# Implementing Row Level Security (RLS)

**Lab Time**: 60 minutes

**Lab Folder**: C:\Student\Modules\09_Security\Lab

**Lab Overview**: In this lab you will continue to work with the report and dataset that you created in the Power BI Desktop project named **Wingtip Sales Analysis.pbix**. You will begin by making a copy of this PBIX file named of **Wingtip Sales RLS.pbix**. After you have created the new PBIX project file named **Wingtip Sales RLS.pbix**, you will open it with Power BI Desktop and add security roles which is always the first step when implementing row-level security (RLS).

**Lab Dependency:** This lab assumes you have completed the lab titled **Designing Interactive Reports in Power BI Desktop** in which you created a multipage report in the **Wingtip Sales Analysis.pbix** project and then published this report and its underlying dataset to the Power BI Service. If you would like to begin work on this lab without completing the earlier lab, copy the lab solution file named **Wingtip Sales Analysis.pbix** which is located in the student folder at **C:\Student\Modules\05_Reports\Lab\Solution** into the folder at **C:\Student\Projects** using the Windows Explorer.

## Exercise 1: Configure Security Roles to Enabled Row-level Security (RLS)

In this exercise you will complete your work by publishing the PBIX file to your personal workspace in the Power BI service.

1. Copy **Wingtip Sales Analysis.pbix** to create a new PBIX project file named **Wingtip Sales RLS.pbix.**

   a) Using Windows Explorer, locate the PBIX file at **C:\Student\Projects\Wingtip Sales Analysis.pbix**.

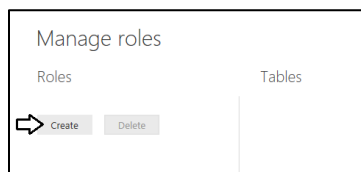   b) Make a copy of the PBIX file named **C:\Student\Projects\Wingtip Sales RLS.pbix**.



   c) Double click on **C:\Student\Projects\Wingtip Sales RLS.pbix** to open it in Power BI Desktop.



2. Add three new roles to the project's data model.

   a) Navigate to Report View.

   b) Activate the **Modeling** tab in the ribbon.

   c) Click the **Manage Roles** button to open the **Manage roles** dialog.

d) In the **Manage roles** dialog, click the **Create** button to create a new role.

e) Create a role named **Eastern Sales Region** which filters based on the **Customers** table using the following DAX expression.
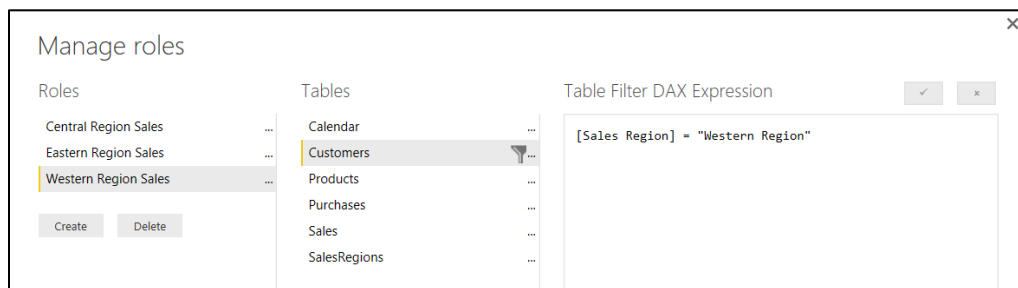
```
[Sales Region] = "Eastern Region"
```

