What are we trying to build?

best-isv.com

Multi-tenant web app that serves embedded Power BI reports, connects to a tenant's odata feed based on the signed in tenant id

acme.com

acme odata feed

contoso.com

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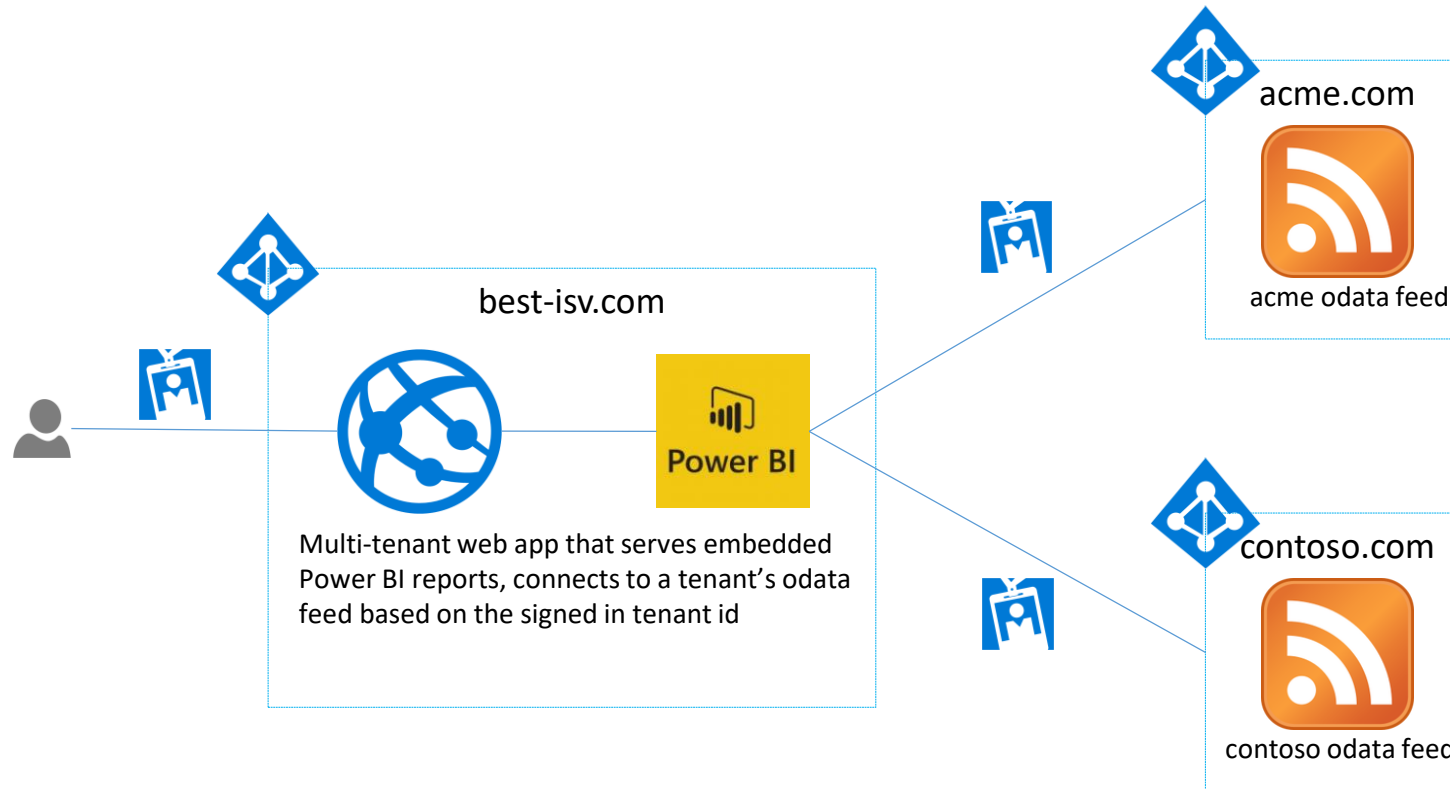
Problem #1: Power BI can't access AAD protected 3rd party OData feeds or API

