CPQ Workflow Creation with Snap

Workflows are a series of *states* that help process a quote's approval and generate its documents.

But your custom products may require more than a simple series of states all in a row. You may need a more complex flow of events.

Combine workflow states and Snap logic to create *branches and loops*, which can build even the most complex workflow.

Secure your workflow at each state of the process… for each document you generate.

Objectives

- Branching Workflows
- Looping Workflows
- Workflow Security

Topic A – Branching workflows

Workflows aren't always a linear process. Depending on how your product is configured, or what decisions your approvers make, quotes may need to be routed to special branches of the workflow. Or maybe they need to loop back to a previous state in the workflow.

Let's discuss branching and looping.

Branches occur in a workflow when some quotes need to follow a different path than others. A branch can occur automatically because of business rules, or manually because of a person's decision.

Automatic branches, based on business rules, are easy to create with Snap logic. You've already seen how the "go to state" block can direct the quote to a different state of the workflow.

You can also place that block within a logic block to make an automatic branch.

To illustrate, let me provide an example. Quotes with a value over some amount need manager approval. But quotes that are less than that amount can skip their approval.

Your branching logic is usually based on information stored in the quote. Here, for example, we use the get quote block. This Snap block and others are available in the "workflow" section of the toolbox to give information about the quote, and the array of custom products within it. Just search for the word quote in the toolbox .

Let's add this automatic branch to the workflow we started in the previous course. We want our managers to approve large quotes after the documentation is generated, but before the customer sees it.

Drag an approval state block out of the toolbox onto the workspace, and give it a name "Manager Approval".

Specify who can perform this task by adding a user or role.

Then drag this new state below the "Building Documentation" state.

Now that the new state is connected to the workflow, we can refer to it. Scroll up to the "building documentation" state, and update what happens when the build is complete. Add an automatic branch to the workflow.

Let's add another kind of automatic branch to the workflow. This time, the two slots of the branch are already created for us. We just have to fill them.

In the workflow we started in the previous course, Did you notice that the quote moves to the "waiting for customer" state, even if there was a problem in building the documentation? Let's fix that. We will add a new "Engineering Review" state. This will be our holding place for any problems that require the skills of an engineer.

Drag out a second approval state from the toolbox, Give it the name "Engineering Review", Specify at least one user role authorized to approve, And drag it below the build state.

Now that this new state is connected, we can refer to it. Scroll up to the Building Documentation state, and change where the failed builds go: they should now go to our new Engineering Review state.

Topic B- Workflow Loops

What are loops in a workflow?

Loops are useful when a quote needs to go through a workflow state more than once. Maybe a mistake needs to be fixed, or something needs to be checked again after a change was made.

Let's add two different types of loops to our workflow.

The first loop has to do with our manager's approval. Where should a quote go after it has been rejected?

We can use a special block, called "unsubmit from workflow". This block takes the quote out of the workflow, and places it back into the unsubmitted state.

Since the quote is no longer in a workflow, it's released from workflow security, and is back in the creator's hands to edit and resubmit.

Add the "unsubmit from workflow" block to the rejected slot of the Manager Approval stage.

And add the "go to state… waiting for customer" to the approved slot.

Use the "goto" and "unsubmit" blocks to create loops within your workflow… or to end the workflow entirely so your customer can edit and re-submit their quote.

Our workflow is almost complete. One routing remains: what should happen after the new Engineering Approval stage?

If the engineers can solve the problem, then we should try to generate the documentation again. Therefore, route engineering approvals to the "building documentation" stage.

If the engineers can't solve the problem, they'll reject the quote. Those should be unsubmitted from the workflow.

Our updated workflow, with new branches and loops added, is complete.

Topic C – Workflow Security

As a quote travels through the workflow, it should remain secure. Workflow security consists of three points.

Each workflow has a set of default permissions.

For each workflow state, only the right people should be able to see the quote or perform an action on it.

For each document generated, only the right people should be able to see it.

Let's discuss the default permissions first.

Rather than set the same permissions over and over in each state, it's more efficient to set them all one time, as default permissions. Default permissions, defined at the top of the workflow block, are applied to all states in the workflow. Defining them once makes security easier to manage as your business needs change.

Let's use default permissions to setup the security in our workflow.

Scroll to the top of the workflow block

Click the add symbol next to "default permissions", and choose "permission". In the new block that appears, select the first permission.

Then click the add symbol next to "Allowed users and roles", and choose "user role".

Select the correct user role from the list.

Clone the permission block a number of times, and select a new permission in each one. In this way, you can set all default permissions.

These defaults can be overridden. Let's discuss the permissions for individual workflow states.

If any one state needs different permissions, you can override these defaults by adjusting those permissions in the specific state that need it. Other states are unaffected by the change in one state.

For example, find the "manager approval" state in the workflow. You'll see the permissions slot is empty. This means all the default permissions will be applied. Let's override just one of those defaults: the ability to view the discount.

Click the add symbol next to the Permissions slot. Add a new permission. Set the permission to "view discount", and then add an appropriate user or role.

Now, in this stage, regional sales managers will always be able to view the discount, regardless of the default permissions defined at the top of the workflow.

The third security consideration is document visibility.

As you remember, when you created document builds in your configurator, you tagged your documents so they can be easily managed. Use those same tags here in the workflow to specify which users can see which documents.

To set the document visibility defaults, return to the top of the workflow block. Click the add symbol next to "default permissions", and choose "view outputs with tag". In the new block that appears at the bottom of the permission blocks, select the tag, and add the permission you want to set.

Duplicate this state for any other document tags you use.

Like other default permissions, document visibility permissions can also be overridden in any specific build state.

The default permissions are complete. Your workflow clearly defines who has what permissions, at any state of the process.

Recap

In this course, you combined workflow states and Snap logic to create branches and loops, which can build even the most complex workflow.

You also secured your workflow at each state of the process… for each document you generate.

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