f) When the **Manage roles** dialog matches the following screenshot, click the **Save** button to save the new role.
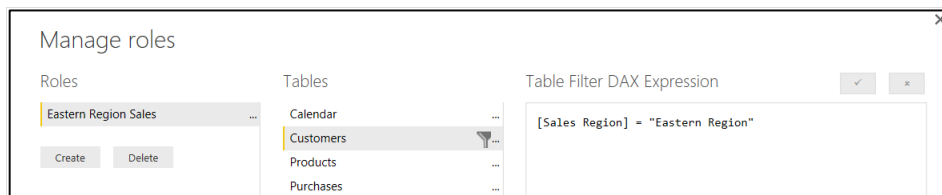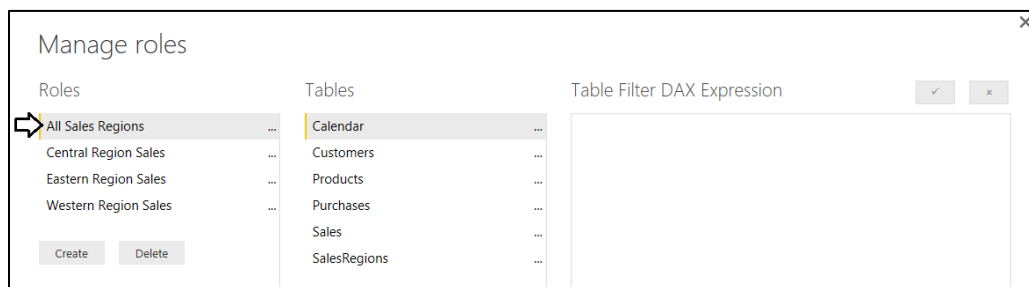
g) Create a role named **Central Sales Region** which filters the **Customers** table where **[Sales Region] = "Central Region"**.
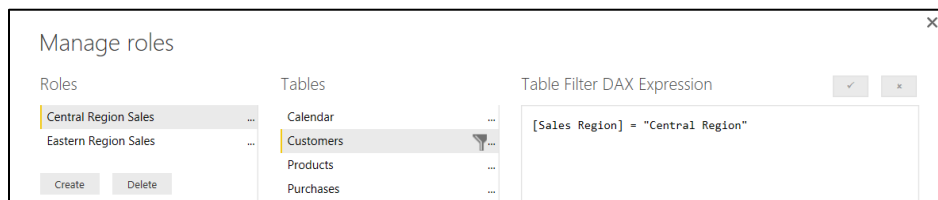
h) Create a role named **Western Sales Region** which filters the **Customers** table where **[Sales Region] = "Western Region"**.

i) Create a manager role named **All Sales Regions** which has no filters.

Now that you have created a few security roles, you will test them using the **View As Roles** feature in Power BI Desktop.

3. Use the **View as Roles** feature to experience the **Wingtip Sales RLS** project from the perspective of a restricted user.

   a) Navigate to Report View if you are not already there.

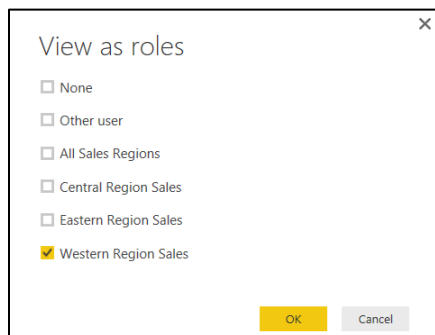   b) Select the **Sales by Geography** report page from the report page navigation menu,
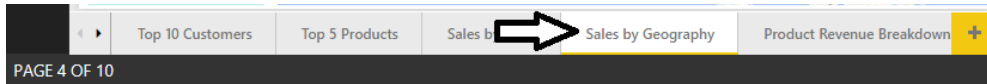


   c) Make sure no filters are selected on the page. You should see that the map visual shows cities through the United States.
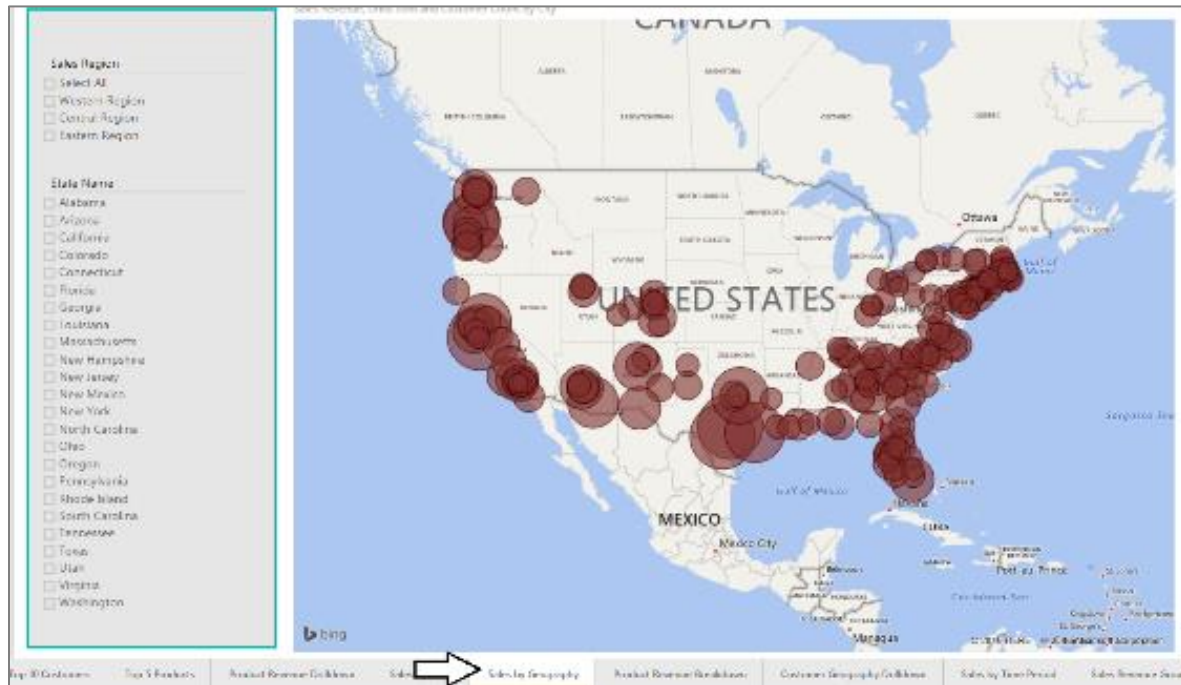