acme.com

acme odata feed

Power BI

contoso.com

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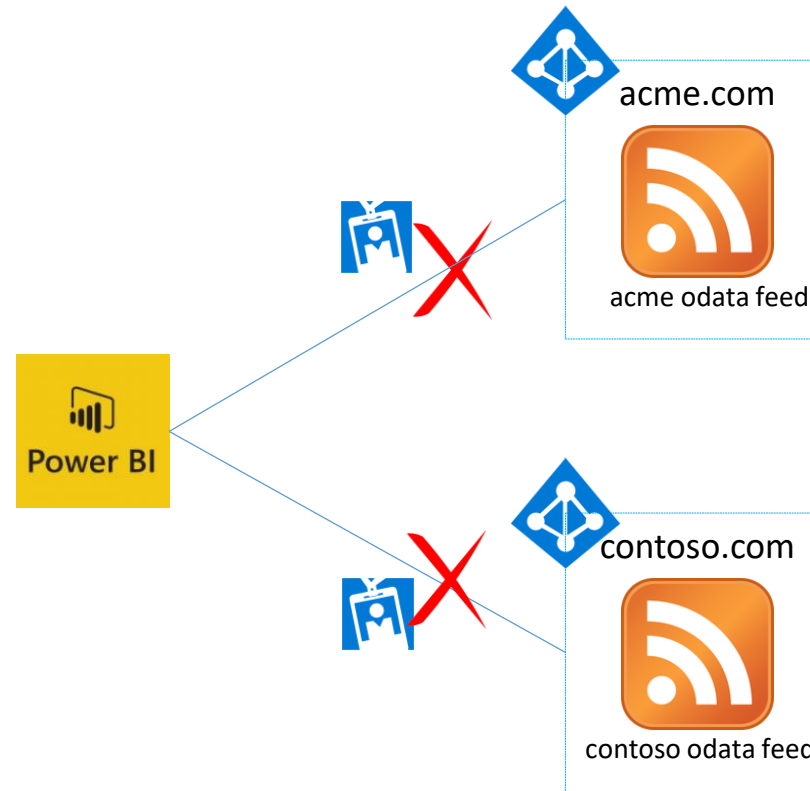
No way for Power BI to specify Permissions to 3rd party APIs in Azure AD.

