

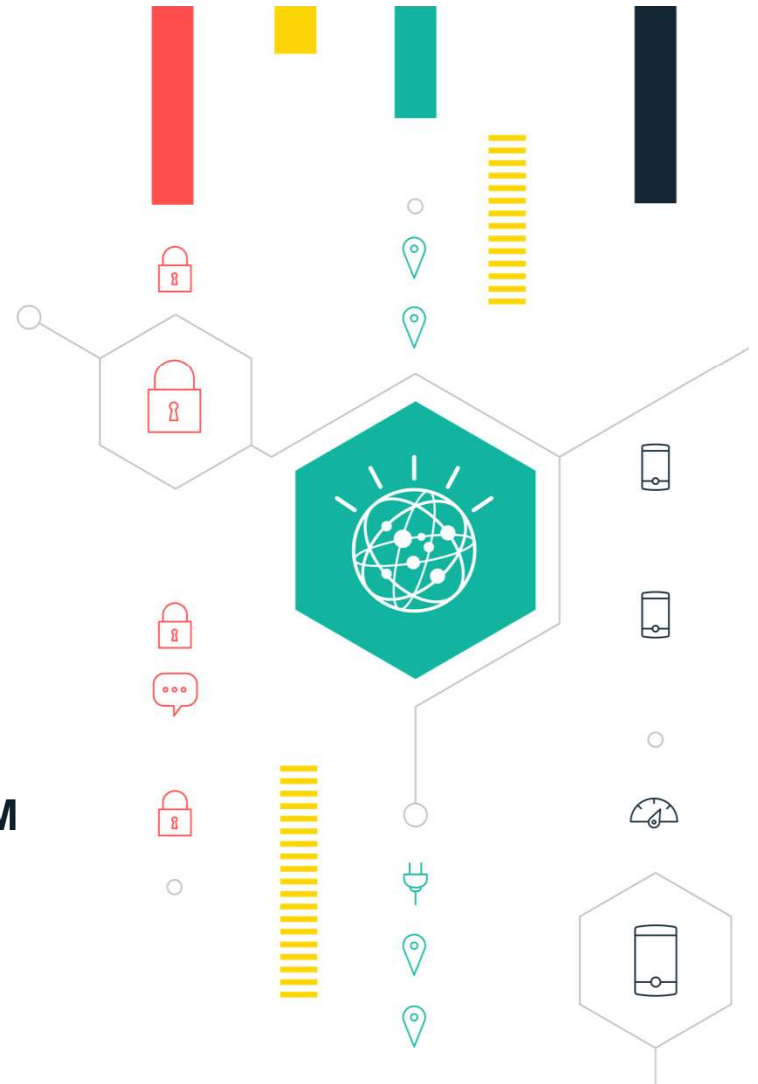
IBM **Watson IoT**

Maximo Scheduler and Maximo Scheduler Plus

Overview

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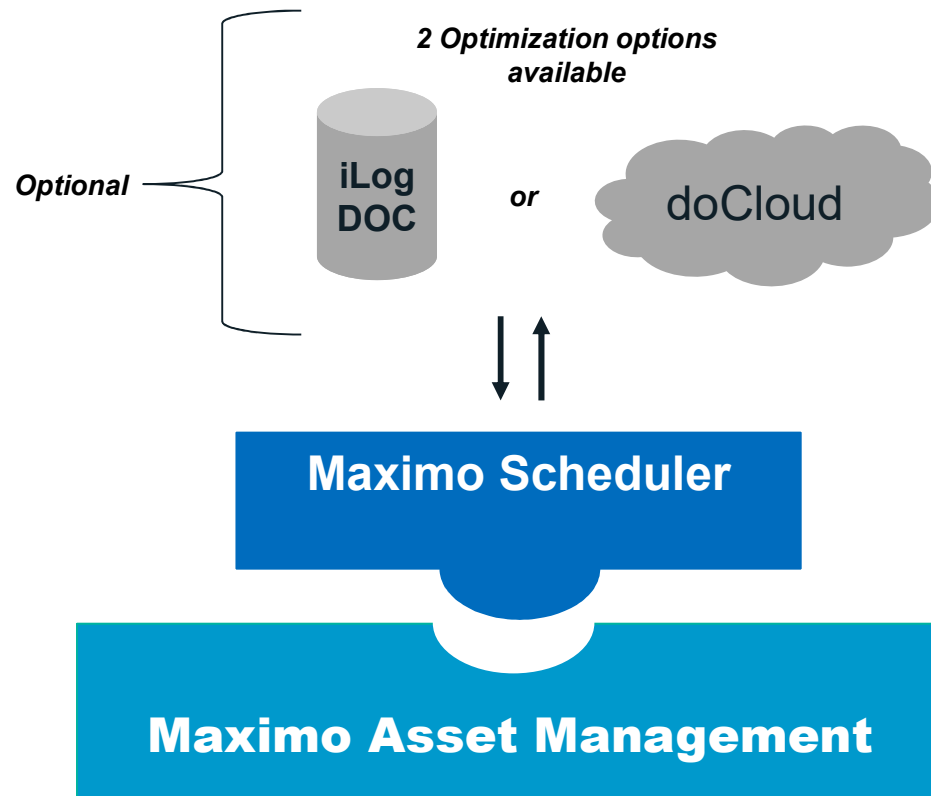
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Maximo Scheduler: Work Mgmt Tool Embedded in Core Maximo



DOC 3.9

- Optional: if clients choose to use the optimization capability, DOC server (included w/ Scheduler license) installation OR subscription to doCloud is required

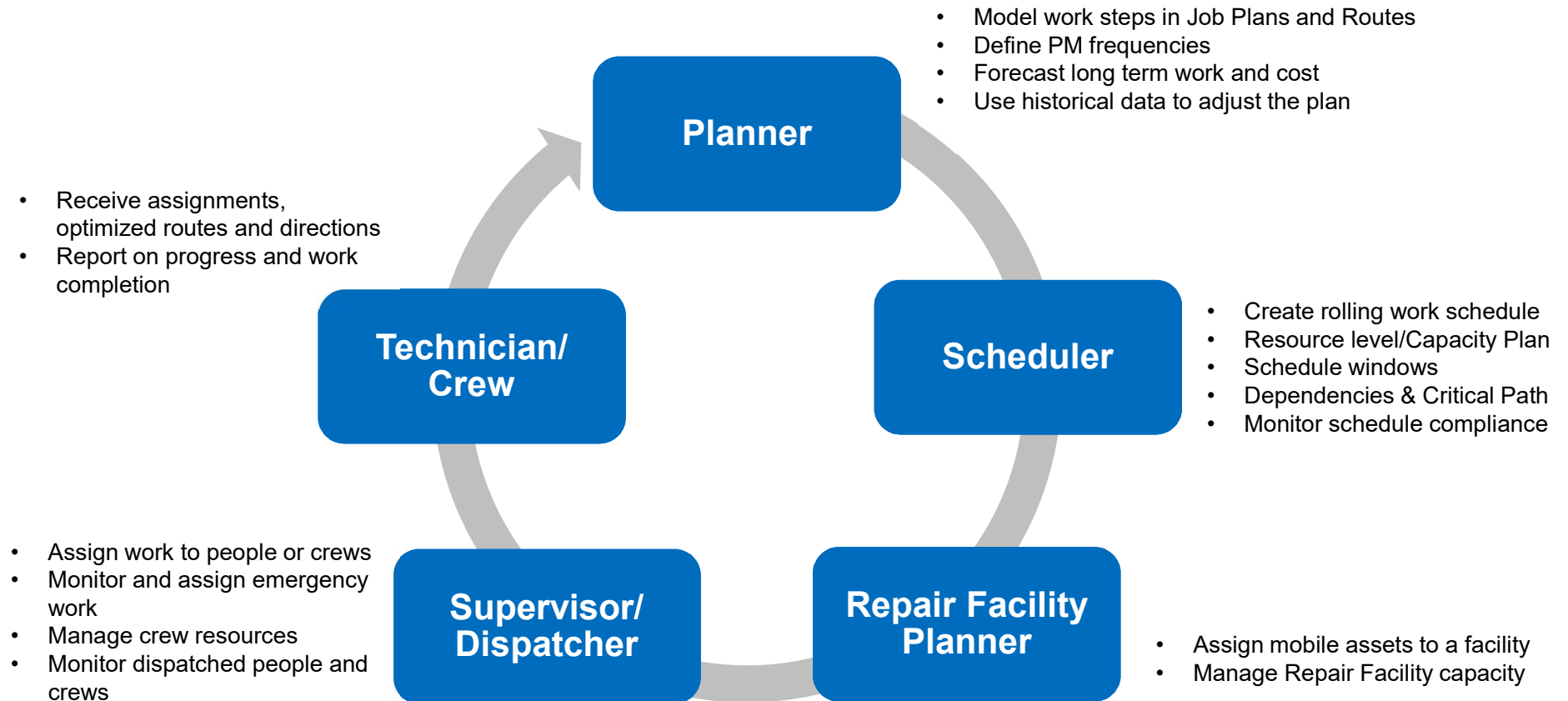
Scheduler 7.6.7.1

- Add-on product to Maximo EAM, code embedded in core Maximo therefore a single install
- Requires a separate license purchase
- Includes integration adapter and optimization engine and models