   d) From the **Home** tab in the ribbon, click the **View As Roles** button to open the **View as roles** dialog.
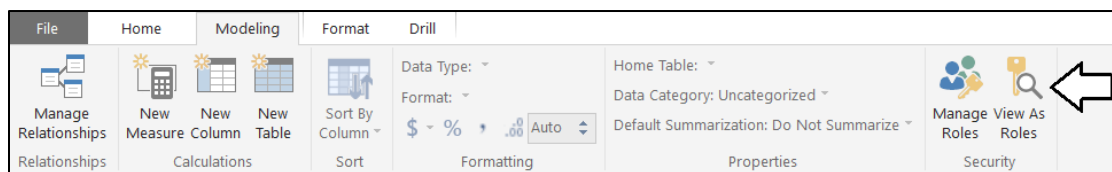


   e) In the **View as roles** dialog, select **Western Region Sales** and click **OK**.

f) The map visual should now be filtered where it only shows cities in the Western Region.



g) Disable the View As Roles feature by click the **Stop viewing** button.



4. Save your work to the project by clicking the **Save** button in the ribbon.

## Exercise 2: Publish the PBIX File and Configure Row-level Security (RLS)

In this exercise you will continue your work by publishing the PBIX file to a new app workspace in the Power BI service.

1. Using a browser, navigate to the Power BI Service at https://app.powerbi.com.
   a) Log in with your primary Office 365 account.
2. Create a new app workspace named **Wingtip Sales RLS**.
   a) Click the **Workspace** flyout menu in the left navigation.

b) Click the **Create app workspace** button to display the **Create an app workspace** dialog.



c) In the **Create an app workspace** pane, enter a new group name of **Wingtip Sales RLS**.



d) Click **Save** at the bottom of the **Create an app workspace** pane to create the new app workspace.

3. Import the **Wingtip Sales RLS.pbix** project into the **Wingtip Sales RLS** app workspace.

a) Click the **Get Data** button in the lower right corner of the page.

b) Click the **Get** button in the **Files** section under **Import or Connect to Data**.
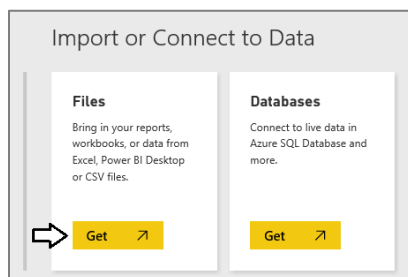


c) On the **Get Data > Files** page, click the **Local File** button to display the Windows **Open** file dialog.
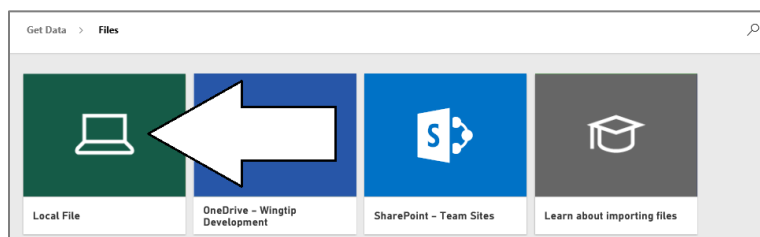
d) In the Windows **Open** dialog, select the project file at **c:\Student\Projects\Wingtip Sales RLS.pbix** and click **Open**.

e) Wait while the Power BI service uploads the PBIX files and imports its assets into the **Wingtip Sales RLS** app workspace



f) Once the import process completes, you should see a new dataset and a new report named **Wingtip Sales RLS** in the left navigation menu. There is also a dashboard named **Wingtip Sales RLS.pbix**.

