knowledge15

April 19–24, 2015 • Mandalay Bay • Las Vegas, NV

Lab Guide

Workflow 301:

Advanced Workflow for Application Development

Shawn Turnbow & Aaron Hudson

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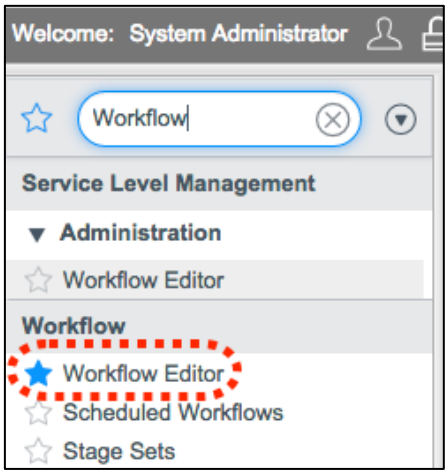
Lab Goal

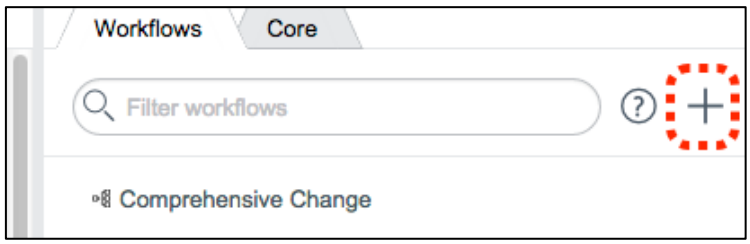
The goal of this lab is to create a workflow for our Offboarding application. This workflow will demonstrate patterns and practices common to many workflows.

Lab Step 1.1
Create Offboarding Workflow

Create a Workflow

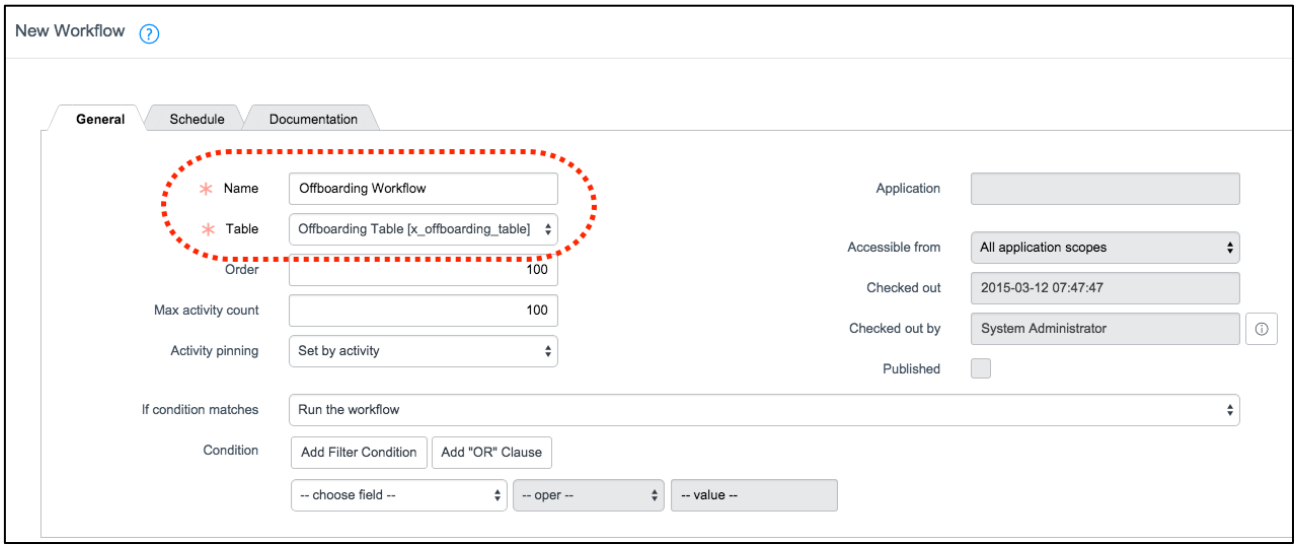
1. Log on to Your Training Instance with the information provided.
2. Go to the **Workflow Editor** and create a new **Workflow** by clicking the **+** icon.





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3. Enter the information into the Name field.
   - Name: **Offboarding Workflow**
   - Table: **Offboarding Table**



You have completed Lab Step 1.1

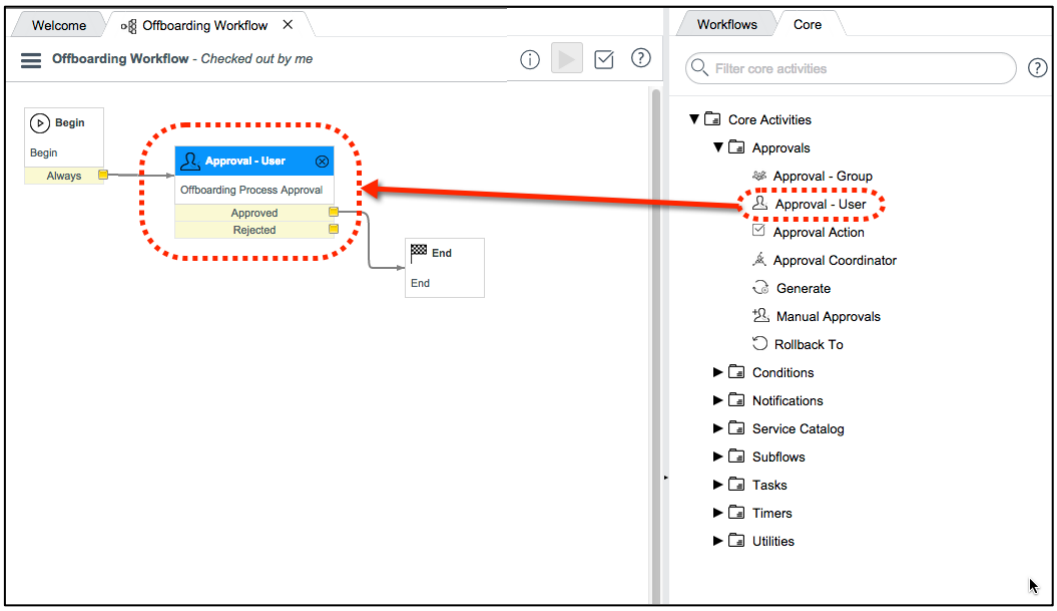
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Lab Step Goal

The goal of this lab step is to add an Approval activity and configure it to allow for percentage approvals.

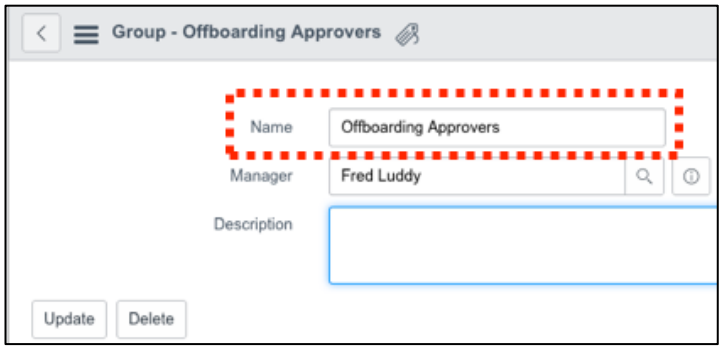
Lab Step 1.2 Add Percent Approval

1. Drag the **Approval - User** activity from the toolbox onto the canvas.

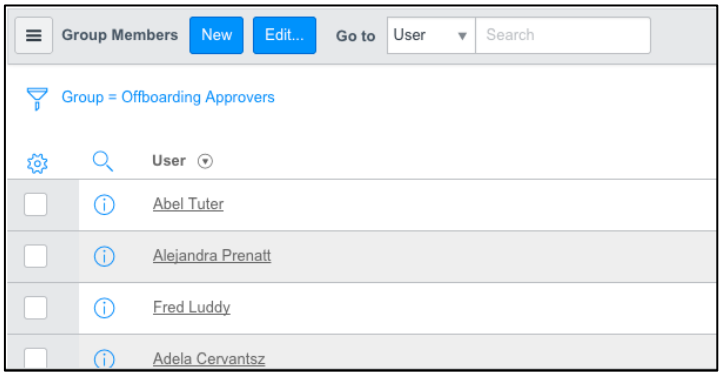


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2. Open another tab in your browser and create a **Group** named **Offboarding Approvers**.



Click **Edit** to add a few users to the group.



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3. Configure the **Approval – User Activity**.

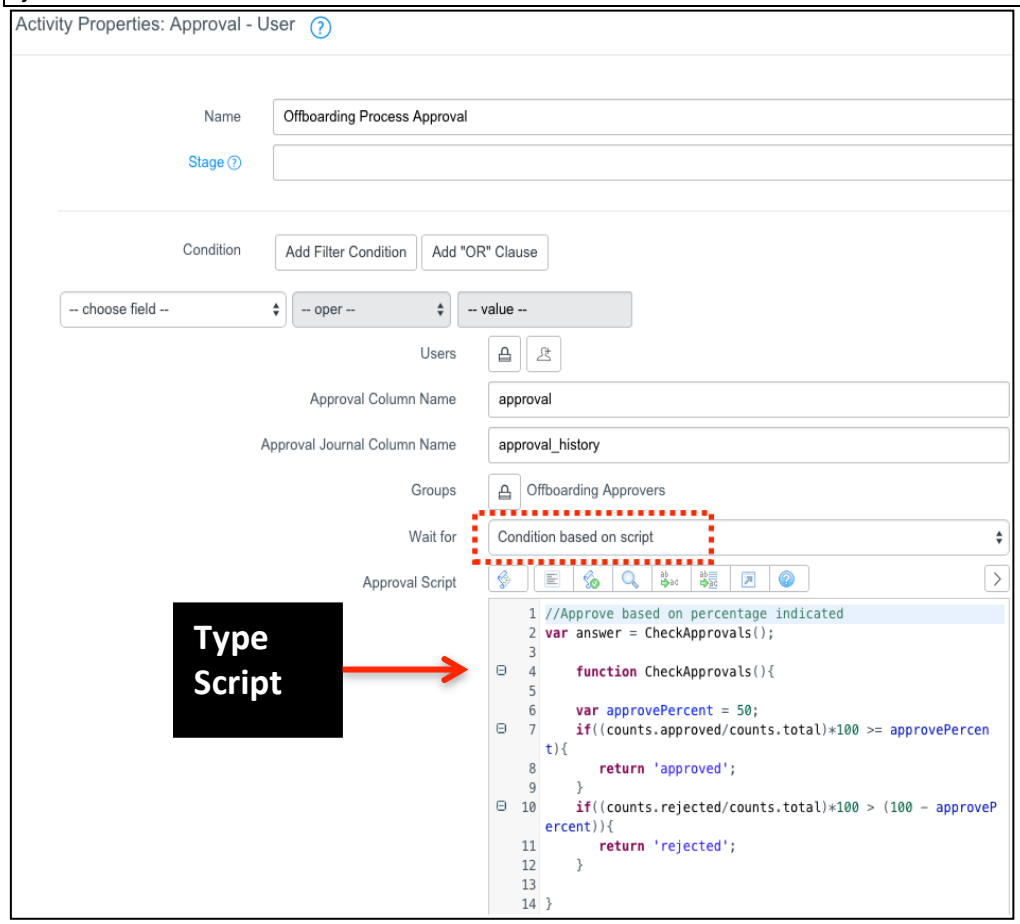
   - Name: **Offboarding Process Approval**
   - Wait for: **Condition based on script**
   - Approval Script:

```
// Approve based on percentage indicated
var answer = CheckApprovals();

    function CheckApprovals(){

    var approvePercent = 50;
    if((counts.approved/counts.total)*100 >= approvePercent){
        return 'approved';
    }
    if((counts.rejected/counts.total)(100 > (100 – approvePercent)){
        return 'rejected';
    }

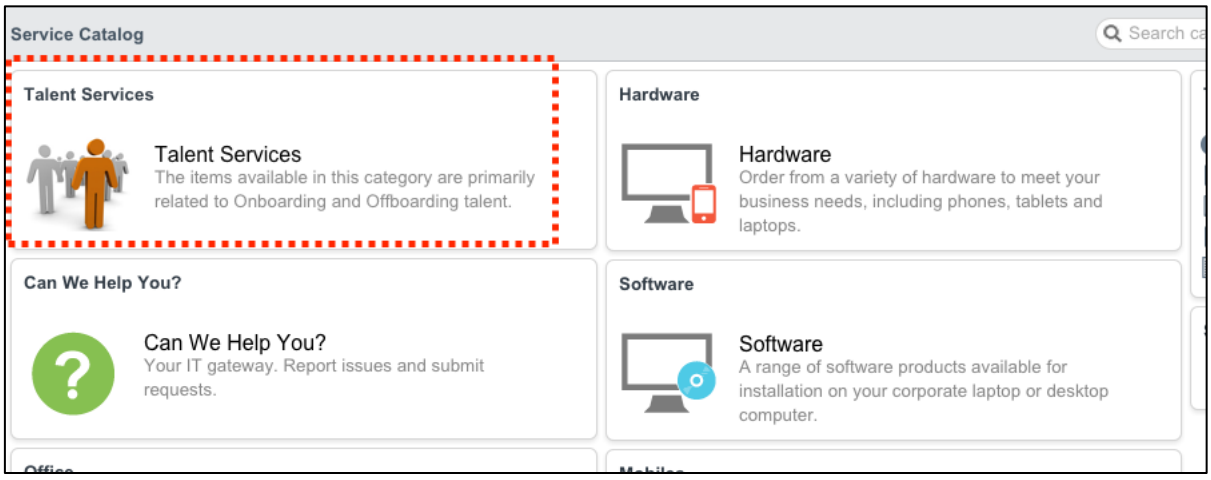
}
```

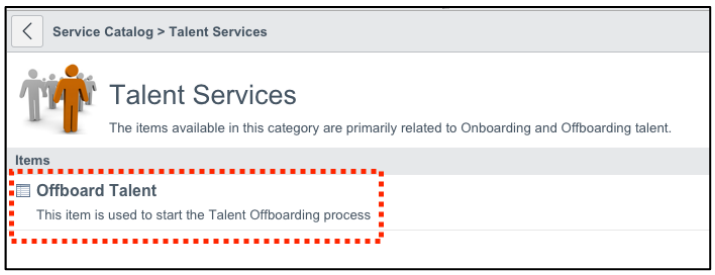


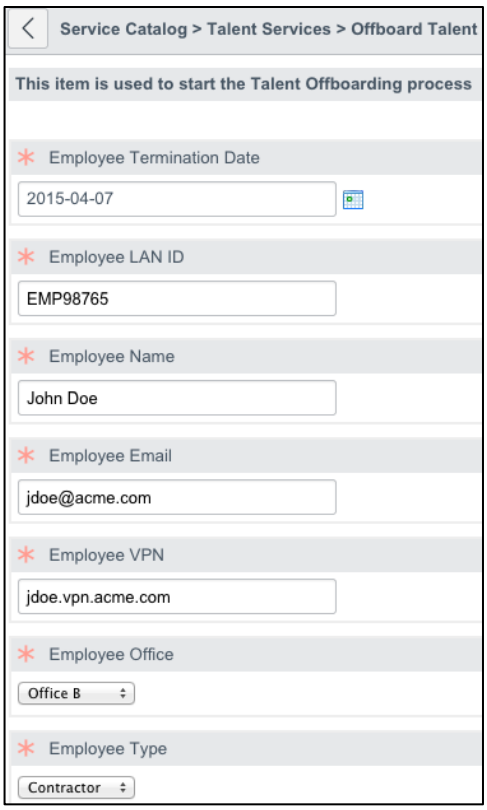
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4. **Publish** and **Run** the Workflow. Confirm that you get the expected behavior. **Ignore "Warn" level errors.**

5. Create a new **Offboarding** record via the Service Catalog **Talent Services -> Offboard Talent** record producer.

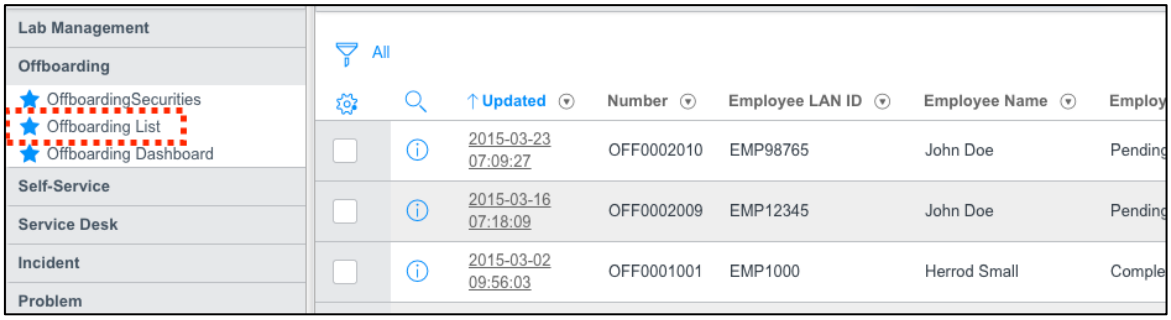




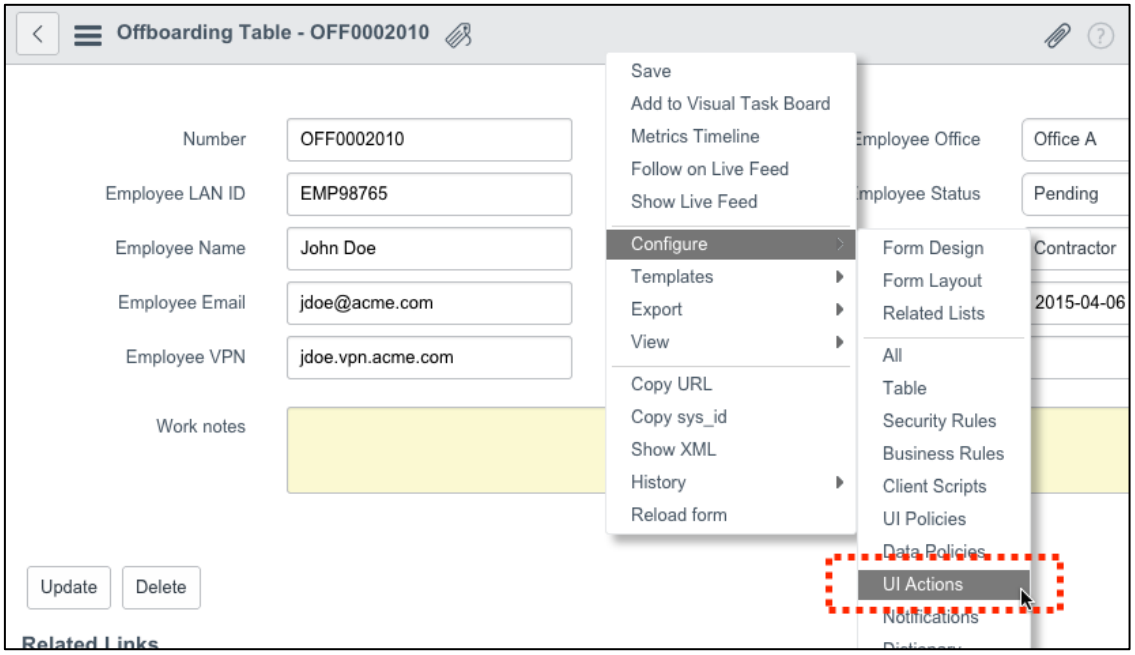


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6. Open the newly created **Offboarding** record.

