IBM Update - Maximo Application Suite



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November, 2023

Please note

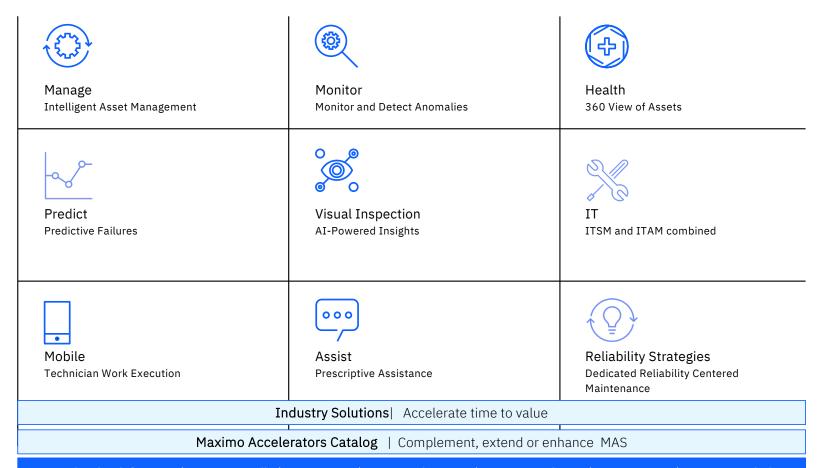
- The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract.
- The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

- 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.

Maximo Application Suite

Best-of-class capabilities to provide complete view of your assets addressing the needs of key personas in your organization.

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







3+ Years of Investment in MAS

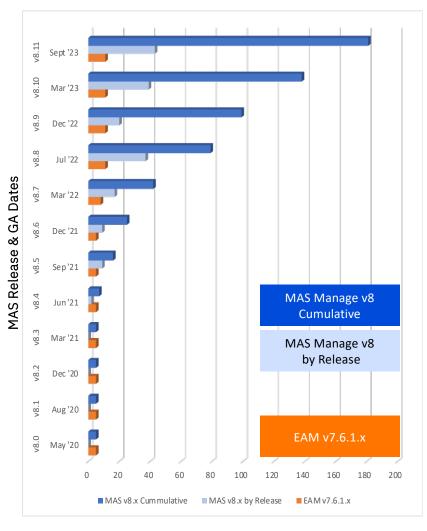
For enhancements and new functionality

Delivered in one major release and eleven-point releases

Latest MAS release is 8.11

Over 3+ years of continued investment

Comparison of MAS Manage v8 to EAM 7.6 (Not counting other new MAS module updates)



Features & Updates Count

What's New in MAS 8.11 for Manage

Manage

- FISMA Readiness
- Accessibility Compliancy for Manage core, Industry Solutions and Add-ons
- Continued work on Continuous Delivery items (CICD) and Operator maturity level items
- Setting Users to Active/Inactive at MAS level

Maximo Mobile

- New Inventory Issues App
- Asset app now supports viewing assets in a map, as well as to classify and edit asset specifications in offline mode
- Performance enhancements on Technician and Inspection apps
- Deprecation of Parts Identifier Enhancements at the Platform level:
 - Shared device cleanup
 - · Switch sites from the device
 - NFC scanning
 - EAudit moment support (capture when changed happened)

Dispatching Dashboard

- · Dashboard KPI view
- Optimization Action
- Optimization Report
- Gantt View visualization
- Assignment Issues
- Emergency Work Order definition
- Emergency Optimization parameters

Scheduling Dashboard

- Resource Leveling improvements
- My Commit updates

Operational Dashboard

- Addition of KPI Trend card
- Addition of KPI Bar Chart card
- Addition of Work Oueue card
- Addition of integrated Manage/Health KPI
- Addition of builder capability to edit the dashboard

Work Orders

- Extended edit capability
- Addition of Communication Log
- Map view on WO List page for Spatial users

New Work Queue Manager admin application

Spatial

New Tools:

- 1 Show Related Records
- 2 Result Tool/Panel
- 3 Batch Attribute Editor
- 4 Home Button
- 5 Sync Tool Operation Report

Enhancements:

- Performance on map load and ESRI integration
- Offline map Performance
- UI enhancement on Mobile and Desktop versions

Civil Infrastructure

- New 2D Stitching service
- Manually create defect polygon without MVI model
- Filter inferences by confidence level
- Usability improvements to defect management process
- Usability improvements to Operational maps in support of Possession/Closure process

https://www.ibm.com/docs/en/masv-and-l/maximo-manage/continuous-delivery?topic=manage-in-87

Modernized Experiences to support the new workforce

Maximo Application Framework

- Uses REST APIs to ensure business rules with direct connectivity to the enterprise system
- ✓ Applications run in a browser or on a mobile device
- ✓ Same tool to <u>configure</u> an App to run on mobile and desktop, can use xml presentations
- ✓ Same development environment to <u>create/build Apps</u> for mobile and desktop



Adaptive UI and Configuration of the Maximo Application Framework

Applications that use the new Maximo Application Framework can be configured to add new fields, update labels, or even duplicate an application to make it your own.