4. Remove the dashboard that was created during the import process.

a) Dropdown the flyout menu for the **Wingtip Sales RLS.pbix** dashboard and click the **REMOVE** menu command.



b) Confirm that you want to delete the dashboard by clicking the **Delete** button the **Delete dashboard** dialog.

c) You should be able to confirm that the dashboard has been removed.

5. Inspect the report named **Wingtip Sales RLS**.

a) Click on the report named **Wingtip Sales RLS** in the **REPORTS** section of the left navigation
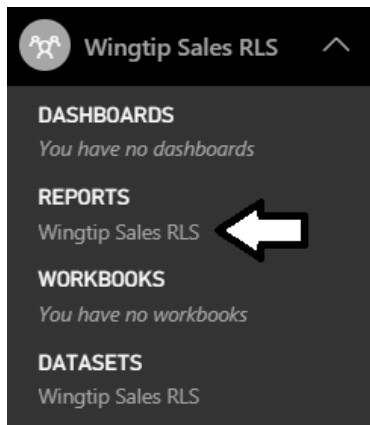
b)   Examine the pages in the report and verify that these are the same report pages that you designed over the last several labs.
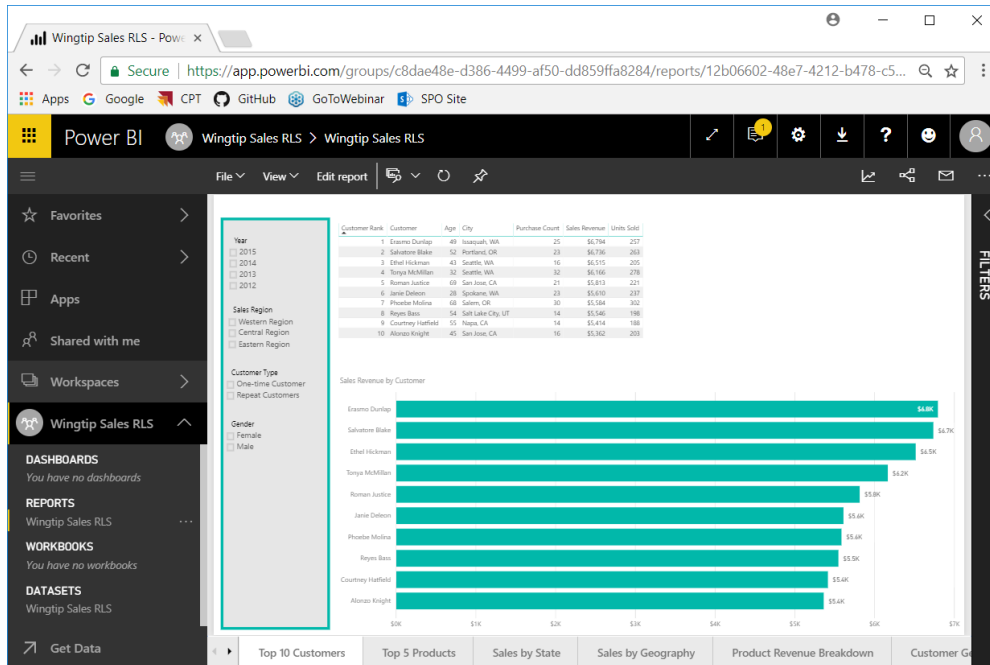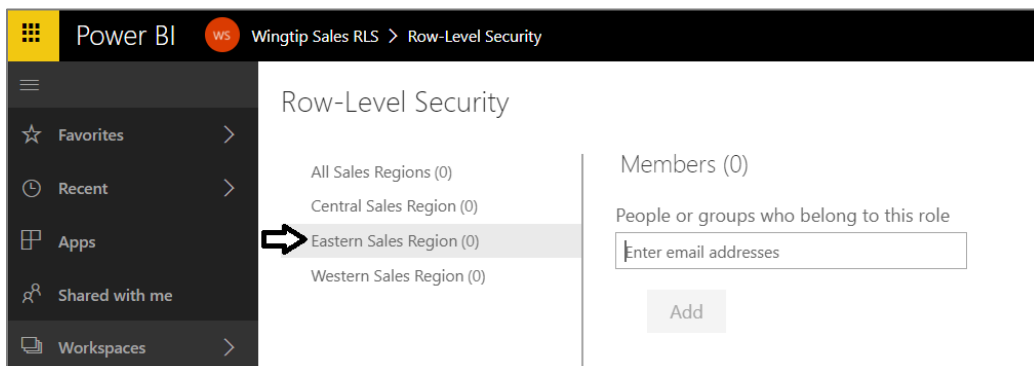