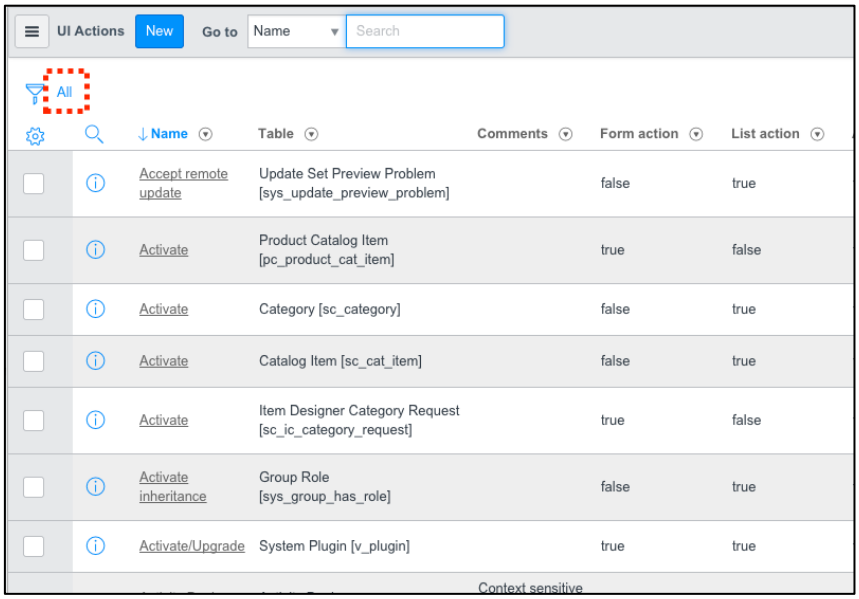


7. Add a **Show Offboarding Workflow** UI Action to the Offboarding form. Right-click the header and choose **Configure -> UI Actions**.

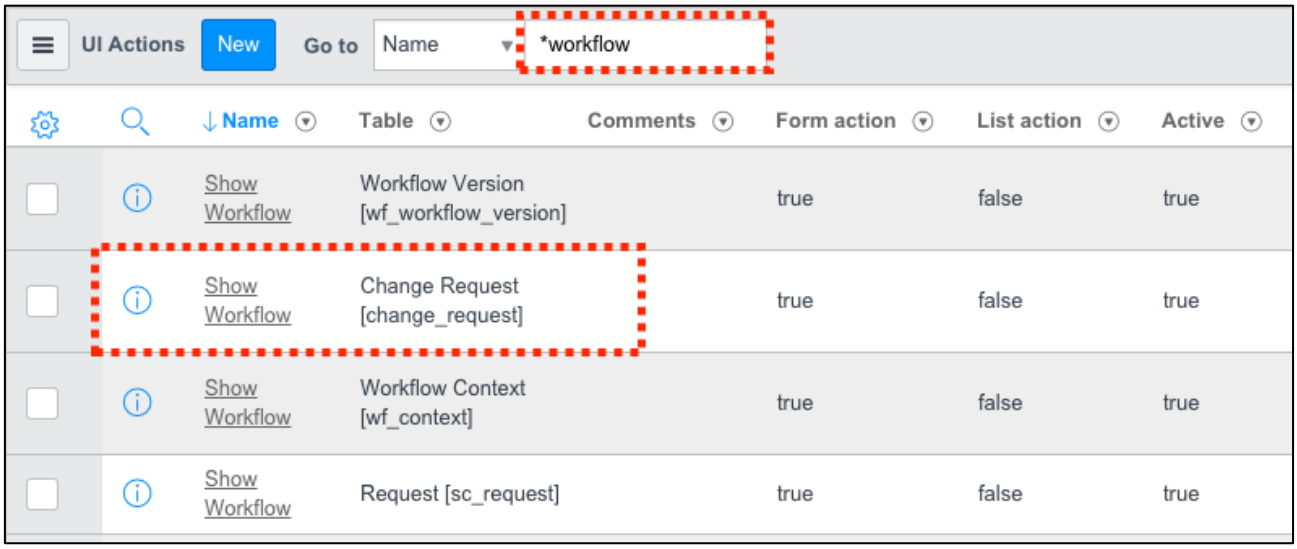


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8. Click **All** to remove the filter so you see all **UI Actions**.



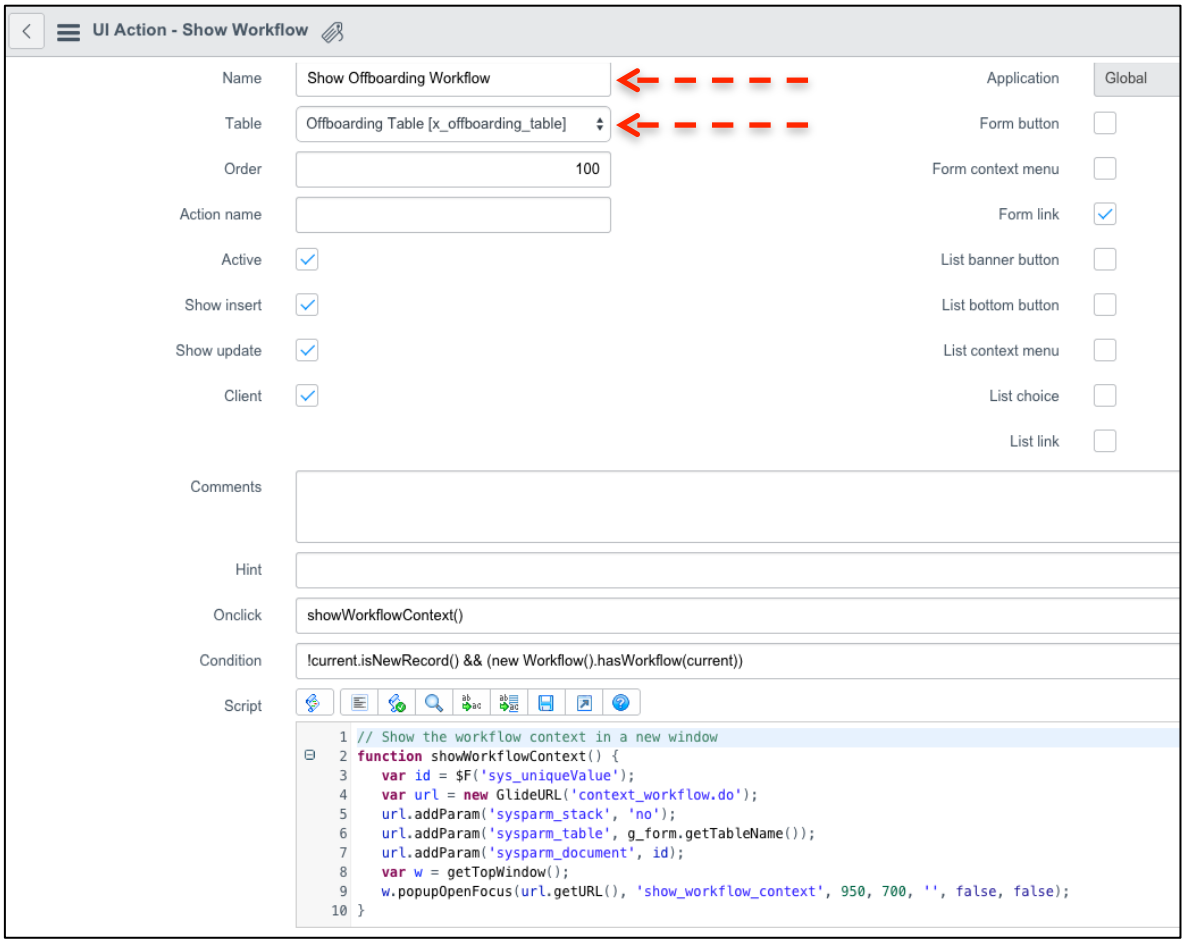
9. Type ***workflow** in the Go to filter and open the **Show Workflow** UI Action for Change Request.



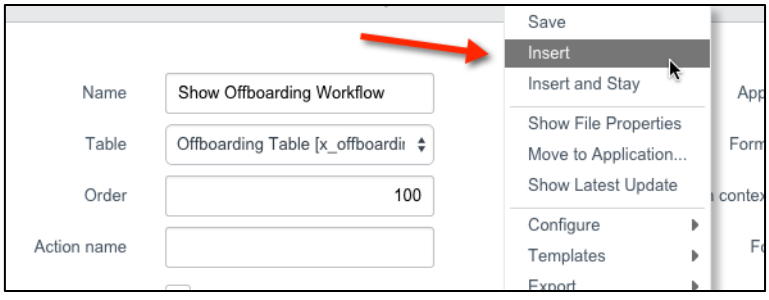
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10. Provide the following information:

- Name: **Show Offboarding Workflow**
- Table: **Offboarding Table**

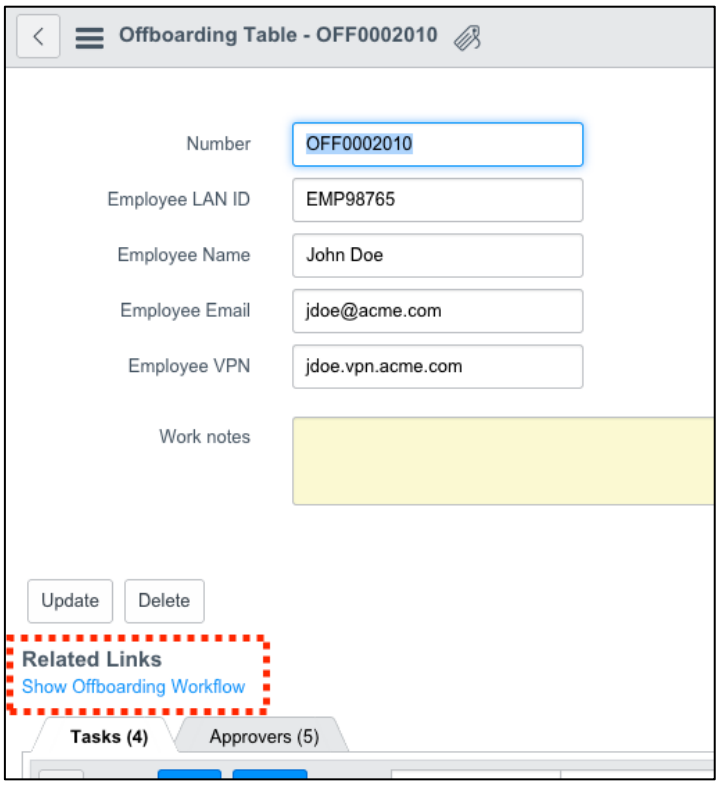


11. Right-click in the header and choose **Insert**. **BE CAREFUL** not to hit **Save**, which overwrites the original UI Action.

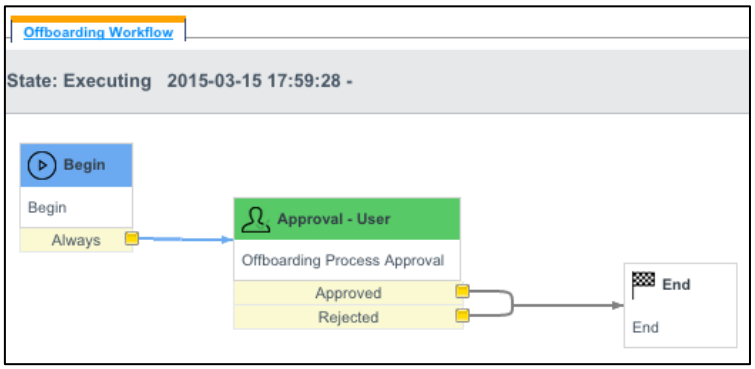


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12. Navigate back to the **Offboarding** form. You should see a **Show Offboarding Workflow** link.

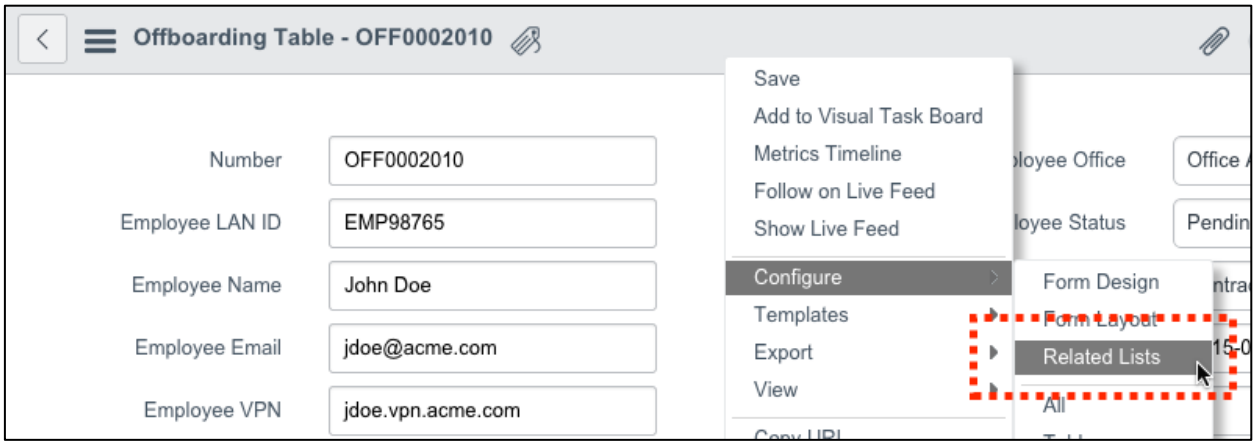


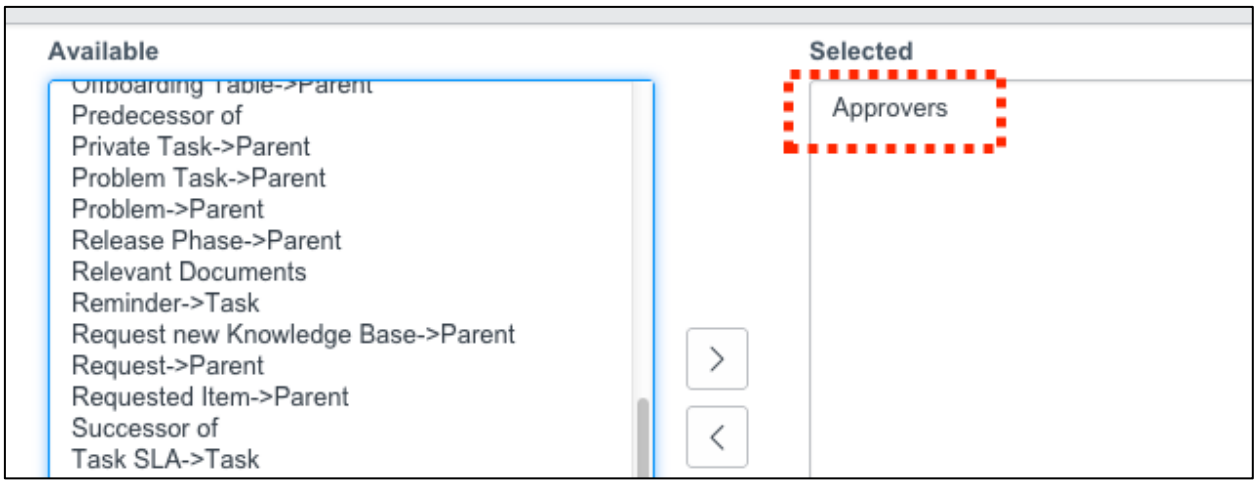
13. Click the **Show Offboarding Workflow** link. Review the Workflow and confirm that it is the same as the following screenshot.



