

Enterprise RLS in Power BI

Jamey Johnston



Enterprise Row Level Security in Power BI



Agenda

- Who am I?
- Row-level Security in Power BI
- Questions

Jamey Johnston

- Sr Data Scientist/Engineer for an O&G Company
- Microsoft Data Platform MVP
- +25 years Data Experience
- Prof @ TAMU MS in Analytics
 - <http://analytics.stat.tamu.edu>
- Semi-Pro Photographer
 - <http://jamey.photography>
- @STATCowboy
- <http://STATCowboy.com>
 - Download Code Here!



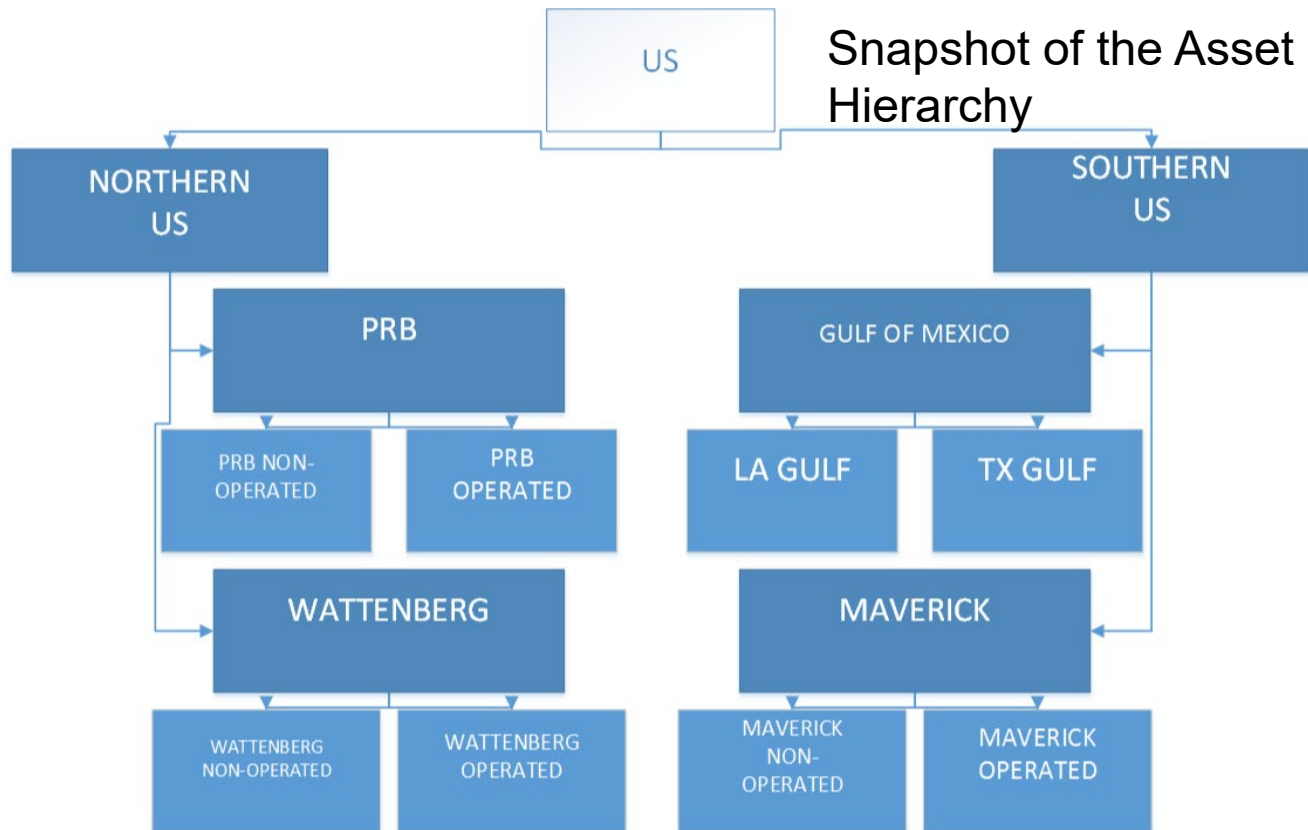
Row Level Security

- RLS allows for controlled access to rows in tables/queries based on attributes of the user executing the query