6.   Configure Row-Level Security for the user with which you are sharing the dashboard.

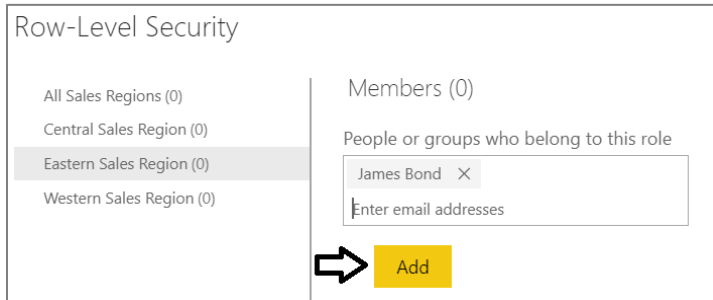a)   Drop down the flyout menu for the **Wingtip Sales RLS** dataset and click the **SECURITY** menu command.



b)   In the **Row-Level Security** dialog, make sure the **Eastern Sales Region** role is the one that is selected.

c)   Place your cursor in the textbox which displays the hint **Enter email address**.

d) Enter the name of the secondary user account with which you've shared the dashboard.



e) Once you have resolved the secondary user account, click the **Add** button to add the user to the **All Sales Regions** role.



f) Confirm that the secondary user account is now a member of the **Eastern Sales Regions** role



g) Click the **Save** button below on the **Row-Level Security** configuration page to save your changes.

## Exercise 3: Publish the Wingtip Sales RLS App Workspace as a Power BI App

In this exercise you will publish the **Wingtip Sales RLS** app workspace as a Power BI app.
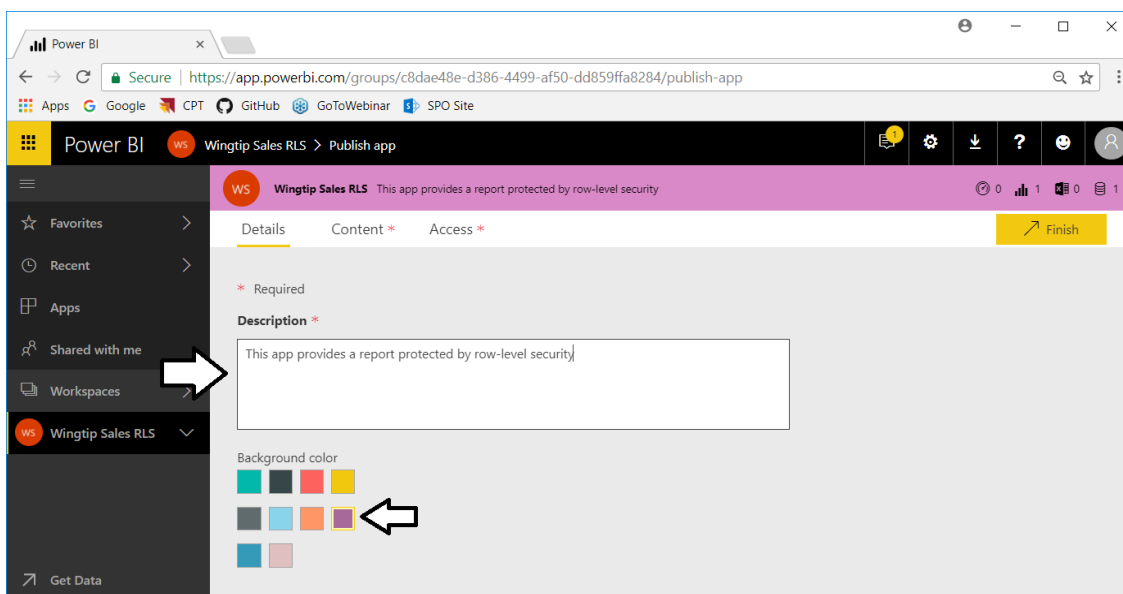
1. Publish the **Wingtip Sales RLS** workspace as a Power BI app.

