Creating and Deploying Dashboards in Power BI

Lab Time: 60 minutes

Lab Folder: C:\Student\Modules\06_Dashboards\Lab

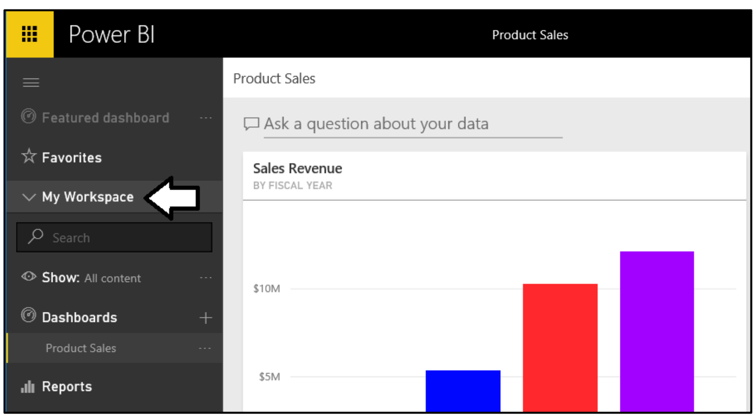
Lab Overview: In this lab you will continue to work with the report and dataset that you created in the Power BI Desktop project named **Wingtip Sales Analysis.pbix**. You will focus on the techniques required to create and deploy dashboards to an audience of business users in an Office 365 environment.

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.

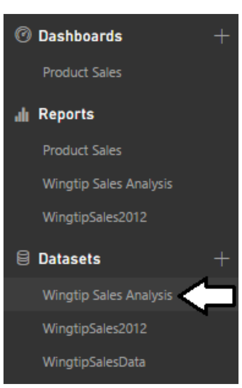
Exercise 1: Create the Regional Sales 2015 Dashboard

In this exercise you will begin by creating a new report named **2015 Regional Sales** which pulls its data from the **Wingtip Sales Analysis** dataset that created in earlier lab exercises. After creating the new report, you will then create a new dashboard named **Regional Sales 2015** and add content to this dashboard by pinning report visuals to create dashboard tiles.

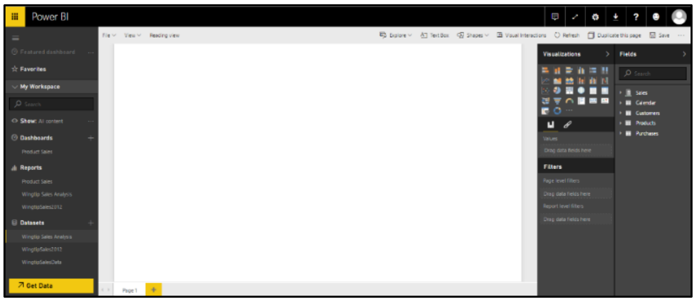
1. Log in to the Power BI service and your personal workspace.
   a) Open a browser and navigate to the Power BI service at https://app.powerbi.com.
   b) Login with your primary Office 365 account.
   c) Expand the left navigation.
   d) You should be able to verify that you are running in the context of your personal workspace which is named **My Workspace**.



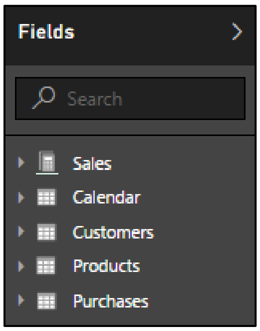
1. Create the **Regional Sales 2015** report.
   a) Click the **Wingtip Sales Analysis** dataset in the **Datasets** section of the left navigation.



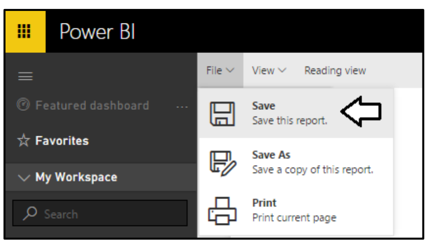
b) When you navigate to the **Wingtip Sales Analysis** dataset, the Power BI service displays a new empty report.



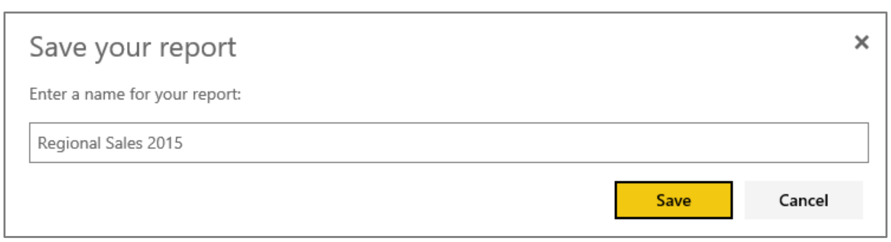
c) In the **Fields** list, you should also see the five tables in the data model you built in lab 3 through lab 6.



d) Save the report by dropping down the **File** menu and selecting the **Save** menu.

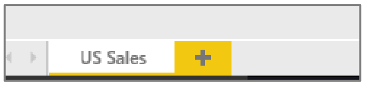


e) In the **Save your report** dialog, enter a report name of **Regional Sales 2015** and click **Save**.

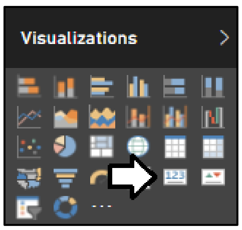


f) You should now be able to see the new report in the **Reports** section.

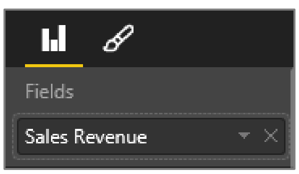
2. The report current has a single page name **Page 1**. Modify the page name to **US Sales**.



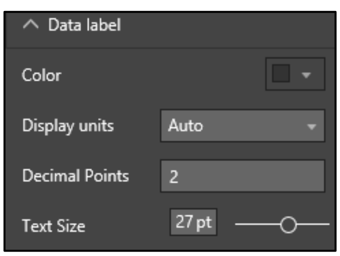
3. Add a card visual to the page to display to sales revenue for the year **2015**.
   a) Add a new Card visual to the page.



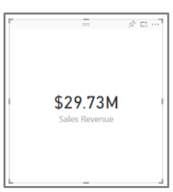
   b) Drag the **Sales Revenue** measure from the **Sales** table into the **Fields** well.



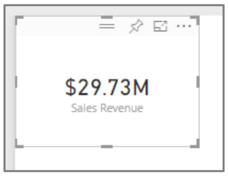
   c) Click the brush icon button in the **Visualizations** page to display the visual's Format properties.
   d) In the **Data label** section, set the **Decimal Point** properties to **2** and the **Text Size** property to **27 pt**.



   e) The visual should appear like the visual shown in the following screenshot.



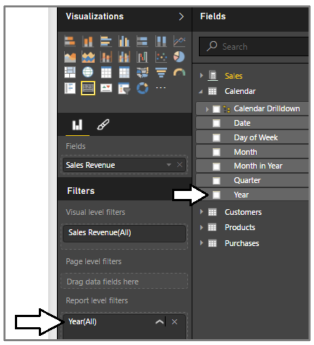
   f) Move the visual to the top right of the page and make it a little smaller so it's just large enough to display its content.



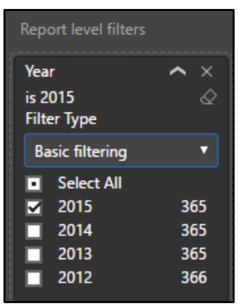
There's a problem because the card visual is displaying the sum of sales revenue across all years instead of just the year 2015.

4. Set a report-level filter for the year 2015.

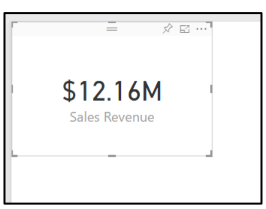
   a) Drag the **Year** column from the **Calendar** table in the **Fields** list and drop it into **Report level filters** section at the bottom of the **Visualization** pane.



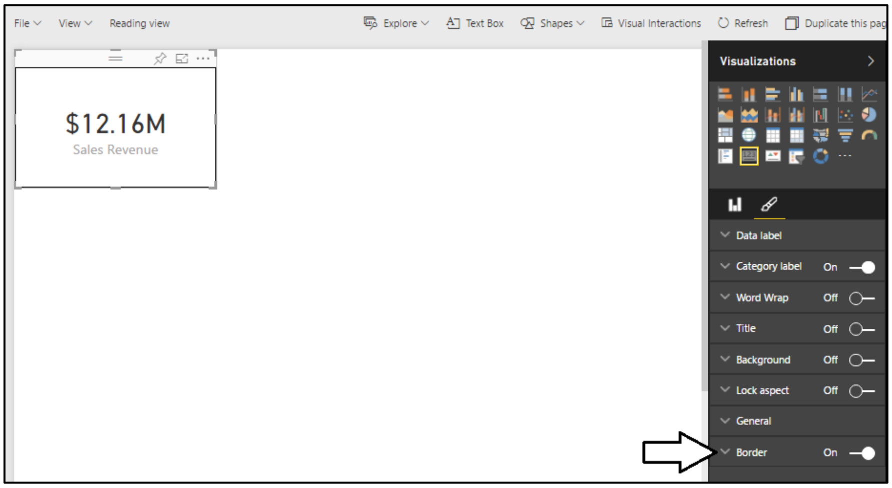
   b) Set the **Filter Type** to **Basic Filtering** and click the checkbox for the year **2015** as shown in the following screenshot.



