# Lab Guide

## What's New in Orchestration

## Featuring Employee On/Offboarding 201

Zack Sargent & Steve Klopfer

Default Login / Password:

admin / Knowledge16

itil / Knowledge16

employee / Knowledge16

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# Lab Goal

**Lab 1.0**
**Create a New Employee Onboarding Workflow**

This lab explains how to build a new workflow for the employee onboarding process. It provides a Design Pattern that is applicable to all HR systems; however, the example is provided using Workday.

To build the workflow, first use the new Workday integration activities to pull data from Workday, as well as ServiceNow developed workflow activities to update Exchange and Active Directory. Then use custom activities built with the Activity Designer. Familiarity with the ServiceNow Workflow Designer is helpful, but not required as detailed instructions for building the workflow are provided.

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# Lab Goal

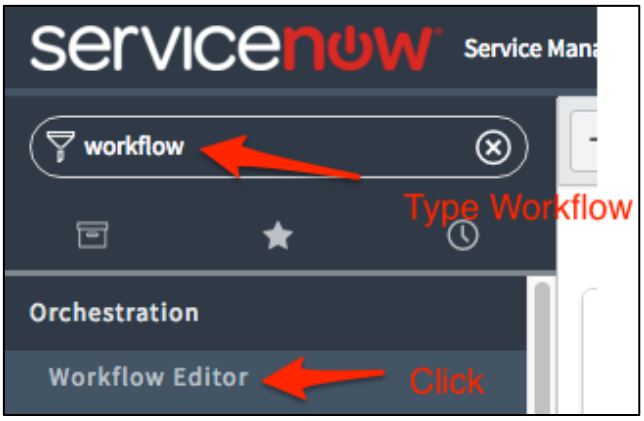
This lab explains how to create the new workflow and add properties.

**Lab 1.1 Create the New Workflow**

## Create the New Employee Onboarding Workflow

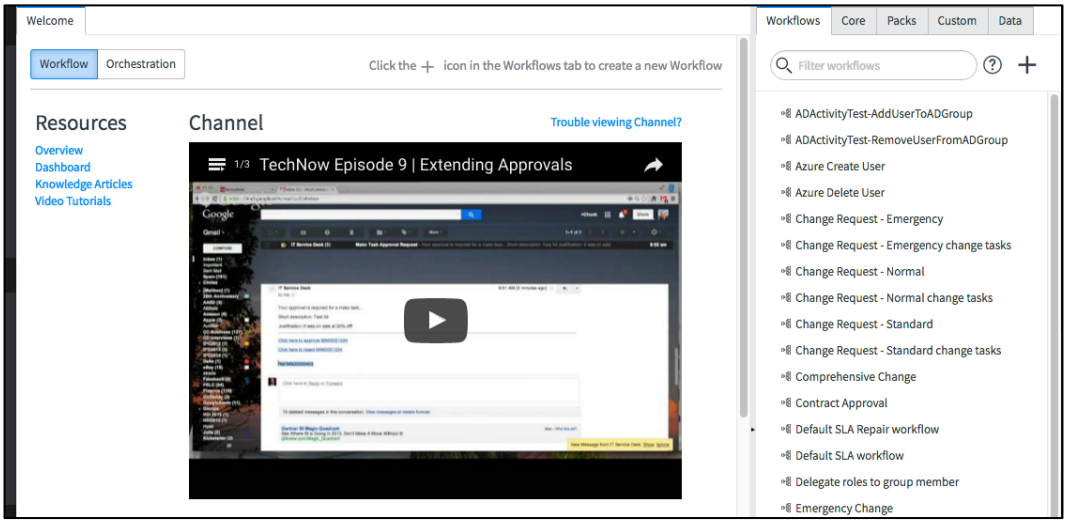
These steps explain how to create a new workflow to onboard an employee. The workflow pulls data in from Workday via a web service call. The data pulled from Workday is then used as input for the subsequent activities to complete the onboarding process.

1. Open the **Workflow Editor**. Navigate to **Workflow Editor** under Orchestration using the navigation bar on the left side of the screen.



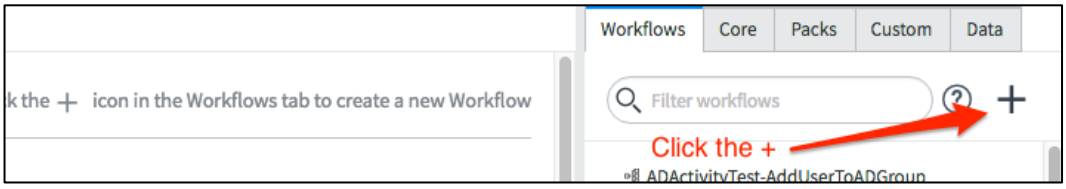

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2. Click **Workflow Editor** in the navigation tree. This opens a new tab in the browser, similar to the example.




**Note**: The left side of the page is the **workflow canvas**, where you build and construct workflows and activities. The right side is the **workflow palette**, where you look for workflows, **core** workflow activities, activities provided within activity **packs** and data elements to use within the workflow.

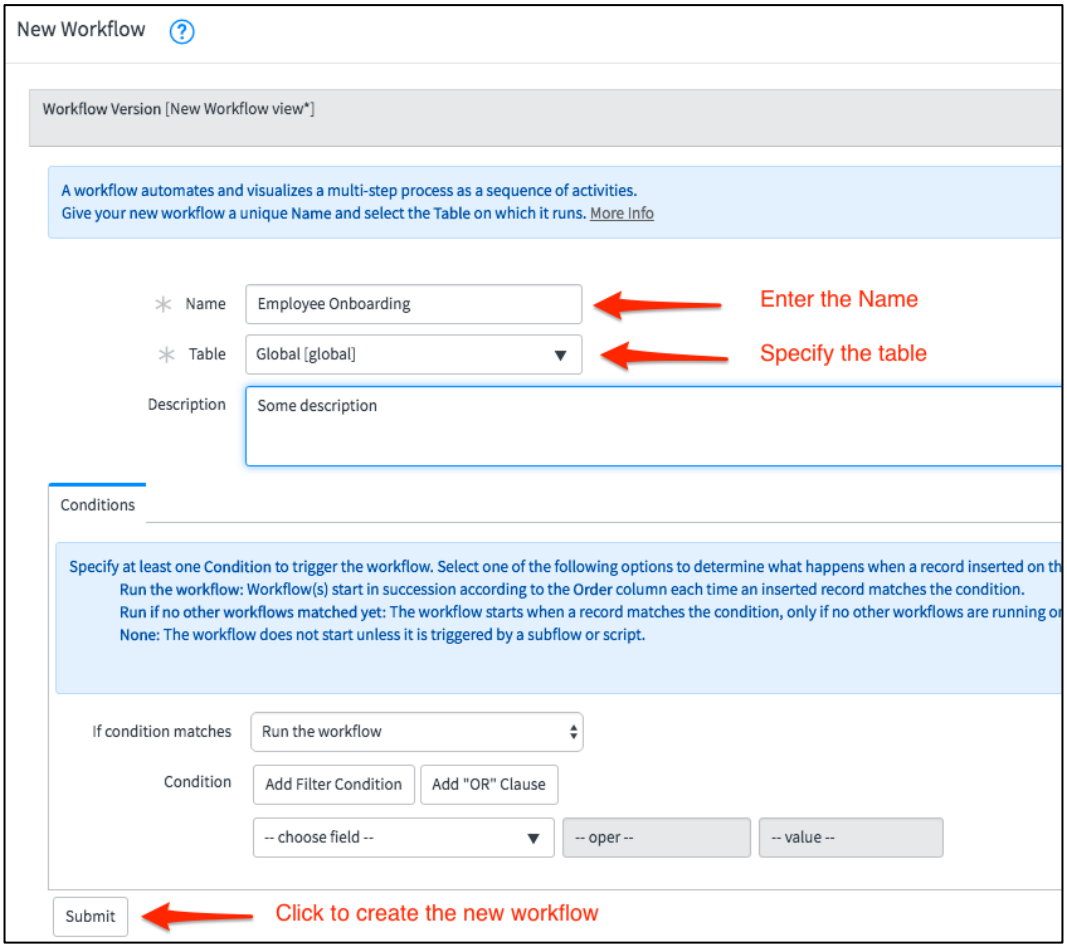
3. Select the **Workflows** tab. Click the (**+**) sign on the right of the screen to create a new workflow. See the example below.




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4. In the new dialog window, titled **New Workflow**, complete the form as follows:

   Name: **Employee Onboarding**
   Description: **Enter a description of your choosing**
   Table: **Global**
   Click: **Submit**




