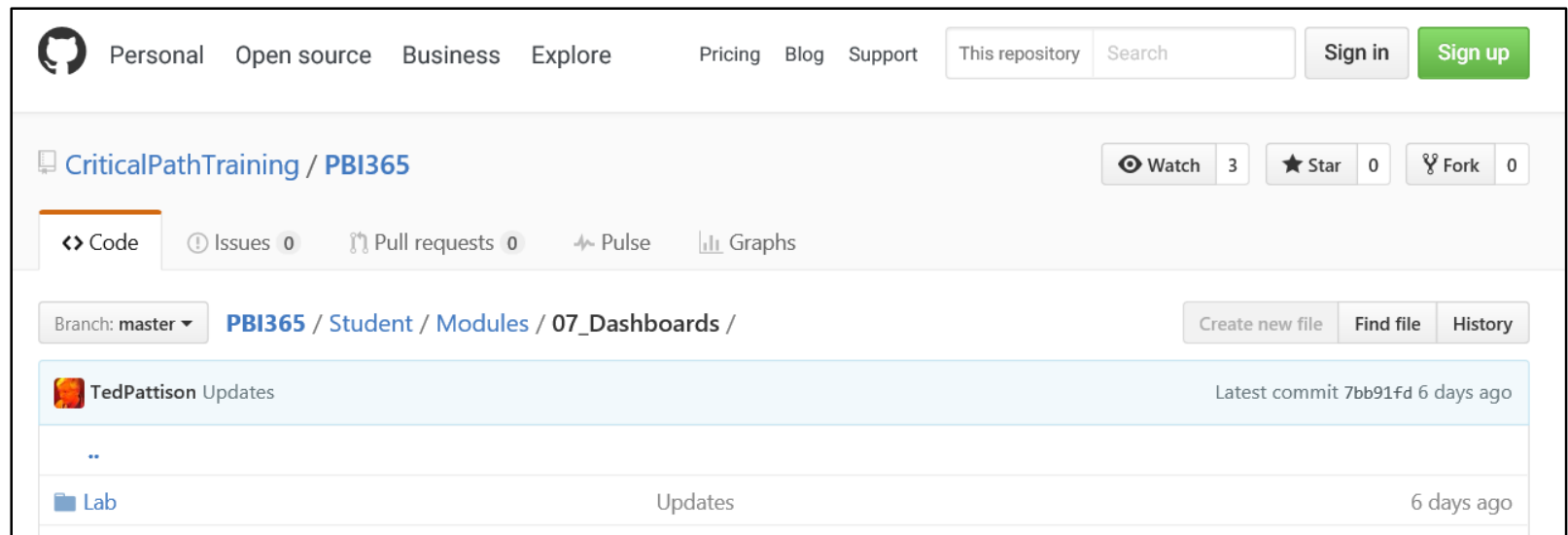


# Introducing the Power BI Platform



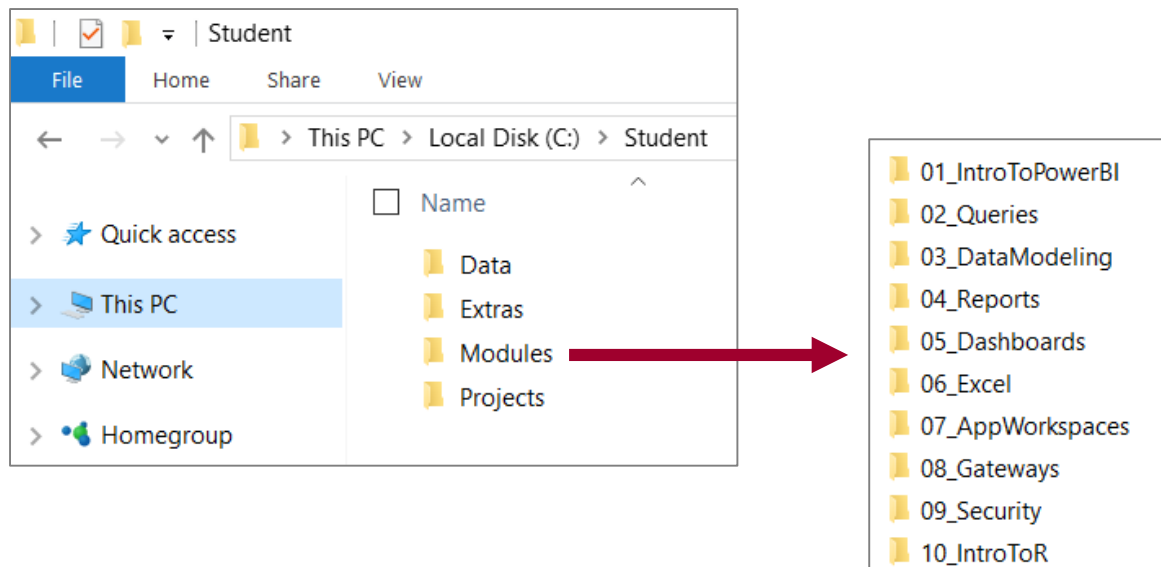
# Live Labs for PBI365

- Student files for this course maintained in GitHub
  - Students files updated frequently
  - Go to <https://github.com/CriticalPathTraining/PBI365>



# Student Files for This Course

- Copy the **Student** folder from the master zip archive
  - Create a new local folder at **C:\Student**
- Each module has folder inside **Student\Modules** folder
  - Slides and lab writeup available through student manual (not in GitHub repository)



# Student Background

- What is your name?
- What are you doing with Power BI?
- Which products/services have you used
  - Excel
  - Access
  - SQL Server, SSRS, SSAS
  - SharePoint and Office 365
  - Tableau
  - Dynamics 365
  - Salesforce
  - Others



# Agenda

- Understanding the Power BI Platform
  - Creating a Trial Office 365 Tenant for Testing
  - Creating Datasets, Reports and Dashboards
  - Getting Started with Power BI Desktop
  - Staying in Sync with Monthly Updates



# What is Business Intelligence?

- BI focuses on business health and performance
  - Gather insights into health of business processes
  - Take corrective actions in a timely fashion
- BI projects typically involve the following...
  - Integrate data from multiple sources
  - Perform data transformation and complex calculations
  - Analyze large data sets with rapid query response
  - Create insightful reports and visualizations
  - Provide insights that are “actionable”



# What is Power BI?

- What is Power BI?
  - A cloud-based analytics service for licensed subscribers
  - Environment which supports and promotes self-service BI
  - Powerful builder tools for importing, modeling and visualizing data
  - Enterprise-grade platform for deploying reports and dashboards
  - On-premises server product supporting subset of cloud features

Power BI  
Service

Power BI  
Desktop

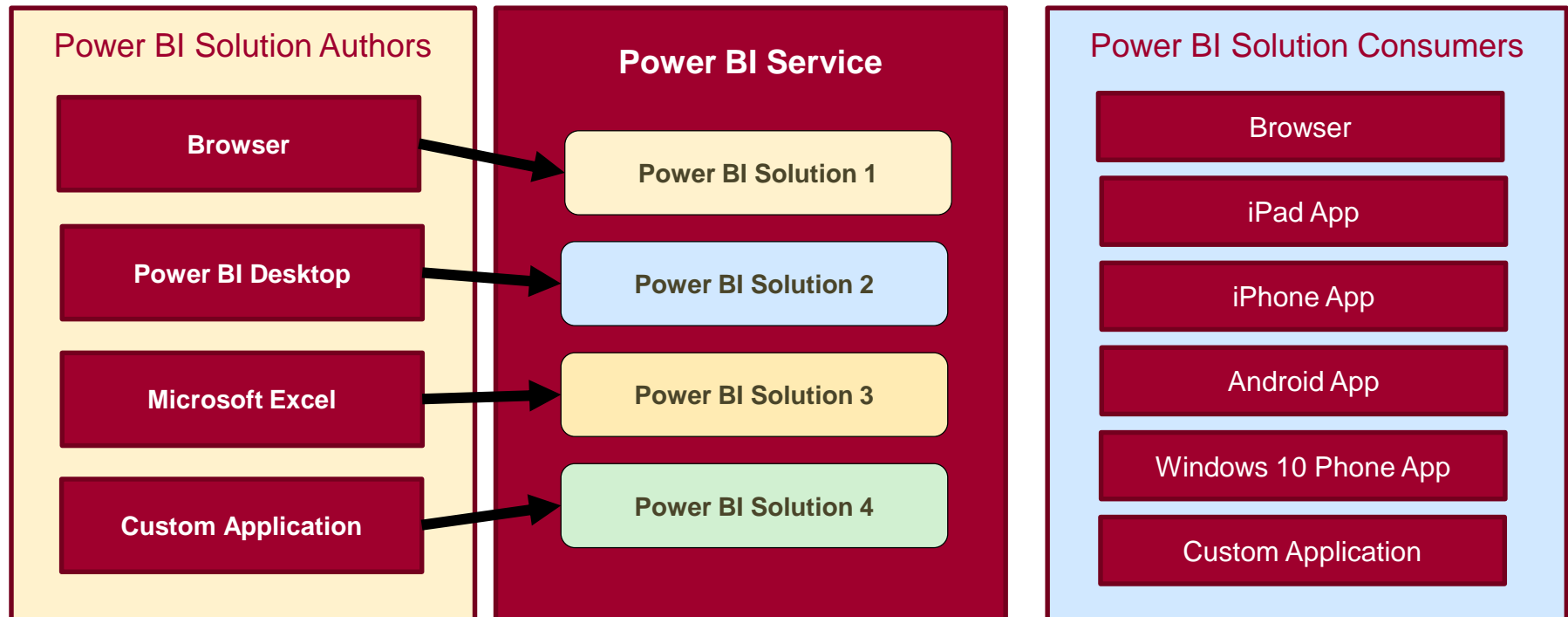
Power BI  
Report Server





# Power BI Authors and Consumers





- Power BI support for authors and consumers
  - BI solution authors have a choice in authoring tools
  - BI solutions consumers can use wide range of devices