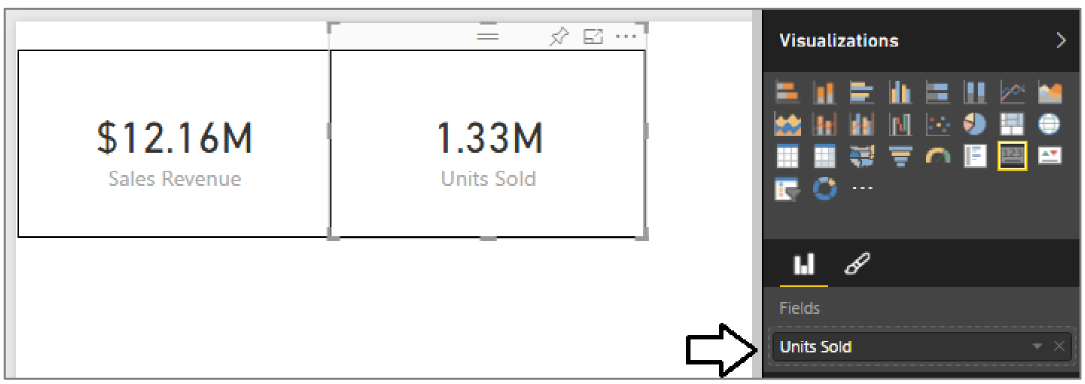
   c) The Card visual should now display a smaller currency value with the sales revenue for just the year 2015.



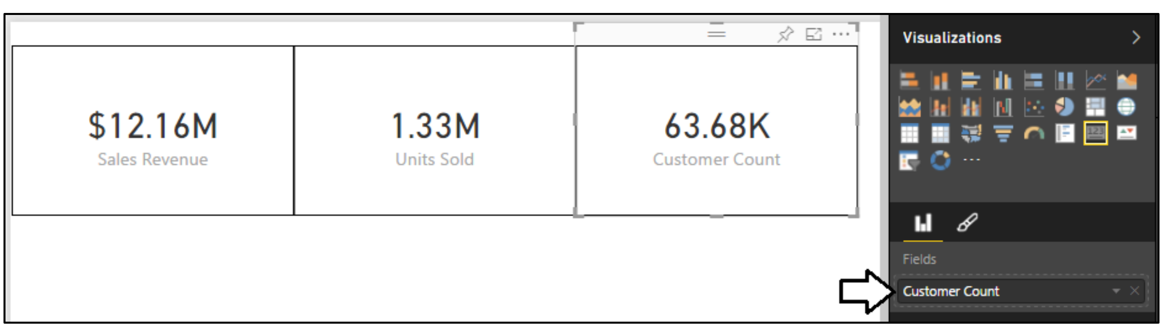
   d) With the Card visual select, navigate to the Format properties pane and set the **Border** property to **On**.



5. Add a second card visual to the page to display the number units sold for the year **2015**.
   a) Select the Card visual which displays sales revenue.
   b) Copy and paste the visual to make a cloned copy.
   c) Select the copy and modify it so it uses the **Units Sold** measure instead of the **Sales Revenue** measure.
   d) Arrange the two visuals so they are side by side on the page.

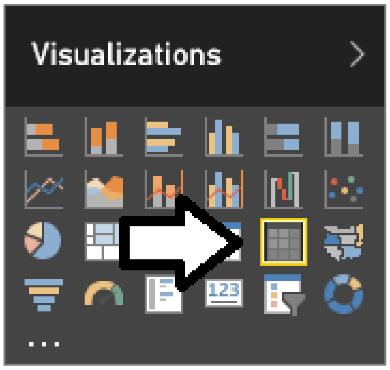


6. Add a third card visual to the page to display the total number of customers for the year **2015**.
   a) Select the card visual which displays sales revenue.
   b) Copy and paste the visual to make a cloned copy.
   c) Select the copy and modify it so it uses the **Customer Count** measure instead of the **Sales Revenue** measure.
   d) Arrange the three visuals so they are side by side on the page.



7. Add a new Matrix visual to the page to visualize how 2015 sales revenue breaks down across sales region, state and quarter.

a) Add a new matrix visual to the page.

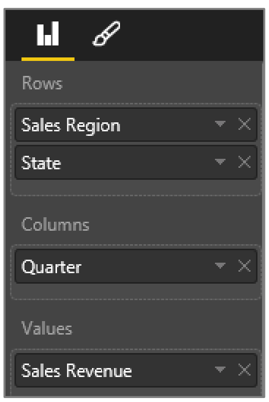


b) Drag the **Sales Regions** column from the **Customers** table into the **Rows** well.

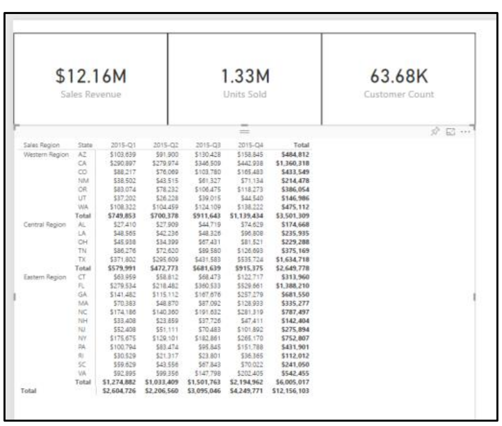
c) Drag the **State** column from the **Customers** table into the **Rows** well.

d) Drag the **Quarter** column from the **Calendar** table into the **Columns** well.

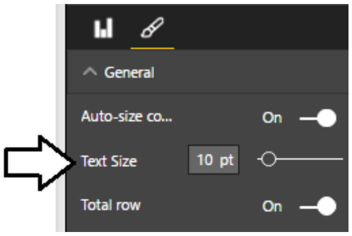
e) Drag the **Sales Revenue** measure from the **Sales** table into the **Values** well.



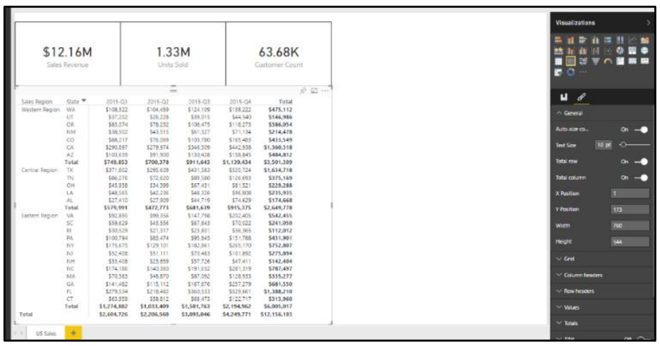
f) Using the mouse, position the Matrix visual below the three Card visuals as shown in the following screenshot.



g) In the **General** section of the **Format** properties pane, increase the **Text Size** of the Matrix visual to **10 pt**.

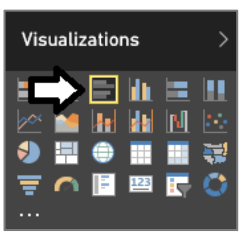


h) Now the content of the Matrix visual should take up the height of the page.



8. Add a new clustered bar chart visual to the page to show how 2015 sales revenue breaks down across sales region and month.

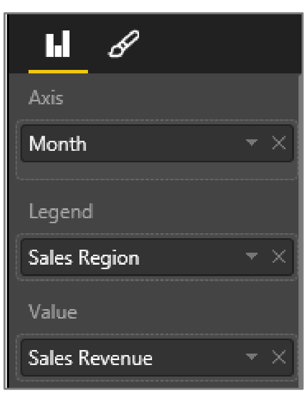
a) Add a new clustered bar chart visual to the page.



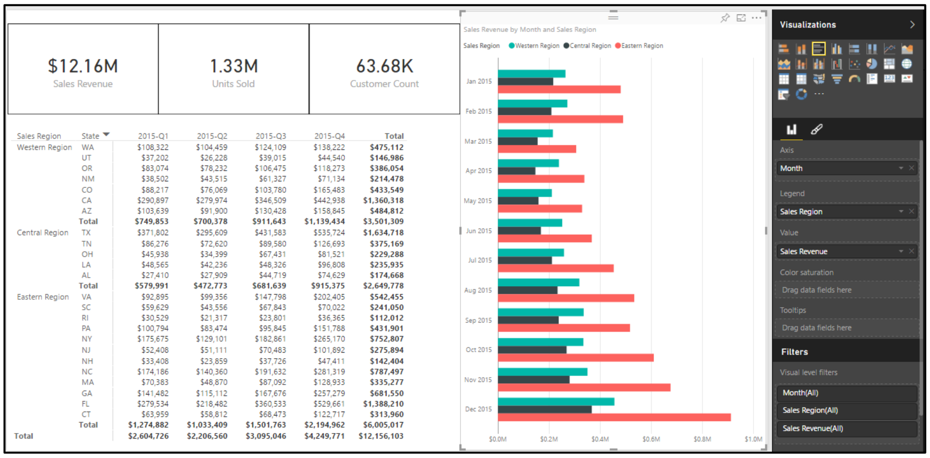
b) Drag the **Month** column from the **Calendar** table into the **Axis** well.

c) Drag the **Sales Regions** column from the **Customers** table into the **Legend** well.