Drive Efficiency at Scale



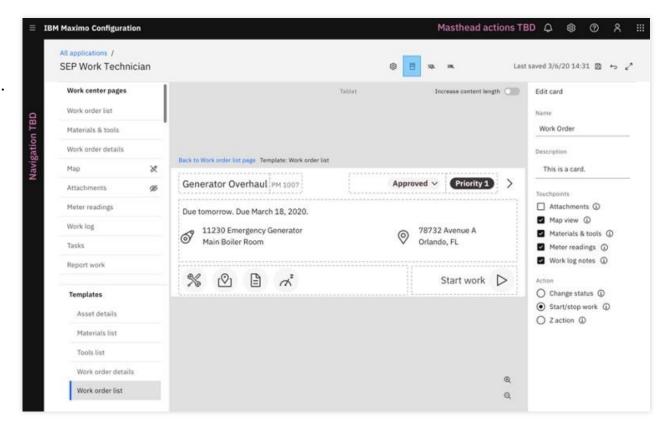
Accelerate adoption



Protect your investment



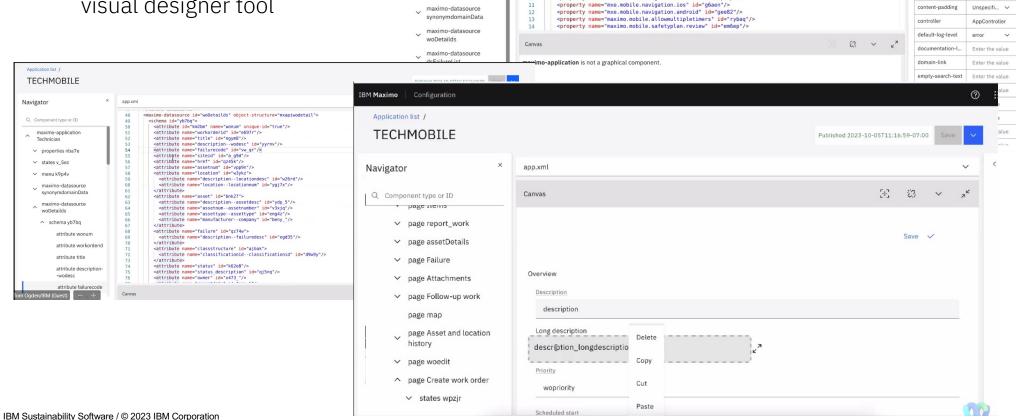
Quicker time to value



Community Library of MAF
Configuration Resources

Application Designer 8.11

Continuing to move towards a visual designer tool



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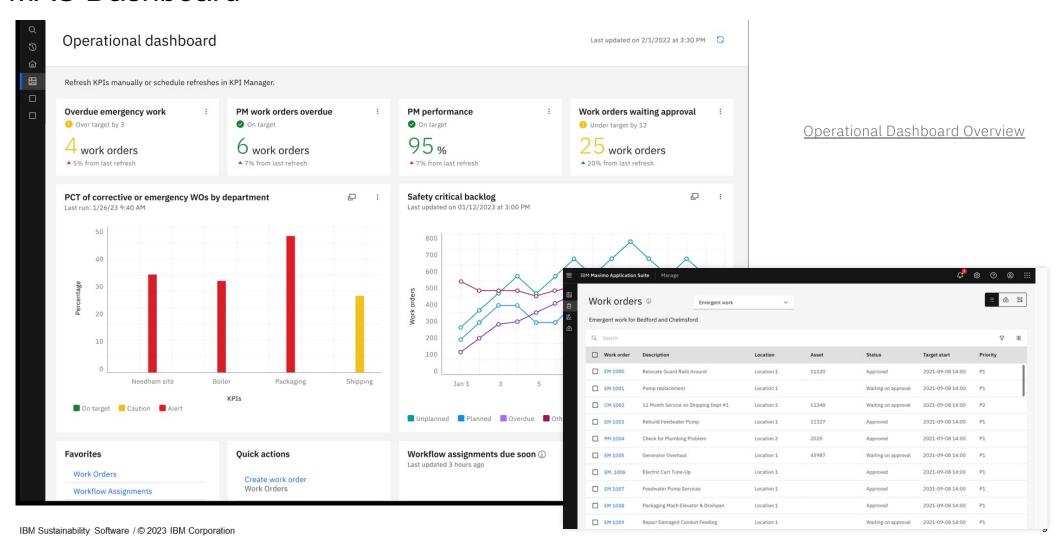
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Navigator

