1	WOQUEUE1	1	0	Active	
WOQUEUE22	WOQUEUE22	2	2	Active	
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## MAS Dashboard Builder

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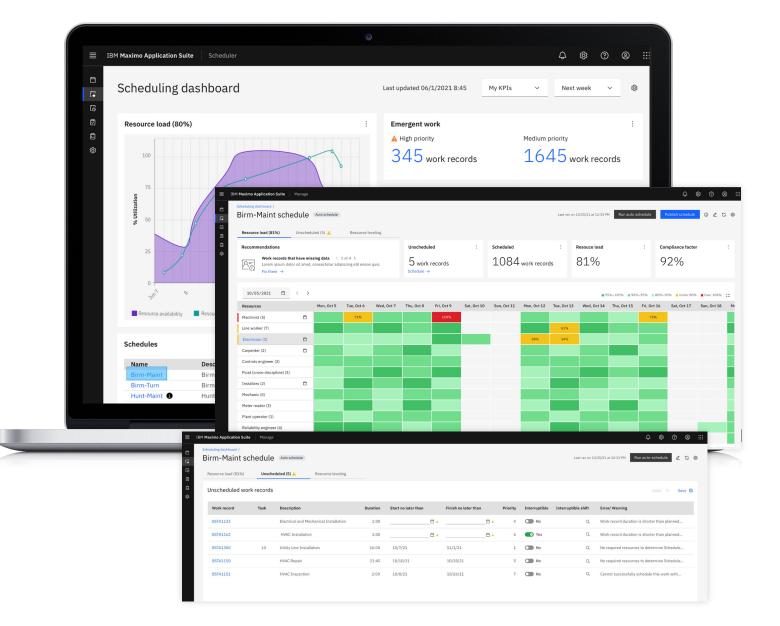
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## Scheduling Dashboard Role Based Application

The dashboard is a holistic view of schedules, indicating areas requiring scheduler's attention with navigation to detailed schedule.

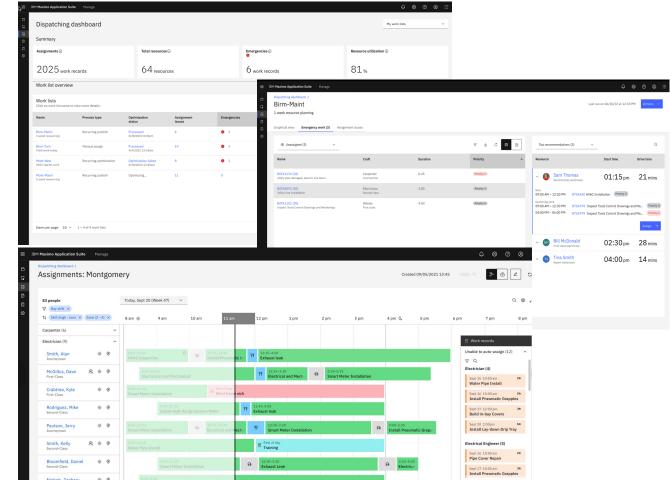
- Optimization initiated by the scheduler or at specific times using configurable parameters. The results of the optimized schedules are shown by resource load and resource levelling.
- Resource load and availability is presented as a heat map, clearly indicating areas of concern
- Resource levelling provides the user with an interactive graphical view
- Unscheduled work records are listed with the errors or warnings in a table that allows the user to fix inline
- Ability to bring work into the schedule from a backlog
- Compliance reporting with configurable metrics
- Leverages existing objects and methods of core applications. Ability to navigate to classic applications for details and additional modifications when necessary



## Modernized Experience: Dispatching Dashboard

The dashboard is a holistic view indicating areas requiring attention with navigation to schedule.