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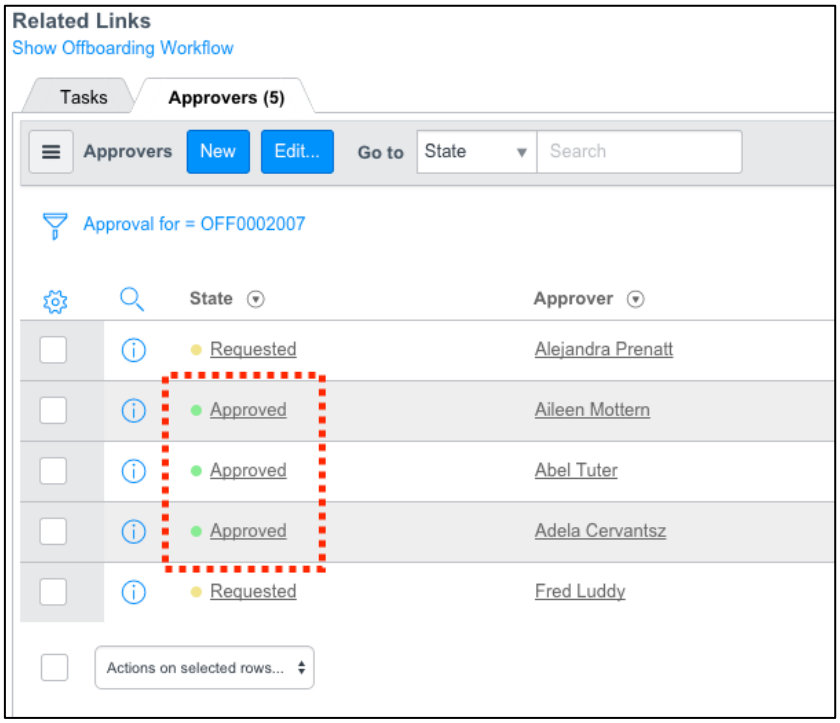
14. Add the **Approvers** related list to the **Offboarding** form.



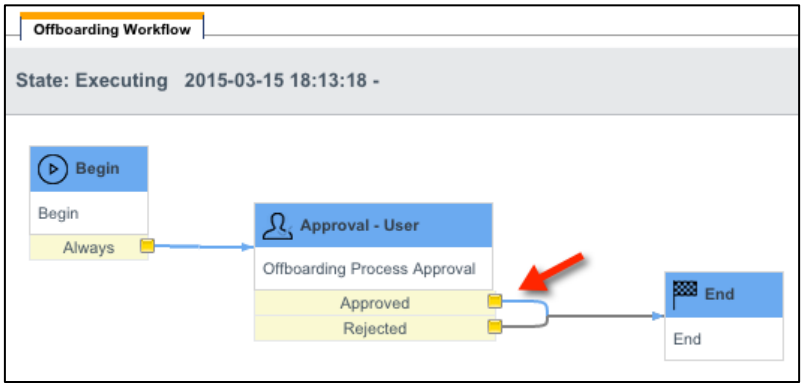


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15. Approve enough approval records to trigger the percentage approval and verify that you get the expected result.



16. The **Approval – User** activity should exit the **Approved** path.



You have completed Lab Step 1.2

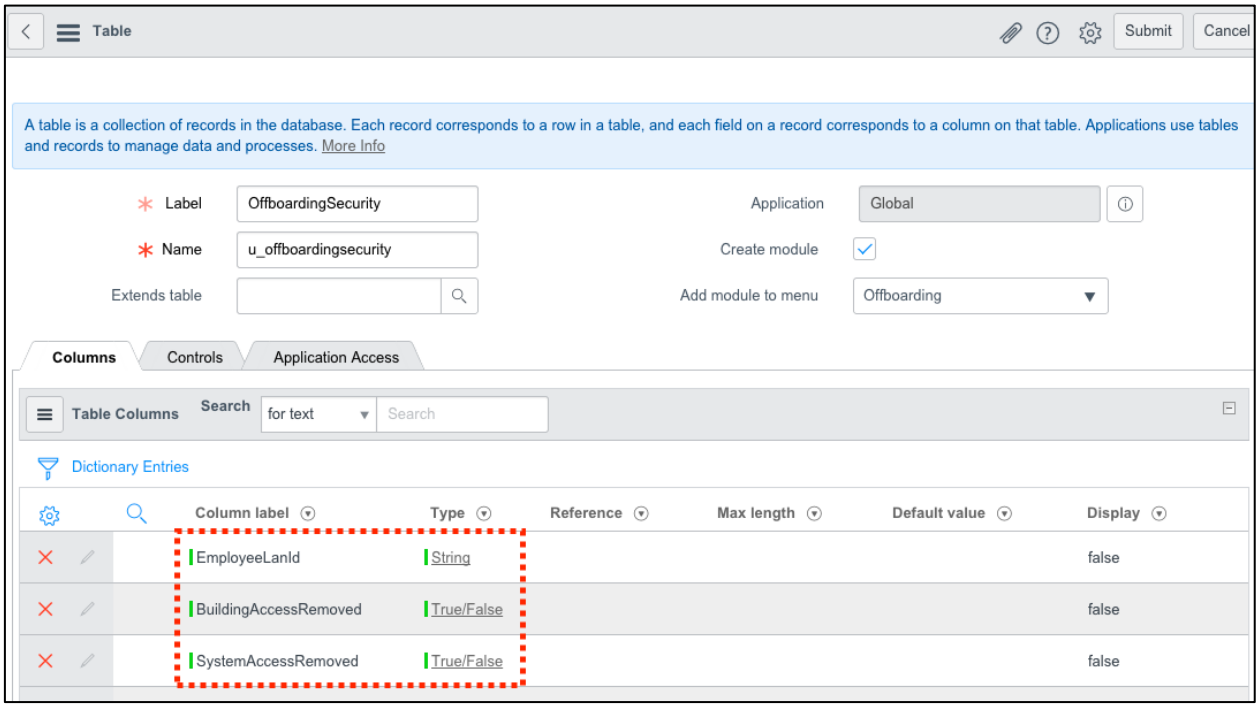
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Lab Step Goal

The goal of this lab step is to create a timer that waits for an external system to get updated. You will create a new table called **OffboardingSecurity**, which is used to emulate a scenario that requires you to integrate with an external system to determine if Physical Security Access has been removed. This table will also be used in subsequent steps.

Lab Step 1.3 Physical Security Check

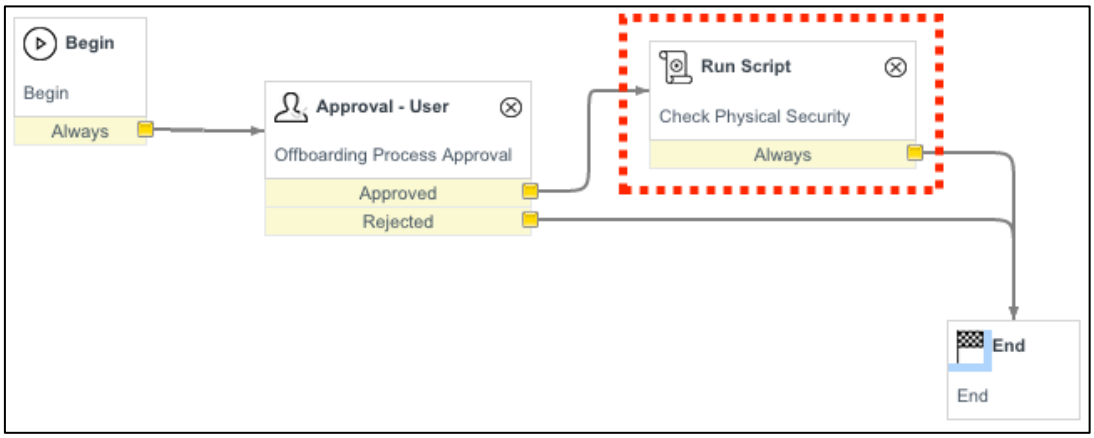
1. Create the **OffboardingSecurity** table with the following fields:
   - EmployeeLanId: **String**
   - BuildingAccessRemoved: **True/False**
   - SystemAccessRemoved: **True/False**



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2. Add a **Run Script** activity to the Workflow that will check if **Physical Security** has been removed.

   Note: We use a ServiceNow table to emulate this scenario. In a real-world situation, you might make a web service call to an external system for this.

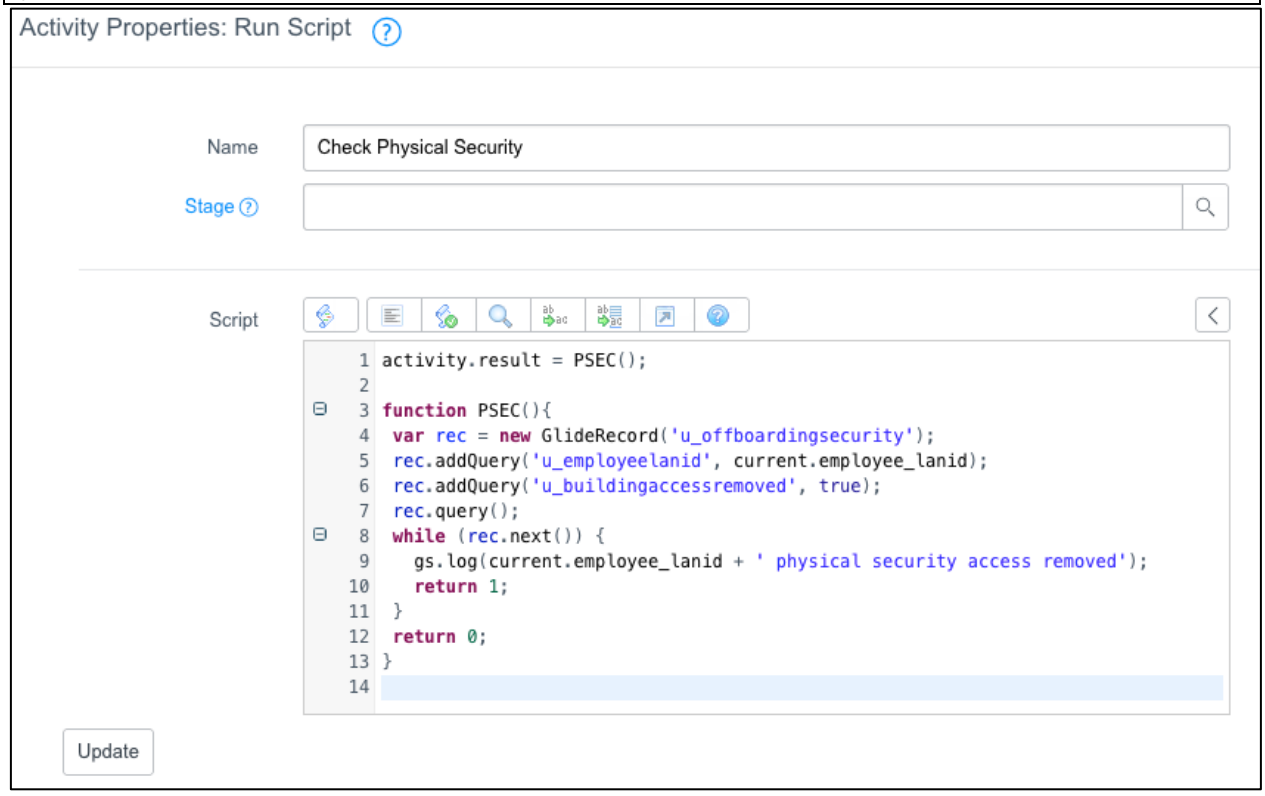


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3. Configure the **Run Script** activity per the following example.
   - Name: **Check Physical Security**

```
activity.result = PSEC();

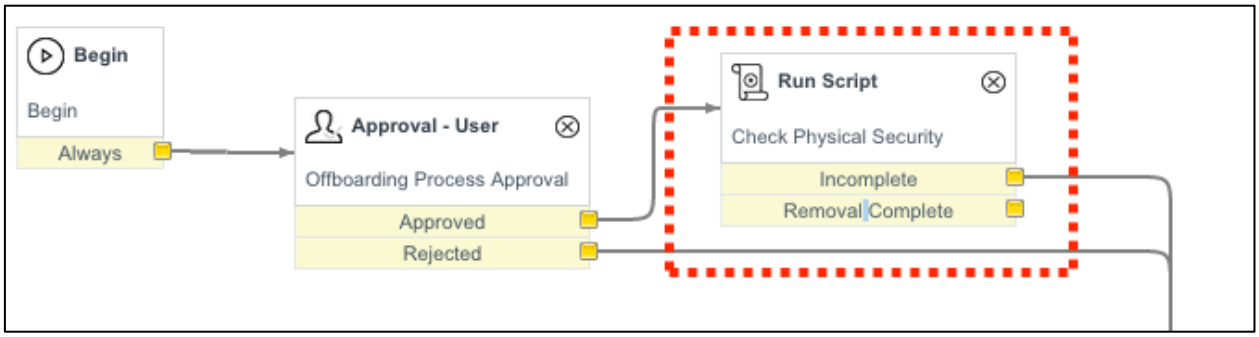
function PSEC(){
    var rec = new GlideRecord('u_offboardingsecurity');
    rec.addQuery('u_employeelanid', current.employee_lanid);
    rec.addQuery('u_buildingaccessremoved', true);
    rec.query();
    while (rec.next()) {
       gs.log(current.employee_lanid + ' physical security access removed');
       return 1;
    }
    return 0;
}
```



4. Click **Update** to save the script.

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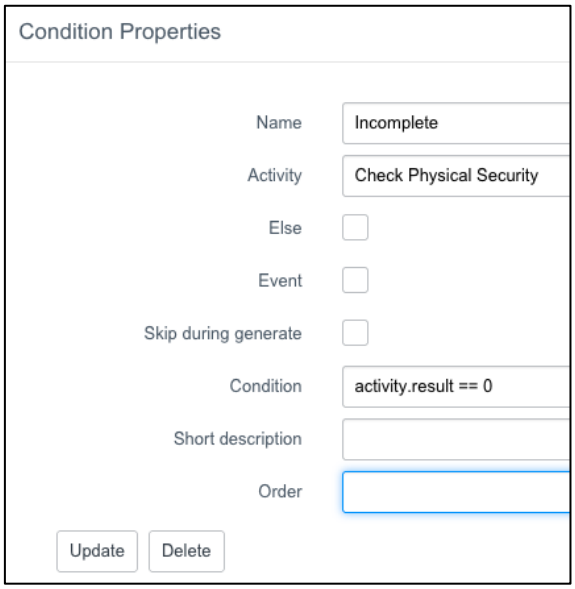
5. Update the **Run Script** activity with multiple conditions.



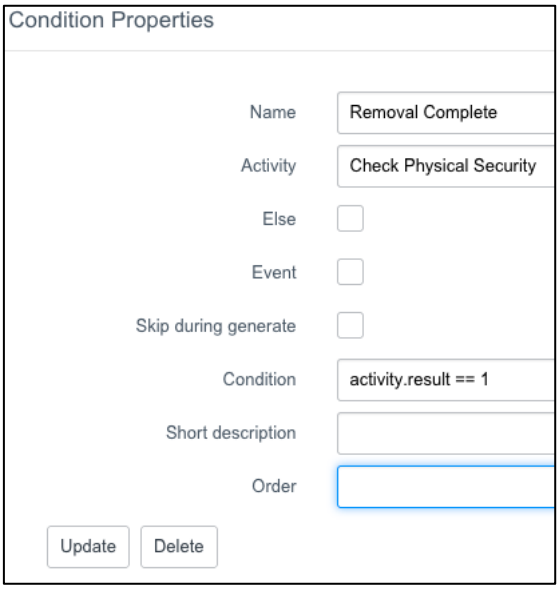
6. Right-click the **Run Script** activity to add/edit conditions.
   Configure the conditions per the below examples.

   Note: You can delete the **Always** condition or edit it to be the **Incomplete** or **Removal Complete** condition as displayed below.

- Name: **Incomplete**
- Activity: **Check Physical Security**
- Condition: **activity.result == 0**

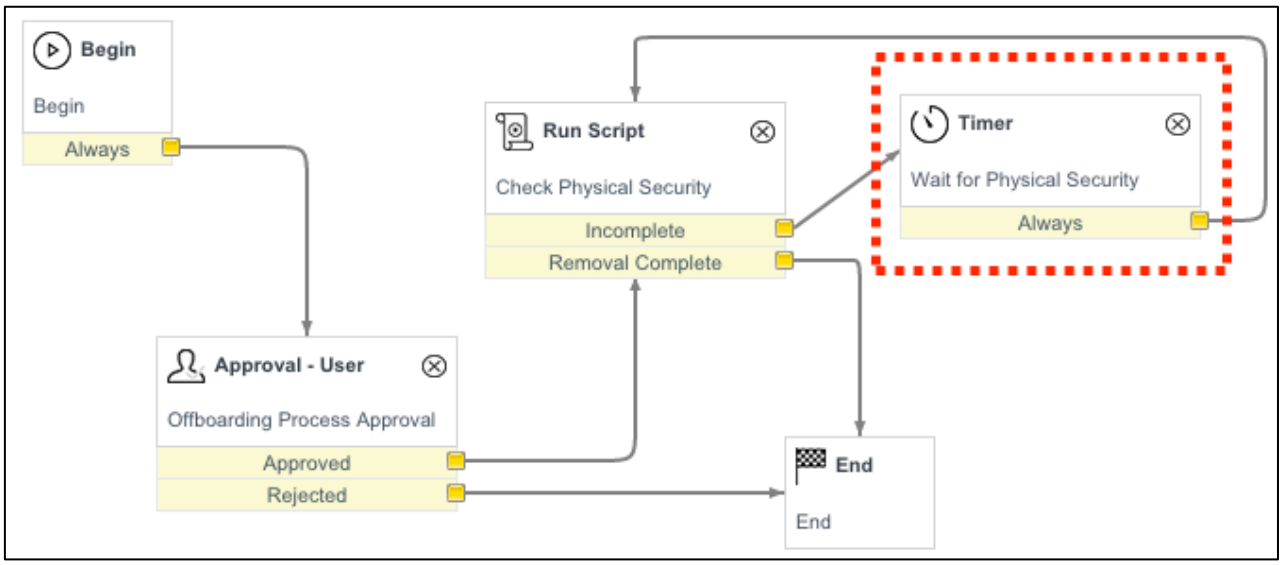


- Name: **Removal Complete**
- Activity: **Check Physical Security**
- Condition: **activity.result == 1**



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7. Add a **Timer** activity to the Workflow. This is used to wait for the **Physical Security Access** to be removed.



