



SCHEDULING ASSISTANT

Scheduling assistant

Search best Resources Vehicles

Group: Mobile Workers (Engineers) Resource:

Skills: Gas Safe Engineer Attributes:

From: 20/07/2020 17:00 To: 20/07/2020 15:30

When: Anytime Morning Afternoon Other

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Resource	Skills	Start	Extra distance (m)	Extra driving (minutes)	Job cost (£)	Avg. duration	Success rate	Punctuality
David Jones	Gas Safe Engineer	Tue 14 July 14:25	3.2	13	22.14			
Mike May	Gas Safe Engineer	Tue 14 July 17:15	10	40	33.26			
Ben Goden		Wed 15 July 07:35	26.7	39	41.11			
Dave Grahams		Thu 16 July 10:45	30.0	41	45.77			
Shaun McDonald		Wed 15 July 12:00	32.0	45	49.84			
Stewart Marks		Mon 13 July 12:00	34.0	49	54.95			
Rachel Lester		Thu 16 July 12:00	42.0	61	60.22			
Martin Siddell		Fri 17 July 12:00	70.0	90	87.63			

SINGLE JOBS

SCHEDULING ASSISTANT – SINGLE JOB – LOGIC

1. The assistant checks the job for time constraints¹ and, if found, applies them as the default date filters for time-slots. If a date and time are set for a job before selecting the scheduling assistant and no resource is entered, then this time slot is also added as the date time filters for the assistant. If no time constraints are found, the assistant defaults to a seven day period from the time of scheduling.
2. The assistant checks the job for resource or vehicle constraints (single or group specific constraints and also skill or attribute constraints) and these are applied as default filters for resource/vehicle, groups and skills/attributes.
3. The assistant will offer a filter choice to look for slots within a time of day – either Anytime, Morning, Afternoon or a custom time window. The default behaviour here is set to Anytime. (Morning is 00:00 - 12:00 and Afternoon is 12:00 – 24:00)
4. Following the default behaviour explained above, when selecting the scheduling assistant on a single job the assistant will immediately search for available job slots where the above criteria are met.
5. When searching for available slots the assistant checks the driving distance to and from the job location when added into a slot on the schedule – there needs to be enough time to drive to the job contact from the previous job location or start of shift location and also enough time to return from the location to end of shift location² or to the next planned job location. All driving is expected to commence and end within a resource's daily shift times.
6. When checking for available slots certain values are also taken into account to allow extra time for unforeseen circumstances. These add a buffer to the slots offered to take into account traffic, etc – these fields are editable in the Schedule section of Account Administration and are listed below;
 - Minimum free time between jobs for scheduling assistant (minutes)
 - Number of minutes late authorised
 - % extra time to add to a journey when scheduling jobs

¹ Constraints applied either manually onto a job or applied due to default constraints set per job type or SLA.

² If Account Administration setting "Shifts start and end at same location" is set to no, then no return journey is taken into account if job is planned to be last job of the day.

STEP 1: a job is created

Schedule all jobs

Search best Resources Vehicles

Group: - Any groups - Resource:

Skills: Attributes:

From: 08/06/2020 To: 15/06/2020

⚠ You are about to automatically schedule unscheduled jobs amongst 4 selected jobs. Please review all parameters before proceeding

⚠ Note, only the first 1000 unscheduled jobs will be processed

STEP 2: constraints are created for the job

View job

Detail | Stock & Equipment | **Constraints** | WorkSheets

Constraints

⌚ Job must be completed before tomorrow 14:00

STEP 3: the Scheduling Assistant applies the constraints to the jobs and provides a list of the lowest cost options which fulfill the job and criteria

Scheduling assistant

Search best Resources Vehicles

Group: Mobile Workers (Engineers) Resource:

Skills: Gas Safe Engineer Attributes:

From: 20/07/2020 17:00 To: 20/07/2020 15:30

When: Anytime Morning Afternoon Other

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SINGLE JOBS

SCHEDULING ASSISTANT – SINGLE JOB – EXPLANATION OF RESULTS

1. Once the assistant has checked for available slots in the time period specified and taking into account constraints applied the assistant produces a list of slots showing times and costs of scheduling jobs at this time.
2. Any Resources who have absences over a period searched by the assistant are treated as not working and therefore are removed from results.
3. The slots presented by the Assistant are ordered by lowest cost to highest cost.
4. Users can change the order to list by alphabetised resource list, by start time of job, or by extra distance in miles/minutes ascending or descending.
5. The job cost column is calculated based on;
 - The resource's hourly cost multiplied by the planned driving time to and from the job,
 - PLUS - The resource's hourly cost multiplied by the planned time of the job,
 - PLUS - The distance travelled to and from the job multiplied by the planned vehicle's cost per mile.
6. Values shown for extra distance are calculated based off driving to and from the job location from already planned job locations or start and end of shift locations, depending where the scheduled job falls in a resource's day.
7. Once a user has found their preferred slot to schedule to they can then click on the slot and choose to schedule, the job is then assigned to the resource/vehicle at the time specified.

