

IT Procurement App

Creators Low Code App Build Lab Guide

Author: Carmen Man carmen.man@servicenow.com
Last Updated: April 12th, 2023

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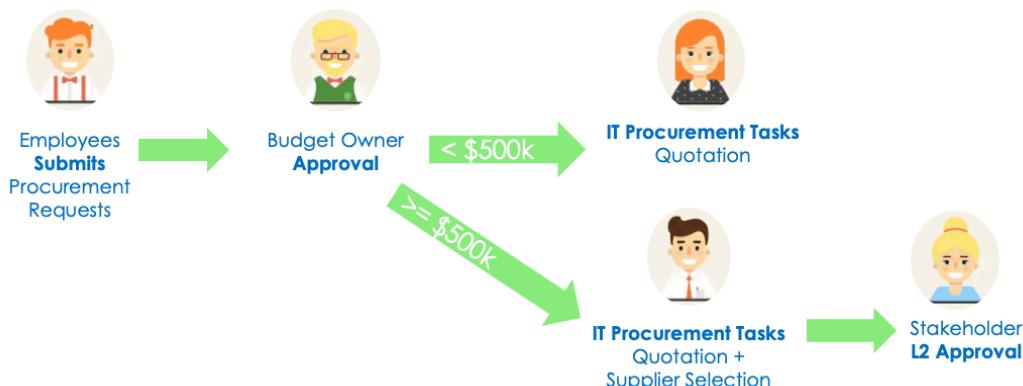
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Lab Overview

In our lab scenario, we will role play the IT Procurement team receiving IT procurement requests from the organization's users. Prior to creating Purchase Requisition (PR) or Purchase Orders (PO) on ERP systems, the IT procurement team will need ensure the following steps are completed:

1. Check that the supplier is onboarded from an internal homegrown system. For this exercise, we will assume all requested suppliers are already onboarded, and we will be integrating with the MySQL database of the homegrown Procurement system to retrieve registered suppliers' information.
2. Dependent on the requested budget, ensure the list of procurement tasks and approvals are completed prior to proceeding with the Purchase Requisition (PR) or Purchase Orders (PO) process on ERP systems.

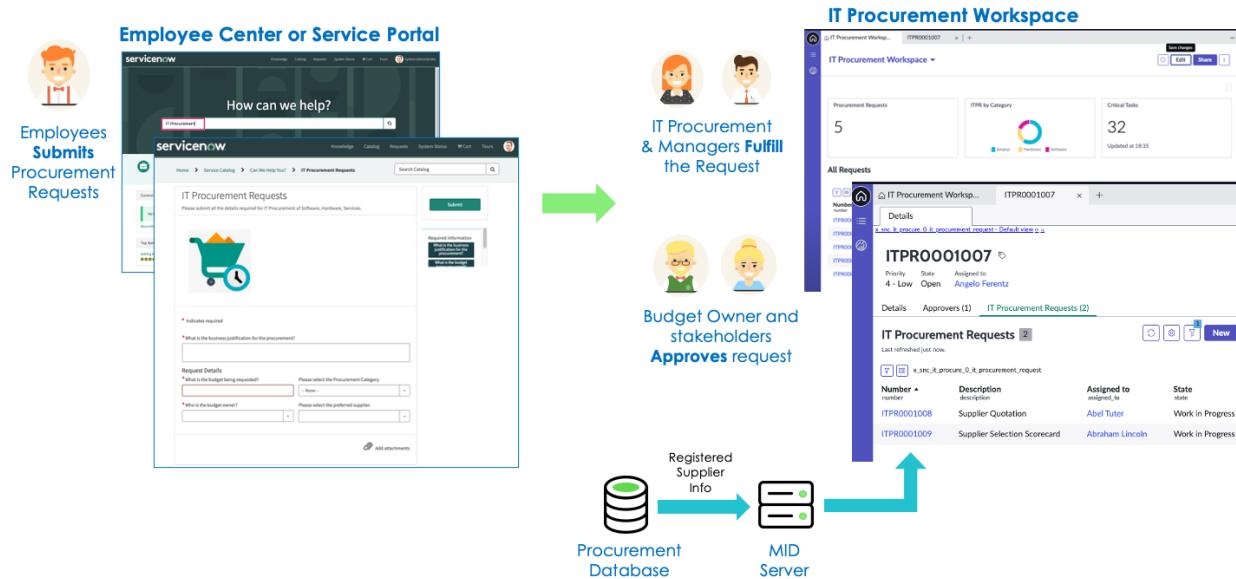
Requested Budget	# of Suppliers Required	Procurement Tasks	Levels of Approval
< 500k	1 (Primary)	Quotation	1 (Budget Owner)
=> 500k	2 (Primary & Secondary)	Quotation Suppliers Selection Scorecard	1 (Budget Owner) 2 (Stakeholder)



When all the pre-requisites procurement tasks and approvals are completed and obtained. The typical process would be for procurement to create the PR and PO on the ERP. ServiceNow has OOTB integration spokes that integrate with ERP systems whereby ServiceNow becomes the single layer of engagement streamlining all procurement backoffice ERP activities.

In this lab, we will focus in the automation of IT Procurement Request fulfillment by building a Low Code IT Procurement App. ERP integrations will not be included in this workshop.

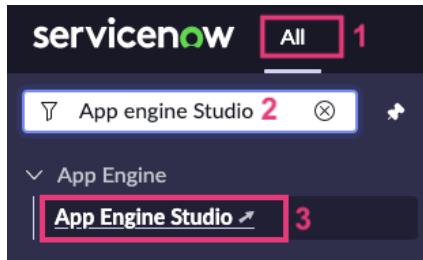
The diagram below summaries the architecture of our IT Procurement App on a high level. A MID Server will be validated to be used for connecting the ServiceNow instance with the Procurement MySQL database hosted on AWS cloud.



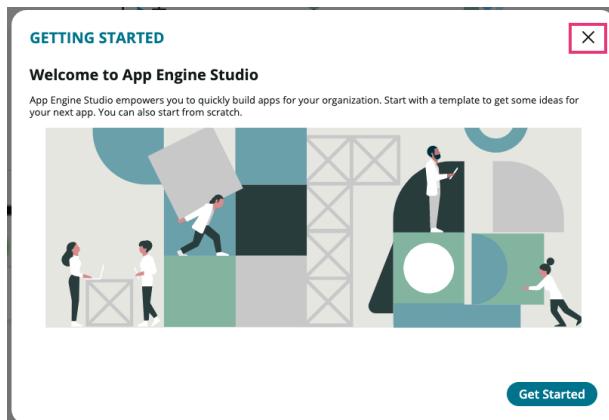
Exercise 1: Build Data Tables / Models

Create the IT Procurement Application

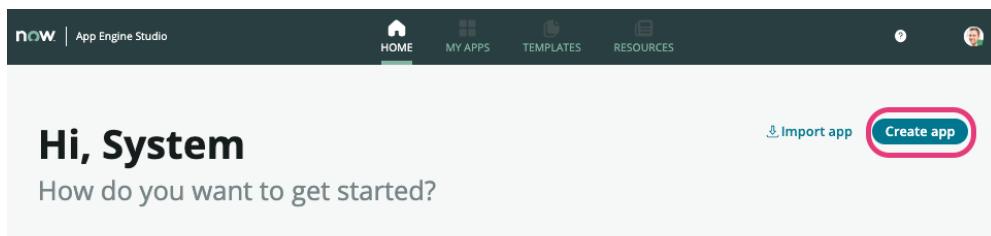
1. Let's begin our ServiceNow Creators Low Code journey by logging into the ServiceNow Lab Instance. Once logged in, search for **App Engine Studio** from the **All** navigator. Click **App Engine Studio** (AES) to launch AES in a new tab. Access AES from the new tab.



2. Click X to close the GETTING STARTED dialog.



3. Click **Create app**



4. On the Create App page, **Name** the app as **IT Procurement App**, **Description** as **Handling IT PR Pre-requisites and Approval Management**. Optionally, upload an image to be used for the application logo. Click **Continue**.

CREATE APP

Let's get started on your new app.

Add a name and description that define the purpose of your app.
You can also add a thumbnail image.

1 Name * ⓘ IT Procurement App

2 Description ⓘ Handling IT PR Pre-requisites and Approval Management

3 Drag app logo or browse to upload
BMP, GIF, ICO, JPEG, JPG, PNG, SVG

Cancel **Continue**

CREATE APP

Let's get started on your new app.

Add a name and description that define the purpose of your app.
You can also add a thumbnail image.

Name * ⓘ IT Procurement App

Description ⓘ Handling IT PR Pre-requisites and Approval Management

 Remove image

Cancel **Continue**

5. Leave the default user roles (admin and user) and click **Continue**

CREATE APP

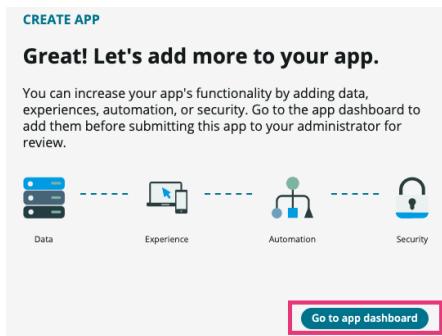
Let's add roles to your new app.

Default roles have already been added based on popular roles for apps. You can add or remove roles, later.

Add a role	
Role name * ⓘ admin	Description ⓘ Default admin role
Role name * ⓘ user	Description ⓘ Default user role

Cancel **Continue**

6. Click **Go to App Dashboard**. We have successfully created a scoped application on the Now platform called IT Procurement Application.



Next, we will create two data tables (models) the IT Procurement Application:

1. Suppliers – stores registered supplier information.
2. IT Procurement Request – stores each IT Procurement request raised by end users

Create the Suppliers Data Table

1. Let's start building the first app component by adding the Suppliers Data model. Click **+ Add** in the Data section.

2. Click **Create a table** and click **Begin**.

ADD DATA

How do you want to add data to your app?

You can add a way for your app to store and handle information using tables. Create a table to store your data or import data into an existing table.

Create a table
 Add a table to your app

Import and map data
 Import and map data into an existing table

ADD DATA

Add a table to your app

Organize and track data flowing through your app using tables. After you create this table, we'll automatically generate a default form view to help you collect and view data for this table.

Steps:

1. Choose a method to add a data table
2. Review and prepare data for table creation
3. A table and default form view will be created for your app

Begin

3. We are going to **Create from scratch** and click **Continue**.

ADD DATA

How do you want to create a table?

Tables contain the data that's available in an app. If you aren't sure where to start, we can help you create a new table from scratch. [Learn more about tables.](#)

Upload a spreadsheet

Create from an existing table

Create from scratch

Create column headers for a blank table

Cancel **Continue**

4. Define the **Suppliers** table with:

- Table label: **Suppliers**
- Check **Auto number**
- Auto number **Prefix: SUPPLIER**

Click **Continue**.

ADD DATA

Now, let's get more info about your new table

Define the properties of your new table.

Table label *	Table name *	
<input type="text" value="Suppliers"/>	<input type="text" value="x_snc_it_procure_0_suppliers"/>	
<input type="checkbox"/> Make extensible	<input type="radio"/>	
<input checked="" type="checkbox"/> Auto number	<input type="radio"/>	
Prefix *	Starting number *	Number of digits *
<input type="text" value="SUPPLIER"/>	<input type="text" value="1000"/>	<input type="text" value="7"/>
<input type="button" value="Cancel"/> <input type="button" value="Continue"/>		

5. On **Let's add permissions to your table**, allow **All** access for **admin** role and **Read** access for **user** role. Click **Continue**.

ADD DATA

Let's add permissions to your table.

Create roles and define how much control each role has of this table. Note: at least one role needs to have 'read' access for you to 'preview' the data in your table.

		Add a role				
Role Name	Description	All	Create	Read	Write	Delete
admin	Default admin role	<input checked="" type="checkbox"/>				
user	Default user role	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="button" value="Cancel"/> <input type="button" value="Continue"/>						

6. Click **Edit table** from the **Your table is ready** screen. The **Suppliers Table builder** tab will open.

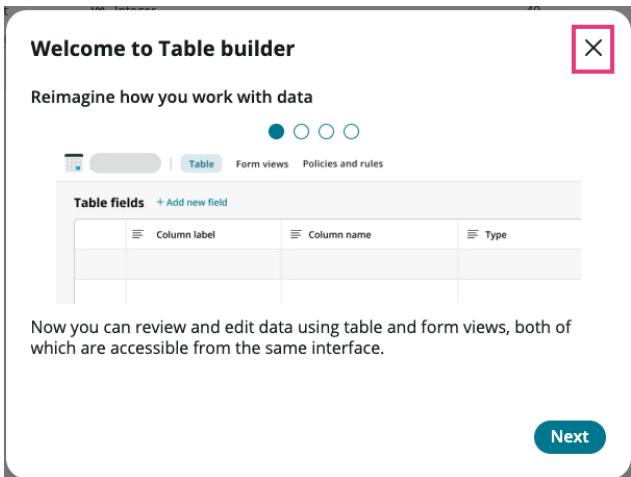
CREATE TABLE

Your table is ready

We'll take you to the app home where you can add more data, experience, logic and security to your app.

Source	Table name	Fields
From Scratch	Suppliers	0
<input type="button" value="Edit table"/> <input type="button" value="Done"/>		

Click **X** to close the **Welcome to Table Builder dialog**.



Note there are six default data fields in every custom table created on the Now platform.

Suppliers

Table fields + Add new field		
Column label *	Column name *	Type *
Created	sys_created_on	Date/Time
Created by	sys_created_by	String
Number	number	String
Updated	sys_updated_on	Date/Time
Updated by	sys_updated_by	String
Updates	sys_mod_count	Integer

- Let's add new data fields to the **Suppliers** table, here is a summary of the data fields that needs to be added:

Column Label	Type	Max Length	Display
Supplier	String	100	On
Supplier Address	String	200	
Procurement System Supplier ID	String	Default (40)	
Contract Status	Choice (Dropdown with -None-): • In Progress • Active		
Compliance Status	Choice (Dropdown with -None-): • In Progress • Active		

Click **+ Add new field**.

Enter the new field **Column Label** as **Supplier** which has **String type** and **Max length** of **100**. Toggle **Display ON**. Click **Done**. The purpose of turning display on is so when the

Suppliers table is referenced by another table, the Supplier name (field) will be the default field to be displayed.

Table fields	+ Add new field	1				
Column label *	Column name *	Type *	Reference	Max length	Default value	Display
Supplier	2 supplier	3 String		4 100		5 <input checked="" type="checkbox"/>

- Click **+ Add new field**. Enter the new field **Column Label** as **Contract Status** has **Choice** type of **Dropdown with – None -**, where the choices are **In Progress** and **Active**. Click **Done**.

Column label *	Column name *	Type *
Contract Status	contract_status	Choice
Procurement System Suppli...	procurement_system_suppli...	
Compliance Status	compliance_status	

Showing 1-6 of 6

Choice Type * Dropdown with -- None -

Choices **Add**

1	Label * <input checked="" type="text" value="In Progress"/>	Value * <input checked="" type="text" value="in_progress"/>	<input type="button" value="Delete"/>
2	Label * <input checked="" type="text" value="Active"/>	Value * <input checked="" type="text" value="active"/>	<input type="button" value="Delete"/>

Done

- Click **+ Add new field**.

The **Compliance Status** new field has **Choice** type of **Dropdown with – None -**, where the choices are **In Progress** and **Completed**. Click **Done**.

Column label *	Column name *	Type *
Compliance Status	compliance_status	Choice

Showing 1-6 of 6

Choice Type * Dropdown with -- None -

Choices **Add**

1	Label * <input checked="" type="text" value="In Progress"/>	Value * <input checked="" type="text" value="in_progress"/>	<input type="button" value="Delete"/>
2	Label * <input checked="" type="text" value="Completed"/>	Value * <input checked="" type="text" value="completed"/>	<input type="button" value="Delete"/>

Done

- Continue to add **Supplier Address** and **Procurement System Supplier ID** new data fields and their configurations. When you are finished with new data fields configuration, the table should look similar to the following:

Suppliers

Table fields + Add new field

Column label *	Column name *	Type *	Reference	Max length	Default value	Display
Compliance Status	compliance_status	Choice <small>2 Choices</small>		40		<input type="checkbox"/>
Contract Status	contract_status	Choice <small>2 Choices</small>		40		<input type="checkbox"/>
Created	sys_created_on	Date/Time		40		<input type="checkbox"/>
Created by	sys_created_by	String		40		<input type="checkbox"/>
Number	number	String		40	javascript:global.getNextObjNumb...	<input type="checkbox"/>
Procurement System Supplier ID	procurement_system_supplier_id	String		40		<input type="checkbox"/>
Supplier	supplier	String		100		<input checked="" type="checkbox"/>
Supplier Address	supplier_address	String		200		<input type="checkbox"/>
Updated	sys_updated_on	Date/Time		40		<input type="checkbox"/>
Updated by	sys_updated_by	String		40		<input type="checkbox"/>
Updates	sys_mod_count	Integer		40		<input type="checkbox"/>

+ Add new field

Showing 1-11 of 11

1 ← 1 → 2

11. Click **Save** the changes made on the Suppliers table.

12. Now we will configure the default form for the Suppliers table. Click **Forms** tab.

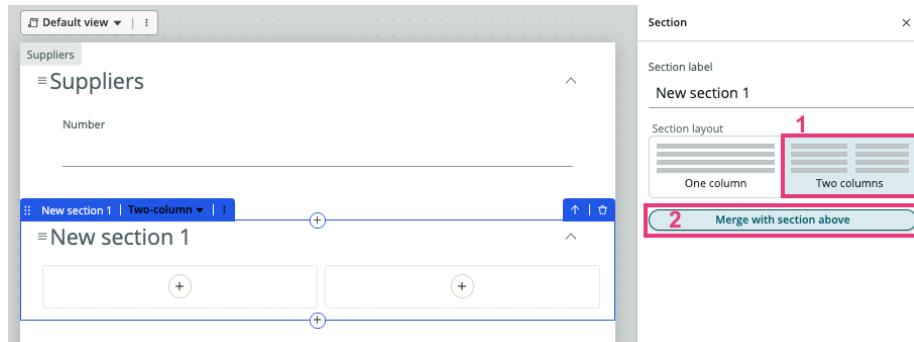


13. We would like to add the following data fields to the form:

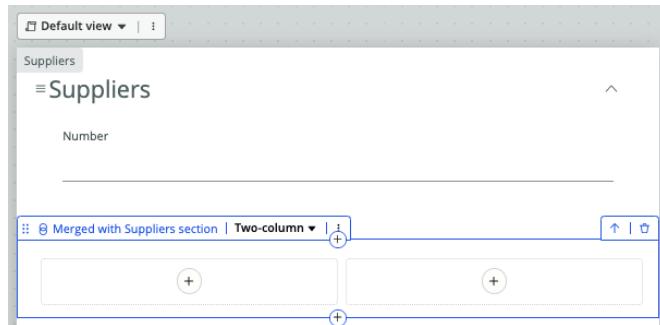
- Compliance Status
- Contract Status
- Procurement System Supplier ID
- Supplier
- Supplier Address
- Updated

Hover over to the Suppliers Section in the form editor. Click the **+ Add section** button to add a section below the default section.

From the Section configurator (right side), select the **section layout** as **Two columns** and **Merge with section above**.