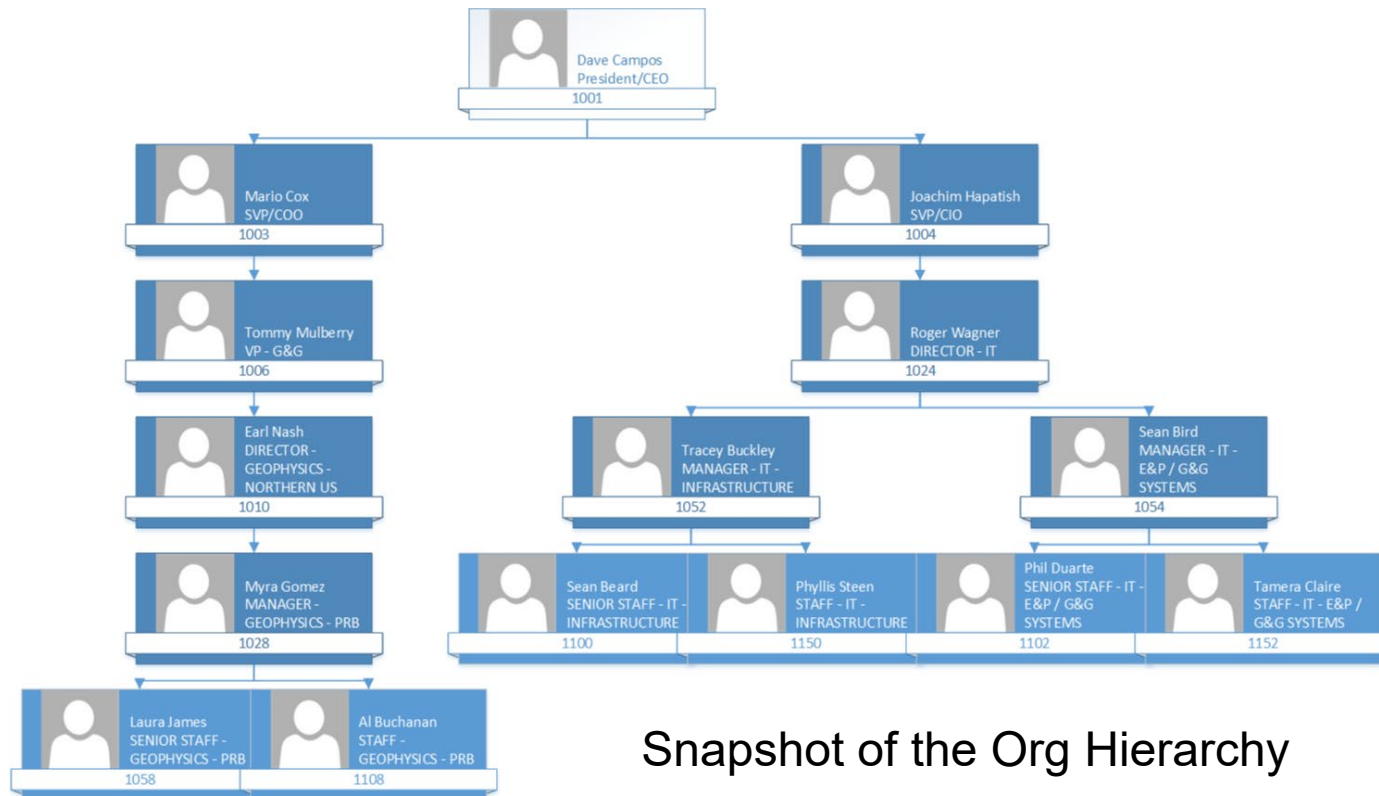
RLS with Parent/Child Hierarchies

- Organizational hierarchies and asset hierarchies can be leveraged together to provide RLS
- **Important Concepts:**
 - Organization Unit
 - Represents a position in the company (not employee)
 - Security is assigned to the Organization Unit and propagated to the User ID
 - Hierarchy Based Security
 - Allows for inheritance of permissions via the Organization and Asset Hierarchy
 - Do NOT need to assign security to every node in the hierarchy.
 - Child nodes can inherit from Parent Nodes
 - Parent/Child Hierarchy
 - Employee ID / Manager ID - Unary Relationship