- Rule based optimization can be initiated by the user or scheduled as specific times using configurable parameters. The results of the optimized assignments are presented as KPIs in graphical timeline or map
- Emergency work top recommendations presented to the user to make informed decisions to assign on the right person considering various factors such as skill, travel time and current assignments.
- Timeline interactive view allows the dispatcher to monitor work status as the day progresses and indicates areas requiring attention



Prototype of Dispatching Dashboard

## Improving Manage via AI

#### Introducing AI into Manage

AI capability has been deployed across other MAS products but is not widely utilised

We have been carrying out proof of concept work on Manage AI capability for several years. Eg failure code identification

We have seen that the technology can work

We now need to work towards practical, scalable implementation

Initial focus will be on process automation with AI Advisors

Delivery vehicle will be the Operational Dashboard and Work Orders application using Work Queues and Actions

#### Introducing AI Advisors into Manage

Priority use cases

- Work Order Approval
- Failure code identification
- Work Order similarity

Challenges

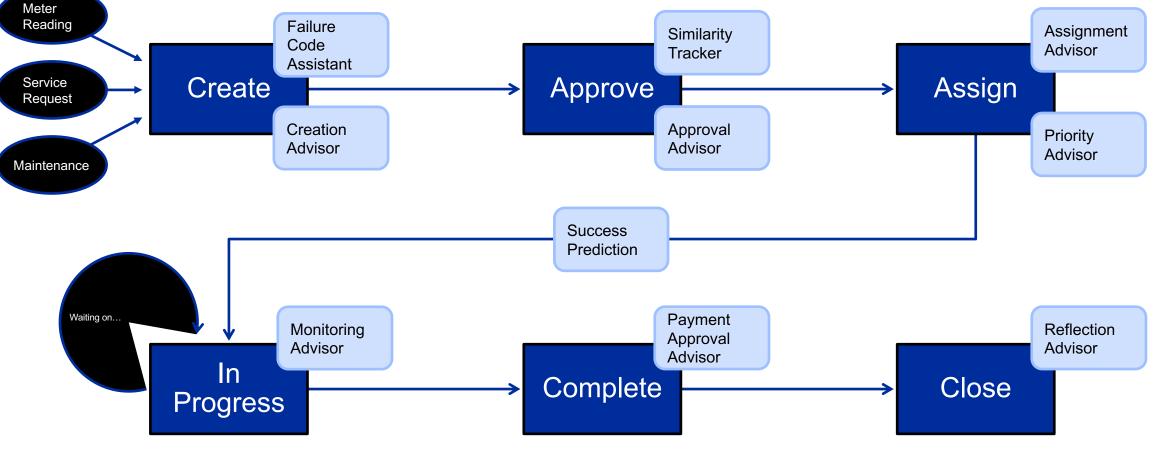
- Keeping the infrastructure simple
- Visibility and trust of decision making
- Model drift and training

Tickets, Supply Chain, Maximo Monitor KPIs and Work Queues

We are keen to engage with customers interested in being early adopters of this capability....

## Work Order Flow infused with Assistants

There are a number of points within the lifecycle of a workorder that are being enabled with automation assistance