permissions to other applications
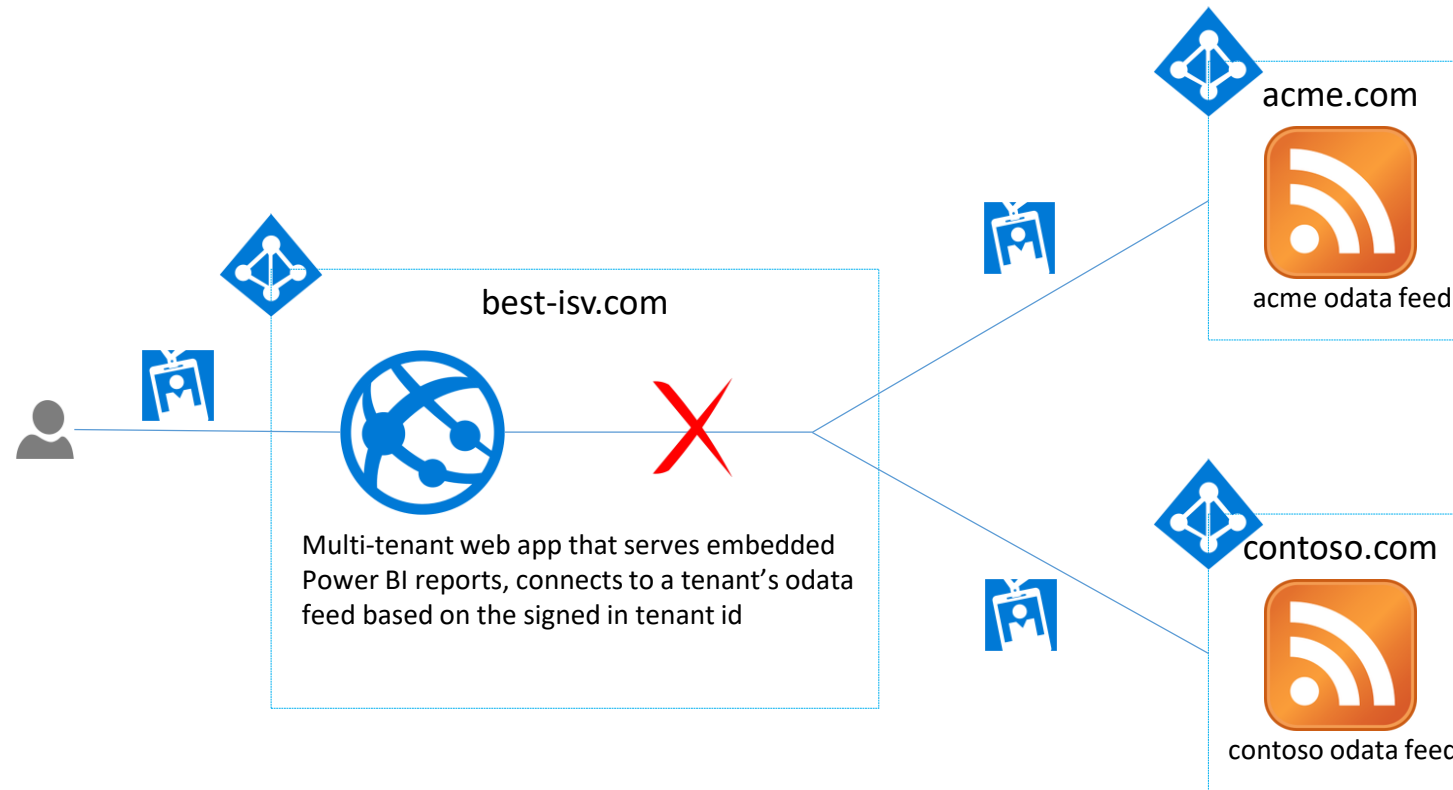
Microsoft Graph	Application Permissions: 0	Delegated Permissions: 1
Windows Azure Active Directory	Application Permissions: 0	Delegated Permissions: 1

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

acme.com

acme odata feed

best-isv.com

Multi-tenant web app that serves embedded Power BI reports, connects to a tenant's odata feed based on the signed in tenant id

contoso.com

contoso odata feed

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.
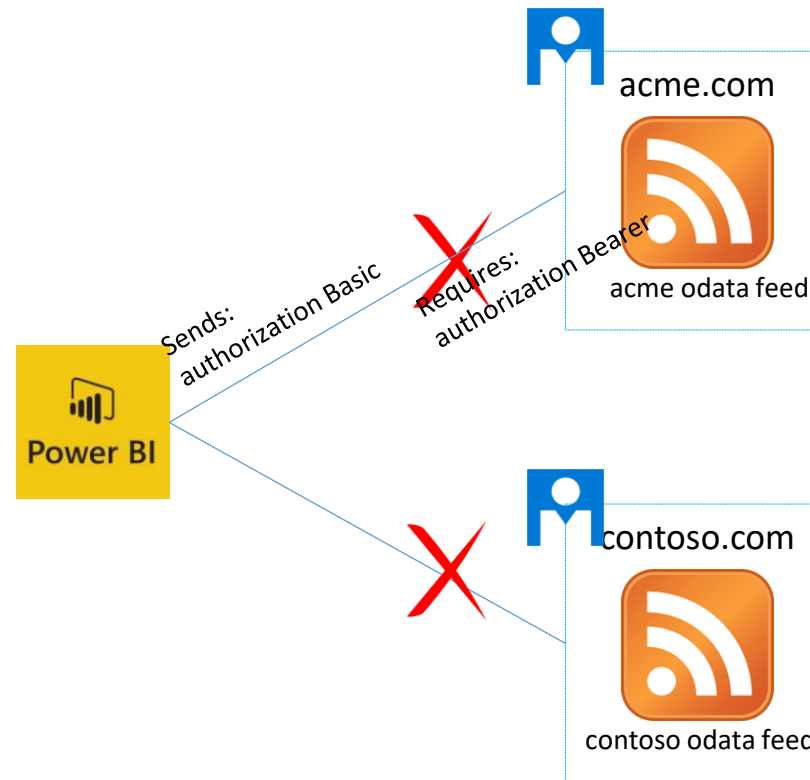
permissions to other applications

