App Engine Studio + IntegrationHub Lab

Author: Joseph Hurley, Senior Solution Consultant

Version 1.05

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Introduction

Goals

ServiceNow is committed to empowering our users to provide better experiences while digitally transforming workflows across the enterprise. Two important capabilities we leverage to deliver these outcomes are App Engine Studio and IntegrationHub.

App Engine Studio is helping to fuel the Workflow Revolution by enabling citizen developers to create impactful business solutions with a no code visual development framework. Powered by simple point and click design, and powerful templates to address common challenges, App Engine Studio helps our users deliver digital solutions substantially faster. It also helps create intuitive and immersive contextual experiences that delight users.

IntegrationHub helps to extend the power of App Engine Studio outside the bounds of IT. Leveraging out-of-the-box spokes, Citizen Developers can easily create powerful transactions that span the enterprise ensuring that systems of record across all departments always have up-to-date and actionable information. This helps us empower users by bringing workflow directly to them and allowing them to interact with processes in their interface of choice.

Use-case Background

This use case walks through the creation of a Logistics Management solution.

In this story, you play the role of Joe Shipman. Joe is responsible for managing shipments across the enterprise, but currently has not centralized logistics management solution. Joe understands that delays in shipping can lead to serious business issues for the company. Beyond simple user satisfaction or SLA Violations, failure to fulfill requests on time can lead to increased cost, risk, and potentially damage the organization's brand.

Joe has access as a Citizen Developer to build applications on the company ServiceNow instance. By building a logistics solution on the Now Platform, Joe hopes to simplify and automate the shipping and receiving processes to enable near real-time status updates to the business users. This will empower users to make better business decisions to support their organizational goals. Furthermore, because the solution will be built on platform, Joe will be able to seamlessly integrate logistics data with other processes such as Request Management already functioning on the Now Platform.

During this lab, you will work through the following exercises:

1. Build an Application (30 Minutes)
2. Create a Workspace Experience (25 minutes)
3. Create an Integrated Business Process using Flow Designer and IntegrationHub (45 mins)
4. Create a Mobile Experience (5 mins) (optional)

Setup

To participate in this lab, you will need to reserve and access a Lab instance. The URL to request your instance will be displayed at the beginning of the live lab broadcast.

Once you have access to the reservation URL, please navigate to this page and provide your **First Name**, **Last Name**, and **Email Address**. It is critical that you provide a valid Email Address, as your instance credentials will be delivered to this address.

Once you receive your confirmation email, please check the URL and password by logging in with the username **admin**, and the password provided in your registration confirmation email.

If there are any issues with connectivity, please raise an issue in the Lab chat window, and one of our Lab Gurus will assist you.

Supplemental Resources

In addition to this Lab Guide and the resources discussed in the live Lab Broadcast, the following resources are always available to help with this, or any other ServiceNow activities.

Resource Name	Resource Purpose	Resource link
ServiceNow Docs	Product documentation	https://docs.servicenow.com/
ServiceNow Developer	Developer instances and resources	https://developer.servicenow.com/
Now Community	Online community forums	https://community.servicenow.com/
Now Learning	Online training and certification	https://nowlearning.service-now.com/
Customer Success Center	Accelerate your success	https://www.servicenow.com/success.html

Products and Platform Features

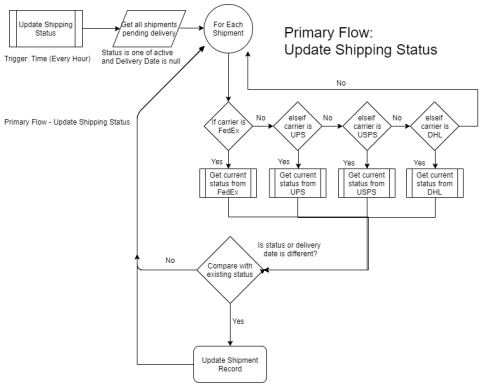
Below is a list of each of the products and platform features highlighted in the lab.

Name	Description	Documentation or Video
App Engine Studio	ServiceNow® App Engine Studio is a development tool for creators of varying skill levels to build applications that meet the immediate needs of your organization.	https://docs.servicenow.com/bundle/quebec-application-development/page/build/app-engine-studio/concept/aes-overview.html

Flow Designer	Flow Designer is a Now Platform® feature for automating processes in a single design environment. Flow Designer lets process owners use natural language to automate approvals, tasks, notifications, and record operations without coding.	https://docs.servicenow.com/bundle/quebec-servicenow-platform/page/administer/flow-designer/concept/flow-designer.html
IntegrationHub	IntegrationHub enables execution of third-party APIs as a part of a flow when a specific event occurs in ServiceNow. These integrations, referred to as spokes, are easy to configure and enable you to quickly add powerful actions without the need to write a script.	https://docs.servicenow.com/bundle/quebec-servicenow-platform/page/administer/integrationhub/concept/integrationhub.html

Important Note:

For purposes of this lab, we are assuming the work associated with solution design and validation has been completed. Typically, all applications should start first with a thorough evaluation of the objectives and outcomes to be achieved as well as modeling of the data and process elements. It should never be considered "good practice" to begin the process of application building with technical implementation. Thorough design work can dramatically reduce the risk of extensive rework. Consider building sample data models or flow diagrams of your business process before jumping straight to building or implementation.



Exercise 1 – Build an Application (30 Minutes)

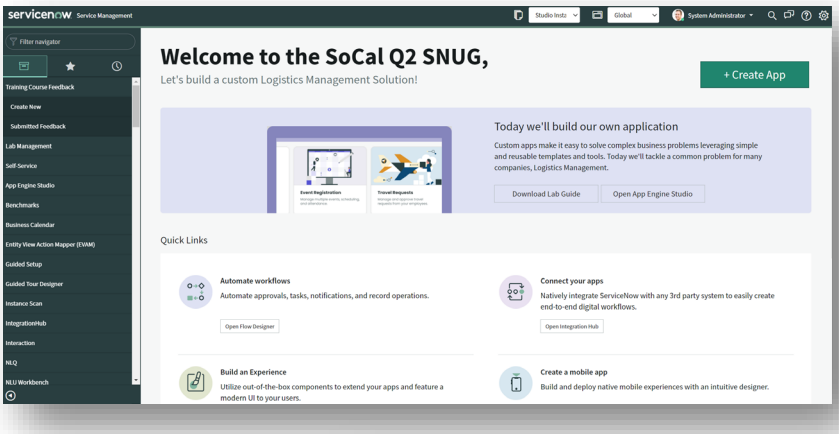
Purpose

In this exercise, we will learn how to create the core data elements of our application.

Section 1 – Create the application framework

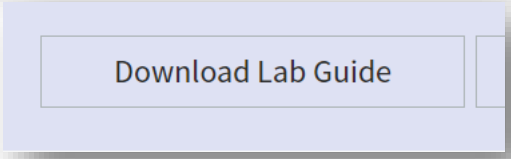
In this section, we will learn how to use App Engine Studio to create a new application which will hold all the functionality we need for our solution. We will also acquaint ourselves with core elements of this lab, and the App Engine Studio interface.

1. **Login** to your Lab Instance as user **admin**. Once you login, you should see the Lab Homepage.



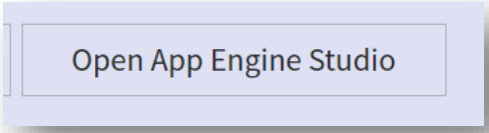
If you need to return to the page later, you can log out and log in again, or click on the ServiceNow logo in the upper left-hand corner.

The Homepage provides information on the use-case, as well as other relevant links to areas we will leverage throughout the lab. This Lab Guide is also available for download from the page by **clicking** the **Download Lab Guide** button.

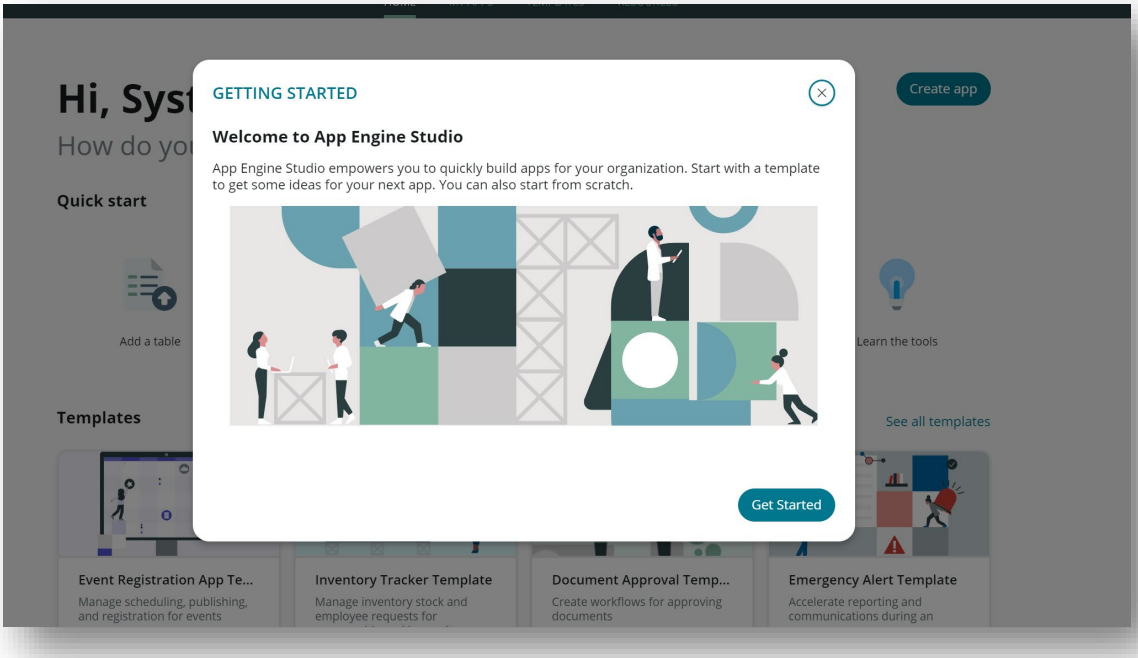


Next, we will proceed with creating the application data framework.

2. Open App Engine Studio by **clicking** the **Open App Engine Studio** button near the top of the **Lab Homepage**.



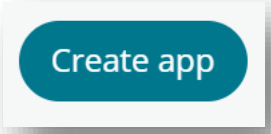
This will open App Engine Studio in a new tab.



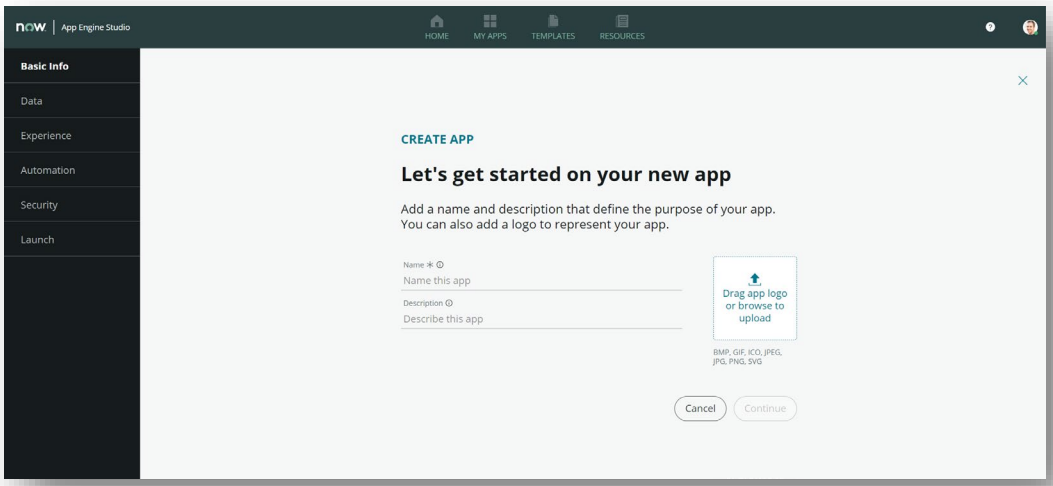
3. Close the **Getting Started** popup by **clicking** the **X** in the top right corner of the pop-up window.

   This reveals the homepage of App Engine Studio. From this page, you can create new applications, or extend previously developed applications. There are a variety of templates provided out of the box that contain examples of configurations that address common business challenges. Feel free to return here later to review some of the capabilities enabled with these templates.

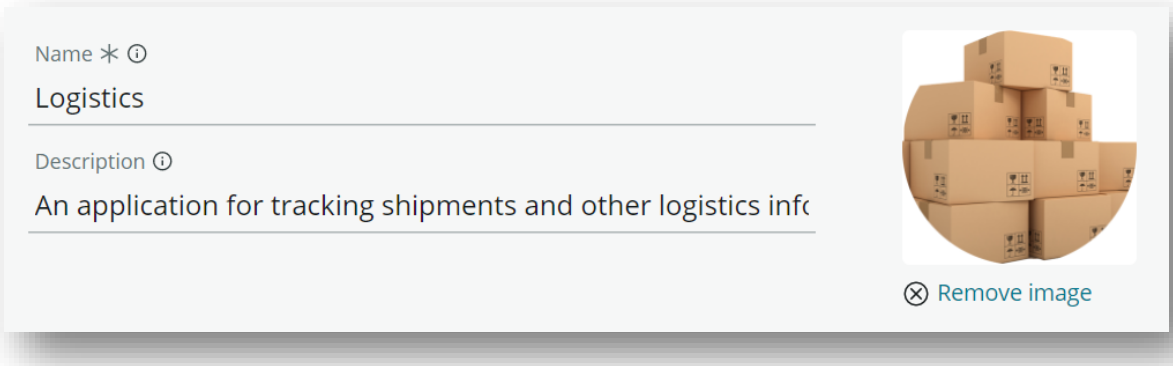
4. Begin the process of creating a new app by **clicking** the **Create app** button in the top right of the screen.