   a) Click the **Wingtip Sales RLS** link in the left navigation to show the summary page for the **Wingtip Sales** app workspace.
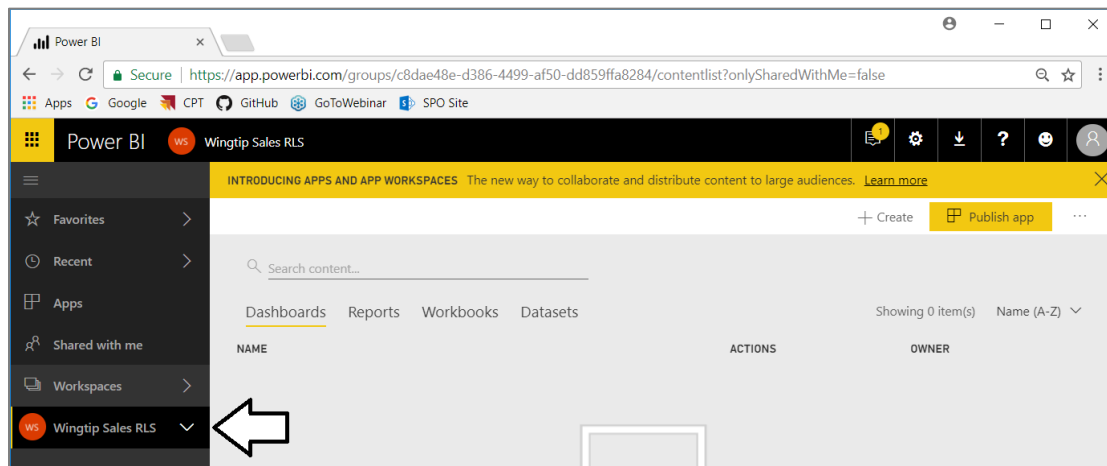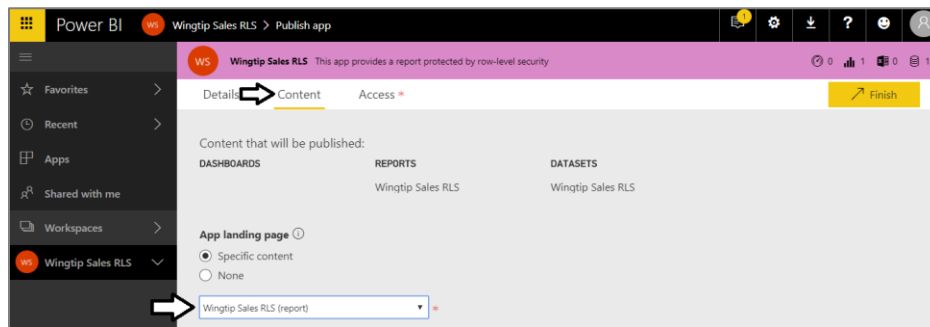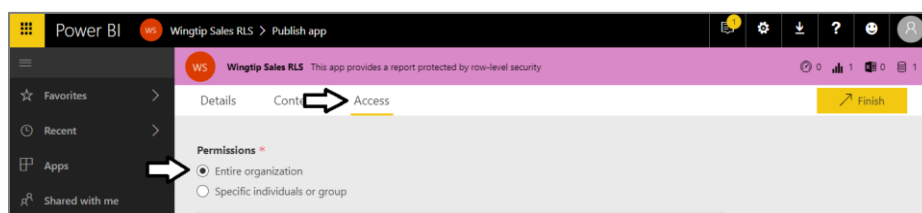


   b) Click the **Publish app** button.
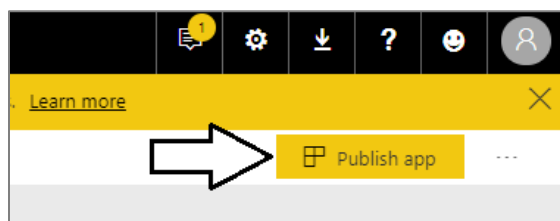


   c) On the **Details** tab of the **Publish app** page, enter a **Description** for the app and select a **Background color** as shown in the following screenshot.
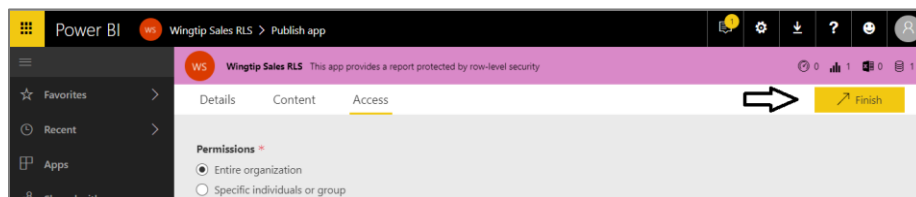
d) Click on the **Content** tab and configure the **App landing page** with the value of **Wingtip Sales RLS (report)**.
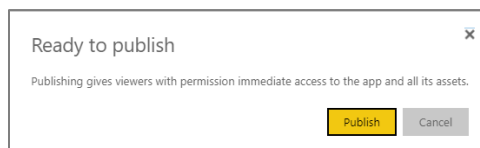