Asset Hierarchy

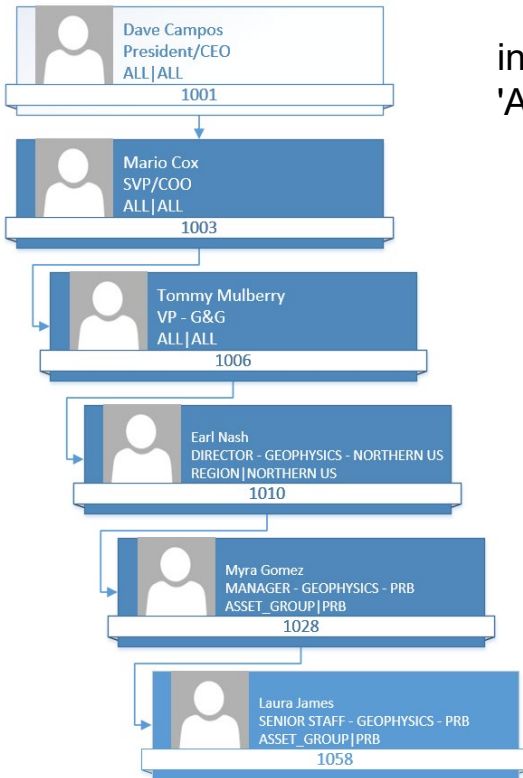


Organizational Hierarchy



Snapshot of the Org Hierarchy

Hierarchies and RLS



insert into [SEC_ASSET_MAP] values (100001, 'ALL', 'ALL');

Inherits from CEO

Inherits from SVP who Inherits from CEO

insert into [SEC_ASSET_MAP] values (100010, 'REGION', 'NORTHERN US');

insert into [SEC_ASSET_MAP] values (100028, 'ASSET_GROUP', 'PRB');

Inherits from Manger

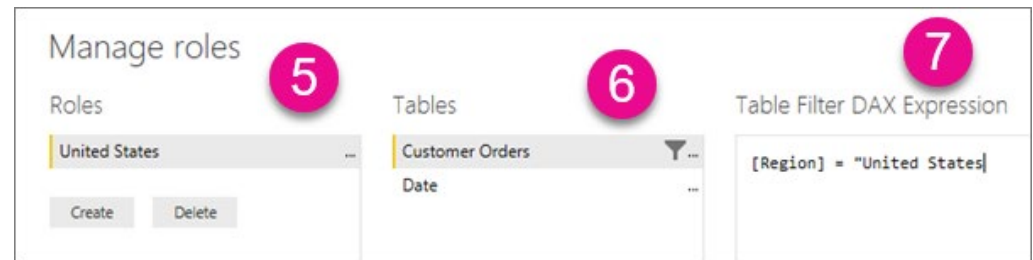
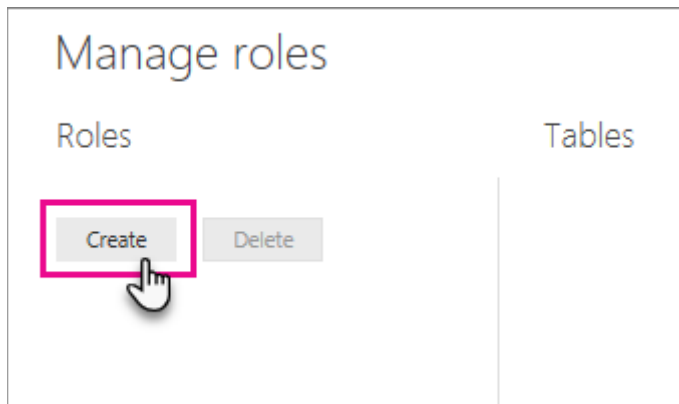
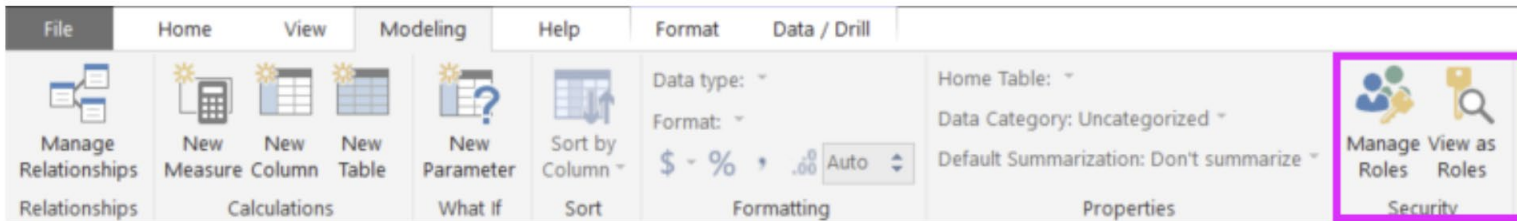
Security Record for Every Employee is NOT Required!