Maximo

- 7.6.1 fix pack level

Maximo Scheduler: Roles We Cater To

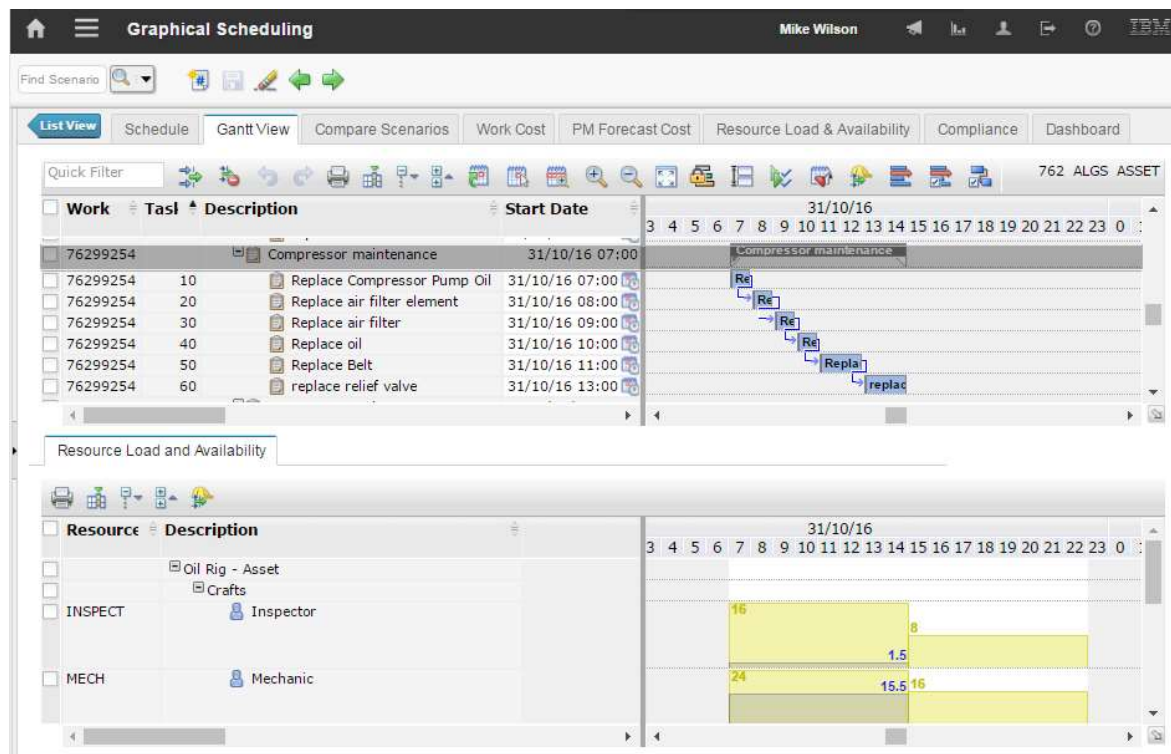


Role Based Applications in Maximo Scheduler

Application	Roles
Graphical Scheduling	Planners and Schedulers
Graphical Assignment	Supervisors and Dispatchers
Graphical Assignment - Repair Facility	Repair Facility Managers
Graphical Crew Management	Supervisors
Everyplace Mobile Templates	Supervisors and Field Technicians

Graphical Scheduling (GS)

- New graphical technology - no dependency on Java applet / JRE
- Drag and drop capability
- New usability enhancements enable users to easily filter to a relevant sub-section



GS – Create Asset or Location or Work Based Schedules

Build Schedule by type, with powerful configuration options

The screenshot displays the IBM Watson IoT GS (Global Scheduler) interface. The 'Schedule' tab is active, showing various configuration options for creating a schedule. A 'Select Value' dialog box is open, allowing the user to choose a schedule type from a list of three options: ASSET, LOCATION, and WORK. The dialog box has a 'Value' column and a 'Description' column. The 'Value' column contains the selected option, and the 'Description' column contains the corresponding schedule type. The 'Cancel' button is visible at the bottom right of the dialog box.

Schedule Configuration Options:

- Schedule: CRW_GS
- Scenario: CRW_GS
- Calendar: DAY
- Shift: DAY
- Organization: EAGLENA
- Public? ☒
- Preserve Existing Records On Refresh? ☐
- Type: WORK
- Show Maintenance and Operational Schedules? ☐
- Top Level Work Records Only? ☐
- Restrict Work to Dates? ☒
- Rolling Start Date: 8/21/17 7:00 AM
- Duration in Days: 4
- Start Date: 8/21/17 7:00 AM
- End Date: 8/25/17 6:00 PM
- Rolling Project? ☒
- Last Saved Date: 7/15/16 9:19 AM
- Last Committed Date:
- Published By:
- Status: DRAFT
- Attachments:
- Preserve Schedule Start Dates? ☒
- Refresh When Opening Gantt View? ☐
- Scenario Allowed? ☐

Work Queries:

Data Source	Query Name	Description
WORKORDE	w	

Additional Resources:

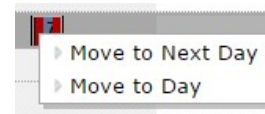
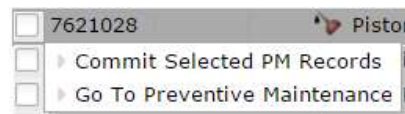
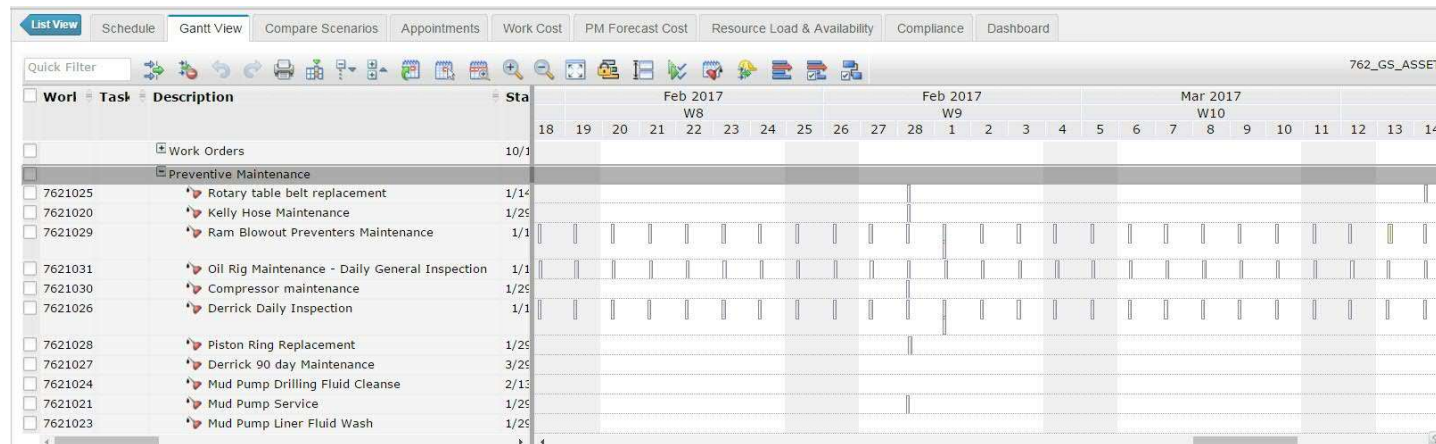
0 - 0 of 0

Resource Availability:

Data Source	Query Name	Description	Where Condition
LABOR	I		laborcode like 'CRW%'

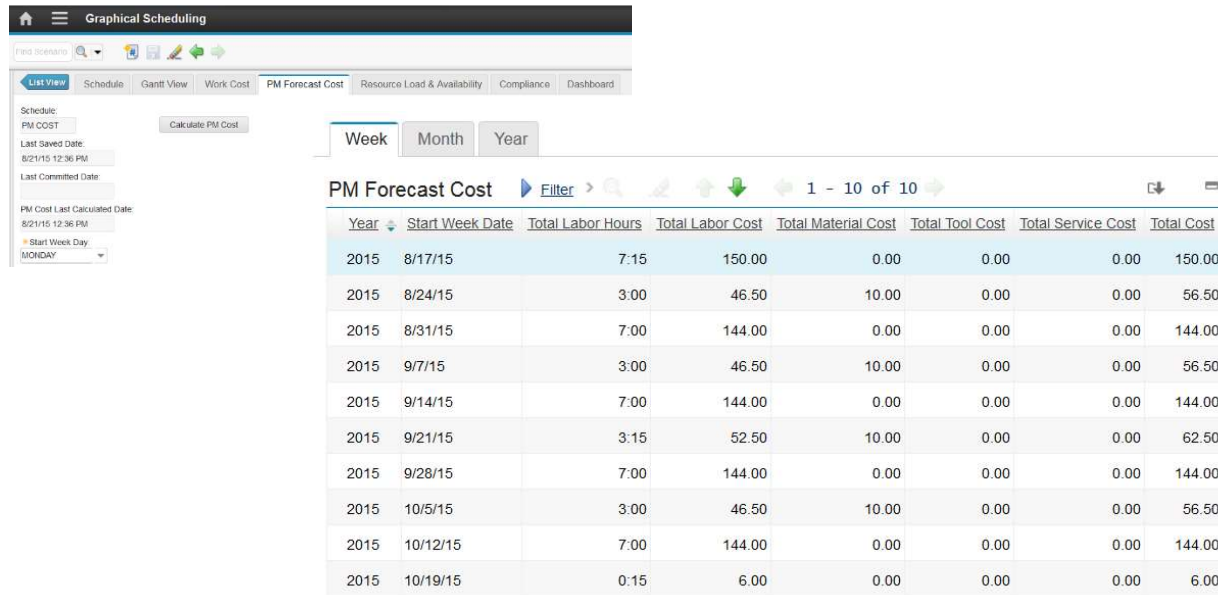
Copy Query New Row

GS – PM Forecasting



- Visualize future work
- Adjust forecasted dates graphically
- Initiate PM reforecast actions