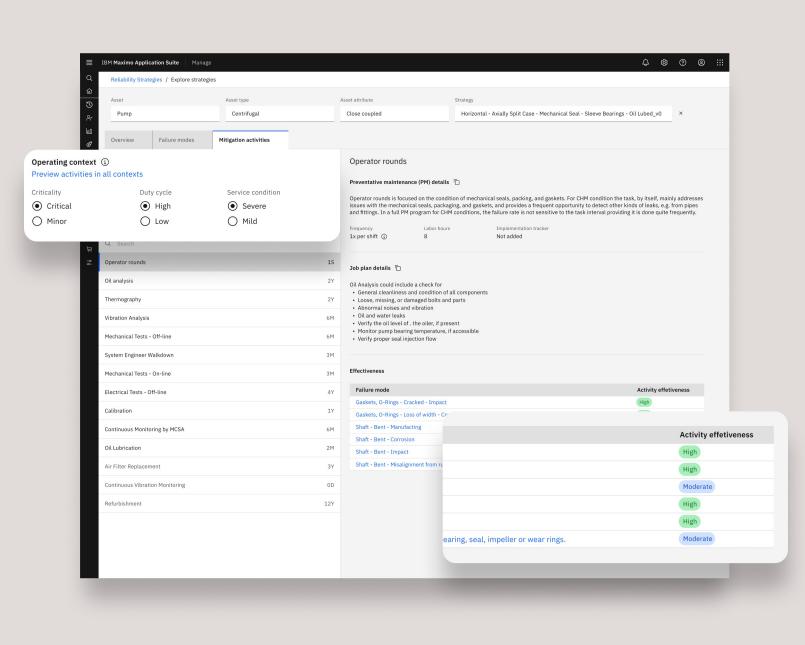


## Introducing Reliability Strategies & Reliability Strategy Library

- One Software (Manage, RCM, APM)
- Rapid FMEA based reliability strategy creation
- Prebuilt FMEA, PM & Job Plan Library
- Advanced PM optimization balancing reliability and costs

# 20% reduction in maintenance cost

**75%** faster than traditional RCM



## Pre-Built Strategies for 800+ Asset Types

...based on 25 years of large-scale RCM studies

#### **Reliability Strategy Library**



#### Features for each asset include...

- Time scales of degradation
- Explicit identification of wear-out & random processes
- Stressor influence on degradation time scales
- PM tasks one to one mapping with failure modes
- PM effectiveness at detecting specific degradation

## Purpose-Built for RCM

With rapid time to value, you can create and optimize reliability strategies quickly and easily

Road Mapped Capabilities

#### **FMEA Viewer**

Reviewing equipment failure mechanisms

#### **Reliability Strategy Composer**

Rapidly builds Reliability Strategies with PMs and Job Plan tasks

#### **Reliability Strategy Builder**

Edit or add to the Reliability Strategy Library

#### **Reliability Strategy Optimizer**

Optimize PM's for both reliability and cost

#### **Conditioned Based Maintenance with Advanced Analytics**

Drive condition-based maintenance with failure mode/parameter coupled machine learning libraries

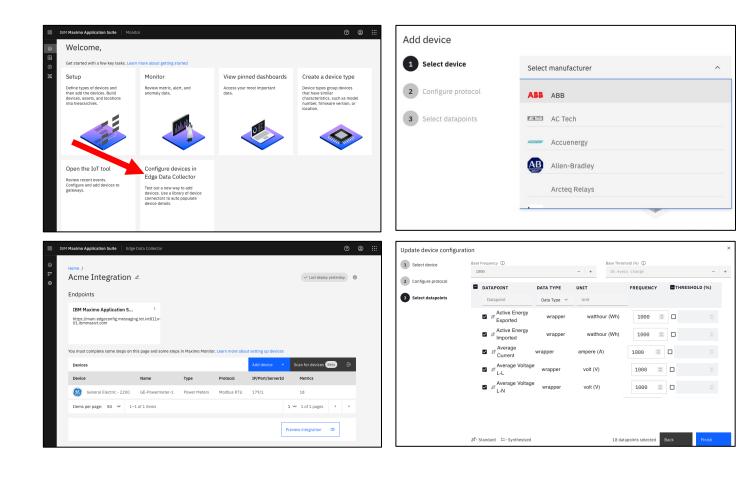
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Mechanical shock, e.g. debris impac							
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✓ Cracked							
✓ Loss of diameter							
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## Maximo Monitor

## Integrating Omnio Software – Improves Time to Value

Integration of the capabilities provided by the acquisition of the Omnio software.