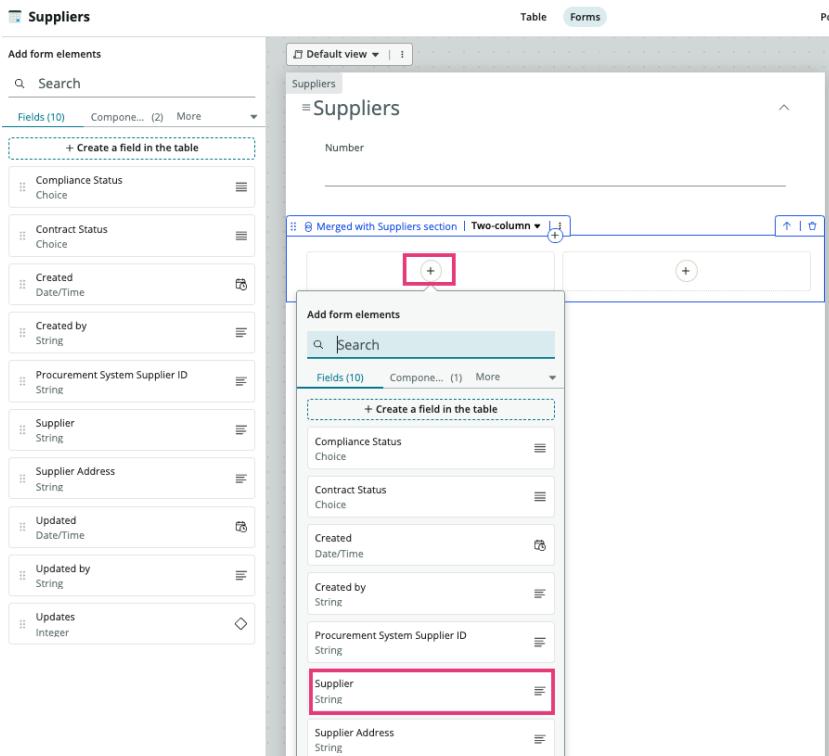
This is what the section show look like, a container with two columns:



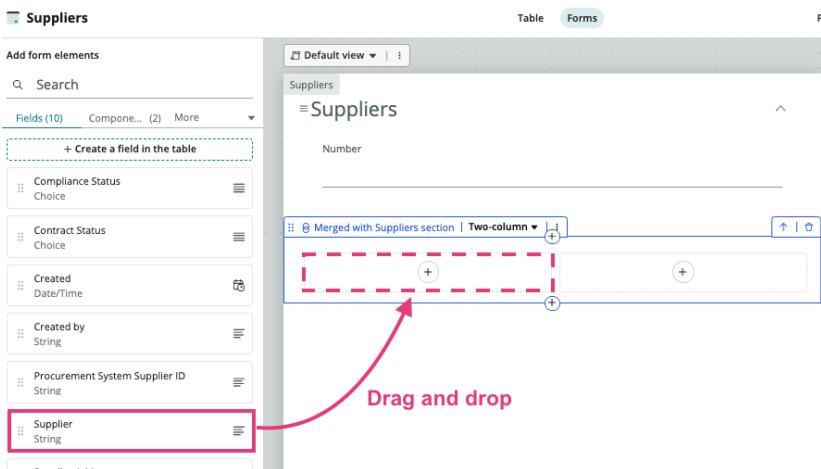
14. There are two ways to add data fields to the form, (a) from the form editor panel in the middle, click + in the first column of the two column container to add a field to the area or (b) alternatively, drag and drop fields from **Add form elements** on the left to the desired location in the form editor panel. We will add the following fields to the form layout:

- Supplier
- Supplier Address
- Procurement System Supplier ID
- Compliance Status
- Contract Status
- Updated

Click +, search for **Supplier** in the **Add form elements drop down list**, select **Supplier**.



Alternatively, use the drag and drop method as shown below:



Continue with adding the rest of the data fields to the form. The form should look like the following after you have added all the fields to the form layout:

15. Click **Save** to save your changes.
16. You can **Preview** the form.

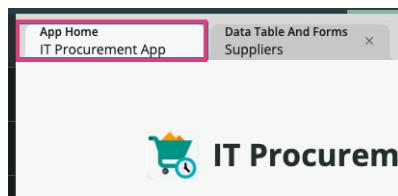


Close the **Preview – Form tab** after you have finished reviewing the form.

We have successfully completed our first **Suppliers** custom data table/model in the scoped IT Procurement App. **Close** the form preview tab.

Create the IT Procurement Request Table

1. Return to the App Home tab in AES.



- We will create a second data table for storing IT Procurement Requests to be raised by the end users.

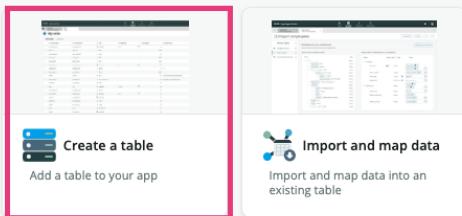
Click **+ Add** data table.

- Select **Create a Table** and click **Begin**

ADD DATA

How do you want to add data to your app?

You can add a way for your app to store and handle information using tables. Create a table to store your data or import data into an existing table.



ADD DATA

Add a table to your app

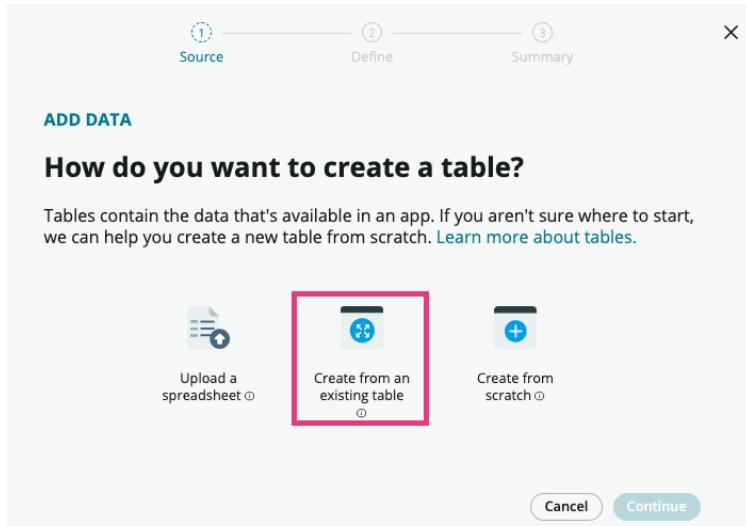
Organize and track data flowing through your app using tables. After you create this table, we'll automatically generate a default form view to help you collect and view data for this table.

Steps:

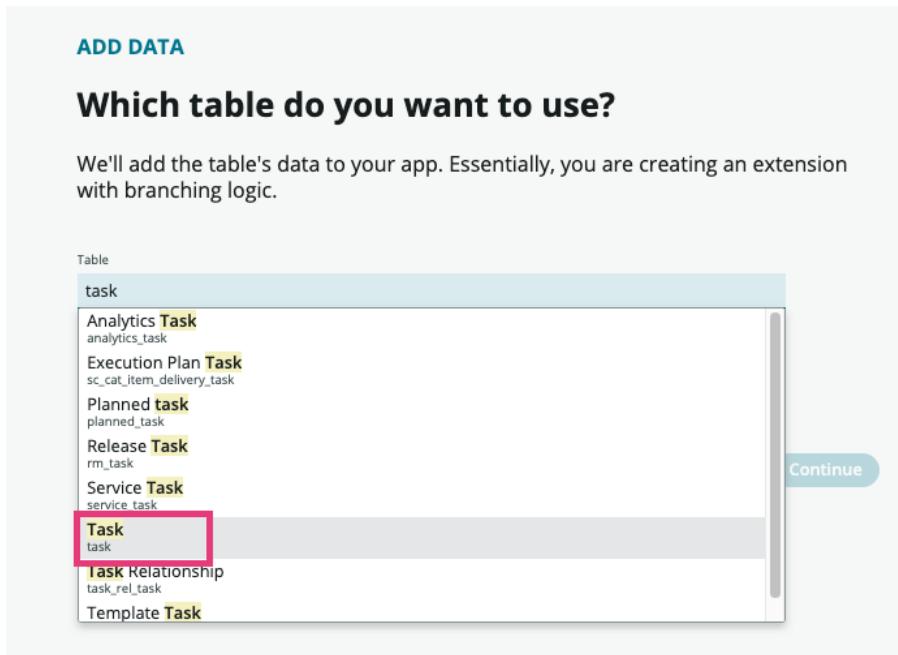
- Choose a method to add a data table
- Review and prepare data for table creation
- A table and default form view will be created for your app

Begin

4. We will extend the **Task** data model so select **Create from an existing table**. And Click **Continue**.



5. Search for the **Task [task]** table, select it and click **Continue**.



6. Enter **Table label** as **IT Procurement Request** and note that the **Table name** will be automatically populated. **Select Auto number** of the table entries. Enter Auto numbering **Prefix** as **ITPR** and click **Continue**.

Source (1) Define (2) Summary (3)

ADD DATA

Now, let's get more info about your new table

Define the properties of your new table.

1	Table label * ⓘ	IT Procurement Request	Table name * ⓘ	x_snc_it_procure_0_it_procurement_
2	<input type="checkbox"/> Make extensible ⓘ			
3	<input checked="" type="checkbox"/> Auto number ⓘ		Starting number * ⓘ	1000
	Prefix * ⓘ		Number of digits * ⓘ	7
	ITPR			

Cancel **Continue** 4

7. Allow the **admin** role with **All** rights access and **user** role with **Create / Read / Write** access to the **IT Procurement Request table**. Click **Continue**.

Source (1) Define (2) Summary (3)

ADD DATA

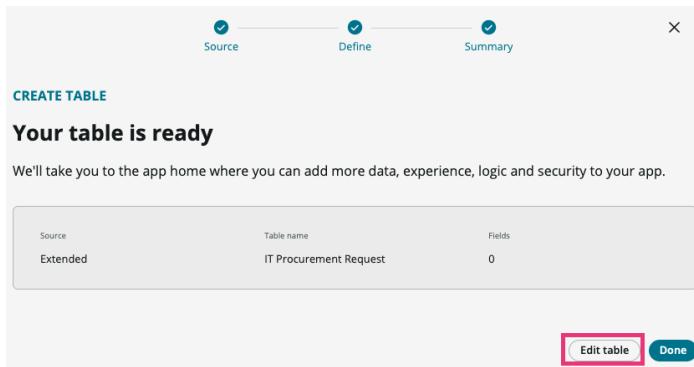
Let's add permissions to your table.

Create roles and define how much control each role has of this table. Note: at least one role needs to have 'read' access for you to 'preview' the data in your table.

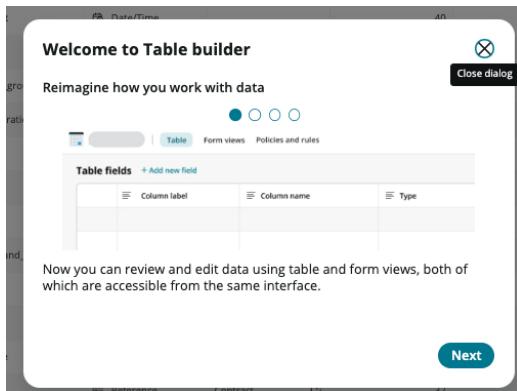
Add a role						
Role Name ⓘ	Description ⓘ	All	Create	Read	Write	Delete
admin	Default admin role	<input checked="" type="checkbox"/>				
user	Default user role	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Cancel **Continue**

8. When the table is ready, click **Edit Table**



If the Welcome to Table builder message pops up, click **Close dialog**



9. Since we have extended the IT Procurement Request table from the Task data table, there are 69 predefined data fields. We will be using some of these fields including:
 - Assigned to
 - Approval
 - Opened by (will be renamed to Requestor in this lab)
 - Parent
 - Approval history
 - Etc.

Get familiar with the the extended data fields. The example below shows the default configuration of the **Approval** data field, where is this a Choice type of 4 choices.

IT Procurement Request

Table fields + Add new field

Column label *	Column name *	Type *	Reference	Max length	Default value	Display
Active	active	True/False		40	true	
Activity due	activity_due	Date		40		
Actual end	work_end	Date/Time		40		
Actual start	work_start	Date/Time		40		
Additional assignee list	additional_assignee_list	List	User	4000		
Additional comments	comments	Journal Input		4000		
Approval	approval	String	4 Choices	40	not requested	
Approval history	approval_history	Journal		4000		
Approval set	approval_set	Date/Time		40		
Assigned to	assigned_to	Reference	User	32		
Assignment group	assignment_group	Reference	Group	32		
Business duration	business_duration	Duration		40		
Close notes	close_notes	String		4000		
Closed	closed_at	Date/Time		40		
Closed by	closed_by	Reference	User	32		
Comments and Work notes	comments_and_work_notes	Journal List		4000		
Company	company	Reference	Company	32		
Configuration item	cmdb_ci	Reference	Configuration Item	32		
Contact type	contact_type	String	6 Choices	40		

Approval Inherited
 approval
 String

Changes you make are specific to the IT Procurement Request table

Field details

Label

Approval

Read only Mandatory

Active

Max. length

Default value

Dependent field

Choices (4)

Use choices

Choices

Not Yet Requested

Requested

Approved

Rejected

We will start adding new data fields that are non-extended fields, for the ease of seeing the new fields to be added, check **Show non-extended table fields**. Note that all the extended table fields will be hidden.

now | App Engine Studio

App Home Data Table And Forms
IT Procurement App IT Procurement Req...

HOME MY APPS TEMPLATES RESOURCES

IT Procurement Request Table Forms Policies and rules Preview Save

Show non-extended table fields

Column label *	Column name *	Type *	Reference	Max length	Default value	Display	Updated
Active	active	True/False		40	true		2022-09-30 16:00
Activity due	activity_due	Due Date		40			2022-09-30 16:00
Actual end	work_end	Date/Time		40			2015-06-03 08:00
Actual start	work_start	Date/Time		40			2015-06-03 08:00
Additional assignee list	additional_assignee_list	List	User	4000			2022-09-30 16:00
Additional comments	comments	Journal Input		4000			2022-09-30 16:00
Approval	approval	String 4 Choices		40	not requested		2022-09-30 16:00
Approval history	approval_history	Journal		4000			2022-09-30 16:00
Approval set	approval_set	Date/Time		40			2022-09-30 16:00
Assigned to	assigned_to	Reference	User	32			2022-09-30 16:00
Assignment group	assignment_group	Reference	Group	32			2015-06-02 23:00
Business duration	business_duration	Duration		40			2022-09-30 16:00
Close notes	close_notes	String		4000			2022-09-30 16:00
Closed	closed_at	Date/Time		40			2022-09-30 16:00
Closed by	closed_by	Reference	User	32			2022-09-30 16:00
Comments and Work notes	comments_and_work_notes	Journal List		4000			2022-09-30 16:00
Company	company	Reference	Company	32			2022-09-30 16:00
Configuration item	cmdb_ci	Reference	Configuration item	32			2022-09-30 16:00
Contact type	contact_type	String 6 Choices		40			2022-09-30 16:00
Contract	contract	Reference	Contract	32			2022-09-30 16:00

+ Add new field

Showing 1-20 of 69 | 1 2 3 4 → | Records per page 20 ▾

10. Click + Add new field.

now | App Engine Studio

App Home Data Table And Forms
IT Procurement App IT Procurement Req...

HOME MY APPS TEMPLATES RESOURCES

IT Procurement Request Table Forms Policies and rules Preview Save

Show non-extended table fields

Column label *	Column name *	Type *	Reference	Max length	Default value	Display	Updated
No data available							

+ Add new field

Showing 0 records | ← → | Records per page 20 ▾

Add the following list of new fields to the IT Procurement Request table:

Column label	Type	Reference	Max length
Supplier	Reference	Suppliers	
Business Justification	String		500
Procurement Category	Choice (Software, Hardware, Services)		
Budget Owner	Reference	User	
Requested Budget	Decimal		
Secondary Supplier	Reference	Suppliers	

Let's start with the Supplier data field. Enter **Column Label** as **Supplier**, select **Reference** as Type. **Search** for **Suppliers [x_snc_it_procure_0_suppliers]** table and select it as the reference table.

11. Click **+ Add new field**.

Enter **Column Label** as **Business justification** with **Type String** and **Max length** of **500**.

12. Click **+ Add new field**. Enter **Column label** as **Procurement Category** with **Choice** Type of **Dropdown with – None –**. Add the three choices: **Software**, **Hardware** and **Services**. Click **Done**.

The screenshot shows the 'Table fields' configuration screen. A new field is being created with the following details:

- Column label ***: Procurement Category
- Column name ***: procurement_category
- Type ***: Choice
- Choice Type ***: Dropdown with -- None --
- Choices** (dropdown menu):
 - Type a choice and hit ENTER
 - Add

1	Label *	Software	Value *	software
2	Label *	Hardware	Value *	hardware
3	Label *	Services	Value *	services
- Done**

13. Enter **Column Label** as **Budget Owner**, select **Reference** as Type. **Search** for **User [sys_user]** table and select it as the reference table.

The screenshot shows the 'Table fields' configuration screen with the following table:

Column label *	Column name *	Type *
Budget Owner	budget_owner	Reference
Business Justification	business_justification	Reference *
Procurement Category	procurement_category	User
Requested Budget	requested_budget	User imp_user User sys_user

14. Complete the table by adding **Requested Budget** and **Secondary Supplier** data fields with similar steps. The table should look like the following after all the new fields are added.

The screenshot shows the 'IT Procurement Request' table fields configuration screen with the following table:

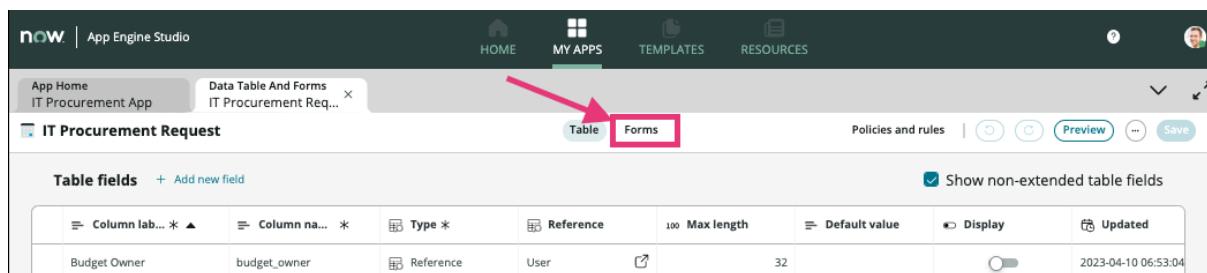
Column label *	Column name *	Type *	Reference	Max length
Budget Owner	budget_owner	Reference	User	32
Business Justification	business_justification	String		500
Procurement Category	procurement_category	Choice	3 Choices	40
Requested Budget	requested_budget	0.0 Decimal		38
Secondary Supplier	secondary_supplier	Reference	Suppliers	32
Supplier	supplier	Reference	Suppliers	32

At the bottom, there is a message: **Showing 1-6 of 6** and navigation buttons: < < 1 > >.

15. Click **Save**.



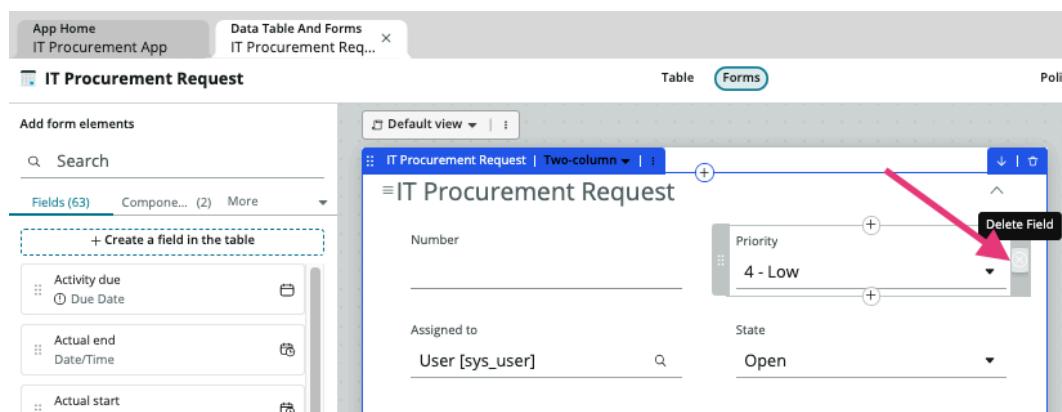
16. Next, we will configure the default form for IT Procurement Requests. Click the **Form tab**.



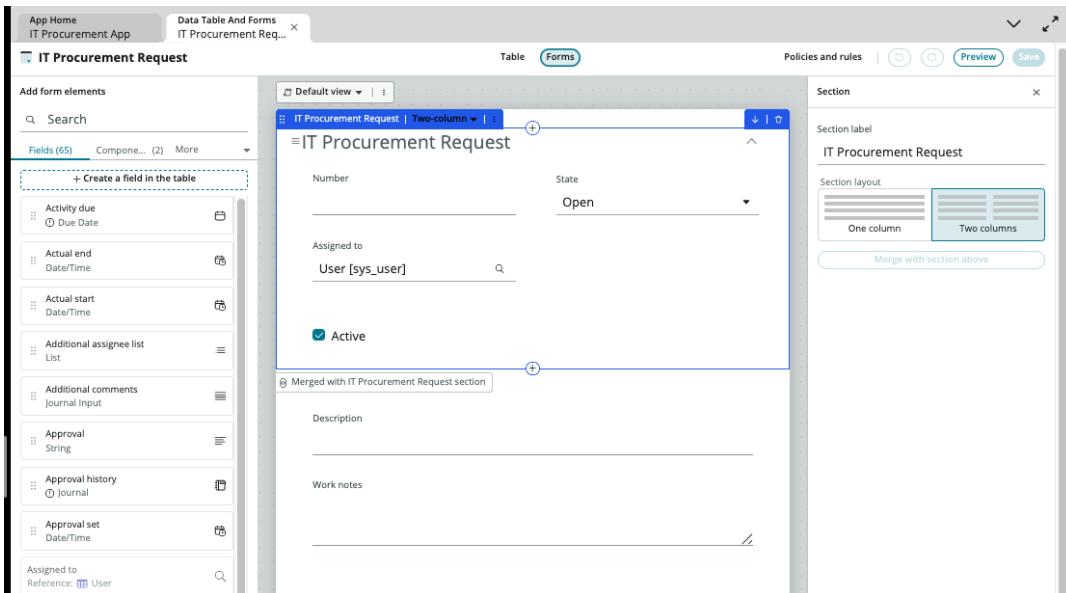
17. We will remove the default field that is not needed for the IT Procurement Request form:

- Priority
- Configuration Item
- Parent
- Short Description

To remove the field from the form, hover over the data field, click on the X to remove the field.