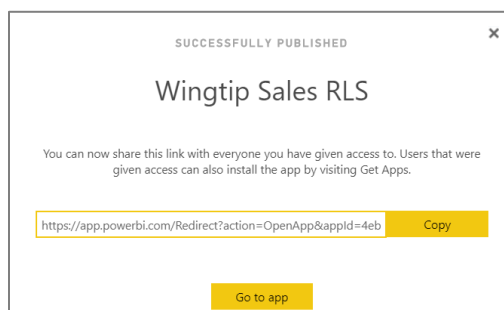e) Click on the **Access** tab and configure app **Permissions** for the **Entire Organization**.



f) Click the **Finish** button on the right to complete the publication process.



g) When prompted by the **Ready to publish** dialog, click **Publish**.



h) When you see the **SUCCESSFULLY PUBLISHED** dialog, close it by clicking the **X** button in the upper right corner.



Now you have made the app available. In the next exercise, you will log in as a different user to install and launch the app so you can test the RLS configuration.

## Exercise 4: Test the RLS Configuration using a Secondary User Account

In this exercise, you will log on as a secondary user and install the Wingtip Sales RLS app so you can test the RLS configuration.

1. Using a browser, log into the Power BI service as the secondary user at **https://app.powerbi.com**.

   a) If you use a different browser (e.g. Chrome, Edge, Internet Explorer) for the secondary user, you can be logged on with two different users at the same time.

   b) Once you are log in, you should be able to confirm the current user identity using the Profile menu in the top right.
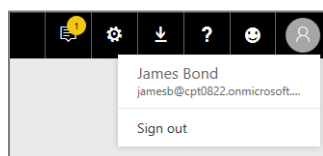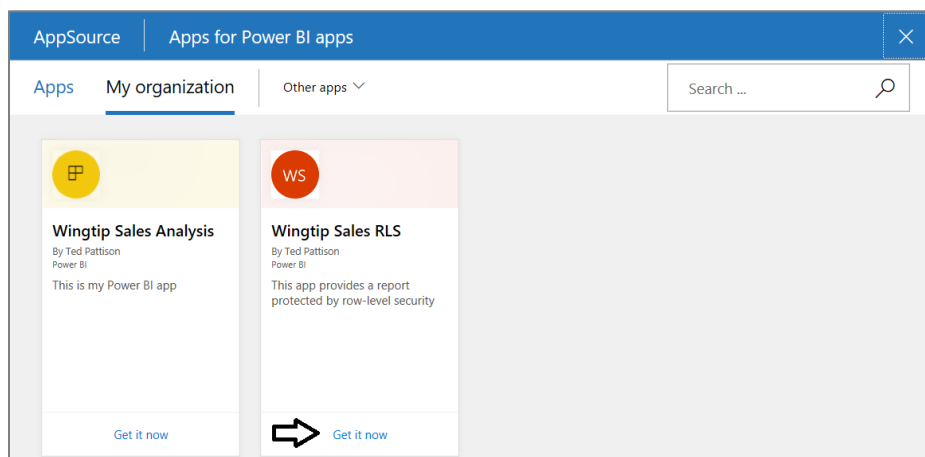


2. Install the **Wingtip Sales RLS** app.

   a) Click the **Apps** button in the left navigation menu. You should see the app named **Wingtip Sales Analysis** that you installed in a previous lab exercise.
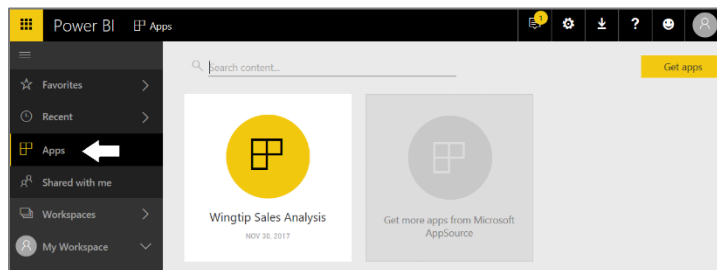