- Users can quickly select and configure integrations with a wide range of industrial data sources, including OT devices, Programmable Logic Controllers (PLCs) and Open Platform Communications (OPC) servers.
- Provides a comprehensive UI to configure integrations launched from within Monitor.
- Connector pre-configurations are searchable by manufacturer, product type, and product name.
- Device datapoints are configurable by the user, which automatically transforms the device data into a standardized data model, providing an efficient method to unify data in MAS.
- Integration is facilitated via Docker using the "Edge Data Collector" software deployed to a IoT Gateway and updated remotely using terminal commands provided in the UI.



## IBM Maximo Accelerators Catalog

# with content and solutions built for Maximo, with Maximo, by Maximo people

What is an "Accelerator"?

A solution that complements or extends Maximo Application Suite capabilities, experience or accelerates time to value

- Content, configurations, dashboards, attachments, model templates
- Scripts and code patterns
- New applications built on and for the Maximo Application Suite
- Integrations
- And much more....



## IBM Maximo Accelerator Catalog

#### A marketplace at the fingertips of Maximo users

- Discover Accelerators in the navigation or administrator catalog
- From IBM and the Maximo ecosystem
- Leveraging the RedHat marketplace to make it easy

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## Discover accelerators that solve business problems

- In the MAS catalog and navigation screens
- Dive deeper into accelerators to learn more
- Secure purchase and from the Red Hat Marketplace

Maximo Application Sui Take a tour				0 0 E	
uite navigator					
Industry soluti	Add-ons Accelerators	Tools			
Acceleration, built directly into your Maximo Application Suite.	記 Relability Strategies Transform how you maintain assets. Explore and leverage failure and misigation deverage failure and by industry experts.				
With 100's more ready and available to install	Cross-application (5)				
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				Support through MAS To get help and support for Maximo Models for Electrical Distribution, see the IBM* Support Guide on IBM.com	
				Product documentation A collection of product documentation to help you get started. Quick start guide 7 Troubleshooting 7 Product configuration 7 Additional link 7	

## Accelerators in onboarding process

	Swiss GmbH	Swiss GmbH	imagin x innovate and inspire	RELIA BILITY WEB.COM	VARIS
Workflow Delegate Select a single person to receive all records that are sent to you via workflow in Maximo.	<b>Easy Reporting</b> With EAM EasyReporting, reports for IBM Maximo can be designed in Word or Excel and run directly out of IBM Maximo.	EAM FlexCalendar Integrated, easy to deploy Add-On and a revolutionary new way of visualizing data in Maximo. The Add-On also allows you to create calendar links which users can subscribe to in their standard Mailing tools like Microsoft Outlook.	<b>iX Twin</b> Customized digital twin asset creation, support, and management	<b>Uptime Elements GPS</b> Ai-powered Reliability and Asset Management Assessment Service Delivery based on Reliability Web's Uptime Elements	<b>Varis</b> Marketplace that integrates with Maximo Application Suite



**IBM Environmental** Intelligence Suite integration for Maximo **Spatial Assets** 



**IBM Maximo Detection** and Prediction for Air Compressors

#### IEM

**IBM Maximo Models for Electric Distribution** 

Model templates to enhance the reliability of energy and utility assets. With predictive capabilities, it enables you to anticipate downtime, degradation, and failures, ensuring the delivery of safe...

#### With more partner and IBM solutions coming soon

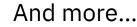




**s**trategic

*m*aintenance





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## Maximo Application Suite Roadmap

- Updated releases planned to be delivered on an annual basis.
- A release may include
  - enhancements to each of the high-level applications;
  - targeted updates to capabilities within an application;
  - technical and administrative improvements to MAS core;
  - addition of new applications/capabilities,
  - and as defect fixes.
- Maximo Test Automation Framework:
  - each release goes through extensive levels of application, system, security, and cross-suite integration testing to ensure compatibility for all included applications.
- 3+ years of on-going investment for product enhancements and to deliver expanded capabilities.
  - Roadmap items are prioritized based on input from customers, sales and the market/industry requirements.