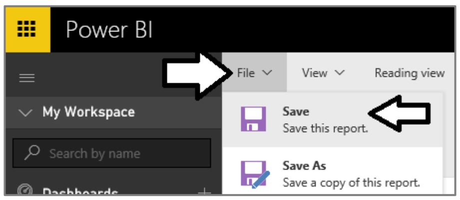
d) Drag the **Sales Revenue** measure from the **Sales** table into the **Value** well.



e) The visual should now appear as the visual shown in the following screenshot.

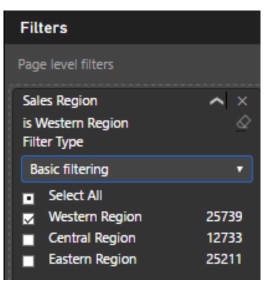


9. Save the work you have done by drop down the **File** menu and select the **Save** command.

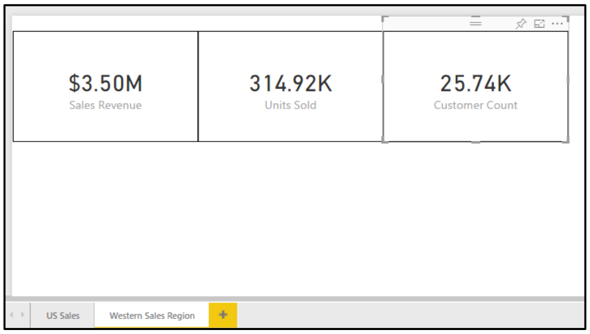


10. Add a new page and rename it to **Western Sales Region**.

11. Set a page-level filter for the wester sales region.
    a) Drag the **Sales Region** column from the **Customers** table in the **Fields** list and drop it into **Page level filters** section at the bottom of the **Visualization** pane.
    b) Make sure the **Filter Type** is set of **Basic Filtering**.
    c) Click the checkbox for **Western Region** as shown in the following screenshot.

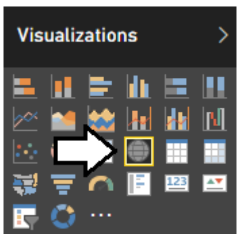


12. Copy and paste the three card visuals from the **US Sales** page to the **Western Regional Sales** page.
    a) Navigate to the **US Sales** page.
    b) Select the card visual on the left.
    c) Copy the card visual to the Windows clipboard.
    d) Navigate the **Western Regional Sales** page.
    e) Paste the visual in the windows clipboard to the **Western Regional Sales** page.
    f) Repeat the same steps to copy the second and third card visual as well.

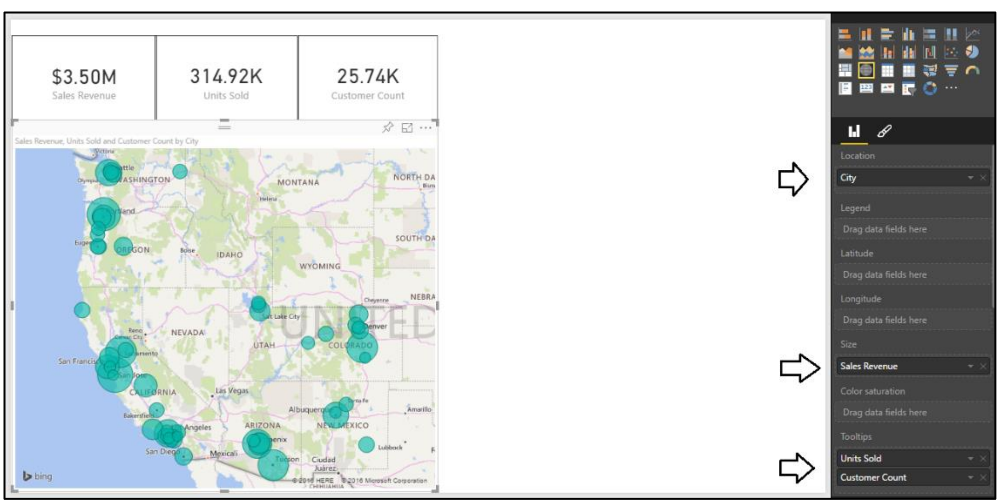


You can observe that the Card visuals on the **Western Regional Sales** page do not return the same results as the Card visuals on the **US Sales** page. That's because of the page-level filter you applied after creating the **Western Regional Sales** page.

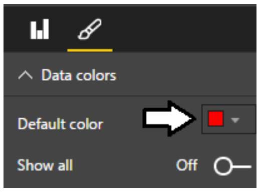
13. Add a new Map visual to the page to show how sales revenue is broken out across geographic regions.
    a) Add a new matrix visual to the page.



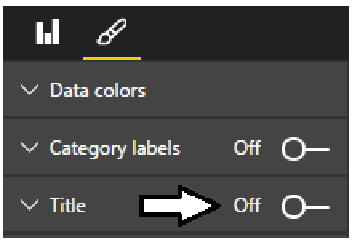
    b) Drag the **City** field from the **Customers** table into the **Location** well.
    c) Drag the **Sales Revenue** measure from the **Sales** table into the **Size** well.
    d) Drag the **Units Sold** field from the **Sales** table into the **Tooltips** well.
    e) Drag the **Customer Count** field from the **Customers** table into the **Tooltips** well.
    f) Reposition the Map visual under the three Card visuals as shown in the following screenshot.



    g) With the Map visual selected, navigate to the **Data colors** section in **Format** properties pane and change the **Default Color** to red so it stands out more distinctively than the default setting of green.

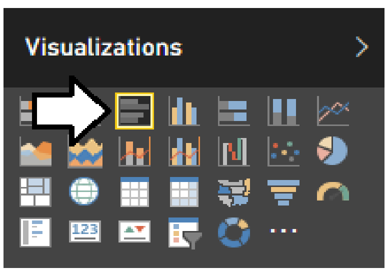


h) Also set the **Title** property of the visual to **Off**.



14. Add a new Clustered bar chart visual to the page to show sales revenue by state split out across quarters.

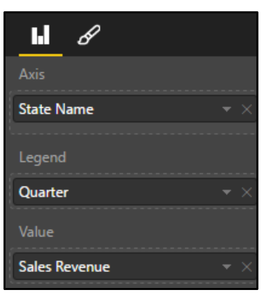
a) Add a new Clustered bar chart visual to the page.



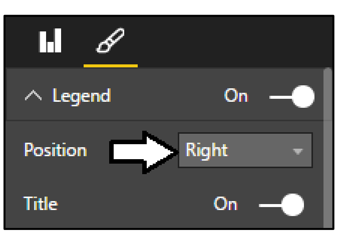
b) Drag the **State Name** field from the **Customers** table into the **Axis** well.

c) Drag the **Quarter** field from the **Calendar** table into the **Legend** well.

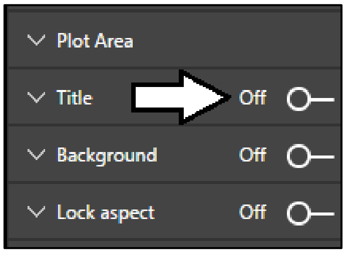
d) Drag the **Sales Revenue** measure from the **Sales** table into the **Value** well.



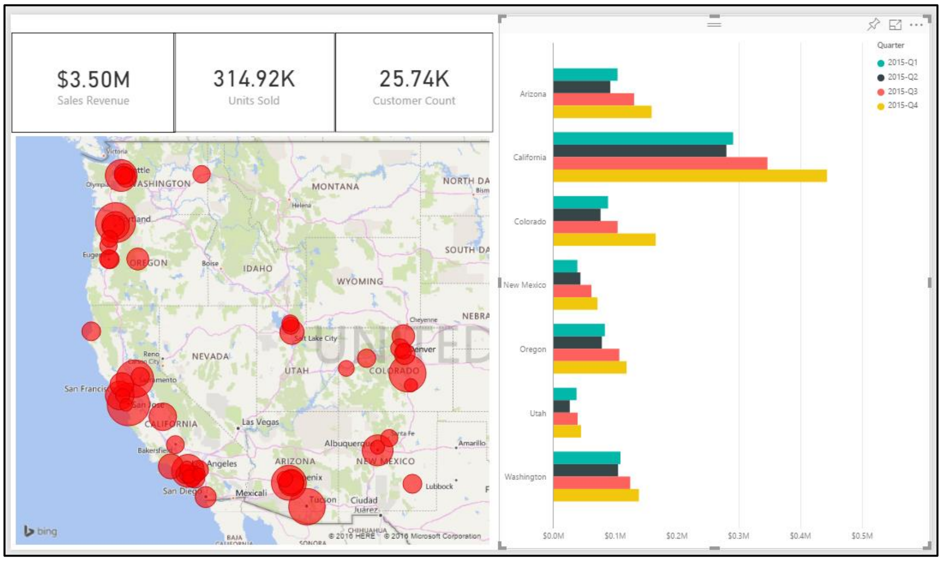
e) In the **Legend** section of the **Format** properties pane, update the legend **Position** property to **Right**.