8. Set the **Duration** to **5** seconds.

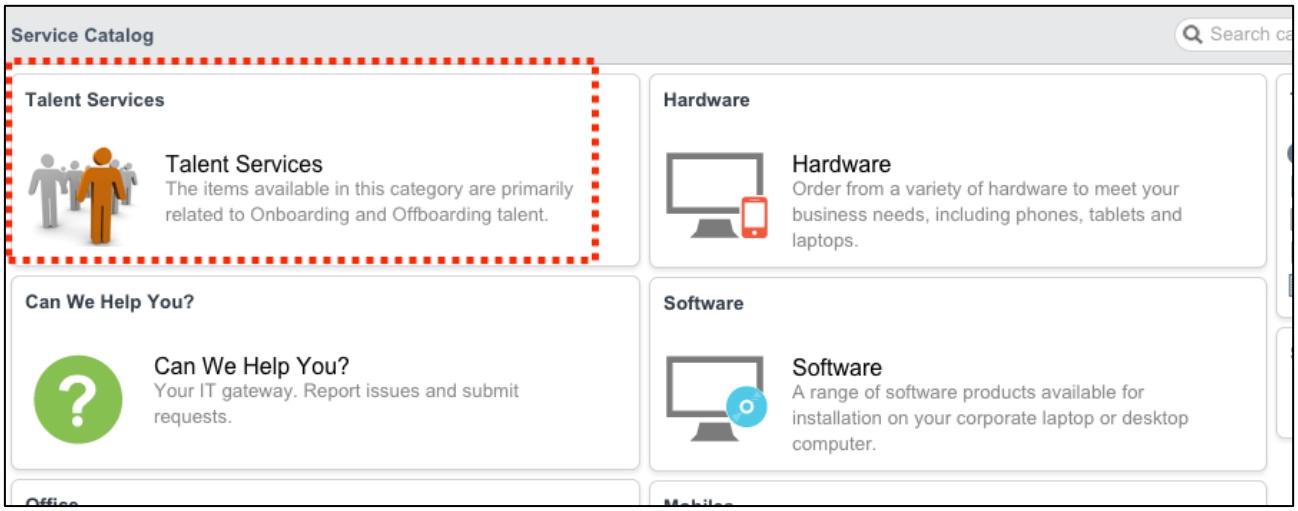


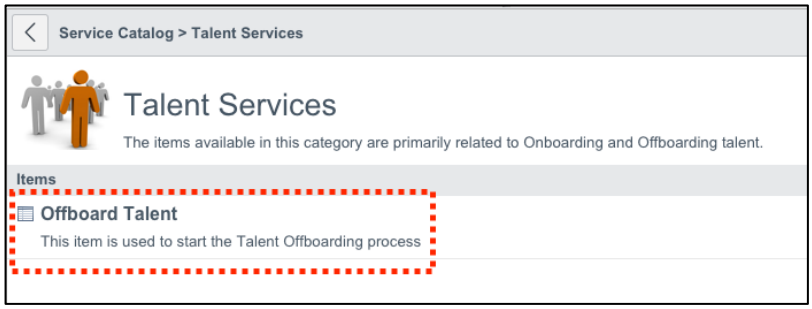
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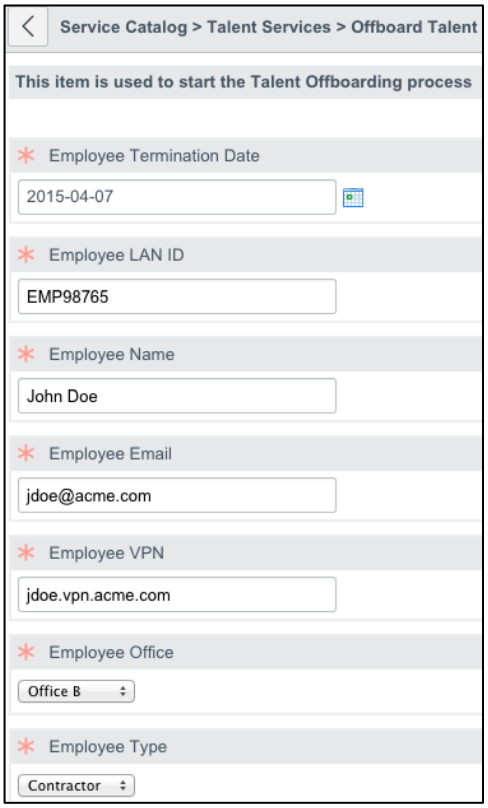
9. **Publish** and **Run** the Workflow. Confirm that you get the expected behavior.

   ***Ignore "Warn" level errors.**

10. Create a new **Offboarding** record via the **Talent Services** – **Offboard Talent** catalog item.

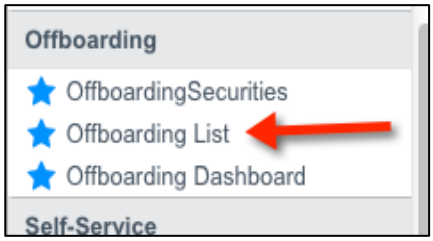


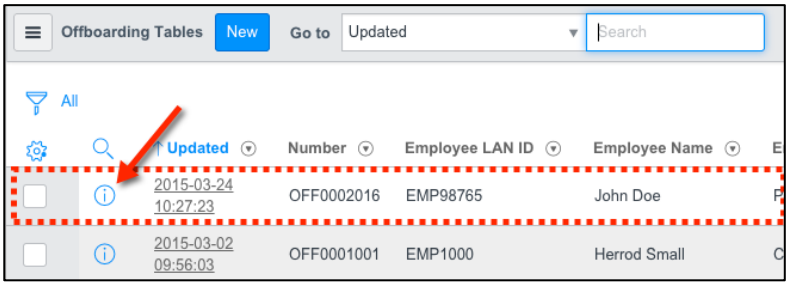




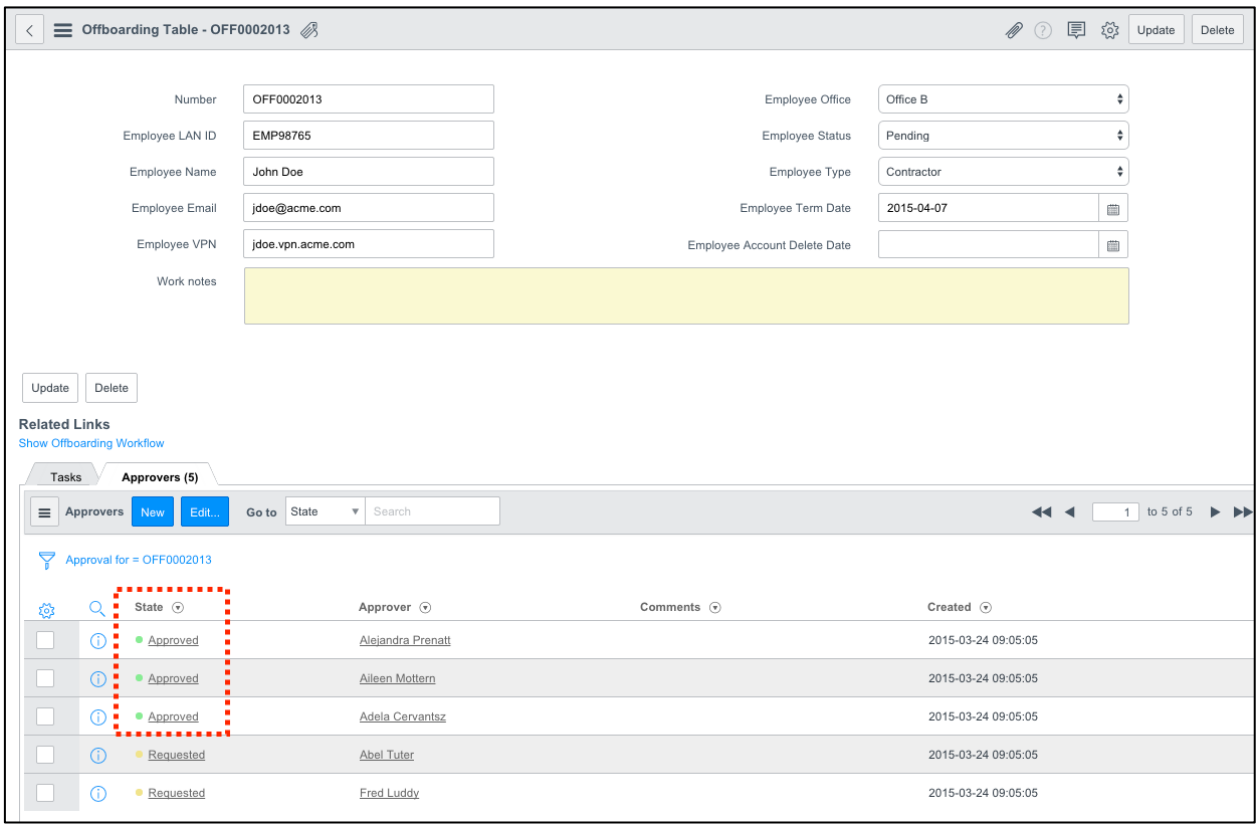
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11. Open the newly created **Offboarding** record.



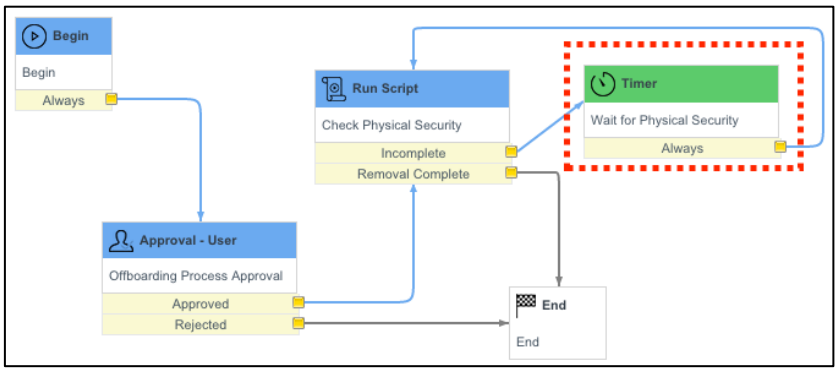


12. **Approve** the request with the necessary number of approvals to pass the percentage criteria.

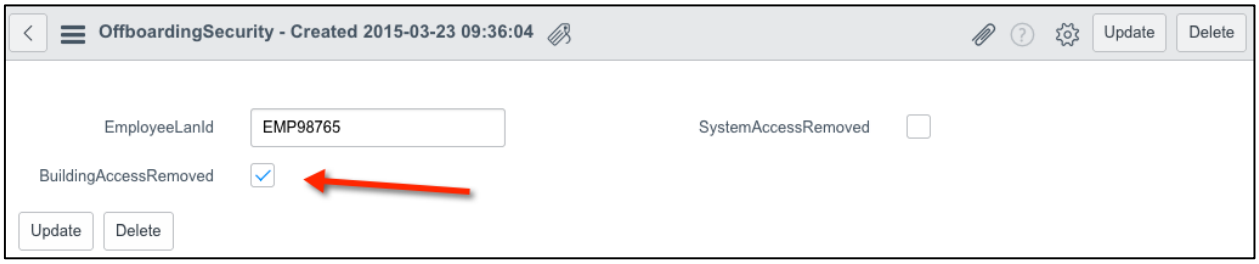


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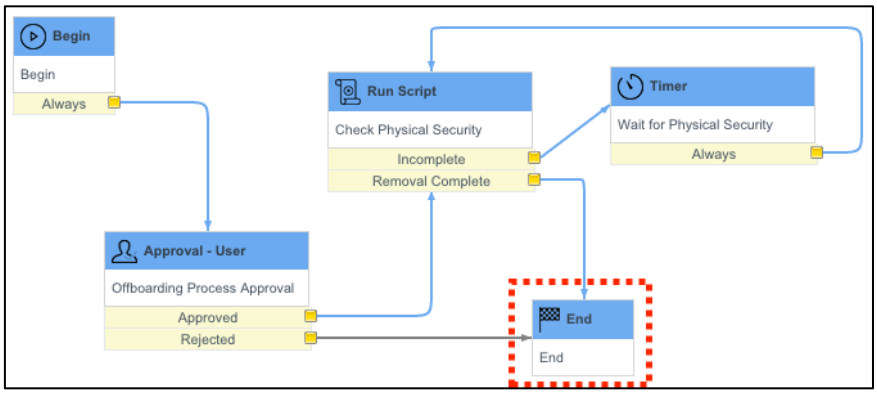
13. Verify that the Workflow is at the **Timer** activity.



14. Add a record to the you created in prior steps. Make sure you put in the **Employee Lan Id** correctly and set **Offboarding Security table BuildingAccessRemoved** to **true**. This record triggers the **Check Physical Security** activity and the Workflow continues.



15. The Workflow should exit the **Removal Complete** path of the **Run Script** activity.



You have completed Lab Step 1.3

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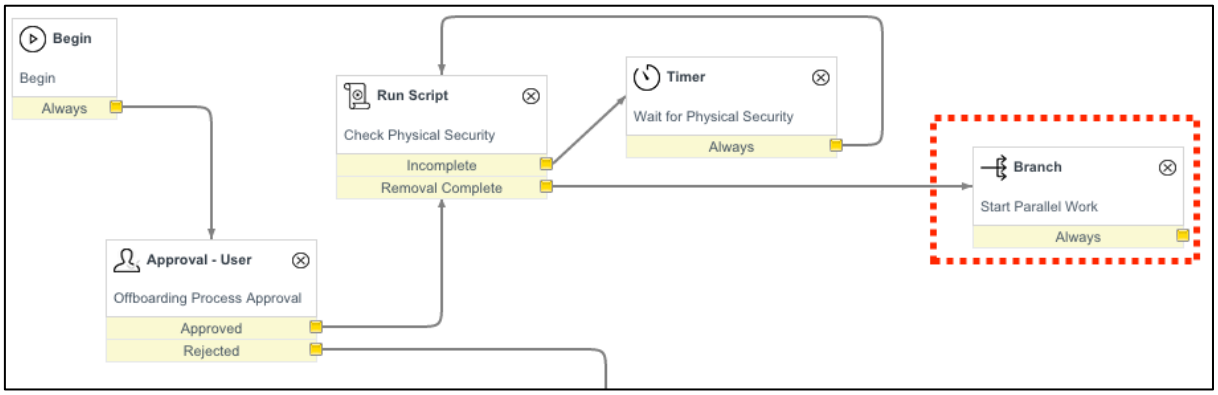
Lab Step Goal

The goal of this lab step is to add activities to the Workflow that run in parallel.

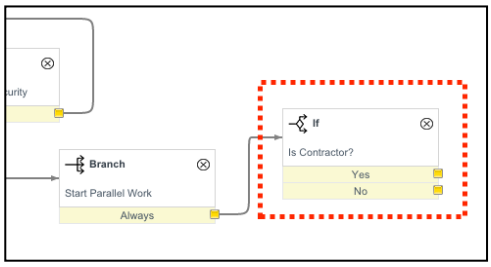
Lab Step 1.4 Parallel Work

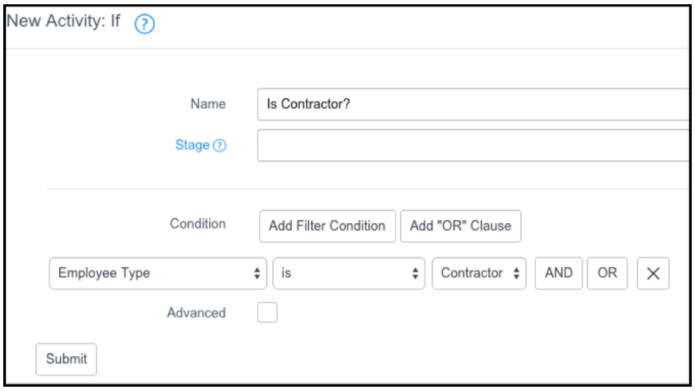
Parallel Work

1. Add a **Branch activity** to the Workflow



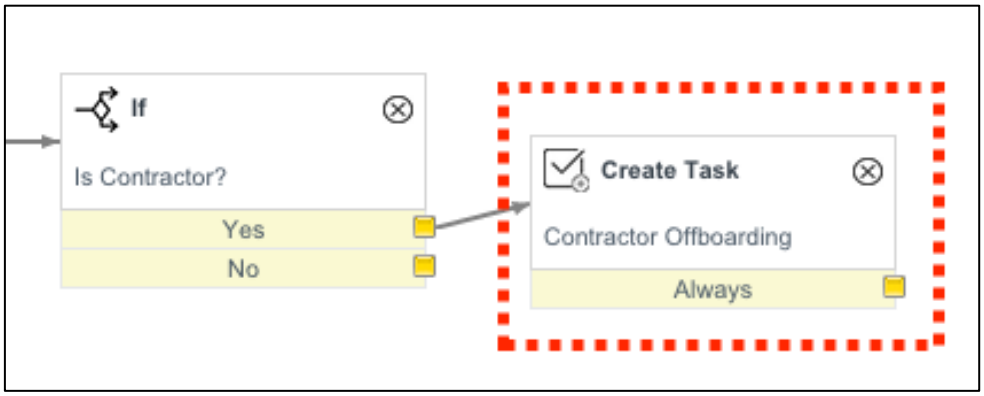
2. Add an **If activity** to the Workflow and configure it as displayed in the following examples.