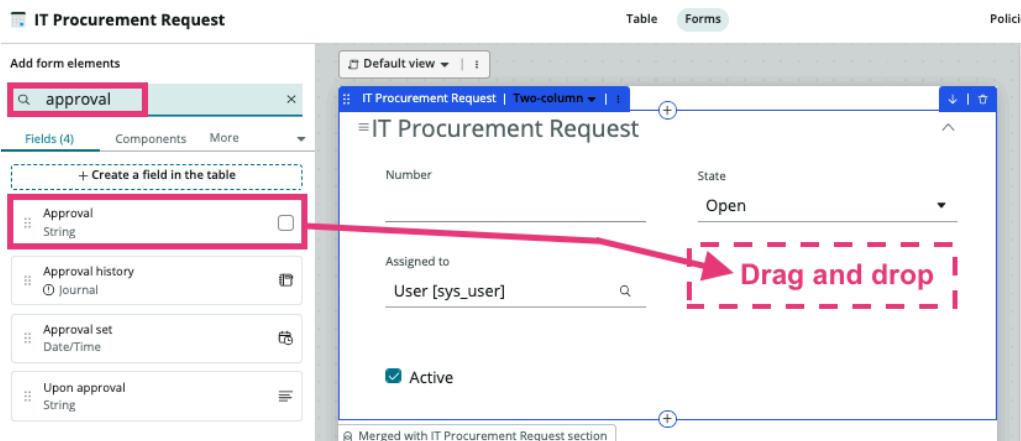
After you have removed the fields, the form should look like this:



18. Add the data fields of interest to the IT Procurement Request form:

- Approval
- Budget Owner
- Business Justification
- Procurement Category
- Opened by
- Supplier
- Secondary Supplier
- Requested Budget

Use the **form element search bar**, search for **Approval**. Locate the Approval field from the **Add form elements** menu below, hover over the **Approval** field, **drag and drop** the Approval field to the desired location within the form. Repeat the same with other field of interest.



19. The result should look like the form below:

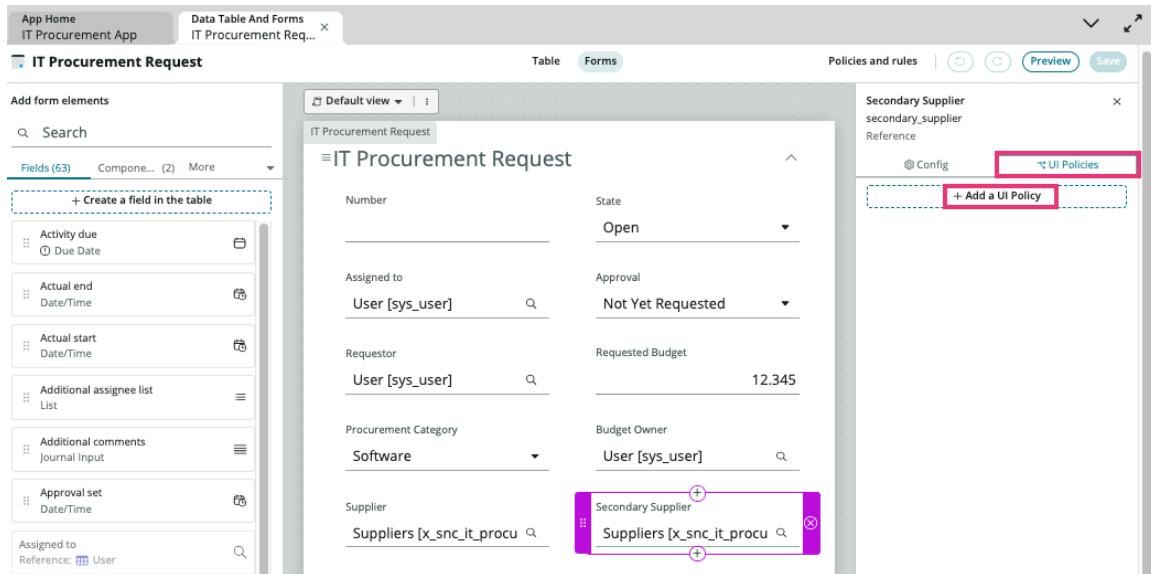
The screenshot shows the ServiceNow IT Procurement Request configuration page. The left pane displays the IT Procurement Request form with fields such as Number, State (Open), Assigned to (User [sys_user]), Approval (Not Yet Requested), and Supplier (Suppliers [x_snc_it_procu]). The right pane shows the configuration details for the 'Opened by' field. The 'Label' field is currently set to 'Opened by'. Other configuration options include 'Read only' (unchecked), 'Mandatory' (unchecked), and 'Active' (checked). The 'Config' tab is selected.

20. Note that we can change the data field label of the default fields. Select **Opened by** data field and change the **Label** from Opened by to **Requestor**.

The screenshot shows the ServiceNow IT Procurement Request configuration page after changing the field label. The 'Label' field in the configuration pane now contains 'Requestor', indicated by a red arrow. The rest of the configuration pane and the IT Procurement Request form remain the same as in the previous screenshot.

21. Click **save**.

22. Let's add a **UI policy** to the Secondary Supplier field as it should only be required (displayed) when the requested budget is greater than or equal to 500k. Select the **Secondary Supplier** field. From the Secondary Supplier configurations panel, click on the **UI Policies** tab. Click **+ Add a UI Policy**.



From **Set up your UI Policy**, configure the policy as follows:

Short description	Requires secondary supplier when requested budget exceeds 500000
Condition	Requested Budget is greater than or is 500000
Perform field Actions	Secondary Supplier; Mandatory is True; Visible is True

Edit your UI Policy

Policy details

Short description	Requires secondary supplier when requested budget exceeds 500000
Order	100
<input checked="" type="checkbox"/> Active	
Advanced settings	

When these conditions are met

Add conditions that must be met to perform the field actions. If no conditions are set, the field actions will always apply.

Requested Budget greater than or is 500,000

Do the following

Perform field actions + Add

Field name	Mandatory	Visible	Read only	Clear the field value
Secondary Supplier	true	true	Leave alone	<input type="checkbox"/>

+ Add

You can also configure scripts and related list actions. [View more configurations](#)

Click **Add UI Policy**.

23. Review the UI Policy configured. Click **Save**.

The screenshot shows the IT Procurement Request form on the left and its UI Policy configuration on the right.

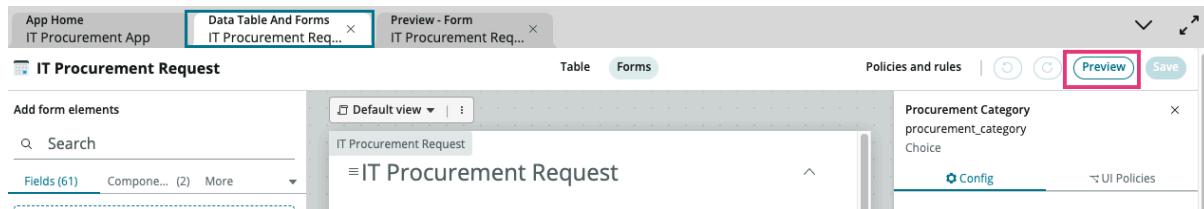
IT Procurement Request Form Fields:

- Number: (empty)
- Assigned to: User [sys_user] (empty)
- Requestor: User [sys_user] (empty)
- Procurement Category: Software
- Supplier: Suppliers [x_snc_it_procure_0_suppliers] (empty)
- State: Open
- Approval: Not Yet Requested
- Requested Budget: 12.345
- Budget Owner: User [sys_user] (empty)
- Secondary Supplier: Suppliers [x_snc_it_procure_0_suppliers] (empty)

UI Policy Configuration (highlighted in red):

- Order:** 100
- Condition:** Requires secondary supplier when requested budget exceeds 500000
- Action:** Reverse if condition is false
- Field actions:**
 - Mandatory: true
 - Visible: true
 - Clear the field value: false

24. Click Preview to check out what the form looks like.



From the preview of the IT Procurement Request form enter **500000** in **requested budget** and verify that the Secondary Supplier field will appear. We have successfully added dynamic behaviours to our IT Procurement Request form using UI Policy.

Number	State
ITPRO0001003	Open
Assigned to	Approval
	Not Yet Requested
Requestor	Requested Budget
	500,000
Procurement Category	Budget Owner
-- None --	
Supplier	Secondary Supplier *
<input checked="" type="checkbox"/> Active	
Business Justification	
Description	
Work notes	
Approval history	

* Field type journal is not supported.

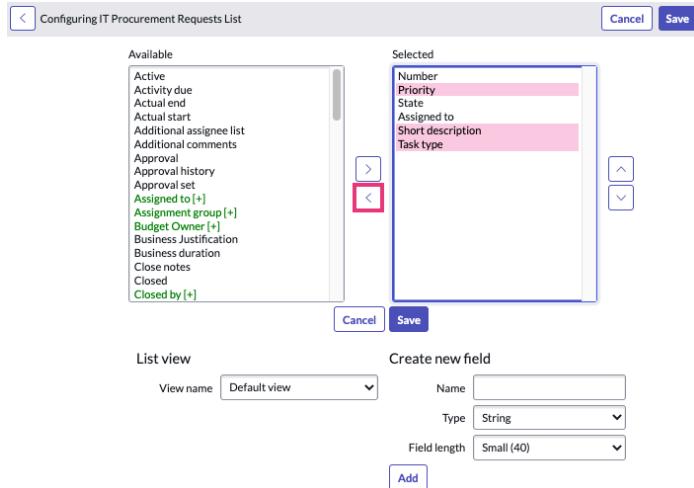
After you have explored the form, **Close** the preview tab.

25. Go back to the **App Home** tab and make note that the **Data** models and Forms **Experiences** is now part of the Low Code App component. Click **Preview** IT Procurement Request Data table.

26. The default field layout of the IT Procurement Request table, is based on the Task table. Let's change the default layout for the purpose of our application. **Right click** on the title row of the IT Procurement Requests Table table, click **Configure**, click **List Layout**.

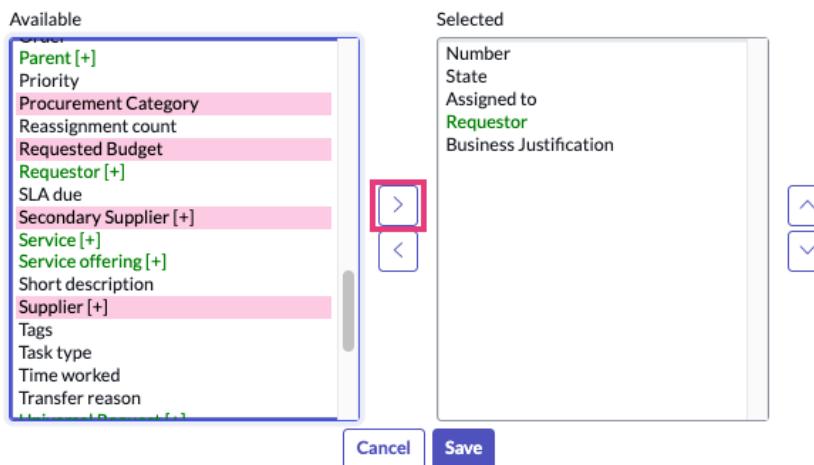
Remove irrelevant fields by multi-selecting the fields in the Selected area, and click :

- Priority
- Short description
- Task type

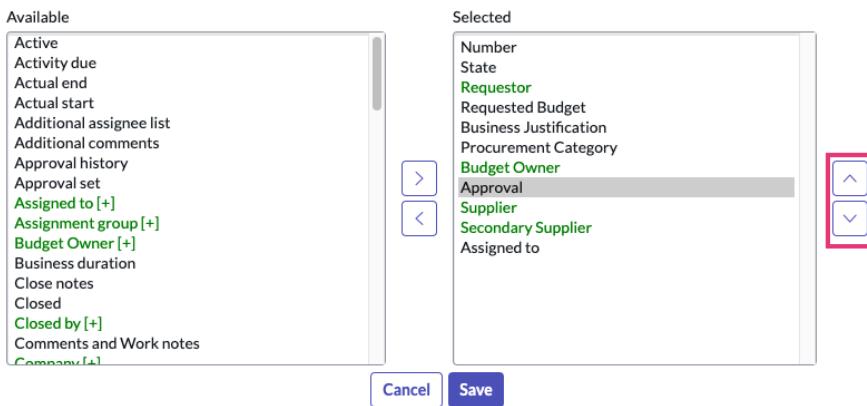


Then add the relevant fields by multi-selecting from Available area and click :

- Requestor
- Business Justification
- Requested Budget
- Budget Owner
- Procurement Category
- Supplier
- Secondary Supplier
- Approval



Change the order of the selected fields using the up and down arrows. Click **Save**.



27. Note that the IT Procurement Request table layout has updated.

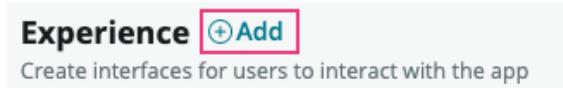
IT Procurement Requests											<input type="button" value="New"/>
All											
	<input type="button" value="Number"/>	<input type="button" value="State"/>	<input type="button" value="Requestor"/>	<input type="button" value="Requested Budget"/>	<input type="button" value="Business Justification"/>	<input type="button" value="Procurement Category"/>	<input type="button" value="Budget Owner"/>	<input type="button" value="Approval"/>	<input type="button" value="Supplier"/>	<input type="button" value="Secondary Supplier"/>	<input type="button" value="Assigned to"/>
[REDACTED]											

We have successfully completed the data model and their default configurations.

Exercise 2: Build User Experience

Create User Friendly Form using Record Producer

1. Click **+Add** to add a user experience.



2. Select **Record producer** from **What type of experience do you want to add to your app?**
Click **Begin**.

ADD EXPERIENCE

What type of experience do you want to add to your app?

Select an experience to learn more about the interface and what it can do for your users.

Workspace
 A workspace helps users manage and fulfill requests sent to them.

Standard catalog item
 People can add ways to request a good or service.

Record producer
 People can create records using a catalog item.

Portal
 Deliver apps to your employees or customers using a modern, easy-to-use portal

Mobile experience
 Add a new experience to your company app

ADD EXPERIENCE

People can create records using a catalog item.

People can create records using a catalog item experience in your app. For example, you can add a way to capture travel requests in a table you select.

Employee Records
Create a new record

Requested for: John Smith

Criticality: 1 - Very Critical

Category: Password Reset

Begin

3. Enter **Name** as **IT Procurement Requests** and enter **Short description** as **Please submit all the details required for IT Procurement of Software, Hardware, Services**. Click **Continue**.

ADD EXPERIENCE

Let's set up your record producer.

After you set this up, you can edit its contents.

Name *

Short description

Please submit all the details required for IT Procurement of Software, Hardware, Services.

Cancel
Continue

4. Click **Edit record producer**.

ADD EXPERIENCE

Success! You added a record producer.

You can edit this record producer or continue building the rest of your app.

	Name IT Procurement Requests	Short description Please submit all the details required for IT...
--	--	---

Edit record producer
Done

[Optional] Click **Attach File** from **Item details**. Upload a relevant image file as the record producer image. Click **Continue to Destination →**

Item details

Image ⓘ

Attach File

IT Procurement Requests

- Details** •
- Destination •
- Location
- Questions
- Settings
- Access
- Review and Submit

Details
Provide basic information and details about your item

Basic info

Item name *

Short description

Item details

Image ⓘ **procurement-logo.png** 

Description

Continue to Destination →

5. Select Destination Table as **IT Procurement Request** [x_snc_it_procure_0_it_procurement_request]. Click **Contine to Location →** at the bottom right.

IT Procurement Requests

Dest •

Dest •

Location
Question
Settings
Access
Review and Submit

Destination
Specify the destination table for the records submitted using this form

Table
Record submission table *

IT Procurement Request

Showing 1-1 of 1
IT Procurement Request
x_snc_it_procure_0_it_procurement_request

6. Click **Browse** from **Catalogs**. Select **Service Catalog** as the **Catalogs** Location and select **Can We Help You?** As the **Categories**. Click **Continue to Questions →** at the bottom right.

Location
Choose a catalog and category where requesters can find your item

Catalogs
Selected catalogs Service Catalog

Categories
Selected categories Can We Help You?

7. Click **Insert new question**.

Questions
Define the questions on your item form

Expand all ▾

8. In the Question Editor, configure:

Question Type = Text
 Question Subtype = **Multi-line**
Check Map to a specific field on the table
 Table field = **Business Justification**
 Question Label = **What is the business justification for the procurement request?**
Check Mandatory

Click **Insert Question** at the bottom right.

What is the business justification for the procurement?

Select a question type and fill in the details

Type
How do you want the user to answer your question (e.g. text, selections, dates)?

Question type: **Text**

Question subtype: **Multi-line**

Details
What would you like to ask or inform the user of?

Map to a specific field on the table

Table field: **Business Justification**

Question label: **What is the business justification for the p...**

Name: **business_justification**

Mandatory

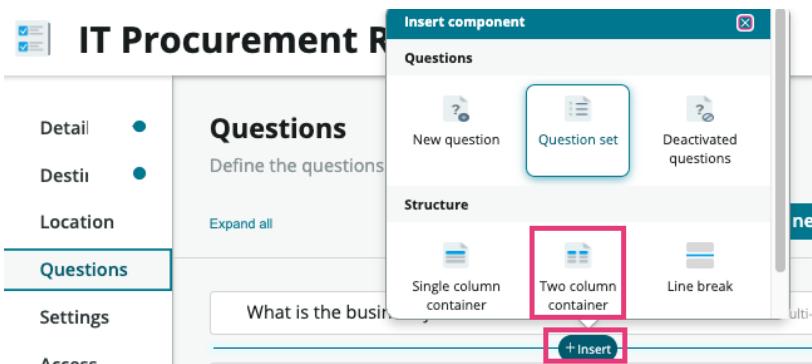
Question Preview

What is the business justification for the p... *

[Continue to Default value →](#)

Insert Question

- Click **+ Insert** positioned after the first question and select **Two column container** from the Insert component pop-up.



Enter **Request Details** as the container Title. Click **Submit**.

Title
Request Details

Display title

Cancel Submit

10. Expand the Requested details container.

Request Details

+ +

11. Hover over to the first column field of the two columns **Request Details container**. Click **+ Insert** and click **New Question** to insert a new question.

Questions

Define the questions on your item form

Expand all Insert new question ▾

What is the business justification for the procurement? * Text - Multi-line

Request Details

+Insert +

12. In the Question Editor, configure:

Question Type = **Text**
 Question Subtype = **Single-line**
Check Map to a specific field on the table
 Table field = **Requested Budget**
 Question Label = **What is the budget being requested?**
Check Mandatory

Click **Insert Question** at the bottom right.

What is the budget being requested?

Select a question type and fill in the details

Question Additional details Default value Annotation

Type
How do you want the user to answer your question (e.g. text, selections, dates)?

Question type

Question subtype *

Details
What would you like to ask or inform the user of?

Map to a specific field on the table

Table field

Question label *

Name *

Mandatory

Question Preview

What is the budget being requested? *

[Continue to Additional details →](#)

[Insert Question](#)

13. Hover over to the second column field of the two columns **Request Details container**. Click **+ Insert** and click **New Question** to insert a new question.

The screenshot shows a 'Request Details' container with two columns. The left column contains a question labeled 'What is the bud... * Text - ...'. The right column has a dashed border and a '+ Insert' button at the top right. Below the '+ Insert' button is a small input field with a '+' icon.

14. In the Question Editor, configure:

Question Type = **Choice**
 Question Subtype = **Dropdown (fixed values)**
Check Map to a specific field on the table
 Table field = **Procurement Category**
 Question Label = **Please select the Procurement Category**

Click **Contine to Choices** at the bottom right.

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Please select the Procurement Category

Select a question type and fill in the details

Question	Choices	Default value	Annotation
Type How do you want the user to answer your question (e.g. text, selections, dates)?	Question type Choice	Question subtype * Dropdown (fixed values)	
Details What would you like to ask or inform the user of?	<input checked="" type="checkbox"/> Map to a specific field on the table Table field Procurement Category		
	Question label * Please select the Procurement Category		
	Name * ⓘ procurement_category		
	<input type="checkbox"/> Mandatory		
Continue to Choices →			

Check **Include none choice**. Click the + to add new choices.

Question	Choices	Default value	Annotation
Settings These settings will structure how your question is displayed	<input checked="" type="checkbox"/> include none choice		
Available Choices To make your multiple choice valid, add at least two choices.	Display name Value <div style="border: 1px dashed #ccc; padding: 5px; text-align: center;"> (+) Add choice </div>		

Add 3 choices with the **Software, Hardware, Services** as the **Display name**, keep the Choice Values as default. Note that on the right panel, you can preview the question. Click **Insert Question**.