GS – PM Forecast Cost



Graphical Scheduling

Field Scenario

PM Forecast Cost

Calculate PM Cost

Week Month Year

PM Forecast Cost

Filter

1 - 10 of 10

Year	Start Week Date	Total Labor Hours	Total Labor Cost	Total Material Cost	Total Tool Cost	Total Service Cost	Total Cost
2015	8/17/15	7:15	150.00	0.00	0.00	0.00	150.00
2015	8/24/15	3:00	46.50	10.00	0.00	0.00	56.50
2015	8/31/15	7:00	144.00	0.00	0.00	0.00	144.00
2015	9/7/15	3:00	46.50	10.00	0.00	0.00	56.50
2015	9/14/15	7:00	144.00	0.00	0.00	0.00	144.00
2015	9/21/15	3:15	52.50	10.00	0.00	0.00	62.50
2015	9/28/15	7:00	144.00	0.00	0.00	0.00	144.00
2015	10/5/15	3:00	46.50	10.00	0.00	0.00	56.50
2015	10/12/15	7:00	144.00	0.00	0.00	0.00	144.00
2015	10/19/15	0:15	6.00	0.00	0.00	0.00	6.00

Calculate the planned hours and costs for all the Forecasted PMs in the Schedule including Routes, Sequences and Nested Job Plans

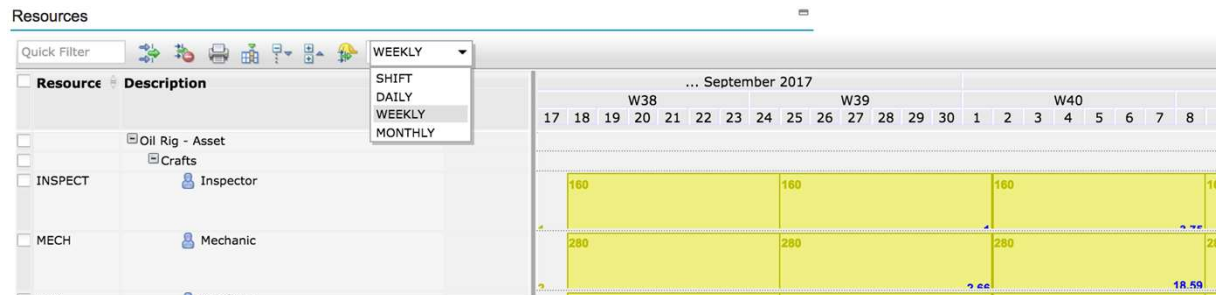
GS – Planning Buckets (Resource Mode)

Start Week Day:
MONDAY

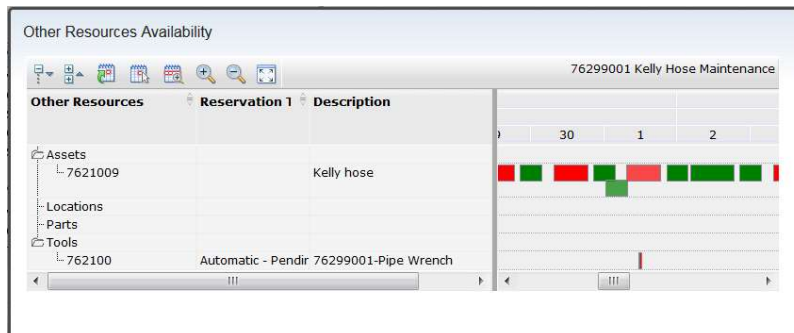
Resource Load and Availability Display Mode:
SHIFT

SHIFT
DAILY
WEEKLY
MONTHLY

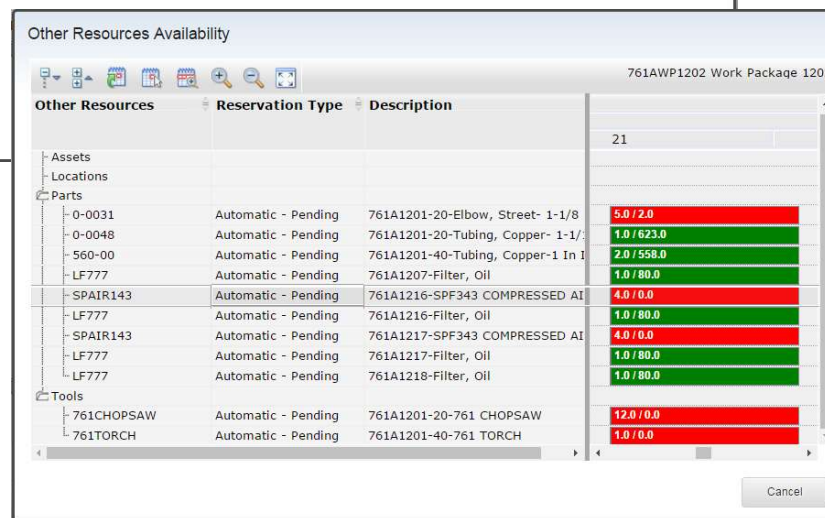
- Select from Shift, Daily, Weekly, or Monthly and save with your schedule
- Select on the fly within the graphical resource view



GS – View Other Constraining Resources

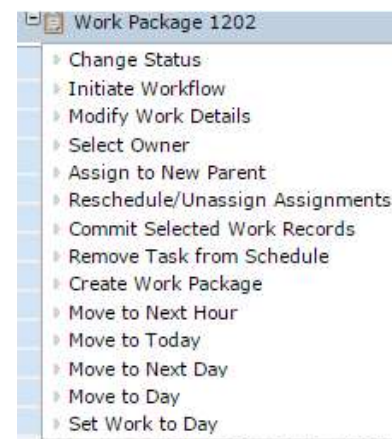
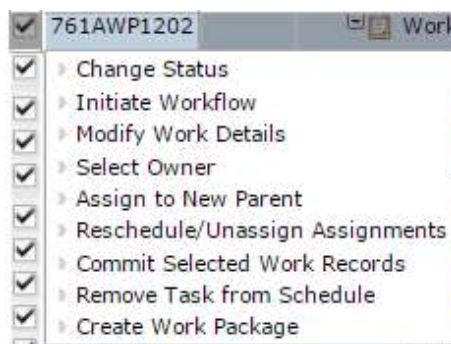
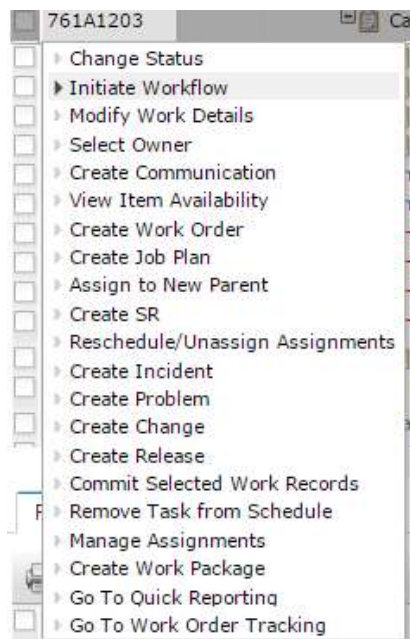


- Tie to the asset / location operational and maintenance schedules to ensure efficient resource utilization



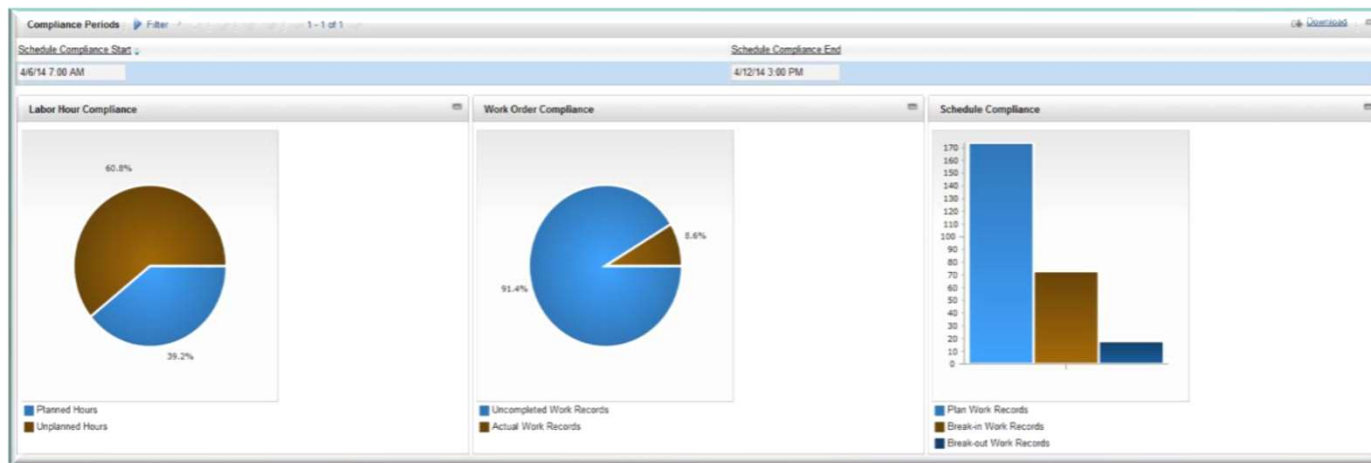
- Graphically view required items and tools

GS – Right-click Actions for Power Users



- Many of the actions within the Work Order Tracking application can be performed within the Gantt view
- Save time (and clicks)