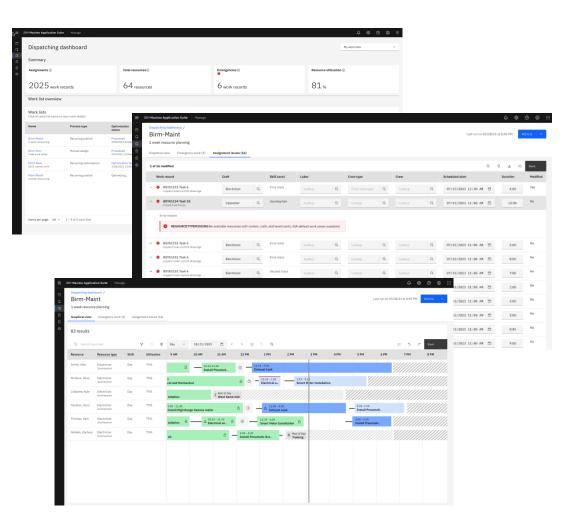
MAS Dashboard



Dispatching Dashboard

The dashboard is a holistic view of schedules, based on Optimization KPI's, indicating areas requiring dispatcher's attention with direct navigation to exception workflows.

- 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
- Timeline interactive view allows the dispatcher to monitor work status as the day progresses and indicates areas requiring attention
- Assignment issues list work records with errors or warnings in a table view that allows the user to directly fix inline and then re-run optimization and check new results.



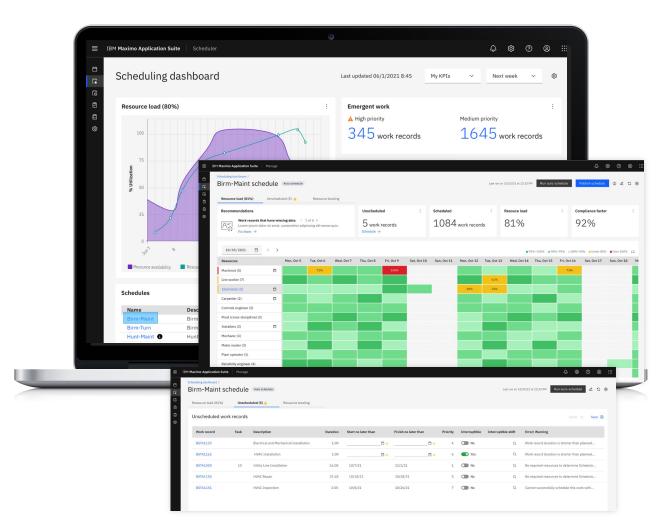
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Scheduling Dashboard Role Based Application

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

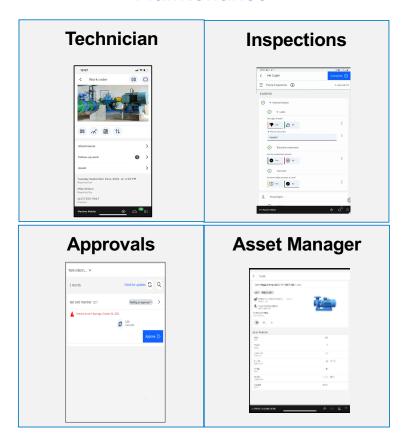
- Optimization initiated by the scheduler or at specific times using configurable parameters. The results of the optimized schedules are shown by resource load and resource levelling.
- Resource load and availability is presented as a heat map, clearly indicating areas of concern
- Resource levelling 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