Please select the Procurement Category

Select a question type and fill in the details

Question	Choices	Default value	Annotation
Settings These settings will structure how your question is displayed <input checked="" type="checkbox"/> Include none choice			
Available Choices To make your multiple choice valid, add at least two choices.			
Display name	Value		
Software	software		
Hardware	hardware		
Services	services		
(+) Add choice			

[Continue to Default value →](#)

Question Preview

Please select the Procurement Category

-- None --

- None --
- Software
- Hardware
- Services

[Insert Question](#)

15. Insert another question in the Request Details container.

Question Type = **Choice**
 Question Subtype = **Record reference**
 Check **Map to a specific field on the table**
 Table field = **Budget Owner**
 Question Label = **Who is the budget owner?**

Click **Contine to Additional details →**.

Who is the budget owner?

Select a question type and fill in the details

Question Additional details Annotation

Type
How do you want the user to answer your question (e.g. text, selections, dates)?

Question type
Choice

Question subtype *
Record reference

Details
What would you like to ask or inform the user of?

Map to a specific field on the table

Table field
Budget Owner

Question label *
Who is the budget owner?

Name * ⓘ
budget_owner

Mandatory

[Continue to Additional details →](#)

Select **User [sys_user]** as the **Source table**. Click **Insert Question**.

Who is the budget owner?

Select a question type and fill in the details

● Question ● Additional details Default

Source
The options for this question will be sourced from ServiceNow.

Source table *

User
Showing 1-25 of 25
User
imp_user
User
sys_user
User consent information
m2m_user_consent_info
User Criteria
user_criteria
User Criteria Exclusions
sys_ux_criteria_m2m_exclusion
User Criteria Inclusion
sys_ux_criteria_m2m_inclusion
User Entitlement
alm_entitlement_user

16. Insert new question.

Question Type = **Choice**
Question Subtype = **Record reference**
Check **Map to a specific field on the table**
Table field = **Supplier**
Question Label = **Please select the preferred supplier.**

Click **Continue to Additional details** →.

Select **Suppliers [x_snc_it_procure_0_suppliers]** as the **Source table**.

Click **Insert Question**.

17. Insert new question.

Question Type = **Choice**
Question Subtype = **Record reference**
Check **Map to a specific field on the table**
Table field = **Secondary Supplier**
Question Label = **Please select the secondary supplier.**

Click **Continue to Additional details** →.

Select **Suppliers [x_snc_it_procure_0_suppliers]** as the **Source table**.

Click **Insert Question**.

18. As the secondary supplier selection is only valid if the requested budget is greater than 500k. Configure behaviour to only display the secondary supplier question if the requested budget exceeds 500k. **Hover over the secondary supplier question** and click the **define behaviour** icon.

19.

Questions

Define the questions on your item form

Insert new question

What is the business justification for the procurement? *

Request Details

What is the budget being requested? *

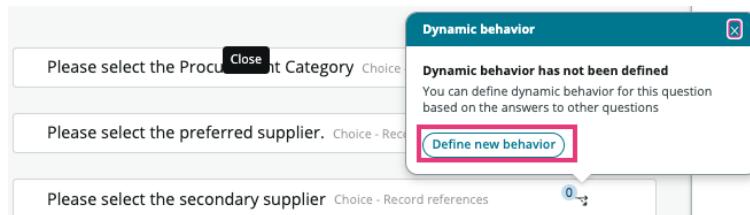
Please select the Procurement Category

Who is the budget owner? *

Please select the preferred supplier

Please select the secondary supplier

Click **Define new behaviour** from the pop up bubble.



Make the question both **mandatory** and **visible** by selecting **Yes**. Click **Continue to Conditions →**.

Please select the secondary supplier

X

Define dynamic behavior of this question based on answers to other questions

Actions	Conditions	Settings
Outcome Specify the behavior of this question when the condition is met		
Make the question mandatory <input checked="" type="button"/> Yes		
Make the question visible <input checked="" type="button"/> Yes		
Make the question read-only <input type="button"/> No action		
<input type="checkbox"/> Clear value		

[Continue to Conditions →](#)

[Add behavior](#)

Add the **Dynamic behaviour condition** of [requested_budget greater than or is 500000](#).

Please select the secondary supplier

Define dynamic behavior of this question based on answers to other questions

Actions	Conditions	Settings
Dynamic behavior condition Set the conditions which triggers the action(s) on this question		
Add Filter Condition Add "OR" Clause		
<input type="button"/> requested_budget <input type="button"/> greater than or is <input type="button"/> 500000 <input type="button"/> AND <input type="button"/> OR <input type="button"/>		

Click **Add behavior**.

20. The record producer should be configured as follows:

IT Procurement Requests

- [Details](#)
- [Destination](#)
- [Location](#)
- [Questions](#) •
- [Settings](#)
- [Access](#)
- [Review and Submit](#)

Questions
Define the questions on your item form

[Expand all](#) [Insert new question](#)

What is the business justification for the procurement? * Text - Multi-line

Request Details

What is the budget being requested? * Text - Single-line Please select the Procurement Category Choice - Dropdown (fixed values)

Who is the budget owner? * Choice - Record references Please select the preferred supplier. Choice - Record references

Please select the secondary supplier Choice - Record references

Click **Preview**. Review the IT Procurement Request record producer. **Close** the preview tab. Enter **500000** as answer to **What is the budget being requested?** And note that the **Please select the secondary supplier** field would appear. Click **X** to close the Preview.

Preview your catalog item

Here's a representation of your item in different experiences. You can interact with the item but not submit it.

View within [Portal](#)
 [Now Mobile](#)
 [Virtual Agent](#)

[Open preview in a new tab](#)

IT Procurement Requests
Please submit all the details required for IT Procurement of Software, Hardware, Services.

* Indicates required

* What is the business justification for the procurement?

* What is the budget being requested? Please select the Procurement Category

* Who is the budget owner? Please select the preferred supplier.

Please select the secondary supplier

[Add attachments](#)

Click **Continue to Settings →**

21. Check **Hide 'Add to wishlist' button**. Click **Continue to Access →**.

Settings
Adjust the portal settings and submit button label for your item

Portal settings

Hide 'Add to wishlist' button

Hide attachment button

Make attachment mandatory

Continue to Access →

22. Add **Any User** to the **Available for** Access configuration. Click **Continue to Review and Submit →**.

IT Procurement Requests

- Details
- Destination
- Location
- Questions
- Settings
- Access**
- Review and Submit

Access
Select which users or groups can access your catalog item

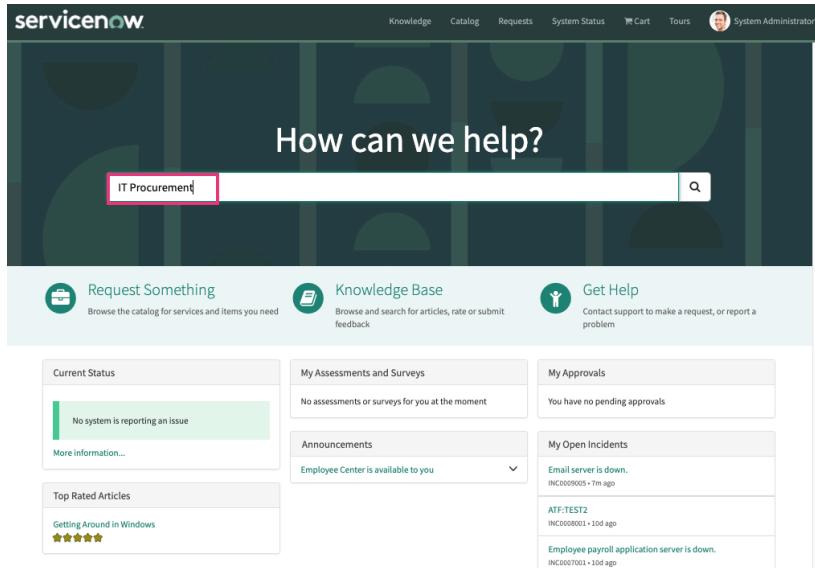
Available for

User criteria granted access ↗
[Edit user criteria granted access](#)
 Any User ↗

Not available for

User criteria denied access
 Browse

23. Review the IT Procurement Requests record producer and click **Submit**. Close the **Record Producer** tab.
24. Open a new browser tab and visit the Service Portal by entering the url: <https://<your-instance>.service-now.com/sp>. Search **IT Procurement** from the How can we help search bar.



Select **IT Procurement Requests** from the returned search results.

The screenshot shows the ServiceNow search results page. The search bar at the top contains the query 'IT Procurement'. The results section is titled 'All results for "IT Procurement"' and contains a single item: 'IT Procurement Requests'. A callout box highlights this item with the text: 'Please submit all the details required for IT Procurement of Software, Hardware, Services.' Below the search bar, there are filters for 'Sources' (set to 'All Knowledge Bases Catalogs') and 'FILTERS' (set to 'Catalogs').

We have successfully completed configuration of the record producer for IT Procurement Requests and its accessible from the **Service Portal**. Employees from the Organization can now make IT Procurement requests from ServiceNow as the single layer of engagement.

Build an IT Procurement Workspace

IT Procurement, budget owners and approvers will be using the IT Procurement Workspace to manage, approve and perform analytics on the IT Procurement requests.

1. Return back to the App Engine Studio **App Home tab** and click **+Add** to add a user experience.



2. Select **Workspace** from **What type of experience do you want to add to your app?** Click **Begin**.

ADD EXPERIENCE

What type of experience do you want to add to your app?

Select an experience to learn more about the interface and what it can do for your users.



Workspace
A workspace helps users manage and fulfill requests sent to them.



Standard catalog item
People can add ways to request a good or service.



Record producer
People can create records using a catalog item.



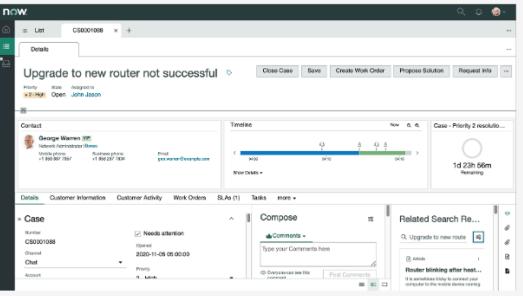
Portal
Deliver apps to your employees or customers using a modern, easy to use portal



Mobile experience
Add a new experience to your company app

ADD EXPERIENCE

A workspace helps users manage and fulfill requests sent to them.



The workspace interface shows a ticket titled "Upgrade to new router not successful". It includes sections for Contact (George Warner), Case (Case - Priority 2 resolved), Timeline, Details, Customer Information, Customer Activity, Work Orders, SLAs, Tasks, and a compose area for comments.

3. In **Let's design your Workspace**, enter **Name** as **IT Procurement Workspace**, enter **Description** as **Workspace to review, manage, approve and report on Procurement requests**. Click **Continue**.

ADD EXPERIENCE

Let's design your Workspace

This experience needs a name, description and URL.

Name * ⓘ

Description ⓘ

URL * ⓘ

Roles ⓘ

[Cancel](#) **Continue**

4. In **Great. Let's add some data**, leave the default settings where the **Primary Table** is the **IT Procurement Requests** table and the **Secondary Table** is the **Suppliers Table**. Click **Continue**.

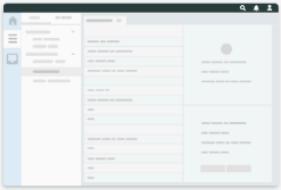
ADD EXPERIENCE

Great. Let's add some data.

Select the data tables you want to work on in this experience.

Primary Table * ⓘ
IT Procurement Request

Secondary Tables ⓘ
Suppliers X

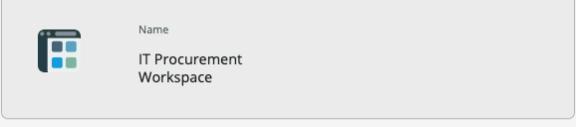


Continue

In **Success! Your experience has been created**, click **Done**.

ADD EXPERIENCE

Success! Your experience has been created



Name
IT Procurement Workspace

Edit Done

5. From the **App Home** tab, click **Preview** next to the **IT Procurement Workspace Experience**. This launches a new browser tab with the IT Procurement Workspace.

Experience ⓘ **Add**

Create interfaces for users to interact with the app

See all (4)

 IT Procurement Workspace	Workspace	Workspace to review, mana...	Last edited 2023-04-11 23:33:44	 PREVIEW	...
--	-----------	------------------------------	---------------------------------	---	-----

6. Click **Edit** to start configuring the Workspace.

The screenshot shows the ServiceNow interface for the 'IT Procurement Workspace'. At the top, there are navigation links for Favorites, History, Workspaces, and Admin. The workspace title 'IT Procurement Workspace' is displayed with a star icon. A search bar is present, along with application scope information: 'Application scope: IT Procurement App' and 'Update set: Default [IT Procurement App]'. On the right side of the header are icons for user profile, notifications, and more.

The main content area features three data visualization cards:

- My Tasks:** Shows 0 tasks. The card has a blue border.
- Unassigned Tasks:** Shows 510 tasks, last updated at 07:38.
- Critical Tasks:** Shows 32 tasks, last updated at 07:38.

Below these cards is a section titled 'My Work' with the following filter options:

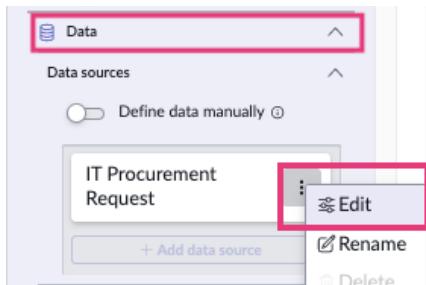
- Active ▾
- Activity due
- Additional assignee list
- Approval
- Approval history

- Let's update the **My Tasks** Data visualization card. Click the **My Tasks card**, note that a menu appears on top of the My Tasks card, click the 3 vertical dots from the dropdown click **Configure**.

The screenshot shows the 'IT Procurement Workspace' in edit mode. The 'My Tasks' card is selected and highlighted with a red border. A context menu is open above the card, with the 'Configure' option highlighted by a red arrow. The menu also includes 'Data visualization' and 'Delete'.

The **Configuration** panel will appear on the right side. Expand **Header and border**, change the **Chart title** from My Tasks to **Procurement Requests**.

The Score card data visualization has a filter applied by default, let's remove the filter so the total number of procurement requests will be displayed. From the **Data sources Configuration**, click **Edit** next to **IT Procurement Request Data sources**, click **Edit** from the dropdown.



Click **Edit filters**.

Remove the **Assigned to is (dynamic) Me** filter by clicking **X**.

Edit data source

Select a source *(i)*

Selected table: IT Procurement Request [x_snc_it_procure_0_it_procurement_request]

Filters

Predefined conditions

We couldn't find any predefined conditions for this table.

▼ Conditions

All of these conditions must be met

Active is true AND Assigned to is (dynamic) Me OR AND

or

New Criteria

Related List Conditions

Run

Click **AND** to add a condition

Selected table: IT Procurement Request [x_snc_it_procure_0_it_procurement_request]

Filters

Predefined conditions

We couldn't find any predefined conditions for this table.

▼ Conditions

All of these conditions must be met

Active is true OR AND

Configure the **condition** where **Parent is empty**. We will be creating sub-tasks from the Master (parent) IT Procurement Request record, we do not want the sub-tasks to be listed.

Selected table: IT Procurement Request [x_snc_it_procure_0_it_procurement_request]

Filters

Predefined conditions

We couldn't find any predefined conditions for this table.

▼ Conditions

All of these conditions must be met

Active is true AND Parent is empty OR AND

or

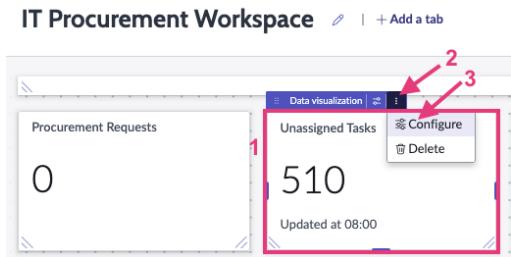
New Criteria

Related List Conditions

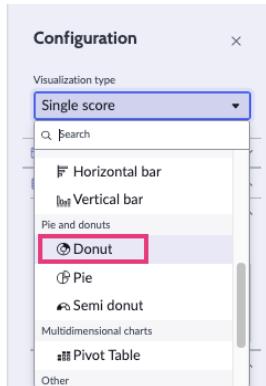
Run

Click **Apply** at the bottom right.

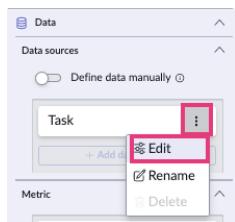
8. Let's edit another data visualization card. Click on the **Unassigned Tasks** card. Click to configure the card, and from the dropdown click .



From the **Configuration panel**, change the **Visualization type** to a **Donut**.



From the **Data sources Configuration**, click next to **Task Data sources**, click from the dropdown.



Select **IT Procurement Request** as the data source.

Edit data source

Select a source ⓘ

Selected table: IT Procurement Request [x_snc_it_procure_0_it_procurement_request]

Search sources

Suggested

IT Procurement Request [x_snc...]

Tables

Indicators

Filter

Predefined conditions

We couldn't find any predefined conditions for this table.

+ Add custom conditions

Run

Preview record list ⓘ

Last refreshed just now.

Active	Activity due	Additional assignee list	Approval	Approval history
0 records				

10 rows per page

Click **+Add custom conditions**.

Edit data source

Select a source ⓘ

Selected table: IT Procurement Request [x_snc_it_procure_0_it_procurement_request]

Search sources

Suggested

IT Procurement Request [x_snc...]

Tables

Indicators

Filter

Filters

Predefined conditions

We couldn't find any predefined conditions for this table.

+ Add custom conditions

Run

Add cust

Configure the **condition** as **Parent is empty**. Click **Apply**.

Filters

Predefined conditions

We couldn't find any predefined conditions for this table.

Conditions

All of these conditions must be met

Parent is empty

From **Group by Configuration**, click next to **Active**. Select **Procurement Category** as the Group by field. Click **Apply**.

Group by

Field for IT Procurement Request

Procurement Category 2

Max number of groups

10

Show others

Hide elements with 0 values 3

Apply

Request

Format values

Group by

1

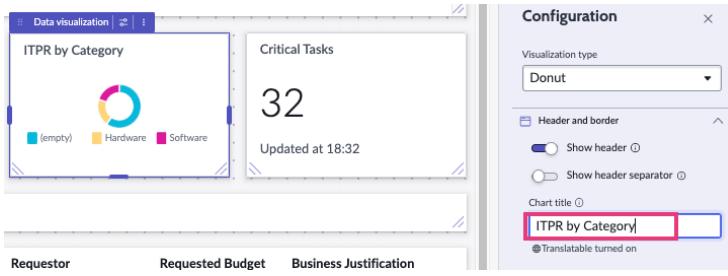
Active

Sorting

Additional settings

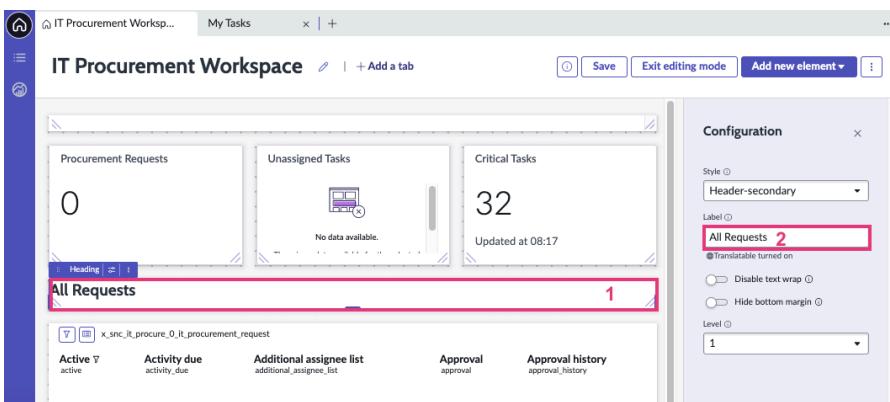
Data update

Update the **Chart title** in the **Header and border** section to **ITPR by Category**. Click **Save**.

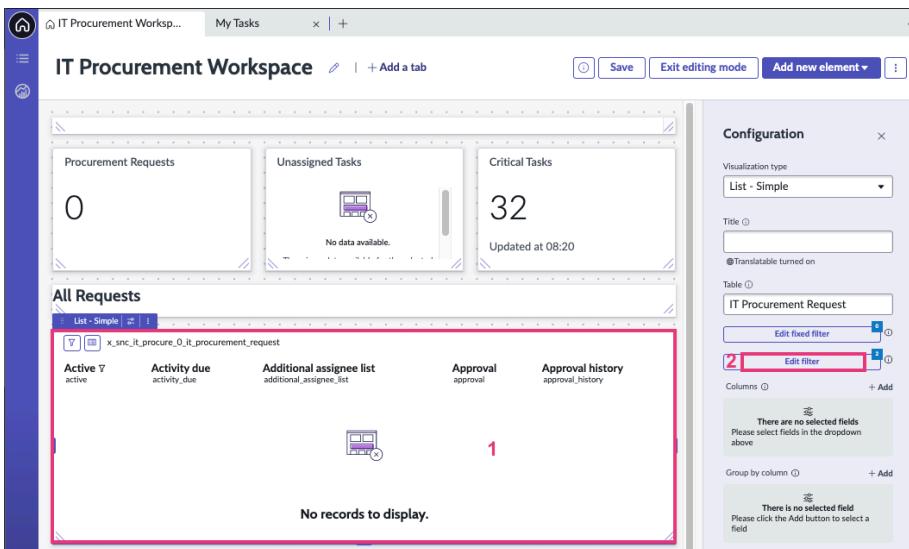


We have successfully configured a nice donut pie visual to tally on the type of procurement requests submitted. If the donut is not being displayed, it's because we do not have any IT Procurement Request data yet.

