

Module 1

Introducing Power BI

Module Overview

- Power BI
- The Power BI Service

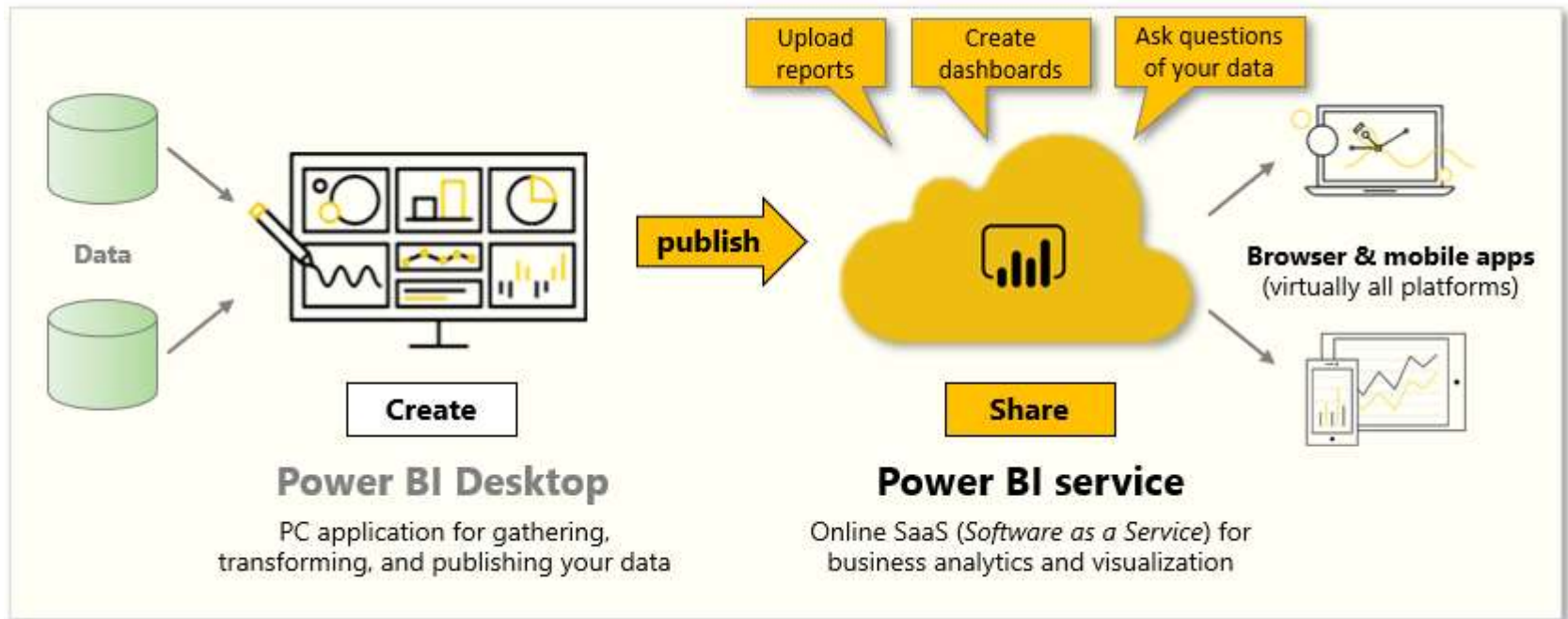
Lesson 1: Power BI

- What is Power BI?
- Power BI Workflow
- PowerBI.com
- Power BI Report Server
- Power BI Desktop
- Reports
- Dashboards
- Designing reports and dashboards

What is Power BI?

- The Power BI suite comprises Power BI Desktop, Power BI Service, Power BI Report Server, and Power BI Mobile. Use it to:
 - Quickly create reports using the app or portal
 - Import data from files, on-premises databases, and SaaS providers
 - Combine multiple data sources into one report
 - Publish reports in the cloud or on-premises
 - Create dashboards on the portal from report items
 - Share dashboards with colleagues
 - View reports and dashboards with the Power BI Mobile app for iOS and Android devices
 - Gain insights in your data with Power BI Q&A

Power BI Workflow



- The Power BI Service is a web portal for sharing reports, data, and dashboards
- My Workspace comprises:
 - Dashboards
 - Reports
 - Workbooks
 - Datasets
- App workspaces:
 - Package contents into an app
 - Share app with other users
 - More granular security than traditional workspaces

Power BI Report Server

- On-premises enterprise reporting solution
- Combines the functionality of SSRS with Power BI
- Licensed with:
 - Power BI Premium
 - SQL Server Enterprise Edition with Software Assurance
- Download from Microsoft Download Center
- Configure using Report Server Configuration Manager

Power BI Desktop

- Power BI Desktop:
 - Combines Microsoft's Power Query engine, with data modeling, and visualizations
 - Free, stand-alone application for creating reports
 - Download from Microsoft website or Power BI portal
 - Report files can be saved with a .pbix extension
- Create reports using three-step process:
 1. Connect to data sources
 2. Shape the data to create the model
 3. Create reports to share with colleagues
- Workspace views: Report, Data, Model