5. This brings up the core configuration screen for our new application.

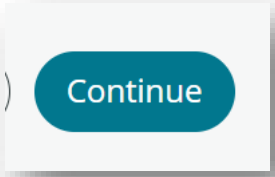


6. Now, let's name our application by typing **Logistics** into the **Name** field.
7. Next, type the following description into the **Description** field: **An application for tracking shipments and other logistics information.**

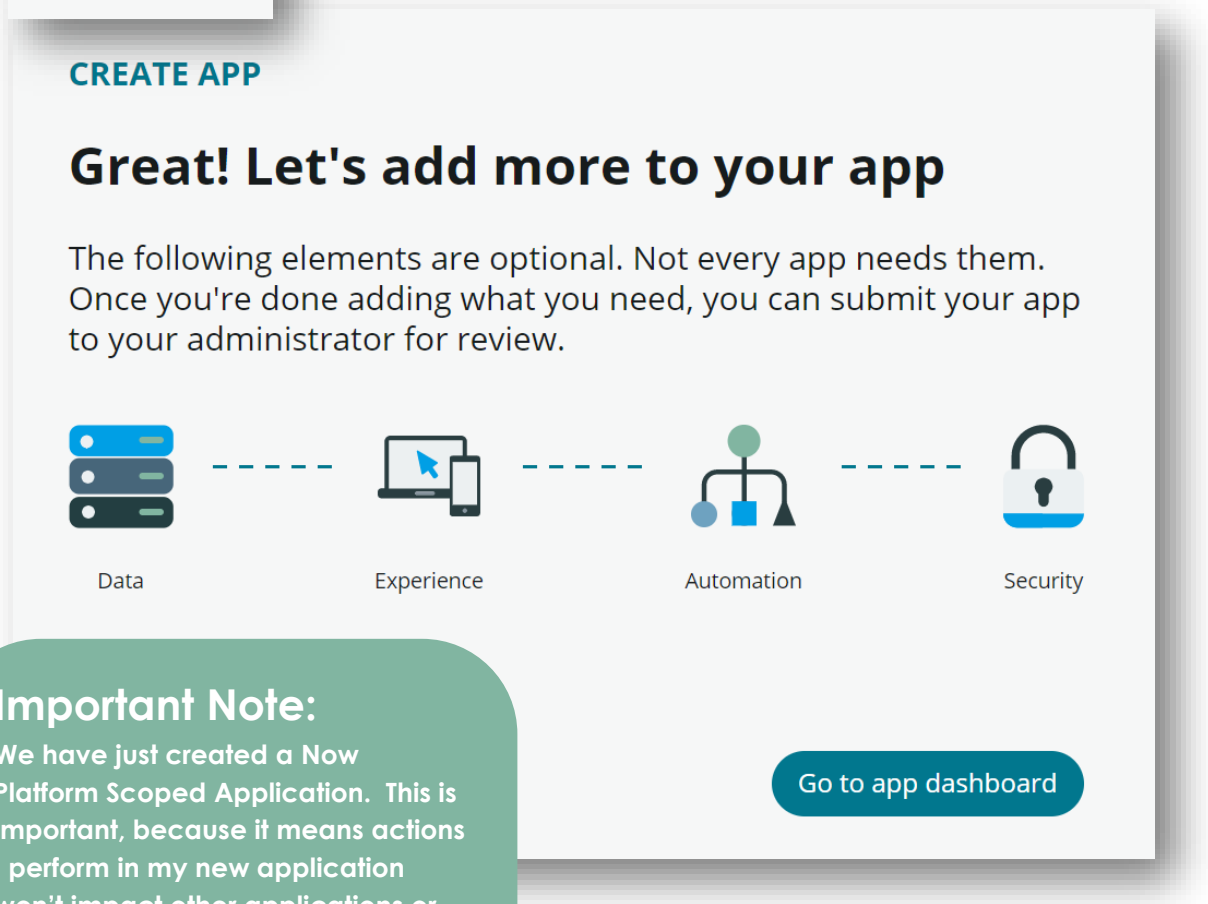


Optional – Feel free to upload an application icon or logo by **clicking** the **upload** link and **selecting** an image on your computer. Images can be a great way to personalize and provide character for your application.

8. **Click Continue** to save your information and move to the next step of the configuration process.



Upon clicking Continue, Studio will create the application framework for your new application. Once complete, you will see the following confirmation screen.



Important Note:

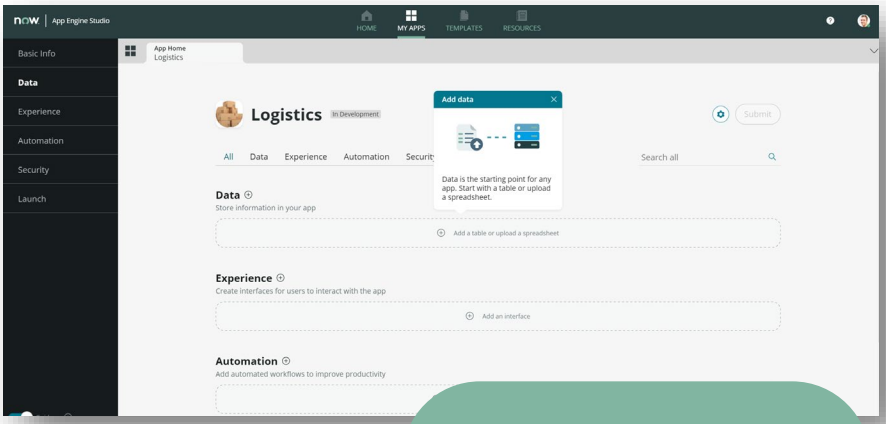
We have just created a Now Platform Scoped Application. This is important, because it means actions I perform in my new application won't impact other applications or processes already running on the Now Platform. This isolation allows me the flexibility I need to solve my business challenges without worrying about creating technical debt or slowing or impacting other areas of the business.

Congratulations, you've just created your first application on the Now Platform!

Now that our framework is complete, we can start building out the data model, business processes and experiences for our application. **Click** the **Go to app dashboard** button.

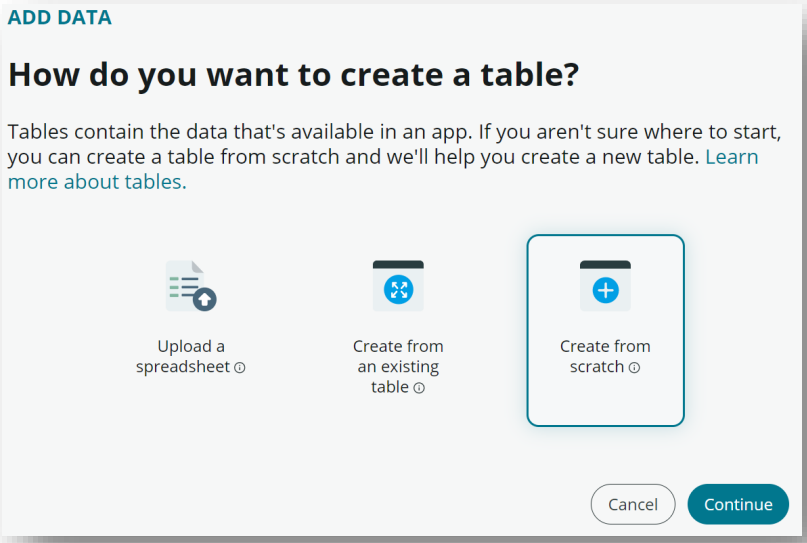
Section 2 – Creating the Data

Now that we have an application framework, we can start to fill in some of the details that will give our application purpose. In this step, we will create the core table that will act as the primary data container for our application.



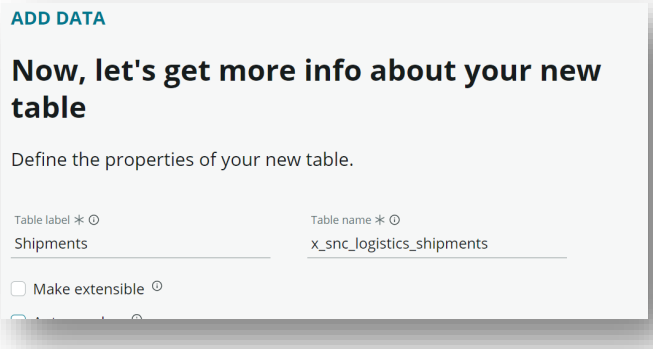
1. Create a new table by **clicking** the **Add a table** link under the **Data** section of your application framework.
2. Next, we will choose the method for creating our table. There are a variety of options, but for this lab, we will be creating our table from scratch. **Select Create from scratch** and then **click Continue**.

Important Note:
In this lab, we will be manually creating a table. In practice, you will often want to import a spreadsheet of existing data or extend an out-of-the-box table to form your table. Extending provides a powerful means of replicating core capabilities without needing to manually recreate the data fields or structure.



3. Next, we create the Shipments table that will hold the data that drives our application.

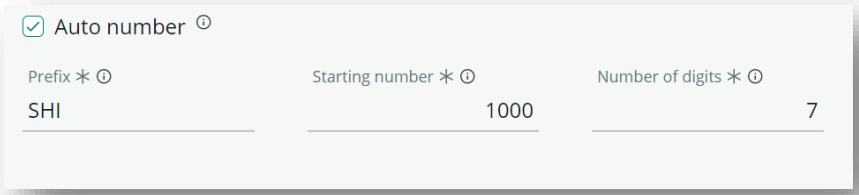
   We'll start by providing a **Table Label** of **Shipments**. This will auto populate a table name derived from our Application and Table names which we can use without modification.



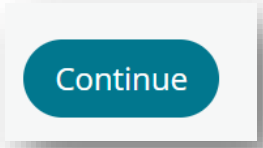
4. Next, **check** the box **Make extensible**. This will allow us to create tables based on the Shipments table later if we choose.

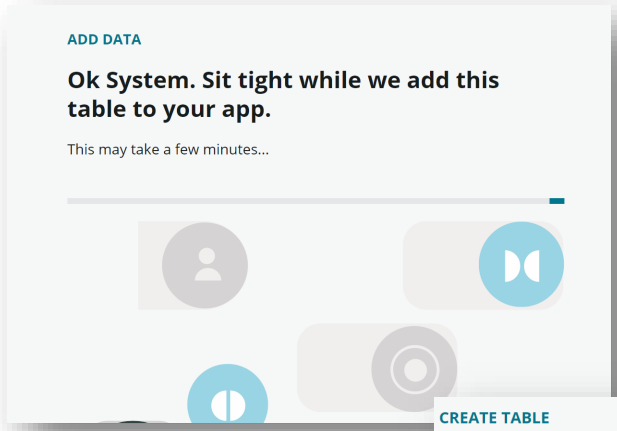
5. Then, **check** the **Auto number** checkbox to create an auto record number field we can use to reference our shipment records.

   Selecting this option provides us with configuration options. Leave the recommended options.

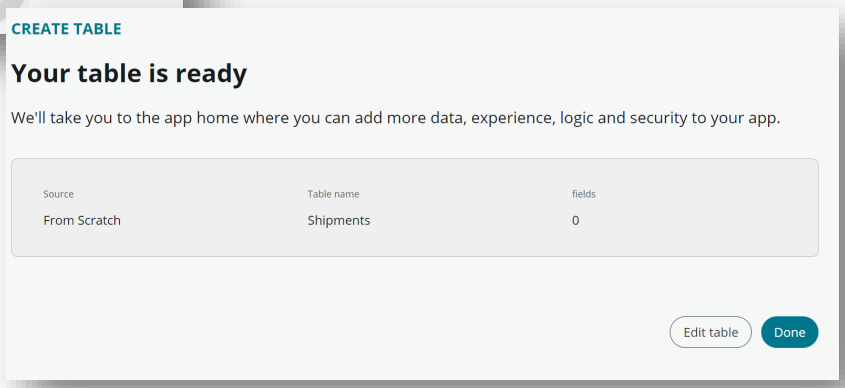


6. Once you have completed these steps, **click** the **Continue** button.



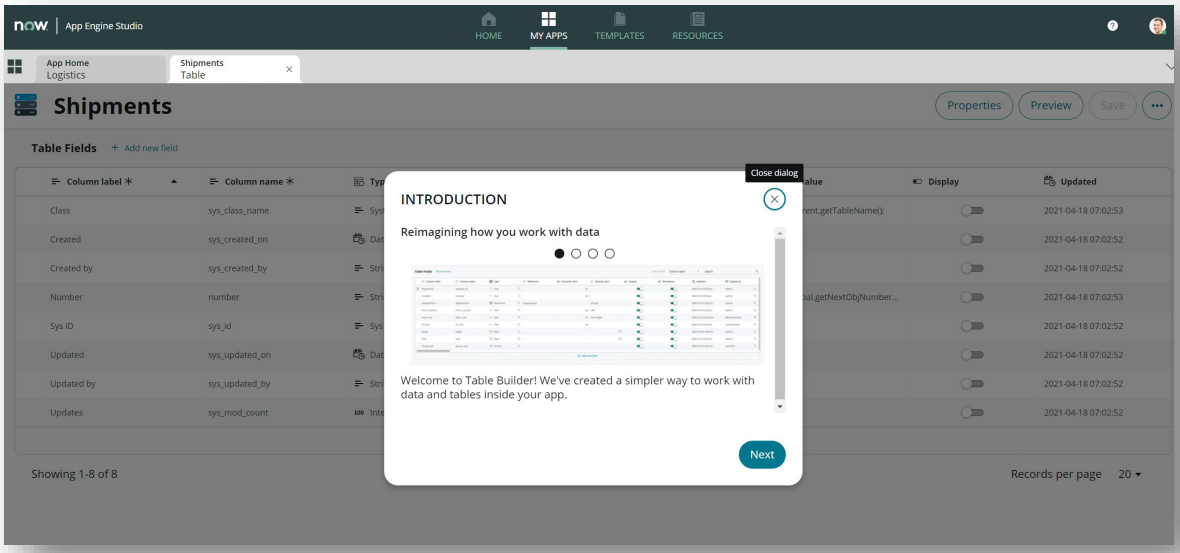


After clicking Continue, App Engine Studio creates your new table structure. Once complete, you should receive the following confirmation screen

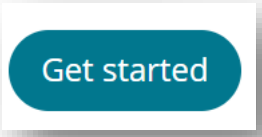


7. Next, we'll add our data columns to this new table by **clicking Edit Table**.

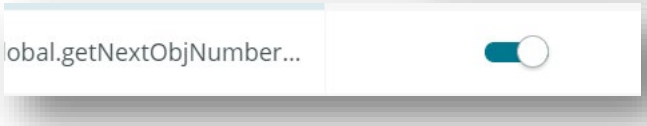
8. We now see the Table Builder screen. From this screen, we are able to see the fields that were automatically added to our table by the system, as well as add additional columns.



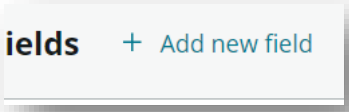
Review the introduction to Table Builder then **click** the **Next** button to walk through each information pane. From the last screen, **click** the **Get Started** button.



9. First, we want the number field to be the primary record identity, so let's make that the clickable value in lists by **toggling** the **Display** setting for **Number to true**.



10. Now let's add the data columns for our application. Start by **clicking** the **Add new field** link at the top of the screen.

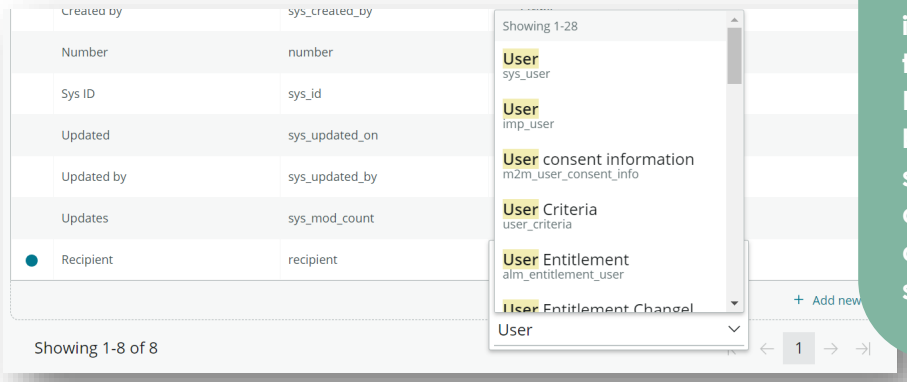


11. In the new row created, add the following values:

Recipient	
Column Label:	**Recipient**
Column Name:	recipient (auto generated)
Type:	**Reference**
Reference:	**User** (sys_user)

Important Note:
Sometimes reference tables share the same label. Make sure you select the correct table (in this case *sys_user*).