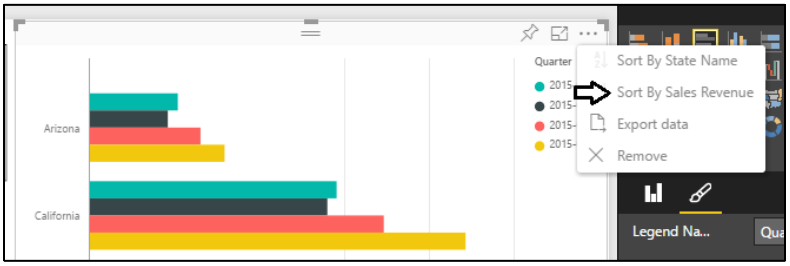
f) Below in the **Format** properties pane, set the **Title** property to **Off**.



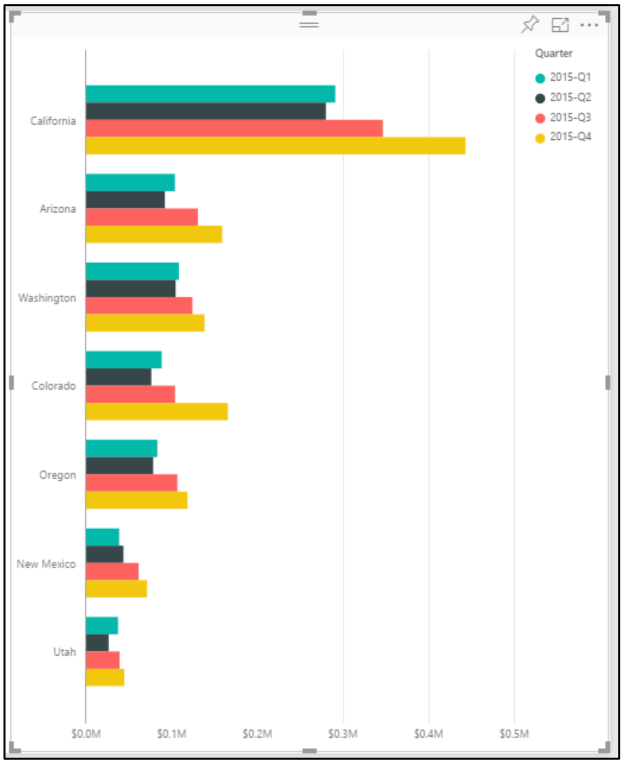
g) Reposition the Clustered bar chart visual so it takes up the entire right-hand side of the page.



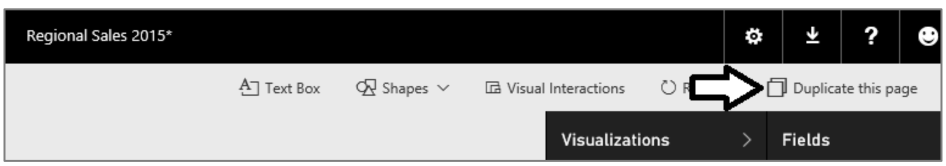
h) Drop down the ellipse (**…**) menu at the top right of the Clustered bar chart and select the **Sort By Sales Revenue** command.



i) The Clustered bar chart should now sort states with greater sales revenue to the top.

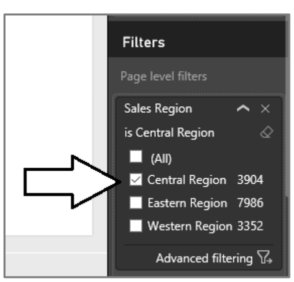


15. Save your work by dropping down the **File** menu and selecting the **Save** command.
16. Duplicate the **Western Regional Sales** page to create the **Central Regional Sales** page.
    a) Click the **Duplicate this page** button.

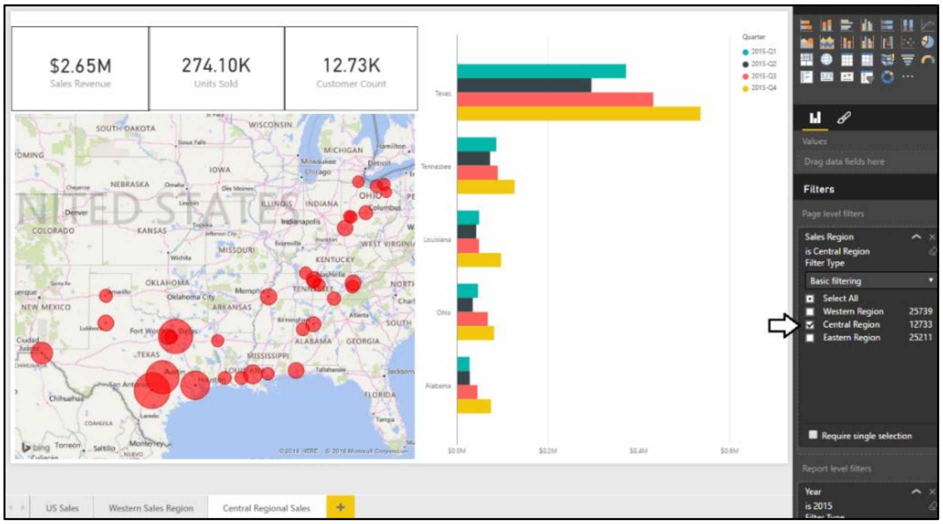


    b) Rename the new page to **Central Regional Sales**.

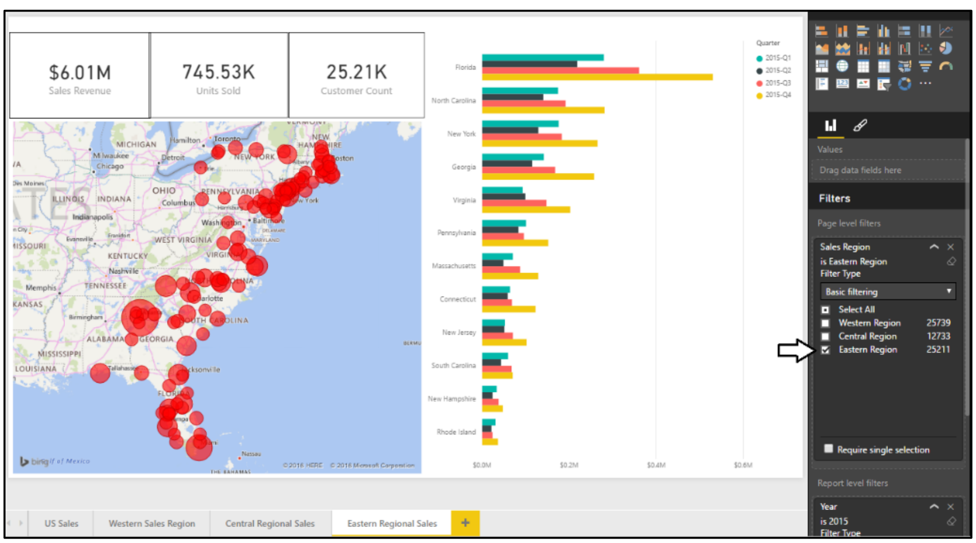
    c) Modify the page-level filtering of the new page to filter on **Central Region**.



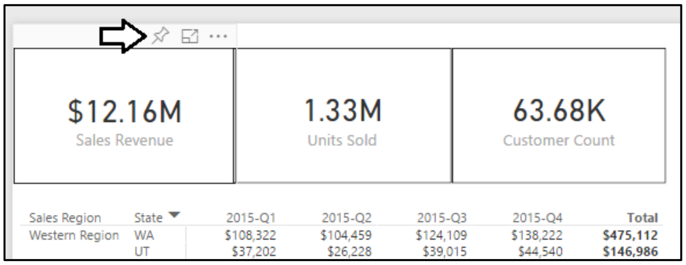
d) Now the **Western Regional Sales** page and the **Central Regional Sales** page display different results even though they have been designed with the exact same layout of visuals.



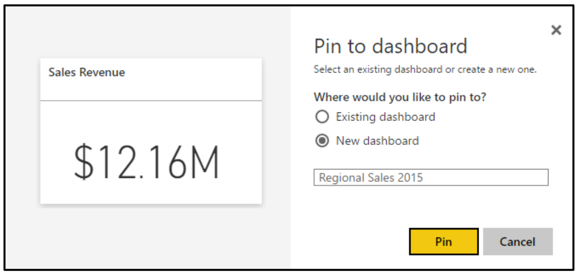
17. Duplicate the **Central Regional Sales** page to create the **Eastern Regional Sales** page.
   a) Click the **Duplicate this page** button.
   b) Rename the new page to **Eastern Regional Sales**.
   c) Modify the page-level filtering to filter on **Eastern Region**.