Reports

- Create multipage reports in Power BI Desktop
 - Load datasets into a report, or use DirectQuery to query the data source and always return latest data
 - DirectQuery is useful for large datasets with long load time
 - Report view:
 - Add visualizations and additional report pages
 - Publish reports to the portal
 - Data view:
 - Shape data using transformations and Power Query Editor tools
 - Model view:
 - Manage relationships between datasets
 - Relationship autodetection runs by default
 - Use templates to share and reuse shaped data and formatted visuals

Dashboards

- Power BI dashboards are created by pinning visuals to a new or existing dashboard
- Pin Live Page creates a dashboard tile from a report page, including all items in the report
- Pin from one dashboard to another dashboard for easy duplication
- Dashboard sharing with other users for a read-only view
- Full Screen Mode displays the dashboard without menus or browser—ideal for presentations or TVs
- Last Refresh Time can be enabled for each tile
- Favorite dashboards for most frequently used
- Featured dashboard to return to most used first

Designing reports and dashboards

- Use techniques to design your reports and dashboards to make them easy to digest:
 - **Customize visuals:** use colors, labels, borders, and titles to enhance and group related visuals together
 - **Positioning:** most important information at top of report or dashboard, especially for viewing on mobile device
 - **Audience:** what metrics are most useful to end users? Think about displaying on TV screen or large monitor
 - **Storytelling:** only show relevant and related data, use multipage reports to break up data into context/subject
 - **Choosing a formatting a visual:** bigger visuals for more important data; try out charts to find best for scenarios

Demonstration and Exercise 1

You will see how to:

- Create a new report in Power BI Desktop
- Connect to the AdventureWorksDW SQL Server Database
- Add a chart to the report using AdventureWorksDW data

Lesson 2: The Power BI Service

- Licensing
- Tenant management
- Datasets
- Row-level security
- Apps
- Natural language queries

Licensing

- Per-user licensing:
 - Choice of Power BI Pro or free licenses
 - Only Power BI Pro accounts can publish shared content
- Capacity licensing:
 - Power BI Premium licenses
 - Dedicated capacity to improve performance
 - Enable free users to access shared content

Tenant management

- Power BI uses a self-service sign-up model:
 - Users can sign up without dependency on an Office 365 account, or organizational Office 365 administrator
 - When a user signs up, a tenant is created for the domain, or the user joins the tenant—for example, contoso.com
 - Users within a tenant can collaborate and share content
- Office 365 admins sign up using the Power BI portal or Office 365 Admin portal:
 - Users can be assigned a license, or sign up and join the tenant and acquire a license
 - Qualifying organizations receive 1 million licenses, and can request more from Microsoft

Datasets

- Create a dataset by importing data into Power BI Desktop or the PowerBI.com portal
 - Import data from data sources including on-premises or cloud databases, files, SaaS connectors
 - Scrape data from a webpage into Power BI tables
 - Copy and paste data from Excel into a Power BI table
- Load data into Power BI, or transform it first
 - Datasets in the Data view and Power Query Editor
 - Power Query Editor offers transformations such as column splits, rounding, aggregations, statistical operations
- Refresh datasets in Power BI Desktop and portal
 - Schedule the refresh of datasets on the portal

Row-level security

- Row-level security (RLS) uses roles and rules to restrict the data a user can see:
 - Configure RLS on imported datasets, and DirectQuery connections
 - Create new role, select table, and add filter in the form of a DAX expression—for example, [Region] = "North"
 - Combine with USERNAME() function and table relationships in model
 - Use View As Roles to filter report or data view
- Limitations
 - Needs a Power BI Pro subscription
 - Roles and rules created in the service must be recreated in Power BI Desktop
 - To use with Excel datasets, the Excel file must first be converted to a Power BI (.pbix) file

Apps

- Power BI apps are packaged reports, dashboards and datasets
 - Can be shared with other Power BI users
 - Can be customized for different users
 - Created in app workspaces
 - Give access to specific groups, or entire organizations
 - Add title, description and image or company logo
 - Can automatically install
- Import apps from SaaS providers, such as MailChimp, Insightly, Marketo, and Twilio

Natural language queries

- Power BI Q&A helps you ask questions about your data using natural query language
 - Anyone who has access to the data in Power BI can ask a question and receive a quick response
 - Users asks questions, just as they would with a search engine
 - Q&A helps you phrase your question, uses auto-complete, restates questions, and corrects spelling
 - Terminology for names, date keywords, date ranges, aggregations, equality, sort order, and verbs
 - Searches are done with datasets used by the dashboard
 - Pin the answers to your dashboard for future reference
 - Answer can be presented in chosen chart type—for example, a map

Demonstration and Exercise 2

You will see how to:

- Publish a report to the Power BI Service
- View Reports in online
- Use the report to create a dashboard