# Power BI Licensing

- User-based licensing

<p>Power BI (free)</p> <p>\$0.00 user/month</p> <p>A cloud-based business analytics service that enables anyone to visualize and analyze data with greater speed, efficiency, and understanding. It ...</p> <p>Office 2016 desktop &amp; mobile apps Not included</p> <p>Office 365 services </p> <p>...</p>	<p>Power BI Pro</p> <p>\$9.99 user/month</p> <p>A cloud-based business analytics service that enables anyone to visualize and analyze data with greater speed, efficiency, and understanding. Power ...</p> <p>Office 2016 desktop &amp; mobile apps Not included</p> <p>Office 365 services </p> <p>...</p>	<p>Office 365 Enterprise E5</p> <p>\$35.00 user/month</p> <p>The Office suite, plus email, instant messaging, HD video conferencing, 1 TB personal file storage and sharing, and advanced security, analytics and PSTN ...</p> <p>Office 2016 desktop &amp; mobile apps </p> <p>Office 365 services </p> <p>...</p>
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- Capacity-based Licensing

<p>Power BI Premium P1</p> <p>\$4,995.00 instance/month</p> <p>Power BI capacity dedicated to your organization, unlocking unlimited content distribution and dependable performance. P1 offers 8 virtual cores ...</p> <p>Office 2016 desktop &amp; mobile apps Not included</p> <p>Office 365 services </p> <p>...</p>	<p>Power BI Premium P2</p> <p>\$9,995.00 instance/month</p> <p>Power BI capacity dedicated to your organization, unlocking unlimited content distribution and dependable performance. P1 offers 16 virtual cores ...</p> <p>Office 2016 desktop &amp; mobile apps Not included</p> <p>Office 365 services </p> <p>...</p>	<p>Power BI Premium P3</p> <p>\$19,995.00 instance/month</p> <p>Power BI capacity dedicated to your organization, unlocking unlimited content distribution and dependable performance. P1 offers 32 virtual cores ...</p> <p>Office 2016 desktop &amp; mobile apps Not included</p> <p>Office 365 services </p> <p>...</p>	<p>Power BI Premium EM3 (Month to Month)</p> <p>\$2,495.00 instance/month</p> <p>Embed Power BI content in your custom application, powered by 4 virtual cores of dedicated capacity. Some Premium features are disabled ...</p> <p>Office 2016 desktop &amp; mobile apps Not included</p> <p>Office 365 services </p> <p>...</p>
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# Power BI Report Server

- Power BI Report Server provides limited PBI functionality
  - Designed for customers that need to keep all IT on-premises
  - Supports publishing reports built with Power BI Desktop
  - Builders must use special release of Power BI Desktop
- Power BI features missing from Power BI Report Server
  - Dashboards
  - Dataflows
  - Row Level Security
  - Deployment using Apps
  - Natural Language Q&A
  - Power BI Service API




# Agenda

- ✓ Understanding the Power BI Platform
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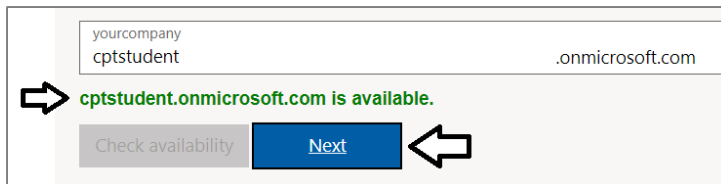


# Creating a Power BI Lab Environment

- Sign up for an Office 365 E5 trial account
  - Sign up process creates new Azure AD tenant
  - Tenant created with user account which is Global tenant admin
  - Tenant gets 30-day trial subscription for 25 Office 365 E5 licenses



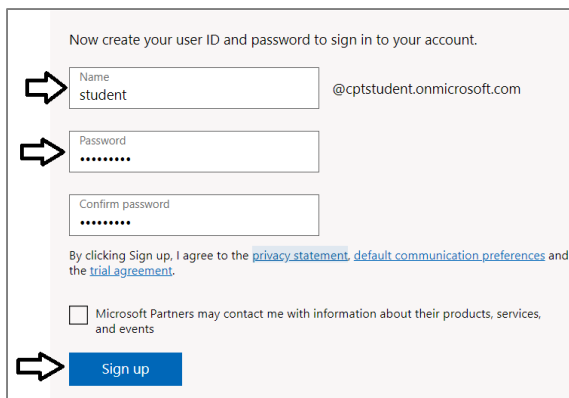
yourcompany  
cptstudent .onmicrosoft.com



yourcompany  
cptstudent .onmicrosoft.com

cptstudent.onmicrosoft.com is available.

Check availability Next



Now create your user ID and password to sign in to your account.

Name student @cptstudent.onmicrosoft.com

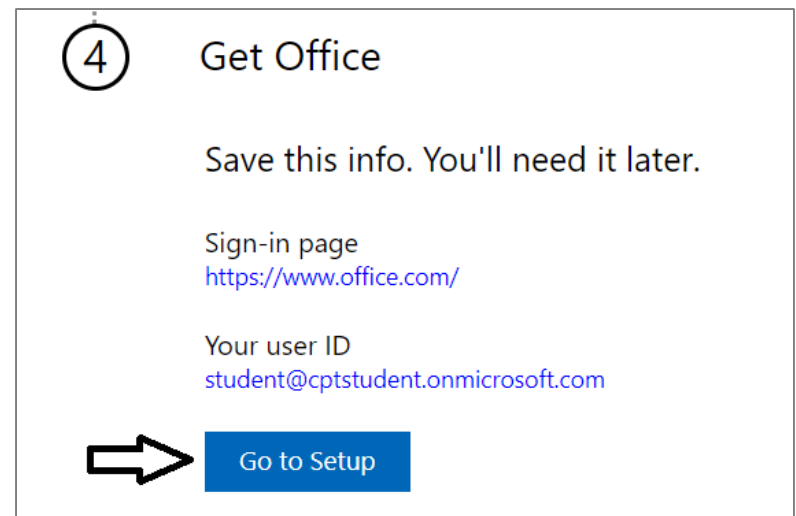
Password .....

Confirm password .....

By clicking Sign up, I agree to the [privacy statement](#), [default communication preferences](#) and the [trial agreement](#).

☐ Microsoft Partners may contact me with information about their products, services, and events

Sign up



4 Get Office

Save this info. You'll need it later.

Sign-in page  
<https://www.office.com/>

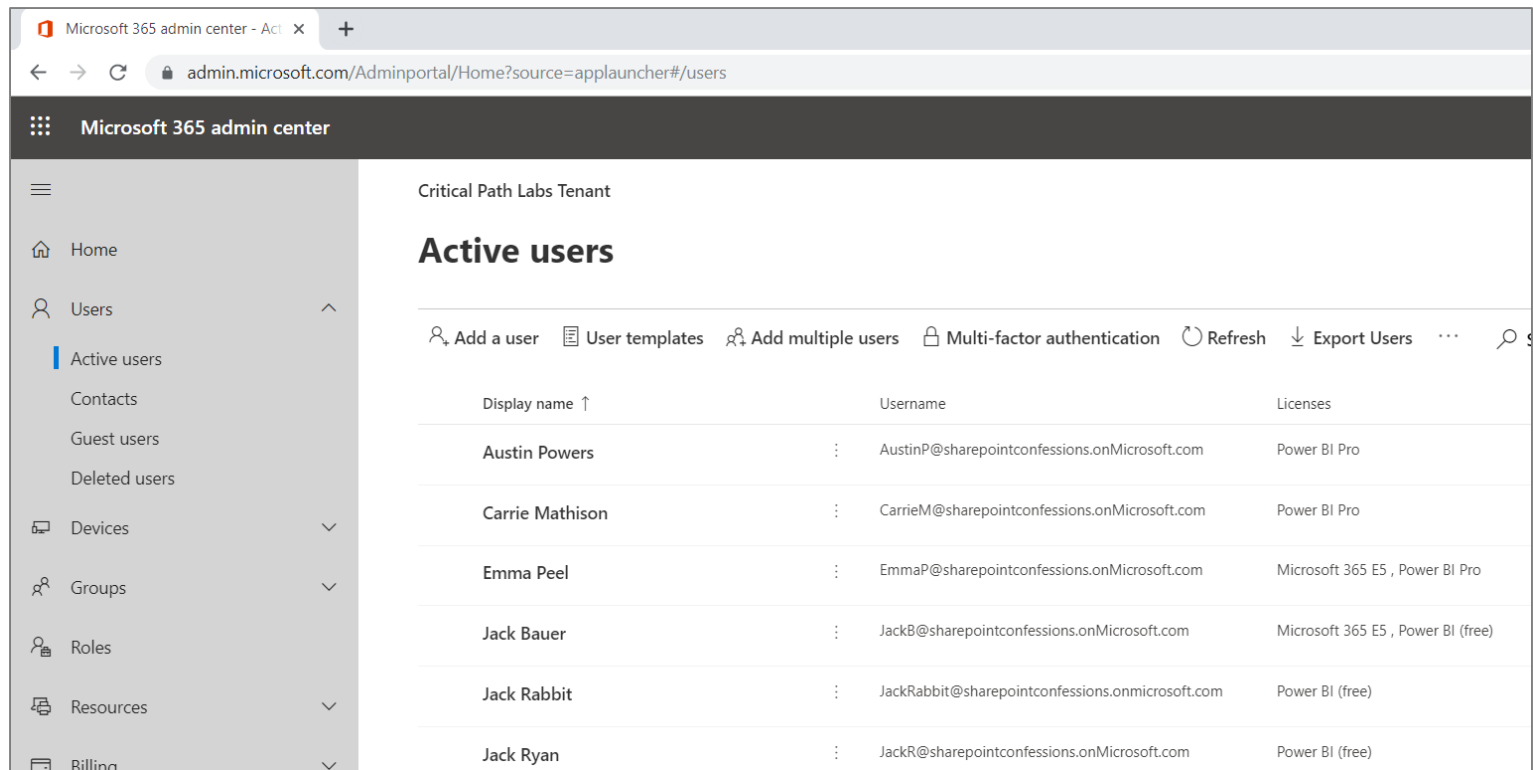
Your user ID  
[student@cptstudent.onmicrosoft.com](#)

Go to Setup



# Microsoft 365 admin center

- Microsoft 365 admin center used for tenant administration
  - You will have full control because you are a Global tenant admin
  - You can create user accounts and groups
  - You can create subscriptions and assign licenses



The screenshot displays the Microsoft 365 Admin Center interface. The left-hand navigation pane includes links for Home, Users, Active users (selected), Contacts, Guest users, Deleted users, Devices, Groups, Roles, Resources, and Billing. The main content area is titled 'Critical Path Labs Tenant' and 'Active users'. It features a toolbar with options: Add a user, User templates, Add multiple users, Multi-factor authentication, Refresh, Export Users, and a search icon. Below the toolbar is a table listing active users with columns for Display name, Username, and Licenses.