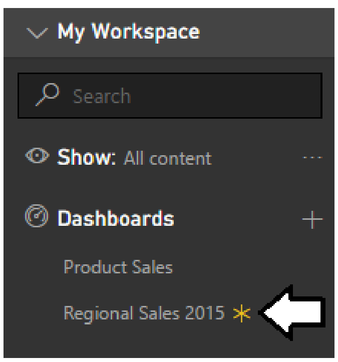
18. Save your work by dropping down the **File** menu and selecting the **Save** command.
19. Create the **Regional Sales 2015** dashboard.
   a) Navigate to the **US Sales** page in the **Regional Sales 2015** report.
   b) If you hover over the Card visual on the left with the mouse, you will notice three icon buttons appear in the upper-right corner. Click on the thumbtack icon button to pin the visual to display the **Pin to dashboard** dialog.



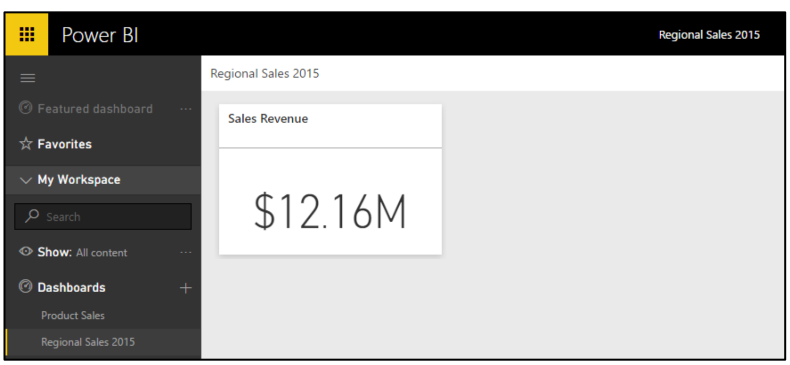
c) The **Pin to dashboard dialog** prompts you enter name for a new dashboard name. Enter a value of **Regional Sales 2015** as the new dashboard name and then click the **Pin** button to create the new dashboard and pin the visual to it.



d) At this point, you should be able to see the new **Regional Sales 2015** dashboard in the **Dashboards** section

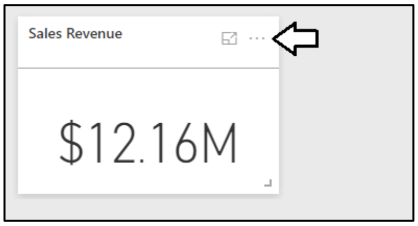


e) Click on the link for the **Regional Sales 2015** dashboard in the **Dashboards** section to examine the new dashboard.

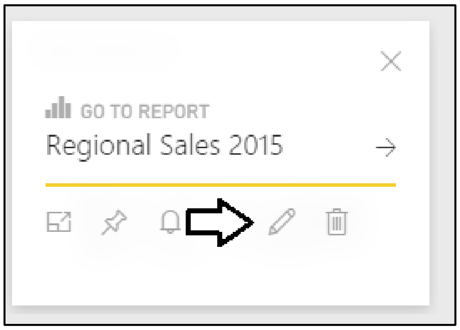


20. Modify the title and subtitle for the tile with the **Sales Revenue** card visual.

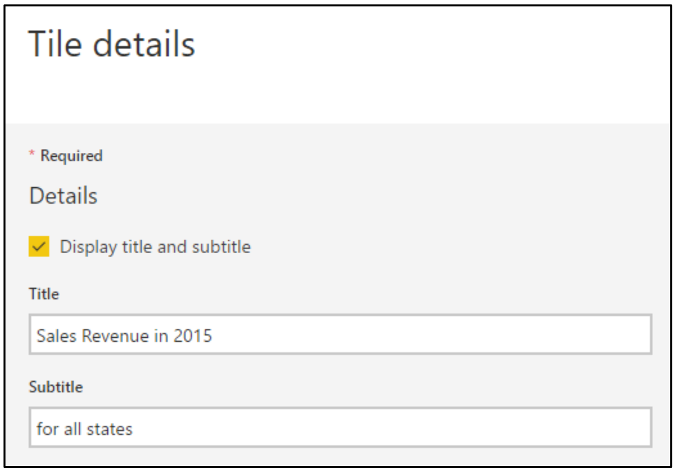
a) Select the ellipse (**…**) menu tile for new Card visual.



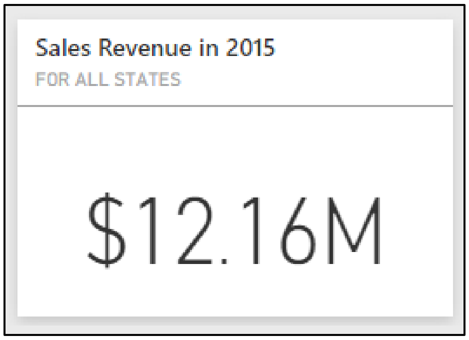
b) Click the button with the pencil icon to open the **Tile details** pane.



c) Enter a **Title** of **Sales Revenue in 2015** and a **Subtitle** of **for all states** and then click **Apply**.



d) You should be able to see that the tile has been updated with a new title and subtitle.



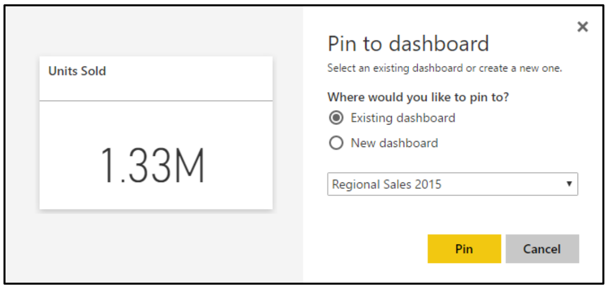
21. Pin the **Units Sold** visual from the **US Sales** page to the **Regional Sales 2015** dashboard.

a) Navigate to the **Regional Sales 2015** report using the left navigation.

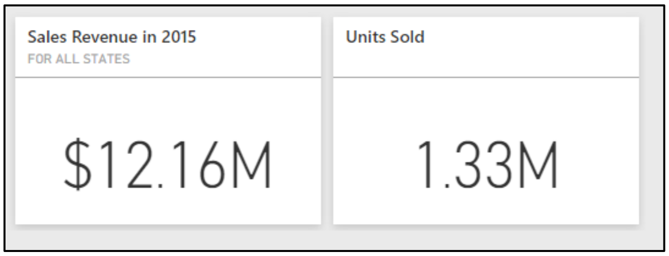
b) Navigate to the **US Sales** page.

c) Select the Card visual with **Units Sold** and click on the thumbtack icon button to display the **Pin to dashboard** dialog.

d) In the **Pin to dashboard** dialog, click the **Pin** button to pin the visual to the **Regional Sales 2015** dashboard.



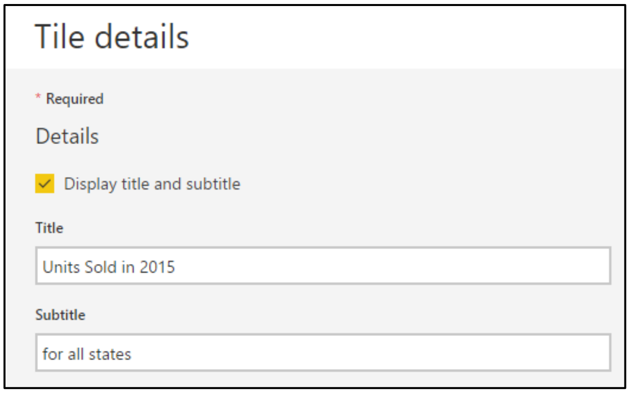
e) Navigate to the **Regional Sales 2015** dashboard and confirm a new tile has been added for the **Units Sold** card visual.



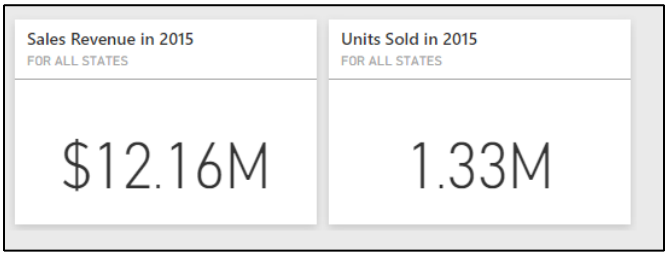
f) Navigate to the **Tile details** pane for the new title.

g) Update the **Title** of the tile to **Units Sold in 2015**.

h) Update the **Subtitle** to **for all state**.



i) Click the **Apply** button at the bottom of the **Tile details** pane to save your changes.



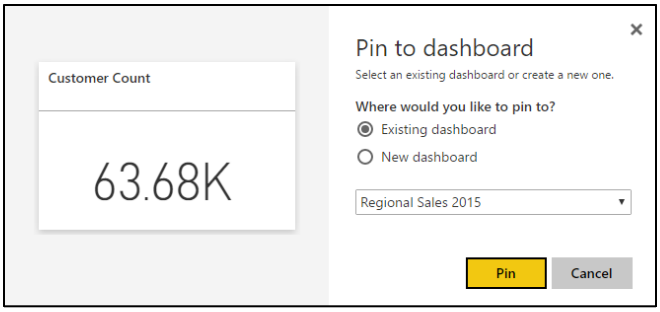
22. Pin the **Customer Count** visual from the **US Sales** page to the **Regional Sales 2015** dashboard.

a) Navigate to the **Regional Sales 2015** report using the left navigation.

b) Navigate to the **US Sales** page.

c) Hover over the Card visual with **Customer Count** and click the thumbtack icon button to display the **Pin to dashboard** dialog.

d) In the **Pin to dashboard** dialog, click the **Pin** button to pin the visual to the **Regional Sales 2015** dashboard.