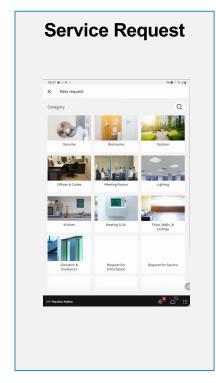


Providing Mobile Applications across roles and functions

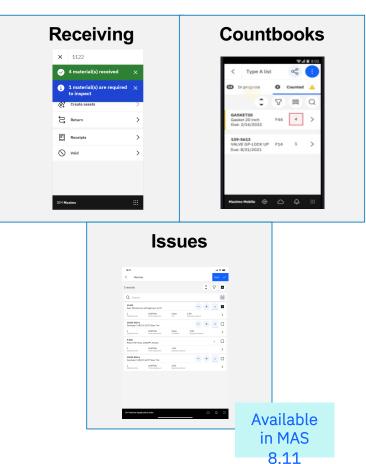


Maintenance





Inventory

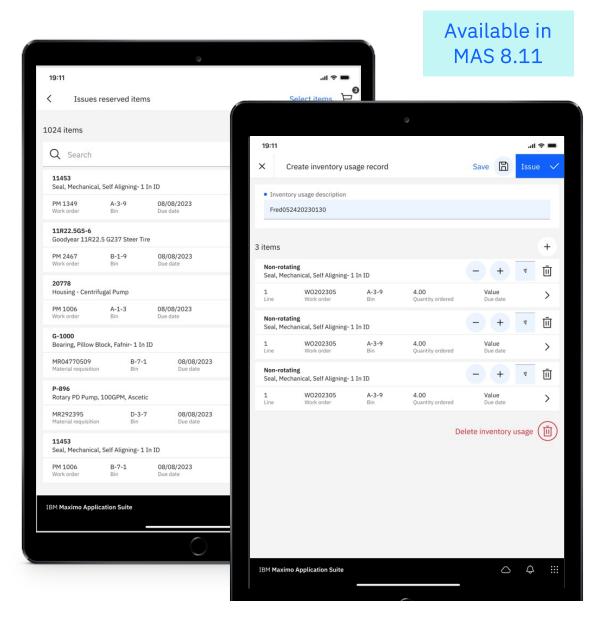


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MAXIMO MOBILE

Issues Mobile Application

- Issue Reserved Items
 (Work Orders, Material Requisitions)
 released in 8.11
- Inventory Usage Records (Create, Save, Open, Issue) released in 8.11
- Issue additional items, Transfers (Internal Purchase Orders, Shipments) planned for Future Release
- Staging, Returns
 planned for Future Release



New - Maximo IT (ICD)

Available in MAS 8.11

What it can do for your business

- Maximo IT provides the IT service management (ITSM) and Asset Management needed to simplify support of users and infrastructures.
- Adds capabilities to support IT/OT convergence
- Helps to reduce costs and increase satisfaction through selfservice, automated service management and integrated, best practice-based service desk capabilities and IT Asset Management processes.
- Leverage your investment and knowledge of Maximo/MAS Manage

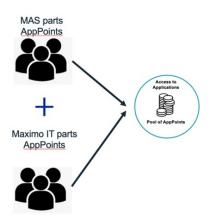


Maximo IT

New Add-on to MAS Manage

Maximo IT

- Complete functionality of IBM Control Desk 7.6.1.5 (ITSM, ITAM)
- Modernized Graphite Self Service, replaces Service Portal
- Integration Foundation
 - Slack Chatops, Swarm
 - Jira Devops
 - ManageIQ Cloud

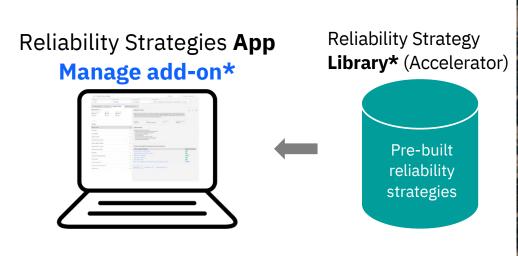


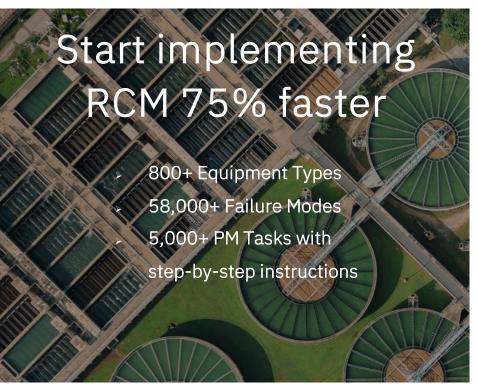
How Entitled

- "Purchased" add-on to MAS
 - MAS is pre-req for Maximo IT
- New Parts for Maximo IT = AppPoints
 - Align with MAS parts (Perpetual, STL, Monthly), S&S
 - Must be purchased to have access and use
 - Trade up/Upgrade parts available for Existing ICD customers
- Users align to MAS types
 - IT users can be flagged using the Manage User
 Type field and Application Security
- Deployed as add-on to Manage
- Retain Value of the Suite
 - Flexibility to use expanded MAS functionality (Monitor, Health, etc)

New - Reliability Strategies Makes It Easy

A dedicated RCM/FMEA app with included content library. Together, it's a game-changer.





^{*}Reliability Strategies can be deployed for existing Manage users without any additional AppPoints.

^{*}The Reliability Strategy Library also does not require any additional AppPoints.

Enabled by Pre-Built Strategies for 800+ Asset Types

...based on 25 years of large-scale RCM studies and 32,000 years of professional industry experience



Reliability Strategy Library

- > 800+ Equipment Types
- > 58,000+ Failure Modes
- 5,000+ PM Tasks with step-by-step instructions

Features for each asset include...