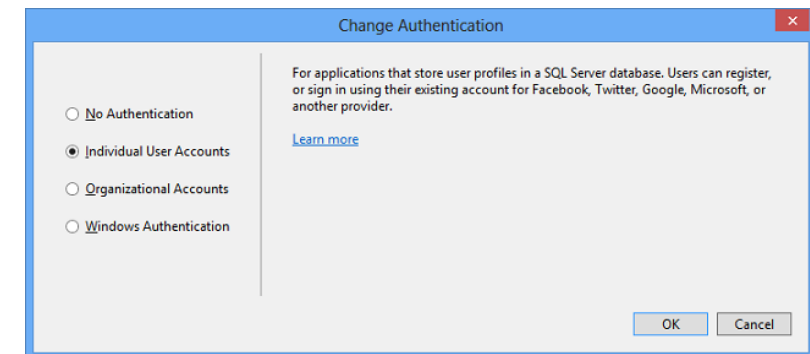|		
Microsoft Graph	Application Permissions: 0	Delegated Permissions: 1
Windows Azure Active Directory	Application Permissions: 0	Delegated Permissions: 1

Add application

Permissions to other applications

| SHOW | All Apps ▼ | STARTING WITH | |

NAME	APPLICATIO...	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

acme.com

acme odata feed

Sends: authorization Basic

Requires: authorization Bearer
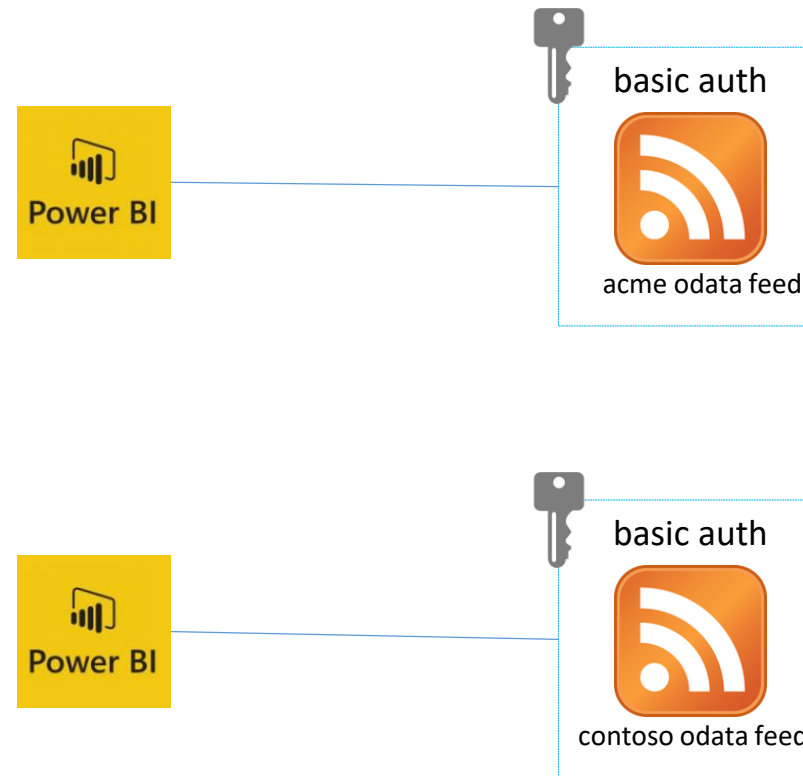
Power BI

contoso.com

contoso odata feed

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.

