# Business Process Flows in CRM 2015

1. Business Process Flows were first introduced in Dynamics CRM 2013 as a new feature.
2. With the release of Dynamics CRM 2015, this feature has been enhanced further to allow more complex and rich Business Processes.
3. Business process flows define a set of steps (2) divided in stages (1) for you to follow which leads you to a desired outcome.
4. These steps provide a visual indicator that shows you where you are in the defined business process.
5. For instance, you could be guided through the Lead to Opportunity sales process using Business Process Flows.
6. In Dynamics CRM 2013, the experience for Business Process Flow was unique to only Business Process flows.
7. The UI gave a graphical view of what the process may look like but it required additional navigation to build the entire process.
8. The experience in Dynamics CRM 2015 has changed a bit.
9. The UI now follows the same as Business Process rules giving you, as a System Customizer, the ability to create a Business Process Flow in a single edit experience.
10. The stage and step configuration, branching rules and the selection for entity relationships are all done on the same Business Process edit window.
11. In CRM 2013, Business Process Flows were very linear.  You waited until each stage was completed and then you were able to move on to the next stage.
12. With CRM 2015, it is now possible to have Business Process Flows change the next stage or future stages with your input from the current stage.
13. This allows Business Process Flows to be more relevant based on the details you has input.
14. These changes are done in real-time so it allows you to get instant feedback on the data you've entered within the Business Process.
15. This is done by rule branching and merging.
16. To branch a Business Process, you can now use If/Else If/Else conditions for Business Rules Logic that was enhanced with CRM 2015.
17. In the screen shot below a new stage "Incubate" (3) is inserted after the "Qualify" stage if (2) the step "Purchase Timeframe" (1) in the "Qualify" stage is set to the value "This Year".
18. The condition is defined in a UI similar to the Business Rules UI
19. You can now choose any entity to be a part of the Business Process. There is one limitation here. The entity must be enabled for Business Process Flows (1)
20. Not all out of the box entities can have this option enabled.  However, all custom entities can.

## Other Limitations

1. A branch can only go five levels deep.  The UI will still show the Add branch button but clicking it will not add another branch
2. The conditional statements, (if/else if), can only use fields defined in the previous stage.

3. Even though the editor shows all of the fields as being available, the field within the condition statement is required.
4. If a field is used in a condition that is not defined in the previous stage, you get an error icon next to the problematic statement upon saving the Business Process.
5. Just like with Business Rules Logic, conditions cannot use a mix of AND or OR logical operators.
6. When defining the second and/or statement and flipping the operator to the opposite operator, the editor will cause all and/or operators to change to the one that was just defined.
7. Processes can only span across a maximum of 5 unique entities
8. Maximum of 30 stages per process, and 30 steps per stage
9. Each branch can be no more than 5 levels deep
10. Only one active process per record
11. Can only leverage 1:N entity relationships (even though this is optional)

## Client API Programmability

1. Access to available processes, active process, active stage, and active path
2. Move stages, change active process
3. Hook into stage selection, or changing active stage
4. Hide the Process Control completely from the form, or toggle whether or not the Process Control is expanded or collapsed on the form

## Rule Based Branching Support (If / Else)

1. Decisions made to branch to different stages
2. Defined in a single UI for rules, stages, steps, & branches
3. Evaluated Real Time
4. Branches on a single entity, cross entity, merge branches back to the main flow
5. Branching rules must be based on steps in the stage immediately preceding it
6. Can combine multiple conditions in a rule using AND/OR

## CRM 2015 – Scripting Options for Business Process Flows

Since the release of business process flows in CRM 2013, we've been clamoring for more extensibility from a scripting standpoint. With the release of CRM 2015 Microsoft has added several new methods to the Javascript API that allow developers to greatly extend the out-of-the-box business process flows capability.

1. **Change the process when there are more than one process available for the entity.**
   Use Xrm.Page.data.process.getEnabledProcesses to retrieve information about enabled processes that the user can choose for the entity. Then use Xrm.Page.data.process.setActiveProcess to make one of the enabled processes the active one.

2. **Move to the next stage when all required steps are completed to make it the current active stage.**
   Use Xrm.Page.data.process.moveNext.
3. **Move to the previous stage and make it the current active stage.**
   Use Xrm.Page.data.process.movePrevious.
4. **Select a stage to view the status of the steps in the stage.**
   Use Xrm.Page.data.process.getActivePath to retrieve information about the stages that have been completed, the current active stage, and valid stages available from the current active stage. Examine the steps included in that stage and compare the corresponding form attribute values to determine whether they are completed.
5. **Complete a step**
   Steps are completed when the corresponding data in the form is entered. You can determine the attribute using the step getAttribute method. This will return the logical name of the attribute. Then use Xrm.Page.getAttribute to retrieve attribute from the Xrm.Page.data.entity.attributes collection and then use the attribute setValue method to set the value.
6. **Detect whether a step is required**
   Use the step isRequired method to determine if a step is required by the business process flow.
7. **Expand or collapse the business process flow control**
   Use Xrm.Page.ui.process.setDisplayState.
8. **Hide the process control**
   Use Xrm.Page.ui.process.setVisible, you can control whether to display the business process flow control.
9. **Skip to a valid completed stage.**
   Use Xrm.Page.data.process.setActiveStage to set one of the valid completed stages for the current entity.
10. **Query the process definition including stages not currently visible**
    Use Xrm.Page.data.process.getActiveProcess to query the definition of the business process flow, including stages that might not be visible because of branching logic in the process.
11. **Events for business process flows**
    You can interact any event provided by the form with business process flows, but two new events allow you to execute code based on events just for the business process flow control. You can execute code when the active stage of a business process flow changes (OnStageChange event) or when a stage is selected (OnStageSelected event).