What's New in MAS 8.11 for Manage – current release		<ul> <li>Manage</li> <li>FISMA Readiness</li> <li>Accessibility Compliancy for Manage core, Industry Solutions and Add-ons</li> <li>Continued work on Continuous Delivery items (CICD) and Operator maturity level items</li> <li>Setting Users to Active/Inactive at MAS level</li> </ul>	<ul> <li>Maximo Mobile</li> <li>New Inventory Issues App</li> <li>Asset app now supports viewing assets in a map, as well as to classify and edit asset specifications in offline mode</li> <li>Performance enhancements on Technician and Inspection apps</li> <li>Deprecation of Parts Identifier</li> <li>Enhancements at the Platform level: <ul> <li>Shared device cleanup</li> <li>Switch sites from the device</li> <li>NFC scanning</li> <li>EAudit moment support (capture when changed happened)</li> </ul> </li> </ul>
<ul> <li>Dispatching Dashboard</li> <li>Dashboard KPI view</li> <li>Optimization Action</li> <li>Optimization Report</li> <li>Gantt View visualization</li> <li>Assignment Issues</li> <li>Emergency Work Order definition</li> <li>Emergency Optimization parameters</li> </ul> Scheduling Dashboard <ul> <li>Resource Leveling improvements</li> <li>My Commit updates</li> </ul>	<ul> <li>Operational Dashboard</li> <li>Addition of KPI Trend card</li> <li>Addition of KPI Bar Chart card</li> <li>Addition of Work Queue card</li> <li>Addition of integrated Manage/Health KPI</li> <li>Addition of builder capability to edit the dashboard</li> </ul> Work Orders <ul> <li>Extended edit capability</li> <li>Addition of Communication Log</li> <li>Map view on WO List page for Spatial users</li> </ul> New Work Queue Manager admin application	SpatialNew Tools:1 – Show Related Records2 – Result Tool/Panel3 – Batch Attribute Editor4 – Home Button5 – Sync Tool – Operation ReportEnhancements:Performance on map loadand ESRI integrationOffline map PerformanceUI enhancement on Mobileand Desktop versions	<ul> <li>Civil Infrastructure</li> <li>New 2D Stitching service</li> <li>Manually create defect polygon without MVI model</li> <li>Filter inferences by confidence level</li> <li>Usability improvements to defect management process</li> <li>Usability improvements to Operational maps in support of Possession/Closure process</li> </ul>
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## Current Release, MAS v8.11 – September 2023

Applications, industry solutions, accelerators, and add-ons:

- IBM Maximo IT (new) provides a single point of user support and enterprise service management of information technology (IT) and operational technology (OT) assets and processes.
- Reliability Strategies (new) By using Reliability Strategies, you can access a library of maintenance strategies that are based on reliability-centered maintenance and include both failure details and mitigation activities for each failure
- New accelerators in the Maximo Application Suite catalog (new) Accelerators are solutions that are provided by IBM and IBM partners to complement or extend Maximo Application Suite capabilities.
- Maximo Optimizer Maximo Optimizer includes a new integration with the new Dispatching dashboard. Also, optimization models now use the new what-if analysis function.

## IBM Maximo Application Suite Product roadmap highlights



Maintenance

#### Inspection

Reliability

Instrumentation and improved User Management; Federal Readiness; MAS Dashboards (Single Pane of Glass across MAS); Maximo Mobile (scalability, performance, serviceability); Accelerators; PLG (discovery and trials); Improved <mark>Migration</mark>

GenAI assistants for Work Order Intelligence

Field Service Management: Dispatching, mobile, optimization, and omni-channel integration

Increase the operational efficiency & agility of Maximo IT clients

Improved Accelerator deployment experience

Emissions Management for critical assets

MVI scalability and Maximo Mobile integration improvements

MVI GigE Camera Support, Facial Redaction

Mobility for regulated industries (calibration and asset install/remove)

Vegetation Management solution leveraging Maximo and EIS Expansion of Reliability Strategy Library & enabling customers to create new strategies

Expansion of Asset Investment Optimization and Planning

Improve Health TTV by utilizing existing Manage data. Assist in identifying/resolving missing data.

