



Critical
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Workflow

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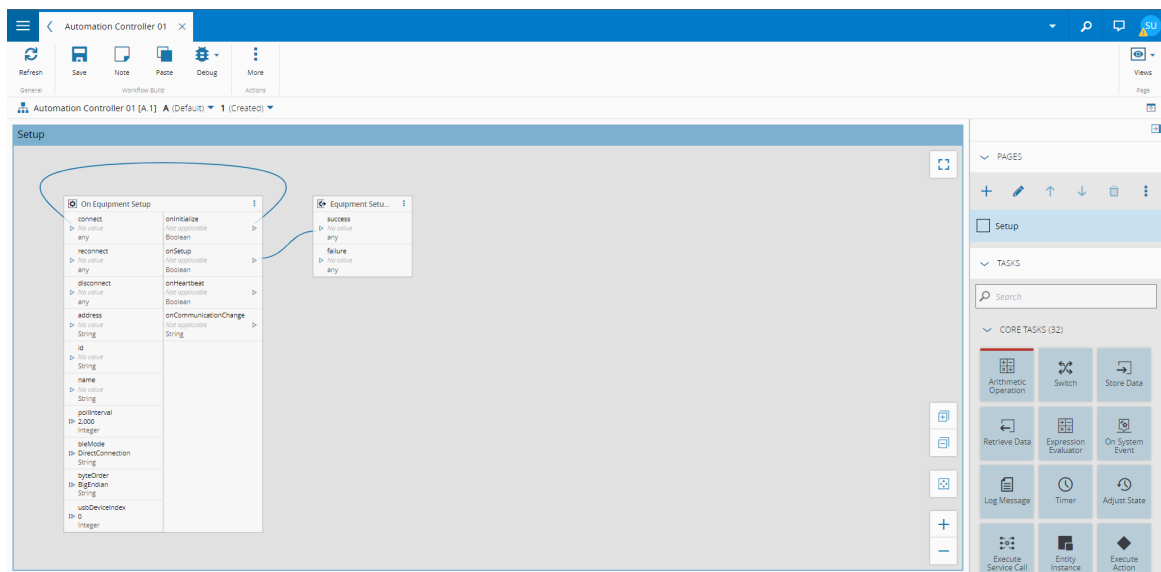
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Workflow

After an Automation Controller instance is created, the workflow designer page is automatically displayed, where the business logic can be developed supported by tasks and converters. This approach makes working with equipment integration easier and more intuitive by trying to minimize the need for programming.

Designer



Upper Section:

- Take notes
- Debug
- Change Set/Version Related Operations

Right pane, pages section:

- A page is a logic aggregator of functionalities and scenarios to be covered by the system, where you can create and organize business logic workflows.
 - Setup page is created after the controller creation with the `On Equipment Setup` task
 - The workflows can be separated by page, however they run at the same time
- A good practice is to have a page per logic section. For example, one page to hold the workflow ensuring the device connection, other to hold what to do when the device performs a specific state change, and another to know what to do when a material is dispatched or tracked-in.
- Possible operations:
 - Create
 - Edit: shows the content that is behind a certain workflow (set of tasks and converters). Any change done in this code affects the workflow and could result in an invalid workflow. It is highly recommended to not edit the workflow through this edit option, rather use the workflow designer.
 - Reorder
 - Remove

- Import: import from a shareable workflow to the controller
- Export: to share the workflow to the **Automation Workflow** entity, where shareable workflows are located. It needs to have both Start and End points.

Right pane, task section: contains the list of all enabled tasks in the last step of the automation controller instance configuration. Tasks represent functions with an entry value, an output and a logic to be executed.

Right pane, view section:

- Default Types
- Input/Output Type
- Notes

Middle Section, workflow designer: to design the business logic of the controller, above the information about the controller, version and revision

Tasks

Tasks are blocks of logic that require at least one entry value and at least one output. It is only possible to connect one output value to an entry value of the next task - it is not possible to connect one output value to an output of the following task. Connection between tasks represent a flow of information within the data transfer.

The activate section of tasks is to indicate what will trigger the logic execution within the task.

Tasks are used to:

- Notify an event
- Data transformation
- Communicate with MES
- Send requests to the device/machine

When the Automation Controller instance is created, and the workflow page is prompted, automatically, there is a workflow that is provided with the protocol specific task On Equipment Setup to ensure the device connection to MES.

The CM MES already comes with a very full list of tasks, but of course this is extendable and it allows adding custom tasks.

All information regarding tasks can be found here: [Tasks](#)

Converters

Converters are used to transform the output value of a task on a recognizable value to input in the following task.

Here is an example of a converter in an equipment integration scenario:

- Output value: the name on a material through a barcode reader: `MAT.ABC01`.
- The name of the lot in MES is just `ABC01`, and this is the value that needs to serve as an input in the next task.
- The converter will parse the lot name `MAT.ABC01` and convert it to only `ABC01`.

Another example of a converter in a different scenario:

- Output value is a materials information (name, type, product, state, step, resource, area, etc.)

- The input in the next is the name of the material
- A converter is applied so that only the property name is the entry value in the following task

The CM MES already comes with a list of default converters, but this is extendable and allows adding custom converters.

All information regarding converters can be found here: [Converters](#)



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