Implement Security

Row Level Security:

- Row-level security (RLS) with Power BI can be used to restrict data access for given users.

Example: sales managers in the united states should only see data for the United States, not Europe. someone from the board of directors can see everything.

- It uses Dax Filters restrict data access at the row level, and you can define filters within roles.
- RLS only restricts data access for users with **Viewer** permissions in workspace. It doesn't apply to Admins, Members, or Contributors.

Types:

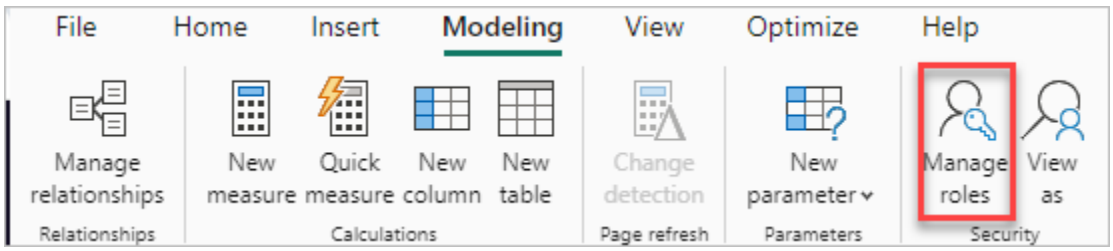
1. Static
2. Dynamic

Steps for Configuration:

1. Create report containing all data.
2. Create role based on rules to restrict rows of data a user can see.
3. Add Members to Role

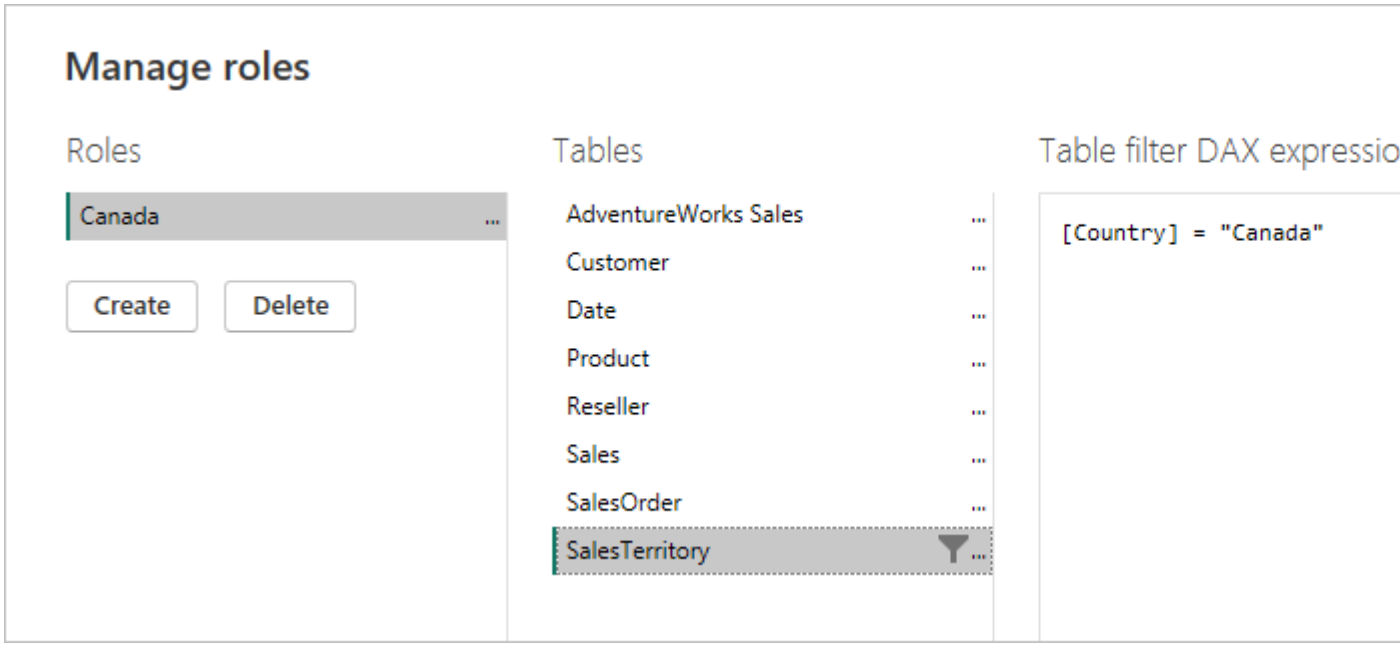
Lab1: Row level Security with Static Method