9. Click on **My Work Header**, and change the **Label** from **My Work** to **All Requests**.

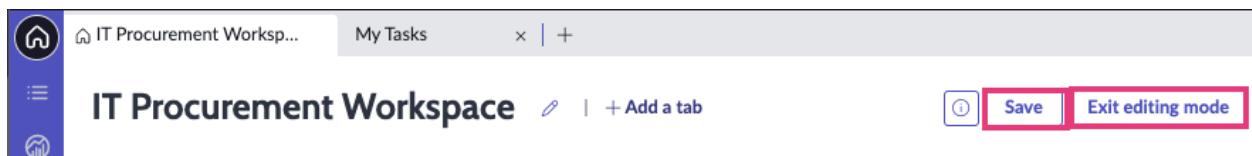


10. Click on the **List**. Click **Edit filter** from Configuration panel.



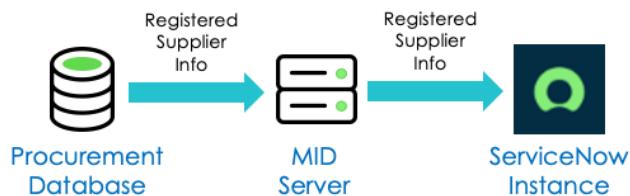
From the pop-up, remove the **Assigned to is (dynamic) Me** filter by clicking X next to it. Click **and** to add and configure the **Parent is empty condition**. Click **Apply**.

11. Click **Save**, then **Exit editing mode**. We have done editing the Workspace, we will come back to the Workspace later.



Exercise 3: Integration with Remote Database

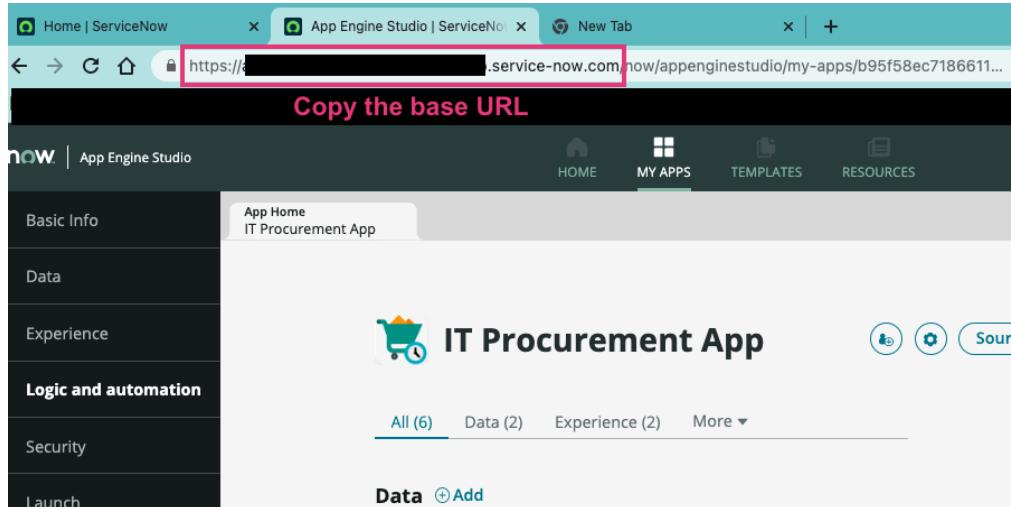
As the procurement team uses a homegrown procurement system to manage registered suppliers information, in this exercise, we will integrate with the procurement system's homegrown database. We will create a **custom spoke** (action) that will connect with the remote MySQL database running on AWS, and read all the suppliers information. The suppliers information will then be stored in the Suppliers custom table within our IT Procurement App.



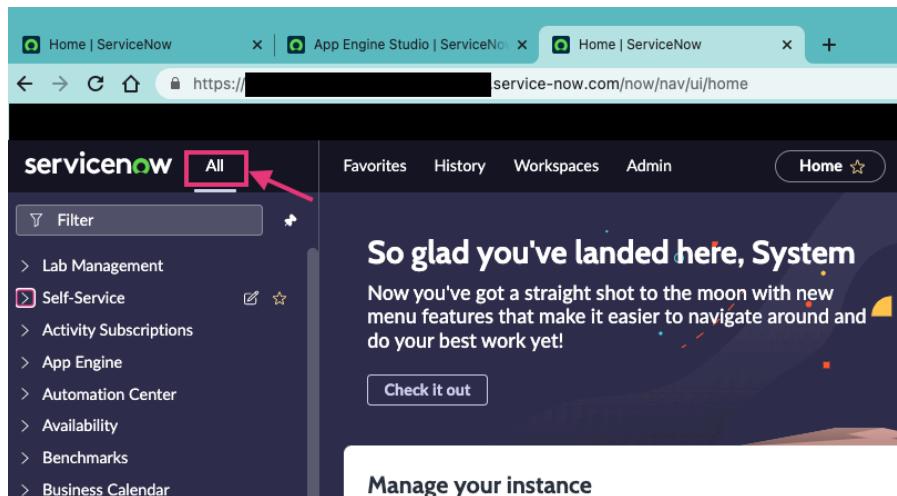
As all database connection is required to be made from the MID Server, will we first validate the MID server prior to configuring the JDBC DB connection.

Validate the MID Server

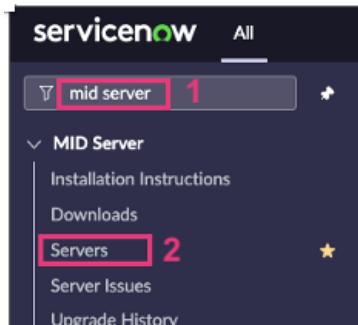
1. Go back to the ServiceNow Home browser tab. Alternatively, copy your instance base URL of format <https://<instance-name>.lab.service-now.com>. Open a new browser tab and open the instance URL in the new tab. This will take you to the Now platform home screen.



Visit the Now platform home page. Note we can access all apps on the Now platform using the **All** navigation menu.



2. Validate the MID Server before we test the new JDBC Connection. From **All** navigation search bar, search for **mid server** and navigate to **Servers** within the **MID Server** menu.



Click to [windows_mid](#) open the only MID server record in the list.

All				
	Name	Host name	Status	Validated
	windows_mid	IP-C633B8E8	Up	No

Click **Validate** from **Related Links**. Click **Save** from **Set Initial Selection Criteria** pop-up window. Click **<** to return to the MID Server list while validation is taking place.

3. Note that the **windows_mid** server is **validated**.

The screenshot shows the ServiceNow interface with the search bar containing 'mid server'. The left sidebar has a 'MID Server' section with 'Servers' selected. The main table lists one server: 'windows_mid' with IP-C633AA1B, status 'Up', validated status 'Yes', and version 'tokyo-07-08-2022_patch1-09-01-2022_09-1...'. A red arrow points to the 'Yes' under 'Validated'.

Configure JDBC Remote Database Connection

- Search for **connections** from the All menu navigation search bar and click **Connections** within the **Connections & Credentials** menu. This will open the list of connections records which is empty initially.

Click **New** from the Connections table to create a new connections record.

The screenshot shows the ServiceNow interface with the search bar containing 'connections'. The left sidebar has a 'Connections & Credentials' section with 'Connections' selected twice (labeled 1 and 2). The main table shows a placeholder image and the message 'No records to display'. A red box highlights the 'New' button in the top right corner of the table area.

- Select **JDBC Connection** as the type of connection to be created. We would like to connect to the remote AWS MySQL database with a JDBC connection.

Connection

What type of Connection would you like to create?

Basic Connection for PowerShell & SSH

HTTP(s) Connection

JDBC Connection

JMS Connection

- Enter the connection **Name** as **Supplier MySQL DB**.

JDBC Connection - New Record

Name: Supplier MySQL DB

Active:

Domain: global

Connection alias:

Query timeout: 0

Connection timeout:

The Format helps you build the connection URL. If you are using a non-standard database, select 'None' to enter your own Connection Url.

Format: -- None --

Host:

Connection URL:

JDBC driver:

Use MID server:

Submit

- Click the **magnifying glass** from the **Connection alias** input field to add details of the MySQL DB JDBC connection.

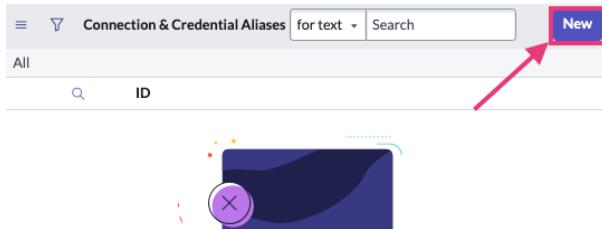
JDBC Connection - New Record

Name: Supplier MySQL DB

Connection alias:

A connection alias resolves your connection and credential at runtime. Only one Connection is active per Connection Alias at a time. [More Info](#)

- Note that a new browser tab opens showing the **Connection & Credential Aliases** list. Click the **New** button from top left to create a new **Connection & Credential Alias**.



Enter **Name** as **Supplier MySQL DB Connection**, select **JDBC** as the **Connection type**, click **Submit** to create the Connection & Credential Aliases record.

1

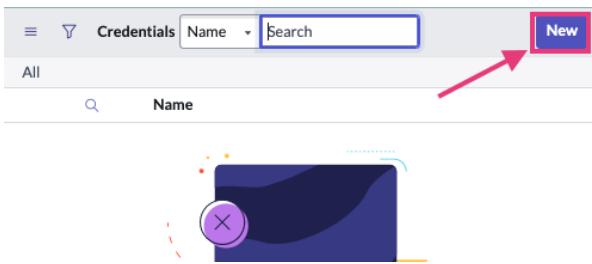
2

3

This will close the Connection & Credential Aliases browser tab and return to the **JDBC Connection New record** page. Note that the Connection alias is now populated with the new record we just created.

6. Click the **magnifying glass** from the **Credential** input field to add credentials for connecting to the MYSQL DB JDBC connection.

Click **New** from top right to create a new **Credentials** record.



Select **JDBC Credentials** as the **type of Credentials** to be created.

- [API Key Credentials](#)
- [Application Credentials](#)
- [AWS Credentials](#)
- [Azure Enterprise Agreement Credentials](#)
- [Azure SAS credentials](#)
- [Azure Service Principal](#)
- [Basic Auth Credentials](#)
- [CIM Credentials](#)
- [Cloud Management Credential](#)
- [Credential Set](#)
- [Docker Credentials](#)
- [Docker Repositories List](#)
- [**JDBC Credentials**](#)
- [JMS Credentials](#)
- [Kafka SSL credentials](#)
- [OAuth 2.0 Credentials](#)
- [Oracle API Credentials](#)
- [SNMP Community Credentials \(Password Only\)](#)
- [SNMPv3 Credentials](#)
- [SSL Keystore Credentials](#)
- [SSH Private Key Credentials](#)
- [SSH Credentials](#)
- [VMware Credentials](#)
- [Windows Credentials](#)

Enter **Name** of the JDBC Credentials record as **MySQL DB Credentials**. Enter **User name** as **snlab**, **Password** as **Lab1234!**. Click **Submit** to save the new credentials.

JDBC Credentials
New record

Name	Supplier MySQL DB Credential 1	Applies to	All MID servers
Active	<input checked="" type="checkbox"/>	Order	100
User name	snlab 2		
Password	***** 3 Lab1234!		

A connection alias resolves your connection and credential at runtime. More than one Credential can be active per Connection Alias at a time. If more than one credential is active, they will be used in order.

Credential alias

Submit **4**

This will close the JDBC Credentials browser tab and return to the **JDBC Connection New record** page. Note that the Credential is now populated with the new credential record we just created.

JDBC Connection
New record

* Name	Supplier MySQL DB
Credential	MySQLDB Credentials
A connection alias resolves your connection and credential at runtime. Only one Connection is active per Connection Alias at a time. More Info	
* Connection alias	x_snc_it_procure_0.Supplier_My
Query timeout	0

- In the **JDBC Connection New record** page, select Format as **MySQL**, enter the **Host** as **cmadb.cwjmmjhjghoa.ap-southeast-2.rds.amazonaws.com**, **Database** name as **Procurement**, and Override default port with **3306**.

Check **Use MID server**. Advanced MID Server Configuration tab will be displayed. Select **Specific MID Server** as **MID Selection**.

Click the **magnifying glass** on the right of the **MID Server** input field, and select the available MID Server with Name **windows_mid**. Compare your entries with the JDBC Connection form shown below.

Right click on the **JDBC Connection title grey bar**, click **Save**.

Right Click 9

8. Click **Test connection** to test the MySQL JDBC connection.

Click **OK** from the Test Connection pop-up window. Click **OK** when connection is validated.



We have connected to the remote AWS MySQL database successfully.

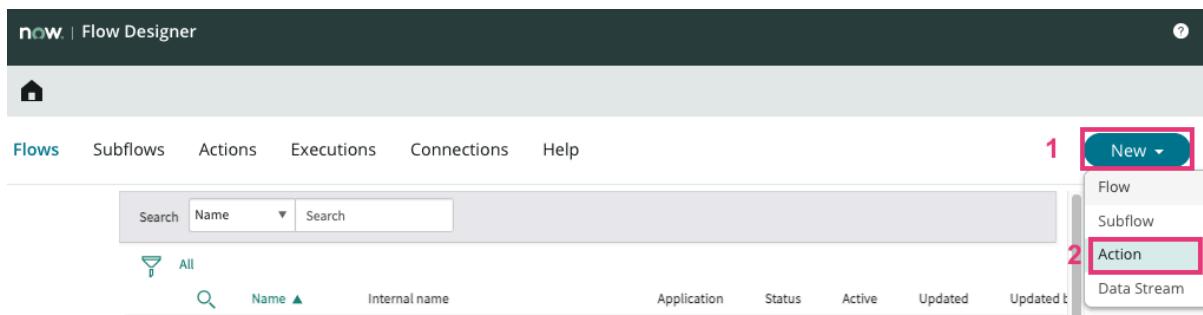
Build Custom Integration to Extract Suppliers Data from Procurement DB

Now we are ready to create an Action as the custom MySQL DB integration spoke and build the Workflow that reads registered Suppliers information from the Procurement database and populating the information the custom **Suppliers** table within our App.

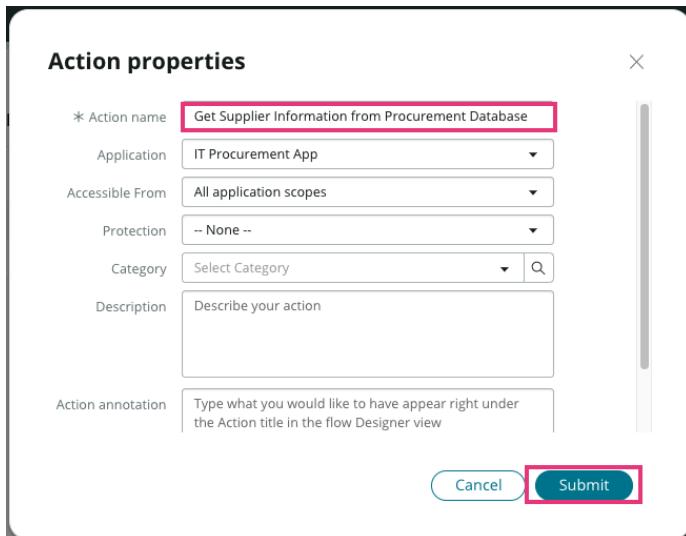
1. Search for **Flow Designer** from All navigation menu, click **Flow Designer** within the **Process Automation** menu. Flow designer will be opened in a new browser tab.



2. Click the **New** button and select **Action** from the drop-down.



3. In the Action properties pop-up window, enter **Action name** as **Get Supplier Information from Procurement Database**, click Submit.

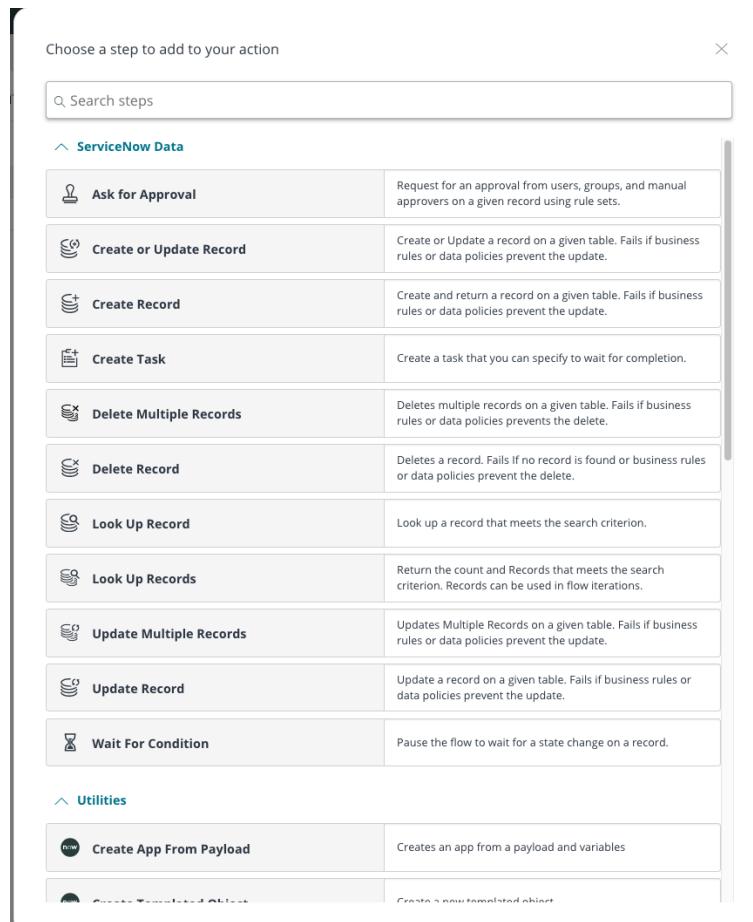


The Action editor is launched.

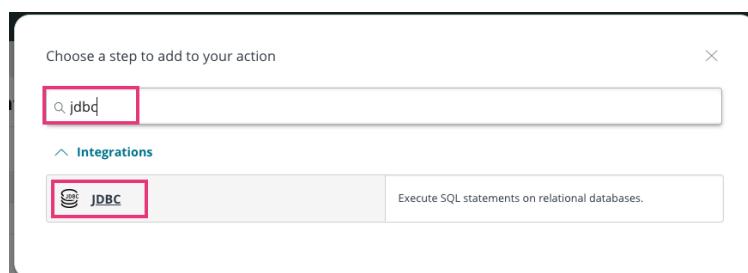
- In the **Action Outline** left menu, click the **+ icon** in-between the **Inputs** and **Error Evaluation** Actions.

The screenshot shows the ServiceNow Flow Designer interface. The top navigation bar includes 'now | Flow Designer', 'scriptsync', 'Test', 'Publish', 'Save', and a '...' button. Below the navigation is a breadcrumb trail: 'Action Get Supplier Inform...'. The main area features the 'Action Outline' panel. On the left, there are three expandable sections: 'Inputs' (highlighted with a pink box and a red arrow pointing to its '+ icon'), 'Error Evaluation', and 'Outputs'. To the right of these sections is a table titled 'Action Input' with columns: 'Label', 'Name', 'Type', and 'Mandatory'. At the top of the table is a button labeled '+ Create Input'. The 'Data' section is also visible on the far right.

The **Choose a step to add to your action** window will pop-up.



Search for **jdbc**, and select the **JDBC** option returned from the search bar.

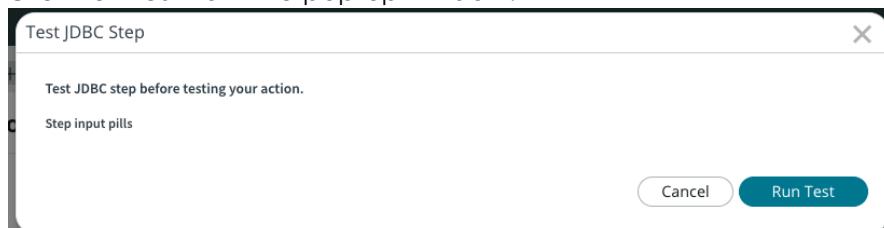


This will add the **JDBC Step** in the Action Outline.