When Reference is selected from the Type drop-down, the Reference selector will open below the field to allow you to designate the table being referenced.



Important Note:

Reference fields are just one important method of unlocking the value of the Now Platform. By leveraging data from existing business processes, we streamline application creation and ensure data quality across all solutions that leverage shared data sets.

12. Once you have updated all the information, **press enter** to update the row and return to the Table Builder Screen.

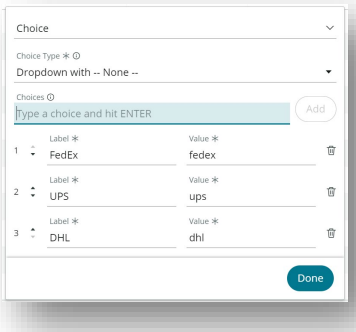
13. Repeat steps 10-12 for each of the following fields:

Destination	
Column Label:	**Destination**
Column Name:	destination (auto generated)
Type:	**Reference**
Reference:	**Location** (cmn_location)

Tracking Number	
Column Label:	**Tracking Number**
Column Name:	tracking_number (auto generated)
Type:	**String**
Max Length:	**40**

Deliver Date	
Column Label:	**Deliver Date**
Column Name:	deliver_date (auto generated)
Type:	**Date**

14. Next, we'll add a few Choice fields. When creating a **Choice** field, you will first **select** the **type** of choice you wish to provide (with or without None, or suggestion). Then you will provide the list of available choices by typing the **value** and pressing **enter**.

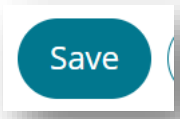


Following these steps, create the Choice fields for the data columns below:

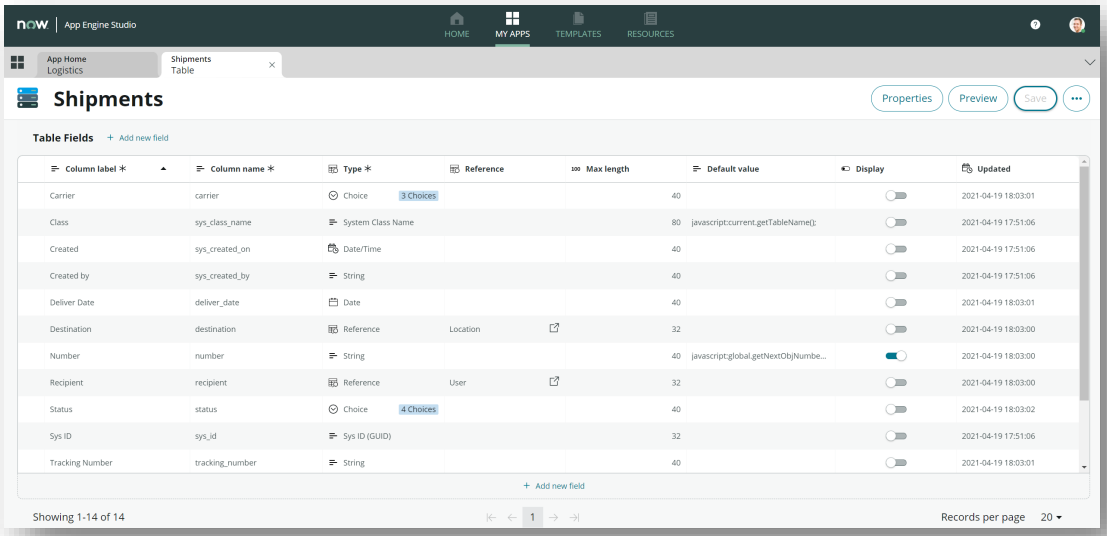
Carrier	
Column Label:	**Carrier**
Column Name:	carrier (auto generated)
Type:	**Choice**
Choice Type:	**Dropdown with -- None --**
Choices:	**FedEx**
	UPS
	DHL

Status	
Column Label:	**Status**
Column Name:	status (auto generated)
Type:	**Choice**
Choice Type:	**Dropdown with -- None --**
Choices:	**New**
	In Transit
	Delivered
	Delivery exception

15. We now have all the data elements we need to track for our first use case. **Click** the **Save** button at the top right to finalize your configuration.



Your Shipments table should now look similar to the image below:



Congratulations, you've built the first table in your solution. Now let's start to configure the user experience.

Close the Table Builder by **clicking** the **x** on the Shipments Table tab.

Exercise Recap

In this exercise, we learned how to create a new application and map out the data elements important to enable our business process. We learned to use the Table Builder to add and configure columns including Reference fields and Choice lists. We were able to complete all these tasks using simple point-and-click administration and without requiring specialized application or database knowledge.

Exercise 2 – Create a Workspace Experience (25 Minutes)

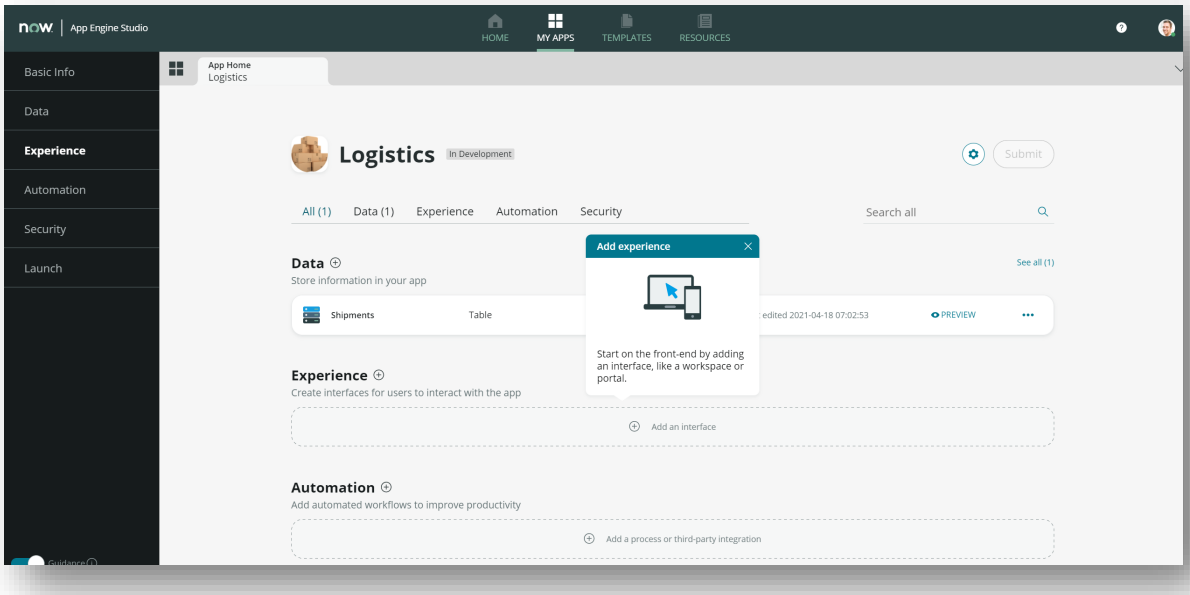
Purpose

In this exercise, we will learn how to create user experiences for interacting with our application. We will leverage App Engine Studio to create a new Workspace Experience designed to allow the Logistics team to track and manage shipments across the enterprise.

Section 1 – Create a Workspace Experience

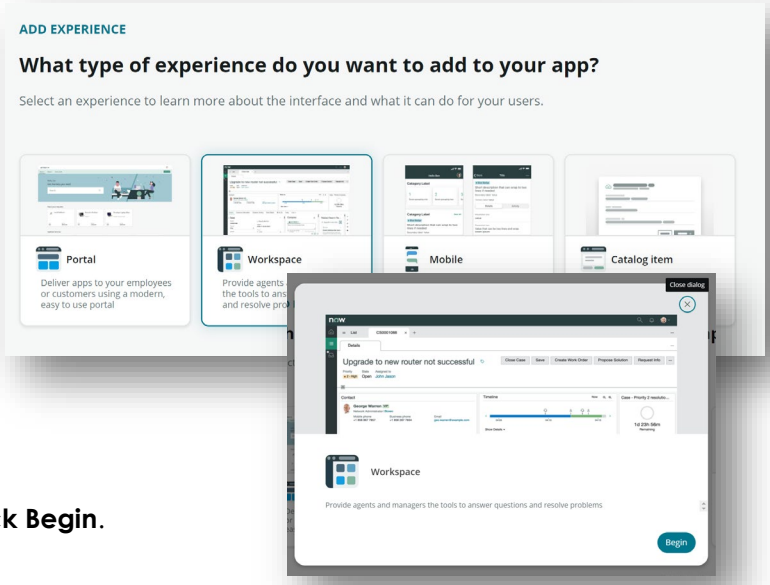
In this section, we will create and configure the core Workspace Experience for our new Logistics application.

1. After completing the previous exercise, you should be on your App Home page for your new Logistics app. If you are not, **Navigate** to your instance **homepage** and **click** the **Open App Engine Studio** button. Once there, open your **Logistics** application by **clicking** it on from the list of applications. This should take you to a screen similar to the one shown below.



2. From this screen, we can see that we have completed the creation of the Data element of our application. Next, we will create an experience by **clicking** the **Add an interface** link in the Experience section.

3. This takes us to a selection where we can identify the type of experience we wish to create. **Click** the **Workspace** option to create a new Logistics Workspace.



4. This launches the workspace creator. **Click Begin**.

5. Next, we provide the basic identifying information for our new experience.

   For the Workspace name, leave the default option of *Logistics*.

   In the description field, we'll provide a friendly description of the intent of the interface. **Enter** the following description into the **Description** field:

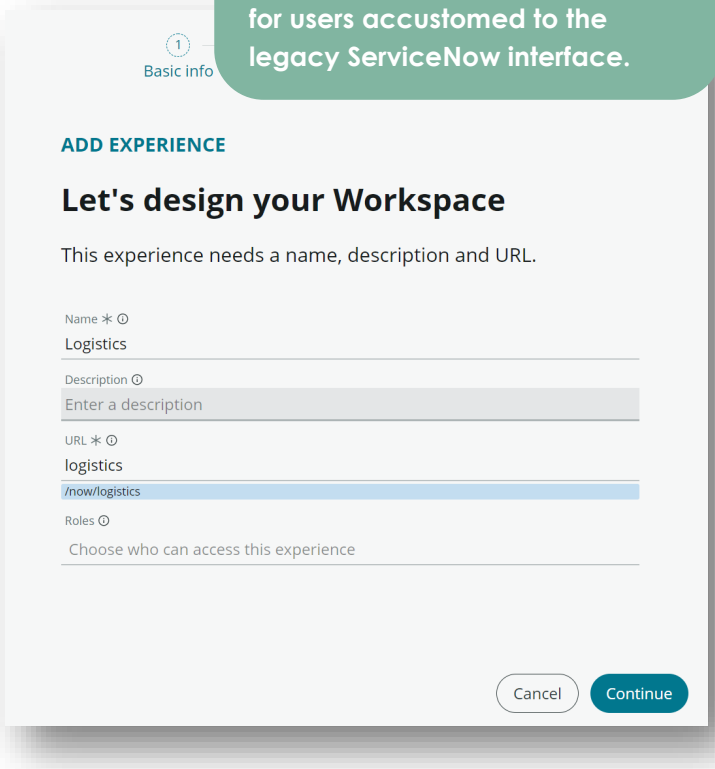
   This workspace helps the Logistics Team track and manage elements of their shipping and fulfillment services.

   The URL is auto populated with the default value *logistics*. Leave this default value.

   At this time, we will not limit who has access to this interface by identifying Roles. This is something that would likely be done as the app matures and a security model is identified.

   Once the information is entered, **click Continue**.

Important Note:
While we will not create a Portal interface in this lab, it is advisable to do so in a typical deployment for users accustomed to the legacy ServiceNow interface.



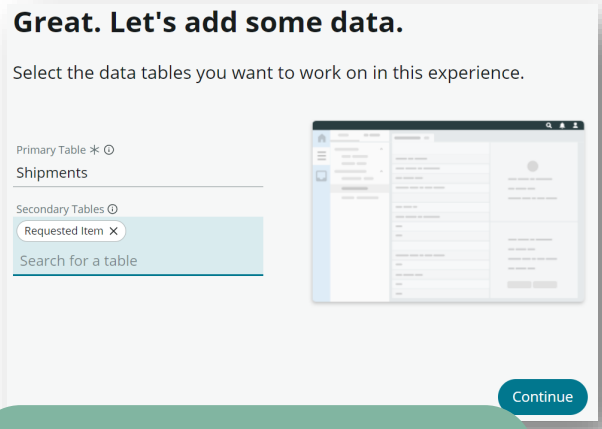
6. Next, we'll select the data elements we wish to have represented in our Workspace.

   The primary data will be in the Shipments table we created which is selected by default.