- Defined Boundary Conditions
- PM tasks and intervals organized by operating context (criticality, duty cycle and service conditions)
- PM tasks one to one mapping with failure modes
- PM effectiveness ranking at detecting specific failure modes
- Cross industry asset coverage

An Application Purpose-Built for RCM

With rapid time to value, the solution makes it fast and easy to create and optimize reliability strategies

FMEA Viewer with 8.11

For reviewing equipment failure mechanisms in the Reliability Strategy Library

Reliability Strategy Composer With 8.11

Rapidly builds Reliability Strategies with corresponding PMs and Job Plan tasks using the Reliability Strategy Library

Reliability Strategy Builder *

Upcoming release

Edit or add to the Reliability Strategy Library

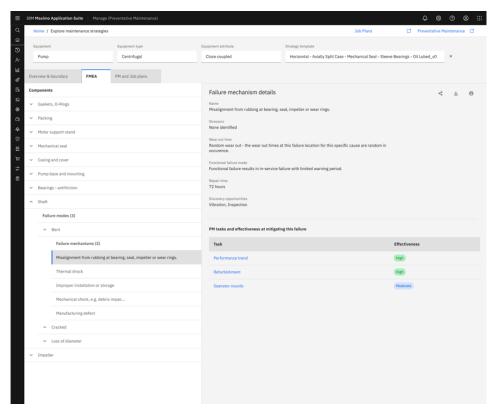
Reliability Strategy Optimizer Upcoming release

For optimizing PM's for both reliability and cost

Conditioned Based Maintenance with

Advanced Analytics Upcoming release

Drive condition-based maintenance further into the asset base with failure mode/parameter coupled machine learning libraries



^{*} Includes Expanding the Library

Maximo RCM key capabilities





Reliability Strategies, pre-built strategies based on 25 years of large-scale RCM studies 800+ equipment types 58,000+ failure modes 5,000+ PM tasks with step-by-step instructions

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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



Examples of device categories:

- Conveyors
- Compressors
- Filters
- HVACS
- Pumps
- Generators
- Cooling
- Towers
- Valves
- Heat Exchangers
- CNC Machines
- Motors
- Relays
- Actuators
- Breakers
- Switchgear

MAS Deployment Options

Deployment	Availability	Procure	Provision & Operate	Client Benefits
On Premise Customer Managed	Now	Client purchases MAS from IBM Client provides infrastructure	Client provisions, manages, and operates full stack	Maximum operational flexibility
Hyperscalers Customer Managed	Now AWS Azure Now AWS Azure	BYOL Client purchases software from IBM and infrastructure from Hyperscalers Paid (Marketplace listing) Client purchases software and infrastructure from Hyperscalers	Client runs IBM-provided automation scripts to deploy MAS on Hyperscalers' cloud Client manages and operates both software and infrastructure	 Simplifies procurement and deployment Allows client to select their Hyperscalers Flexibility for clients to manage and operate their environment
SaaS Editions IBM Managed	Now AWS	Client purchase single part (includes software, infrastructure, and operations) from either std IBM sales/channels or AWS Marketplace Essentials Standard	IBM provisions, manages, and operates Client's MAS environment on AWS Cloud using IBM's AWS cloud account Provides a base implementation of Manage or MVI. Limited configuration. Provides full MAS Capability, with limited options and operational options	Reduced time-to-value Reduced operational costs Allows clients to focus on business priorities Entry Level for small implementations. Targeted at most clients requiring MAS and wanting to focus on standard capabilities.
		Premium	Full MAS with more flexibility.	For clients wanting more operational features and flexibility. ²⁰

MAS SaaS Editions

Essentials

Standard

Premium

Maximo Maintenance Essentials Manage + Mobile + Health + Reliability Strategies

- 1 environment
- Up to 25 users
- Up to 100 work orders / hour
- Up to 1,000 health scores / hour
- Scheduler included

Add'l purchase options

- Max of 1 add'l environment
- Up to 25 add'l users

Maximo Inspection Essentials Visual Inspection

- Capacity to train 1 model at a time
- Up to 2 deployed models
- Up to 5 client devices
- Up to 10K inferences / hour
- Up to 500 GB storage

Add'l purchase options

None

Full MAS Suite with Standard Operational Practices (Today's MAS SaaS Offering)

- Select from any MAS application or combination of applications
- Purchase multiple non-production environments; R/W access to non-prod environments is included by request

OR

- Purchase any capacity of functionality (e.g., Users, Scores/Inferences, I/O Points, etc.)
- Select from preferred AWS regions (US, Canada, Germany or Australia)
- Most Manage Industry Solutions & Add-ons are available; some require additional AppPoints

Add'l purchase options

- Non-production environments
- Scheduler Optimizer
- Read-only production DB replica
- Allow Listing²

Full MAS Suite with Custom Operational Options

- Flexible scheduling of upgrades (within limits, excluding updates & security items)
- Support for multiple VPNs
- Deployment validations for regulated industries
- Assigned communication coordinator
- Back up retention of up to 1 year

Add'l purchase options

- Extended upgrade schedules
- Extended data retention periods¹
- Multi-Workspaces¹

- Enhanced Disaster Recovery
- · Choice of any AWS data center that offers necessary services1
- Oracle¹ or SQL Server database
- · Direct (Private) Connect

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¹Future availability

IBM Maximo Accelerators Catalog

with content and solutions built by IBM and Maximo partners

What is an "accelerator"?