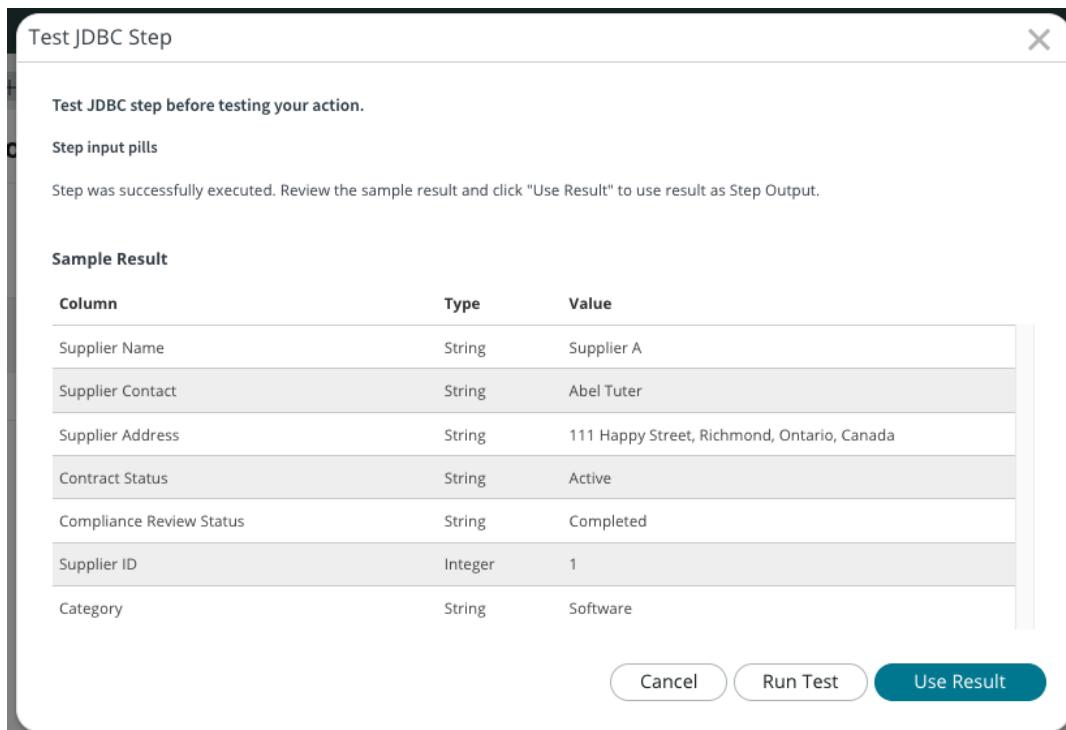
5. Click the drop-down triangle arrow to select **x_snc_it_procure_0.Supplier(MySQL_DB_Connection)** as the **Connection Alias**. Note that the connection alias name may be different in your instance, select the one that you have created from previous steps. In **SQL Statement**, enter **select * from Suppliers**. This is a SQL statement that reads all the records in the MySQL Suppliers table within the Procurement database.

- Click **Test JDBC Step** to test our connection and SQL statement. If you are getting an error from the test, check the syntax of the SQL statement.

Click **Run Test** from the pop-up window.



Note that the test report shows all the information read from the remote MySQL database. Click **Use Result**.



This will create the **ResultSet JDBC Step Output**, it can be seen from the Data menu left panel. Click **Save**.

Action Outline

1. JDBC step

Connection Details

JDBC Configuration

SQL Statement: select * from Suppliers

Outputs

Data

ResultSet

- Supplier Name
- Supplier Contact
- Supplier Address
- Contract Status
- Compliance Review Status
- Supplier ID
- Category

7. The last part of the custom integration action is to define the output. From the **Action Outline** menu on the left, click **Outputs**. From the Action Output editor, click **+ Create Output**.

Get Supplier Information from Procurement Database

Action Outline < Action Output

Inputs + JDBC step JDBC

Error Evaluation + Outputs 1

No output items have been defined yet. To define action outputs, select Create Output, then set the value manually or from data pill from your Action steps.

2 **+ Create Output**

Edit Outputs

Add the output variables:

Label	Name	Type
Suppliers Information	suppliers_info	Array.Object
Number of Registered Suppliers	suppliers_count	Integer

Get Supplier Information from Procurement Database

Action Outline < Action Output

Inputs + JDBC step JDBC

Error Evaluation + Outputs

Label	Name	Type	Mandatory
Suppliers Information	suppliers_info	Array.Object	<input checked="" type="checkbox"/>
Suppliers Information_...	suppliers_information_...	Object	<input type="checkbox"/>
Number of Registered Suppliers	suppliers_count	Integer	<input checked="" type="checkbox"/>
Action Status	_action_status_	Object	<input type="checkbox"/>

1, 3 **+ Create Output** 5 **Exit Edit Mode**

Click **Exit Edit Mode**.

8. From the Data menu on the right panel, drag and drop the **JDBC step Outputs**, **ResultSet > Records** and **Total Rows** data pills into the Action Output **Suppliers Information** and **Number of Registered Suppliers** variables respectively.

Action Outline

- Inputs
- 1 JDBC step JDBC
- Error Evaluation
- Outputs

Action Output

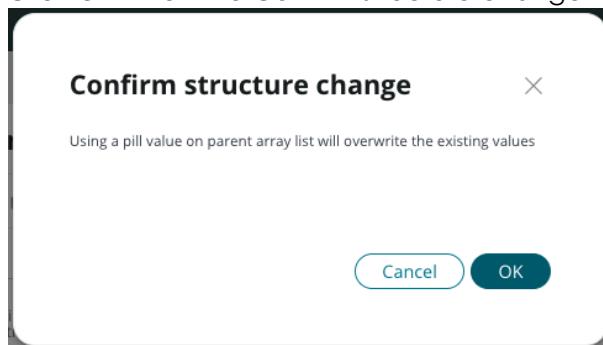
Label	Value
Suppliers Information	Drag and drop array.object type pill
Number of Registered Suppliers	
Action Status	Drag and drop object type pill
Code	
Message	

Data

- Input Variables
- JDBC step
 - Variables
 - Credential Value
- Outputs
 - ResultSet
 - Records
 - Total Rows
- Output Variables

Object Array.Object Object Integer String Object Integer

Click **OK** when the Confirm structure change window pops-up.



Click **Save**.

Action Outline

Action Output

Save

9. We have now completed the custom integration Action and is ready to test it. Click **Test**.

Action Outline

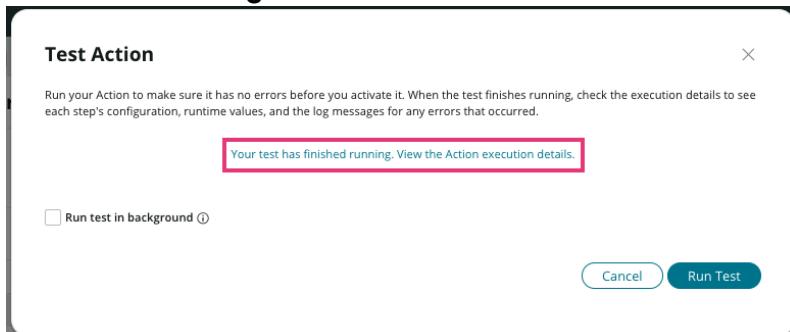
Action Output

Label	Value
Suppliers Information	step > ... > Records
Number of Registered Suppliers	step > ... > Total Rows
Action Status	Drag and drop object type pill

Data

- Input Variables
- JDBC step
 - Variables
 - Credential Value
- Outputs
 - ResultSet
 - Total Rows

Click **Run Test** from **Test Action** pop-up window. After the test has finished running, click **Your test has finished running. View the Action execution details.**



Note that the action ran successfully. Click into the **Suppliers Information** to check the returned information from the remote database.

VARIABLE NAME	RUNTIME VALUE	CONFIGURATION	TYPE
Action Status	{"Action Status":{"code":0,"message":"Success"}}		Object
Don't Treat as Error	true	true	True/False
Number of Registered Suppliers	4	total_rows	Integer
Suppliers Information	<pre>[{"Suppliers Information": [{"category": "Software", "compliance_review_status": "Completed", "contract_start_date": "2023-01-01", "contract_end_date": "2024-12-31", "name": "Acme Corp", "status": "Active"}, {"category": "Hardware", "compliance_review_status": "Pending", "contract_start_date": "2023-02-01", "contract_end_date": "2024-01-31", "name": "Baztek Solutions", "status": "Active"}, {"category": "Software", "compliance_review_status": "Completed", "contract_start_date": "2023-03-01", "contract_end_date": "2024-02-28", "name": "Codelink Solutions", "status": "Active"}, {"category": "Hardware", "compliance_review_status": "Pending", "contract_start_date": "2023-04-01", "contract_end_date": "2024-03-31", "name": "Dynamix Solutions", "status": "Active"}]}</pre>	Array.Object	

Review the information retrieved from the Procurement database. Note that there are 4 registered suppliers returned from the Procurement database's Suppliers table.

Close the results window. **Close** the Operation Execution Details tab. **Close** the Test Action pop-up window.

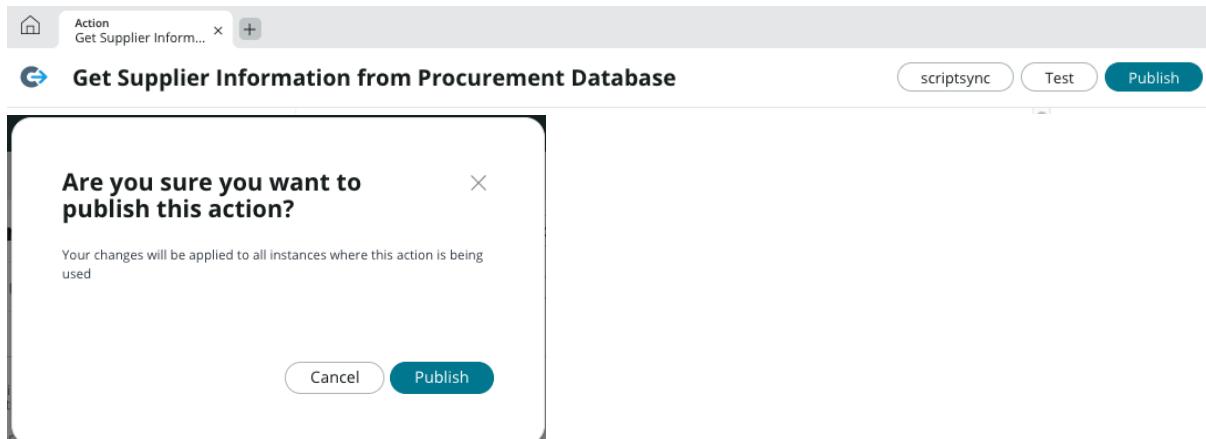
Viewing suppliers_info [array.object]

Raw Text Formatted

```
{
  "Suppliers Information": [
    {
      "category": "Software",
      "compliance_review_status": "Completed",
      "contract_status": "Active",
      "supplier_address": "111 Happy Street, Richmond, Ontario, Canada",
      "supplier_contact": "Abel Tuter",
      "supplier_id": 1,
      "supplier_name": "Supplier A"
    },
    {
      "category": "Software",
      "compliance_review_status": "In Progress",
      "contract_status": "In Progress",
      "supplier_address": "222 Wonderful Crescent, Discovery Land, Singapore",
      "supplier_contact": "Abraham Lincoln",
      "supplier_id": 2,
      "supplier_name": "Supplier B"
    },
    {
      "category": "Services",
      "compliance_review_status": "Completed",
      "contract_status": "Active",
      "supplier_address": "333 Joyful Mansion, Epic City, USA",
      "supplier_contact": "Adela Cervantsz",
      "supplier_id": 3,
      "supplier_name": "Supplier C"
    },
    {
      "category": "Services",
      "compliance_review_status": "Completed",
      "contract_status": "Active",
      "supplier_address": "444 Low Code Drive, App Engine Studio, USA",
      "supplier_contact": "Aileen Mottern",
      "supplier_id": 4,
      "supplier_name": "Supplier D"
    }
  ]
}
```

Close

- Click **Publish** so that the **Get Supplier Information from Procurement Database** action can now be used in a workflow. Click **Publish** from the pop-up to confirm.



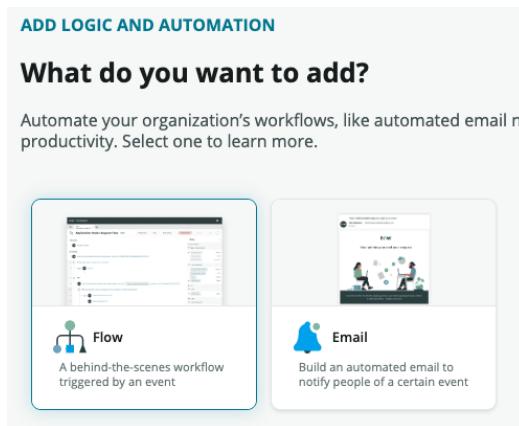
Close the Flow Designer browser tab.

Build the Integration Workflow

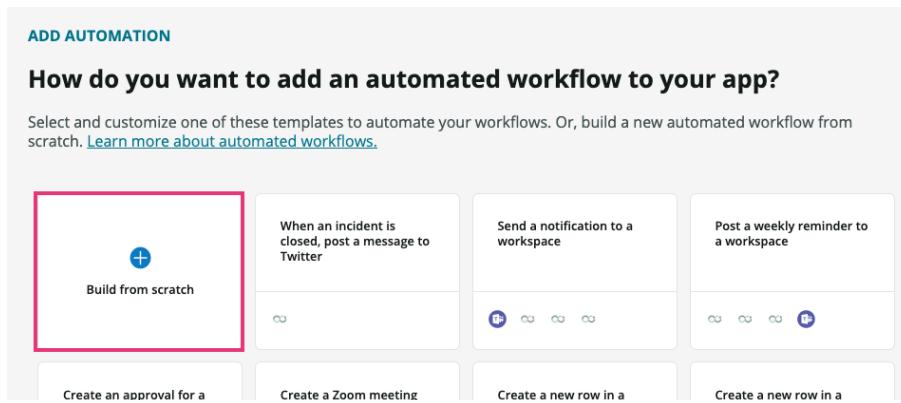
1. Let's create the workflow that ingest Suppliers Information from the remote Procurement MySQL database using the Action that we have created from the previous exercise. Return to the **App Engine Studio** browser tab with. From the **App Home** tab, click **+ Add in Logic and automation**.



2. Select **Flow** from **What do you want to add?**



3. Select **Build from scratch** from **How do you want to add an automated workflow to your app?**



4. In the **Let's set up your flow window**, enter **Name** as **Get Suppliers Information from Procurement DB**, enter **Description** as **To retrieve supplier info and save the info into in this app**. Click **Show advanced options**. Select **Run as System User**. Click **Continue**.

ADD AUTOMATION

Let's set up your flow

This flow needs a name, description, and other details.

Name * ⓘ

Description ⓘ

Show advanced options ↗

Application

Protection ⓘ

-- None --

Run as ⓘ

Cancel **Continue**

5. Click **Edit this flow**.

ADD AUTOMATION

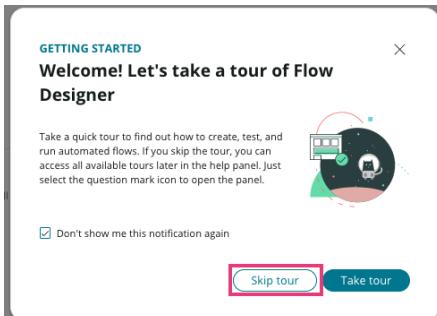
Success! Your flow is ready.

You can edit your new flow or choose "Done" to continue building the rest of your app

	Flow name	Description
	Get Suppliers Information from...	To retrieve supplier info and save the info into in...

Edit this flow **Done**

This opens the **Flow Designer**. If the **Welcome! Let's take a tour of Flow Designer** window pop-up, check **Don't show me this notification again**, and click **Skip tour**.



6. From the Flow Designer, in the Trigger section, click **+ Add a trigger**.

Get Suppliers Information from Procurement DB [Inactive]

TRIGGER

ACTIONS

ERROR HANDLER

If an error occurs in your flow, the actions you add here will run.

We intend to import the suppliers information once a day. Search **daily** from the **Select a Trigger search bar**. Select **Daily** from the **DATE trigger category**.

Abort trigger creation

Trigger Select a Trigger

1 daily

DATE Daily

ACTIONS

2 Daily

Trigger initiates on a daily

Leave the default time as is and click **Done**.

Trigger Daily at 15:00:00

Trigger Daily

* Time 15 h 00 m 00 s

Delete Cancel Done

7. As a first action to the workflow, it is to read the suppliers information from the remote database. To add an Action, click **+ Add an Action, Flow Logic, or Subflow**

Get Suppliers Information from Procurement Database

TRIGGER

Daily at 15:00:00

ACTIONS

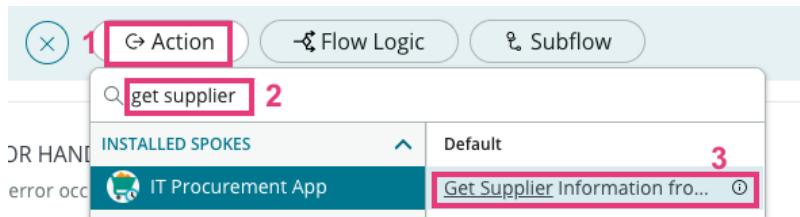
Add an Action, Flow Logic, or Subflow

ERROR HANDLER



If an error occurs in your flow, the actions you add here will run.

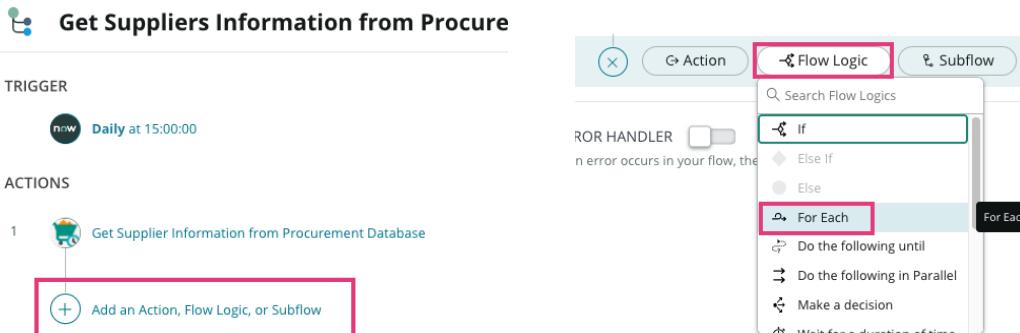
Click **Action**, search for **get supplier**, click the **Get Supplier Information from Procurement Database** custom spoke (integration action), this is the spoke we created from previous exercise.



Click **Done**.

Save the Workflow.

- After reading the suppliers information, we will then write the information into our application table, the Suppliers table. Click **+ Add an Action, Flow Logic, or Subflow**. Select **Flow Logic** and click **For Each** from the drop down.



Drag and drop the Suppliers Information data pill from Action step 1's output into the Items of the For Each Logic. This will traverse through the list of items returned from the Procurement database read from the previous step. Click **Done**.

ACTIONS

- 1 Get Supplier Information from Procurement Database
- 2 For Each Item in

Items Drag and drop a data pill in Items

Add an Action, Flow Logic, or Subflow

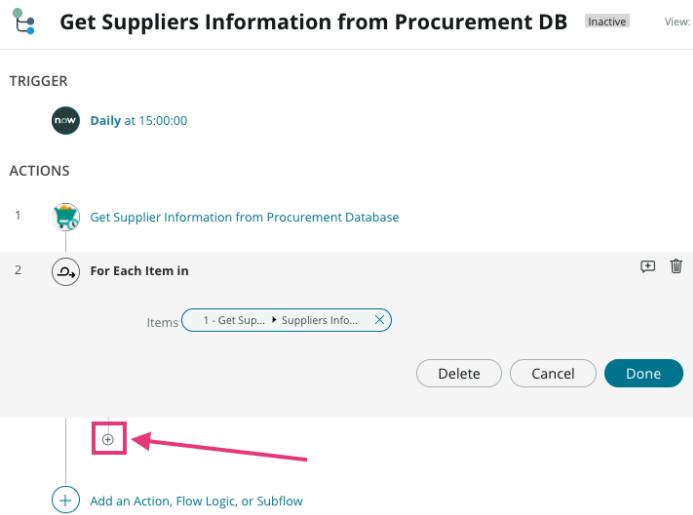
ERROR HANDLER

If an error occurs in your flow, the actions you add here will run.

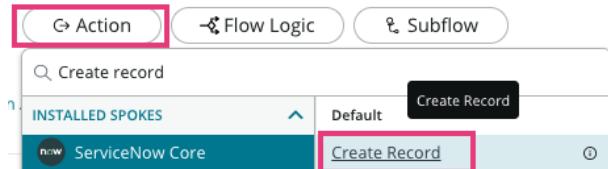
Suppliers Information

- Action Status
- Record
- Supplier Name
- Supplier Contact
- Supplier Address
- Contract Status
- Compliance Review Status
- Supplier ID
- Category
- Number of Registered Suppl...