**Questions:**
The **Global** table was specified. What is the significance of using that table?

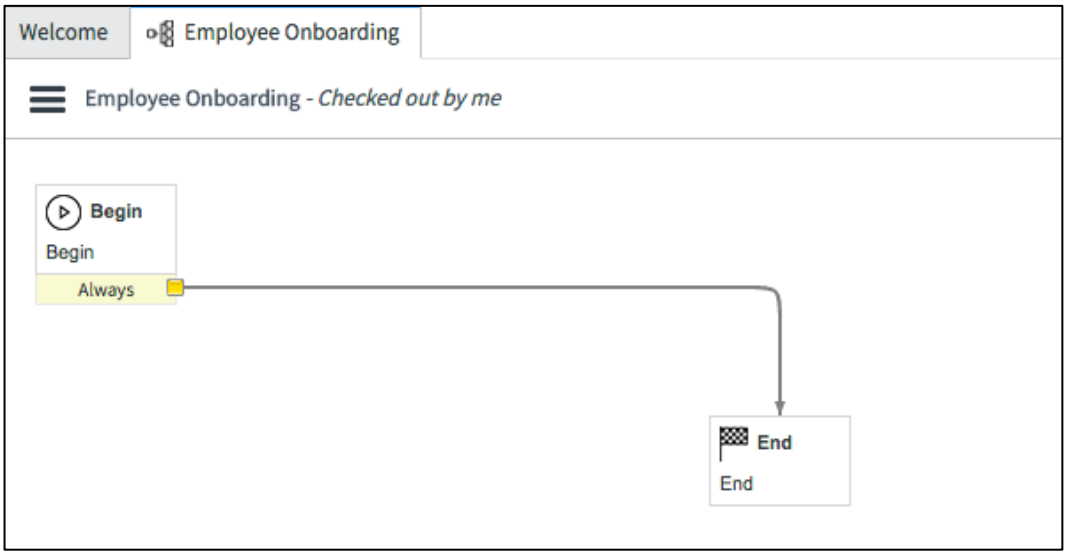
_____

Why might you want to use a different table? _____

Why might you want to set a condition? _____

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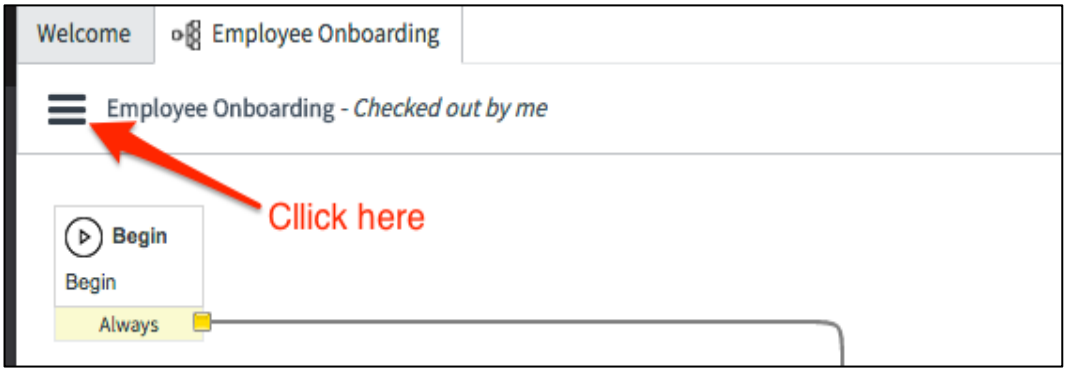
5. Your screen should look similar to the example.

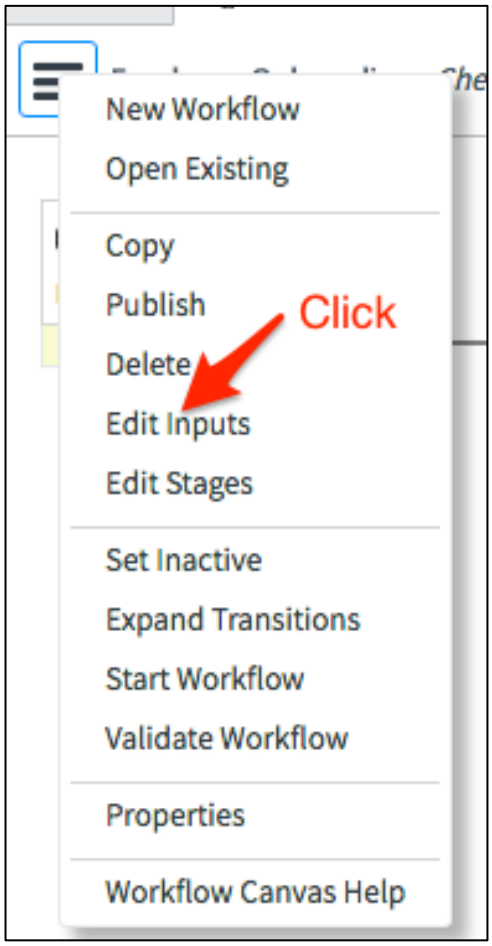



6. Add a new Input variable for the new employee's password. For this lab, predefine the password for the new user in an input variable called **Password**.

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7. Click the **hamburger** icon (3 dark lines top left) then click **Edit Inputs**. The Workflow Inputs screen pops up.




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8. Click **New** on the dialog that pops up to add a new input.
   You are about to create a new variable to use during the workflow execution as the initial password for the new employee. Notice that as you enter the column name below, the system prefixes the value with **u_**. This signifies that the variable is a user-defined field. The Label field defines how the variable appears on the canvas.

9. Fill in the form as follows. When complete, compare to the example below.

   Column Name: **defaultpassword**
   Label: **Default Password**
   Type: **Password (2 Way Encrypted)**

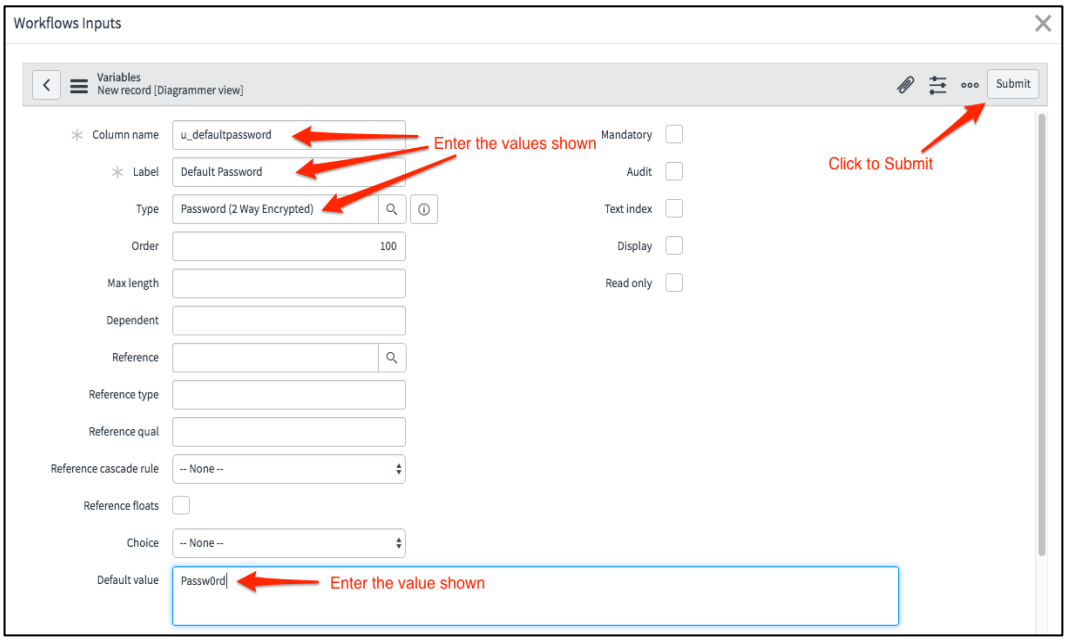
   **Note**: When you see the magnifying glass next to a field, start typing in the field the value you want to enter. The system searches for possible values and displays suggested values. Click the value you would like.

   Default Value: **Passw0rd** (Password with a **Zero** for the letter O)

   **Note**: It is not recommended to supply a default password as an input for a secure system because workflow inputs are not masked, so anyone authorized to view the workflow can see the password. Pass the value in from an encrypted variable in the catalog, or as a Password 2 on the form when testing secure systems.

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10. Click **Submit**, and then click the **X** in the top right to close the Workflow Inputs dialog box.




**Note**: Take a moment and explore other options under the **Hamburger** icon on the workflow canvas.

**Question:**
How would you return to the screen where you initially defined the workflow?

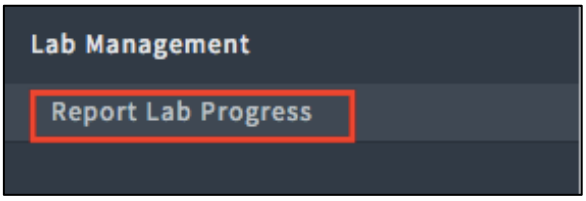
_____

**Note**: Do not make any modifications to the overall properties.

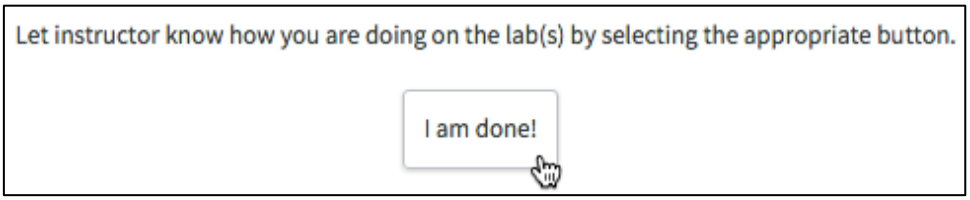
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## Progress Report

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




2. Click **I am done!**




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# Lab Goal

**Lab 1.2 Add "Get Employee Info" Activity**

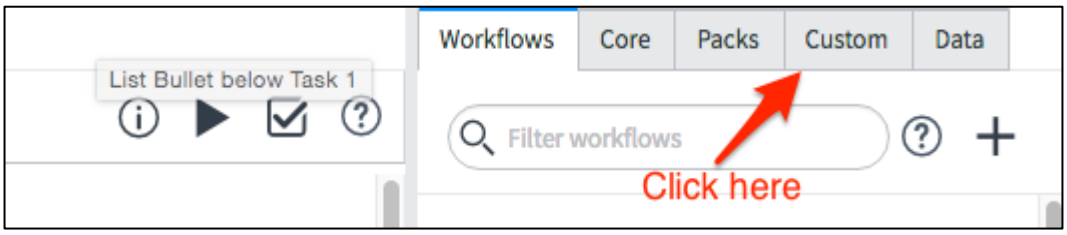
This lab explains how to add the **Get Employee Info** activity to the workflow and configure it.

## Add "Get Employee Info" to the Employee Onboarding Workflow

These steps explain how to add the **Get Employee Info** activity into the workflow. This activity issues the web service call out to Workday to retrieve the employee information.

