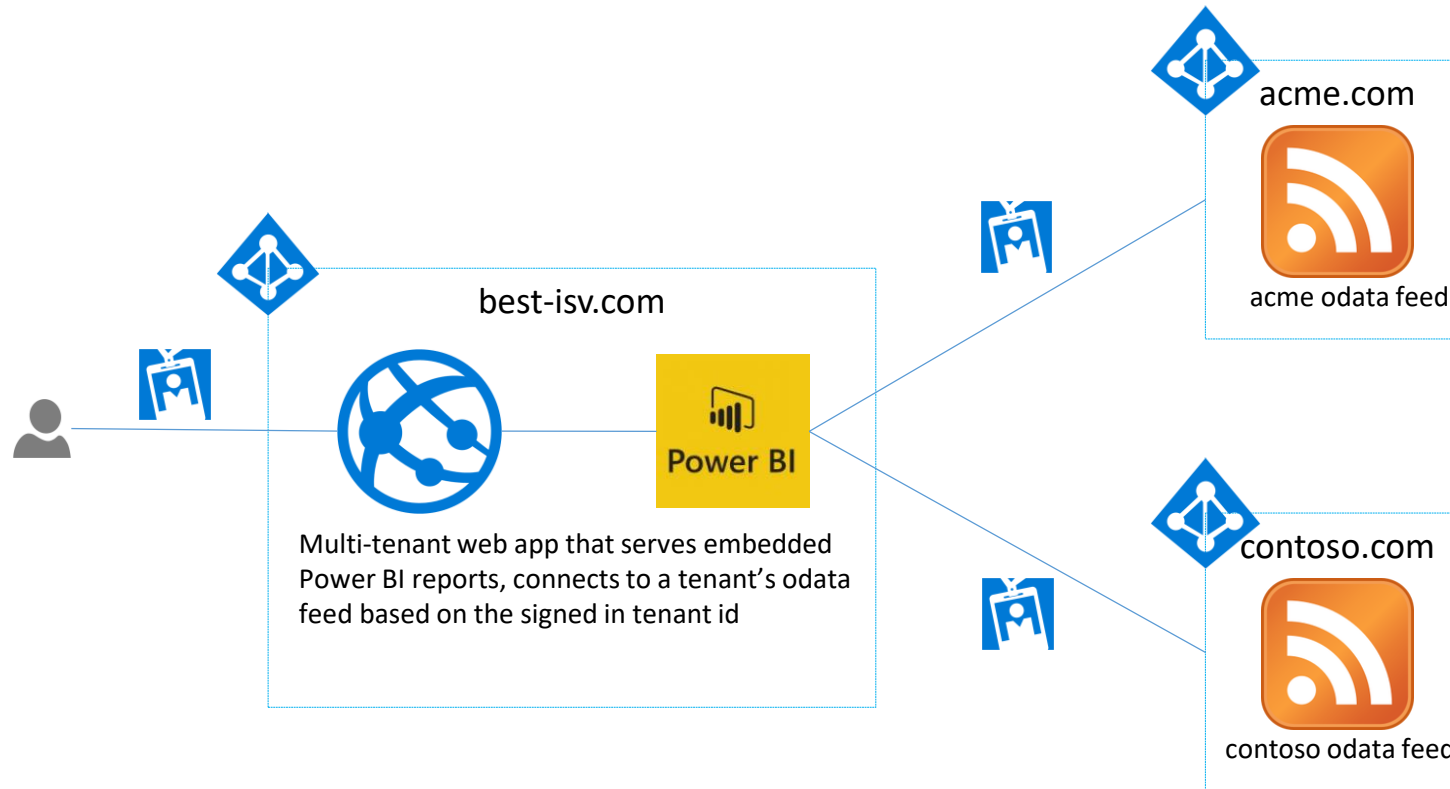
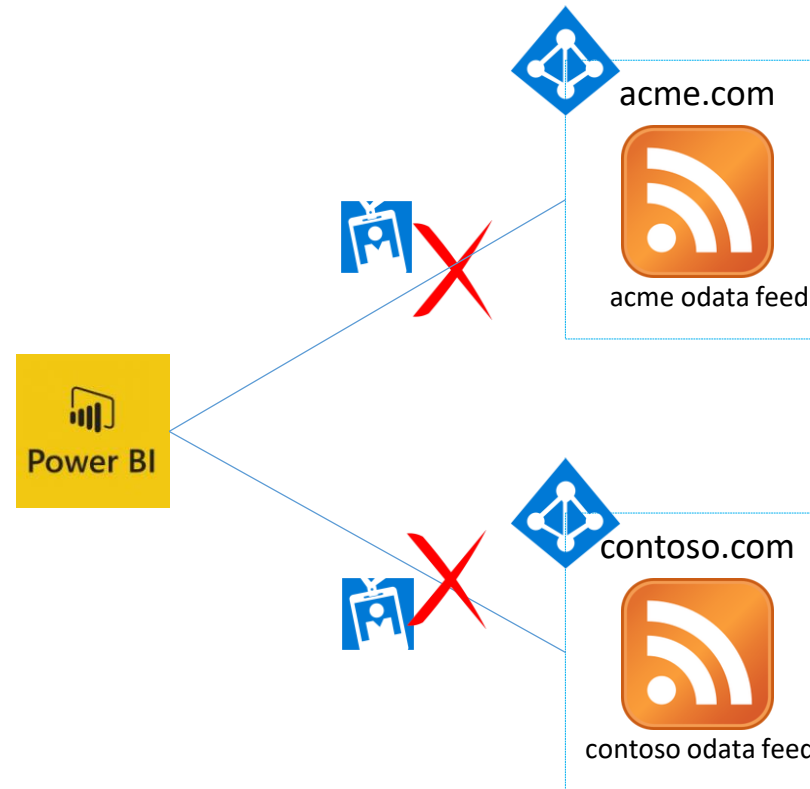