Display name ↑	Username	Licenses
Austin Powers	AustinP@sharepointconfessions.onmicrosoft.com	Power BI Pro
Carrie Mathison	CarrieM@sharepointconfessions.onmicrosoft.com	Power BI Pro
Emma Peel	EmmaP@sharepointconfessions.onmicrosoft.com	Microsoft 365 E5, Power BI Pro
Jack Bauer	JackB@sharepointconfessions.onmicrosoft.com	Microsoft 365 E5, Power BI (free)
Jack Rabbit	JackRabbit@sharepointconfessions.onmicrosoft.com	Power BI (free)
Jack Ryan	JackR@sharepointconfessions.onmicrosoft.com	Power BI (free)







**DEMO**

# **Creating Azure AD User Accounts in an Office 365 Tenant**

# Agenda

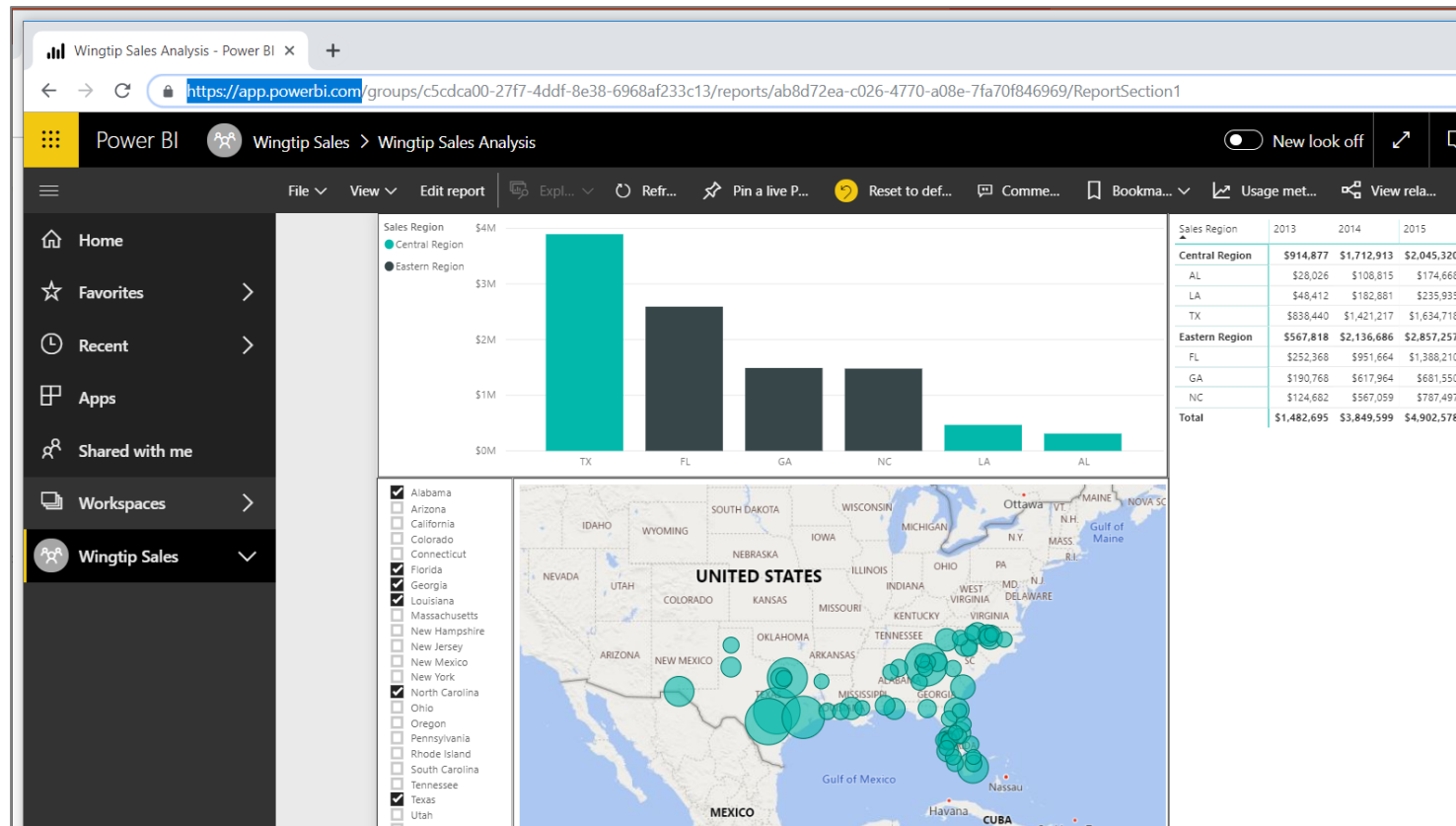
- ✓ Understanding the Power BI Platform
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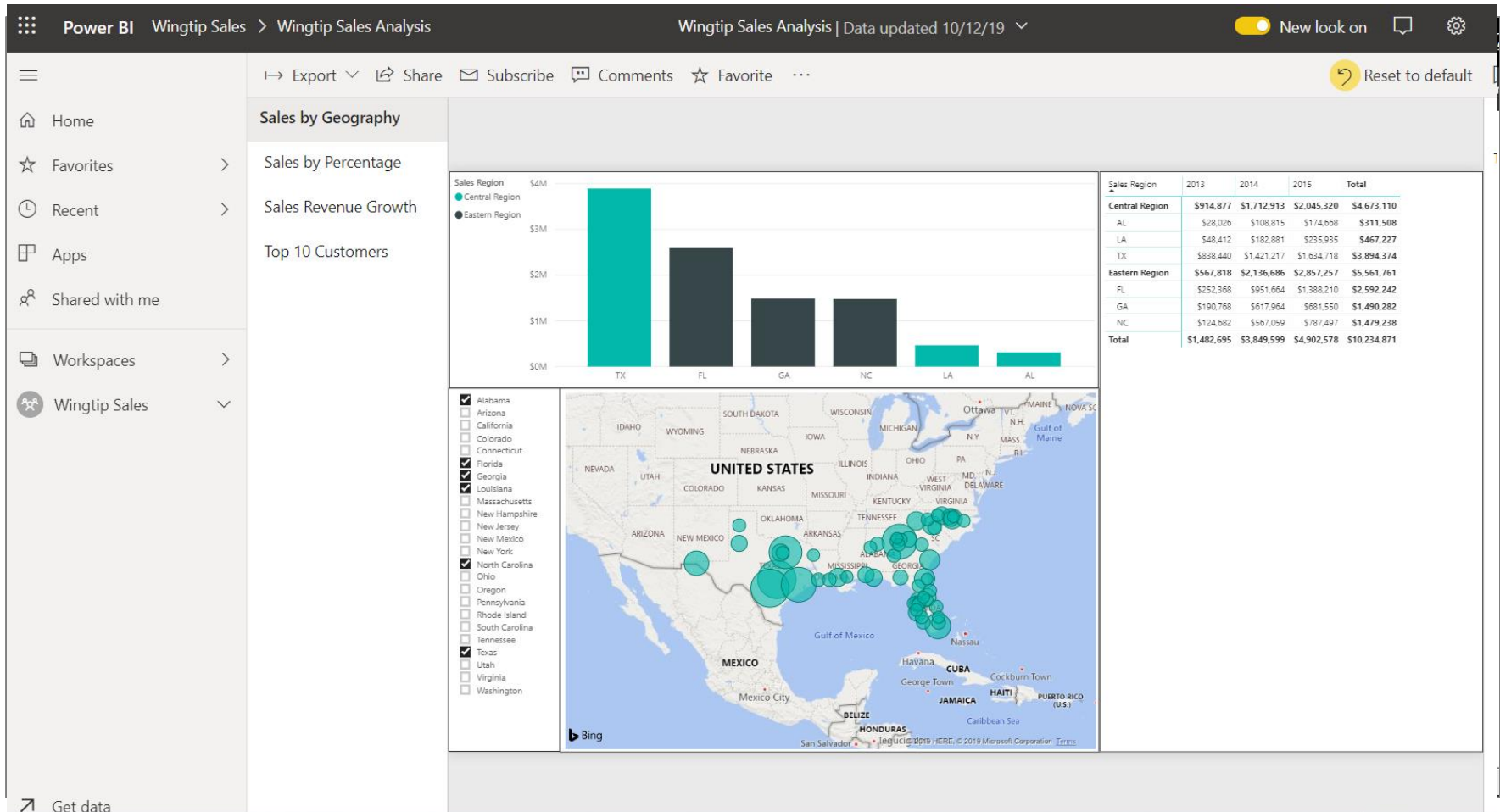


# The Power BI Service

- The Power BI Service
  - Provides cloud-based foundation for Power BI platform
  - Provides browser-based portal at <https://app.powerbi.com>