Power BI RLS

USERNAME() & USERPRINCIPALNAME() in DAX

- way we determine who is logged into the PowerBI.com Service
- USERNAME() function returns the domain name and username for the currently connected user as DOMAIN\username
- USERPRINCIPALNAME() function returns as username@domain.com

RLS Roles



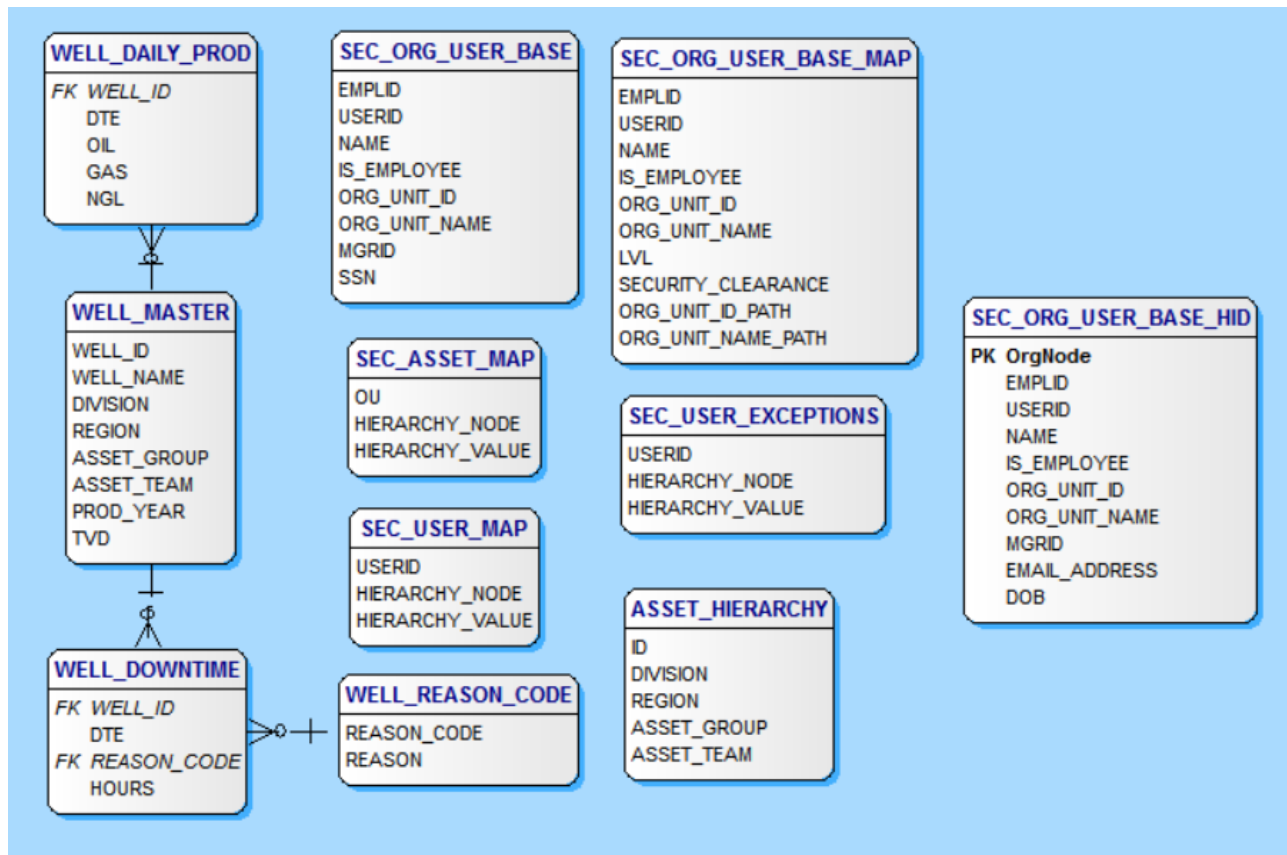
<https://docs.microsoft.com/en-us/power-bi/service-admin-rls>

Parent and Child functions

Function	Description
<u>PATH</u>	Returns a delimited text string with the identifiers of all the parents of the current identifier.
<u>PATHCONTAINS</u>	Returns TRUE if the specified <i>item</i> exists within the specified <i>path</i> .
<u>PATHITEM</u>	Returns the item at the specified <i>position</i> from a string resulting from evaluation of a PATH function.
<u>PATHITEMREVERSE</u>	Returns the item at the specified <i>position</i> from a string resulting from evaluation of a PATH function.
<u>PATHLENGTH</u>	Returns the number of parents to the specified item in a given PATH result, including self.

<https://docs.microsoft.com/en-us/dax/parent-and-child-functions-dax>

Demo ERD



Questions?

Thank you for attending!

- @STATCowboy
- <http://STATCowboy.com>
 - Download Demos



Please take time to thank our volunteer staff and these sponsors who make this event possible