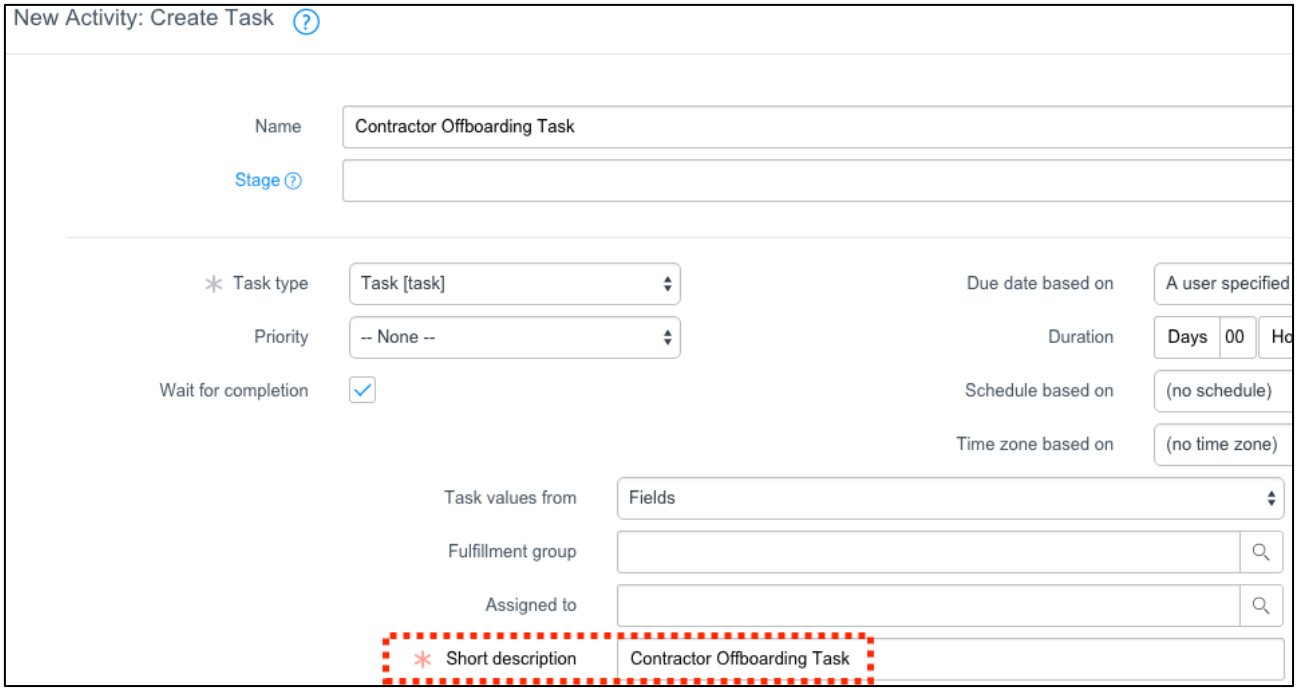




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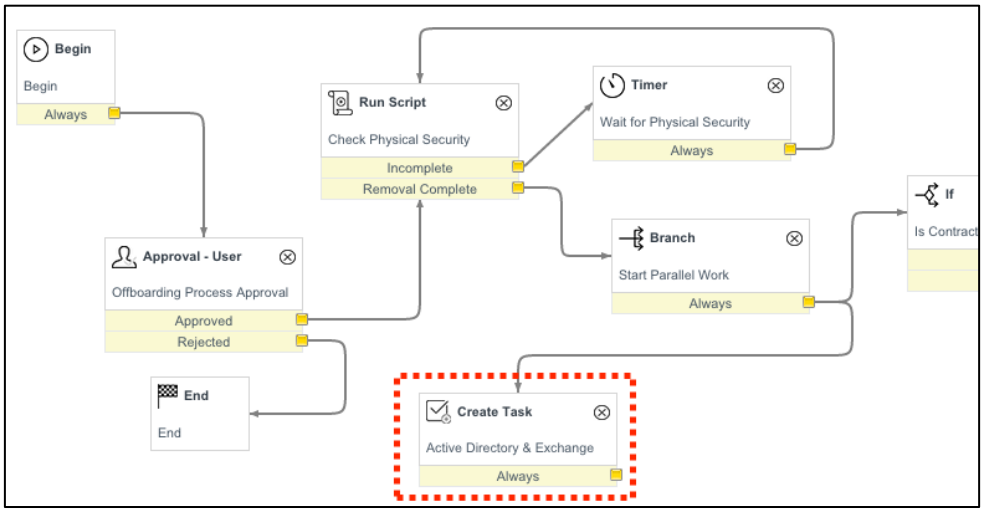
3. Add a **Create Task** activity and call it **Contractor Offboarding**.



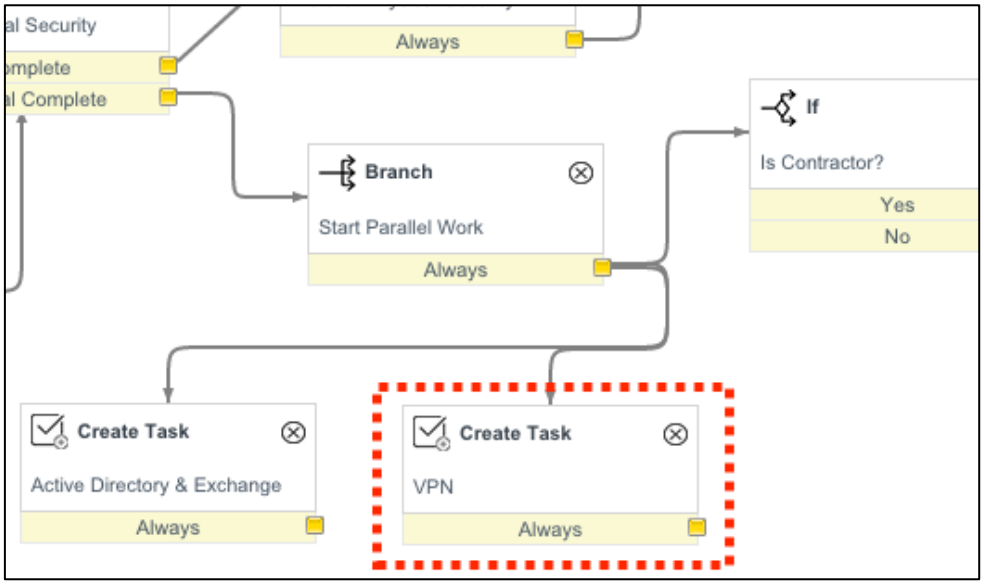


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4. Add a **Create Task** activity for **Active Directory & Exchange**”

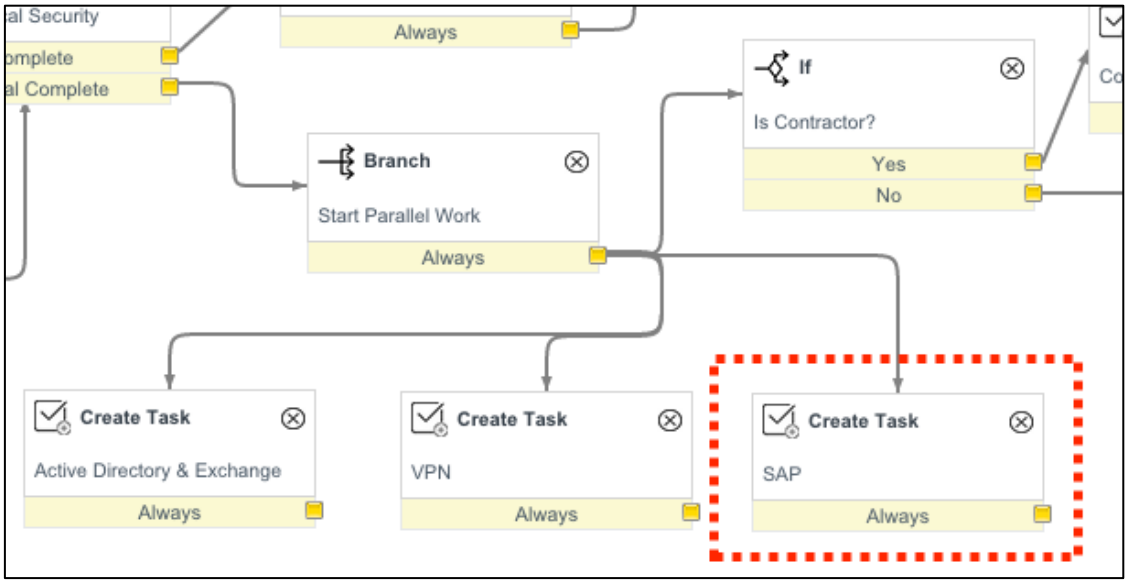


5. Add a **Create Task** activity for **VPN**.



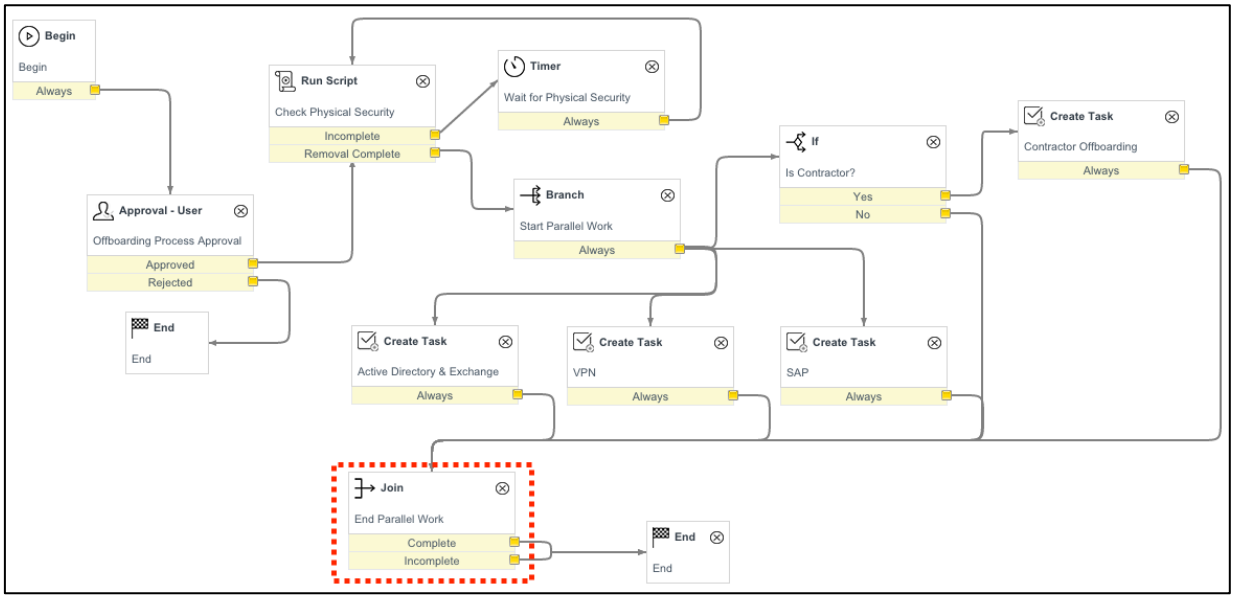
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6. Add a **Create Task** activity for **SAP.**



7. Add a **Join** activity and connect the upstream activity outputs to it.

   ***Note:** Right-click the existing **End** activity. Select **Copy** then drag to the end of the workflow as shown in the example.

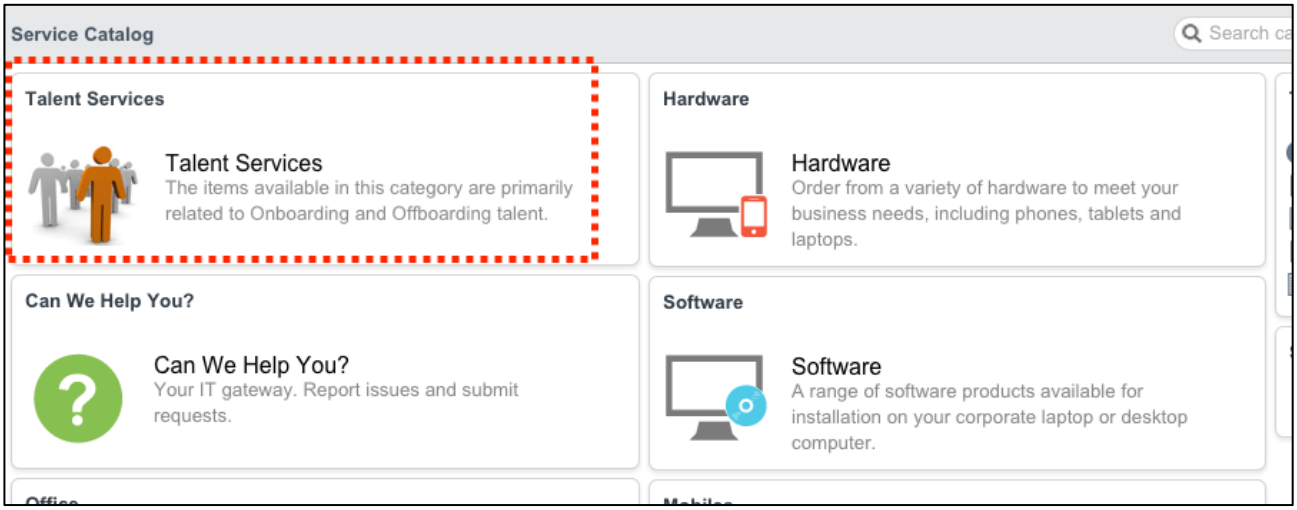


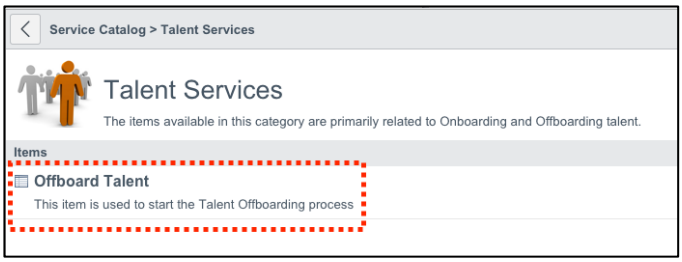
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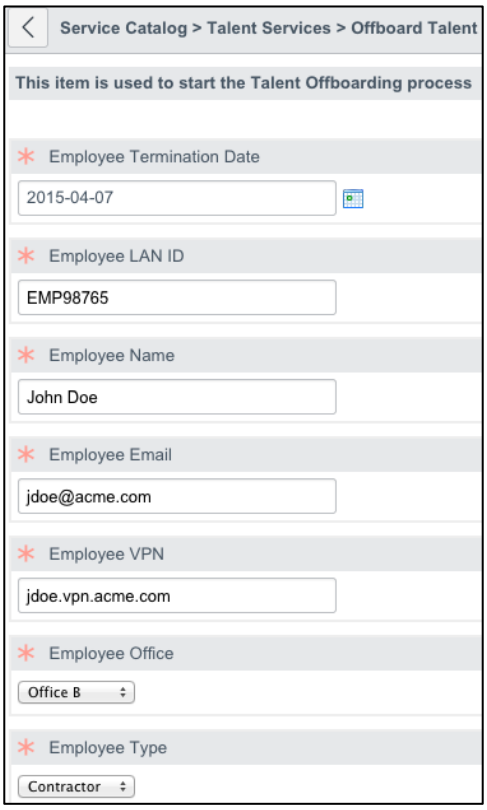
8. **Publish and Run** the Workflow. Confirm that you get the expected behavior.