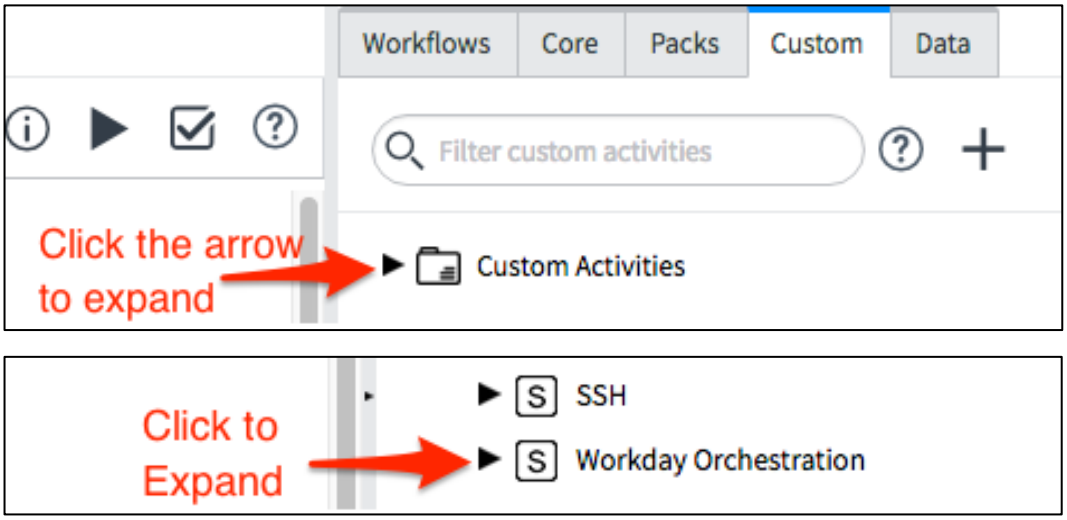
**Note**: The directions for this step guide you through the process to find an activity on the Workflow Palette. Drag and drop activities onto the canvas of the new workflow. Subsequent steps do not provide this level of detail. They instruct you to find the activity and "drag and drop" it onto the canvas.

1. Click the **Custom** tab on the top-right side of the workflow canvas.



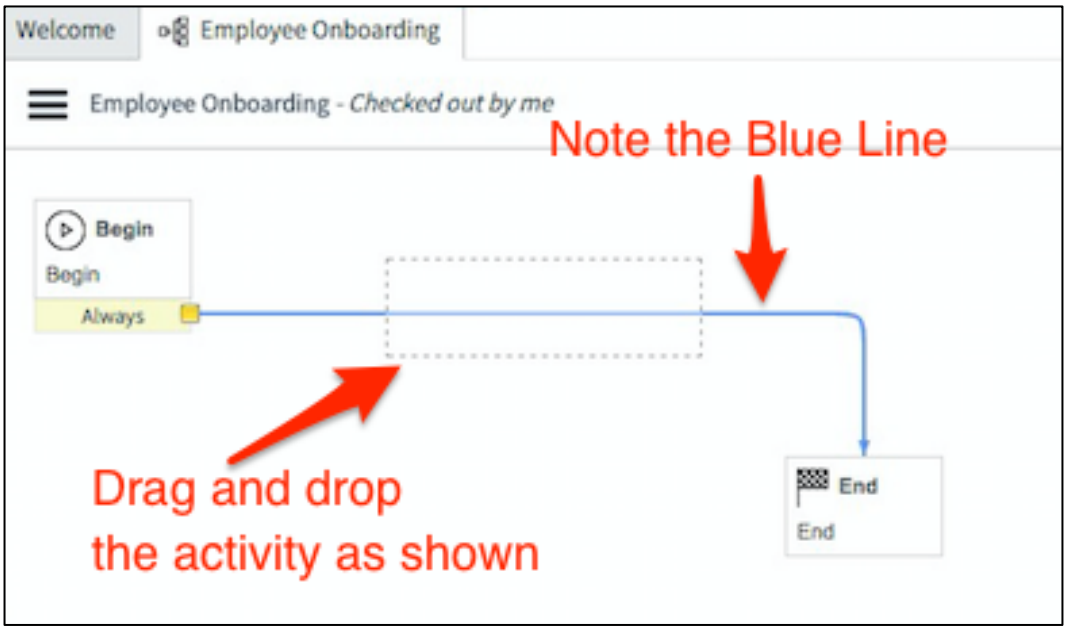

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2. Expand the **Custom Activities** and the **Workday Orchestration** activities.
**Note**: You can also type the name of the activity in the search box.




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3. Click and hold the activity titled **Get Employee Info V2**. Drag and drop it onto the line in the workflow between the **Start** and **End** activities. Note that the line turns blue when the new activity is positioned correctly. See the example.

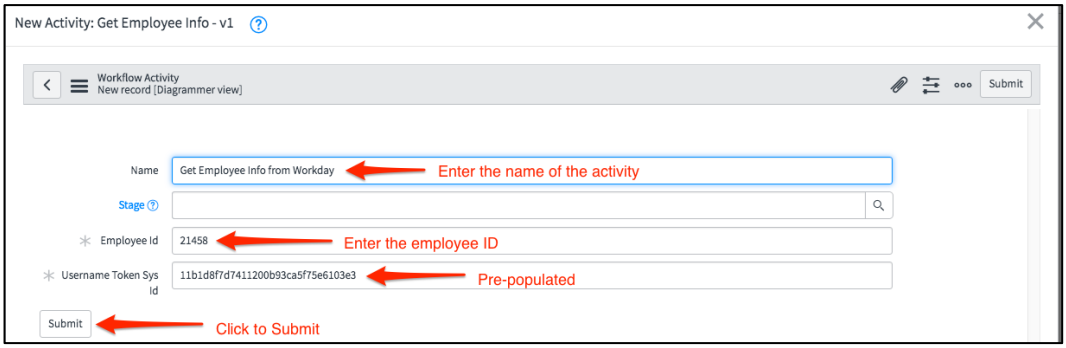



The line turning **blue** indicates that the activity being added is automatically connected to the two activities. Do not worry if you fail to drop it on the **blue** line, you can easily rewire the new activity into your existing workflow by clicking on the lines and dragging them to new connectors on activity boxes.

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4. Complete the follow information into the dialog box that opens:

   Name: **Get Employee Info from Workday**
   Employee ID: **21458**
   Username Token Sys ID: **11b1d8f7d7411200b93ca5f75e6103e3** (should be pre-populated)
   Click: **Submit**




**Note**: In this lab we specify a specific employee ID in order to complete the lab in the allotted time. This is also a good best practice as you develop workflows, providing a known value as input so that you can test and debug the workflow without having to worry about data being passed in and out correctly. Once the workflow is working, you can then parameterize it, by using an input variable for the Employee ID.

**Question:**
Can you think of where this variable might be entered by a user who is starting the onboarding process?

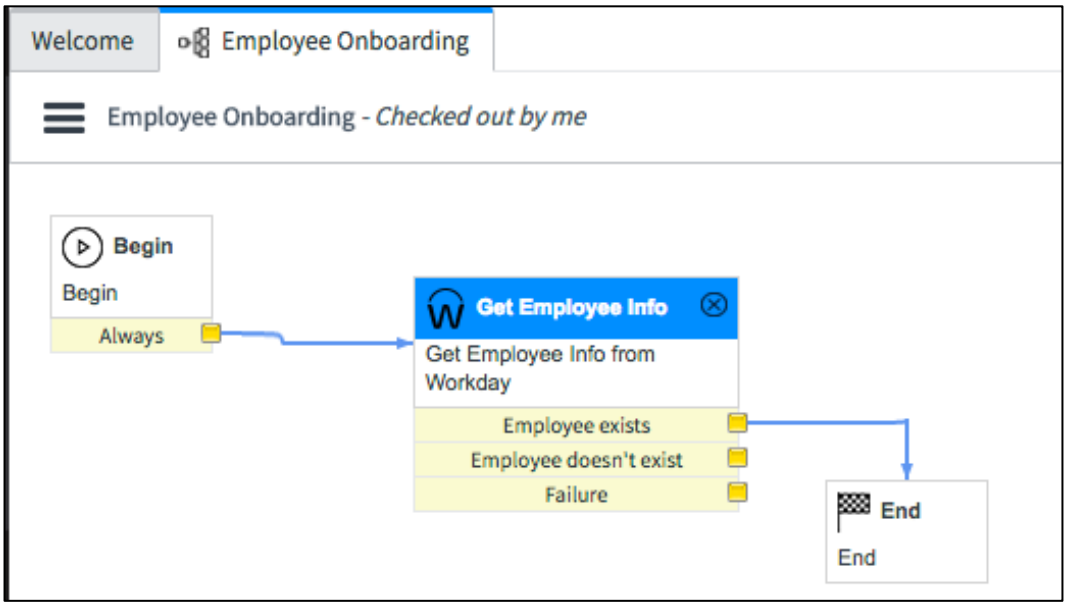
_____

Think about the overall process to onboard employees at your company. What other information might be critical to complete the process?

_____

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5. The workflow should now look like the example.




## Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.
2. Click **I am done!**

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# Lab Goal

**Lab 1.3**
**Add "Create Mailbox" Activity**

This lab explains how to add the **Create Mailbox** activity to the workflow and configure it.

## Add "Create Mailbox" to the Employee Onboarding Workflow

The steps in this section explain how to add the **Create Mailbox** activity to the workflow in order to automate the creation of the user's Exchange Mailbox. Note that the activity to create the Exchange Mailbox also creates the employee's AD account, so there is no need to add the **Create AD Object** into the workflow.

The next steps explain how to add an activity to the workflow that creates the new Employee's Exchange Mailbox, thereby setting up the user to use your company's email system.

1. In the Workflow Palette, select the **Custom Tab**.

2. **Expand Custom Activities** and then **Exchange Section**. Expand the **Mailbox** section under Exchange by clicking the arrows next to each section.

3. Next, drag and drop the **Create Mailbox – v2** activity on the line between the **Get Employee Info** activity, and the **End** activity.