Change Authentication

○ No Authentication

● Individual User Accounts

○ Organizational Accounts

○ Windows Authentication

For applications that store user profiles in a SQL Server database. Users can register, or sign in using their existing account for Facebook, Twitter, Google, Microsoft, or another provider.
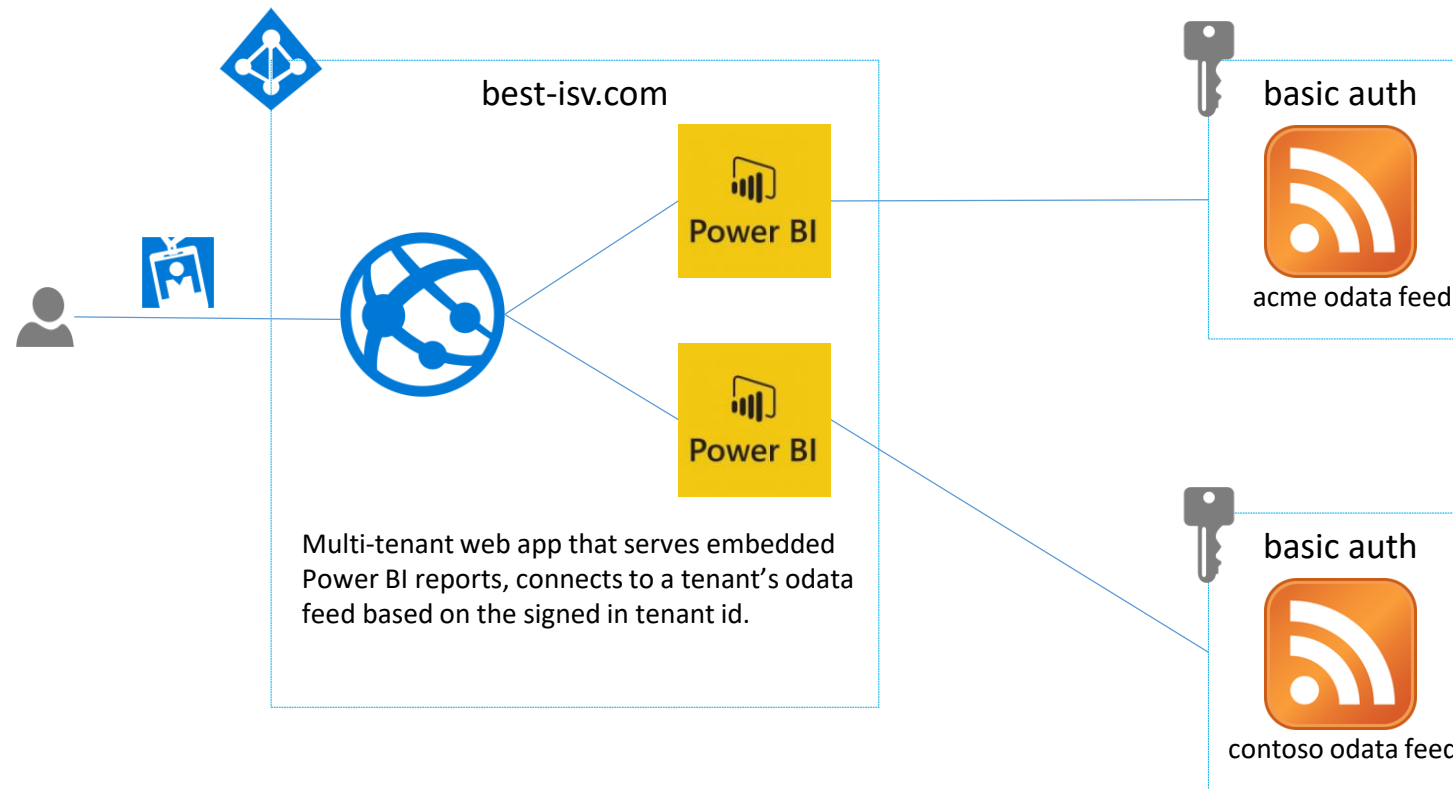
Learn more

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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 Thinktecture.IdentityModel.Owin.BasicAuthentication

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

basic auth

acme odata feed

Power BI

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

basic auth

contoso odata feed

Power BI

What did we end up building?

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Power BI

Power BI

basic auth

acme odata feed

basic auth

contoso odata feed

Multi-tenant web app that serves embedded Power BI reports, connects to a tenant's odata feed based on the signed in tenant id.

- *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.