GS – Compliance Dashboard



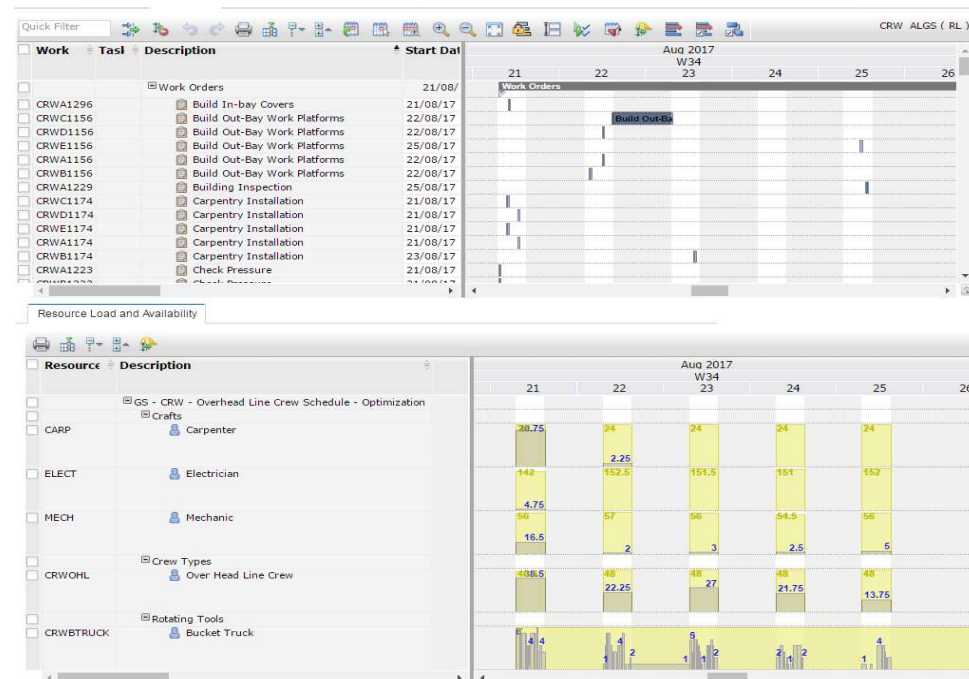
See how the schedule is performing against plan

- Compare planned vs unplanned hours
- Compare uncompleted to completed work records
- See break-in and break-out counts

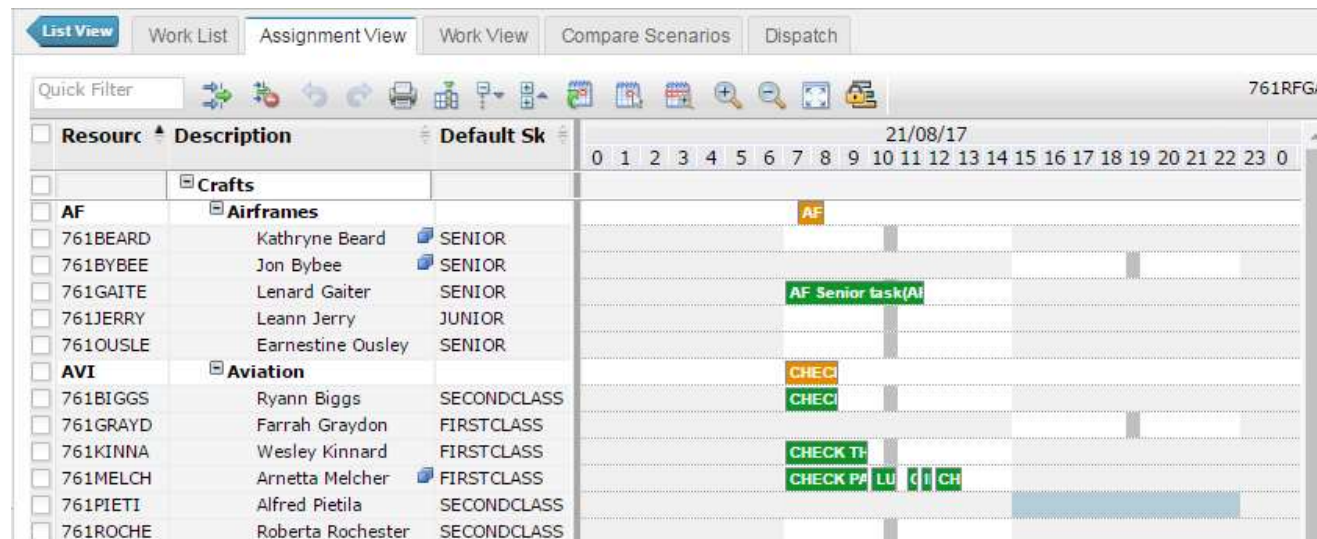
GS – Optimization

Transform manual and time consuming work management tasks into faster, automated processes with meaningful results

- The Resource Levelling model schedules within availability
- The Capacity Planning model provides a best fit within a date range



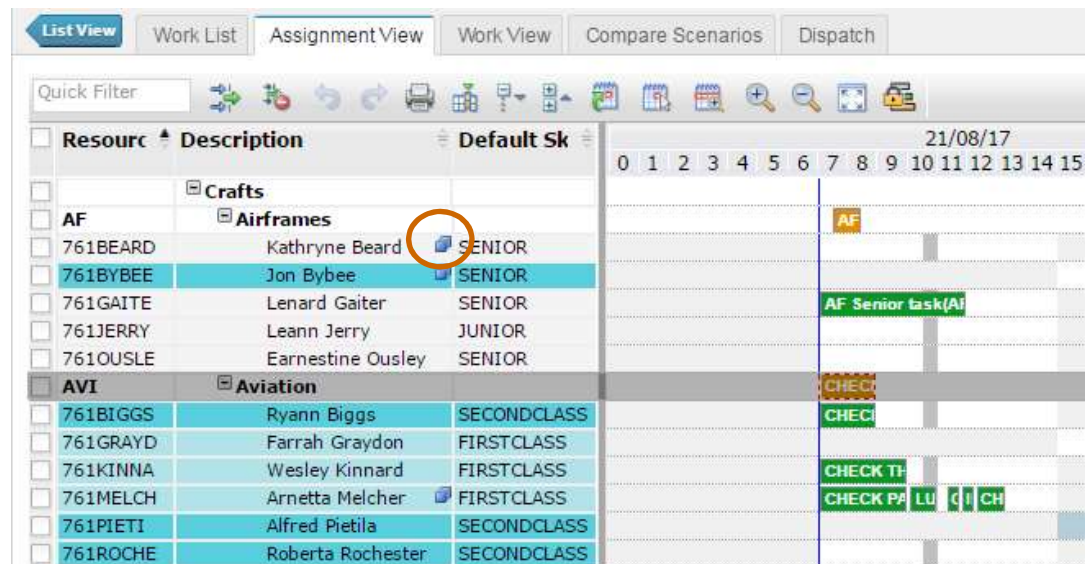
Graphical Assignment (GA)



Easily assign work manually or automatically –

- The Assignment View lists all the labor requirements as orange bars beside the craft/crew type to be assigned to available labor/crew
- Drag and drop to a labor/crew row; assigned is green

GA – Include Resources with Multiple Skills

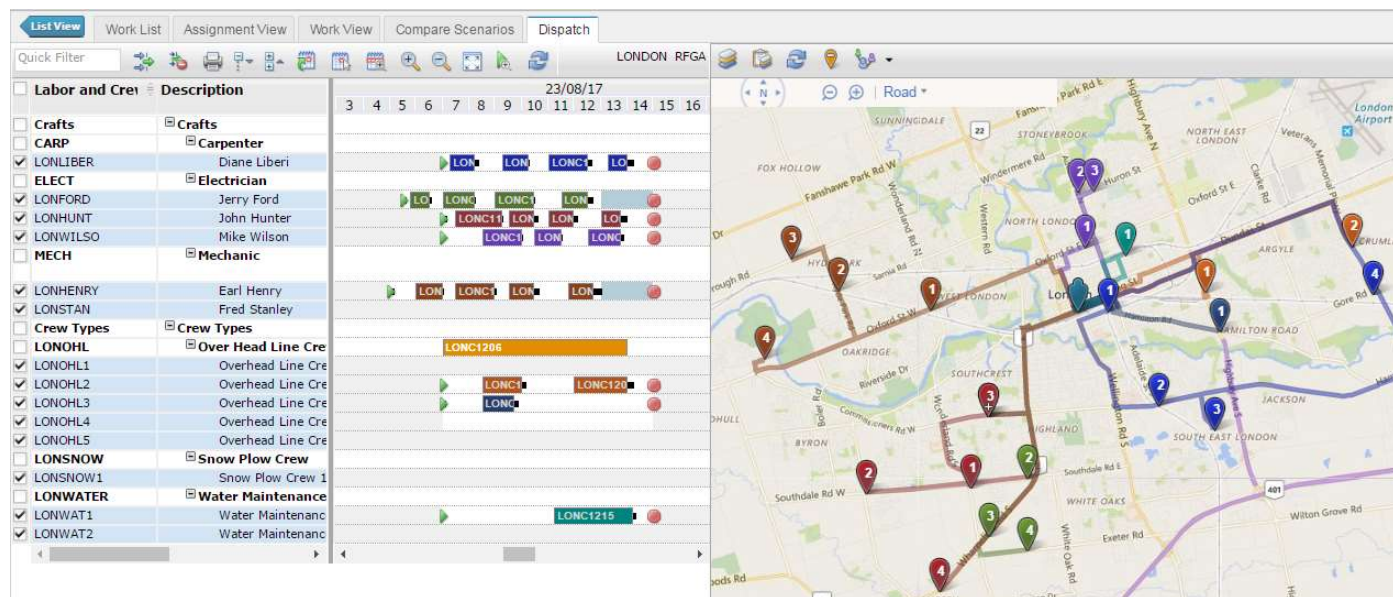


- Select an assignment bar, and the best matched labor/crew is highlighted in dark blue. Possible acceptable matches (by skill level ranking) are a lighter shade.
- Resources with secondary craft skill that match work requirements will be brought into the work list under their default craft/skill even if that default craft skill is not required by the work
- Note the multi-skilled labor indicator beside the labor description