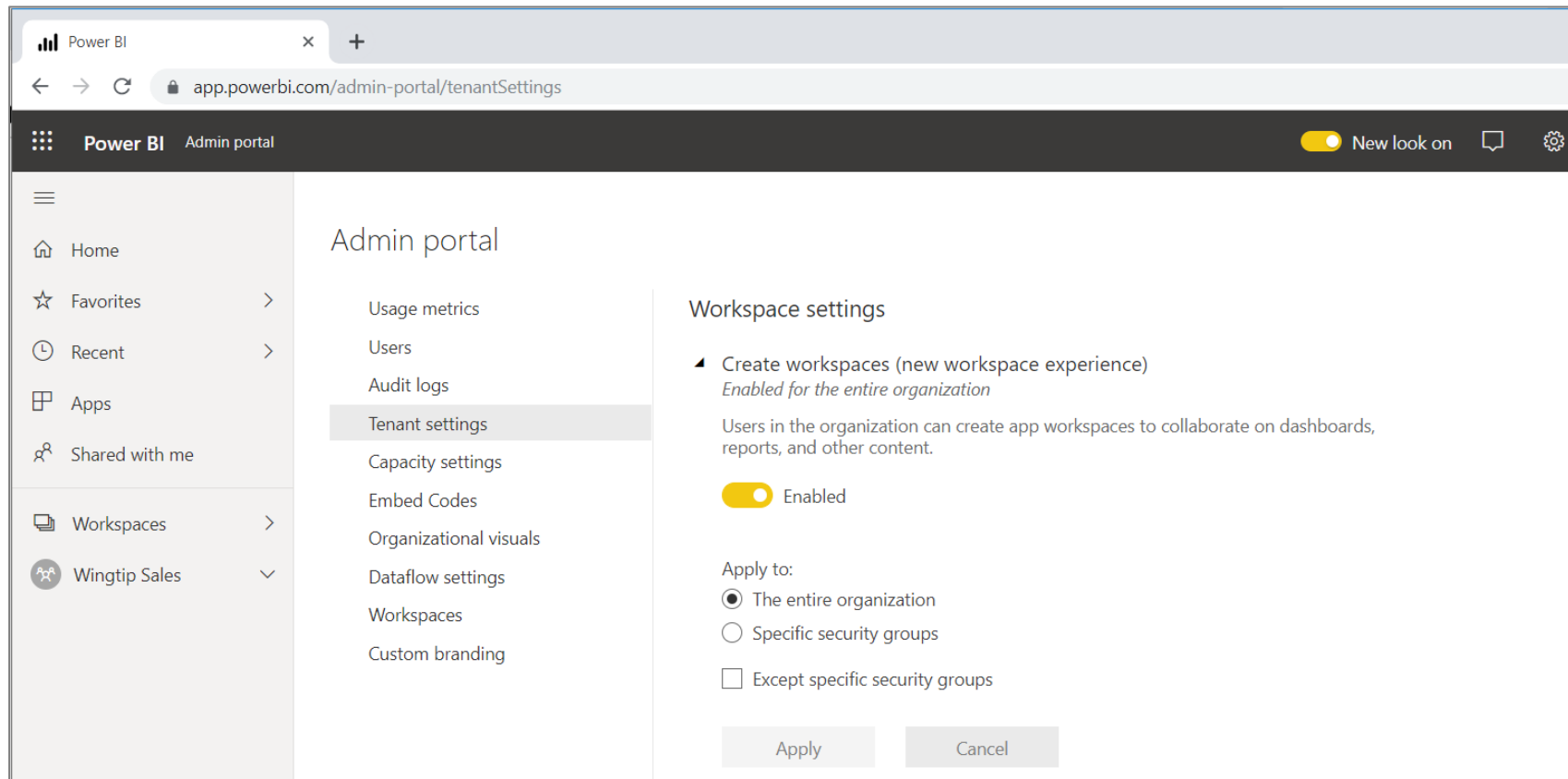


# Light Grey is the New Black



# The Power BI Admin Portal

- Admin portal used to configure tenant-level settings
  - Accessible at <https://app.powerbi.com/admin-portal>
  - Accessible by global tenant admins and Power BI Service admins



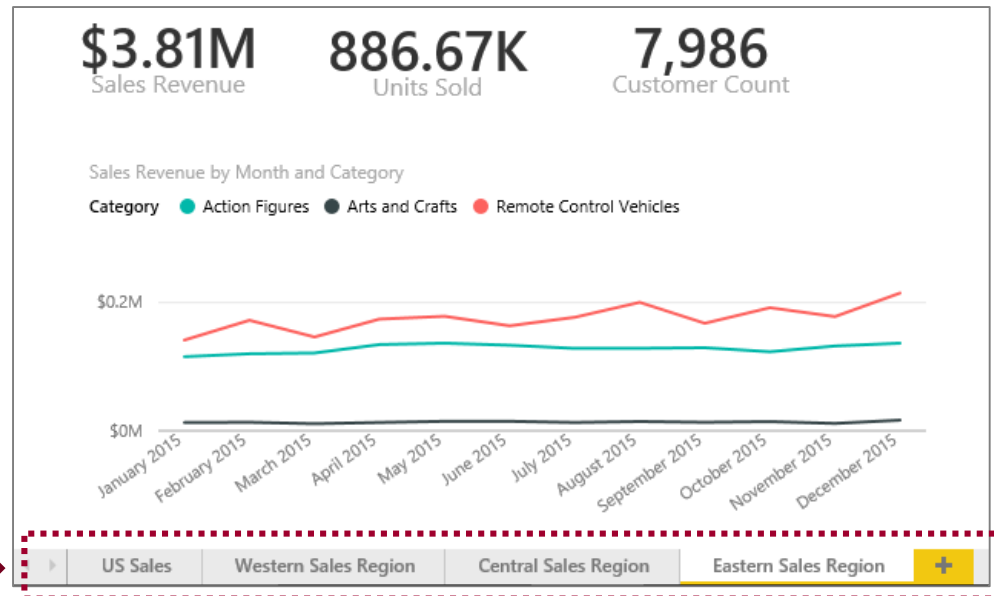
# Central Power BI Concepts

- Workspace
  - Secured container for Power BI resources
  - Created as personal workspaces and app workspaces
- Dashboard
  - Consolidated high-level view into reports and datasets
  - Provides great experience on mobile device (*e.g. iPhone, Android, tablet, etc.*)
- Report
  - Collection of one or more pages with tables & visualizations
  - Provides consumer with interactive control through filtering and bookmarks
- Dataset
  - In-memory data model containing one or more tables
  - Used to supply the underlying data to reports and dashboards
- Dataflows
  - Persistent data store used for more complex ETL requirements
  - Not required in most Power BI scenarios



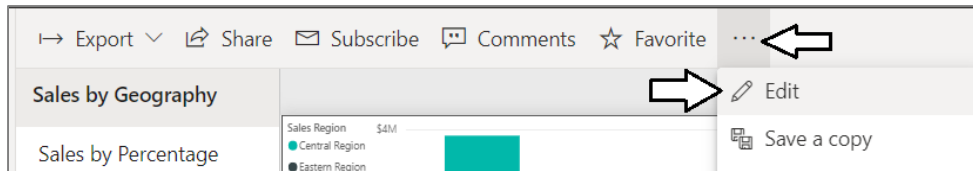
# Reports and Pages

- Reports contain one or more pages
  - A report can be designed with a single page
  - A report can be designed with many pages
  - Tabbed navigation located at bottom of report view
  - Each report is associated with exactly one dataset

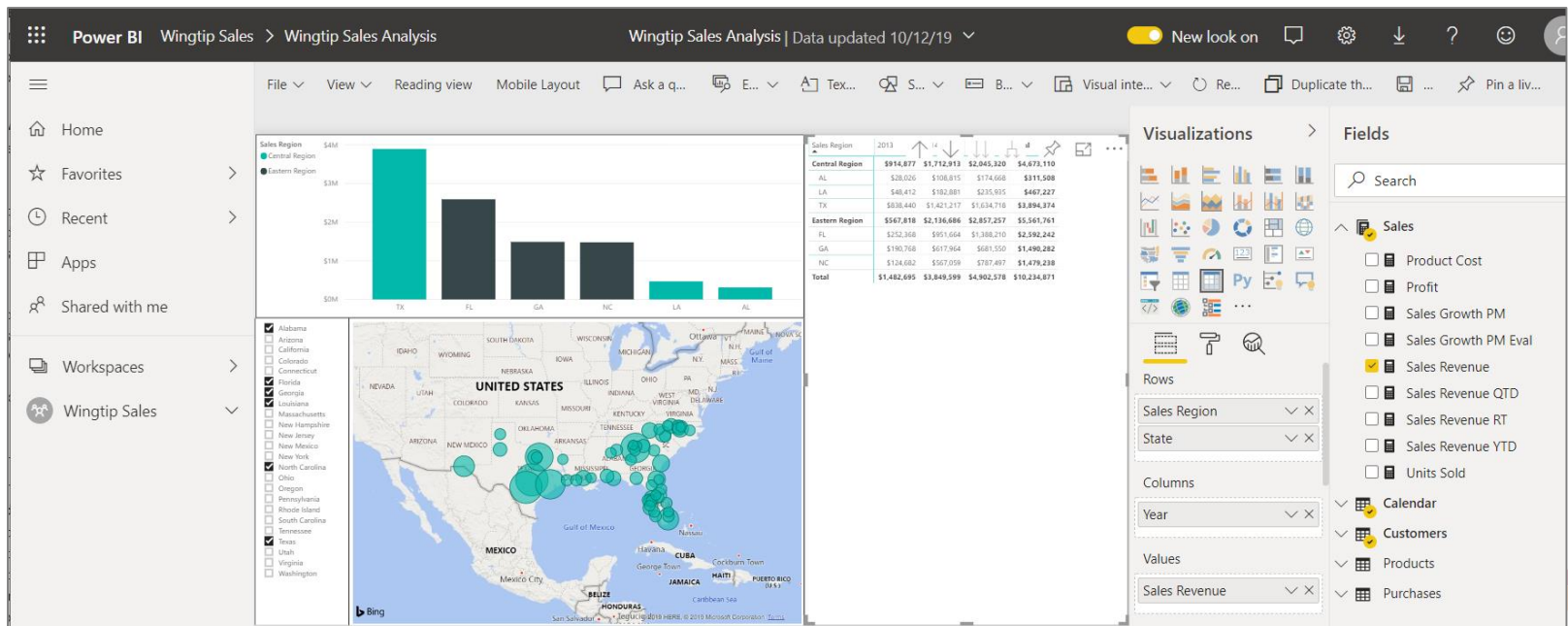


# Report Authoring

- Report initially opens in reading view
  - Select Edit command to switch report to edit mode