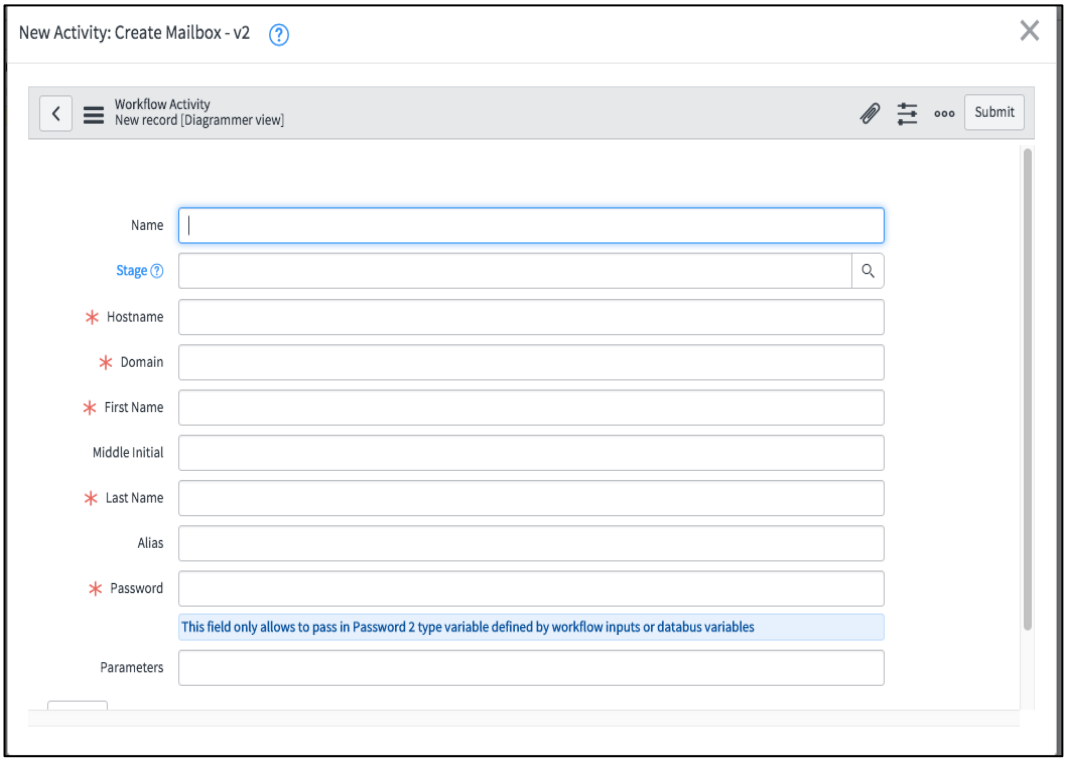
   **Note**: If the line between the activities is too short for an easy drag and drop, move the **End** activity on the canvas to give you more room. Grab the **End** activity with your mouse, and move it to the right and down.

   **Question:**
   How do you know if you are dropping the new activity correctly into the existing flow of activities? _____

   **Hint**: The line turns a different color.

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4. After dropping the activity box, a new dialog window opens, **New Activity: Create Mailbox – v2** as shown in the example.




5. Complete the activity box by filling in the fields as follows:

   Name: **Create Exchange Mailbox**.

   Stage: **Leave Blank**. The stage is used to communicate to the requester of the service the current state of the overall process of a workflow. Different stages indicate where this particular activity occurs in the process. For example, if this activity occurs during the fulfillment of a process, use the **Fulfillment** stage. Examples of other stages include **Approval**, **Work in Progress**, etc.

   Hostname: **Exchange2010**. The hostname of the Exchange server with which the activity interacts. Do not enter an IP address in this variable.

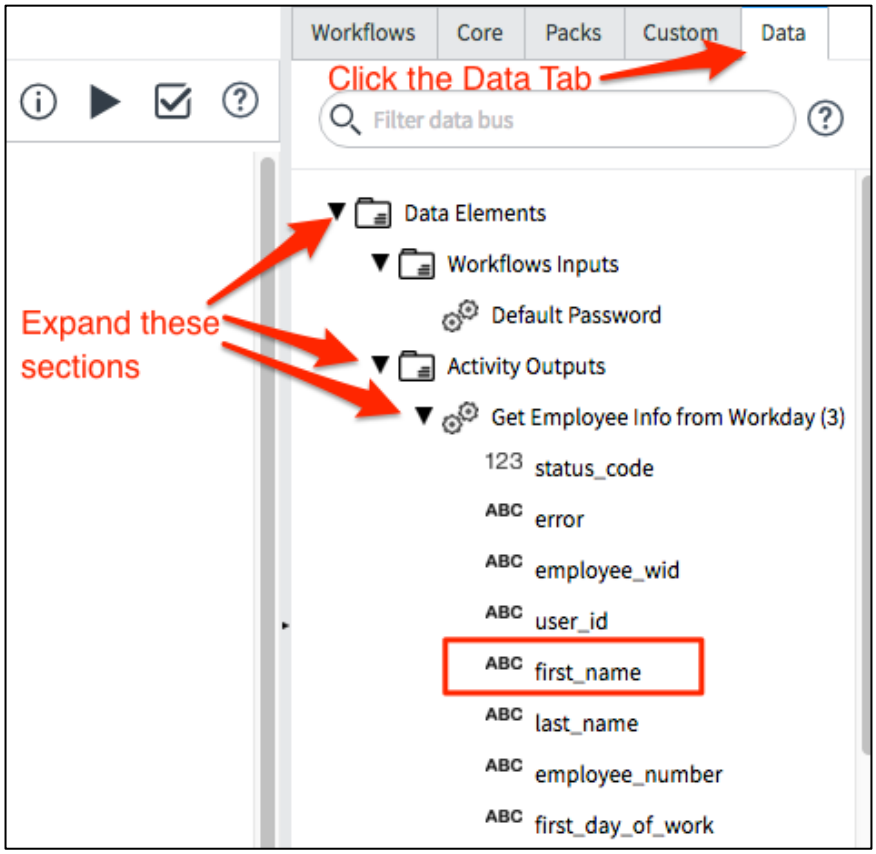
   Domain: **autolab1.service-now.com**. The name of the Exchange server's assigned domain.

   First Name: The first name of the user. This value is obtained from the **Get Employee Info from Workday** activity already added. The outputs of that activity are data elements in the Data Bus, under the Activity Outputs section – the Data tab within the Workflow Palette.

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The following steps explain the process of finding, then dragging and dropping a data element onto the form. You repeat this process several more times as you complete the workflow. Subsequent steps do not include screen shots.

a) Click the **Data** tab on the **Workflow Palette**, then expand **Activity Outputs**. Expand **Get Employee Info from Workday** Activity Outputs as shown below. Note the highlighted data element for First Name.




b) Find the activity output **first_name**. Drag and drop that activity output into the First Name Field on the activity form. The result should look like the example.




c) Middle Name: The middle name of the user. Workday does not provide this value. For now, leave it blank.

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d) Last Name: Use the **last_name** activity output**,** the last name of the user. Repeat the above drag-and-drop steps for the activity output last_name, dropping it into the **Last Name** field on the activity form.

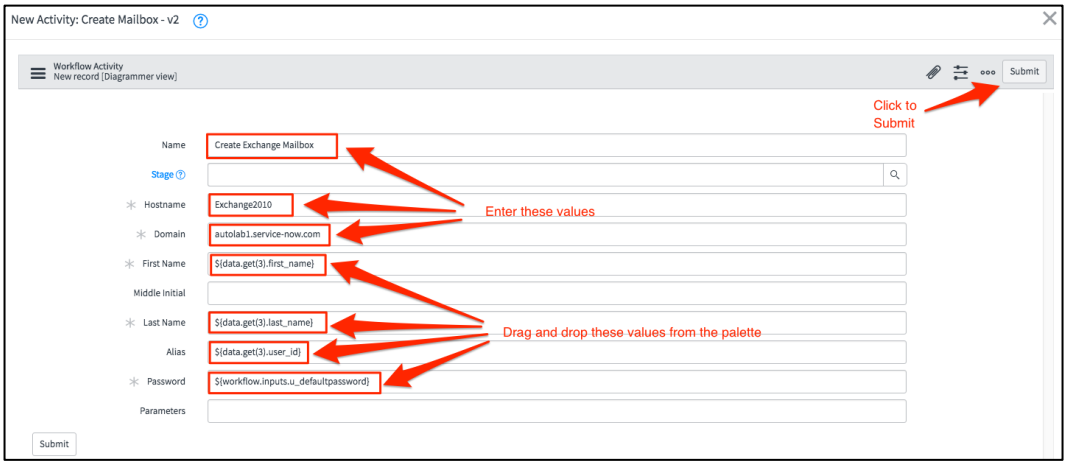
e) Alias: Use **user_id**. This is the display name for the mailbox address, the part of the email address to the left of the @ symbol.

f) Password: Use the **Default Password data** element. Drag and drop the data element **Default Password** into this field. This is the user's default password for the new mailbox. The password is encrypted when it is sent to the target host.

g) Parameters: Optional parameters to pass to the Exchange Server written in JSON (JavaScript Object Notation) format. **Leave this field blank**.