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

A marketplace solution

- Build, sell, discover and buy accelerators
- Delivers a marketplace for IBM and ecosystem Accelerators within MAS
- We are leveraging the RedHat marketplace to make it easy

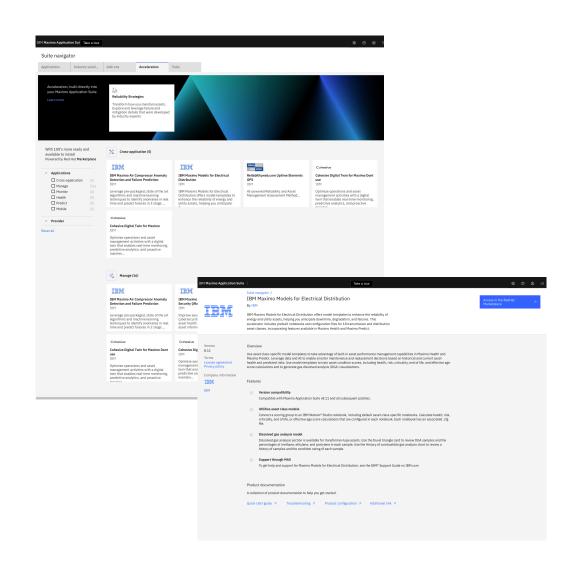
Explore the Maximo Marketplace.

Accelerator Catalog

Provides customers access to a range of accelerators offered by both IBM and the Maximo Ecosystem

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

Explore the Maximo Marketplace

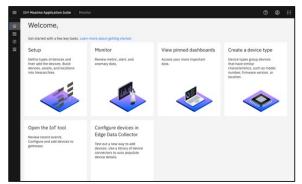


APM - Maximo Monitor

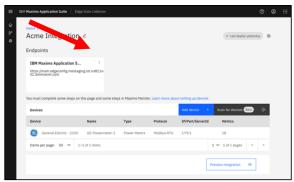
Integrating Omnio Software as Edge Data Collector

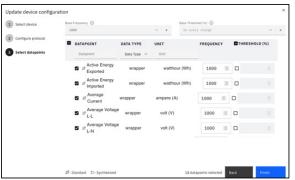
Integration of the capabilities provided by the acquisition of the Omnio software.

- 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.

















































Continued Investment in Maximo Application Suite – Focus Areas for 2024

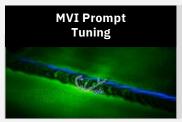
AI	Modernized User Experience	IT/OT Convergence	Administration & System Maintenance	Expand and Deliver through ecosystem	RCM Library
Embrace Generative AI to bring value to each critical role in MAS	Enable 100% compliance and accurate asset data capture through mobile work and inspections activities 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%
 Maintenance managers are 10-20% more productive processing routine work, and increasing the data quality 25-30% Deliver a consumable experience that empowers everyday users of MAS to derive greater value from AI insights and automations 	 Modernize and Enhance role- based applications (Add Cognos) Optimize Scheduling and Dispatching capabilities 	Improve the interoperability of IT and OT processes APM	 User management, IDP options, authentication Continue development on migration to MAS items. Improve Operator Maturity Power &/or Z support for MAS Manage Continue to deliver on Federal Readiness actions to eliminate barriers for Regulated customers Certify on newer BIRT and Cognos versions 	 Improve the consumption experience of accelerators Introduce certification program to foster trust in offerings Introduce Carbon Emissions Module for Manage Introduce Renewables offering 	 Improved data import capabilities from library Reliability Strategies Composer Reliability Strategies Builder Reliability Optimizer Condition Based maintenance advanced analytics
	Introduce Calibration, Incident Mobile ApplicationsConfiguration Tool	APM as an essential component driving improved reliability.			
	 Complete Issues and Transfers Include operational, condition and predictive, and additional inspection capabilities into MAS dashboards. Introduce MAS dashboards for engineers and operators. 				

using data from the edge

Embedding AI Intelligence into Maximo processes



- Maximo Visual Inspection is currently based primarily on open-sourced convolutional neural network models. These models can lack accuracy for "Few-Shot" anomaly detection.
- We are building a transformer-based foundation model that will fill these gaps



- Maximo Visual Inspection uses the classic ML pattern of labeling data, training the model and deploying the model to provide capabilities.
- We are using foundation models and prompttuning to dramatically reduce the effort required to effectively train the model



- Technicians have a difficult task diagnosing and fixing issues across a wide array of equipment.
- IBM is using an AI assistant trained on service manuals and previous work orders to help technicians easily access the latest asset service info and generate repair workflows.



- There is a wide variety of sensors and asset behaviors that must be analyzed to understand an asset's health
- We are using Gen AI to create sensor-level models, trained on a small sample of sensor data. This greatly speeds time to value for asset health prediction.