What are we trying to build?



Problem #1: Power BI can't access AAD protected 3rd party OData feeds or API



No way for Power BI to specify Permissions to 3rd party APIs in Azure AD.

permissions to other applications

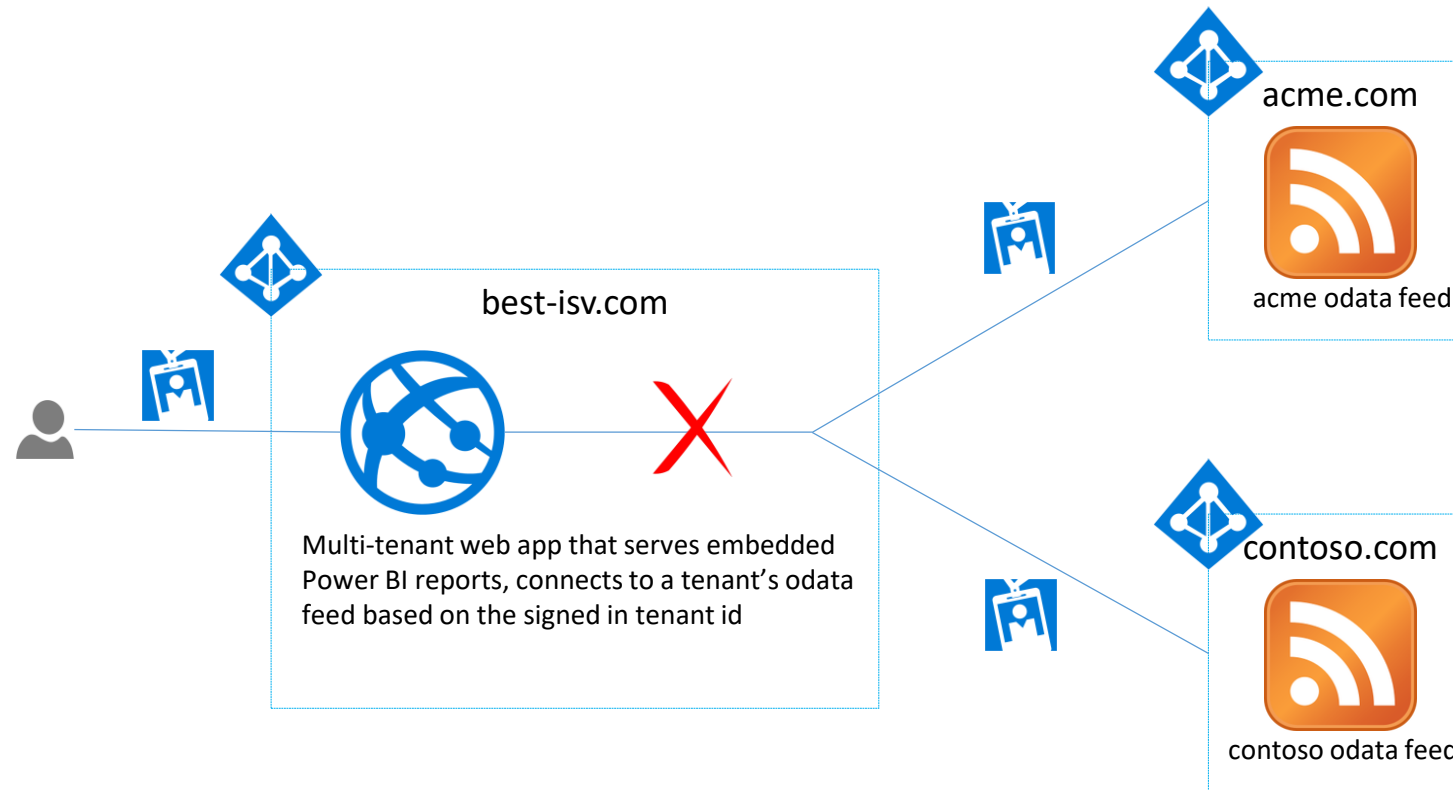
Microsoft Graph	Application Permissions: 0	Delegated Permissions: 1
Windows Azure Active Directory	Application Permissions: 0	Delegated Permissions: 1