   ***Ignore "Warn" level errors.**

9. Create a new **Offboarding** record via the **Talent Services – Offboard Talent** catalog item.



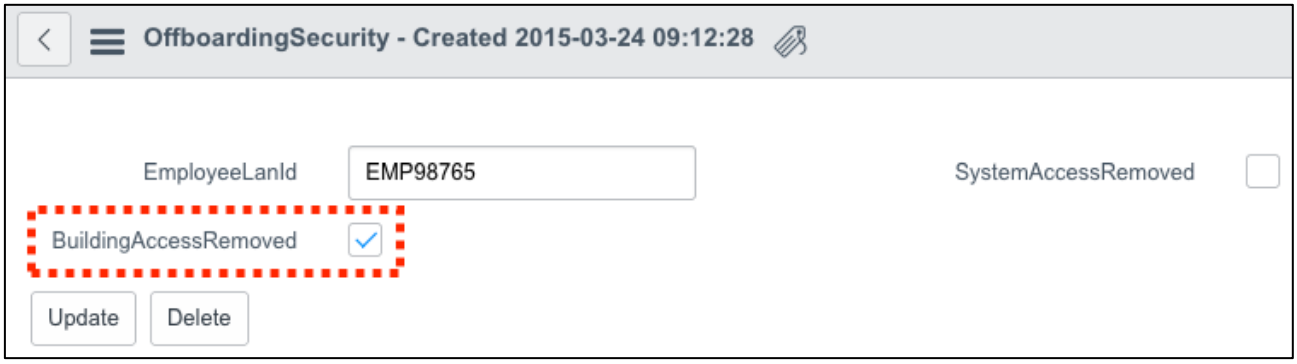




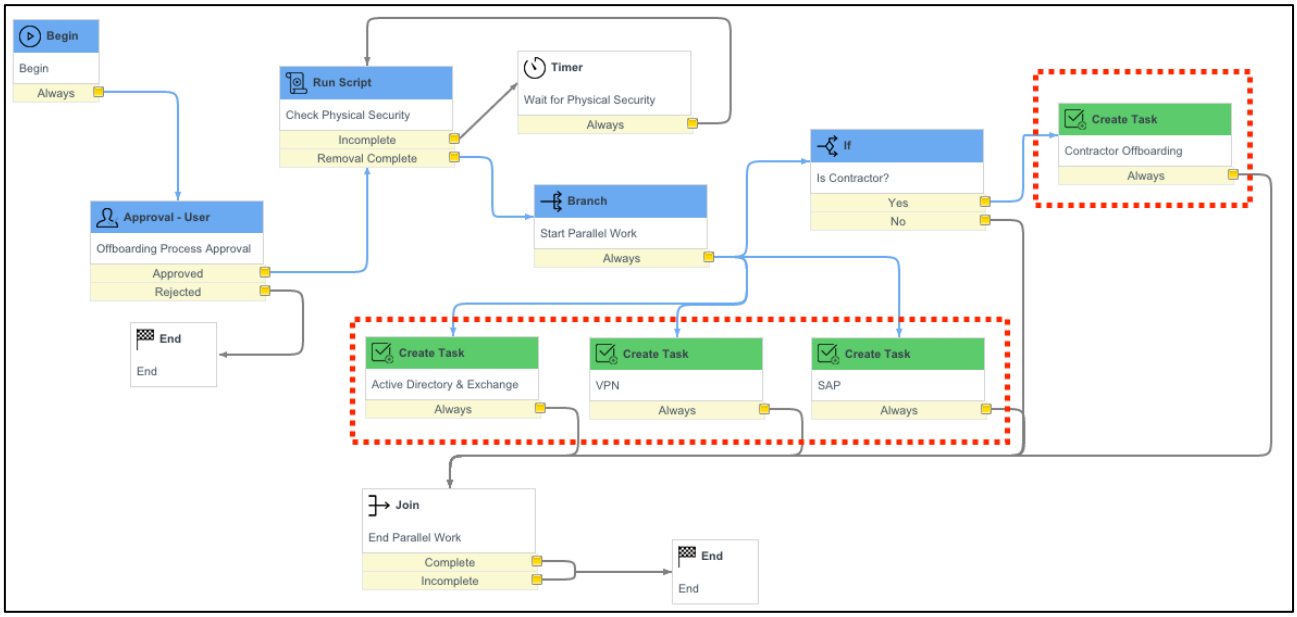
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10. Approve the request with the necessary number of approvals to pass the percentage criteria.

11. Add a record to the Offboarding Security table created in prior steps. Make sure you put in the **Employee Lan Id** correctly and set **BuildingAccessRemoved** to **true**.

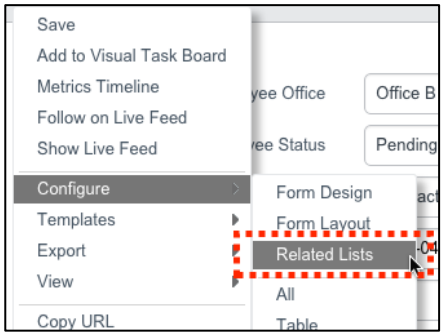


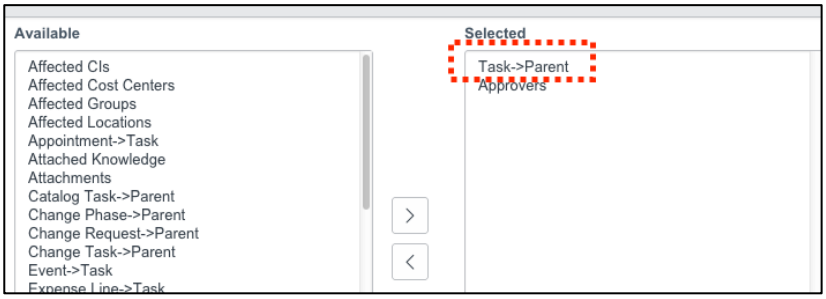
12. Your Workflow should look similar to the below example after the Approval and Security activities complete.



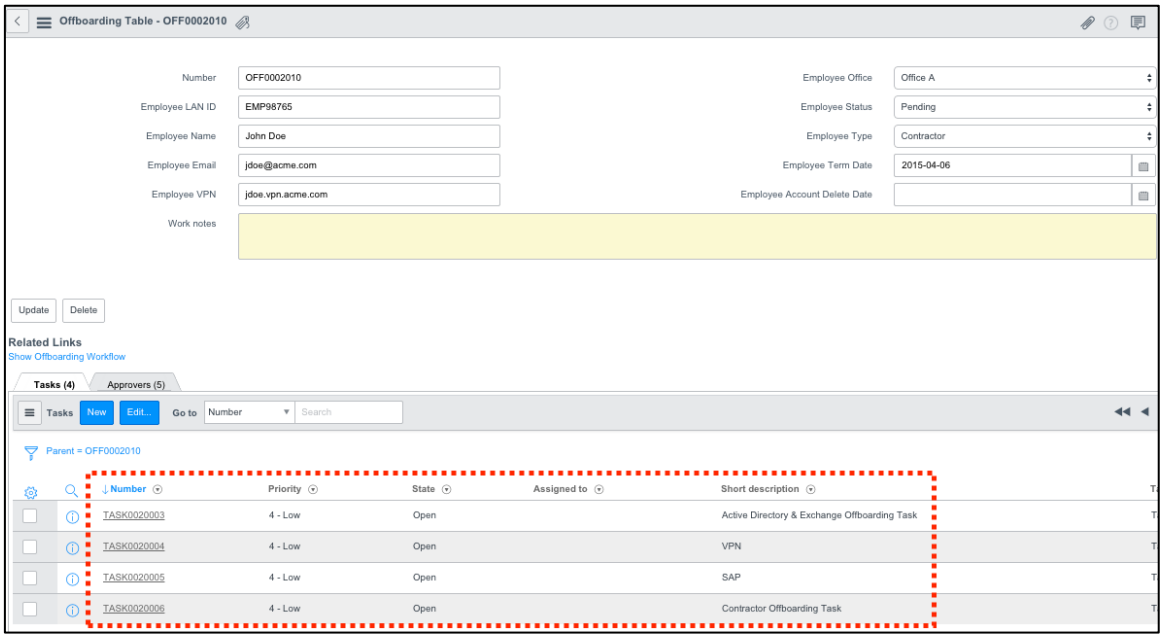
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13. Add the **Tasks** related list to the Offboarding form.



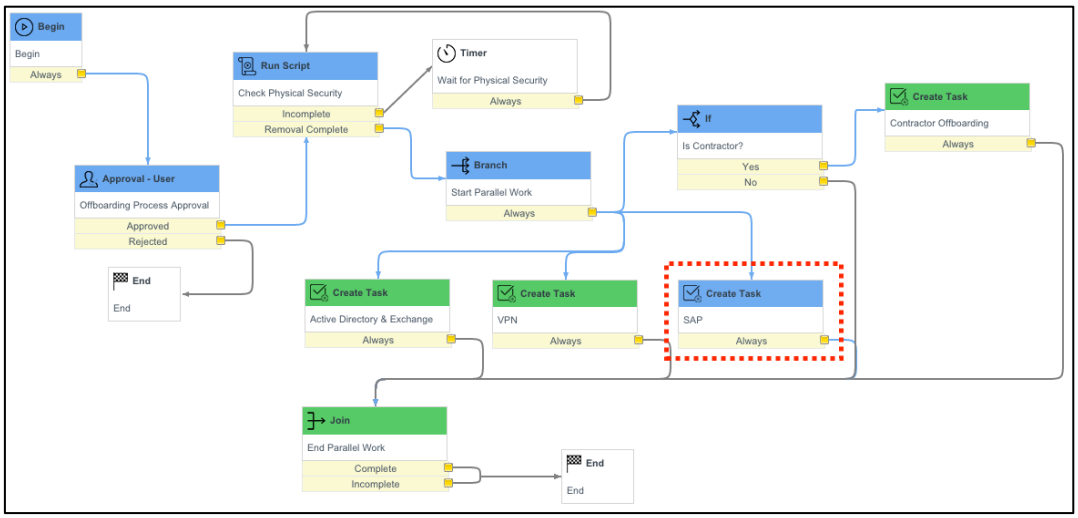


14. If you indicated that the employee was a contractor, you should have four tasks pending.



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15. Complete one of the tasks and verify that the Join continues to wait for the remaining tasks.



16. Complete the remaining tasks. The Join should exit the **Incomplete** path. See this thread on Complete vs. Incomplete Join paths (https://community.servicenow.com/thread/175011) for clarification around **Incomplete**.

You have completed Lab Step 1.4

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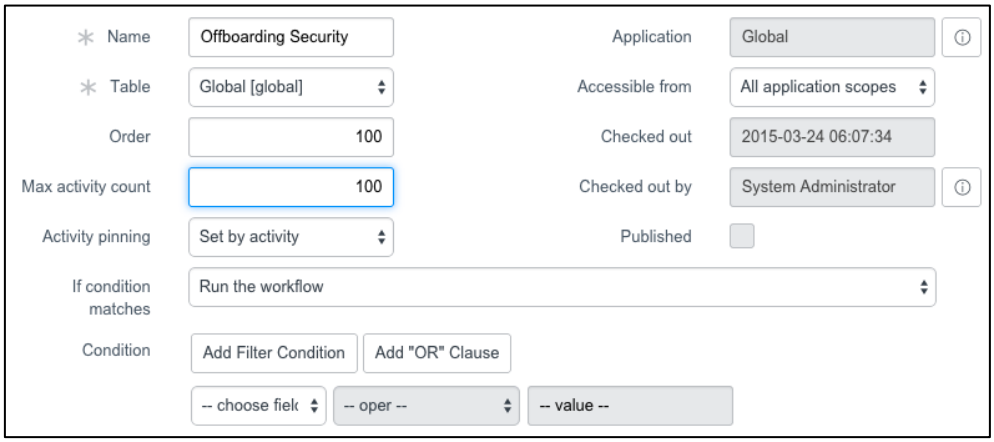
Lab Step Goal

The goal of this lab step is to add a subflow to our workflow.

Lab Step 1.5 Subflow

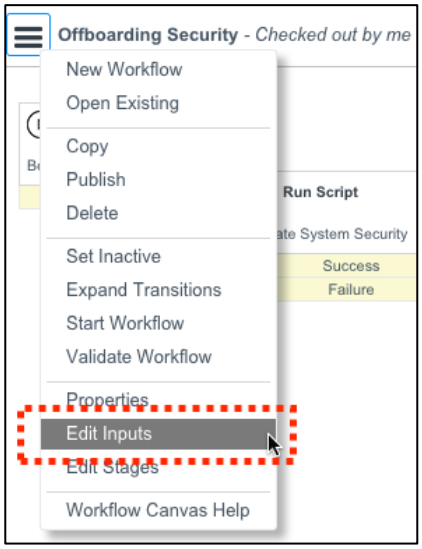
1. Create a new Workflow called **Offboarding Security**.





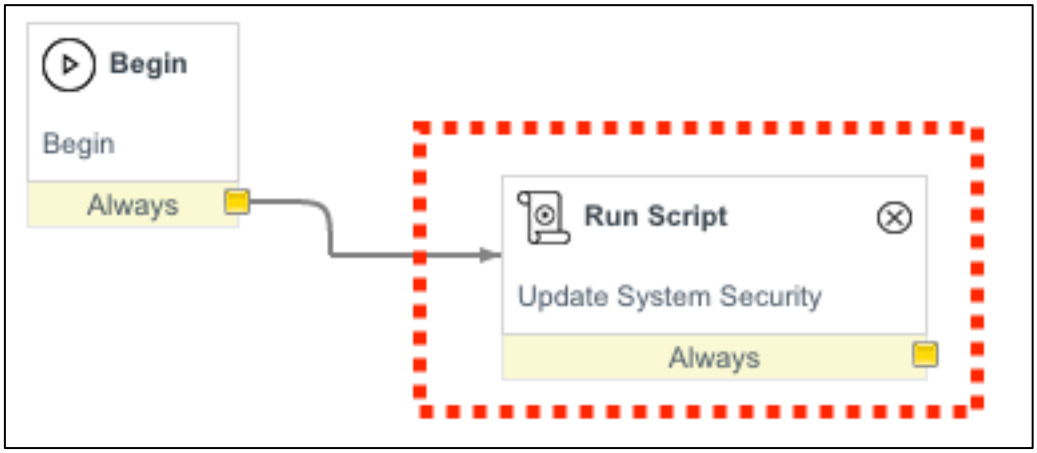
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2. Create an input variable for the Workflow.





3. Add a **Run Script** activity to the Workflow and configure it as displayed in the following screenshots.



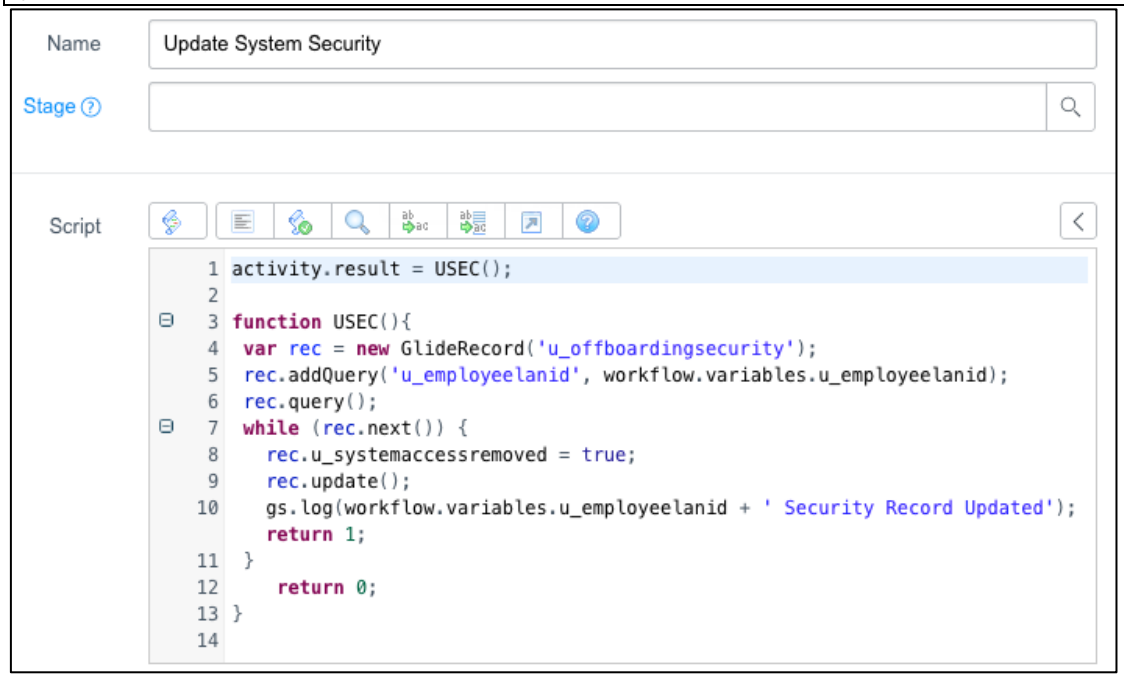
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4. Add the following **script**.