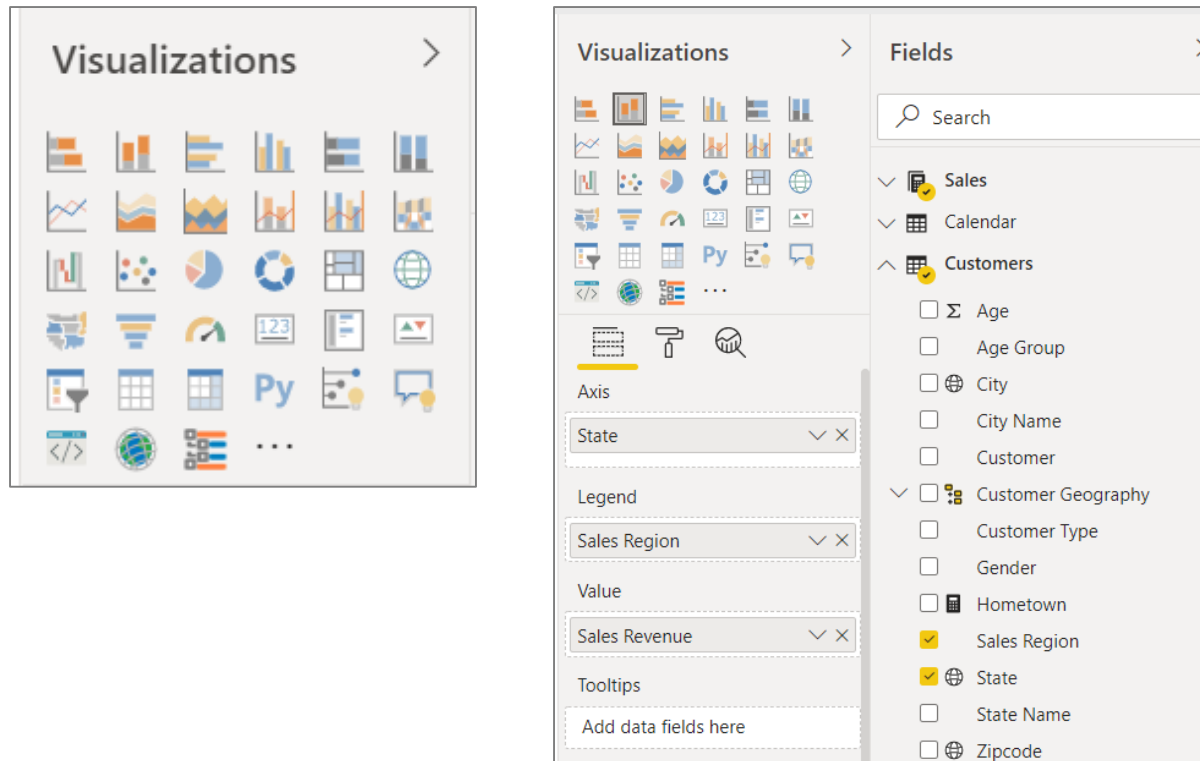


- Report design tools appear on right side of page



# Visuals (aka Visualizations)

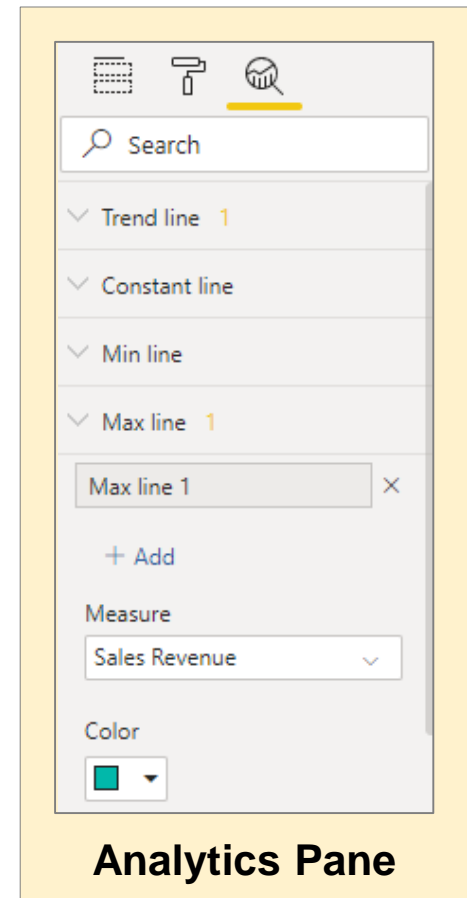
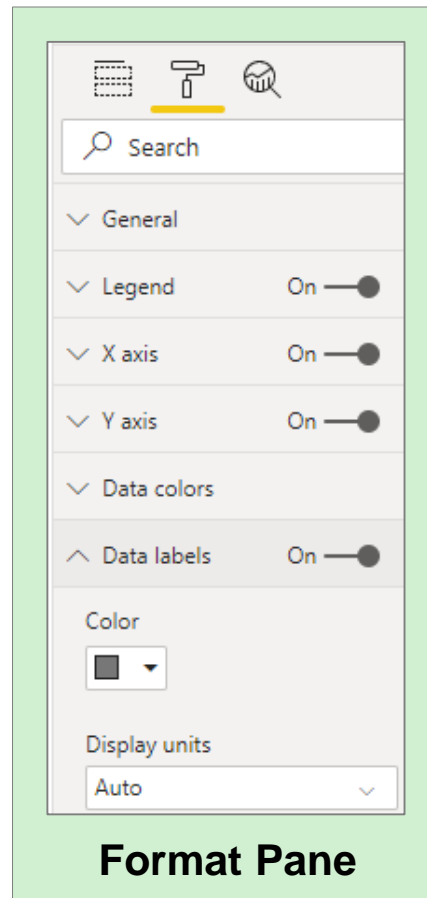
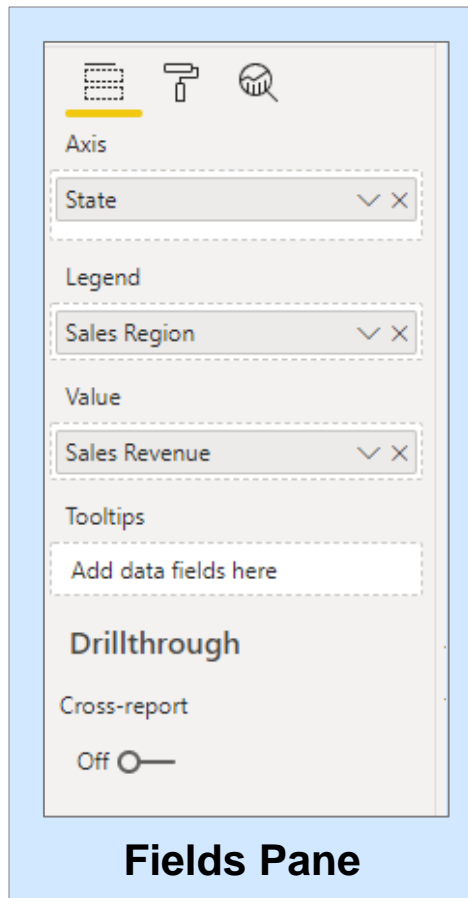
- Reports are designed using visual (aka visualizations)
  - Each visual is based on an underlying visualization type
  - Visualization type can be changed using **Visualizations** pane
  - Visuals configured using fields from tables in **Fields** list





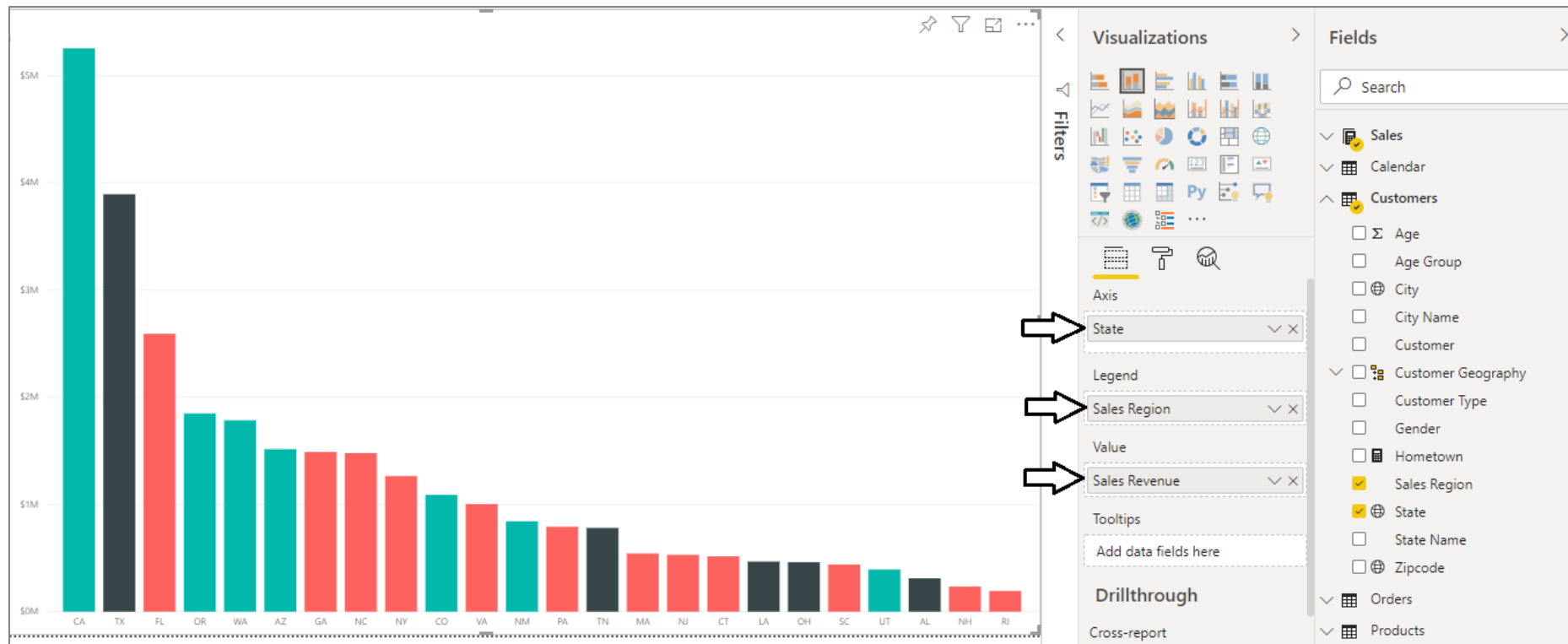
# Editing Visual Properties

- Visual properties modified using three property panes
  - Visual properties vary depending on visualization type