1. Open Report SecurityStatic-Starter.pbix
2. Report View→Modeling Tab→Manage roles→Manage Role Window opens

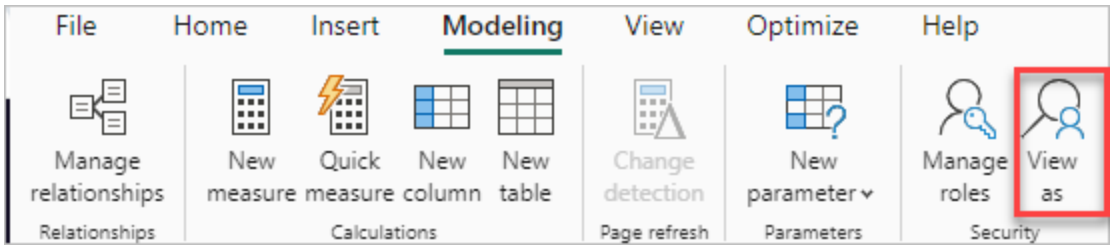


Observe Three panes

3. Roles pane →Click on Create, Name the Role as Canada
4. Tables Pane →Select **SalesTerritory**
5. Filter Pane → Dax Expression as : [Country] = "Canada"



6. Click on Save.
7. Similarly Create Role France with Dax Expression as: [Country] = "France"
8. To validate the Role **Open View as** Option in Modeling



9. Select the Role you want to test for and observe the changes in Report.

You can Assign Users to Roles in Power BI Service.

10. Go to PowerBI Service→Workspaces→New workspace→Name:RLSDemoWS→Apply
11. Publish the Report to Power BI Service
12. Home Tab→Publish→Select RLSDemo
13. Go to PowerBI Service→Observe Report and Dataset under **RLSDemoWS**
14. Dataset→Click on (…) More options→Security→Observe the Roles created.(Canada,France)
15. You can assign them to Power BI accounts in your organization.
16. **Test the Role** :Hover mouse over Canada(0)→Observer … →Click on (…)→Test as Role

Note: Static row-level security is simple to implement. However, if you have thousands of roles, then it would be a nightmare to maintain.

Dynamic Row-level Security

1. For dynamic row-level security, you need to have a table of all users. This table needs to have all users in it with a field which is their login id to the Power BI report.
2. Dynamic row level security is implemented using **User Email address** present in Data Model.
3. Use UserPrincipalName() function in DAX which returns the username of logged in user.

4. When user logs in with that id he will be able to see only data related to him

Lab2: Implement Dynamic Row-level Security

1. Report View→Modeling Tab→Manage roles→Manage Role Window opens
2. Click on Create,Name the Role as Email and Dax Expression as : [Email] = USERPRINCIPALNAME()
3. To validate the Role Open View as Option in Modeling
4. Check **Email and Other user** and specify the Email address you want to test for in box.
5. If you are not getting desired result make sure that Relationship between SalesTerritory to Email
   I. is One to many based on SalesTerritoryKey
   II. Cross filter direction in **Both**
   III. Apply security filter in both direction is **Checked**

Note: "Other user" allows us to pass the text value which is returned by UserPrincipalName() when using PowerBI Service.