Add application

stackoverflow explanation on this issue:

<http://stackoverflow.com/questions/28293791/waad-authentication-with-webapi-odata-service-consumed-by-excel-powerquer>

Problem #2: AAD multi-tenant web app can't access AAD protected 3rd party Odata feeds or API



No way for ISV Web App to specify Permissions to 3rd party APIs in Azure AD. A Web App can only specify permissions to Microsoft APIs or APIs in its own directory.

permissions to other applications

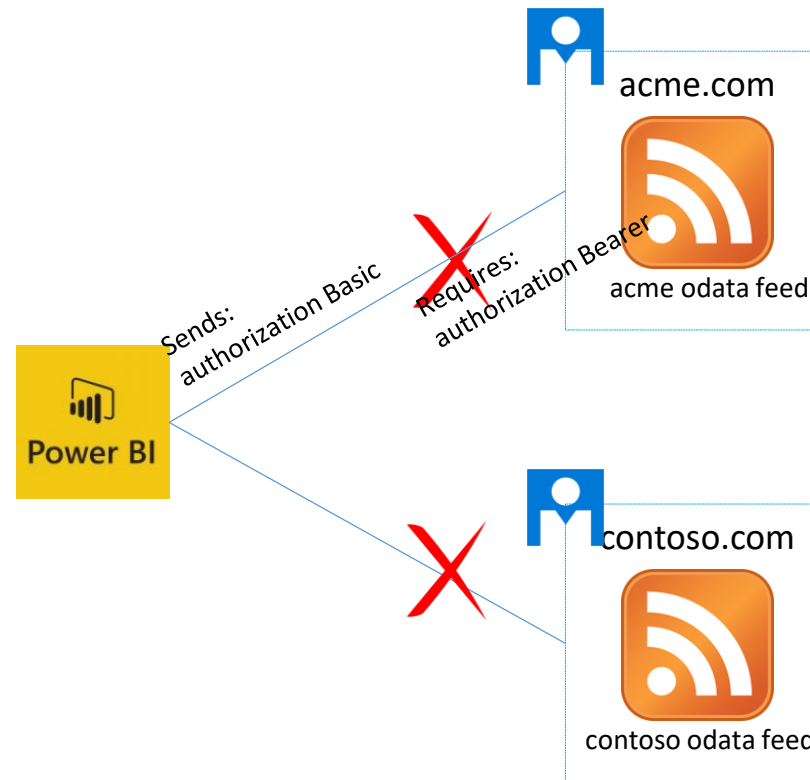
Microsoft Graph	Application Permissions: 0	Delegated Permissions: 1
Windows Azure Active Directory	Application Permissions: 0	Delegated Permissions: 1