- Often the quality of the failure data available for reliability analysis is inadequate. Understanding how assets fail is crucial for effective preventative maintenance.
- Maximo is building a gen AI model to classify asset failure modes derived from work order data.



- Enabling the automatic processing of work order through business flows based on recognizable patterns can save valuable time over manual review.
- Maximo is building both ML and generative foundation models to provide automated recommendations to assist users in managing work order process flow.



- Clustering of tickets and assignment will ensure work is aligned to the right resource, and drive solutions to enable users to solve more of their own issues.
- Maximo IT is building both ML and generative foundation models to deliver ticket deflection through ticket grouping and assignments and pushing effective solutions to end users.



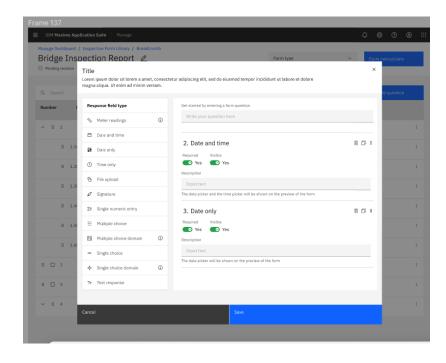
- Maximo Application Suite is a complex product that needs integration with other client systems
- We are training an LLM model to help answer questions that arise in its implementation that can guide clients and answer questions about costs, effort and risks.

Traditional & Non-Traditional

MAS Modernized Dashboards and Applications

2024 and Beyond

Inspection Form Builder



Maximo Management Interface (MMI)

 Administrative Dashboard to provide insights into Maximo application health and performance.

Data Loader

 Provide tools to manage data sets while ensuring business rules are enforced.

Scheduling - Planner Dashboard

Support longer term planning horizon scenarios.

Investing in Dashboards for 2024 and beyond

- Multi-tab, Multi-role Dashboards
- New Dashboard card for a configurable iframe link to third party content
- Work queues phase 2 multiple objects, secure membership, conditional actions, auto-save view manager
- Work order Plans re-imagined for usability
- POC Delivery to Accelerator program of AI models to improve work order quality
- Status advisor
 - Failure code advisor
 - Duplicate detection advisor
 - Global Tickets application

Reporting Future Plans

BIRT

Support for BIRT 4.14

COGNOS

- Support for Cognos 12
- Embed Cognos content in MAS Operational Dashboard
- User Synchronization automation from MAS to Cognos
- Improve Install and Deployment process
- BYOL support
 - Remove dependency on CP4D
 - Remove dependency on OCP

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MAS is more than MAS Manage

It is RCM

makes it fast and easy to create and optimize reliability strategies and mature methodologies to predict

- A dedicated RCM/FMEA app with included content library. Together, it's a game-changer
- Build projects, add assets to those projects, and run replacement scenarios to determine which assets should be replaced and when
- Use replacement information from templates built for common asset types OR from individual asset replacement plans
- Asses and score risk and health of assets/projects

It is APM

Real Time Analytics with IoT Data – Reduce Downtime

- 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.
- Represent a business as a hierarchy of assets, roll up metrics at different levels, and create summary dashboards to monitor performance at scale and see meaningful alerts generated by AI-based anomaly detection
- Ingest 1 million tags per minute from distributed systems across several customer sites and analyze the data using the streaming analytics pipeline

It is AI

Scale and accelerate the impact of AI with trusted data

- Reduced time to value for asset classes where we have less experience
- More accurate failure assessments and preventative maintenance plans
- Automated creation of maintenance strategies for new assets & clients
- Accelerate at a complete portfolio approach for predictive maintenance and connected technician

It is preconfigured for Industry use cases with the supporting asset structure, location & geo/spatial information

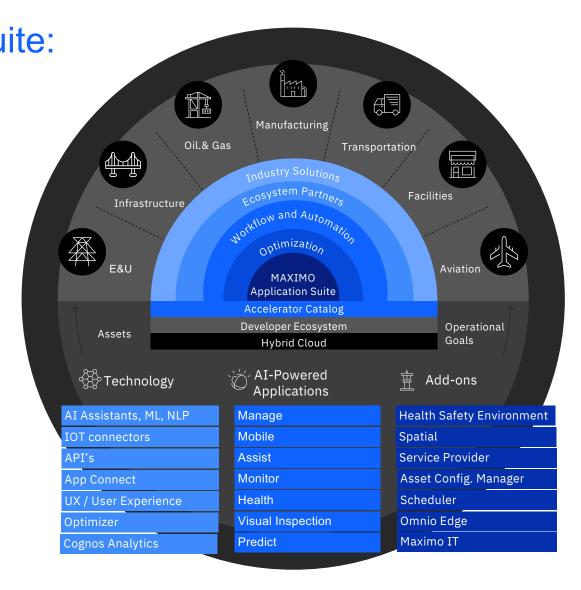
MAXIMO APPLICATION Suite: Operations Optimization platform

Powered by Al-based Automation

The next generation of Operational Technology (OT) solutions requires bringing new intelligence that did not previously exist.