   b) Click the **Get apps** button.
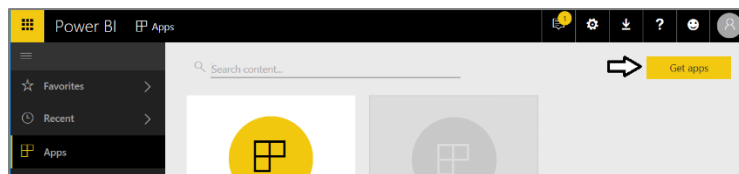


   c) You should see the **AppSource** dialog showing you what apps are available for installation. The **Wingtip Sales RLS** app should be displayed as an app available for installation. Click the **Get it now** link.

d) The app should install and then be displayed as shown in the following screenshot. Click on the tile for the **Wingtip Sales RLS** app to launch it,
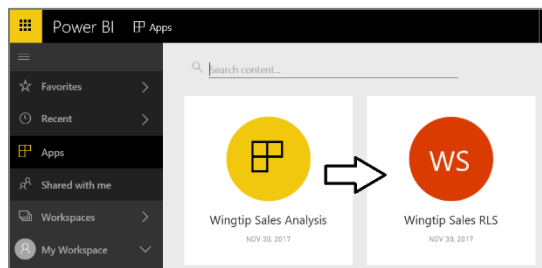


e) When the app is launched, it should display the **Wingtip Sales RLS** report.
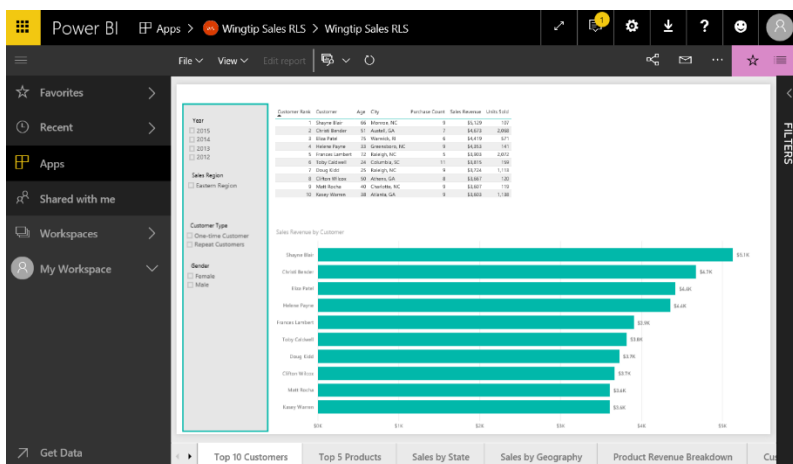


f) Navigate to the **Sales by Geography** page in the report. You should see that the customer data for this user has been filtered by row-level security so that only states within the Eastern Region can be seen.
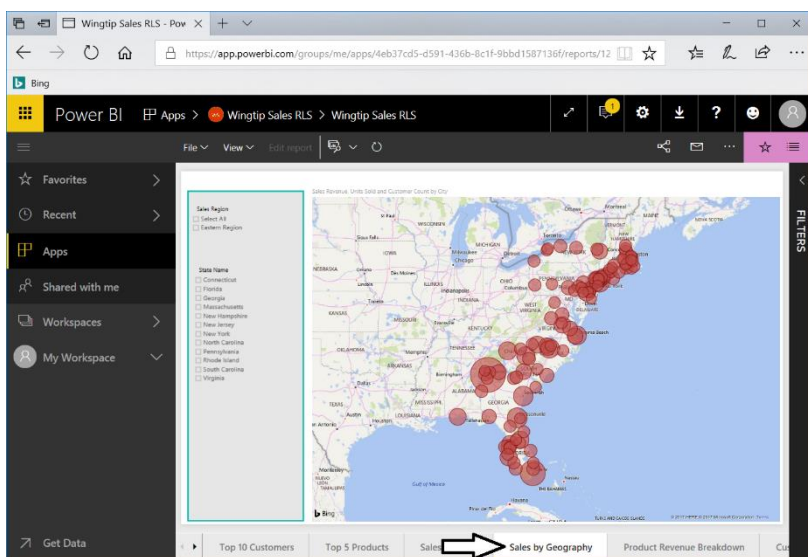


Congratulations. You have reached the end of this lab.