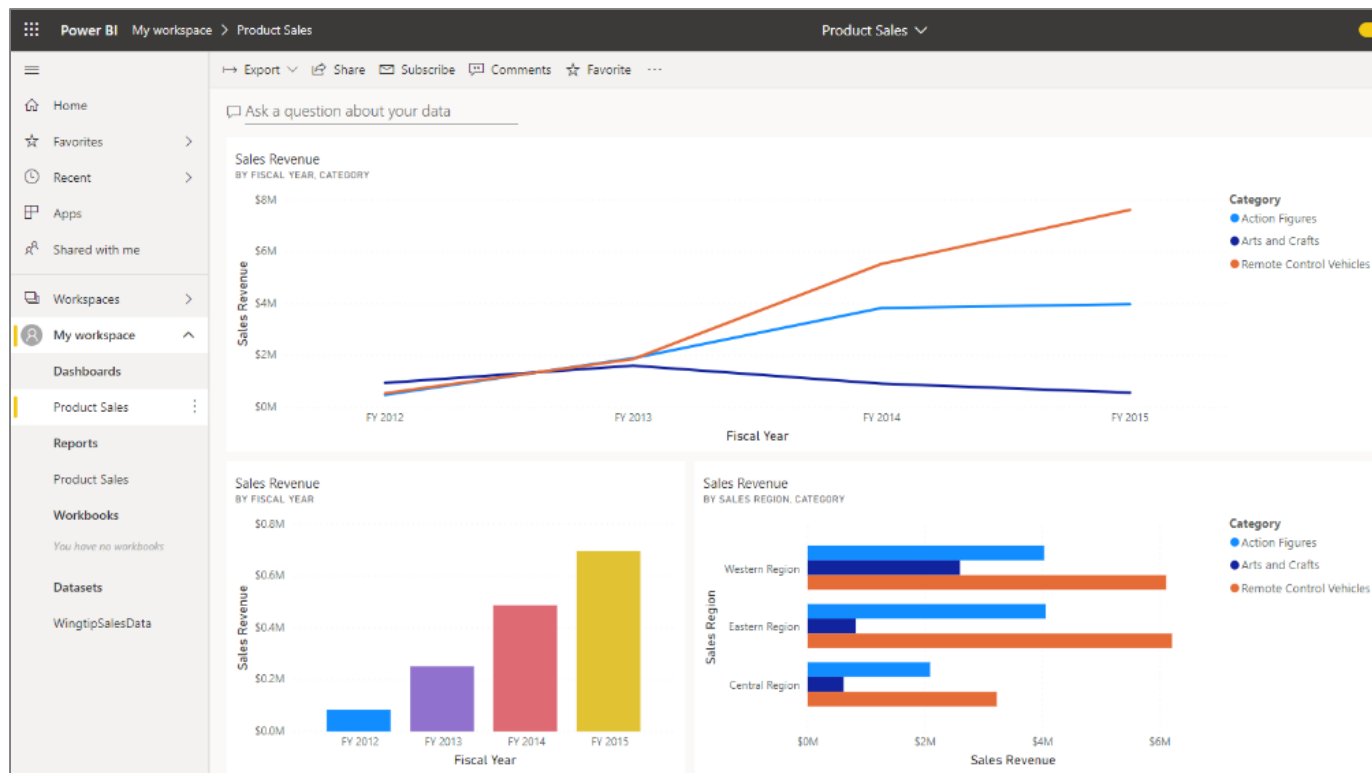
# Report and Datasets

- Each report is based on single underlying dataset
  - **Fields list** in report designer shows tables and fields
  - Fields added to a visual's data roles in **Fields pane**



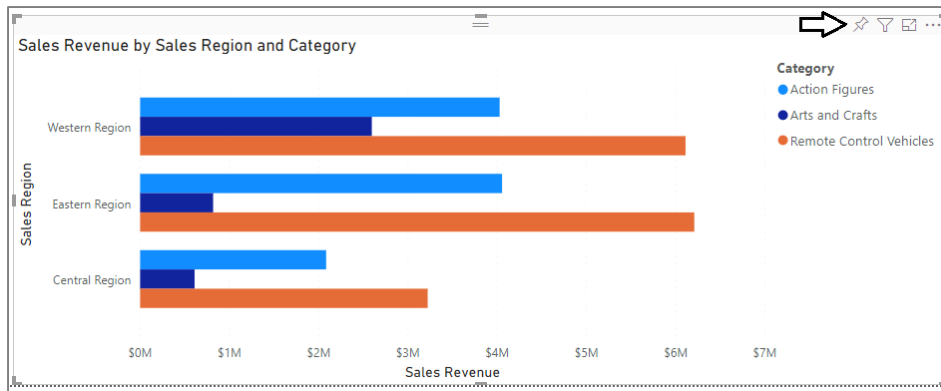
# Dashboards and Tiles

- Dashboard is a collection of tiles
  - Tiles can be created by pinning visual from a report
  - Tiles can be created by pinning Q&A search result

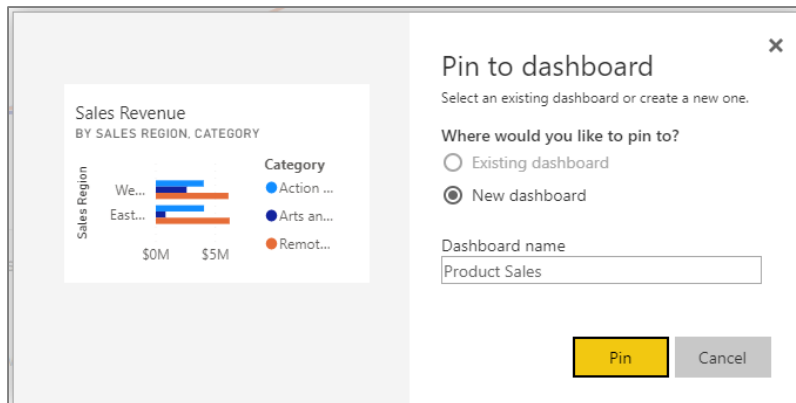


# Creating Dashboards

- Dashboards contain tiles
- Tiles created from visuals using thumbtack button

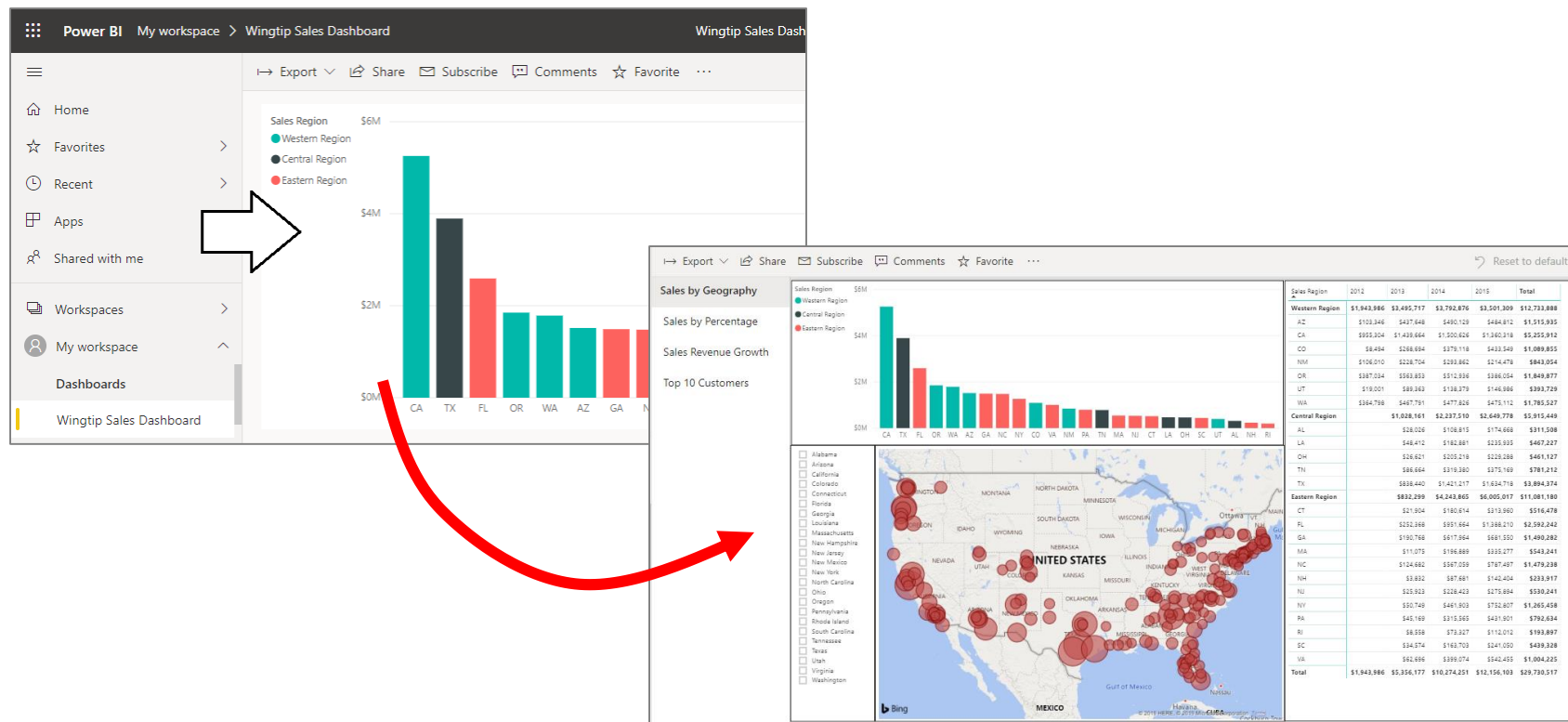


- New tiles can be added to new or existing dashboard



# Dashboards and Reports

- Dashboards link users to reports
  - Dashboard tiles designed to provide high-level view
  - Clicking tiles drills down into report to see more detail