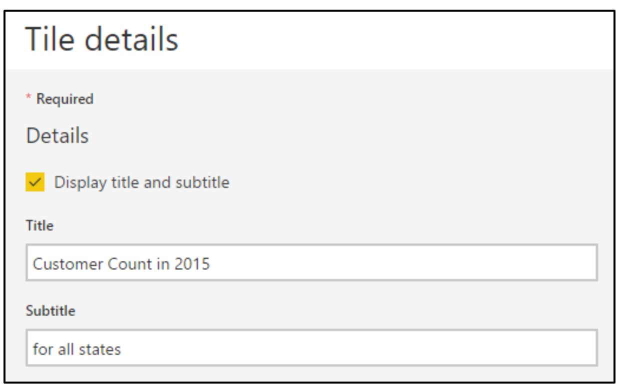


e) Navigate to the **Regional Sales 2015** dashboard and confirm a new tile has been added for the **Customer Count** card visual.

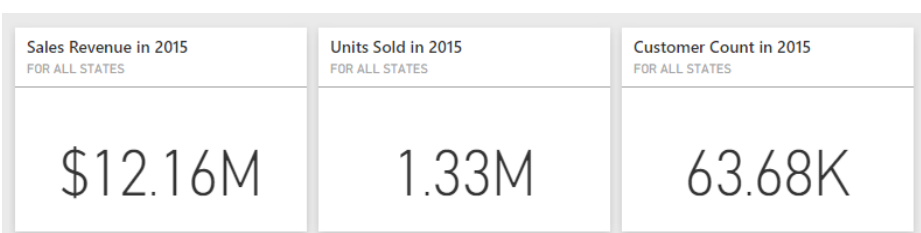
f) Navigate to the **Tile details** pane for the new title.

g) Update the **Title** of the tile to **Customer Count in 2015**.

h) Update the **Subtitle** to **for all state**.



i) Click the **Apply** button at the bottom of the **Tile details** pane to save your changes.



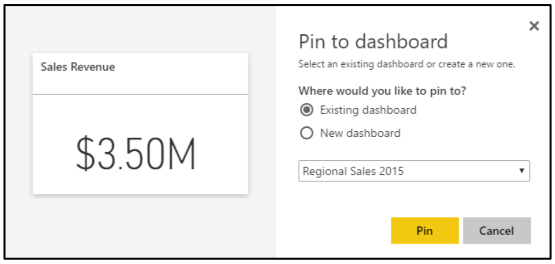
23. Pin the **Sales Revenue** Card visual from the **Western Region Sales** page to the **Regional Sales 2015** dashboard.

a) Navigate to the **Regional Sales 2015** report using the left navigation.

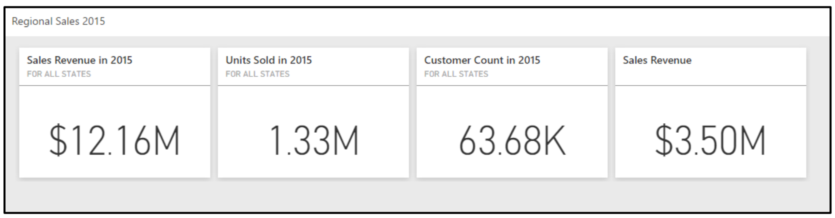
b) Navigate to the **Western Region Sales** page.

c) Select the Card visual with Sales Revenue and click on the thumbtack icon button to display the **Pin to dashboard** dialog.

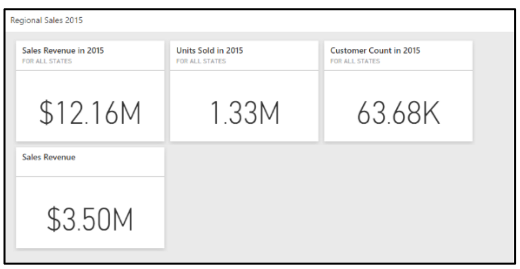
d) In the **Pin to dashboard** dialog, click the **Pin** button to pin the visual to the **Regional Sales 2015** dashboard.



e) Navigate to the **Regional Sales 2015** dashboard and confirm a new tile has been added for the **Sales Revenue** card visual.



f) Use the mouse to move the new title down to the left below the other three titles on the dashboard.



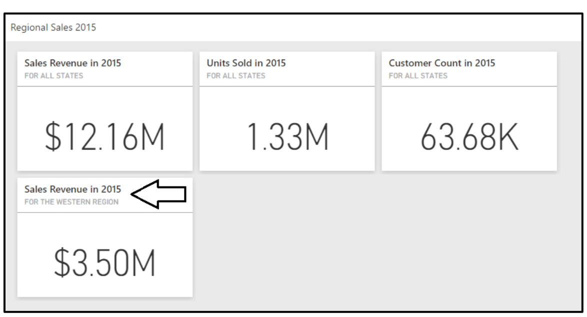
You can see there is a potential problem because the tile only displays a title of **Sales Revenue** but the tile does not indicate that this revenue figure has been calculated for the western sales region. Therefore, you must modify the title of the tile to make this clear.

24. Modify the title and subtitle for the new tile.

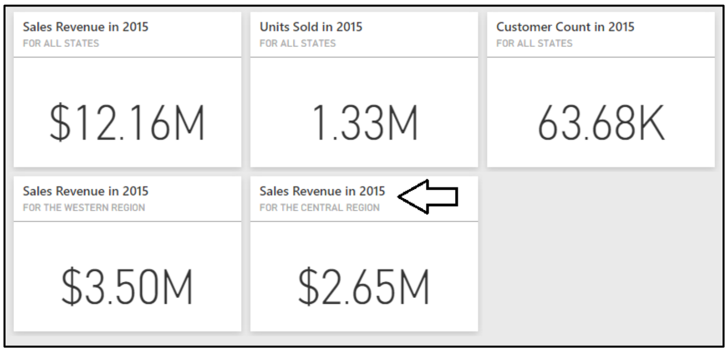
a) Navigate to the **Tile details** pane for the new title.

b) Update the **Title** of the tile to **Sales Revenue in 2015**.

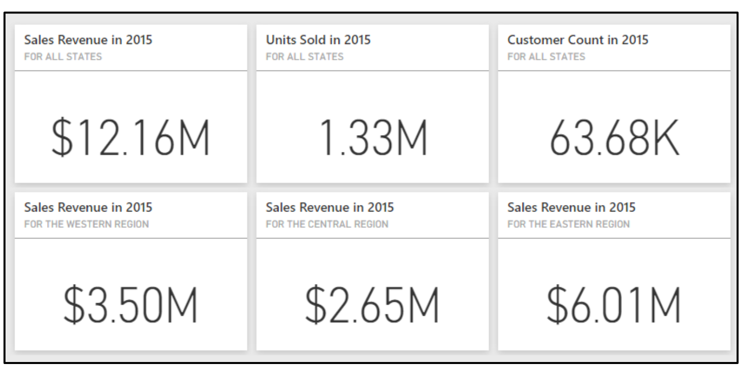
c) Update the **Subtitle** to **for the Western Region** and click **Apply**.



25. Pin the **Sales Revenue** visual from the **Central Region Sales** page to the **Regional Sales 2015** dashboard.
    a) Navigate to the **Regional Sales 2015** report using the left navigation.
    b) Navigate to the **Central Region Sales** page.
    c) Hover over the **Sales Revenue** Card visual and click the thumbtack icon button to display the **Pin to dashboard** dialog.
    d) In the **Pin to dashboard** dialog, click the **Pin** button to pin the visual to the **Regional Sales 2015** dashboard.
    e) Navigate to the **Regional Sales 2015** dashboard and confirm a new tile has been added for the **Sales Revenue** card visual.
    f) Move the new tile down to the second row.
    g) Navigate to the **Tile details** pane for the new title.
    h) Update the **Title** of the tile to **Sales Revenue in 2015**.
    i) Update the **Subtitle** to **for the Central Region** and click **Apply**.



26. Pin the **Sales Revenue** visual from the **Eastern Region Sales** page to the **Regional Sales 2015** dashboard.
    a) Navigate to the **Regional Sales 2015** report using the left navigation.
    b) Navigate to the **Eastern Region Sales** page.
    c) Hover over the **Sales Revenue** Card visual and click the thumbtack icon button to display the **Pin to dashboard** dialog.
    d) In the **Pin to dashboard** dialog, click the **Pin** button to pin the visual to the **Regional Sales 2015** dashboard.
    e) Navigate to the **Regional Sales 2015** dashboard and confirm a new tile has been added for the **Sales Revenue** card visual.
    f) Move the new tile down to the second row.
    g) Navigate to the **Tile details** pane for the new title.
    h) Update the **Title** of the tile to **Sales Revenue in 2015**.
    i) Update the **Subtitle** to **for the Eastern Region** and click **Apply**.