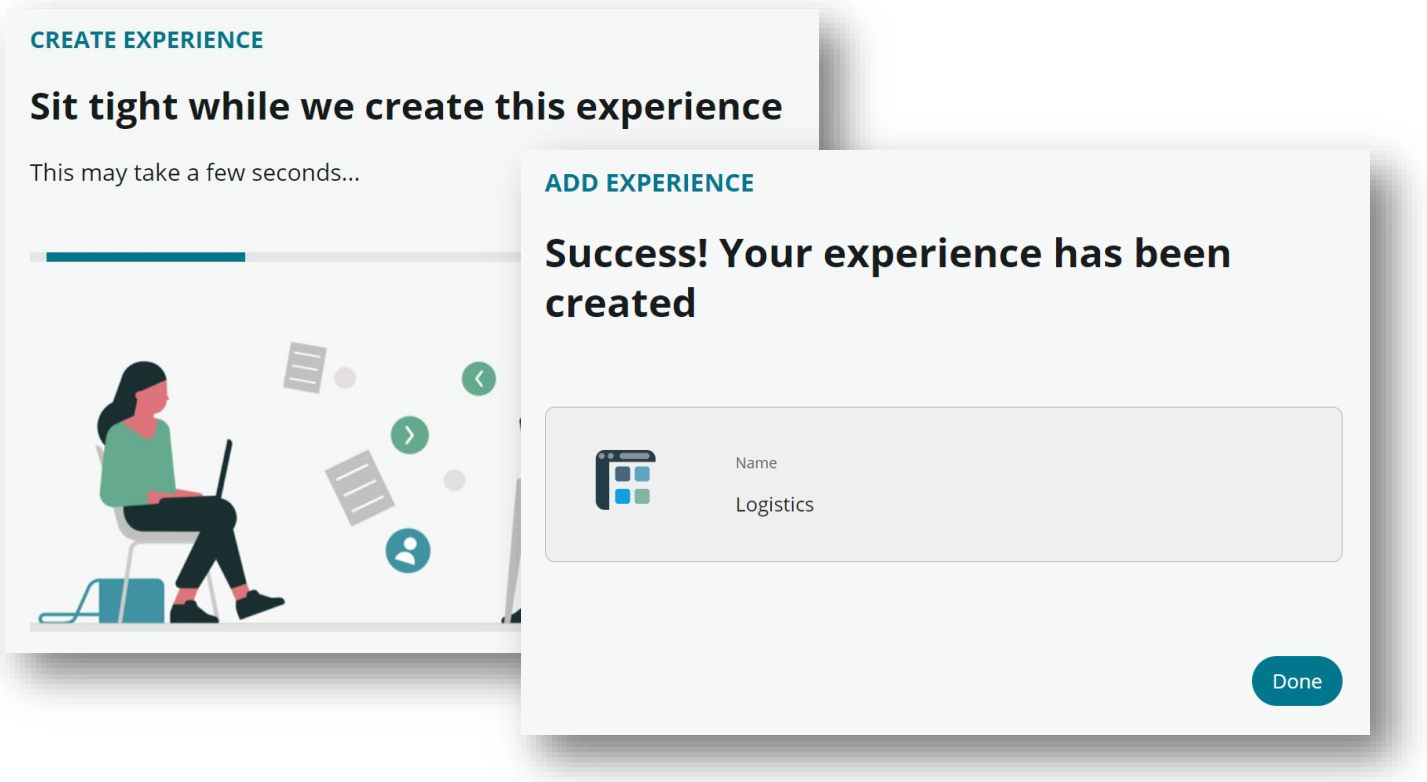
   We will also want the Logistics Team to be able to seamlessly access information on Requested Items, since shipments may be related to those requests.

   Add this data to your experience by entering **Requested Item** in the **Secondary Tables** field and **selecting** the table **sc_req_item**.

   Once these fields are set as pictured, **click Continue** to create your new experience.



Important Note:
The ability to seamlessly correlate data across multiple enterprise processes in a single experience is another important value of building applications on the Now Platform.

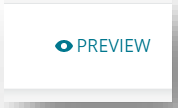


7. Your new Logistics Workspace experience is completed. **Click Done** to return to the App Home tab for your Logistics application.

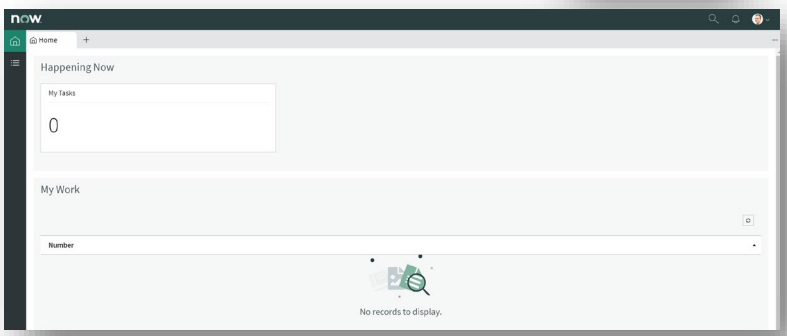
Section 2 – Configure a Workspace Experience

In this section, learn how to adjust the automatically created Workspace configuration. This helps you adapt the experience of an application to the way your users work boosting productivity and user satisfaction with your solution.

1. First, let's review what was automatically created for us by App Engine Studio. From the App Home tab of your Logistics application, **click** the **Preview** link by your newly created Logistics Experience.



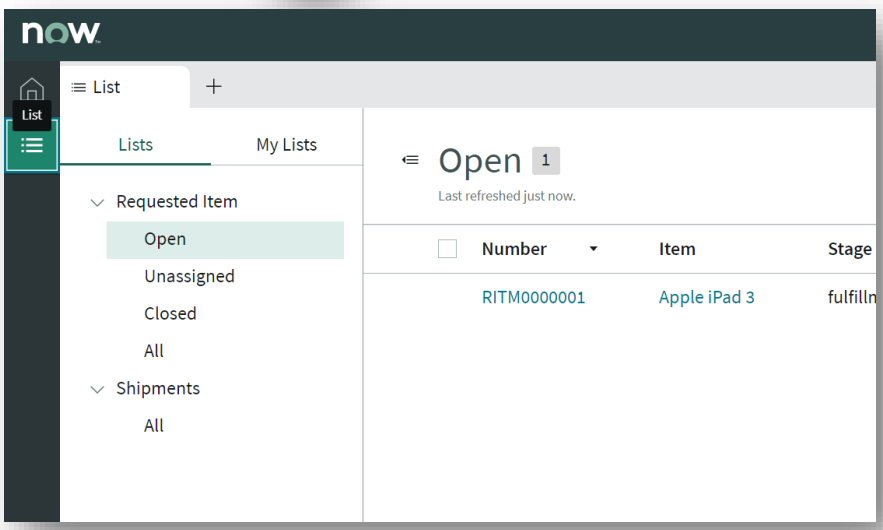
This will open a new browser window or tab loading your newly created experience. Here we see the actionable information featured by the default template including tasks and work assigned to the current user.



Now, let's look at the lists created for us.

2. **Click** the **Lists** tab on the left side of the Workspace.

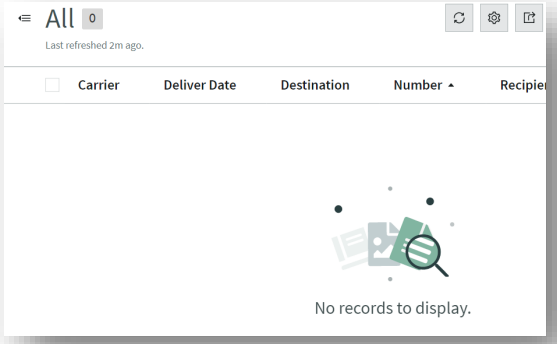
This will open the default lists created by the App Engine Studio template.



Here we see the listing of the items we selected during the workspace configuration – Shipments and Requested Items.

Notice, Requested Items is listed above Shipments. That could be confusing for our users, but not to worry, we can easily adjust that in this exercise.

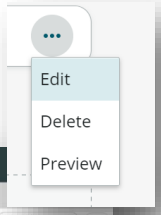
Next, **click** the **All** list under Shipments.



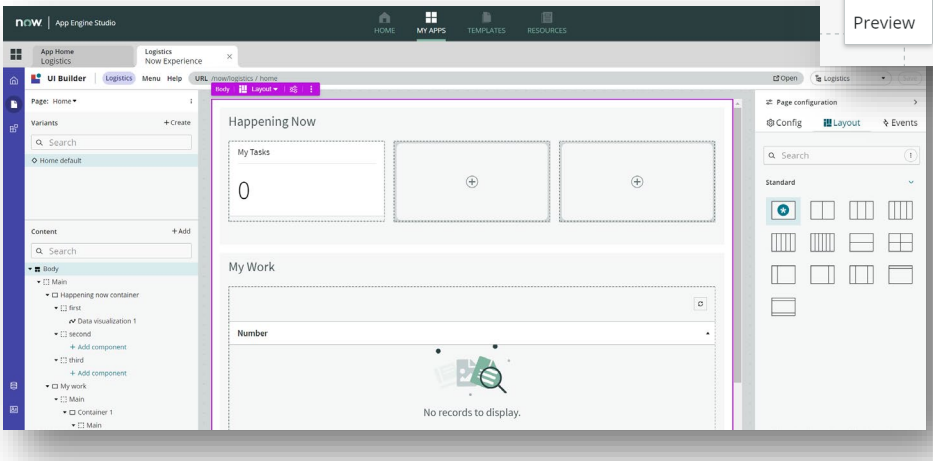
As you would expect, there is no data yet in our table, but what you might also notice is SysID is being displayed and the columns aren't in the optimal order. We will also want to adjust this when we configure the workspace.

Let's close the preview by **closing** this **browser tab** or window and **returning** to **App Engine Studio**.

3. From the Logistics App Home tab, **click** the **ellipsis** next to the preview link under the Experience section and **select** the **Edit** option.



This will launch the UI Builder in a new tab.



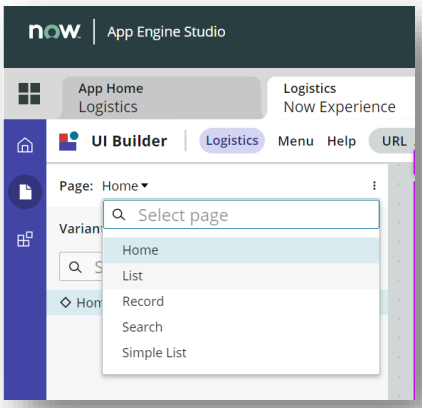
From the UI Builder, we can change any element of the interface to optimze the user experience.

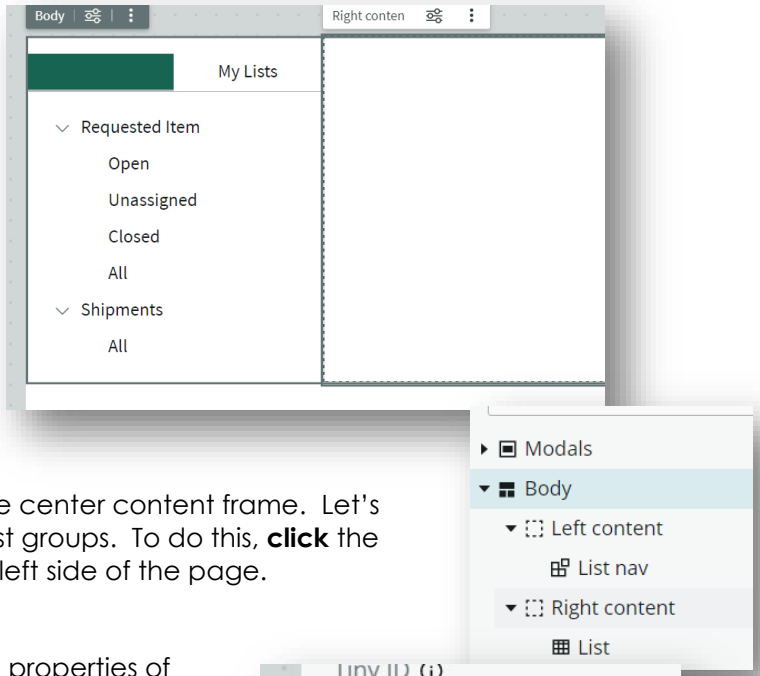
Here, we can see that there are a variety of changes we could make to the Workspace Homepage including adding reports, dashboards, widgets, lists, or other content and controls.

For now, we will focus on updating the elements of the list view previously identified.

Important Note:
While this lab does not cover working with all the elements of UI Builder, we recommend returning later to test various configuration options and settings to familiarize yourself with the powerful tools available.

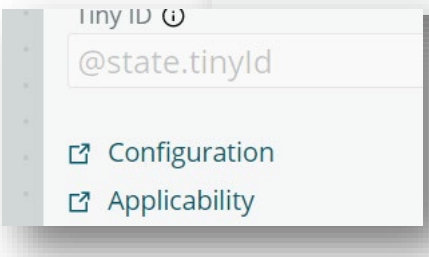
4. Change the selected Page from Home to List by **clicking** the **drop-down** list at the top left and **selecting List**.





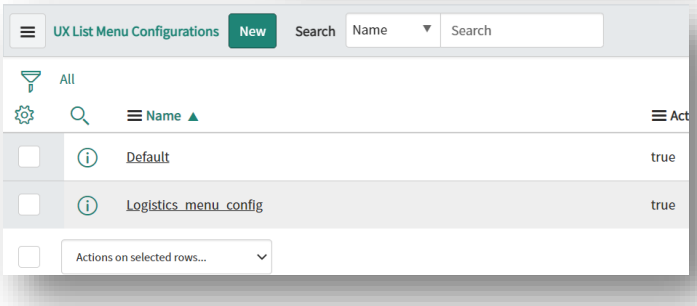
5. This loads the list page configuration in the center content frame. Let's start by fixing the order of the displayed list groups. To do this, **click** the element **List nav** from the selector on the left side of the page.

6. In the right frame, we now see the Config properties of the List nav. To adjust the order, we'll need to change the list configuration. **Click** the **Configuration** link under the Config panel tab on the bottom right of your screen.



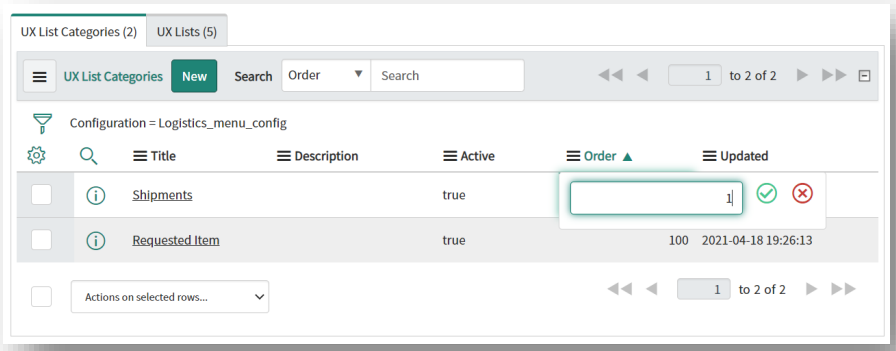
This will open a new browser tab with the menu items for the Logistics Application.

7. Open the menu configuration by **clicking** the record **Logistics_menu_config**.



This will open the configuration record for the Logistics navigation menu.

8. On the configuration record under the UX List Categories tab at the bottom of the record, **double click** the **Order** field and **change** the value from **100** to**1** for the Shipments record.

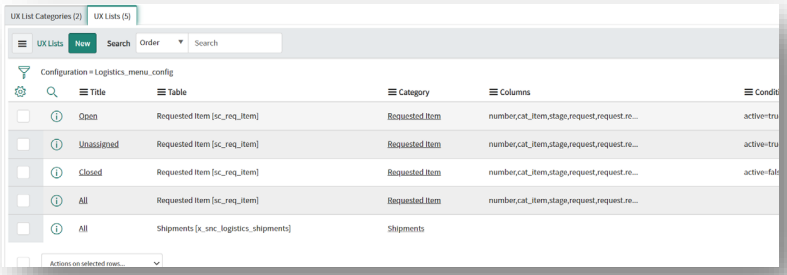


9. Then **click** the **green check mark** to save your changes.

   This will update the display order of the lists on your workplace experience.

10. Now, let's update the list configuration for Shipments to make it easier for our users to view shipment information. From the same configuration record, **click** the **UX Lists tab**.

    This displays a listing of all the configured lists linked to our workspace.