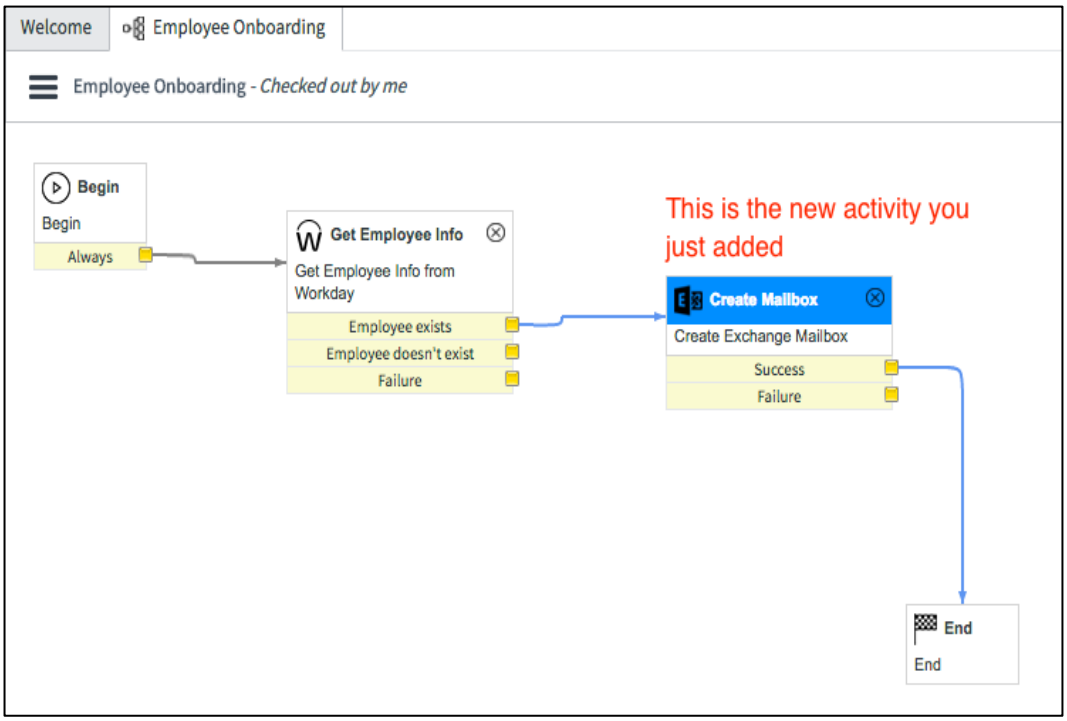
6. When completed, the activity box should look like the example. Confirm that the values in the red boxes in the screenshot match the values you entered via drag and drop from the Data Bus.

7. Click: **Submit**.




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8. The workflow should now look like the example. Confirm that the connectors between each activity block are wired together as shown. The **Success** output from Get Employee Info should be connected to the newly added **Create Mailbox** activity, and the connector from **Create Mail Success** should be wired to the **End** activity. Correct any activities that are not connected as shown.




## Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.
2. Click **I am done!**

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# Lab 1.4 Add "Add User to Group" Activity

# Lab Goal

This lab explains how to add the "Add User to Group" activity to the workflow and configure it.

## Add the "Add User to Group" Activity to the Workflow

These steps explain how to add an activity to the workflow to update the new Employee's group settings in Active Directory. In this step, only add the user to a single group.

1. Locate the **Add User to Group – v1** activity in the activity palette on the right of the screen.

   **Hint**: Look under the Custom Tab, then under Active Directory.

2. Drag and drop **Add User to Group – v1** into the workflow. Make sure you drop it on the line that connects the **Create Mailbox** activity to the **End** activity.

   **Tip**: Recall that the line should turn blue if you drop the activity correctly.

3. The dialog box for **Activity Properties: Add User to Group** opens. Complete the dialog box as follows:

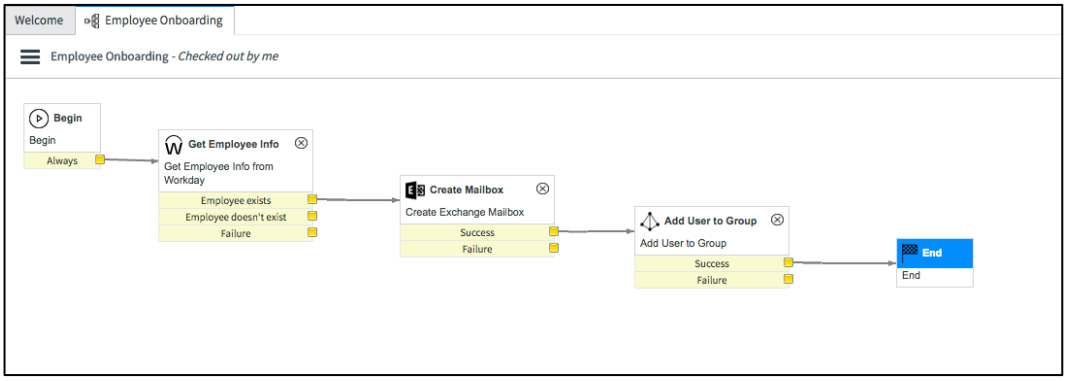
   Name: **Add User to Group**
   Domain Controller: **10.0.103.15**
   User Name: Drag and drop the **user_id** data element from the Workday Activity Output
   Group name: **OrchGroup**
   Click: **Submit**

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4. When completed, the form should look like the example.




5. The workflow should now look like the example.




## Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.
2. Click **I am done!**

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# Lab 1.5 Add "Create Unix Account" Activity

# Lab Goal

This lab explains how to add the "Create Unix Account" activity to the workflow and configure it.

## Add "Create Unix Account for Employee" to the Workflow

These steps explain how to add an activity that creates a user account on Unix servers for the new employee. Again, use information that comes from Workday as input.

1. Find the activity **Create Unix account for Employee** on the workflow palette. Drag and drop it on the line between the **Add User to Group** and the **End** activities.

   **Hint**: Look under **Custom Activities > Global**. This activity was created using the Activity Designer. The Activity Designer allows you to create your own custom, reusable activities without having to write script or java code. To open the Activity Designer for this activity, click once on the Activity. A new tab opens in the Workflow Designer where you can review what this activity does.

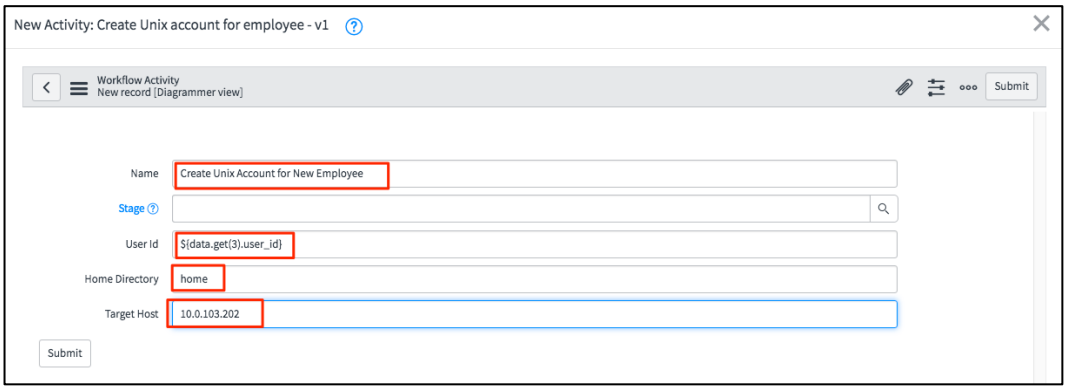
   **Questions:**
   If you wanted to update this custom activity, how would you do so? _____

   What is the Unix command being run? _____

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2. Complete the dialog as shown in the example:

   Name: **Create Unix Account for New Employee**
   User Id: Drag and drop the **user_id** data element returned from the Workday call
   Home Directory: **home**
   Target Host: **10.0.103.202**
   Click: **Submit**




**Questions:**
Again, we provided specific values for Target Host and Home Directory. Can you think of other ways we could have provided these values? _____

What would be the benefit of providing these values in a variable?

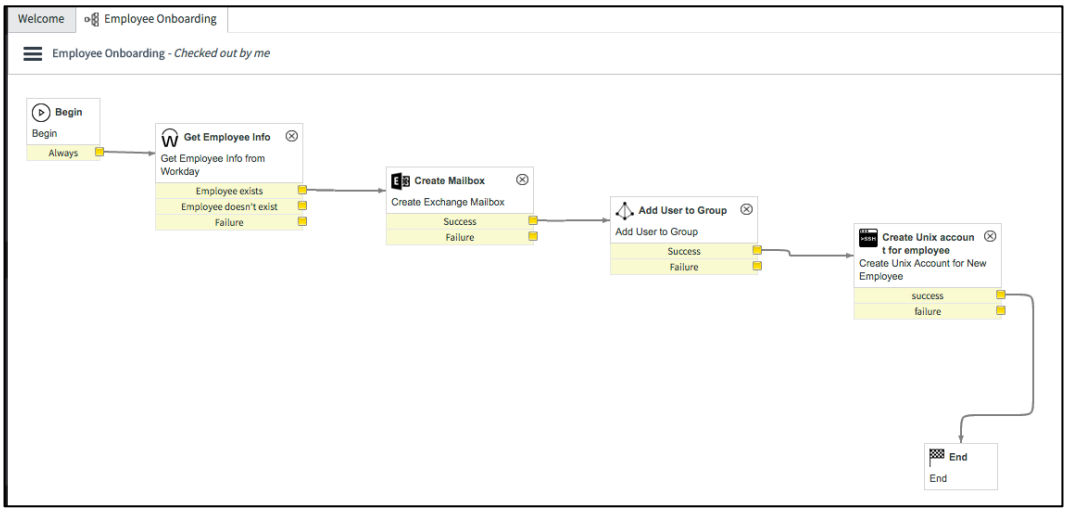
_____

The Home Directory was specified just as “home.” Can you determine what the actual path for the user’s home directory will be set up as on the target server? **Hint**: Review the Custom Activity described in the previous step.

_____

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3. After clicking **Submit**, the workflow should look like the example.




## Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.
2. Click **I am done!**

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# Lab 1.6 Add "Create Employee in HRIS DB" Activity

# Lab Goal

This lab explains how to add the **Create Employee on HRIS DB** activity to the workflow and configure it.

## Add "Create Employee on HRIS DB" to the Workflow

These steps explain how to add an activity to create the new employee's record on the internal HR Information System **system of record**. This mimics creating the employee record on PeopleSoft, or some other HRIS type of system. In most customer environments there is an official HR System of Record to store employee information. For this lab, we update a MySQL database to simulate adding the employee record.