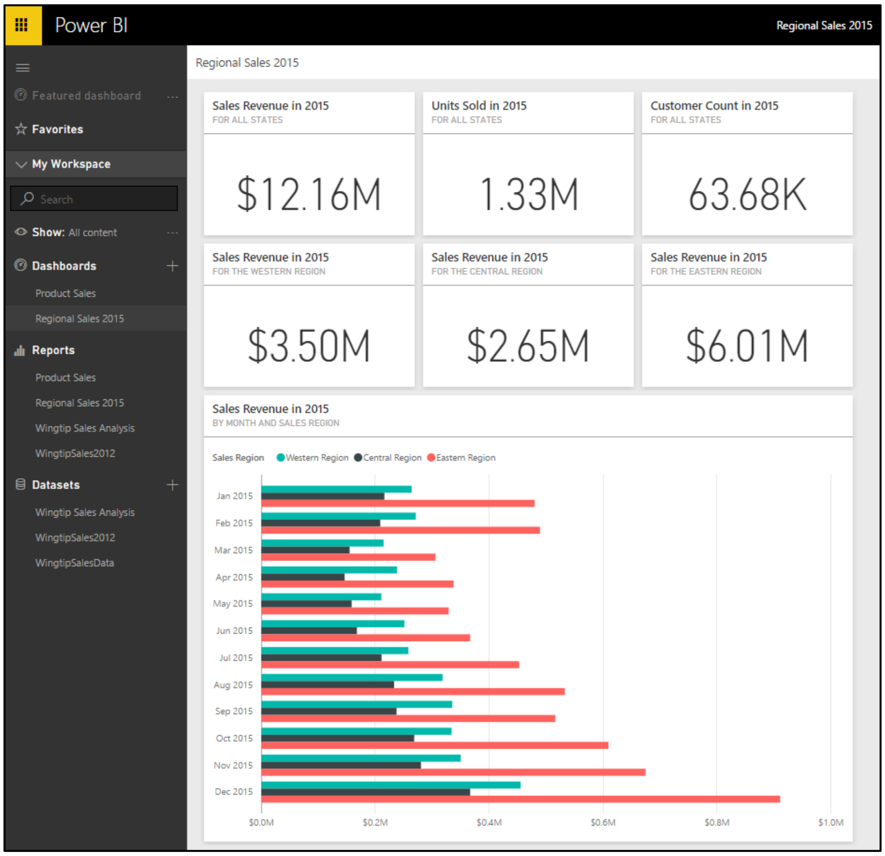


27. Pin the **Bar Chart** visual from the **US Sales** page to the **Regional Sales 2015** dashboard.
    a) Navigate to the **Regional Sales 2015** report using the left navigation.
    b) Navigate to the **US Sales** page.
    c) Hover over the bar chart visual and click on the thumbtack icon button to display the **Pin to dashboard** dialog.

d) In the **Pin to dashboard** dialog, click the **Pin** button to pin the visual to the **Regional Sales 2015** dashboard.

e) Navigate to the **Regional Sales 2015** dashboard and confirm a new tile has been added for the **bar chart** visual.

f) Reposition the new tile with the Bar chart to match the layout in the following screenshot.



You have now finished creating the dashboard. You will now move on to the next exercise where you will deploy the dashboard using dashboard sharing.

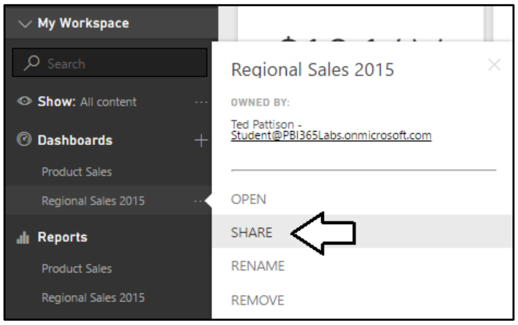
Exercise 2: Share the Product Sales Analysis Dashboard

In this exercise you will share the **Products Sales Analysis** dashboard and test it out from the perspective of a user who is a dashboard consumer as opposed to a dashboard author.

1. Share the **Wingtip Sales Analysis** dashboard with another user.

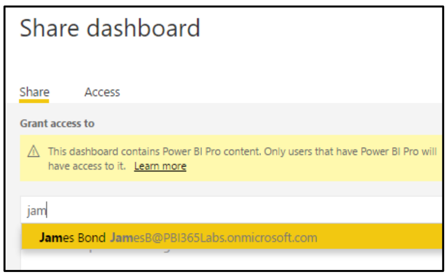
   a) Drop down the flyout menu for the **Regional Sales 2015** dashboard

   b) Click the **Share** menu command to open the **Share dashboard** pane.

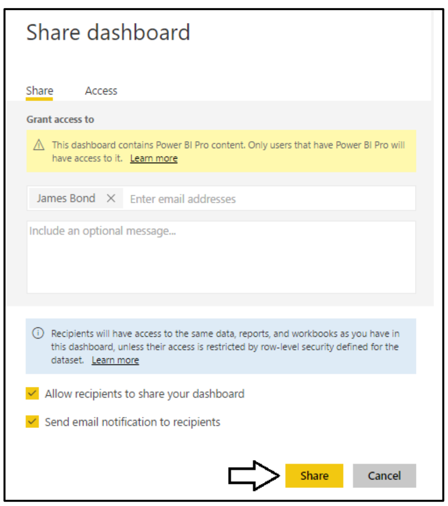


c) In the **Share dashboard** pane, place your cursor in the textbox in the **Grant access** section to enter a user account name.

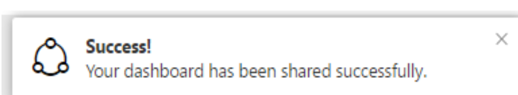
d) Type in the name of the secondary user account that you are using for testing.



e) Once you have resolved the user account name, click the **Share** button at the bottom of the page.



f) The Power BI service responds with even more positive reinforcement.

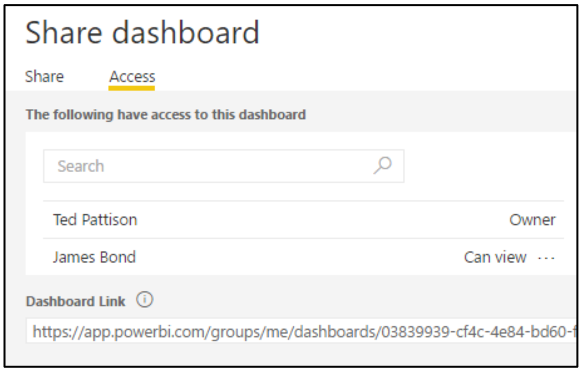


2. Inspect the **Access** tab of the **Share dashboard** pane.

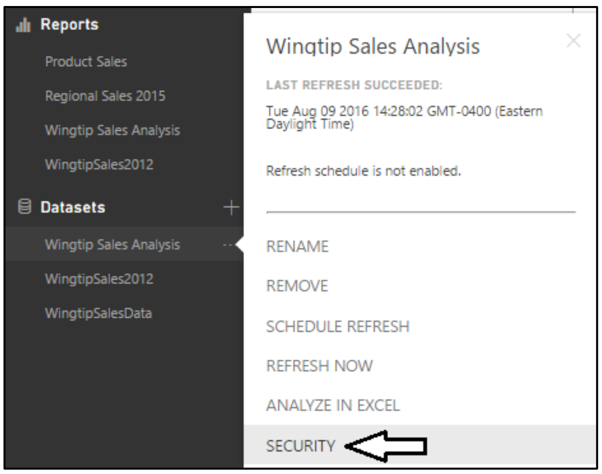
a) Drop down the flyout menu for the **Regional Sales 2015** dashboard in the left navigation.

b) Click the **Share** menu command to open the **Share dashboard** pane.

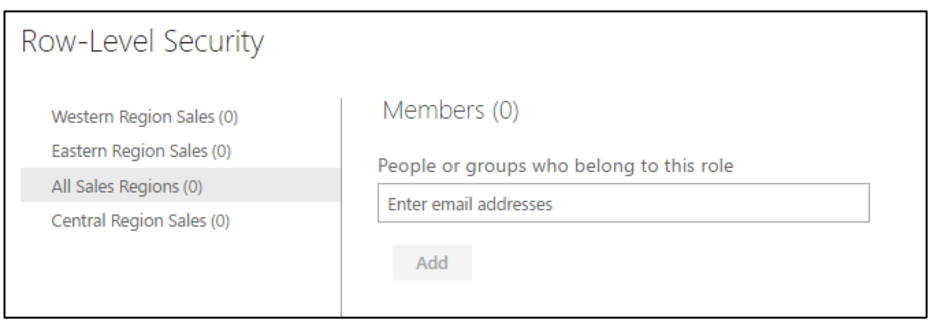
c) Navigate to the **Access** tab to see what users currently have access to the dashboard through dashboard sharing.



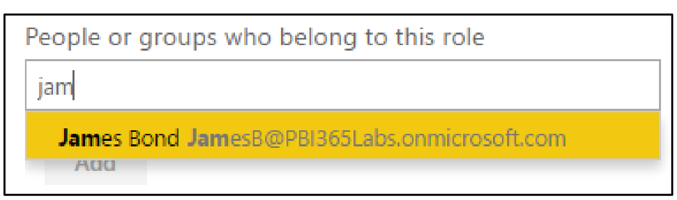
3. Configure Row-Level Security for the user with which you are sharing the dashboard.
   a) Drop down the flyout menu for the **Wingtip Sales Analysis** dataset and click the **SECURITY** menu command.