   Name: **Update System Security**

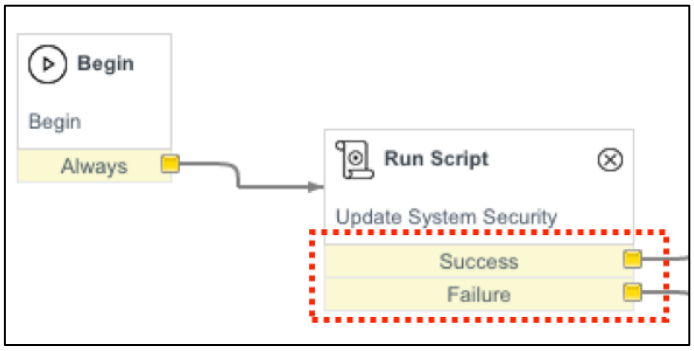
```
activity.result = USEC();

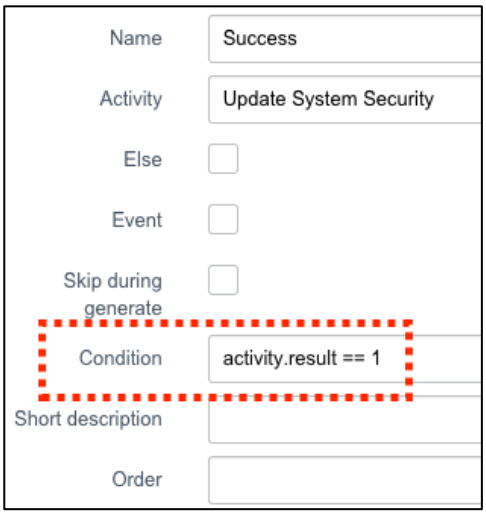
function USEC(){
    var rec = new GlideRecord('u_offboardingsecurity');
    rec.addQuery('u_employeelanid', workflow.variables.u_employeelanid);
    rec.query();
    while (rec.next()) {
       rec.u_systemaccessremoved = true;
       rec.update();
       gs.log(workflow.variables.u_employeelanid + ' Security Record Updated');
       return 1;
    }
    return 0;
}
```

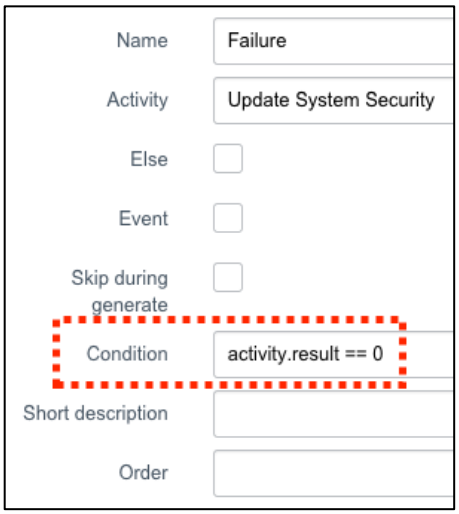


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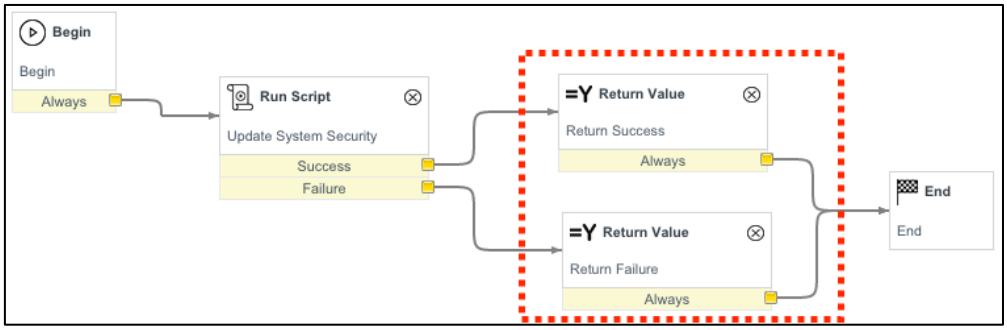
5. Add **Conditions**





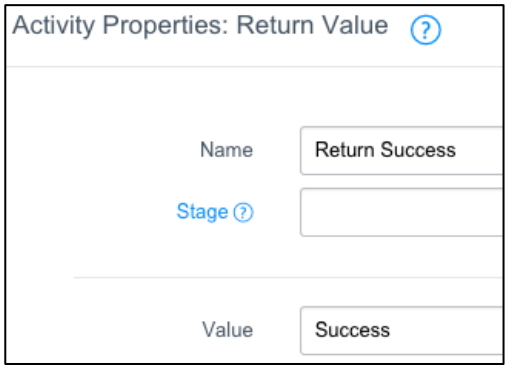


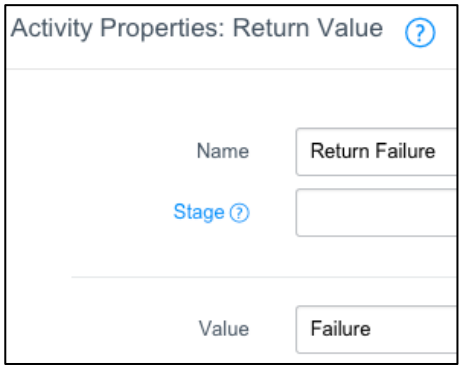
6. Add **Return Value** activities to the Workflow.



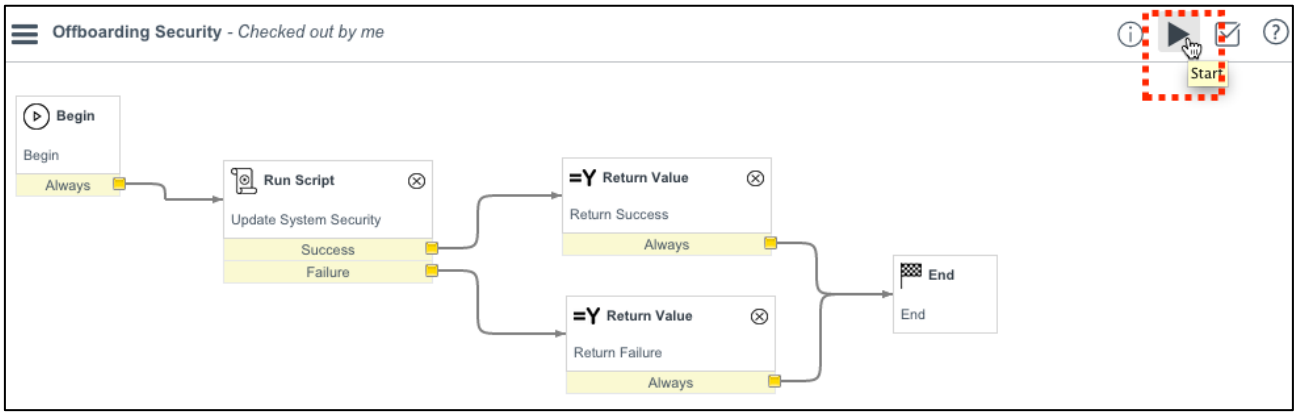
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7. Configure the **Return Value** activities as displayed in the following screenshots.



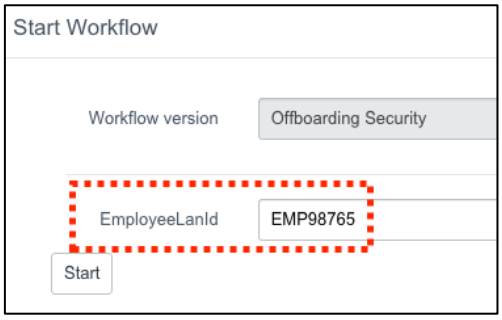


8. Run and Test the Workflow using the **Start button**.

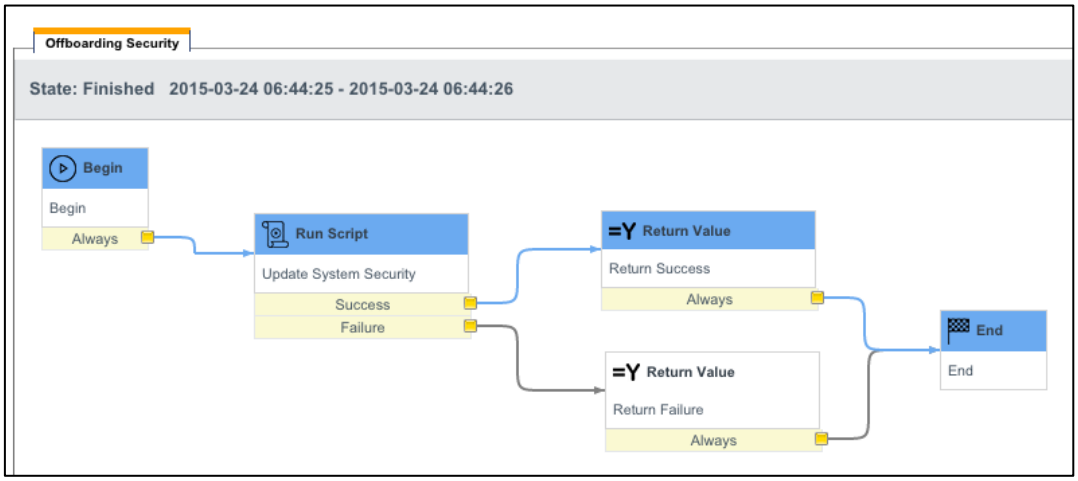


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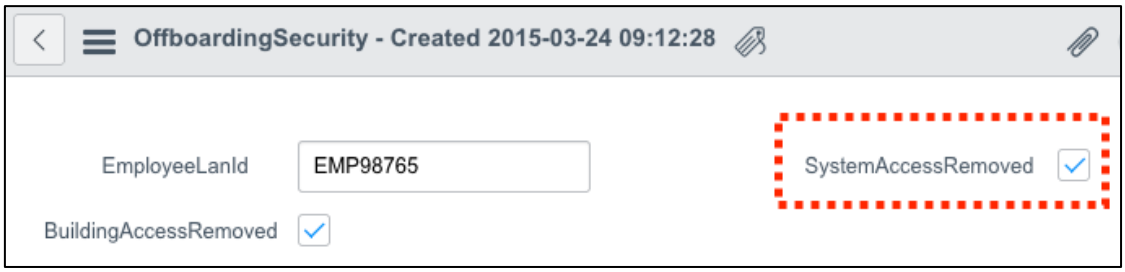
9. Use an **EmployeeLanId** that you know will work (based on prior steps) and verify you get the expected behavior.



10. The **runtime view** should look similar to the following example.



11. Verify that the record was updated.



You have completed Lab Step 1.5

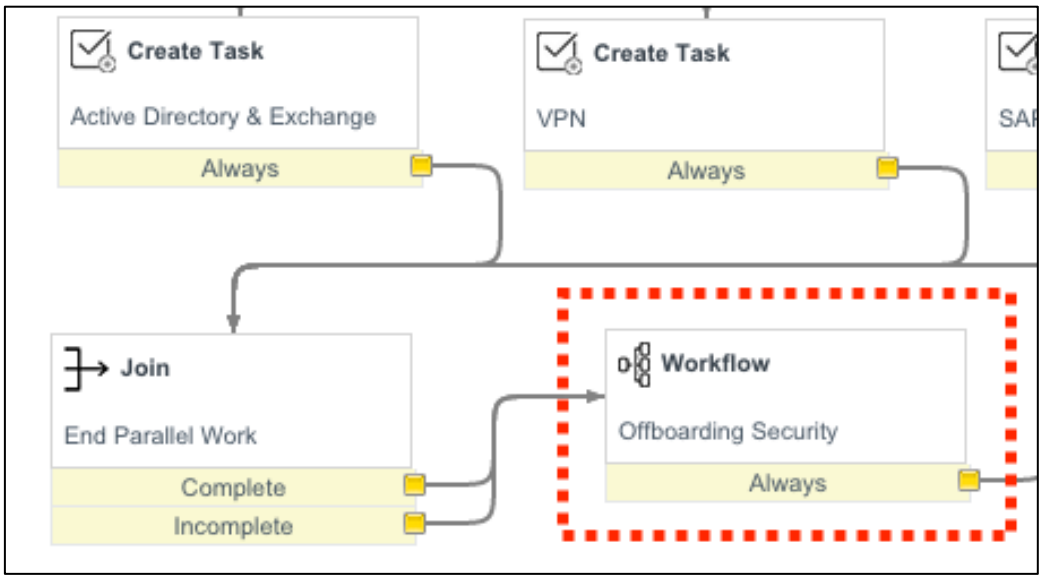
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Lab Step Goal

This lab explains how to add Subflow to the Offboarding Workflow

Lab Step 1.6
Add
Subflow

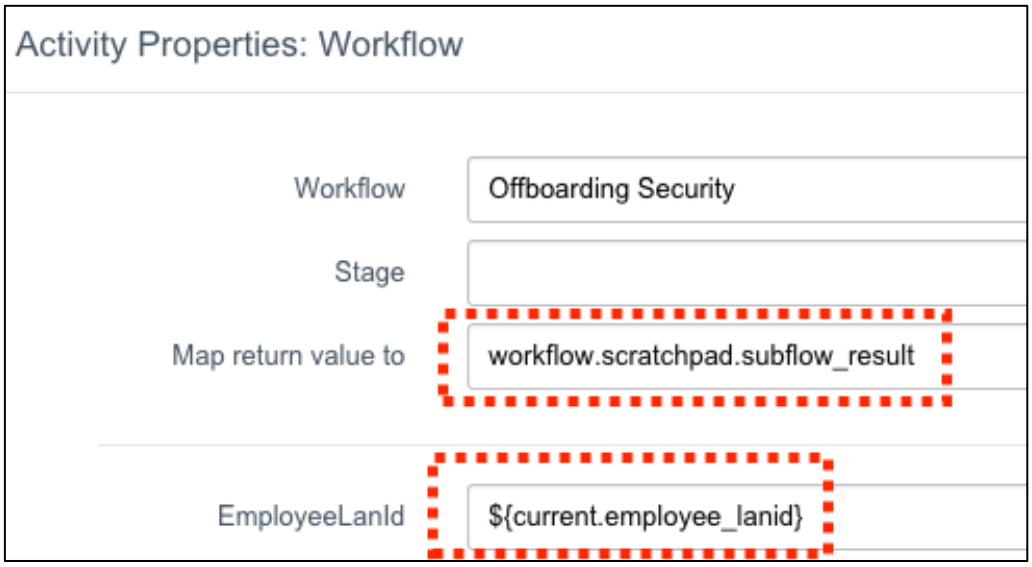
1. Switch to the **Offboarding Workflow** and add the **Subflow** after the Join activity.



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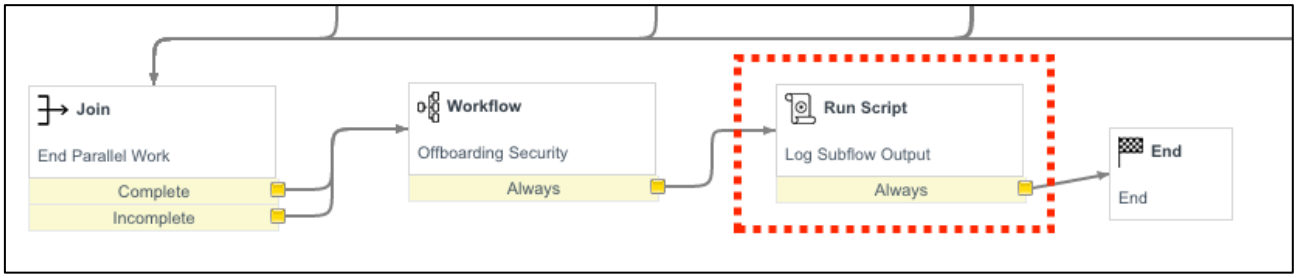
2. Configure the **Subflow** per the following example.

   Note: Be sure to use brackets not parenthesis.



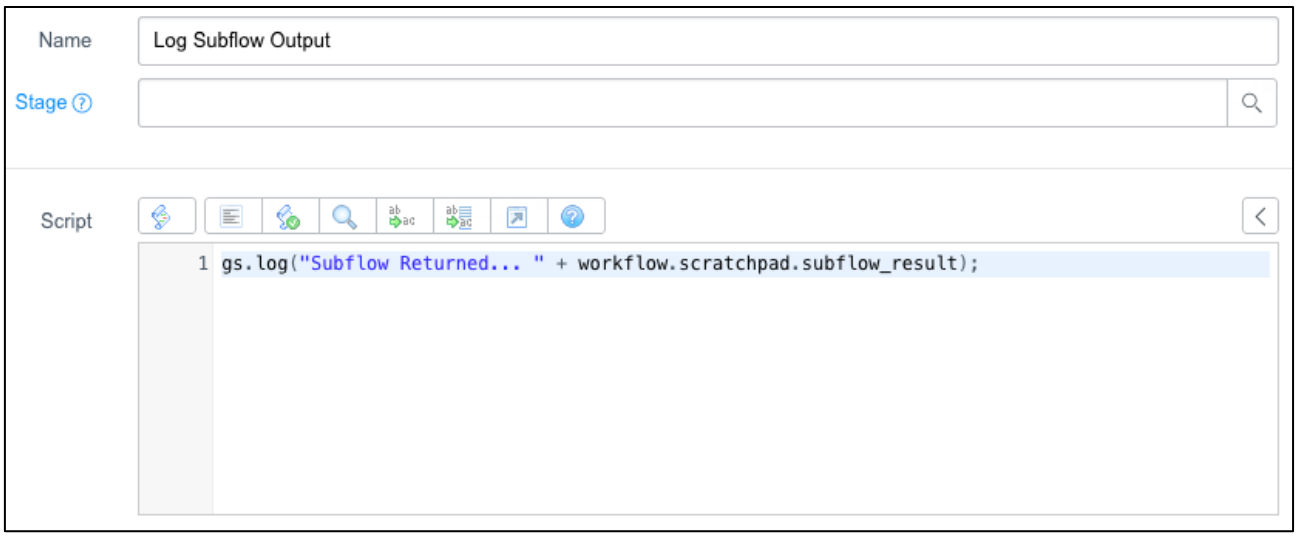
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3. Add a **Run Script** activity after the Subflow. This is used to log the **Subflow output**.