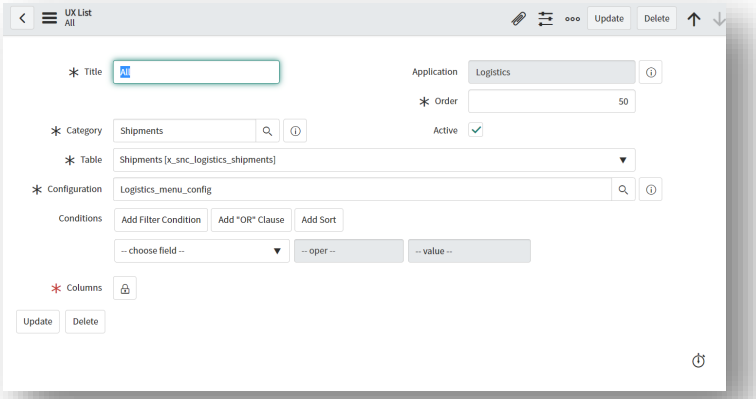


    From here, we can see the All list for the category shipments showing only one displayed column (number).

    Let's add some additional columns now.

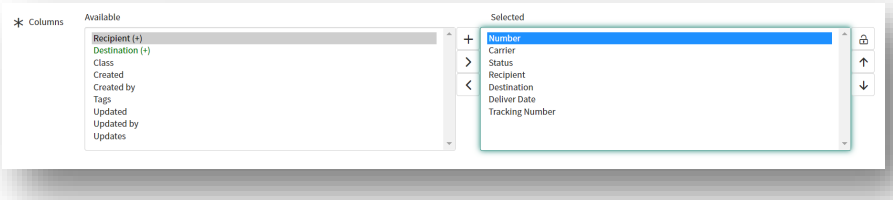
11. **Click** the record **All** linked to the Shipments category.

    This shows the list configuration. Let's add some columns to make the list more useful.



12. **Click** the **lock** icon next to the **Columns** data field.

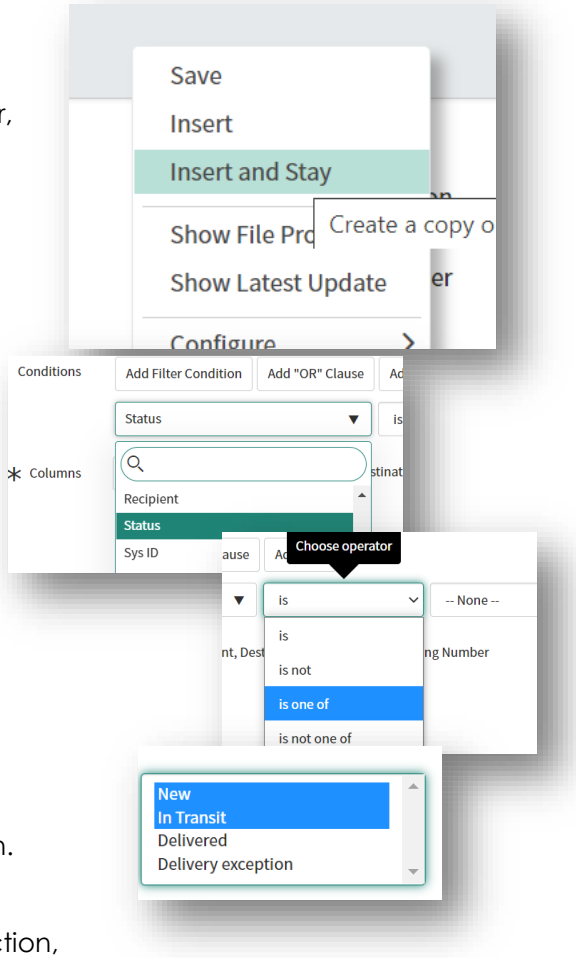
    This opens the column selector. Add the columns **Number**; **Carrier**; **Status**; **Recipient**; **Destination**; **Deliver Date**; and **Tracking Number** by **selecting** the value on the left column, then **clicking** the **right arrow** to move it to the selected column.



13. Now, let's save this and create a similar view of filtered data. **Right-click** on the grey header bar at the top of the window and **click Save**. (If you accidently click the Update button, simply reopen the record by clicking All again.

14. Next, we'll copy this record to a new record we can use to create a filtered view. Again, **right-click** on the grey header bar, but **select Insert and Stay** to create a new clone of the list configuration record.

    Now that we have our record copy, let make some changes to create a new list view.



15. **Update** the **Title** field value from All to **Not Delivered**

16. Next, let's filter the results so only undelivered items are shown. Under **Conditions select** the **choose field** drop down and **select Status**.

17. Set the **Operator** drop-down to **is one of**.

18. From the option selector, **click New**, and **In Transit**.

19. Finally, **click** the **Update** button to save our new list configuration.

    We have completed our configuration changes. In the next section, we'll review our changes.

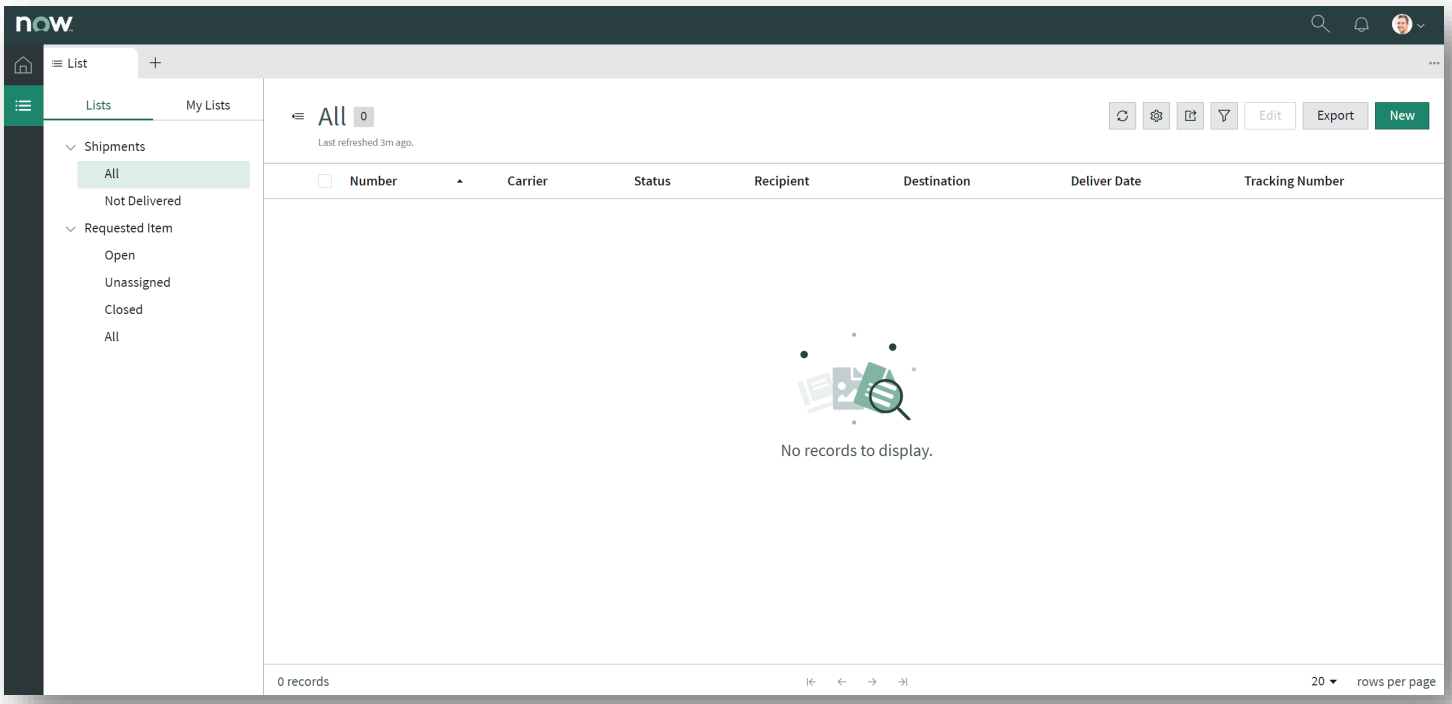
Section 3 – Testing our Logistics Workspace

In this section, we will review our configuration changes and test our newly created Logistics application.

1. **Close** the configuration record browser tab and return to our UI Builder window. Next, **close** the UI Builder tab to return to our **Logistics App Home** tab.

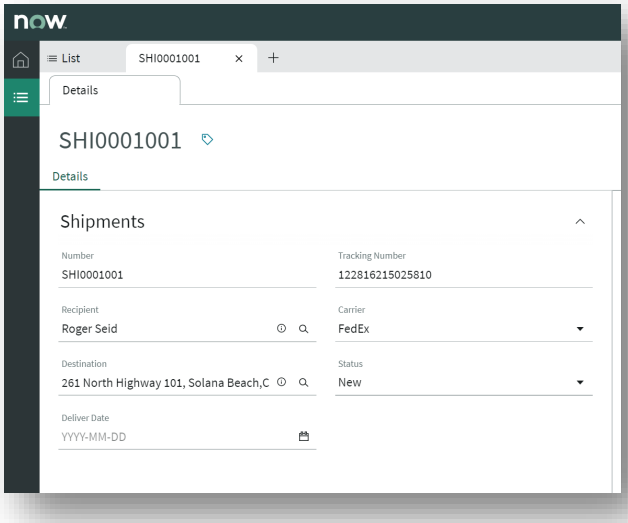
2. **Click** the **Preview** link next to your Logistics Workspace Experience.

   Now, when we click the lists tab on the left side of our workspace, we should see our newly made configuration changes.



We can see Shipments is now the first list, and the new filtered list for Not Delivered is displayed. Additionally, the columns we selected for our list view are displayed.

Let's create some data to test out our work!



3. **Click** the **New** button to create a new shipment record.

   The Create New Shipments form is displayed.

4. Enter the **Recipient** as **Roger Seid**

5. Enter the **Destination** as **261 North Highway 101, Solana Beach, CA**

6. Enter the **Tracking Number** as **122816215025810**

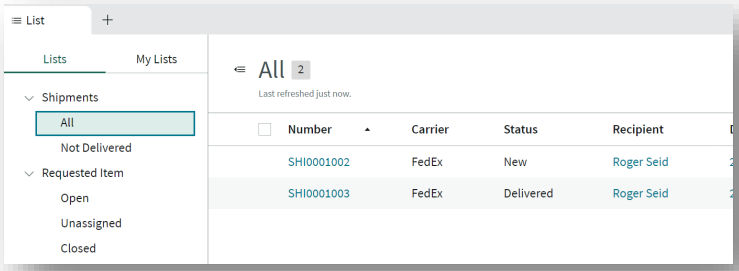
7. Set the **Carrier** to **FedEx**

8. Set the **Status** as **New**

9. **Click Save**

10. **Close** the record tab to return to your list view. You should now see your new record in the Shipments list.

    The same record will also be available on the Not Delivered list. Try creating a new record with a status of **Delivered** to confirm that it does not appear on this filtered Not Delivered list.



Congratulations, you have built a custom experience for your Logistics Team. They are now able to create and track digital records to manage the end-to-end Shipment Lifecycle.

Exercise Recap

In this exercise, we learned how to create a custom workspace using UI Builder. We identified how to group and organize information in ways that benefit our users, as well as correlate information with existing business processes in a single experience.

Our next exercise will focus on taking the building blocks created to this point and making them actionable to drive automation and process optimization.

Important Note:

This exercise obviously only scratches the surface of this use case. With the UI Builder, creators are empowered to build dashboards and process guidance to help the team identify, manage, and mitigate all manner of shipping exceptions. It would also be possible to extend the scope to capture additional logistics functions such as costing, routing, sourcing, fulfillment, and more.

Exercise 3 – Create an Automated Business Process using Flow Designer and IntegrationHub (45 mins)

Purpose

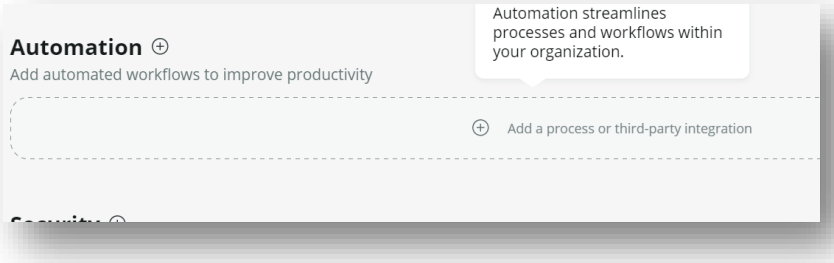
In this exercise, we will move beyond simply digitizing existing business processes and instead focus on ways we can drive optimization though automation and integration with external systems using IntegrationHub.

Section 1 – Building an Automated Integration Flow

While our users may be happy simply being able to track and manage their shipments on the Now Platform, as Creators we know this is only the beginning of the value we can provide. In this section, we will create an automated flow to connect to the tracking APIs of the various carriers used by our logistics team to update in near real-time the status of all our pending shipments. We will also automate actions that occur when shipment statuses are updated to ensure we remain responsive to our customer's demands.

1. **Navigate** to App Engine Studio and open the **App Home** tab for your **Logistics** application.

2. In the Automation section, **click** the **Add a process or third-party integration** link.



From the Add Automation Screen, we are provided with a variety of process automation templates we can use to speed creation of common activities.

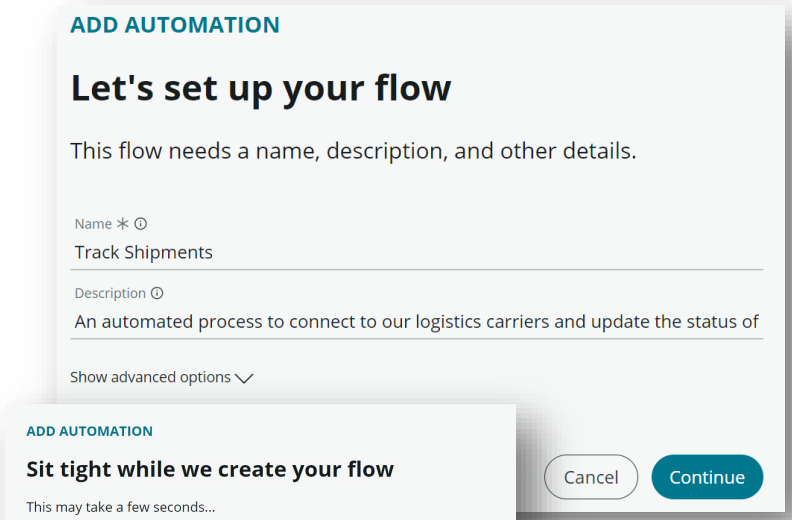
3. **Click Build from scratch** to open a new custom flow.