Again, this is a custom activity that has been prebuilt for your convenience. You can open the Activity Designer for this activity if you would like to see what it is doing.

1. Find the activity called **Create Employee on HRIS Db** in the workflow palette. Drag and drop it into the workflow on the line between the previous activity you added and the **End** activity.

2. Complete the resulting dialog with the values below. Drag and drop data elements from the Workday activity onto this activity in order to pass them to the HRIS database.

   Name: **Create Employee Record on HRIS DB**
   First Name: **first_name**
   Last Name: **last_name**
   Employee Number: **employee_number**
   User Id: **user_id**
   First Day of Work: **first_day_of_work**
   Home Address Line1: **address_line1**
   Home Address City: **city**
   Home Address State: **state**
   Home Address County: **country**
   Home Email: **home_email**
   Cell Phone: **area_code cell_phone** (Is there more than one phone number?)

   **Note**: For the cell phone, ensure there is a space between the 2 entries.

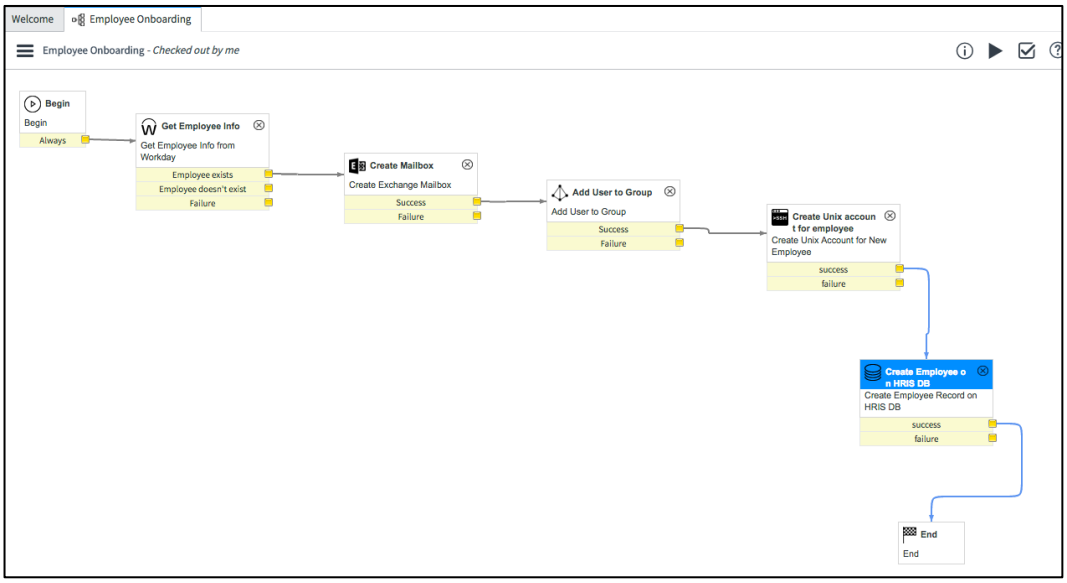
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3. When completed, the form should look like the example.




4. Click: **Submit**.

5. The workflow should now look like the example.




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## Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.
2. Click **I am done!**

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# Lab Goal

**Lab 1.7 Add "Log Error" Activity**

This lab explains how to add the **Log Error** activity to the workflow and configure it.

## Add a "Log Error" Activity to the Workflow

This lab explains how to add an activity to log an error condition to the workflow log. In this lab you keep the logging simple by logging a generic error message.

1. Find the **Log Message** activity in the activity palette on the right side of the workflow canvas.

   **Hint**: You can find it under the Core tab, then under Utilities. If you are not familiar with ServiceNow workflow capabilities, explore some of the other provided activities.

2. Drag and drop the **Log Message** onto the canvas, but do not drop the new activity on an existing line between activities. Connect this new activity to the **error** and **failure** terminals on the other activities. If any of them fail, a message appears in the workflow log.

3. Complete the **Log Message** dialog box as shown in the example.

   Name: **Log an Error Message**
   Message: **An Error occurred during the execution of the Employee Onboarding workflow**



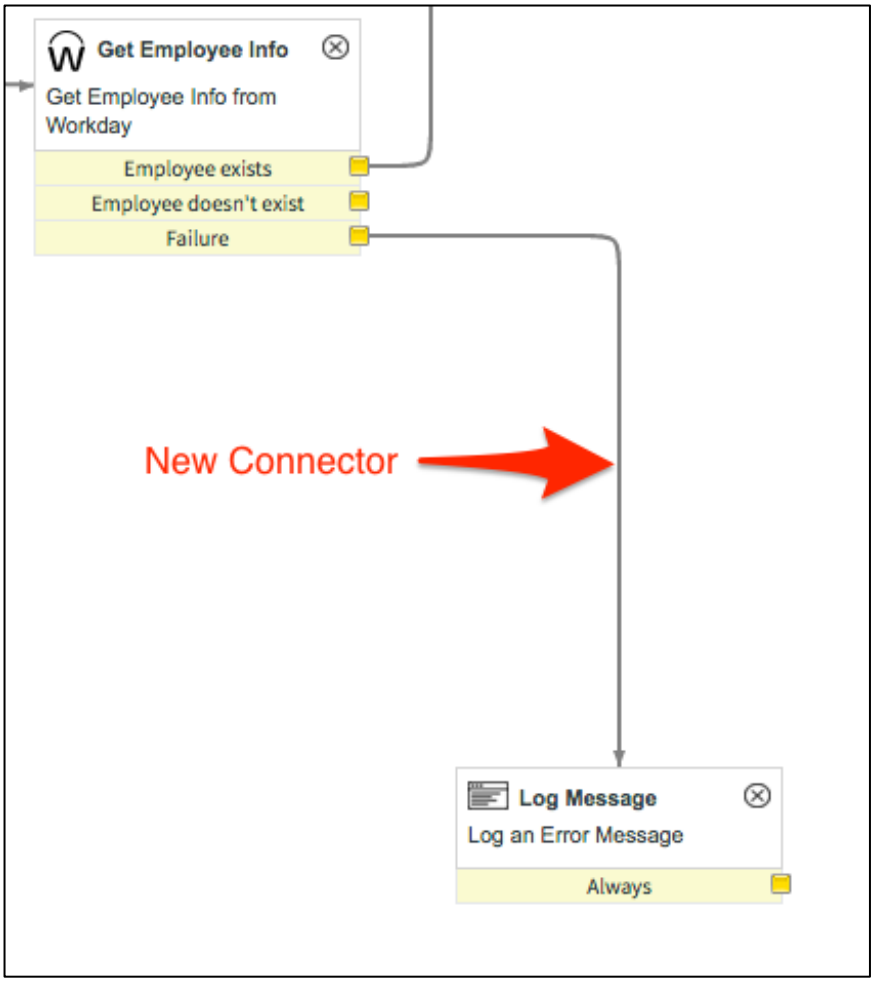

   **Note**: We do not include much detail in the logging message. Look through the data elements to see if there are elements you think would be beneficial to include.

4. Click **Submit**.

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5. Connect all failure activity output terminals to the new “Log Message” activity.

6. Click and hold the mouse over the yellow **Failure** terminal (it should turn **blue**) on the **Get Employee Info** activity, and move the mouse to the new **Log Message** activity and release the mouse button. A line should appear that connects the 2 activities as shown in the example.



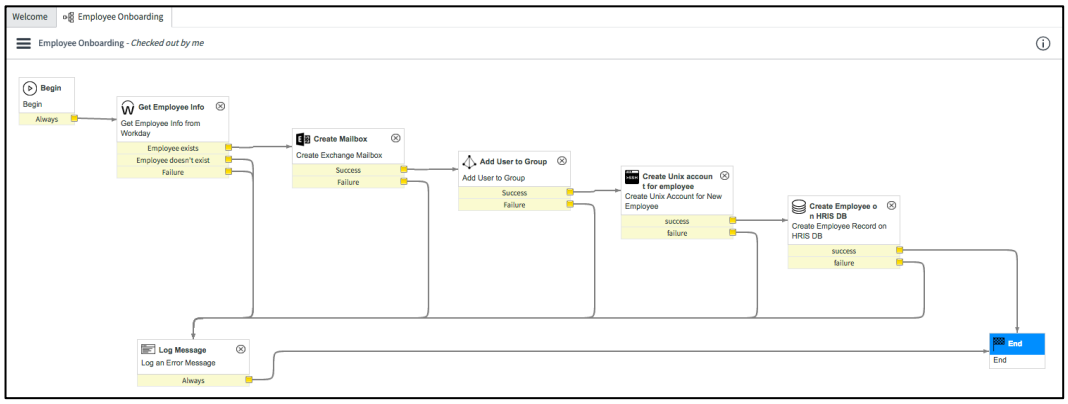

7. Connect the **Employee doesn’t exist** terminal to the new Log Message Activity.

8. Connect all other **Failure** terminals to the new Log Message Activity.

9. Finally, connect the **Always** output terminal on the Log Message activity to the **End** activity.

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10. Result should look like the example.




The workflow is now complete and ready for testing.

## Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.
2. Click **I am done!**

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# Lab Goal

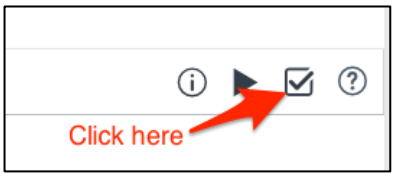
This lab explains how to validate and test the workflow to see if it works as designed. The lab explains how to execute the workflow just created, validate success, and debug failures.

**Lab 2.0 Validate and Test the Workflow**

## Validate and Test the Completed Workflow

After the workflow is completed, it is ready to be validated and then tested.