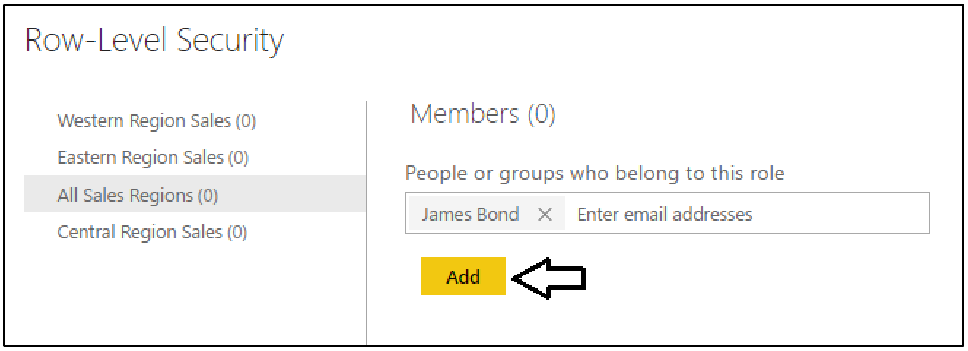
   b) In the **Row-Level Security** dialog, make sure the **All Sales Regions** role is the one that is selected.
   c) Place your cursor in the textbox which displays the hint **Enter email address**.



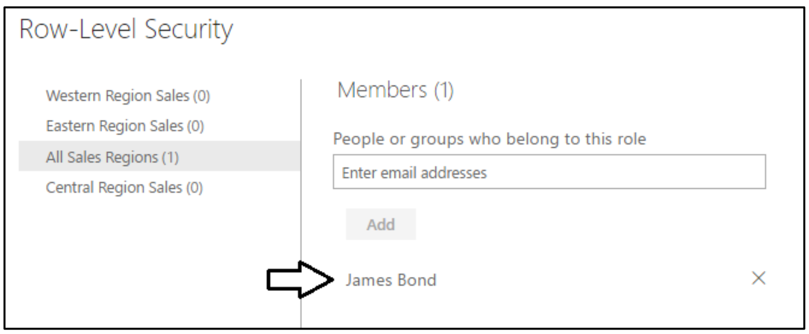
   d) Enter the name of the secondary user account with which you've shared the dashboard.



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



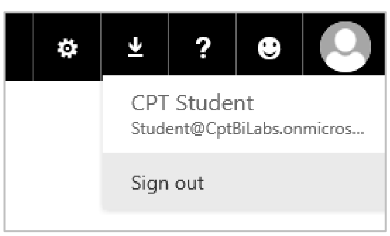
f) Confirm that the secondary user account is now a member of the **All Sales Regions** role



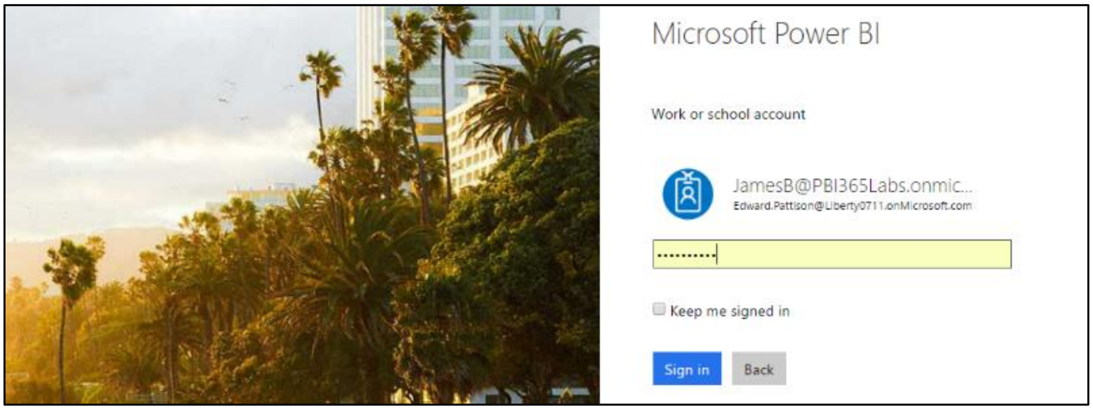
Now you have completed the steps to share the dashboard, the next step is to test out the dashboard experience when logged in as a user who is not the dashboard author, but instead a dashboard consumer. This will require that you sign out of the Power BI service and then sign back in under the identity of the secondary user account. By accessing the shared dashboard in this fashion, you will be able to observe the typical experience of a dashboard consumer when accessing a dashboard that has been shared by another user.

4. Log out as the primary user and then log back in as the secondary user for testing purposes.

a) Drop down the user menu from the top, right-hand corner of the page and click the **Sign out** command.

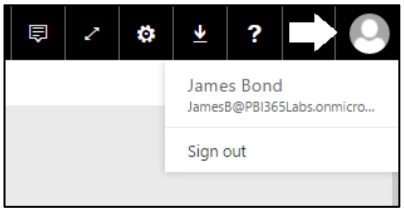


b) Now, sign back in using the account name and the password of the secondary user account you created earlier.

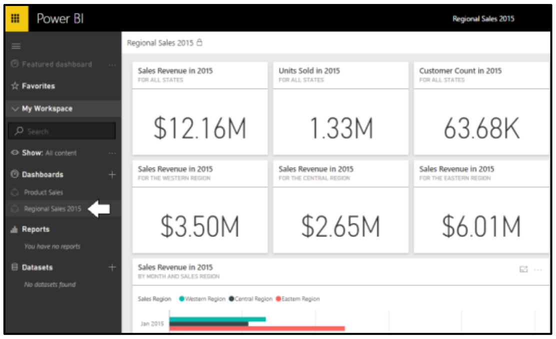


c) Once you have signed in, navigate to the Power BI service at https://app.powerbi.com.

d) Drop down the Power BI service log in menu in the top right corner to ensure you are running as the secondary user.

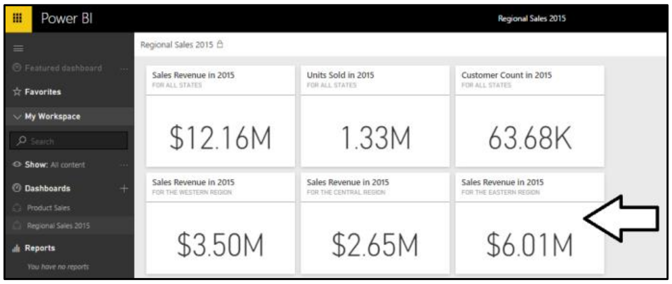


5. Inspect the **Regional Sales 2015** dashboard.
   a) Expand the left navigation.
   b) Click the link to navigate to the **Regional Sales 2015** dashboard

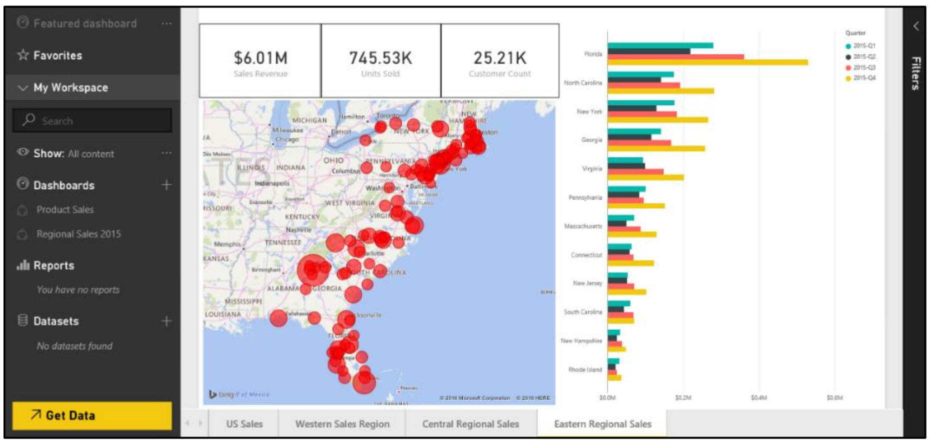


You should be able to verify that the current user can see the **Regional Sales 2015** dashboard link in the left navigation menu but the current user cannot see links to any of the reports or datasets behind the dashboard. While Power BI does not provide the dashboard consumer with direct access to the report or the dataset behind the dashboard, you should keep in mind that Power BI does supply the dashboard consumer with indirect access to the report and the dataset behind the dashboard. It's just that the dashboard consumer can only access the report and dataset by interacting with the dashboard. A key benefit is that this approach keeps the left navigation less cluttered when the user is accessing many different shared dashboards.

6. Navigate to a report by clicking a dashboard tile.
   a) Click on the dashboard tile with the Sales Revenue for the Eastern Region.



b) You should now be looking at the **Eastern Regional** sales page **Sales Regions 2015** report.



c) Use the page navigation at the bottom of the report to navigate to the other page sin the report.

You are now finished with your dashboard testing using the secondary user account.

7. Sign out the current user and then log back in using your primary Office 365 account.

You have now reach the end of this lab.