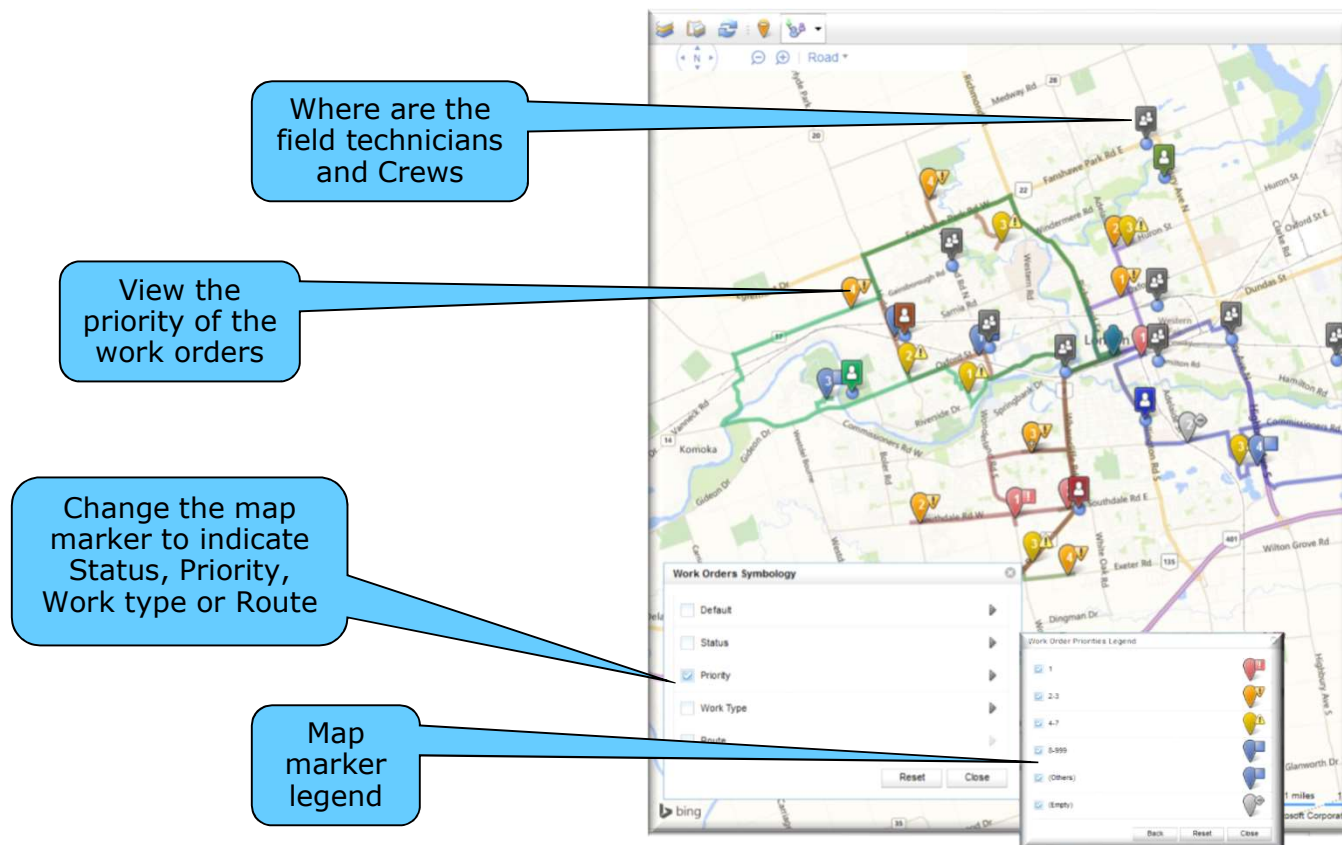
GA - Dispatching

Dispatcher monitors and responds to on-going work out in the field:

- View Work Order assignments in a calendar and map view to understand the dynamic work day
- Ability to match resources with incoming work orders, based on location and travel time
- Automatically create optimized street routes for the crews



GA – Additional Information to Aid the Dispatcher



Technician's Template

The screenshot displays the IBM Everyplace Technician (Tablet) interface. At the top, there is a header bar with 'Everyplace Technician (Tablet)', 'Start Center', 'Sign Out', and the IBM logo. Below the header is a toolbar with various icons, including a magnifying glass, a document, and a list. The 'Advanced Search' button is circled in orange. Below the toolbar, there is a 'Work Orders' section with a 'Filter' button and a '1 - 2 of 2' indicator. The 'Work Orders' table has columns for 'Work Order', 'Description', 'Asset', and 'Status'. It lists two work orders: BOSA1208 (Service Building, BOS128, INPRG) and BOSA1178 (Service Building Construction, BOS121, APPR). Below the table is a 'Select Records' checkbox and a '1 - 2 of 2' indicator. The 'Map View' section is circled in orange. Below it is the 'Required Materials' section with a 'Filter' button and a '1 - 4 of 4' indicator. The 'Required Materials' table has columns for 'Item', 'Description', 'Storeroom', and 'Quantity'. It lists four items: 121115 (Bushing, Bronze- 1-1/2 In OD X 1 In ID, CENTRAL, 1.00), 217215 (Bearing, Pillow Block, Fatihir- 1 In ID, CENTRAL, 1.00), 217224 (Cam, 1 In Dia Shaft, CENTRAL, 1.00), and FIRE-100 (Fire Extinguisher, CENTRAL, 1.00). Below the table is a '1 - 4 of 4' indicator. The 'Required Tools' section has a 'Filter' button and a '1 - 1 of 1' indicator. The 'Required Tools' table has columns for 'Tool', 'Description', 'Storeroom', and 'Quantity'. It lists one tool: BOSBTRUCK (Bucket Truck, Storeroom, 1.00). Below the table is a '1 - 1 of 1' indicator.

Work Order	Description	Asset	Status
BOSA1208	Service Building	BOS128	INPRG
BOSA1178	Service Building Construction	BOS121	APPR

Item	Description	Storeroom	Quantity
121115	Bushing, Bronze- 1-1/2 In OD X 1 In ID	CENTRAL	1.00
217215	Bearing, Pillow Block, Fatihir- 1 In ID	CENTRAL	1.00
217224	Cam, 1 In Dia Shaft	CENTRAL	1.00
FIRE-100	Fire Extinguisher	CENTRAL	1.00

Tool	Description	Storeroom	Quantity
BOSBTRUCK	Bucket Truck		1.00

The technicians can access all pertinent work details from a single view, on their mobile device

Technician's Template

Everyplace Technician (Tablet) - Mozilla Firefox IBM Edition

File Edit View History Bookmarks Tools Help

9.32.229.192/maximo/ui/?event=loadapp&value=techartlet

Most Visited IBM My Yahoo! Comcast RTC: Maximo Plans Mobile Dev Wiki Facebook

Everyplace Technician (Tablet)

Field Technician's Street Level Route

Field Technician's Material Requirements

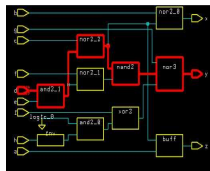
Field Technician's Tool Requirements

Item	Description	Storeroom	Quantity
11241	Contactor, Renewal Kit	CENTRAL	3.00
11453	Seal, Mechanical, Self Aligning- 1 In ID	CENTRAL	3.00
XMP-9500	Gasket- AR46	CENTRAL	3.00
Z-RAGS	Rags, Cloth	CENTRAL	2.00

Tool	Description	Storeroom	Quantity
TORQUE	TORQUE WRENCH-20 FT-LB CAPACITY		

Scheduler Plus

Offers the following in addition to Maximo Scheduler



Managing large projects

- Model complex work order network dependencies
- Highlight critical path, % complete



Appointment booking

- Make customer appointments within a schedule window
- Customer notifications – cancel / reschedule



Dynamic dispatching

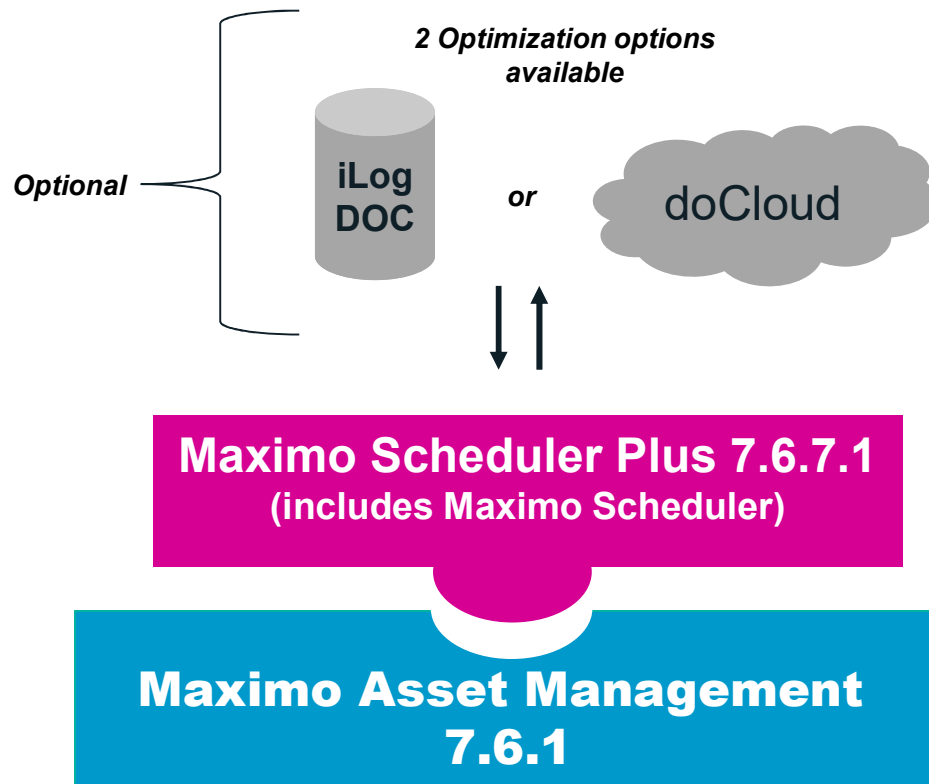
- Auto refresh, re-optimization based on real-time progress
- Incorporate real-time traffic conditions