4. On the Flow Designer configuration screen, set the core attributes of our new automation flow.

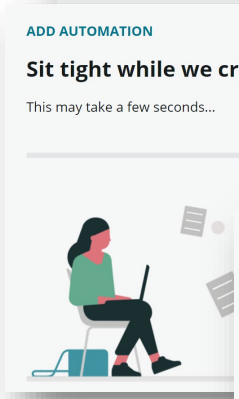
5. Set the name to **Track Shipments**

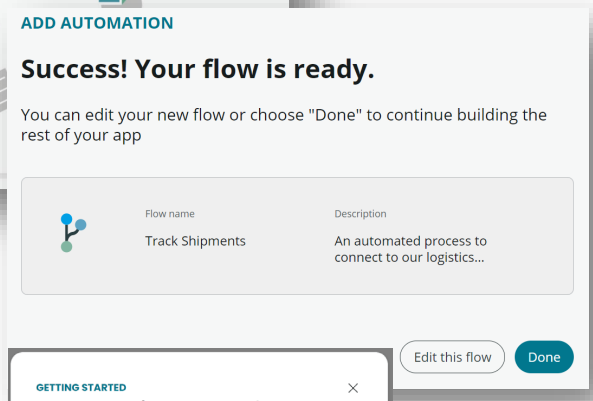
6. Set Description to **An automated process to connect to our logistics carriers and update the status of pending shipments.**

7. Once complete **Click Continue**



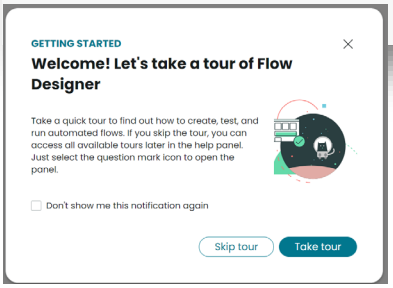
App Engine Studio will now create your Flow based on the options you selected. Once complete, you will see the Success confirmation screen.





We will want to specify the activities to included in this flow, so **click** the **Edit this flow** button to begin the configuration process.

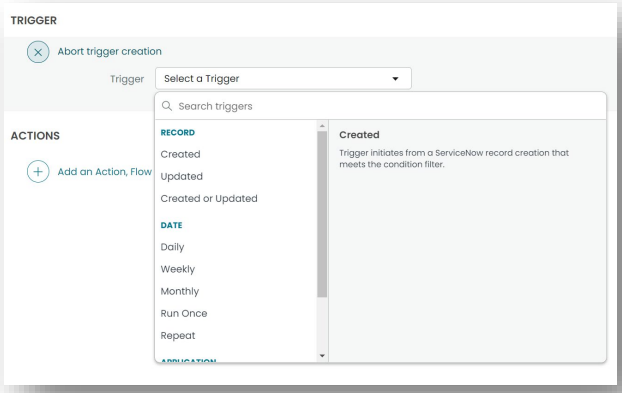
8. This opens Flow Designer to the Track Shipments process just created. Since this is the first time we've launched Flow Designer, we're given the opportunity to go through the Flow Designer product tour.



Let's skip the tour for now, by **clicking** the **Skip tour** button.

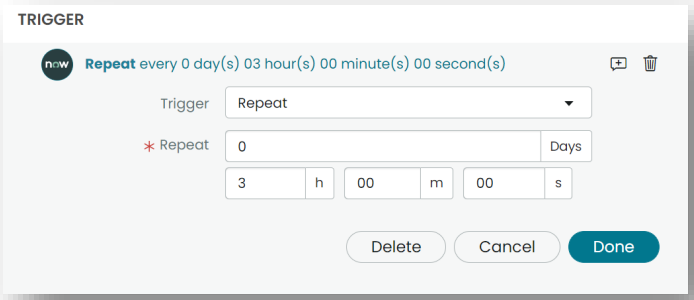
9. Now we have a blank Flow Designer canvas to start creating our process.

Our first task is to decide how this flow will be triggered. Common triggers include record creation or updates; REST Events; SLA Events; Catalog Events; or Inbound Email. In this case however, we want the status of our shipments to be updated regularly, even when no other internal or external event occurs. To enable this, we'll choose one of the Date options.



10. **Click** the **Add a Trigger** link and **Select Repeat** under the Date heading.

11. Next, we set the frequency with which we wish this flow to be triggered. We'll start with every 3 hours to provide near real-time updates on shipments.



Set the values as follows:

Days: **0**

Hours: **3**

Minutes: **0**

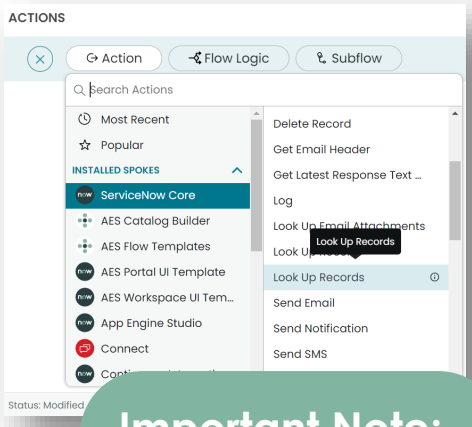
Seconds: **0**

Once these values are set, **click** the **Done** button.

12. The next step is to define the specific process that will occur every 3 hours. We do this through a combination of Actions, Flow Logic, and Subflows.

Add the first action to your Flow by **clicking** the **Add an Action** link, then **clicking** the **Action** button.

This will display a list of the Actions available for use on your instance of the Now Platform.

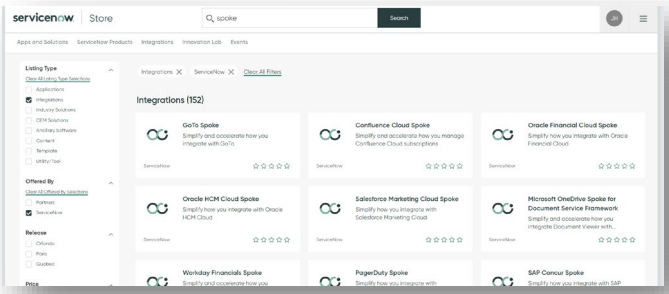


The action list provides an extensive list of options provided both by ServiceNow and by your own internal IT Team leveraging spokes from our IntegrationHub product. These actions are built to empower you, the Citizen Developer, to create powerful interactions with common platforms and your own internal systems of record.

Important Note:

Make sure you select *Look Up Records* and not Look Up Record for this step or you won't be able to complete the next step without changing.

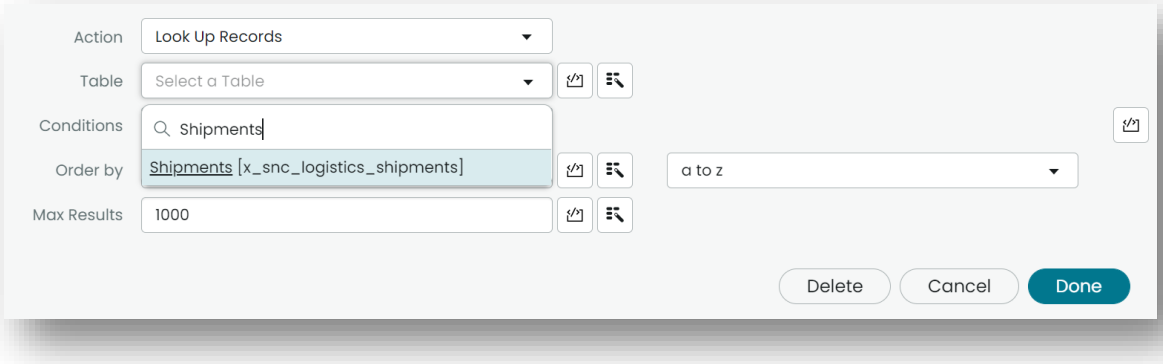
If you are looking for a connection that does not appear on the list, it is possible that it just has not yet been enabled on your instance by your Platform Owner. For a list of the prebuilt spokes and their actions offered by ServiceNow, check out the ServiceNow store.



In this Flow, we'll need to start by accessing our shipment data. We do this with the ServiceNow Core Spoke.

13. **Click ServiceNow Core** from the spoke list.

14. **Click** the action **Look Up Records** from the action list.



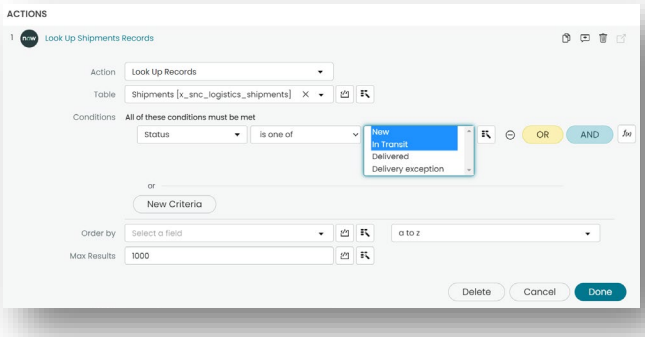
15. **Click** the **table** field

16. **Type Shipments** in the field. The list of tables will filter as you type.

17. **Select** our table name **Shipments [x_snc_logistics_shipments]** from the list

18. Next, we want to decide which records we want to update. Since shipments that have already been delivered are not likely to have updates, it makes sense to filter them from the actions of this Flow.

    Select the **choose field** drop-down under Conditions and **select** the value **Status**.

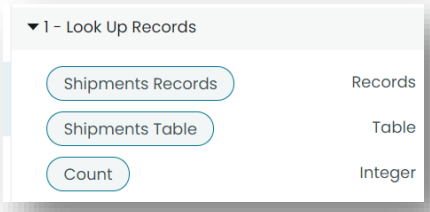


19. Update the **Operator** field from is to **is one of**.

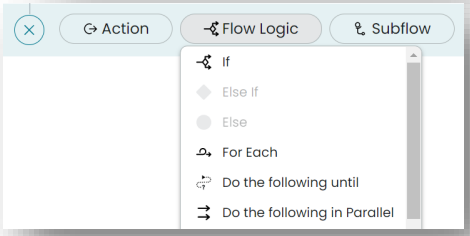
20. Then, **select** the status values of **New** and **In Transit**.

21. **Click Done**.

22. Now that we have a collection of records, we can tell the system what we want to do with them. The records are available in a data pill on the right side of the screen called Shipments Records.



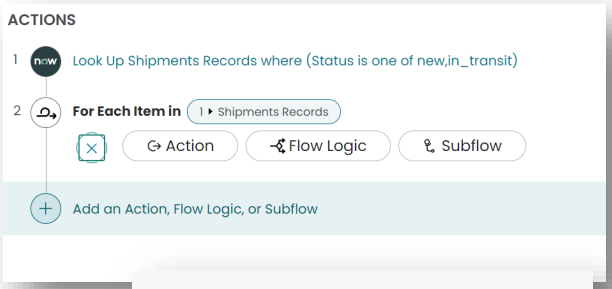
Now we can walk through the records and check the current status of each. Start by adding a new step, but this time instead of Action, **click Flow Logic**.



23. Then, **select** the **For Each** flow logic operator.

24. **Drag** the data pill **Shipments Records** under 1 – Look Up Records into the Items selector to tell the system we want to process each of the identified shipment records.

25. **Click Done**.



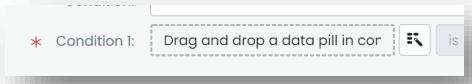
26. Now we have a second activity stream under the For Each Item in action. It is represented by a step directly under the For Each Flow Logic. This is an activity loop that will be performed for each item in the shipment record set.

Let's add an action to that loop by **clicking** the **Flow Logic button** under the For Each loop.

This time we'll **select** the **If** operator.

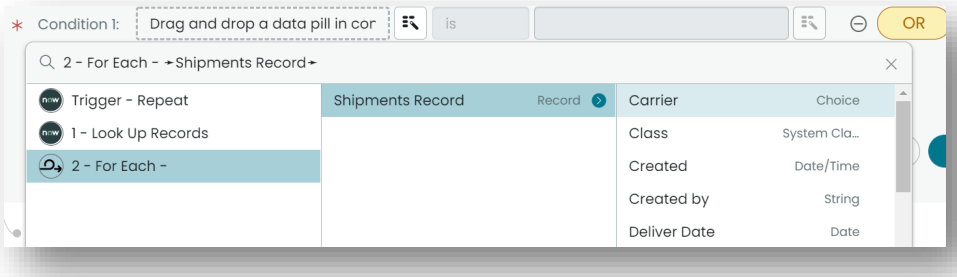
27. Now we can evaluate information about each shipment record and do something different based on the value. In this case, we want to look up the status with the appropriate carrier depending on which carrier was used for the shipment.

We'll step through these one by one starting with FedEx. First, check to see if the current record is for a FedEx shipment by creating a condition that evaluates the carrier field. **Click** the **Data Pill Picker** button for Condition 1.



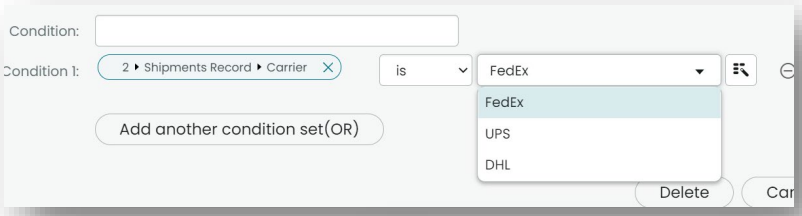
28. In the popup that appears, **select** the **2-For Each Collection**.

29. Then **click** the **>** next to Shipments Record to expand that record

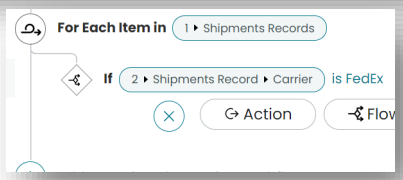


30. Finally, **click Carrier** to select that field for the condition.

31. Leave the default operator ***is*** selected and under the data selector **click FedEx** to filter records that meet this criterion.



32. **Click Done**



33. Now, we can create an action that will only occur on records that are shipped through the FedEx Carrier. Under the If Flow Logic control, **click Action**.

34. For this action, we'll be using a custom IntegrationHub spoke. Search the action list for the spoke named FedEx. **Click FedEx** then **select** the **Track Shipment** action under this spoke.

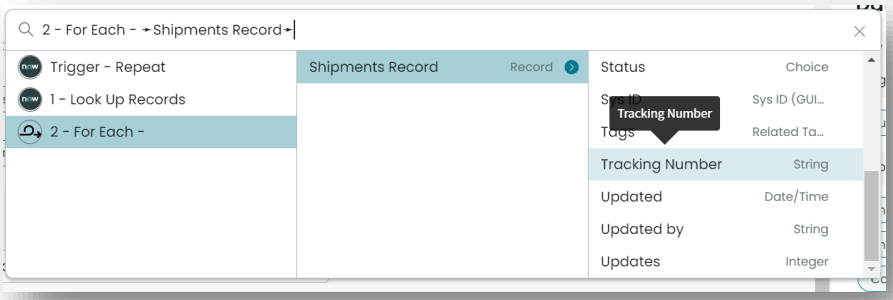
35. The Track Shipment is a custom spoke that leverages our company's FedEx account information to connect to the public FedEx API and return information about a shipment. Because our IT team has already set this spoke up to use our FedEx connection information, the only thing we need to provide is the tracking number we wish to lookup. Fortunately, we have this information stored on the Shipment record and easily provide it.