SCHEDULE ALL

(SCHEDULING ASSISTANT AUTOMATED) – LOGIC

1. When in the jobs list view a User can apply a number of filters to find a list of jobs. Once they have their list of jobs they can hit the More option at the bottom of the filters in the list view and then choose to schedule all jobs.
2. As with the scheduling assistant, we offer similar filters for target resource and vehicle constraints, including individuals, groups, skills and attributes.
3. The schedule all assistant defaults to a seven day period from time off scheduling to place the jobs in the list.
4. The schedule all functionality is limited to scheduling 1000 jobs per request, this can be repeated as needed. Jobs in the list are first sorted by postcode alphabetically, if a user has a list of more than 1000 jobs, the top 1000 eligible jobs from the sorted list will be scheduled.
5. If a job in the list is already scheduled we do not reschedule the jobs.
6. The assistant will schedule all unscheduled jobs in the list prioritising slots based on their meeting of constraints – those slots which meet all constraint requirements are always chosen as priority. Following failure to find a valid slot in the time period where time slots are not found meeting ALL constraints, we then schedule based on importance of constraint. Below is a list of constraint types and their priority, the lower the priority in this list the more likely the job is to be scheduled not meeting this constraint if no valid slots could be found.
 - Absences (including multiple resources)
 - Resource
 - Resource Group
 - Resource Skill
 - Max travel of Resource
 - Vehicle
 - Vehicle Group
 - Vehicle Attribute
 - Time before constraint
 - Time after constraint
 - Contact opening hours
 - Travel time

For certain jobs, it may be essential that specific constraints are matched and therefore a forced match would be unsuitable for them. There are five checkboxes on the batch schedule popup which allow you to decide which jobs should or should not be scheduled when a constraint has not been met. If a constraint box is ticked against a specific constraint and that constraint is not met, then the job(s) it applies to will not be scheduled.

The constraints covered are:

- Time-based constraint (start before, after, contact access hours)
- Vehicle constraint (specific vehicle or group)
- Resource constraint (specific resource or group)
- Skills and attribute constraint
- Resource max distance
- Note that all options will be ticked by default.

Schedule all jobs

Search best Resources Vehicles

Group: Resource:

Skills: Attributes:

From: To:

When scheduling or rescheduling jobs en masse, various elements of the job are analysed to allocate them to the most suitable resource.

We match the constraints in the order shown below, however if no match is found the job will be forced scheduled based on the closest match available.

If you would prefer not to force schedule a job if a particular constraint cannot be matched, check the box below. If these constraints cannot be matched the job will not be scheduled.

Time based constraint (start before, after, + contact access hours)

Vehicle constraint (specific vehicle or group)

Resource constraint (specific resource or group)

Skills and attribute constraint

Resource max distance

⚠ You are about to automatically schedule unscheduled jobs amongst 22 selected jobs. Please review all parameters before proceeding

⚠ Note, only the first 1000 unscheduled jobs will be processed

SCHEDULE ALL

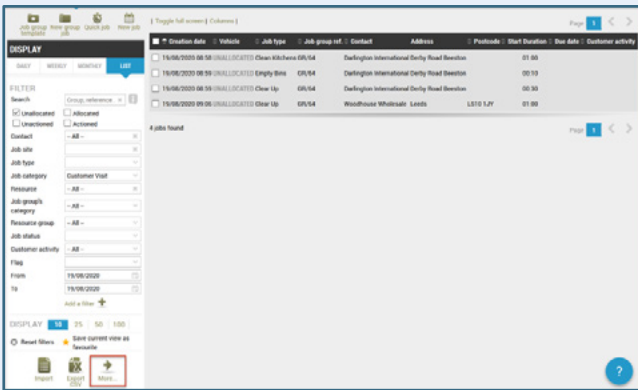
SCHEDULING ASSISTANT – SCHEDULE ALL – BEHAVIOUR