- Name: **Log Subflow Output**
- Script:

```
gs.log("Subflow Returned… " + workflow.scratchpad.subflow_result);
```

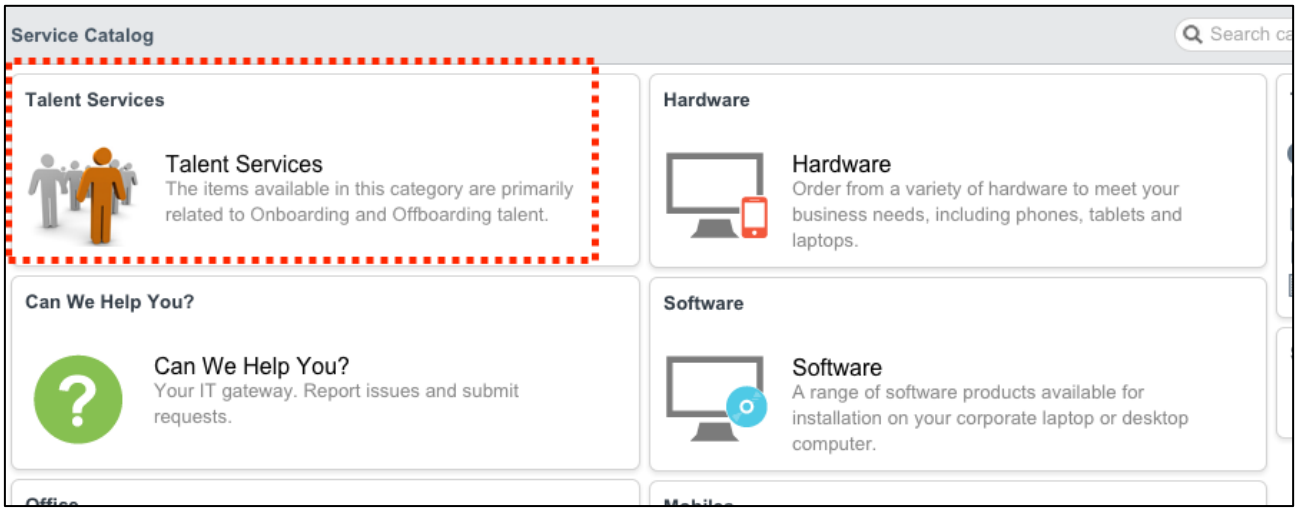


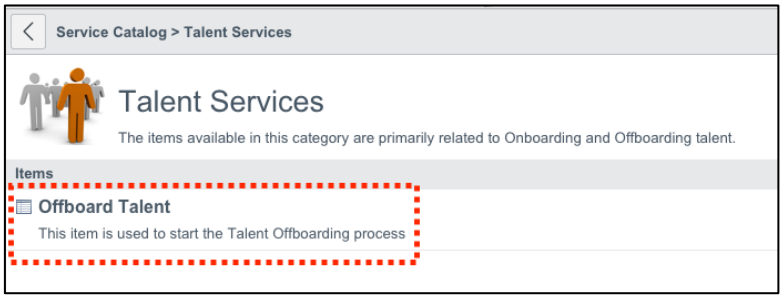
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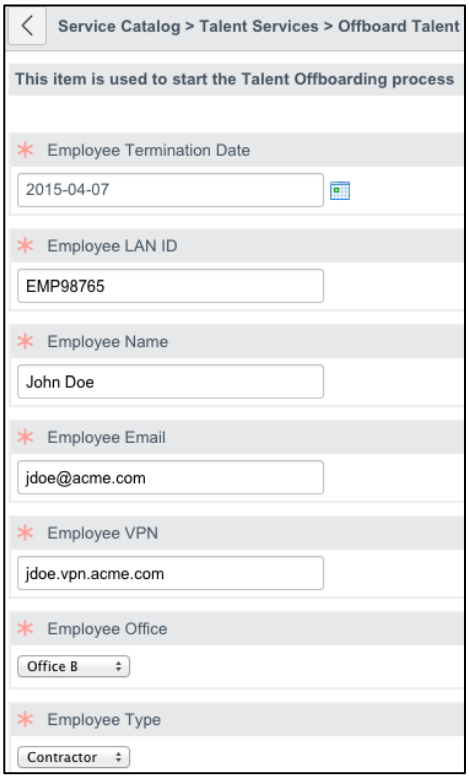
4. **Publish and Run** the Workflow. Confirm that you get the expected behavior.

   ***Ignore "Warn" level errors**.

5. Create a new Offboarding record via the **Talent Services – Offboard Talent** catalog item.



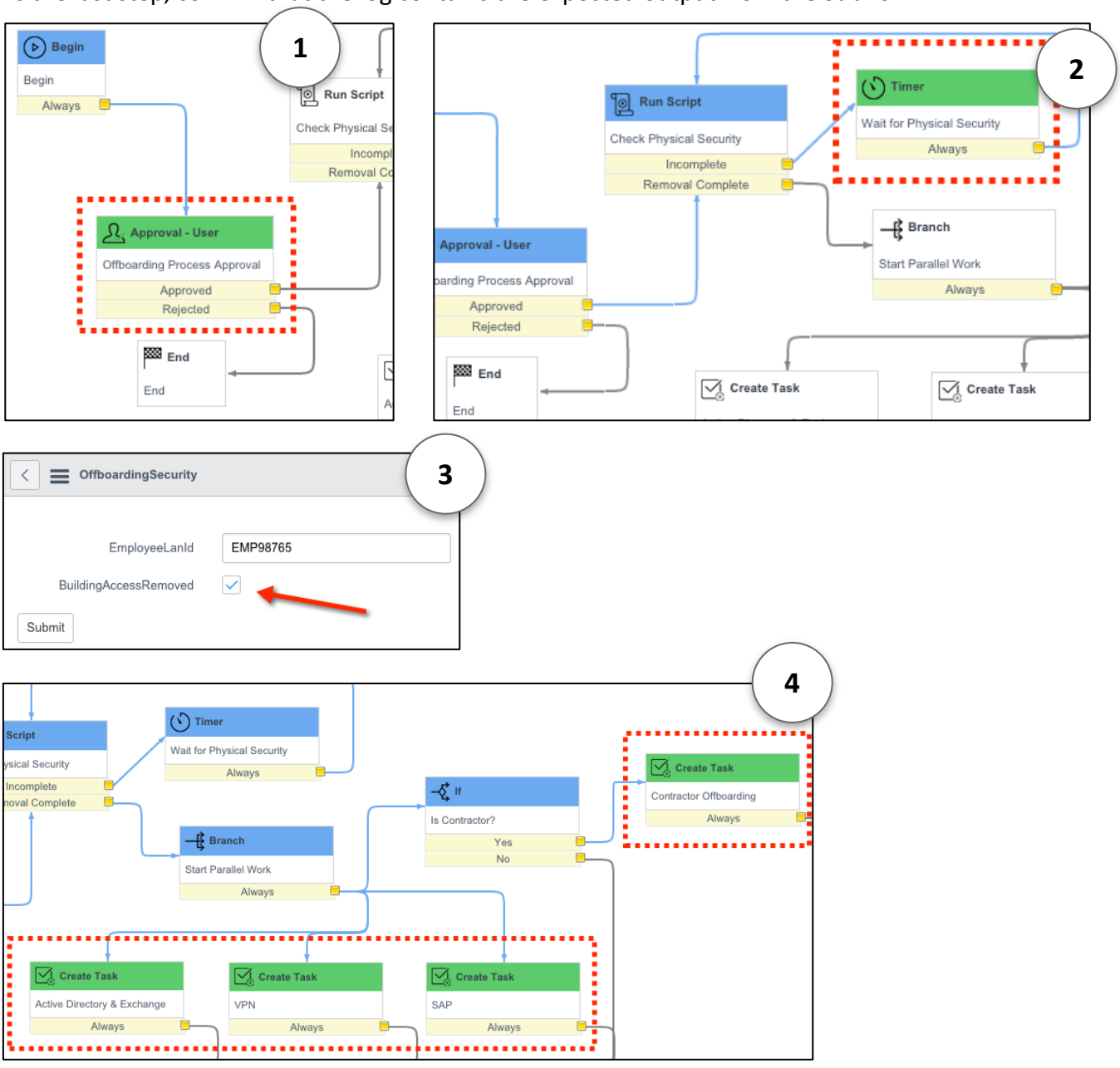




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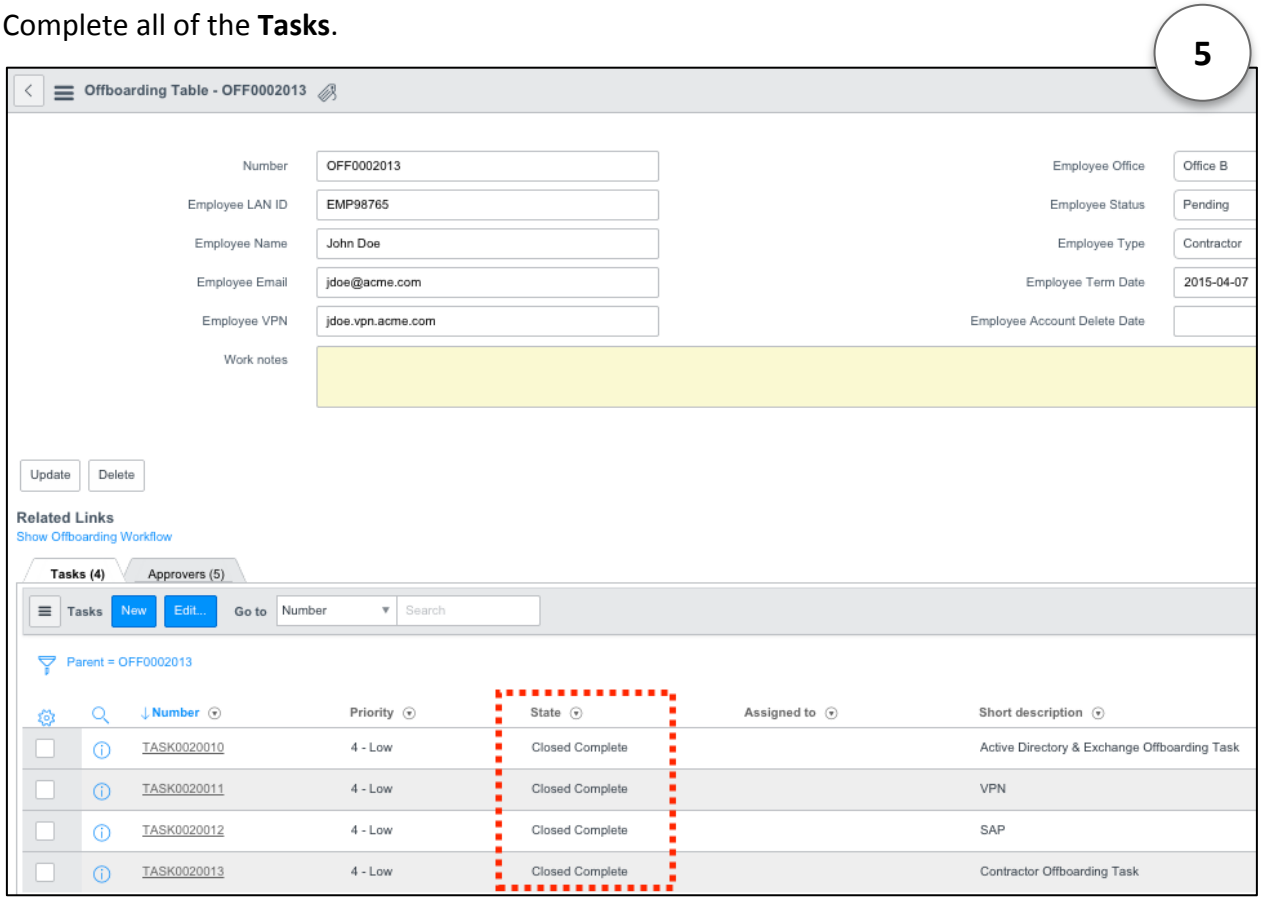
6. Execute all the steps in the process and verify that the Workflow follows the expected paths and provides the expected outcome.

7. As the last step, confirm that the log contains the expected output from the Subflow.



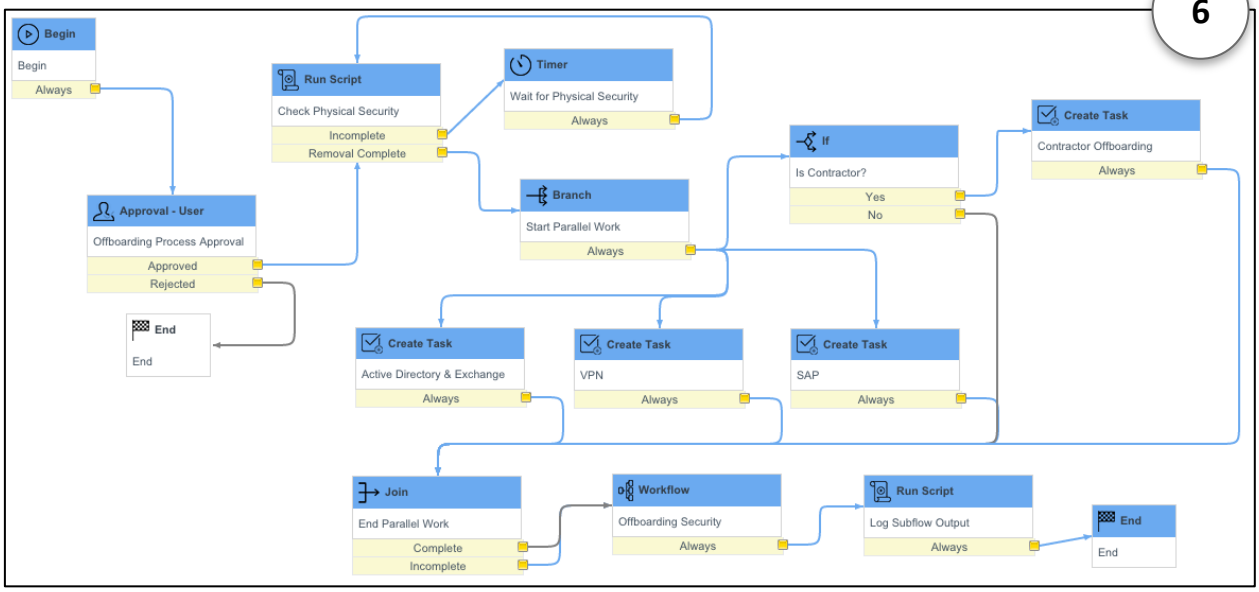
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8. Complete all of the **Tasks**.

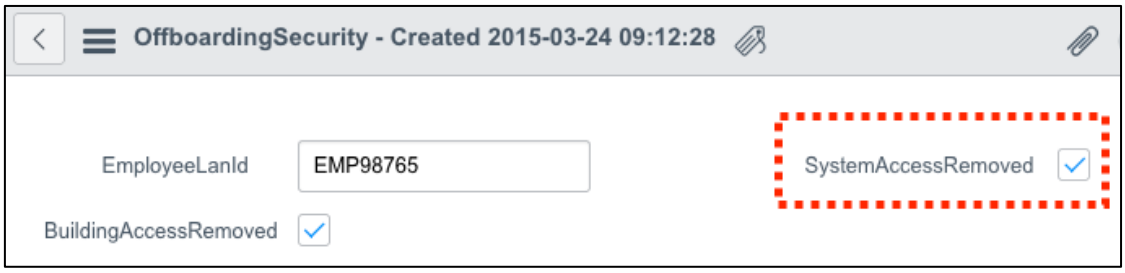


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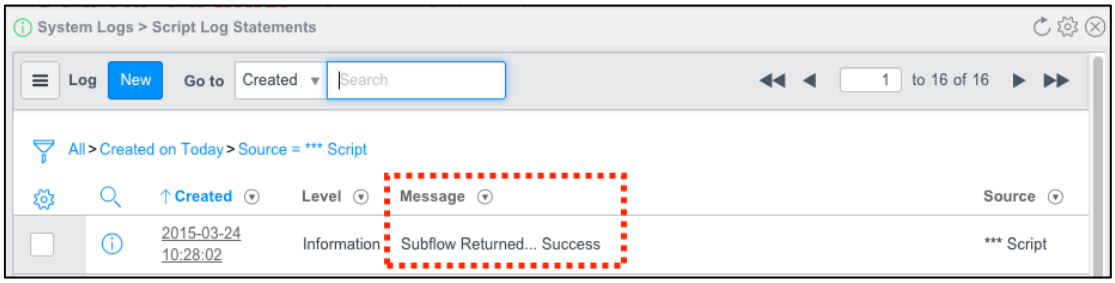
9. Your Workflow should look similar to the following example.



10. Confirm that the **Offboarding Security** record was updated properly.



11. Confirm that you have a log entry that contains the output from the **Subflow**.

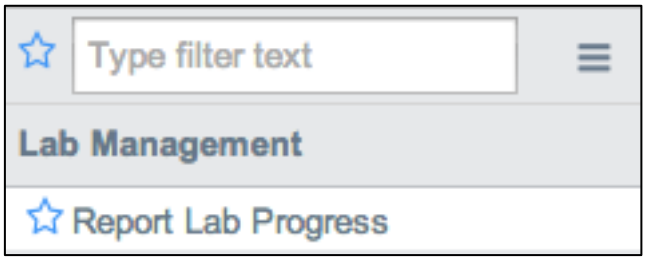


You have completed Lab Step 1.6

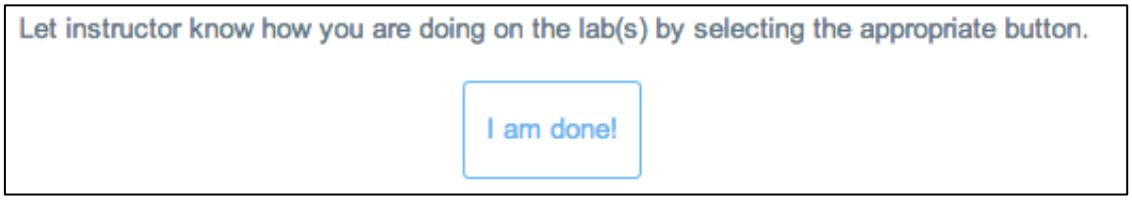
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Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.



2. Click **I am done!**



LAB COMPLETE

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