    Click the **Data Pill Picker** next to the Tracking Number field.

36. In the popup that appears, **select** the **2-For Each Collection**.

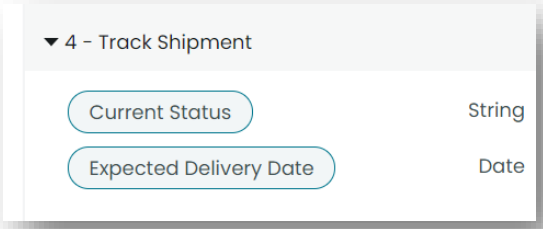
37. Then **click** the **>** next to Shipments Record to expand that record

38. Next **click** the **Tracking Number** field to provide that value to our FedEx spoke.



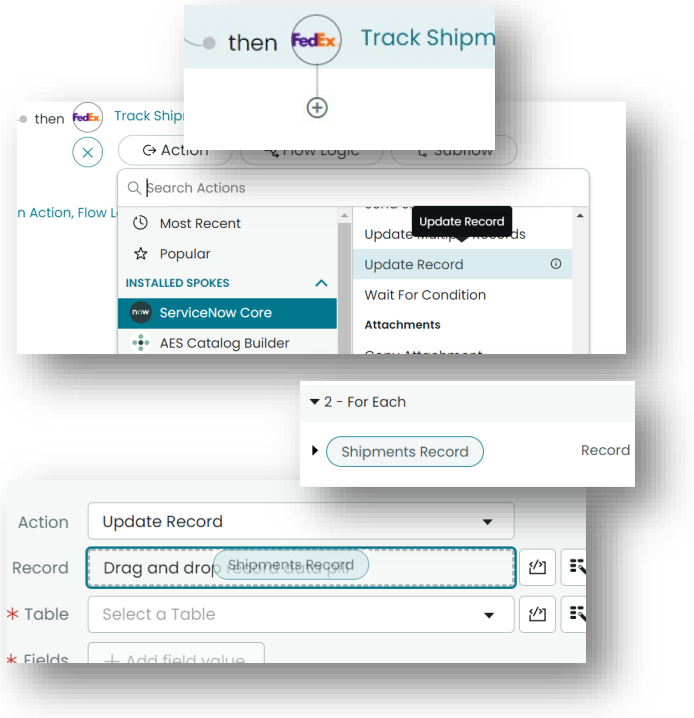
39. **Click Done**.

    Now, as the records are processed, each time a record has the carrier FedEx, the spoke will be activated to call the FedEx API passing the Tracking Number for that record. The response back from FedEx will be available in the data collection *4 – Track Shipment*. We can see what information will be returned by scrolling down on the right and opening the 4 – Track Shipment collection. Here we see Current Status and Expected Delivery Date for this shipment are returned.



40. Since we now have an updated status and delivery date for this shipment, let's update the record on the Now Platform.

    Add an action under the If Flow Control Logic by **clicking** the **+** icon under the FedEx spoke connection.



41. **Select Action**

42. **Select ServiceNow Core**

43. **Select Update Record**

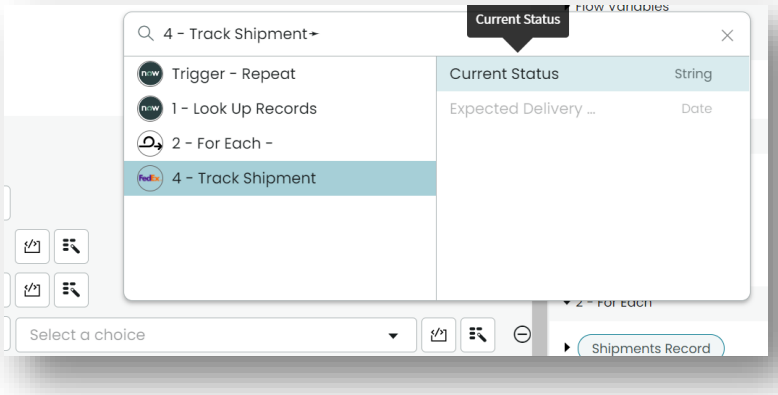
44. Next, we need to tell Flow Designer which record we wish to update. To do this, either use the Data Pill Picker again, or simply **drag** the **Shipments Record** data pill under 2 – For Each on the right side into the **Record** field.

    Once the record is selected, the table will automatically be set to the Shipments table.

45. Now let's tell Flow Designer which fields to update. **Click** the **Add field value** button.

46. A Fields drop-down will appear. **Select** the field **Status** from the drop-down.

47. Next, we'll update with the data we received from FedEx. **Click** the **Data Pill Picker** button.



48. **Click 4 – Track Shipment**

49. **Click Current Status**

    Now, let's do the same for the updated delivery date information.

50. **Click** the **Add field value** button under the Status field.

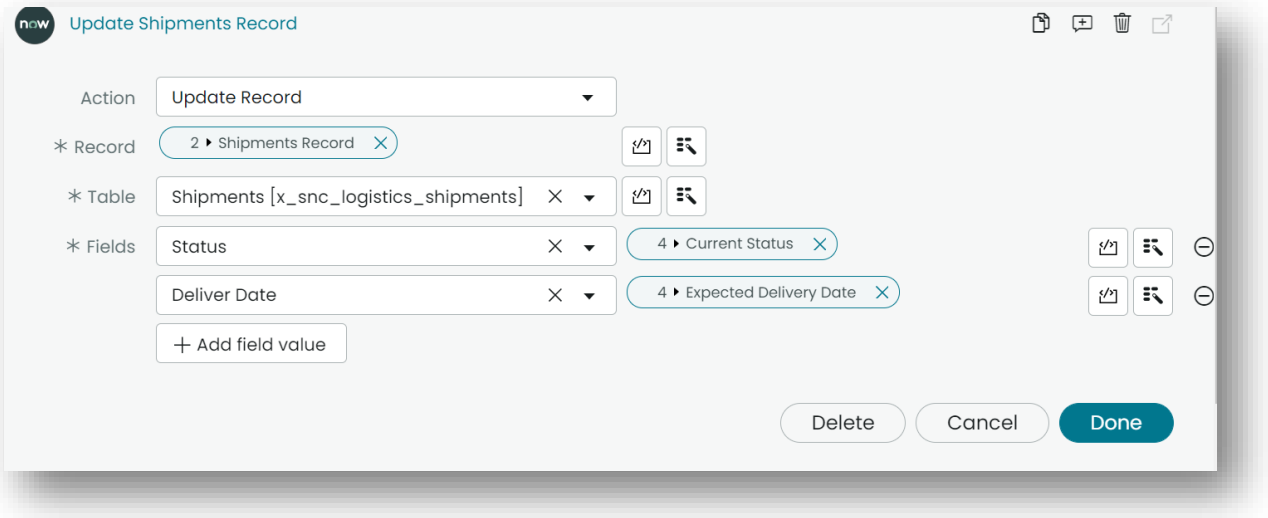
51. **Choose Deliver Date** from the drop-down.

52. Click the **Data Pill Picker** button next to Deliver Date

53. **Click 4 – Track Shipment**

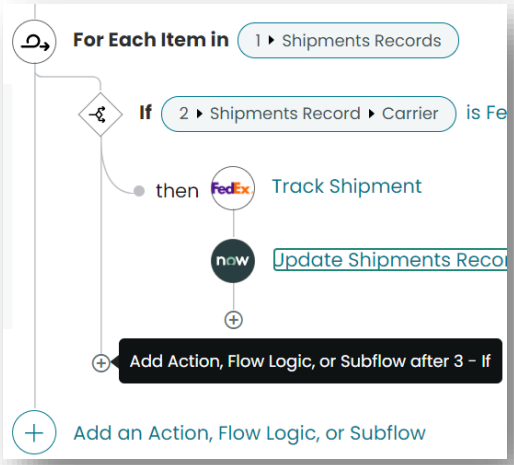
54. **Click Expected Delivery Date**

Once complete, your action should look similar to the image below.



55. **Click Done**

Congratulations, you now have a Flow that automatically connects to FedEx and updates shipment status information for undelivered shipments every three hours. Now let's keep going to add status checks for UPS and DHL as well.



56. Moving straight down from the If Flow Logic in the previous step, let's add a check for UPS. Make sure you are extending the right process thread. If you continue the process under the FedEx thread, your UPS check will not run. Remember, in that thread we've only selected Shipment Records where the carrier is FedEx, so a subsequent check to see if the carrier is UPS would always be negative.

    Click the **+** link directly below the previous If as shown in the image.

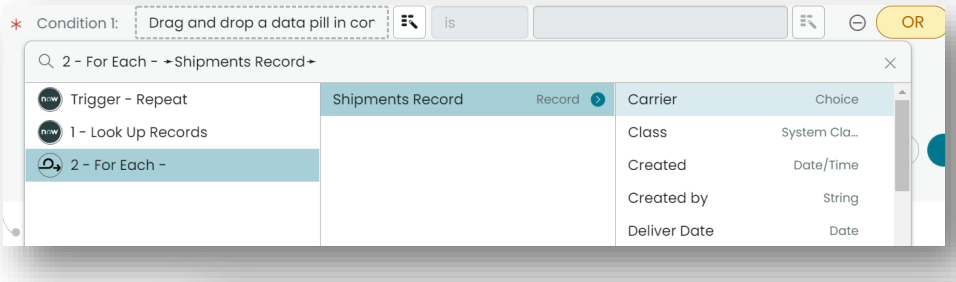
57. **Click** the **Flow Logic** button and **select Else If**

58. **Click** the **Data Pill Picker** button for Condition 1.

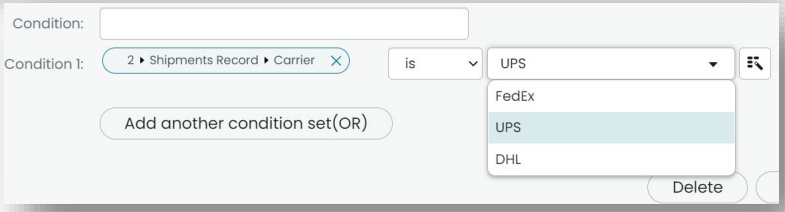
59. In the popup that appears, **select** the **2-For Each Collection**.

60. Then **click** the **>** next to Shipments Record to expand that record

61. Finally, **click Carrier** to select that field for the condition.



62. Leave the default operator ***is*** selected and under the data selector **click UPS** to filter records that meet this criterion.



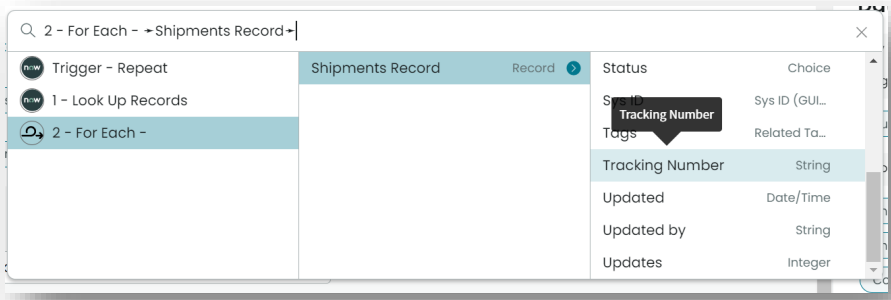
63. **Click Done**

64. Under the Else If Flow Logic, **click** the **Action** button.

65. **Select** the **UPS Spoke** and **select** the **Track Shipment** action.

66. **Click** the **Data Pill Picker** next to the Tracking Number field.

67. In the popup that appears, **select** the **2-For Each Collection**.



68. Then **click** the **>** next to Shipments Record to expand that record

69. Next **click** the **Tracking Number** field to provide that value to our UPS spoke.

70. **Click Done**.

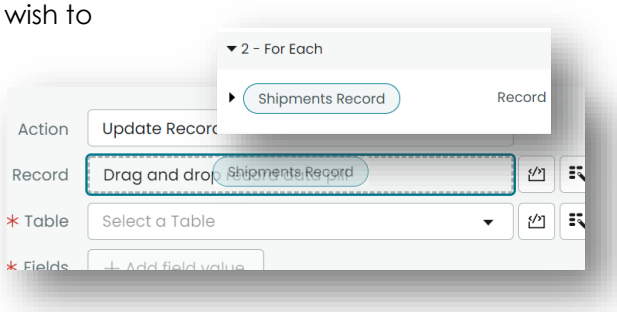
71. Adding to the thread under the UPS Spoke, **click +** then **Select Action**

72. **Select ServiceNow Core**

73. **Select Update Record**

74. Next, we need to tell Flow Designer which record we wish to update. To do this, either use the Data Pill Picker again, or simply **drag** the **Shipments Record** data pill under 2 – For Each on the right side into the **Record** field.

    Once the record is selected, the table will automatically be set to the Shipments table.

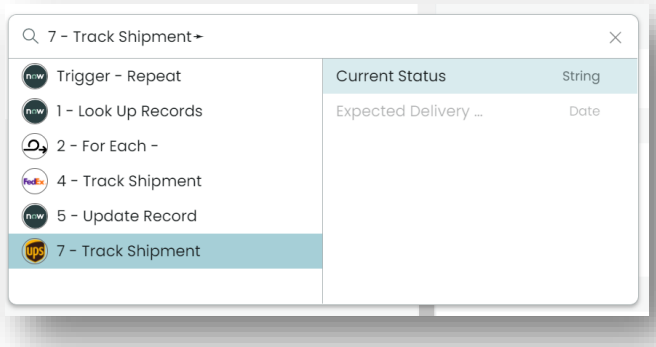


75. **Click** the **Add field value** button.

76. A Fields drop-down will appear. **Select** the field **Status** from the drop-down.

77. Next, we'll update with the data we received from FedEx.

    Click the **Data Pill Picker** button.



78. **Click 7 – Track Shipment**

79. **Click Current Status**

    Now, let's do the same for the updated delivery date information.

80. **Click** the **Add field value** button under the Status field.

81. **Choose Deliver Date** from the drop-down.

82. **Click** the **Data Pill Picker** button next to Deliver Date

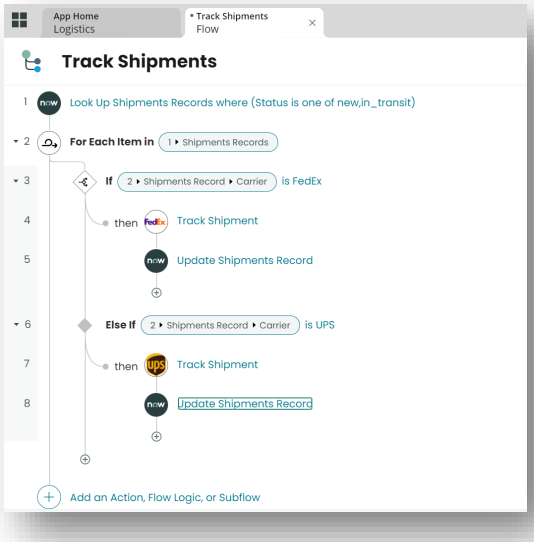
83. **Click 7 – Track Shipment**

84. **Click Expected Delivery Date**

85. **Click Done**

    Assuming all has gone well, your Flow should look like the one pictured here.