9. Add an Action within the For Each logic by clicking the smaller +.



Click **Action**. Search for the **Create Record** action, and select it. We will create a record in the local Suppliers custom table for each registered supplier read from the remote procurement database.



Select **Suppliers** as **Table**. Click **+ Add field values** respectively to add fields to the record:

- Supplier
- Procurement System Supplier ID
- Supplier Address
- Contract Status
- Compliance Status

From the **data output** of **2 – For Each Logic**, expand the **Record** data pill. **Drag and drop** the **Record data pills** into the respective **Create Suppliers Record** field's **value input box**. The data pills included **Supplier Name**, **Supplier Contact**, **Supplier Address**, **Contract Status**, **Compliance Review Status**, and **Supplier ID**.

Get Suppliers Information from Procurement DB Inactive

TRIGGER
now Daily at 15:00:00

ACTIONS

- 1 Get Supplier Information from Procurement Database
- 2 For Each Item in 1 - Get Sup... ▶ Suppliers info...
- 3 Create Suppliers Record

Action: Create Record
 * Table: Suppliers [x_snc_it_procure_0_suppliers] **1**
 * Fields:
 Supplier **Supplier**
 Procurement System Supplier ID
 Supplier Address
 Contract Status
 Compliance Status
 + Add field value **2**

Drag and Drop

Object Array.Object Integer

Object String String String String String Integer String

Record Supplier Name Supplier Contact Supplier Address Contract Status Compliance Review... Supplier ID Category

Record Suppliers Record

1 - Get Supplier Information from Procurement Database
 Action Status Object
 Suppliers Information Array.Object
 Number of Registered Suppliers Integer
 Trigger - Run Daily
 Run Start Time UTC Date/Time
 Run Start Date/Time Date/Time
 2 - For Each Record Supplier Name Supplier Contact Supplier Address Contract Status Compliance Review... Supplier ID Category
 3 - Create Record Suppliers Record

The resulting Create Supplier Record Action configuration after the drag and drop activities. Click **Done**.

Create Suppliers Record

Action: Create Record
 * Table: Suppliers [x_snc_it_procure_0_suppliers]
 * Fields:
 Supplier **Supplier**
 Procurement System Supplier ID
 Supplier Address
 Contract Status
 Compliance Status
 + Add field value

2 - For Each ▶ ... ▶ Supplier Name
 2 - For Each ▶ ... ▶ Supplier ID
 2 - For Each ▶ ... ▶ Supplier Address
 2 - For Each ▶ ... ▶ Contract Status
 2 - For Each ▶ ... ▶ Compliance Review...

Delete Cancel Done

10. **Save** the workflow.

11. To test the workflow click **Test** and **Run Test**. After the test finishes running, click **Your test has finished running. View the flow execution details.**

Review the test results. Review the output of step 3 by clicking **Create Record**. Traverse through the list of Suppliers written into the Suppliers table by clicking the **up** arrow count of the **For Each** logic.

EXECUTION DETAILS Get Suppliers Information from Procurement DB

Test Run - Completed Open Flow Open Context Record

Hide Action Details State Start time ⓘ

FLOW STATISTICS Run as: System Open Flow Logs ⓘ Completed 2023-04-11 10:42:58 450ms

TRIGGER

now Daily at 15:00:00

ACTIONS

1 Get Supplier Information from Procurement Database Completed 2023-04-11 10:42:58 218ms

2 For Each Item in 1 - Get Sup... ▶ Suppliers Info... 1 of 4 Completed 2023-04-11 10:42:59 98ms

3 now Create Record 1 Core Action Completed 2023-04-11 10:43:01 20ms

Configuration Details

VARIABLE NAME	RUNTIME VALUE	CONFIGURATION	TYPE
Table	x_snc_it_procure_0_suppliers	x_snc_it_procure_0_suppliers	Table Name
Fields	supplier=Supplier A procurement_system_supplier_id=1 supplier_address=111 Happy Street, Richmond, On...	supplier= 2 - For E... ▶ ... ▶ Supplier Na... procurement_system_supplier_id= 2 - For Each ... ▶ Supplier ID supplier_address= 2 - For E... ▶ ... ▶ Supplier Addr... contract_status= 2 - For E... ▶ ... ▶ Contract Sta... compliance_status= 2 ... ▶ ... ▶ Compliance Revie...	Template Value

Output Data

VARIABLE NAME	RUNTIME VALUE	CONFIGURATION	TYPE
Action Status	{"Action Status":{"code":0,"message":"Success"}}		Object
Don't Treat as Error	true	true	True/False
Record	SUPPLIER0001001 ⓘ	record	Document ID
table_name	x_snc_it_procure_0_suppliers	table_name	Table Name

No Logs

ERROR HANDLER

Close the **Executions** tab. **Close** the **Test Flow** pop-up window. Click **Activate**.

12. Navigate to the **App Home** tab in App Engine Studio. **Preview** the Suppliers table.

The screenshot shows the ServiceNow App Home interface. At the top, there are several tabs: "App Home" (highlighted with a red box), "IT Procurement App", "Data Table And Forms Suppliers", "Data Table And Forms IT Procurement Req...", and "Flow Get Suppliers Infor...". Below the tabs, the main content area has a title "IT Procurement ...". It includes a "Source control" button, a "Submit" button, and a "More" button. There are three tabs at the top of the content area: "All (7)", "Data (2)", and "More ▾". On the right, there is a search bar and a magnifying glass icon. The main content area is titled "Data +Add" and says "Store information in your app". It shows two tables: "Suppliers" (Table) and "IT Procurement R..." (Table). Both tables have columns for "Number", "Compliance Status", "Contract Status", "Procurement System Supplier ID", "Supplier", and "Supplier Address". Each table has a "PREVIEW" button (highlighted with a red box) and a "..." button.

Note that all the suppliers information read from the remote database are written into the Suppliers Table.

Suppliers						
	Number	Compliance Status	Contract Status	Procurement System Supplier ID	Supplier	Supplier Address
	SUPPLIER0001001	Completed	Active	1	Supplier A	111 Happy Street, Richmond, Ontario, Canada
	SUPPLIER0001002	In Progress	In Progress	2	Supplier B	222 Wonderful Crescent, Discovery Land, ...
	SUPPLIER0001003	Completed	Active	3	Supplier C	333 Joyful Mansion, Epic City, USA
	SUPPLIER0001004	Completed	Active	4	Supplier D	444 Low Code Drive, App Engine Studio, USA

We have successfully completed the integration and our first workflow. Close the Supplier table browser tab.

Exercise 4: Build the Automated Request Management Workflow

- From App Engine Studio **App Home** tab, Click **+Add** next to Logic and automation. Select **Flow** from **What do you want to add?** Select **Build from scratch** from **How do you want to add an automated workflow to your app?** From **Let's set up your flow**, enter **Name** as **IT Procurement Request Workflow**, **Description** as **Automate IT Procurement Requests Management**. Click **Show advanced options**. Select **Run as System User**. Click **Continue**.

ADD AUTOMATION

Let's set up your flow

This flow needs a name, description, and other details.

Name * ⓘ

Description ⓘ

Show advanced options ↗

Application

Protection ⓘ

Run as ⓘ

Cancel **Continue**

Click **Edit this flow in Success! Your flow is ready.** This will launch the flow designer with the **IT Procurement Request Workflow**.

- In the **Trigger** section, click **+ Add a trigger**. Search for **RECORD Created** as the Trigger agent, select **IT Procurement Request** as the Table. Click **+ Add filters** and configure the condition **Parent is empty** so the flow is only triggered when it is the master record request submitted by end user. Click **Done**.

TRIGGER

Abort trigger creation

Trigger **Select a Trigger**

Created

RECORD

Created

TRIGGER

IT Procurement Request Created where (Parent is empty)

Trigger **Created**

* Table **IT Procurement Request [x_snc_it_procure_0]**

Condition All of these conditions must be met

Parent **is empty**

or

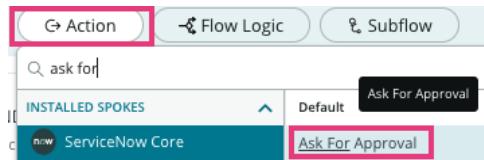
New Criteria

Advanced Options

Delete **Cancel** **Done**

- 3.

4. From the ACTIONS section, click **+ Add an Action, Flow Logic, or Subflow**. Select **Action**. Search and select the **Ask For Approval** action.



Drag and drop the **Trigger Record** as the Ask for Approval record.

Configure the **approval Rules** as **Approve or Reject** When **Anyone approves or rejects**.

Click **Add User** and select **Fred Luddy** as the **Approver**.

Click **Done**.

The screenshot shows the 'Actions' configuration screen for an 'Ask For Approval' action. It includes sections for 'Trigger' (IT Procurement Request Created where (Parent is empty)), 'Actions' (1 Ask For Approval), and 'Data' (various flow variables and triggers). A pink arrow labeled '1. drag and drop' points from the 'Data' section to the 'Record' field in the 'Action' configuration. Numbered callouts explain the steps: 2 'Approve or Re...', 3 'Anyone approves or rejects', 4 'Pick a user', and 5 'Fred Luddy'.

TRIGGER

IT Procurement Request Created where (Parent is empty)

ACTIONS

1 Ask For Approval

Action: Ask For Approval

* Record: Trig... ▶ IT Procurement Req...

Table: IT Procurement Request [x_snc_it_procure_...]

Approval Field: Approval

Journal Field: Approval history

* Rules: Approve or Re..., When: Anyone approves or rejects

Due Date: None

Data Collapse All

- Flow Variables
- Trigger - Record Created
 - IT Procurement Request Rec...
 - IT Procurement Request Ta...
 - Run Start Time UTC
 - Run Start Date/Time
- 1 - Ask For Approval
 - Approval State
 - Action Status
- 2 - If
- 3 - Create Record
 - IT Procurement Request Rec...
 - IT Procurement Request Ta...
 - Action Status

1. drag and drop

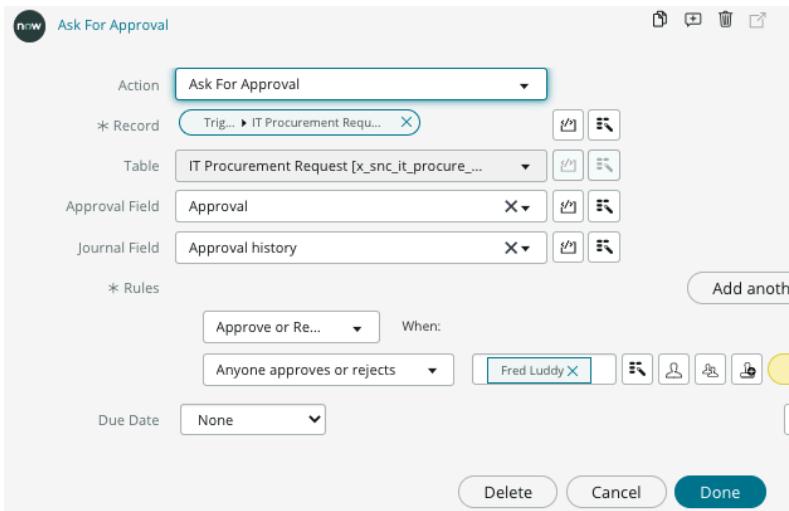
2 Approve or Re...

3 Anyone approves or rejects

4 Pick a user

5 Fred Luddy

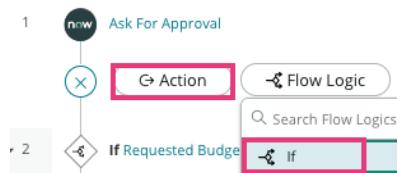
The following shows the configured **Ask for Approval** from Fred Luddy action.



- Dependent on the Approval results, if the IT Procurement request is Approved by Fred Ludy, then IT Procurement will carry on with the Procurement tasks. However, if the request is rejected by Fred, then the request is considered Closed Incomplete.

Click + Add an Action, Flow Logic, or Subflow. Select **Flow Logic**. Use the **If** logic.

ACTIONS

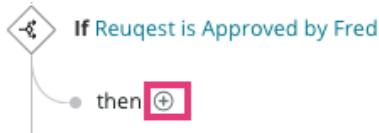


Enter Condition Label as **Request is Approved by Fred**.

From the data pill picker right panel, Drag and drop the **Approval State output from step 1 – Ask for Approval** to the If Condition. Select **Approved** state. Click **Done**.

6. When the request is approved, we would like to create the relevant tasks based on the budget. Create a task for Supplier Quotation which is applicable to both <500k and >= 500k.

Click **+**, select **Action** within the **If Request is Approved by Fred Condition**.



Search and select **Create Task** as the action.

The screenshot shows a search interface with three tabs: 'Action', 'Flow Logic', and 'Subflow'. The 'Action' tab is selected and highlighted with a red box. Below the tabs, there is a search bar containing 'create task'. Underneath the search bar, there are two sections: 'INSTALLED SPOKES' and 'ServiceNow Core'. In the 'ServiceNow Core' section, there is a button labeled 'Create Task' which is also highlighted with a red box.

Select **IT Procurement Request** as the Table where the record should be created.

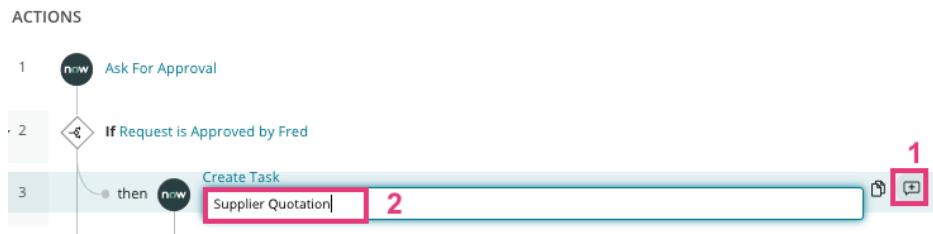
Update the record fields by **+ Add field value**:

Parent	Drag and drop the Trigger Record's SysID
Description	Supplier Quotation
State	Work in Progress
Assigned to	Abel Tuter

The screenshot shows the 'Create Task' dialog box. At the top, it says 'Create Task'. Below that, there are sections for 'Action' (set to 'Create Task') and '* Table' (set to 'IT Procurement Request [x_snc_it_procure...]'). The 'Field Values' section contains four rows: 'Parent' (with a dropdown menu), 'Description' ('Supplier Quotation'), 'State' ('Work in Progress'), and 'Assigned to' ('Abel Tuter'). A red box highlights the 'Parent' row. To the right of the dialog, a context menu is open with various options like 'Short description', 'State', 'Supplier', etc. At the bottom of the dialog, there are 'Delete', 'Cancel', and 'Done' buttons, with 'Done' being highlighted with a red box.

Click **Done**.

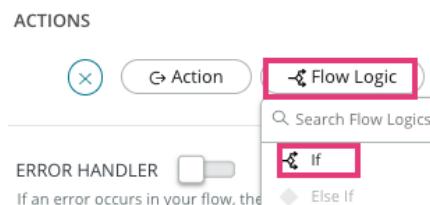
7. Select the **Create Task Action** created from the previous step. Click add annotation , enter the **annotation** as **Supplier Quotation**. Addition annotations to flow actions makes the flow easy to understand on a high level.



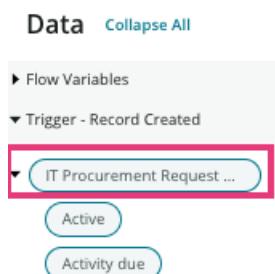
8. This is what the flow would look like by far:



9. Next is to check the requested budget to create the additional tasks if the budget is greater than 500k. Click **+ Add an Action, Flow Logic, or Subflow**. Select **Flow Logic**. Use the **If** logic.



From the data pill picker right panel, expand the **IT Procurement Request Trigger record**.



Enter **Condition Label** as **Requested Budget >= 500k**.

Look for **Requested Budget** data pill, drag and drop to the **If Condition**.

Fill in the condition as **Requested Budget greater than or is 500000**. Click **Done**.



The following is what the flow looks like by far.

IT Procurement Request Workflow

TRIGGER

IT Procurement Request Created where (Parent is empty)

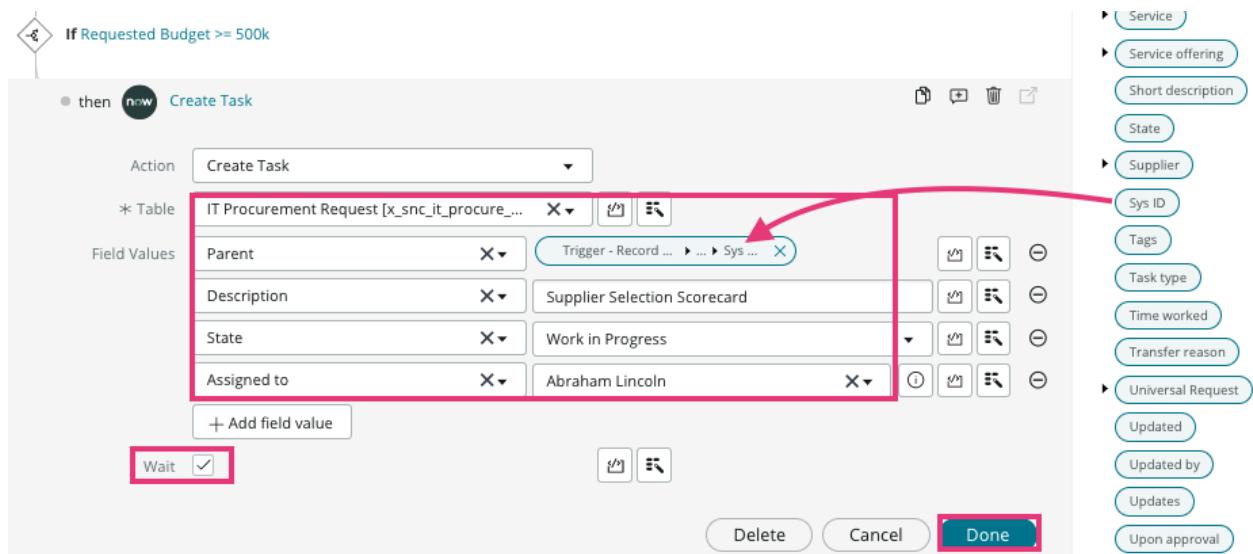
ACTIONS



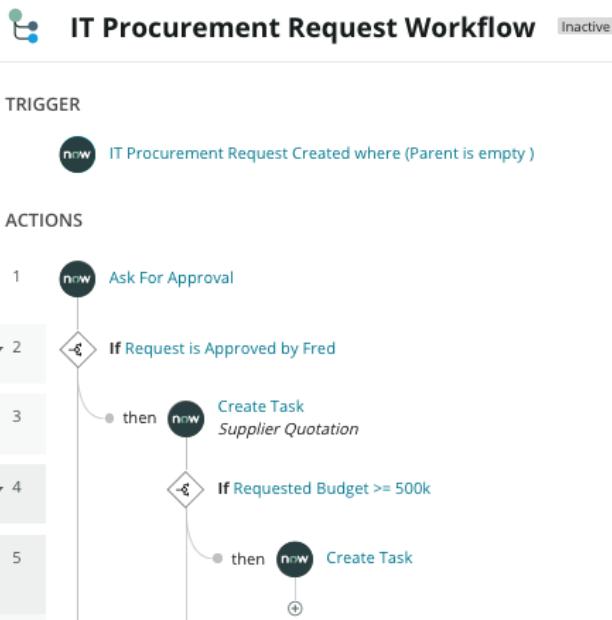
10. Within the **If budget >= 500k condition**, click **+**, select **Action**, search and select **Create Task** Action. Select the **IT Procurement Request** table where the task will reside.

We are creating the task with the **Parent** task as the **SysID of the trigger record**, **Description** as **Supplier Selection Scorecard**, **state** is **Work in Progress**, and select **Assigned to** as **Abraham Lincoln**.

Note that for this task, we will check **Wait**, as we want the supplier selection process/task to be completed before proceed to the 2nd level of Approval request. Click **Done**.