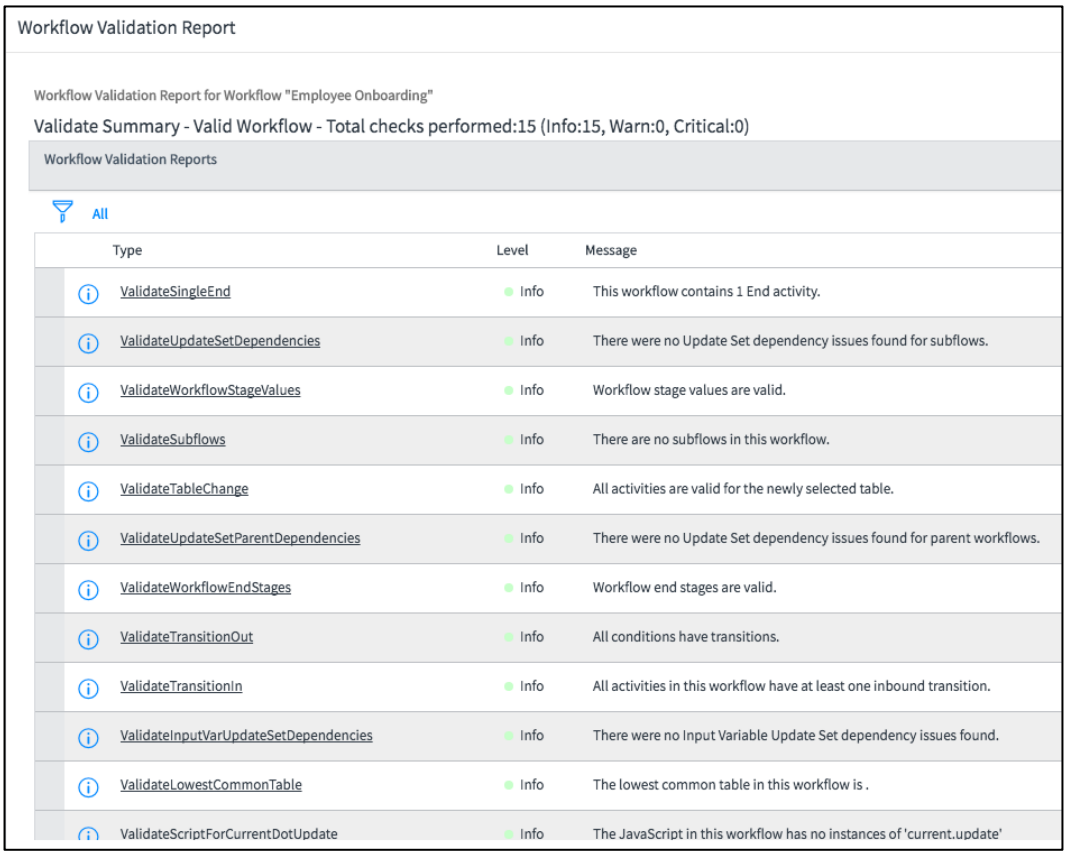
1. To validate the workflow, click the **validate** button – a box with a check mark – on the top-right of the canvas.




2. The Workflow Validation Report displays. There should be no errors, and all levels should be listed as **info** with a **green** dot to indicate there are no problems. See the example.

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3. If there are any errors or warnings, go back and fix the problems, or raise your hand and ask for a Lab Guru to assist if you cannot fix it on your own. Repeat the validation process until it shows all **green**.



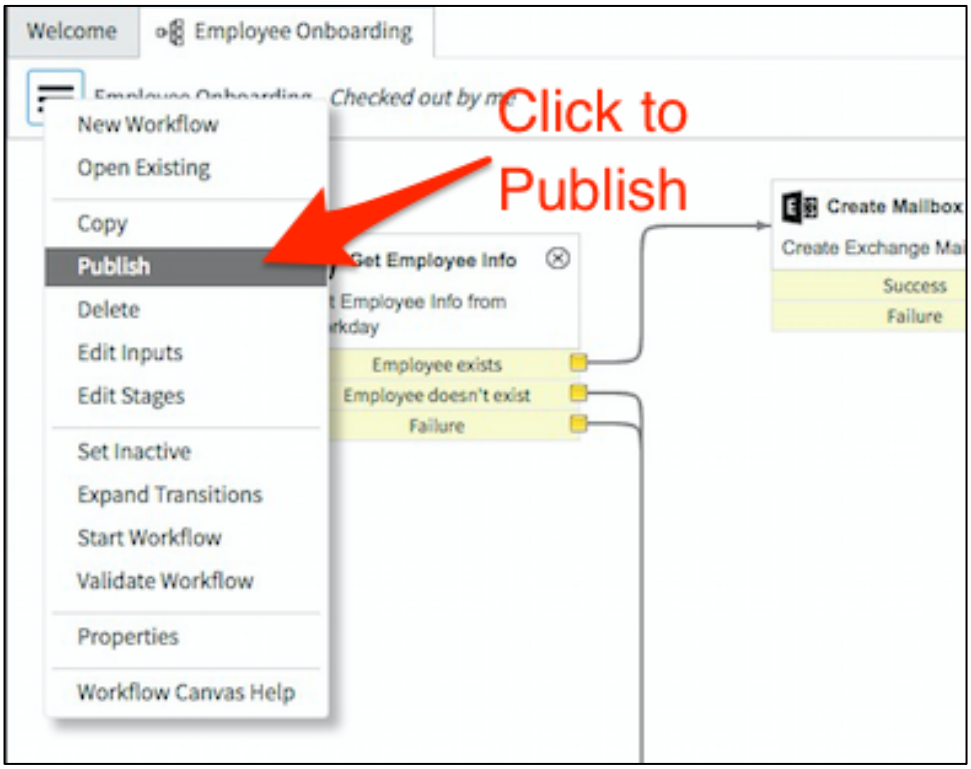

4. Close the report by clicking the **X** on the top right, or **OK** bottom left.

5. **Note**: At this point the workflow indicates that it is **Checked out by me**. Look at the top left of the Workflow Canvas.

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6. Optional: **Publish** the workflow.

   To **publish** the workflow, click the **hamburger** icon, and select **Publish**.




**Questions:**
If you choose to publish the workflow, what does that mean? Why would you **publish** it?

_____

Can you edit the workflow after you publish it? If not, how would you edit it?

_____

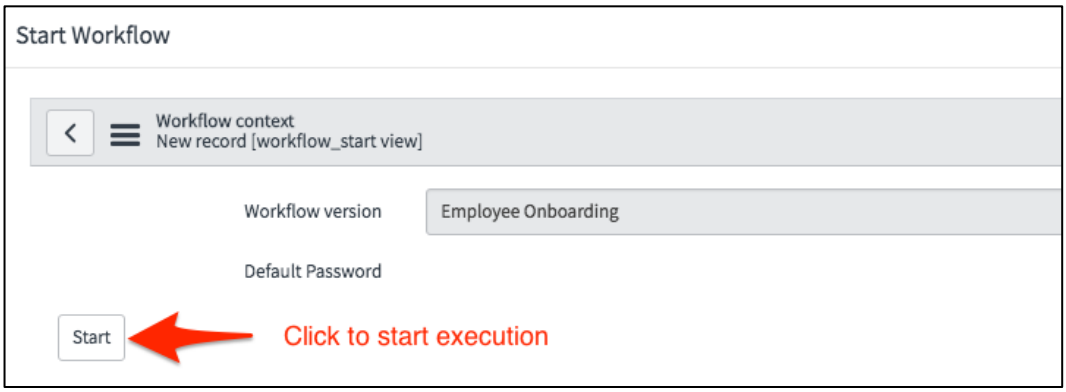
**Hint**: What other options are under the **hamburger** Icon?

7. Now execute the workflow and determine if it works as desired. Click the **Start** button (black triangle top right of the canvas) to begin the execution.




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8. The Start Workflow dialog appears. Click **Start** to begin execution.

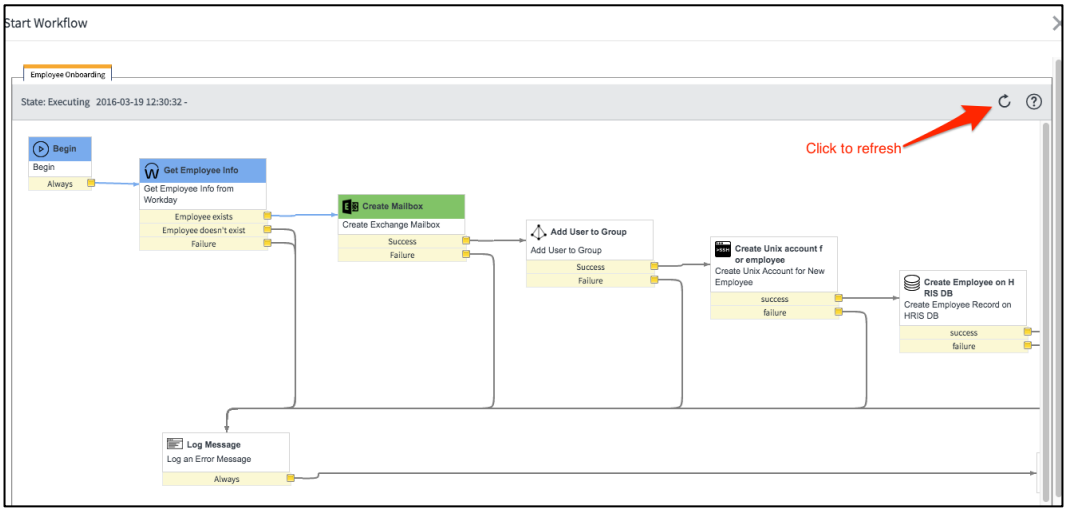



9. A new window displays showing the status of the execution of the workflow. The window shows the path through the workflow that was executed, as well as the status of each activity.

   A **blue** highlighted activity indicates the activity has been executed. Hover the mouse over the activity to see any messages and status of the activity. A **green** shaded activity indicates it is in progress. To refresh the execution, click the refresh icon on the top right as shown in the example.