Add application

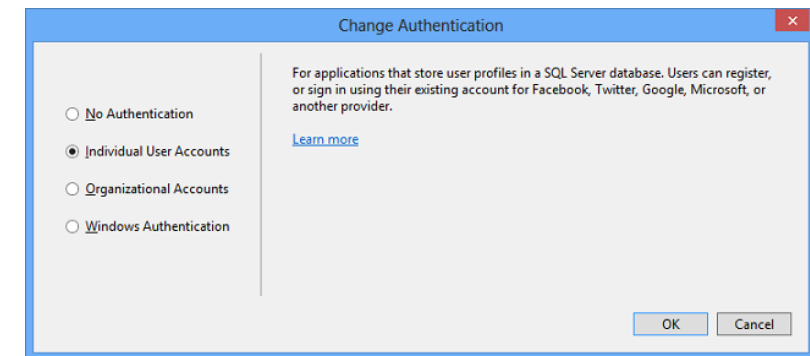
Permissions to other applications

SHOW	All Apps	STARTING WITH	
NAME	APPLICATION...	DELEGATED PERMISSIONS	
ClouderaDirector	0	1	
ISVWebApp_20160827490302	✓ 0	1	
Office 365 Management APIs	7	7	

Problem #3: Power BI Odata basic auth is not supported by Microsoft Owin middleware

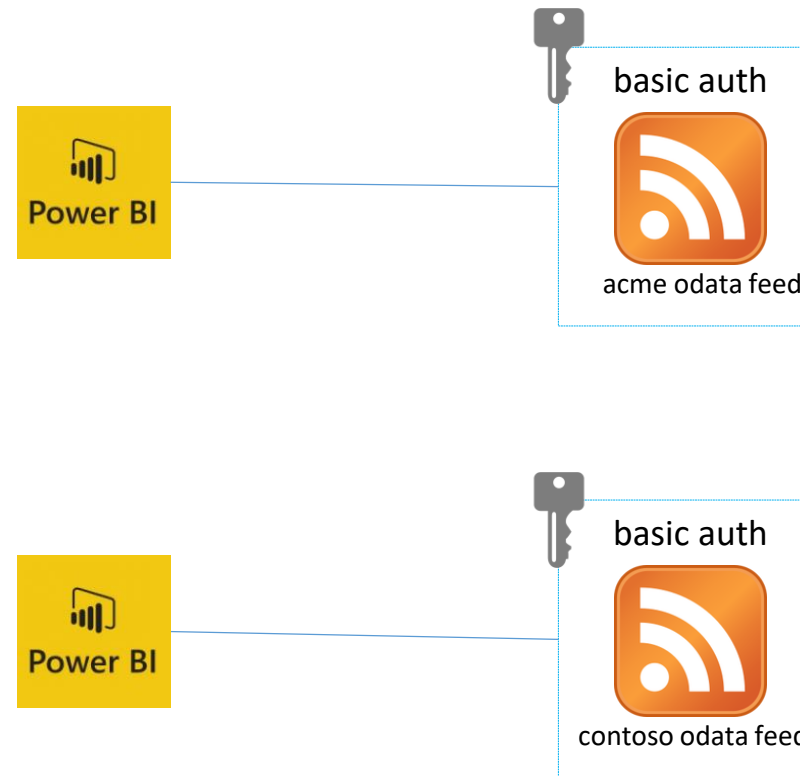


Visual Studio ASP.NET “Individual User Account” authentication enables username password based identity, but a “Bearer” token generated from username password is required to access web API.