    Now, let's see if you can do the next one on your own.

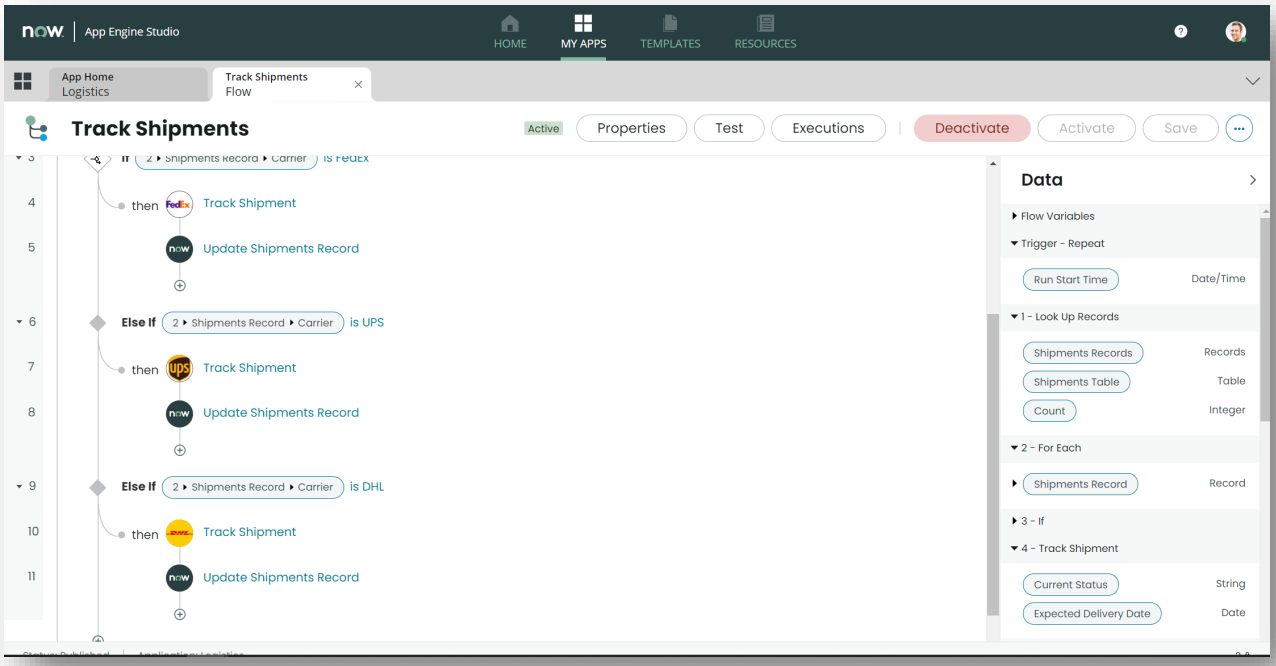


86. Starting with step 56, try and recreate the same sequence for the carrier DHL **on your own**.

87. **Click Save**

88. **Click Activate** then confirm by **clicking Activate** on the confirmation popup screen.

    If all goes well, your flow should look like the image below when complete.



Congratulations! You've built an automated flow that updates all pending shipments every three hours. Next, let's test our work and see it in action.

Important Note:

For purposes of the lab, the Carrier spokes featured leverage simulated transactions. This allows us to build the process flow without requiring a live connection account with each carrier. In a live environment, these could easily be replaced by your Now Platform team with spokes leveraging live API credentials.

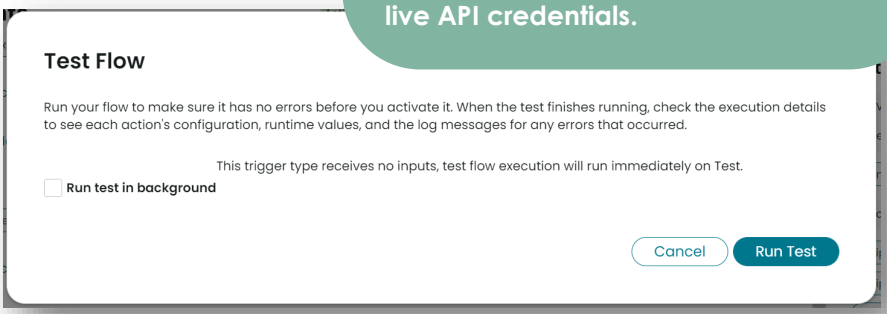
Section 2 – Testing a Flow Designer flow

In this section, we will test the flow we just created and make sure it functions as expected.

1. Start by **clicking** the **Test** button at the top of the screen.

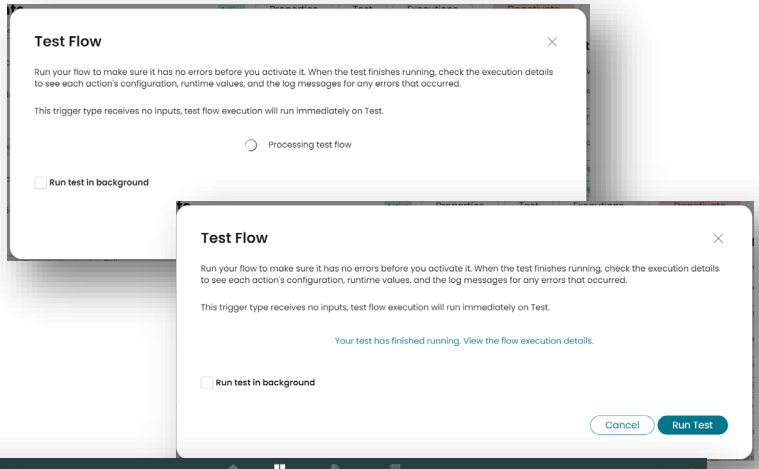
2. The Test Flow dialog popup will appear. **Click Run Test**.

   Since the flow has no input parameters, it will run



immediately. If we had specified a flow trigger based on a record criterion, we would have been prompted to provide a context for the flow test.

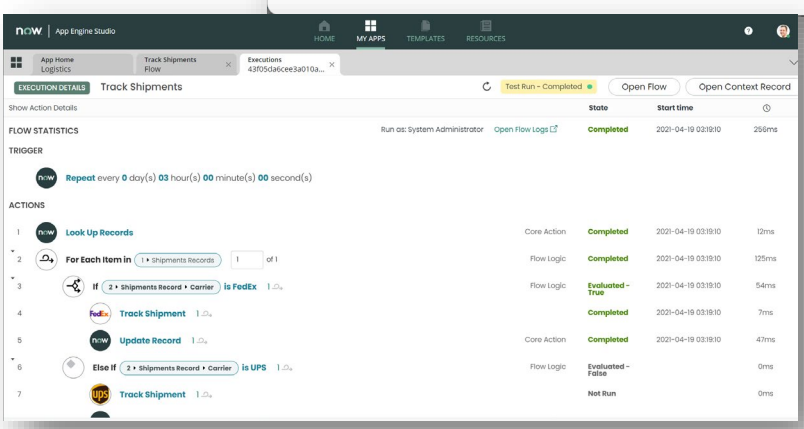
When the test completes, you will see a message on the test window.



3. **Click** the **message** link to drill into the detailed results of the test execution.

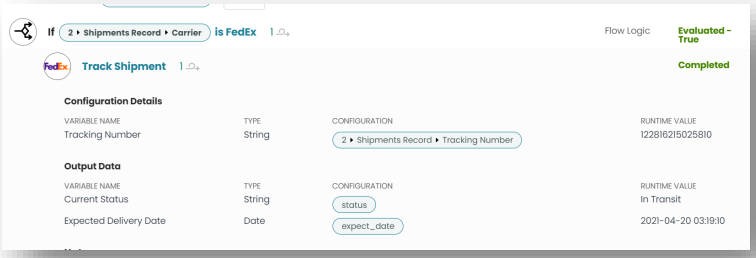
From the Executions tab, we can see each step in the process that was executed. At the top, we can see the overall result of the Test Run with a Completed Green to indicate the flow completed successfully.

The *For Each* step shows a record indicator to show each individual record that was processed in the test. Since we only had one record that met the criteria we provided, there is only one record in the collection. Had there been more, we'd be able to page through each record to review the results.



4. We can see the FedEx condition evaluated true for the test record in our system, which triggered the execution of that branch of the workflow. The UPS and DHL conditions evaluated false, so those sections of the workflow were skipped.

Expand the results of the FedEx Track Shipment action by **clicking** on the step. Here we can see the result that was returned from the FedEx API call (your results may differ) including the status and expected delivery time. We can also see these values were used to update the shipment record in the next Update Record step. You may want to go back and create additional test records to see the workflow operate on a larger data sample size.



Congratulations! Your process is now fully automated! Now users can see near real-time status updates of their shipments which provides a substantially enhanced experience for users allowing them to make better business decisions.

Exercise Recap

In this exercise, we built, implemented, and tested an automation process that leverage data both on and outside our organization. We empowered users to make better decisions while reducing overhead and maximizing process efficiency.

Of course, the examples in this exercise are just the beginning when it comes to the power of leveraging Flow Designer automation and IntegrationHub to delight users. Consider just a few of the possible extensions of this use case. Using these capabilities, you could easily:

- Proactively notify users automatically of shipping delays.
- Develop sub-processes for Delivery or Receiving activities tasking employees in a fully managed and traceable integrated solution.
- Track shipping costs and perform departmental show-back or chargeback calculations.
- Provide inline help articles and process guides for new team members to walk through the logistics processes.
- Provide real-time shipment statuses via virtual agent chat.

The possibilities are limited only by your imagination as a Creator. If you can dream it, you can workflow it on the Now Platform.

Exercise 4 – Create a Mobile Experience (5 mins) (optional)

Purpose

Users are on the go more than ever today. With increasing numbers of workers working from home and remotely, mobile experiences have become a critical component of the user experience.

If you've finished the previous lab exercises and would like to dip your toe into the world of mobile experiences, feel free to dive into this exercise.

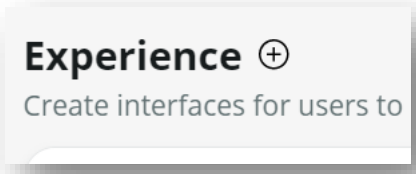
Important Note:
Because this lab does not have an active deployment pipeline, you will not be able to publish or test the Mobile interface created in this exercise.

Section 1 – Create your mobile experience

In this section, we will create a basic Mobile Experience for our new Logistics application.

1. **Navigate** to the **Home Page** and **click** the **Open App Engine Studio** button.
   Once there, open your **Logistics** application by **clicking** it on from the list of applications.

2. **Click** the **+** link next to the Experience section of the App Home tab



3. **Select Mobile**

4. **Click Begin**

5. This will launch the Mobile Studio which allows you to create dynamic mobile experiences for your users.

   Leave the default name *Logistics*

   Enter the description: **Mobile experience for Logistics**

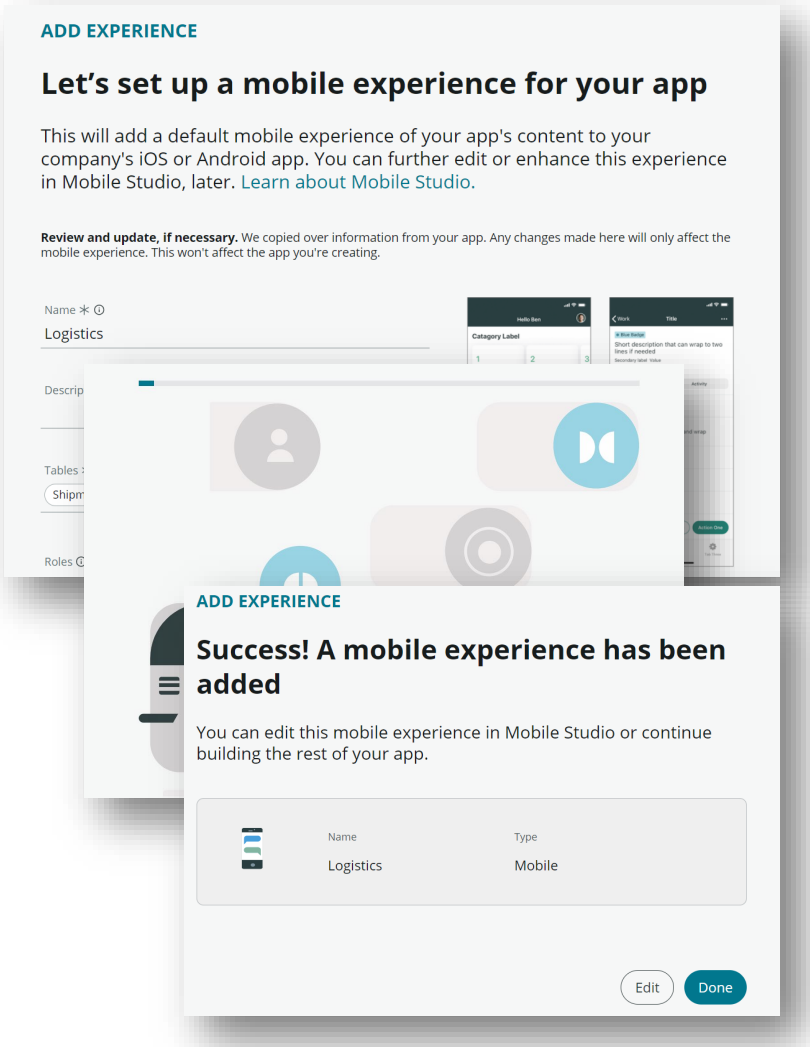
6. **Click** the **Continue** button

   Mobile Studio will now configure your default experience.

   Once complete, it will display the success screen. **Click Edit** to modify the default template.

7. This will launch the Mobile Studio for the created Logistics experience.

   From here, you can navigate through the various options and see the visualizations and functions that can be modified.



Exercise Recap

In this exercise, we've seen how simple it can be to create and publish mobile experiences for your application. To be truly useful, mobile experiences can't simply be a porting of an existing portal interface to a mobile device. Mobile users have different needs, and the interfaces they use need to be built to power these varied experiences. By incorporating native mobile services such as Location, Microphone and Camera, or Tactile responsiveness and more, we can create a mobile app that delights our users and keeps them engaged throughout any process.

Lab Review

In this Lab, you've taken the first step into becoming a Citizen Developer. You've learned how, with the Now Platform, users like you can create intuitive purpose-built applications that deliver real-world value quickly. This can be achieved without need for specialized development or scripting knowledge. ServiceNow has reduced the barriers to entry into the application creation value chain.

If you would like more information on any of the topics covered in this lab or would like to conduct a version of this lab within your own company to help people learn just how easy solutioning complex enterprise workflow problems can be, reach out to your ServiceNow account team.

ServiceNow can help you work together… "Let's Workflow it."