**DEMO**

# **Creating Reports and Dashboards using the Power BI Service**

# Agenda

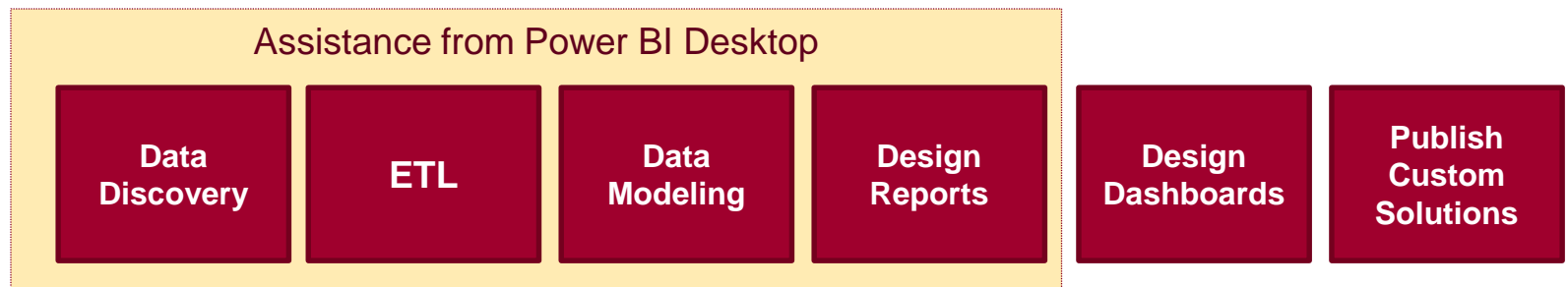
- ✓ Understanding the Power BI Platform
- ✓ Creating a Trial Office 365 Tenant for Testing
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- Getting Started with Power BI Desktop
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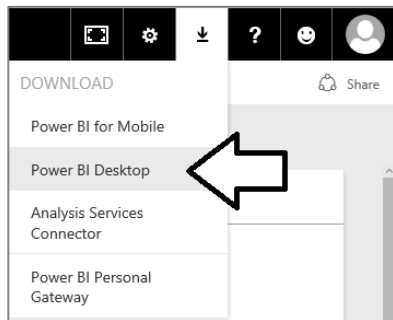
# Working with Power BI Desktop

- Power BI Desktop focuses on first four phases
  - Query features for Data Discovery
  - Query features for ETL
  - Design features and DAX language for data modeling
  - Report design using a visual report designer
  - No support for designing dashboards
  - Not used to package custom solutions with dashboards



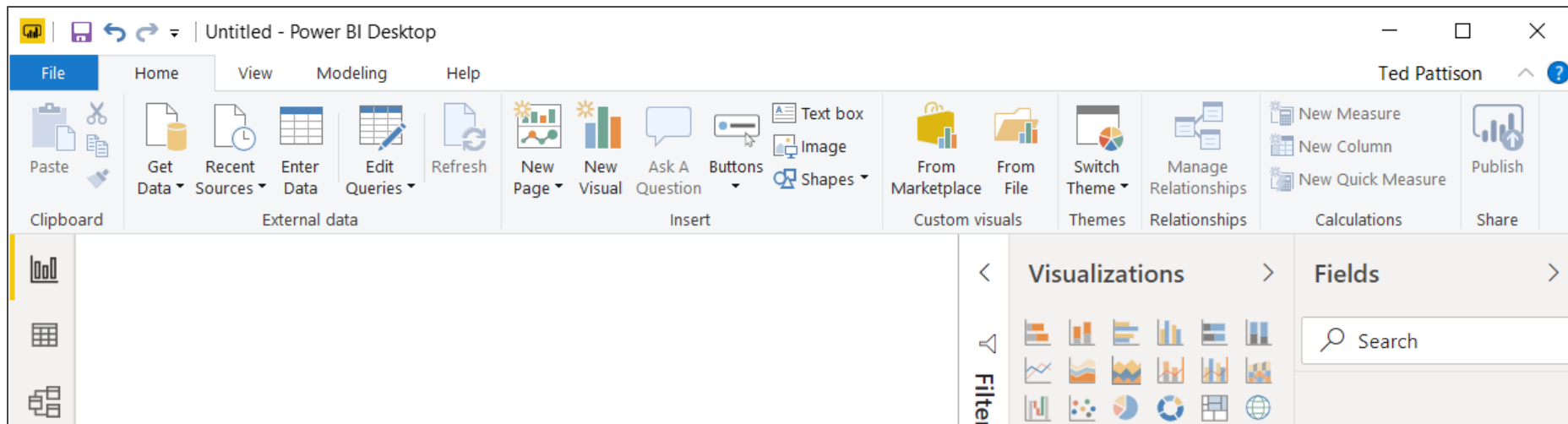
# Installing Power BI Desktop

- Power BI Desktop quick & easy to install over the Internet
  - Select Power BI Desktop option from Power BI Download menu
  - Power BI Desktop downloads & installs in less than a minute



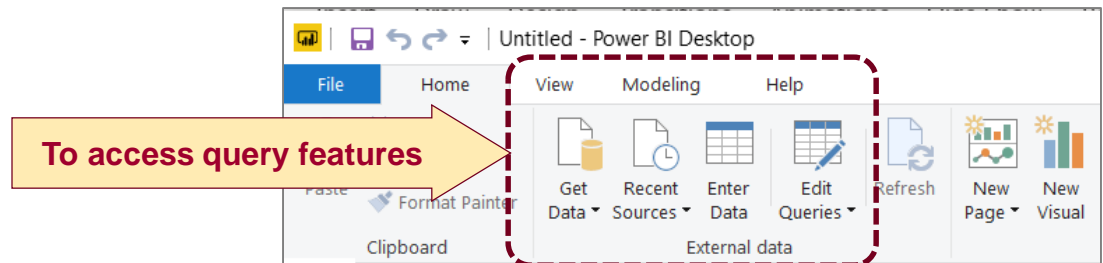
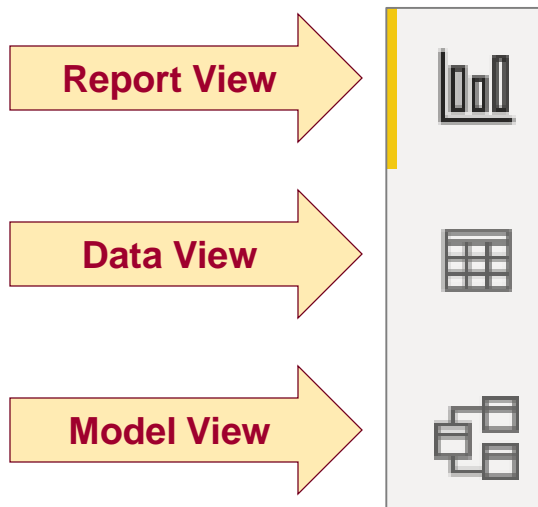
# Working with Power BI Desktop

- Power BI Desktop is a Windows application
  - Work is saved and published in terms of PBIX projects
  - You can work on multiple projects at once
  - Each project runs in its own Power BI Desktop instance
  - Power BI Desktop can freeze up or act buggy
  - Quit & restart Power BI Desktop if it acts strangely



# Getting Around in Power BI Desktop

- What do you need to learn to use Power BI Desktop?
  - Query features for importing data
  - Designing data model & writing DAX expressions
  - Designing reports with Power BI Desktop report designer
- Navigating between view modes





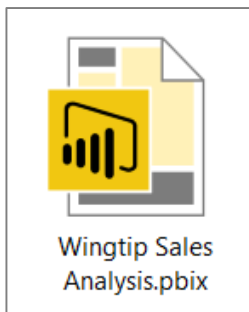


**DEMO**

# Getting Up and Running with Power BI Desktop

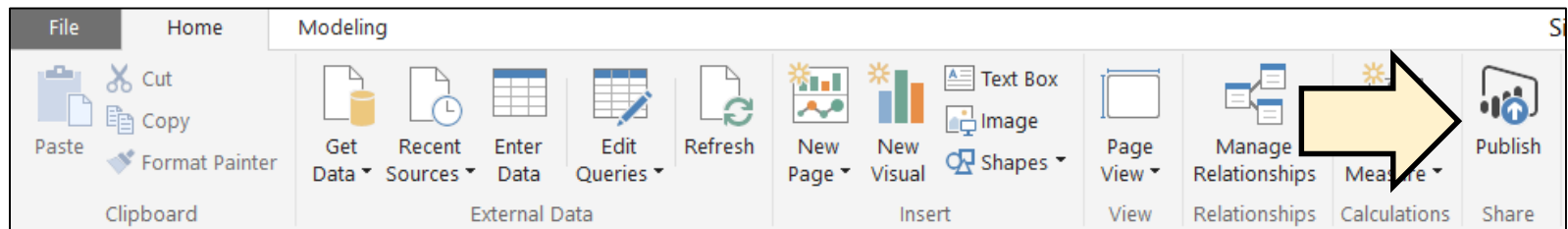
# Projects and PBIX Files

- Power BI Desktop projects saved using PBIX files
  - PBIX file contains data source definitions
  - PBIX file contains query definitions
  - PBIX file contains data imported from queries
  - PBIX file contains exactly one data model definition
  - PBIX file contains exactly one report
  - PBIX file never contains data source credentials

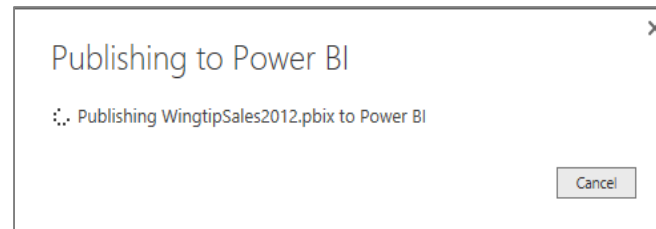
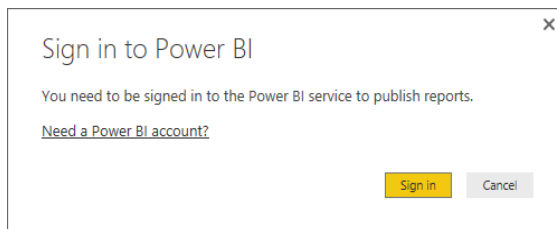


# Publishing a Power BI Desktop Project

- Power BI Desktop provides **Publish** command
  - Used to publish project to Power BI service



- Requires logging into your Office 365 account



- Published articles added to target workspace







**DEMO**

# **Publishing a PBIX Project File to the Power BI Service**

# Agenda

- ✓ Understanding the Power BI Platform
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# Power BI Team Blog