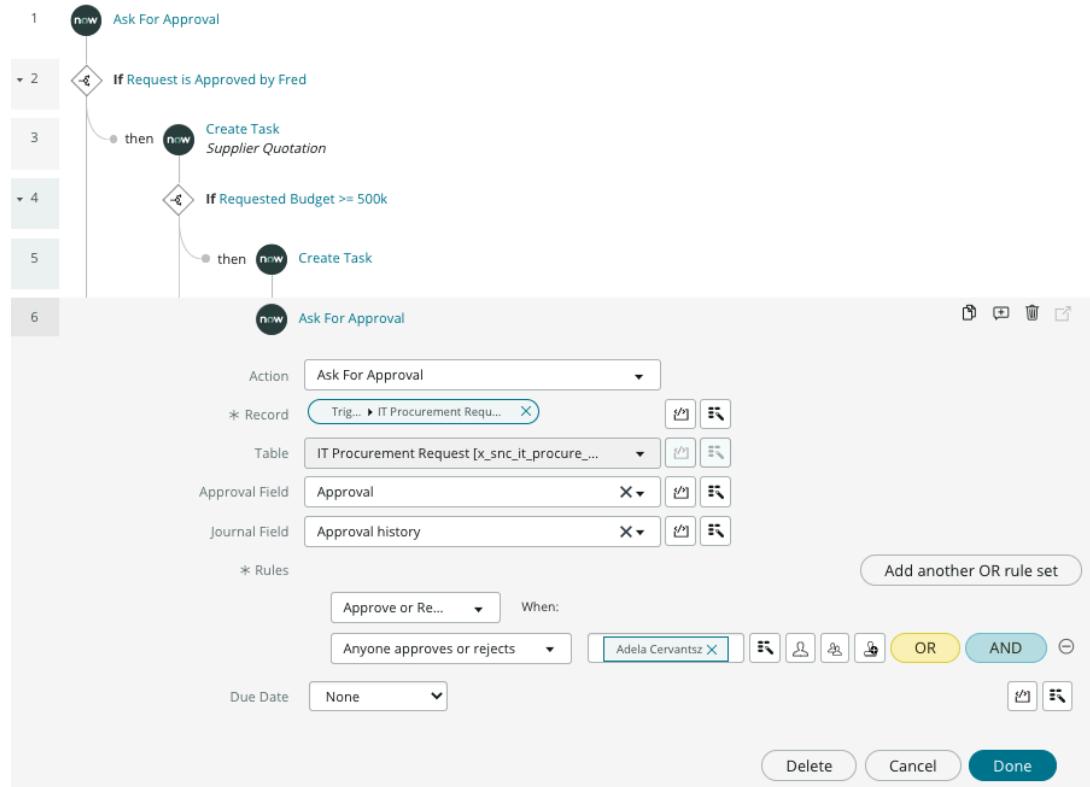


This is what the workflow looks like:

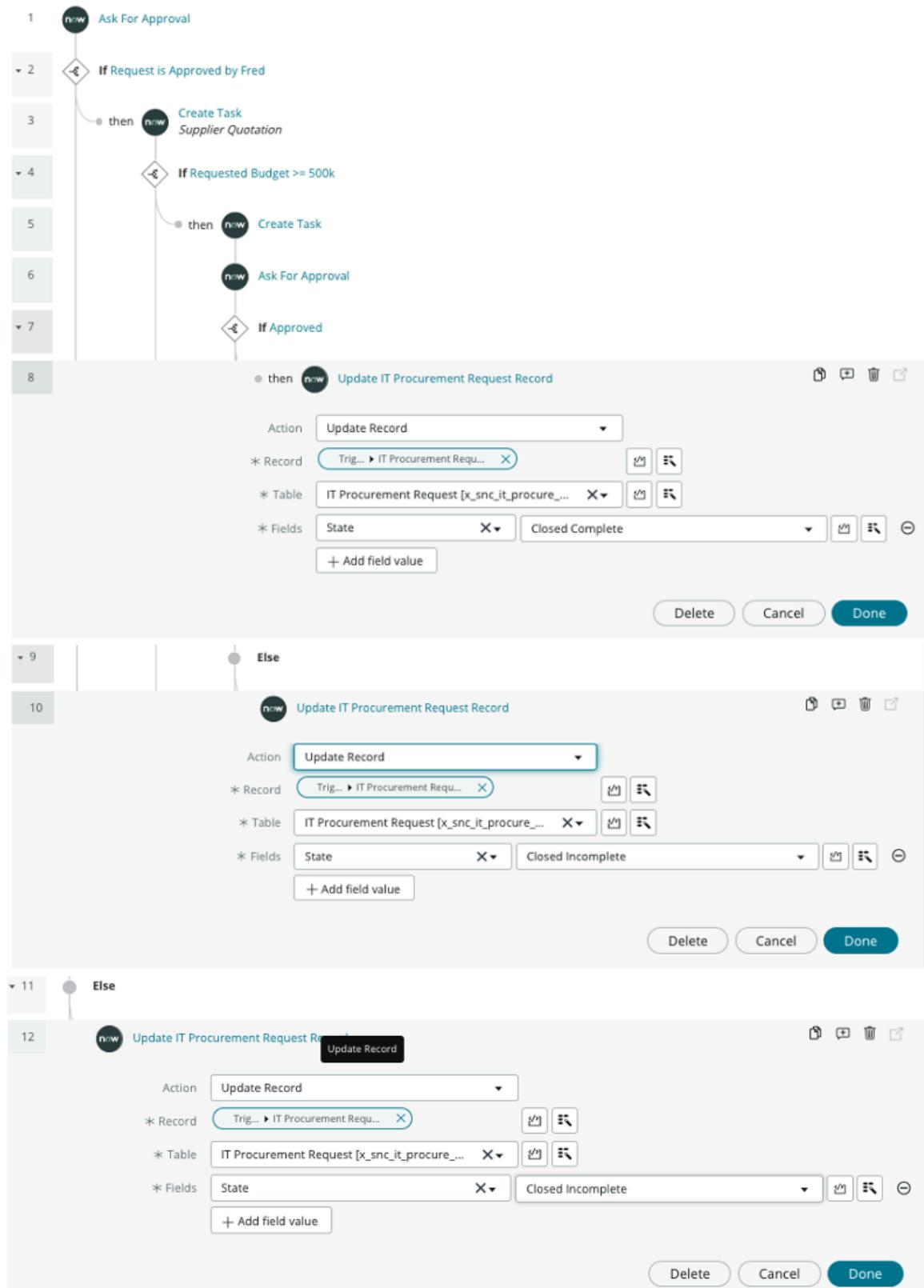


11. Click **Save**. Click **Activate**. Click **Activate** from the pop-up to confirm. The workflow is now ready for Action.

12. **[Optional]** To complete the application workflow, proceed with the following activities:
 - Add a 2nd level of Approval request for Requested Budget $\geq 500k$



- Add an Else Condition for all rejected Approval request. Update the approved and rejected trigger record state as Closed complete and Closed Incomplete respectively.



Exercise 5: Test the Application

- From App Engine Studio **App Home** tab. **Preview** the IT Procurement Workspace.

The screenshot shows the ServiceNow App Home interface for the 'IT Procurement App'. The top navigation bar includes tabs for 'All (10)', 'Data (2)', 'Experience (4)' (which is highlighted in blue), and 'More'. On the right, there are icons for 'Source control', 'Submit', and 'Info'. Below the tabs, a search bar says 'Search experience' with a magnifying glass icon. The main content area is titled 'Experience' with a 'Add' button. It says 'Create interfaces for users to interact with the app'. Below this, a breadcrumb shows 'IT Procurement Workspace > Workspace'. To the right, it says 'Workspace to review, man...' and 'Last edited 2023-04-11 23:33:44'. At the bottom right of the content area is a red-bordered 'PREVIEW' button, and to its right is a three-dot menu icon.

- Click on the **list** icon to visit Workspace list page.

The screenshot shows the 'IT Procurement Workspace' list page. On the left is a vertical sidebar with a 'List' icon (highlighted with a red box and arrow) and a 'Graph' icon. The main content area has a title 'IT Procurement Workspace ▾'. Below it is a card titled 'Procurement Requests' with a count of '0'.

- Click New to create a new ITPR request.

The screenshot shows the 'IT Procurement Request' list page. On the left is a sidebar with 'Lists' and 'My Lists' tabs, and sections for 'IT Procurement Request' (with 'Open' selected) and 'Suppliers'. The main content area shows a table with columns: Number (dropdown), Priority, State, Assigned to, Short description, and Task type. A red arrow points to the 'New' button at the top right of the table.

- When accessing the Workspace IT Procurement Record page for the first time, it will show two notifications pop-up. Close both notifications.

The screenshot shows the 'IT Procurement Request' record page. At the top, there's a header with 'List', 'Create New IT Pr...', and a '+' icon. Below it is a 'Details' section. The main content area has a title 'Create New I' and two notifications: 'Read operation on table 'cxs_table_config' from scope 'IT Procurement App '' was granted and added to 'IT Procurement App ' cross scope privileges' and 'Read operation on table 'sys_ux_page_property' from scope 'IT Procurement App '' was granted and added to 'IT Procurement App ' cross scope privileges'. Each notification has a red-bordered 'X' button to close it. To the right, there's an 'Attachments' section.

5. Enter the IT Procurement Request information as indicated below and click **Save**.

Create New IT Procurement Request

Details

IT Procurement Request

Number	ITPR0001004	State	Open
Assigned to	Andrew Och	Approval	Not Yet Requested
Requestor	System Administrator	Requested Budget	40,000
Procurement Category	Software	Budget Owner	Fred Luddy
Supplier	Supplier A		
<input checked="" type="checkbox"/> Active			
Business Justification For Project ABC.			
Description Need to purchase software for project ABC.			
Work notes			
Approval history			

* Field type journal is not supported.

Attachments

No Attachments Available

Browse for a file to add it as an attachment

Save

Note that the Approval field is automatically updated as **Requested** due to the progress of the IT Procurement Workflow.

ITPR0001004

Priority: 4 - Low State: Open Assigned to: Andrew Och

Details

IT Procurement Request

Number	ITPR0001004	State	Open
Assigned to	Andrew Och	Approval	Requested
Requestor	System Administrator	@ system has modified this field value	
Procurement Category	Software	Requested Budget	40,000

6. For IT Procurement members to be able to see all the relevant information about this workflow, let's update the record view to reflect related tables.

Go back to the App Engine Studio browser Tab. Preview the IT Procurement Request table.

Click the **Number** field of the only record created. This opens up the IT Procurement request record.

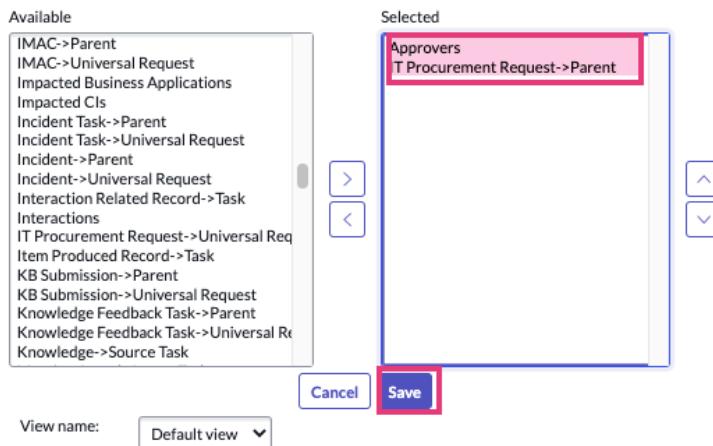
Right click on the **grey menu bar** of the IT Procurement Request record. Select **Configure**, select **Related Lists**.

2023-04-12 09:35:59 - System
Fred Luddy requested to approve task

Approval history

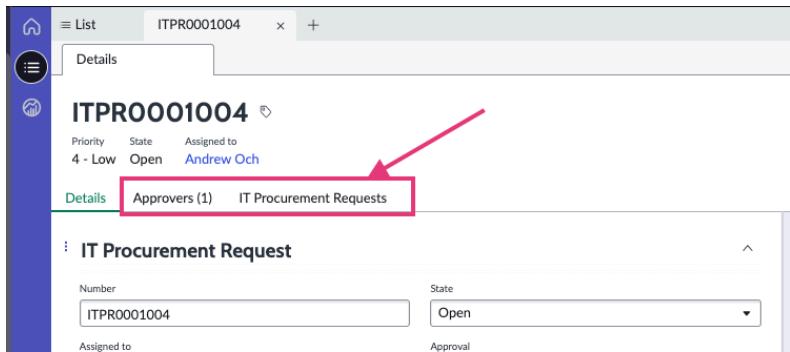
Update **Delete**

Add **Approvers** and **IT Procurement Request → Parent** from Available to **Selected**. Click **Save**.

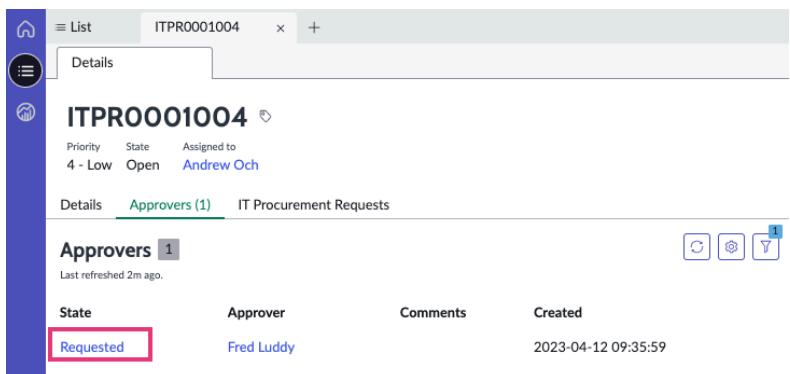


Note that the Approvers and IT Procurement Requests **related lists** appeared at the bottom of the record.

7. Go back to the browser tab with Workspace launched, refresh the record page and note that the additional tabs also appears in the Workspace Record view.

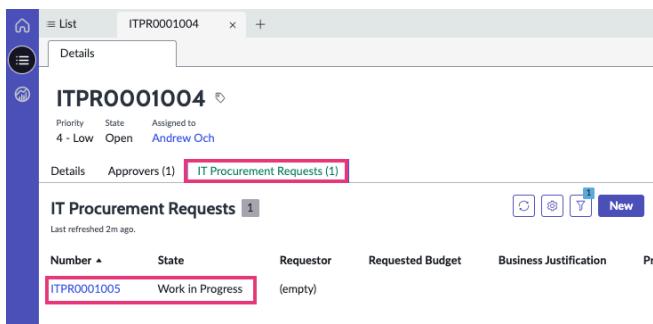


Explore the **Approvers** tab. The approval request is assigned to Fred Luddy. Click Requested state, to access the details of the approval request.



Assume we are Fred Luddy, update the Approval **State** to **Approved**. Click **Save. Close** the approval request tab.

Select the **IT Procurement Request** tab, note that the Related IT Procurement Request is automatically created.



Click and **Edit columns** to edit the list layout in the workspace view.

IT Procurement Requests (1)

Number	State	Requestor	Requested Budget	Business Justification	Pr
ITPR0001005	Work in Progress	(empty)			

Edit the list view as shown below in Selected columns. Click OK.

Edit List

Select columns and put them in the order you want

Available columns

- Active
- Activity due
- Actual end
- Actual start
- Additional assignee list
- Additional comments
- Approval
- Approval history
- Approval set

Selected columns

- Number
- Description
- Assigned to
- State

Cancel OK

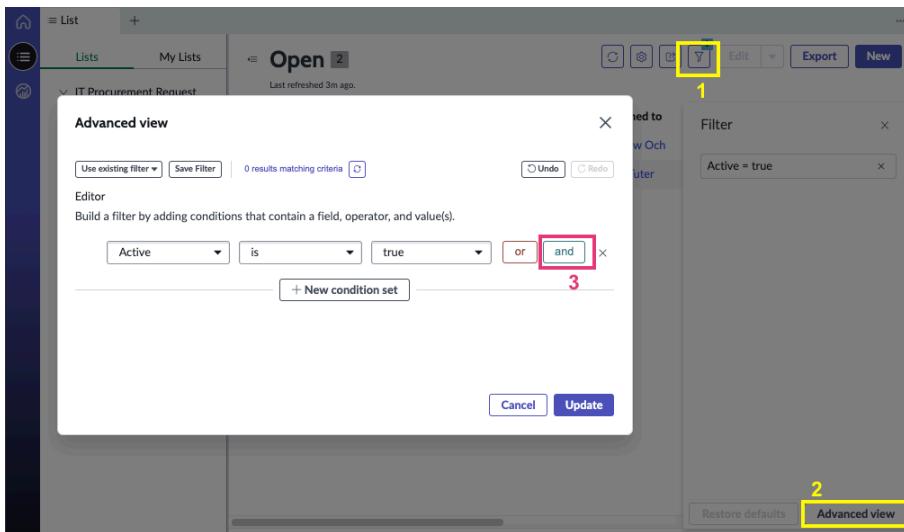
Note that the list view has been updated to show the relevant sub-tasks information. As this requested budget is < 500k, there is only one task created. Close the IT Procurement request record.

IT Procurement Requests (1)

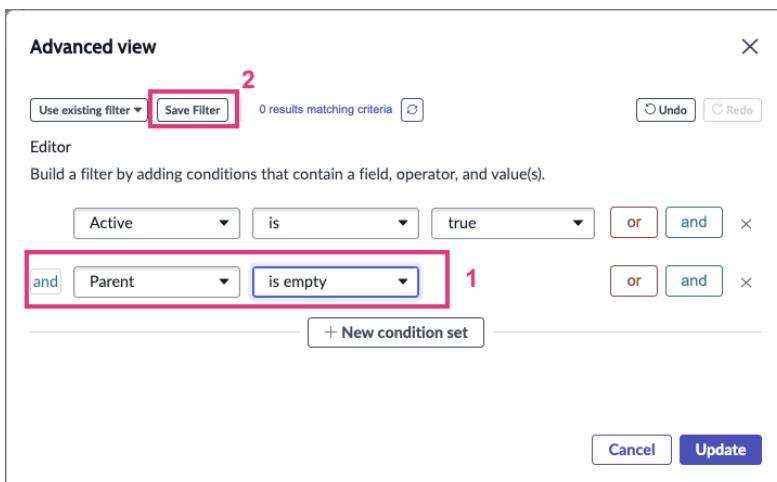
Number	Description	Assigned to	State
ITPR0001005	Supplier Quotation	Abel Tuter	Work in Progress

8. When we returned to the List view of IT Procurement Requests, we want to filter on only showing the Master (Parent) requests and not the sub-tasks. We will update the list view filter.

Click **filter** , click **Advanced View**, click **and**.



Configure **filter Parent is empty**. Optionally, you may **Save Filter**. Click **Update**.



Note that it will only show the Master (Parent) records.

9. Let's perform another workflow test by creating an IT Procurement Request where the budget is > 500k. Click **New** to add a new IT Procurement Request.

The screenshot shows the ServiceNow interface for managing IT Procurement Requests. On the left, a sidebar lists categories like 'IT Procurement Request' (with 'Open' selected), 'Suppliers', and 'All'. The main area displays a table titled 'Open' with one item. The columns are Number (ITPR0001004), Priority (4 - Low), State (Open), Assigned to (Andrew Och), Short description, and Task type (IT Procurement Request). Action buttons at the top right include 'Edit', 'Export', and a highlighted 'New' button.

Ensure that the Requested Budget is over 500k, in the example below, **600k** was used and Secondary Supplier Information is required. **Input** all the relevant information and click **Save**.

The screenshot shows the 'Create New IT Procurement Request' form. The 'Details' tab is selected. The form fields include:

- IT Procurement Request** section:
 - Number: ITPR0001006
 - State: Open
 - Assigned to: Angelo Ferentz
 - Requestor: System Administrator
 - Procurement Category: Hardware
 - Supplier: Supplier B
 - Active: checked
 - Business Justification: Project DEF implementation
 - Description: Require more hardware resources
- Attachments** section: No attachments available. A 'Browse' button is present.

Approve the approval request. Note that after approval, two new tasks are created this time as the requested budget is > 500k.

ITPR0001007

Priority	State	Assigned to
4 - Low	Open	Angelo Ferentz

IT Procurement Requests (2)

Number	Description	Assigned to	State
ITPR0001008	Supplier Quotation	Abel Tuter	Work in Progress
ITPR0001009	Supplier Selection Scorecard	Abraham Lincoln	Work in Progress

10. Return to the Workspace Dashboard by click the Home Icon. Check out the graphics.

IT Procurement Workspace

IT Procurement Requests: 5

ITPR by Category: (empty), Hardware, Software

Critical Tasks: 32 (Updated at 18:35)

All Requests:

Number	State	Requestor	Requested Budget	Business Justification
ITPR0001004	Open	System Administrator	40,000	For Project ABC.
ITPR0001005	Work in Progress	(empty)		
ITPR0001007	Open	System Administrator	600,000	Project DEF implementation
ITPR0001008	Work in Progress	(empty)		
ITPR0001009	Work in Progress	(empty)		

11. We can also submit the IT Procurement Request from the respective catalog item in the Services Portal for additional testing.

The screenshot shows the ServiceNow IT Procurement Requests page. At the top, there's a navigation bar with links for Knowledge, Catalog, Requests, System Status, Cart, Tours, and a user profile icon. Below the navigation is a breadcrumb trail: Home > Service Catalog > Can We Help You? > IT Procurement Requests. To the right of the breadcrumb trail is a search bar labeled "Search Catalog". The main content area has a title "IT Procurement Requests" and a sub-instruction "Please submit all the details required for IT Procurement of Software, Hardware, Services." On the left, there's an icon of a shopping cart with orange boxes and a clock. On the right, there's a large green "Submit" button. The central form area contains fields for business justification (with "Project Hello World" entered), budget information (budget amount 607000 and category selected as "Hardware"), budget owner (selected as "Fred Luddy"), preferred supplier (selected as "Supplier A"), and secondary supplier (selected as "Supplier B"). At the bottom right of the form is a "Add attachments" button with a paperclip icon.

Congratulations, we have successfully created an application for handing IT Procurement Requests!