Optimize asset performance using data from the edge

MAS SaaS continuous delivery updates

#### Continued Investment in Maximo Application Suite – Focus Areas for 1H 2024 (MAS 9.0)

AI	Modernized User Experience	IT/OT Convergence	Administration & System Maintenance	Expand and Deliver through ecosystem	RCM Library
Embrace Generative AI to bring value to each critical role in MAS	Enable 100% compliance and accurate asset data capture through mobile work and inspections activities for regulated industries	Increase the operational efficiency and agility in enterprises by integrating IT and OT systems for real-time data sharing, analysis, and decision making.	IT Administrator can improve system availability and ease of implementation and ongoing maintenance	Rapidly grow ecosystem of accelerators to address critical opportunities and TTV	Clients can implement reliability-centered maintenance 75% faster and reduce their maintenance cost by 20%
<ul> <li>Maintenance managers are 10-20% more productive processing routine work, and increasing the data quality 25-30%</li> <li>Deliver a consumable experience that empowers everyday users of MAS to derive greater value from Al insights and automations</li> </ul>	<ul> <li>Optimize Scheduling and Dispatching capabilities</li> <li>Introduce Calibration, Incident Mobile Applications</li> </ul>	<ul> <li>Improve the interoperability of IT and OT processes</li> <li>Service view application for service availability and value Data driven decisions</li> <li>Enablement of Chatops, Swarm, remote control and video support to Agents</li> <li>Simplified Discovery data load APM</li> <li>APM as an essential component driving improved reliability.</li> <li>Improve model lifecycle mgmt</li> <li>Expand AIP</li> <li>Link MVI outputs to Condition flow for assets</li> <li>Operations managers can easil connect, stream and automate</li> </ul>	<ul> <li>options, authentication</li> <li>Continue development on migration to MAS items.</li> <li>Improve Operator Maturity</li> <li>Power &amp;/or Z support for MAS Manage</li> <li>Continue to deliver on Federal Readiness actions to eliminate barriers for Regulated customers</li> <li>Certify on newer BIRT and Cognos versions</li> </ul>	<ul> <li>Improve the consumption experience of accelerators</li> <li>Introduce certification program to foster trust in offerings</li> <li>Introduce Carbon Emissions Module for Manage</li> <li>Introduce Renewables offering</li> </ul>	<ul> <li>Improved data import capabilities from library</li> <li>Reliability Strategies Composer</li> <li>Reliability Strategies Builder</li> <li>Reliability Optimizer</li> <li>Condition Based maintenance advanced analytics</li> </ul>
IBM Sustainability Software 2024		actions optimizing performanc	e		35

using edge data

## IBM Maximo Application Suite Product roadmap highlights

		Maintenance	Inspection	Reliability		
1H 2025 Planned deliverables (MAS 9.1)		Improved User Security across MAS, Guest Users Support, Java 17, Support for Power/Z, Data Loader Dashboard				
		MAS level Dashboards and extended capabilities (Work progress bar	MVI Measurements and Model Lifecycle	Reliability Strategy Dashboard & direct link from Manage Assets to		
		configuration)	MVI scalability and Maximo Mobile integration improvements	Library		
		MAS level Mobile Scheduling Additional Scheduling Constraint	Mobility – Work	Monitor for Real Estate/Facilities		
		Types	assignment/reassignment	Introduce additional Health scoring		
		Maximo IT - ITIL v4 certification	Civil Infrastructure – Defect Dashboard	methodologies, work queues and actions		
		GenAI assistants for Tickets & MVI				
		Improved Accelerator deployment experience				
	I	MAS SaaS continuous delivery updates				

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

# Thank you



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