- Power BI Team Blog is an Essential Resource

<https://powerbi.microsoft.com/en-us/blog/>

- Be on the lookout for monthly updates

## Power BI Service and Mobile June Feature Summary

Announcements

Features



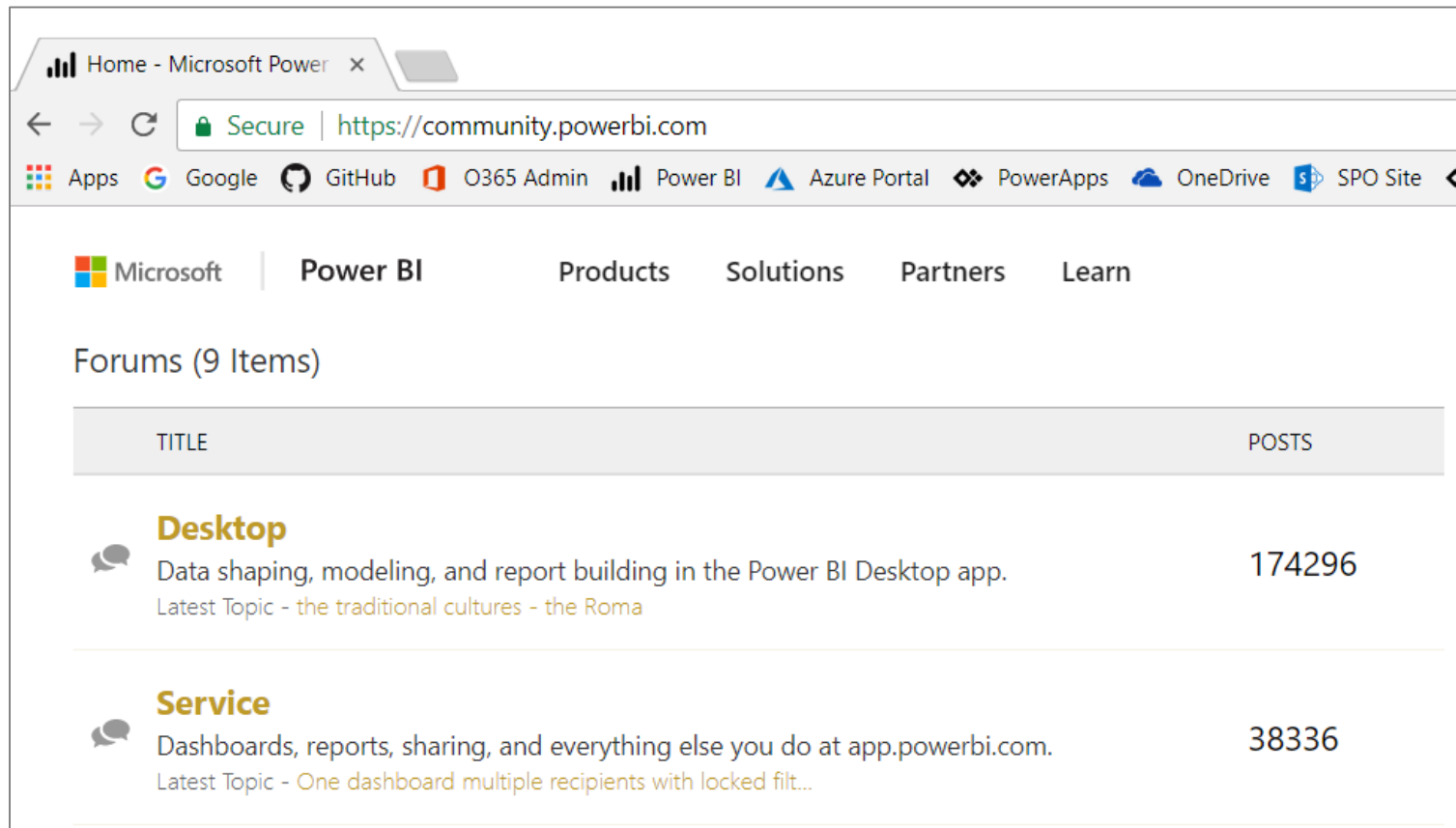
July 11, 2018 by Nikhil Gaekwad

The month of June flew by quickly for Power BI. With summer in the air and MBAS just around the corner, we are laser focused on planning another unforgettable conference for you in Seattle! There...



# Power BI Community Forums

- Located at <https://community.powerbi.com/>
  - Great place to get answers to tough questions



Home - Microsoft Power x

Secure | <https://community.powerbi.com>

Apps Google GitHub O365 Admin Power BI Azure Portal PowerApps OneDrive SPO Site

Microsoft | Power BI Products Solutions Partners Learn

Forums (9 Items)

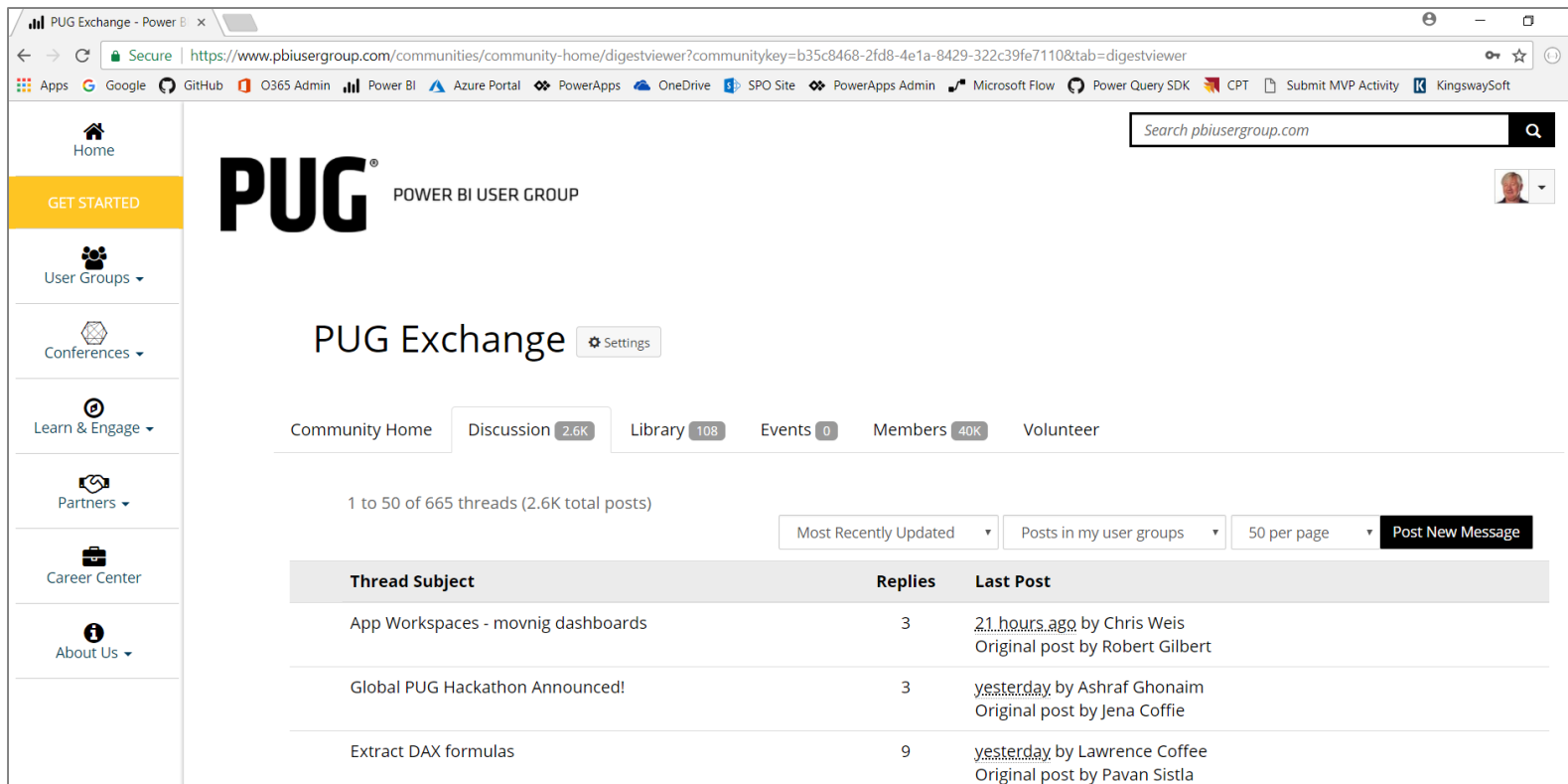
TITLE	POSTS
<b>Desktop</b> Data shaping, modeling, and report building in the Power BI Desktop app. Latest Topic - the traditional cultures - the Roma	174296
<b>Service</b> Dashboards, reports, sharing, and everything else you do at app.powerbi.com. Latest Topic - One dashboard multiple recipients with locked filt...	38336





# Power BI User Group (PUG)

- Located at <http://pbusergroup.com/>
  - PUG Exchange is another place to get questions answered
  - Also let's you find and connect with local Power BI User Groups



The screenshot shows the PUG Exchange website interface. The left sidebar contains navigation links: Home, GET STARTED, User Groups, Conferences, Learn & Engage, Partners, Career Center, and About Us. The main header features the PUG logo and the text "POWER BI USER GROUP". Below the header, the "PUG Exchange" section includes a "Settings" button and a navigation bar with links to Community Home, Discussion (2.6K), Library (108), Events (0), Members (40K), and Volunteer. A search bar is located in the top right corner. The main content area displays a list of discussion threads, showing 1 to 50 of 665 threads (2.6K total posts). The threads are sorted by "Most Recently Updated" and show 50 posts per page. A "Post New Message" button is visible in the top right of the thread list.

Thread Subject	Replies	Last Post
App Workspaces - movnig dashboards	3	21 hours ago by Chris Weis Original post by Robert Gilbert
Global PUG Hackathon Announced!	3	yesterday by Ashraf Ghonaim Original post by Jena Coffie
Extract DAX formulas	9	yesterday by Lawrence Coffee Original post by Pavan Sistla



# Summary

- ✓ Understanding the Power BI Platform
- ✓ Creating a Trial Office 365 Tenant for Testing
- ✓ Creating Datasets, Reports and Dashboards
- ✓ Getting Started with Power BI Desktop
- ✓ Staying in Sync with Monthly Updates