Weather integration

- Incorporate weather data into planning/scheduling and dispatching
- Weather alerts / notifications

Scheduler Plus – Also Embedded in Core Maximo



- Built on Maximo Scheduler
- Code embedded in core Maximo therefore a single install
- Available On-prem and via SaaS
- Requires a separate license purchase (license includes Maximo Scheduler functionality)
- Includes the optimization models
- Optional: if clients choose to use the optimization capability, DOC server (included w/ Scheduler Plus license) installation OR subscription to doCloud is required

Role Based Applications

Scheduler Plus further enhances the Scheduler applications as well as offers two new applications

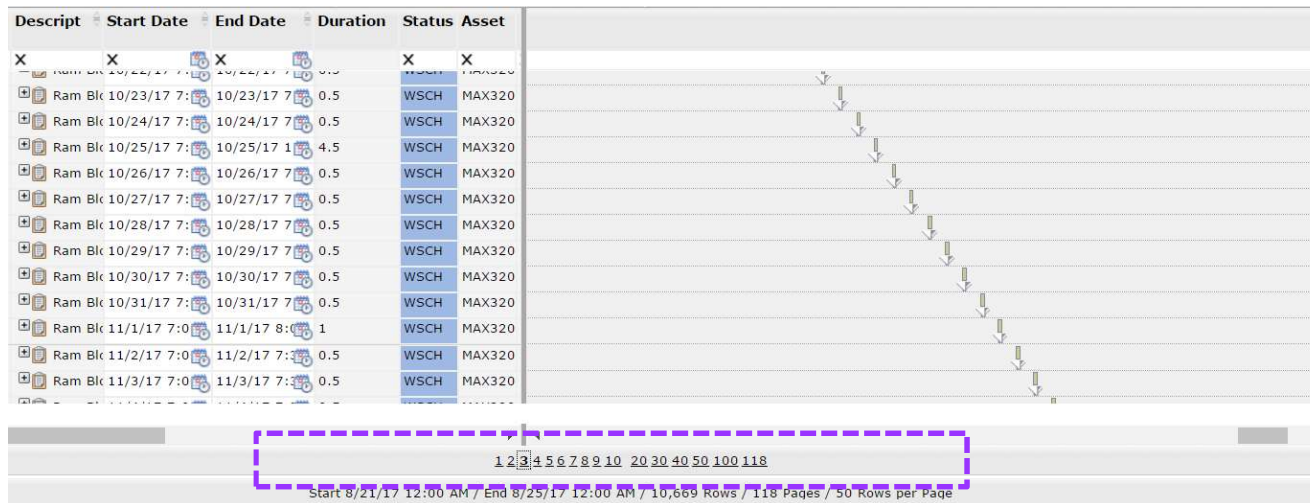
Application	Roles
Graphical Scheduling^	Planners and Schedulers
Graphical Assignment^	Supervisors and Dispatchers
Graphical Assignment - Repair Facility	Repair Facility Managers
Graphical Crew Management	Supervisors
Everyplace Mobile Templates	Supervisors and Field Technicians
Graphical Appointment Book	Customer Service Representatives
Graphical Scheduling – Large Projects	Planners and Schedulers

^enhanced by Scheduler Plus;  available with Scheduler Plus only

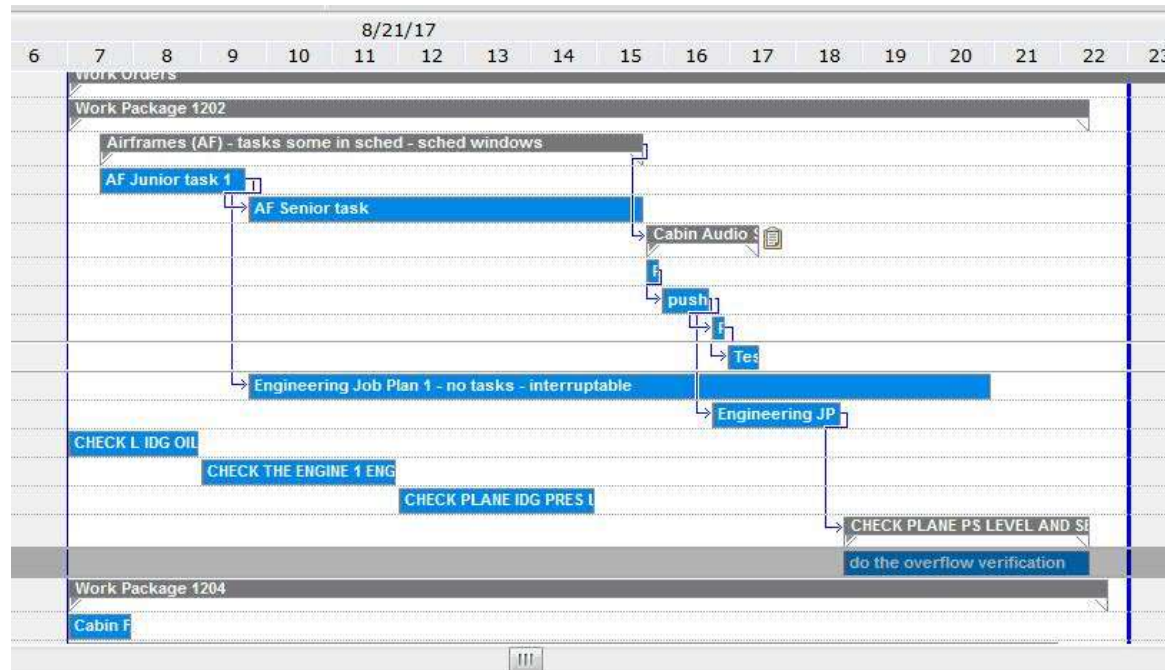
Maximo Scheduler Plus Highlights

Graphical Scheduling – Large Projects

- Ability to bring in large numbers of records
- Introduces server side paging, sorting, filtering etcetera in order to accommodate large projects with a high record volume
- Similar to Graphical Scheduling, but a few changes to accommodate the same work on the server side



Managing Complex Network Dependencies



- Build linkages across work orders and tasks
- Minimize down time and maximize productivity by allowing work to be started as soon as its prerequisites are satisfied

Percent Complete

Description	Physical Per	6	7	8	9	10	11	12	13	14	15
* Repair Damaged Conduit Feeding Generator	65										
* Disconnect power to generator	20										
* Repair damaged conduit on south side of generator	40										
* child 1 for rollup	100										
* child 2 for rollup	100										

In Line Editing

Enter – calculate – summarize – and review the completion status of work

- Enter the physical % complete directly into the activity table
- Calculate the actual labor % complete
- Calculate work order completion by tasks

Summarize by time, or by the average of the % completion in the roll-up

Visualize at a glance in the Gantt chart and activity table

Percent Complete Calculation Method: Last Committed Date: Preserve Schedule Start Date

NONE

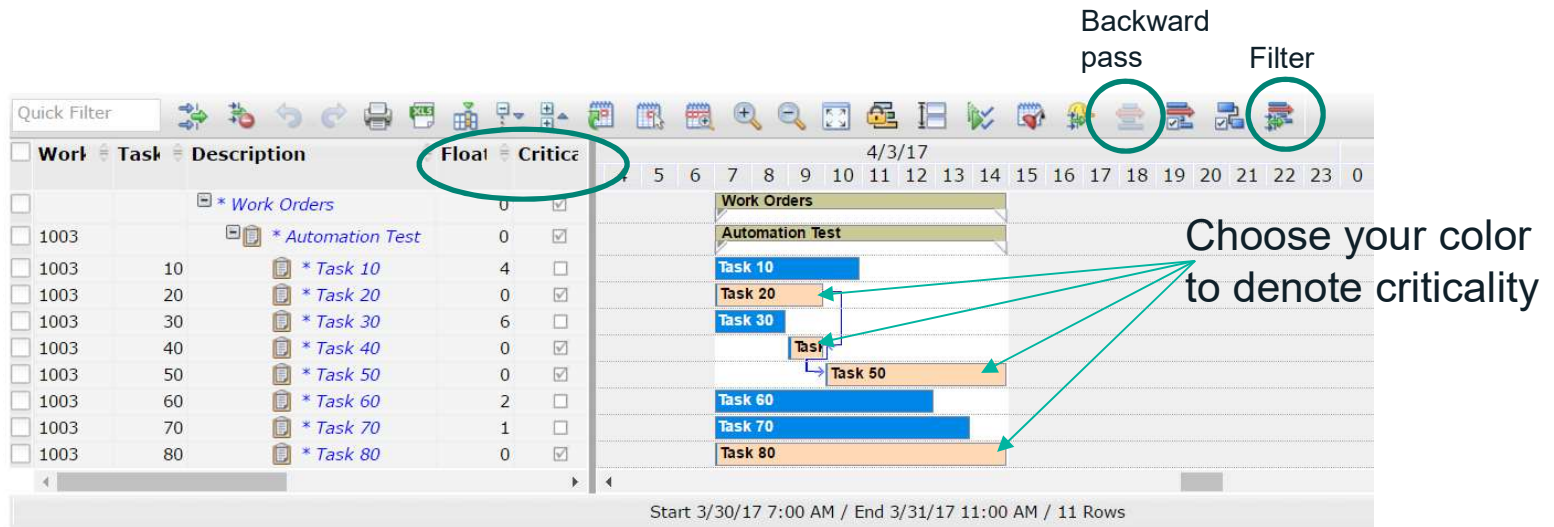
Select Value

Filter > 1 - 4 of 4

Value	Description
ACTUAL	Percent Complete based on Actuals
NONE	Do not show visual percent complete
PHYSICAL	Percent Complete based on Physicals
TASK	Percent Complete based on TASK completeness

