Power BI Row Level Security

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About Devin

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Agenda

What is Row Level Security
Setting up Basic Row Level Security
Making Security Dynamic
What is Power BI Row Level Security?

What does it do?
Gives the ability to restrict specific rows of data from being viewed by your report users

What is it not?
Not the same as Report, Dashboard, Workspace or Power BI App sharing
Create Role

In the Power BI Desktop define what the Role can do.

Assign Users or Groups

In the Power BI Service assign Users to the Role you created.
Basic Row Level Security

Configuration
   Setup a hard-coded role definition

Downside
Basic Row Level Security Setup
Problem with Basic Row Level Security

Issues to deal with

- Requires a new role for every different security scenario
- Could require continuous maintenance
Dynamic Row Level Security

How it Works

- Captures the user logged into the Power BI Report
- Checks permissions against a table in the data model
- Matches the user’s login to acceptable rows based on relationships in the data model

DAX

UserPrincipalName()
UserName()
Dynamic Row Level Security Setup
Dynamic Row Level Security (Many to Many)

User

<table>
<thead>
<tr>
<th>UserID</th>
<th>Name</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Devin</td>
<td>dknight@pragmatic...</td>
</tr>
<tr>
<td>2</td>
<td>Mitchell</td>
<td>mpearson@pragma...</td>
</tr>
<tr>
<td>3</td>
<td>Manuel</td>
<td>mquintanta@pragma...</td>
</tr>
</tbody>
</table>

UserStateBridge

<table>
<thead>
<tr>
<th>UserID</th>
<th>StateID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
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<tr>
<td>3</td>
<td>2</td>
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</tbody>
</table>

State

<table>
<thead>
<tr>
<th>StateID</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Florida</td>
</tr>
<tr>
<td>2</td>
<td>California</td>
</tr>
<tr>
<td>3</td>
<td>Georgia</td>
</tr>
<tr>
<td>4</td>
<td>South Carolina</td>
</tr>
</tbody>
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Sales

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<th>ProductID</th>
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</thead>
<tbody>
<tr>
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<td>$2566</td>
</tr>
<tr>
<td>2</td>
<td>856</td>
<td>$6723</td>
</tr>
<tr>
<td>4</td>
<td>489</td>
<td>$822</td>
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<tr>
<td>4</td>
<td>849</td>
<td>$2262</td>
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</table>
Demo
Dynamic Row Level Security Setup
With Many to Many
Why didn’t this work

Security Applied here: UserName = UserPrincipalName()

Filter only applies here.
Demo

Dynamic Row Level Security Setup
With Many to Many... Continued
Dynamic Row Level Security with DAX

Why you should consider this way

Applying ‘Both’ to Cross Filter Direction can hurt performance

DAX Method

Filter the Hospital table to only return values associated with the user logged in

FILTER

LOOKUPVALUE
Demo
Dynamic Row Level Security Setup
With DAX
Dynamic Row Level Security with Parent Child Hierarchy

<table>
<thead>
<tr>
<th>UserID</th>
<th>Name</th>
<th>UserName</th>
<th>ManagerID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Devin Knight</td>
<td><a href="mailto:dknight@pragmaticworks.com">dknight@pragmaticworks.com</a></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Manuel Quintana</td>
<td><a href="mailto:mquintana@pragmaticworks.com">mquintana@pragmaticworks.com</a></td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Mitchell Pearson</td>
<td><a href="mailto:mpearson@pragmaticworks.com">mpearson@pragmaticworks.com</a></td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Daniel Straitiff</td>
<td><a href="mailto:dstraitiff@pragmaticworks.com">dstraitiff@pragmaticworks.com</a></td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Erin Ostrowsky</td>
<td><a href="mailto:eostrowsky@pragmaticworks.com">eostrowsky@pragmaticworks.com</a></td>
<td>3</td>
</tr>
</tbody>
</table>

How to solve

Flatten hierarchy with PATH function

DAX

PATH and OR operator (||) for each flattened level of the hierarchy
Dealing with Self Referencing Tables
Commonly asked Questions

• What happens when I republish?
Have Any Questions?

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