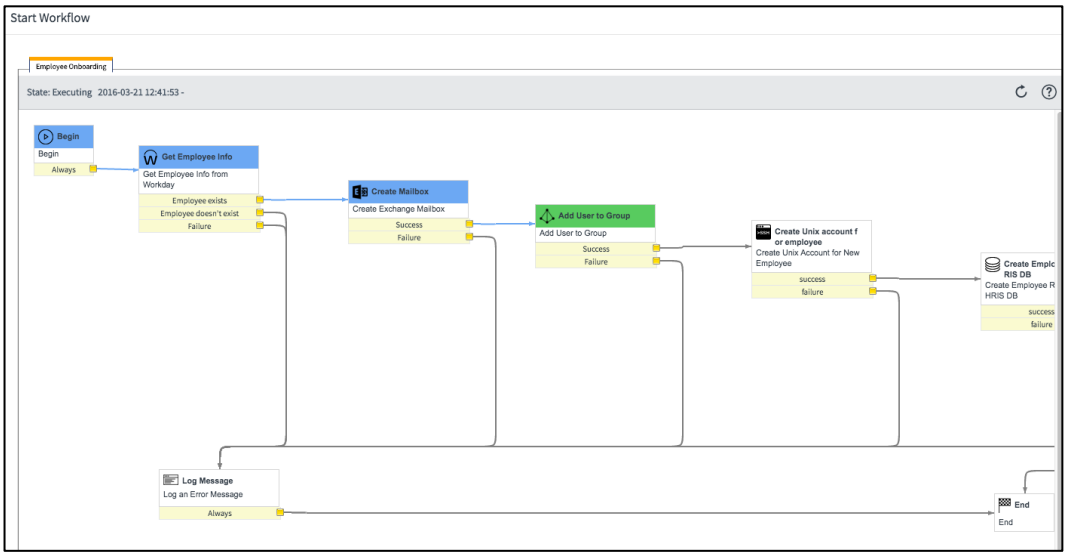
   The **blue** line between activities shows the path of the execution through the workflow.

10. Below you see that Activity **Get Employee Info** has completed, and **Create Mailbox** is running.



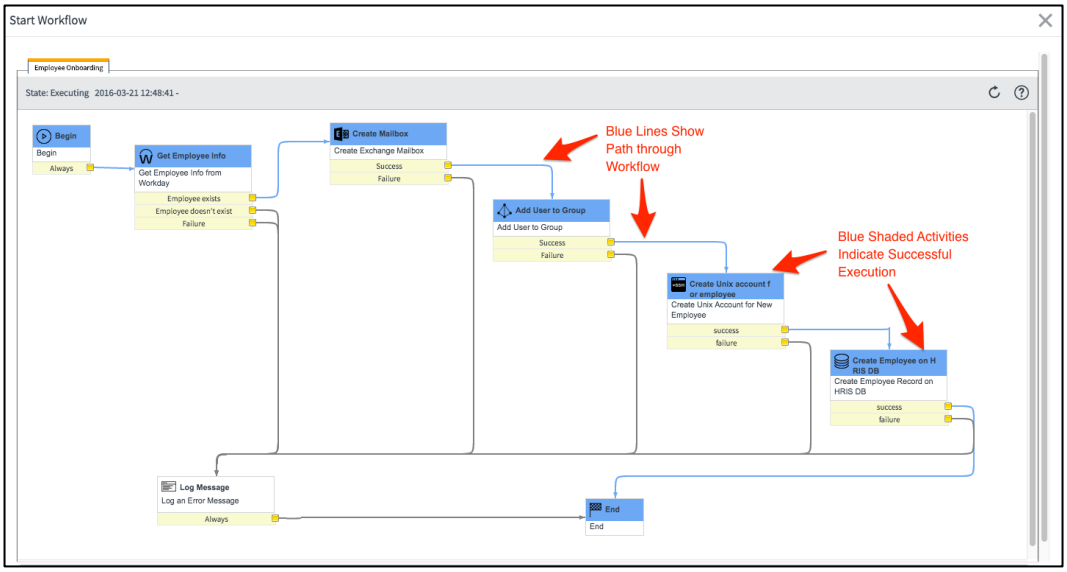

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11. **Create Mailbox** ran successfully; now **Add User to Group** is running.



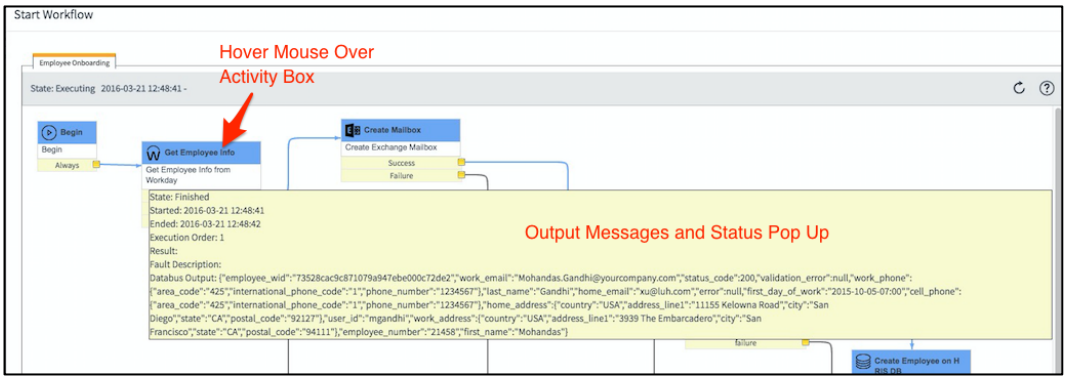

12. Execution of the workflow may take a few seconds to complete. Continue to click the refresh icon until the workflow completes successfully.

**Successful completion!**




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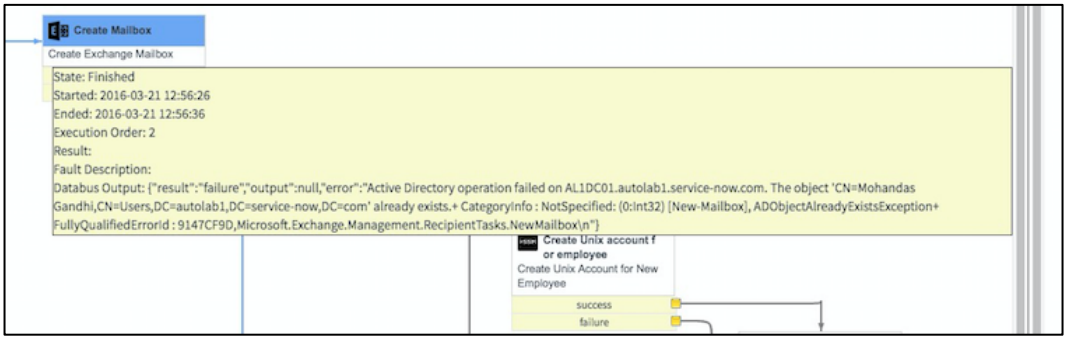
13. Hover over any activity that was executed to see any output messages and status (success/failure) of the activity. The following example shows the output from the **Get Employee Info** activity.




14. If the workflow does not complete successfully, review the messages for any activity in which the path exited via a failure terminal. Analyze the error and correct the workflow and reexecute it until it completes successfully.

    **Note**: If you chose to **publish** the workflow back in step 2 above and now it is failing, you will have to **check out** the workflow in order to edit it. Use the **hamburger** Icon to check out the workflow.

15. Here is an example of a failed **Create Mailbox** activity.



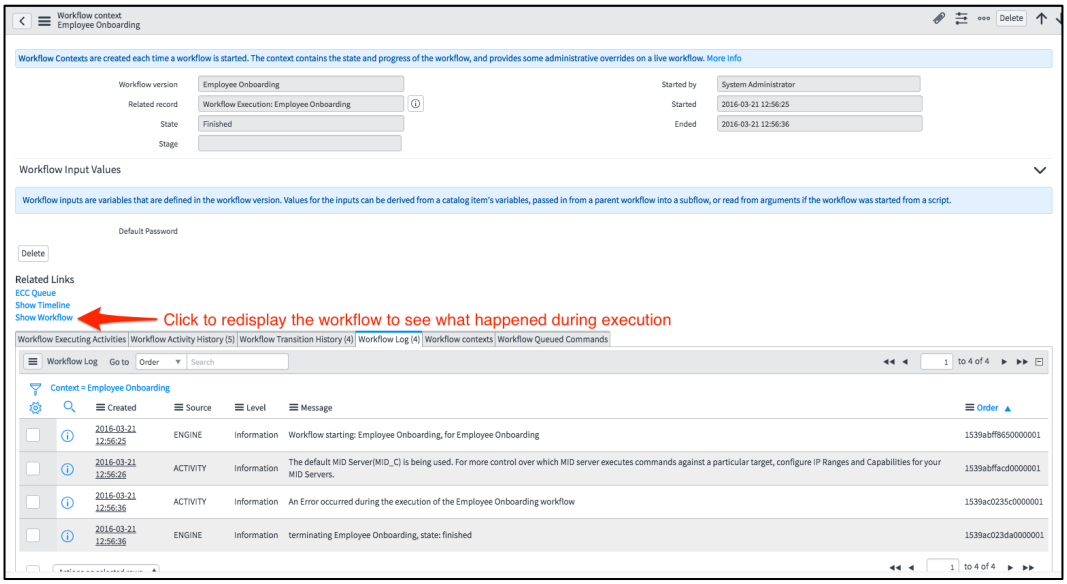

**Question:**
Can you determine why the activity failed above from the error message?

_____

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16. If you close the workflow status, you can find it again in the left navigator panel of the main ServiceNow application. Navigate to **Workflow -> Live Workflows -> All Contexts**. Find the workflow in the list (should be the top one in the list), open it, and review the information provided. Click the **Show Workflow** UI Action under Related Links on the left side of the form. The status of the overall workflow displays. There you can review success/error messages from each activity.

17. Below is an example of an Onboarding workflow that had an error.




## Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.
2. Click **I am done!**

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