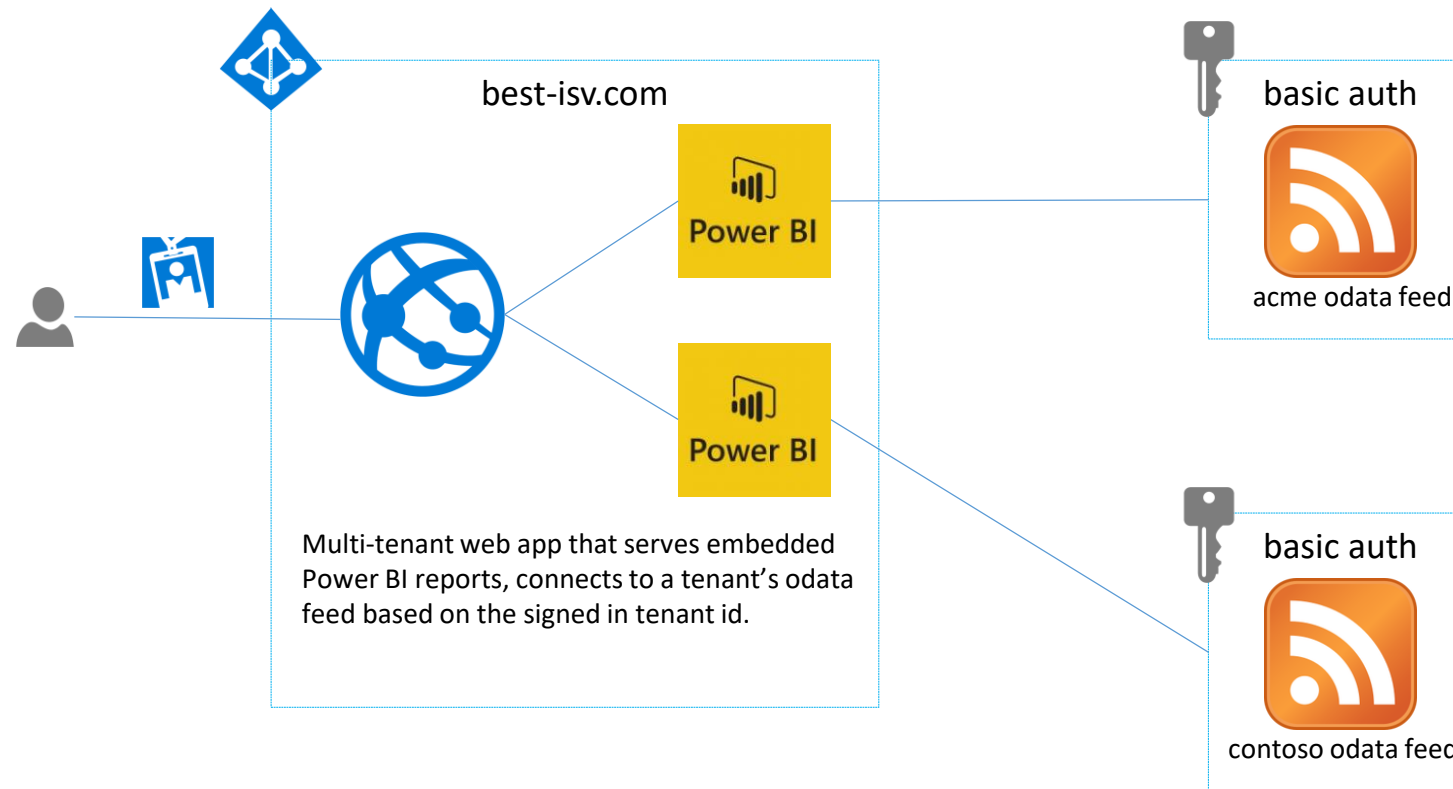
There's [no Microsoft provided Owin middleware that supports basic auth due to security concerns](#), write your own or install 3rd party packages such as `Thinkecture.IdentityModel.Owin.BasicAuthentication`

Problem #4: No programmatic way to dynamically provide different Odata feeds to the same Power BI Embedded report



Power BI stores Odata source and its credentials with the report. Have to create a report for each tenant's Odata feed.

What did we end up building?



- *Odata must be protected by basic auth, not AAD*
- *ISV must create a report for each tenant*
- *ISV must keep the mapping of tenant id to report*

Sample app is published on GitHub:

<https://github.com/liupeirong/Azure/tree/master/MTPbiOdata>.