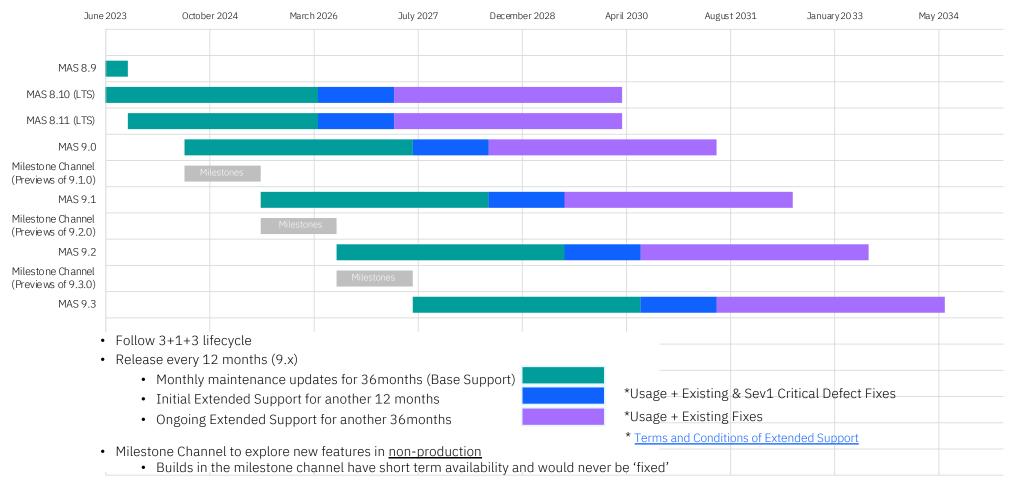
Enhancing physical assets operations with rich digital insights helps companies transform their businesses.

Lastly, the solution must be plug and play able to quickly integrate to existing solutions



New lifecycle for MAS: 3+1+3 with 12-month release cadence

**Please review MAS SaaS policies for their release cadence



Note: EAM customers on 7.6.0.10/7.6.1.2/7.6.1.3 will be able to directly upgrade to 9.x All MAS sub-components (i.e., Manage, IS/Add-ons, Health, etc.) will now align to the release version – for example 9.0

Maximo EAM Lifecycle Updates

	DESCRIPTION	DATE
Announce End of Market (EOM & EOS)	Announcement Letter published IBM Announcement Letter #922-024	April 12, 2022
End of Marketing (EOM)	Parts are no longer available for purchase	April 19, 2024
End of Support (EOS)	Update Support Plans and Lifecycle page	Sept 30, 2025

DESCRIPTION



IBM Extended Support: Enables clients continued access to IBM Support for "how to" questions, usage issues, known defects published in IBM Fix Central, and new critical sev1 defects (no security fixes) after IBM standard support ends for 7.6.1.x.

IBM Sustained Support: Enables clients to continue to get support for "how to" questions, usage issues, and known defects published in IBM Fix Central after IBM standard/extended support ends for 7.6.1.x.

IBM Sustained Support does not include support for new defects or new security fixes.

DATE

MAS/Manage Summary Above and Beyond EAM

EAM + APM + RCM

Reliability STrategies

Modernized Experience Mobile

- Technician
- Inspections
- Service Requests
- Approvals
- Asset Manager
- Inventory Count Books & Count Books application
- Issues and Transfers
- Indoor Mapping

Applications

- Scheduling Dashboard
- · Dispatching Dashboard
- Operational Dashboard
- Work Orders
- Workflow Inbox
- Query Manager
- Configuration Tooling

Licensing

Available as part of Base User

- Scheduling
- Linear
- Spatial
- Calibration
- Flexibility allows access to
 - Transportation
 - Oil and Gas
 - Utilities
 - Civil Infrastructure
 - Nuclear
 - · Health Safety Environment Mgr
 - Service Provider
 - Health
 - Monitor
 - Predict
 - Visual Inspections
 - Assist
- Install Licenses for Production Environments only

Modern Technology

Mobile

- Assist
- Parts Identifier
- Hands Free Inspections

Scheduling

Optimization Models

Health

- Risk Matrix
- Investment Planning

Monitor

Omnio Connectors

AppConnect OOTB Integrations

- Workday
- TRIRIGA
- Envizi

Currencies

- Dojo 1.16
- Update iText 3rd party plug-in 2.17

Serviceability

- · Grafana Dashboard
- Log output to S3 Cloud Object Storage
- Ability to stream WebSphere Application Server Liberty logs
- Metrics are added to the monitoring dashboard

Technical Foundation

- Bulk export feature is added to the integration framework
- Integration framework support for OR and AND operators in the same OSLC WHERE clause
- Ability to scale Java Message Service (JMS)