Cancel

Highlight Critical Path



- Backward pass calculates the late dates and float to determine the critical path, allowing users to focus on the important tasks that drive the schedule finish date
- Filter to just the critical path at the push of a toolbar icon

Schedule Dashboard

Schedule Dashboard												
Quick Filter												
	Scheduler	Description	Duration	Start Date	End Date	% Remain	% Complete Method	Work Orders	PMs	Activities	L	H
☒	X	X	X	X	X	X	X	X	X	X	X	X
☐ 0.0%	761_SCHED	761 Scheduling for GA demo dat	5	9/17/18 12:00 AM	9/22/18 12:00 AM	100	NONE	101	0	0	2	
☐ 0.0%	762_ASSET QUERY	Oil Rig	183	9/1/18 12:00 AM	3/3/19 12:00 AM	100	NONE	0	11	0		
☐ 0.0%	762_LOCATION QUI	Water Treatment	183	9/1/18 12:00 AM	3/3/19 12:00 AM	100	NONE	78	5	0		
☒ 15.0%	764_GS_NETWORK	Multi-level nested project	14	11/1/17 12:00 AM	11/15/17 12:00 AM	85	PHYSICAL	14	0	0		
☐ 0.0%	764_GS_PMDATES	PM demo of start dates	376	6/19/17 12:00 AM	6/30/18 12:00 AM	100	NONE	3	3	0		
☐ 0.0%	DPC6K	6000 series	16	10/30/17 12:00 AM	11/15/17 12:00 AM	100	NONE	10	0	0		
☐ 0.0%	DPCINT	dpcint	31	10/30/17 12:00 AM	11/30/17 12:00 AM	100	NONE	1	0	0		
☐ 0.0%	LON_SCHEDULE	GS - LON - Monday Schedule	5	9/17/18 12:00 AM	9/22/18 12:00 AM	100	NONE	174	0	0		
☐ 0.0%	SCH_SCHEDULE	GS - Overhead Line Crew Schedi	5	9/17/18 12:00 AM	9/22/18 12:00 AM	100	NONE	174	0	0		

Choose Items

Panel	☒	
Scheduler	☒	Tool (Actual)
Description	☒	Tool (Planned)
Duration	☒	Tool (Remaining)
Start Date	☒	Service (Actual)
End Date	☒	Service (Planned)
% Complete	☒	Service (Remaining)
% Remaining	☒	Forecast Service
% Complete Method	☒	Forecast Material
Work Duration	☒	Forecast Tool
Labor Hours (Actual)	☒	Project Status
Labor Hours (Remaining)	☒	Work Orders
Cost (Total)	☒	PMs
Actual Cost	☒	Activities
Material (Actual)	☒	Labor Hours (Planned)
Material (Planned)	☒	Work Total
Material (Remaining)	☒	Scenario Number

How are my projects doing?

- Totals of all the Schedules the user has access to view
 - Cron to run calculations in off
- Quick Filter and Column Filtering
- Print
- Download to Excel
- User selected columns to display

Appointment Booking

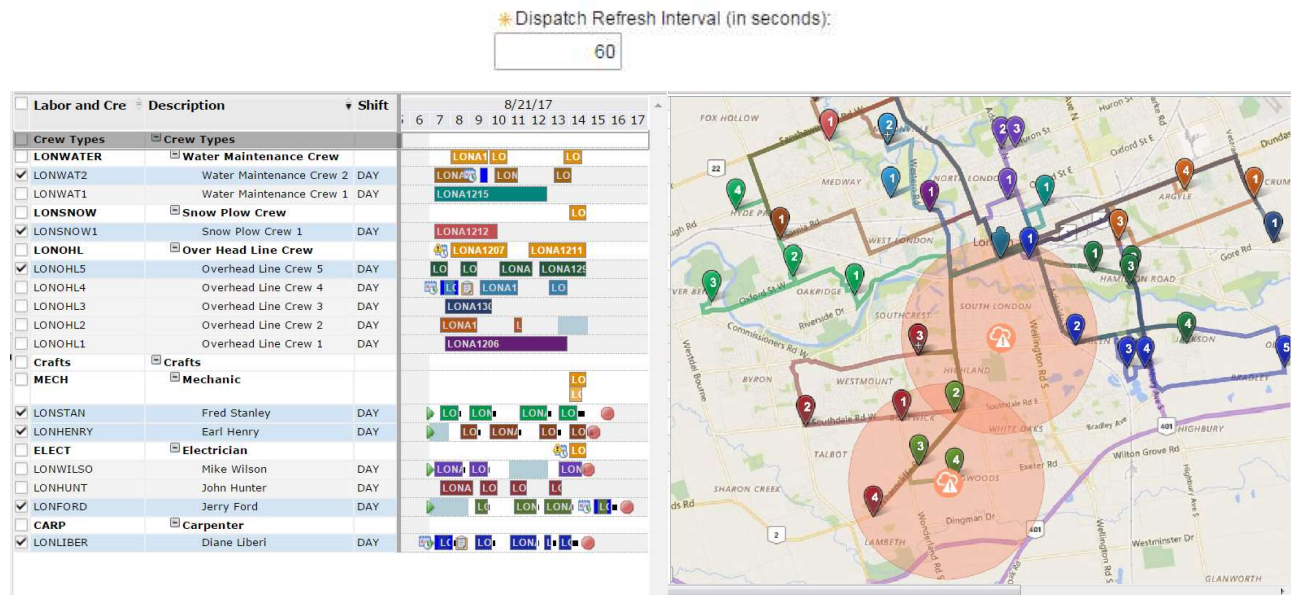
- Book customer appointments within Maximo using a simple graphical interface
- Incorporate weather data for more efficient scheduling - minimize cancellations / reschedules
- Automatically notify customers of appointment, cancellation, reschedule and ETA

Dec 2016							
	 25°F 19 Mon	 25°F 20 Tue	 39°F 21 Wed	 39°F 22 Thu	 36°F 23 Fri	 41°F 24 Sat	 37°F 25 Sun
MORNING 8-12	3	3	3	3	3	2	---
AFTERNOON 12 -4	3	3	3	3	3	---	---
EVENING 4 - 8	3	3	3	3	3	---	---

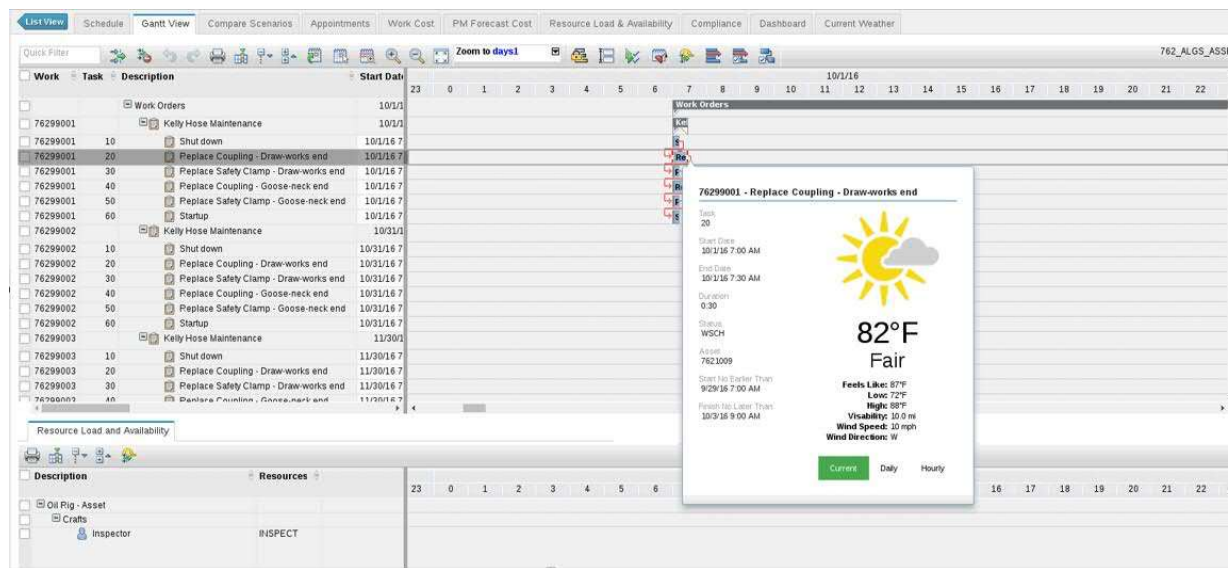
Dynamic Dispatching

Automatically refresh the dispatch view to show the latest progress and work details as they are posted.