1. The Schedule All feature replicates behaviour of manual use of the scheduling assistant in a batch of 100 jobs in one action.
2. Every job scheduled using this feature is scheduled in isolation and is only compared to scheduled jobs in finding slots to place it. We do not compare any common attributes or constraints of jobs which are being allocated when using the scheduling assistant.
3. The scheduling assistant will place jobs in available slots where there is currently no work being carried out. The assistant will never reschedule or move existing jobs to accommodate the scheduling of another job.
4. When using the scheduling assistant on a single job, the user is offered slots to make an informed decision based on costs and timings and whether or not a slot meets requirements set by constraints. The final decision is the user's.
5. When using the schedule all functionality the system will schedule jobs based on the requirement of slots to meet all constraints set, if this is not achievable then the system will look for slots where the most important prioritised constraints are met and then the system will choose the cheapest slot of those available and schedule the job – the user does not get the final decision during this process.
6. When any jobs are scheduled to a slot whereby some constraints are not met, JobWatch will display a red warning symbol on the job with a text explanation showing why the job has been highlighted in this manner, allowing the user to clearly see the unmet constraint and reschedule if they desire.

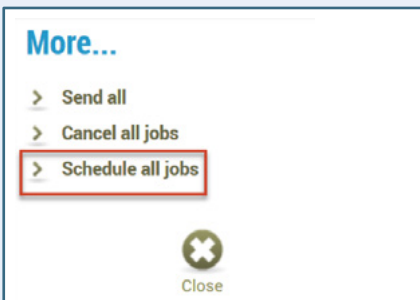
*The values used for cost calculation can be set in Administration against each Resource and Vehicle

STEP 1:

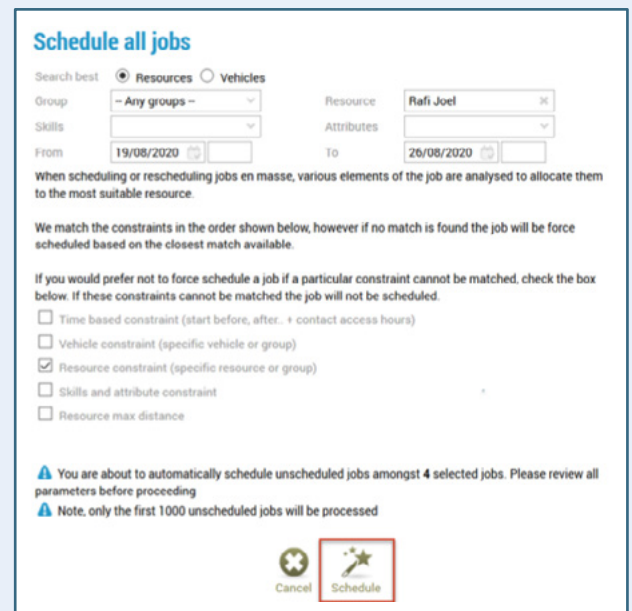
From the List View, apply filters to create the list of jobs you wish to schedule and then click 'More'



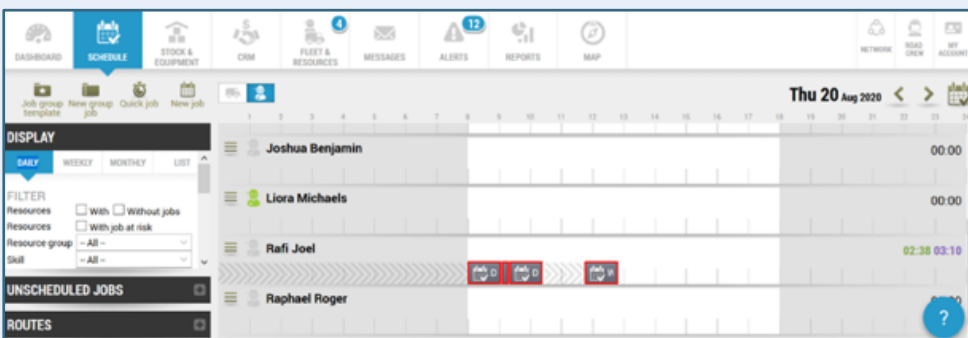
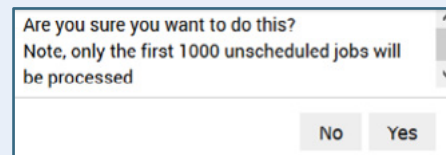
STEP 2: Select 'Schedule all jobs' from the popup



STEP 3: Add any desired constraints and click on the 'Schedule' icon



STEP 4: Click 'Yes' to continue to schedule



STEP 5:

The jobs will now appear on the Schedule