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Batching Record Updates for a Scheduled Flow

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Flows are a powerful tool for automating business processes and making data updates in Salesforce. However, when processing large amounts of data, it can be challenging to avoid errors such as governor limit exceeded errors, DML statement exceptions, and record-locking conflicts. To help address these challenges, you can use the `RecordUpdater` Apex class to batch your data updates.The `RecordUpdater` Apex class is a reusable solution for updating records in Salesforce. By using the `@InvocableMethod` annotation it can be easily called from a flow.

Why create this — A real business issue!

While working on a Scheduled flow that closed opportunities based on open date and other

engagement conditions, I encountered an issue with the flow. The flow was generating errors like

- UNABLE_TO_LOCK_ROW
- CANNOT_INSERT_UPDATE_ACTIVATE_ENTITY

because of the supporting apex triggers and Process Builders that updated accounts, contacts, tasks, and a custom object when an opportunity is closed.

To resolve the issue, I tried a different approach. I extracted all the conditions from the flow and used a data loader with controlled batch sizes to close the opportunities. This approach was successful and did not result in any errors. I wanted to replicate that in a flow, so below is the apex class I created....

Apex Class

Name: **RecordUpdater**

```
global class RecordUpdater {
```

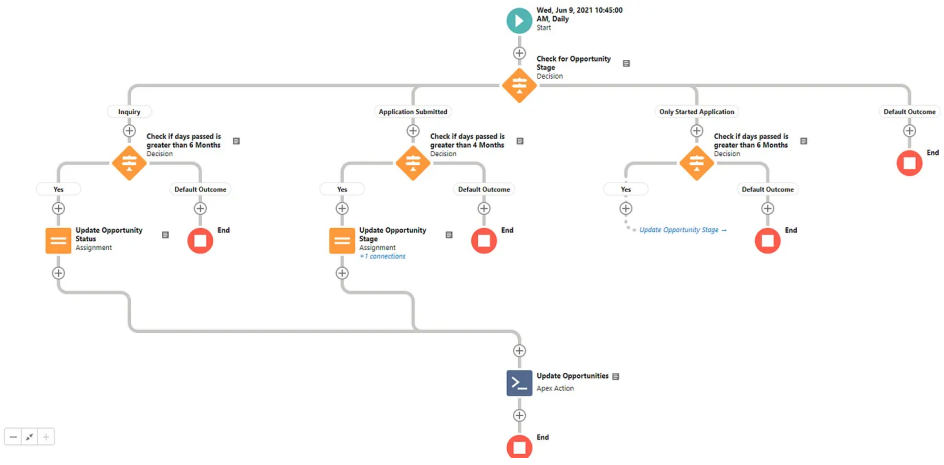
```
    // Declare an invocable method to update records wit
    @InvocableMethod(label='Update Records' description=
    global static void updateRecords(List<RecordUpdateRe
        // Loop through each record update request
        for (RecordUpdateRequest request : requests) {
            // Get the list of records to update
            List<SObject> recordsToUpdate = request.reco
            // Get the specified batch size or default t
            Integer batchSize = request.batchSize;
            if (batchSize == null) {
                batchSize = recordsToUpdate.size();
            }
            // Keep track of the current start index for
            Integer startIndex = 0;
            // Continue updating records as long as ther
            while (startIndex < recordsToUpdate.size())
                // Determine the end index for the curre
                Integer endIndex = Math.min(startIndex +
                // Create a new list to store the record
                List<SObject> batch = new List<SObject>(
                // Loop through the records to update fo
                for (Integer i = startIndex; i < endInde
                    // Add each record to the batch list
                    batch.add(recordsToUpdate.get(i));
                }
                // Update the records in the current bat
                update batch;
                // Update the start index to the end ind
                startIndex = endIndex;
            }
        }
    }

    // Declare a class to store information about a reco
    global class RecordUpdateRequest {
        // Declare a required variable to store the reco
        @InvocableVariable(required=true)
        global List<SObject> records;

        // Declare a variable to store the specified bat
        @InvocableVariable
        global Integer batchSize;
    }

}
```

There are several benefits to using the Apex class in a

flow:

1. Performance: By reducing the amount of data processed in a single transaction. This can help avoid exceeding governor limits and reduce the risk of encountering errors such as timeout exceptions and DML statement exceptions.
2. Scalability: By allowing you to process larger amounts of data all within Salesforce reducing dependency on ETL Platforms for some things.
3. Reliability: Batching records can improve the reliability of your flows and transactions by reducing the risk of encountering errors such as governor limit exceeded errors, DML statement exceptions, and record-locking conflicts.

Example



We go through a certain set of decisions to determine if we need to close this opportunity

In the Assignment Variable (Could be either, but I am going to use the center one called *Update Opportunity Stage, Status, and Role)* we first set the $Record variable values to what we want them to be and then add the $Record variable to another Record Collection variable that will be used further down in the Apex. We will call that collection variable Opportunity4Update

Assignment: Update Opportunity Stage, Status, and Role (Middle)

Collection Variable: Opportunity4Update

The updated values are now connected to the Apex Action

Apex Action: Update Opportunities

because this is a scheduled flow we don’t get a choice to pick a record we want to debug with. I tried it with a record to see how did it perform with a Flow Record Update to the Apex. Here are the results — // These are results form a single record debugging.

Alternate Approach

Instead of using the Apex Class to simply control the batch size because of errors you are facing (in this example let's stick to Opportunities closing), You can do the following:

- Keep the current scheduled flow and instead of closing an opportunity, Just update a new checkbox called *'trigger opportunity close'*
- Create a new Record Trigger flow to run only on record update and when *'trigger opportunity close'* = true.
- Create a dummy scheduled path and define a batch

size. (This is an example for the below flow, but the logic remains the same)

Dummy Schduled Path

- Close the opportunity via the Record Triggered flow with controlled batch size.

I created a flow that generates total compensation and individual payment records based on enrollments in a course. The flow is triggered when enrollments are updated and calculates the total compensation for the course. Then, it creates individual payment records that are used to pay out the faculty on a bi-weekly basis. The payment records are continually adjusted based on changes in the number of students enrolled or dropped. This approach ensures that faculty members are fairly compensated for their work and that the payment records are accurate and up-to-date. Because of system timeouts and other issues, this was a workaround for the Apex class as all I was looking for was to control the batch size.

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