Re-optimize the in-progress work list to reflect ongoing changes to the plan for optimal crew routing



Weather Integration (Graphical Scheduling)



- Planners can assure that work is completed on time without an adverse weather impact
- Pick what you want displayed in the tool tip (both front and back), from over 50 weather data points
- Similar integration available for the Graphical Assignment application

Weather Alerts

- See active weather perils on schedules, appointments, and maps
- Respond by adjusting the work schedule to ensure employee safety. Email notification to work owners and techs of weather events automatically

Work view:

Alerts and Dowels

Alert is active from 2017-03-28 11:11:29.0 to 2017-03-29 11:11:29.0: Heavy rain forecast ≥ 25.4 mm in the next 24 hours. Alert is active from 2017-03-28 11:11:29.0 to 2017-03-29 11:11:29.0: Heavy ice forecast ≥ 6 mm. cumulative in the next 48 hours.

SCHA1151 - Install Latches and Dowels

Start Date: 3/28/17 10:15 PM
End Date: 3/30/17 2:00 PM
Duration: 39:45

1000 Wharnccliffe Rd S, London, ON N6L 1K3, Canada

Day	Time	Weather
Tuesday	10:00 PM	Cloudy
Tuesday	8:00 PM	Cloudy
Tuesday	9:00 PM	Cloudy
Tuesday	10:00 PM	Cloudy
Tuesday	11:00 PM	Cloudy
Wednesday	12:00 AM	Cloudy
Wednesday	1:00 AM	Cloudy

Appointment Book:

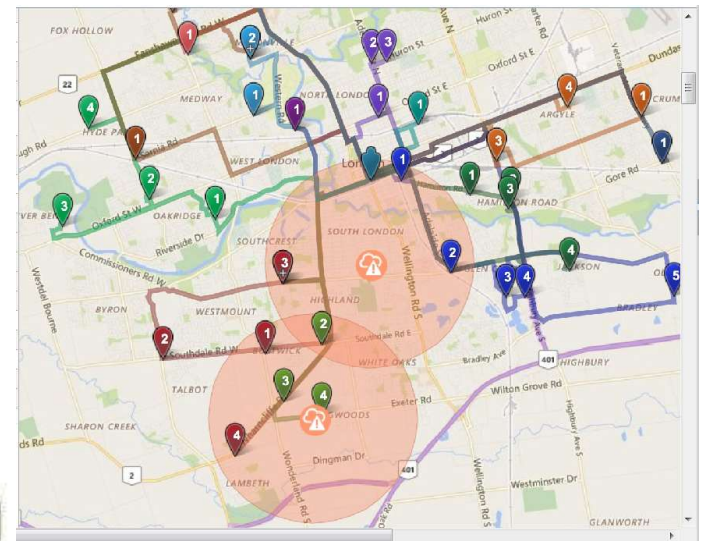
Mar 2017

Day	Time	Weather
30 Thu	10:15 PM	Sunny
31 Fri	8:00 PM	Cloudy
1 Sat	9:00 PM	Cloudy
2 Sun	10:00 PM	Sunny
3 Mon	11:00 PM	Sunny

Alert is active from 2017-03-28 11:11:29.0 to Thu Mar 30 11:11:29 EDT 2017: Heavy ice forecast ≥ 6 mm. cumulative in the next 48 hours.

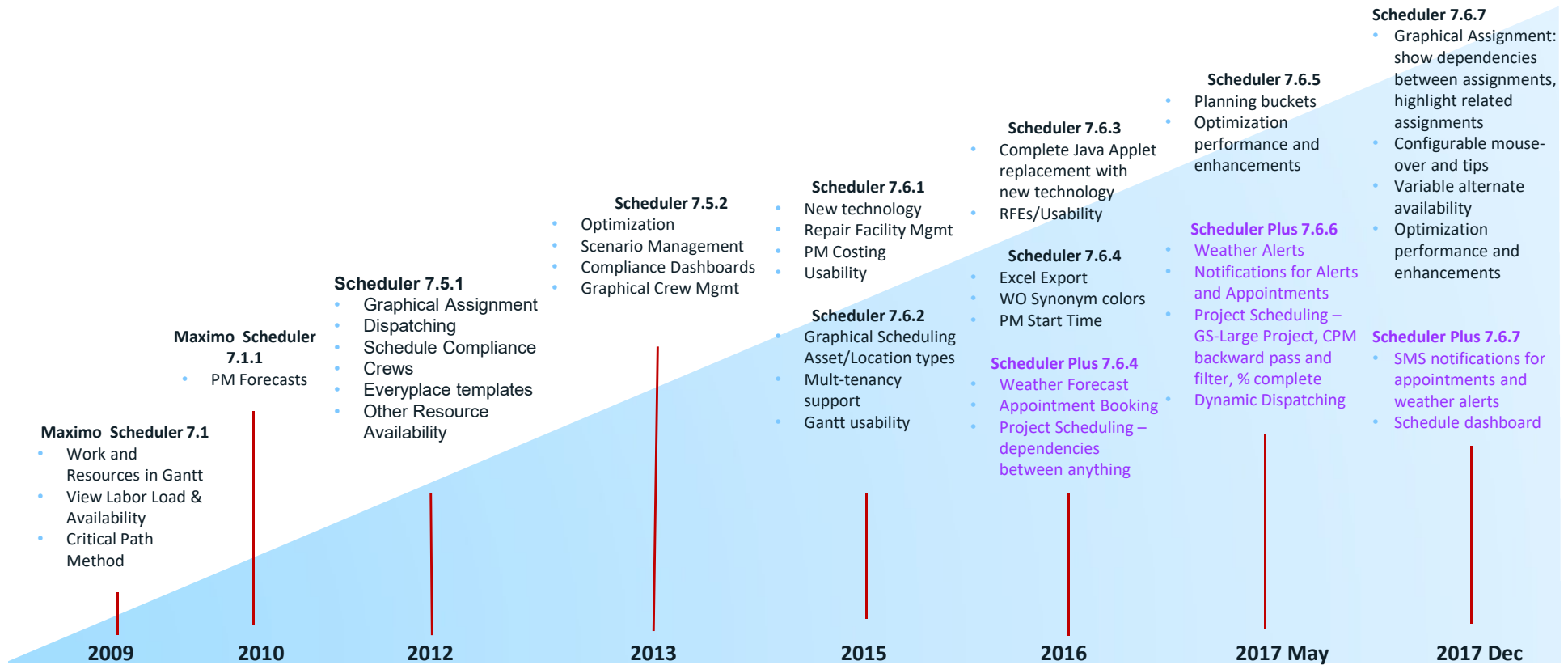
IBM

Dispatching:



IBM Watson IoT

Pedigree



Roadmap

Scheduler Plus

Scheduler

Graphical Scheduling & Graphical Assignment

- Heat map for resource load/availability view

Graphical Resource View

- Calendar w/ shift totals and bulk edit

Publish to 3rd party calendars

UX Enhancements

- WO/task creation from the Gantt
- Inline editing
- Gantt chart record grouping

Saved and conditional layouts

Schedule Data Manager

Milestones

- View within Gantt; status colors

Optimization

- Resource Leveling on a single craft, Large project optimization (buckets), performance, move to new scalable engine (also applies to Scheduler)

Appointment Booking

- Resource dependent windows



The information on the new product is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information on the new product is for informational purposes only and may not be incorporated into any contract. The information on the new product is not a commitment, promise, or legal obligation to deliver any material, code or functionality. The development, release, and timing of any features or functionality described for our products remains at our sole discretion.

Watson IoT

Sold to over 700 clients

A Few Existing Maximo Scheduler / Scheduler Plus Clients



Resources

Maximo Scheduler Plus and Maximo Scheduler Wiki:

<https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20Maximo%20Asset%20Management/page/Maximo%20Scheduler>

<https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20Maximo%20Asset%20Management/page/Maximo%20Scheduler%20Plus>

Or simply Google/search for “Maximo Scheduler” or “Maximo Scheduler Plus” to find the wiki – sign in with your DeveloperWorks credentials

IoT Academy (self-guiding Scheduler 101 course):

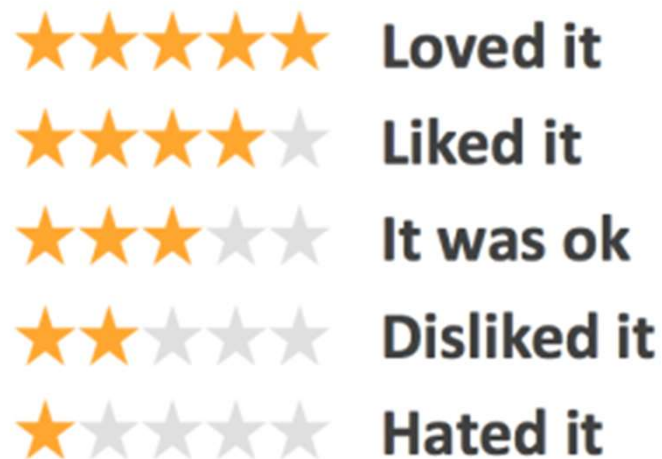
<https://www.iot-academy.info/index.php/en-us/component/content/article/44-course-catalog/ibm-watson-iot/connected-operations/95-maximo-7-6-scheduler?highlight=WyJzY2hIZHVhZXliXQ==&Itemid=101>

RFE Tool:

https://www.ibm.com/developerworks/rfe/?BRAND_ID=90



Please rate the sessions you attend by completing the Star Rating and be sure to complete the overall conference evaluation in Guidebook.



Questions



Capabilities included with Maximo Scheduler Plus (today)

- Manage complex projects
 - Dependencies across work orders and tasks
 - Highlighted critical path
 - Percent complete
 - Schedule dashboard
 - The 'Graphical Scheduling – Large Projects' application to manage large record volumes
- Customer appointment booking
- Dynamic dispatching
 - Automatic refresh of the dispatch view
 - Re-optimize the in-progress work list
- Weather data integration
- All the Maximo Scheduler functionality

