ELEVATE 2024

New .NET DataStore and PowerClient Features in PowerBuilder 2025

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Session Agenda

- New .NET DataStore project
- PowerClient project painter optimization

Presenter Profile

Bruce Armstrong

in https://www.linkedin.com/in/bruceaarmstrong/

Recent Projects

- OpenSourcePFCLibraries - The open-source PowerBuilder Foundation Class libraries

Key Skills

- PowerBuilder
- Oracle PL/SQL

- Java
- C#
- C++

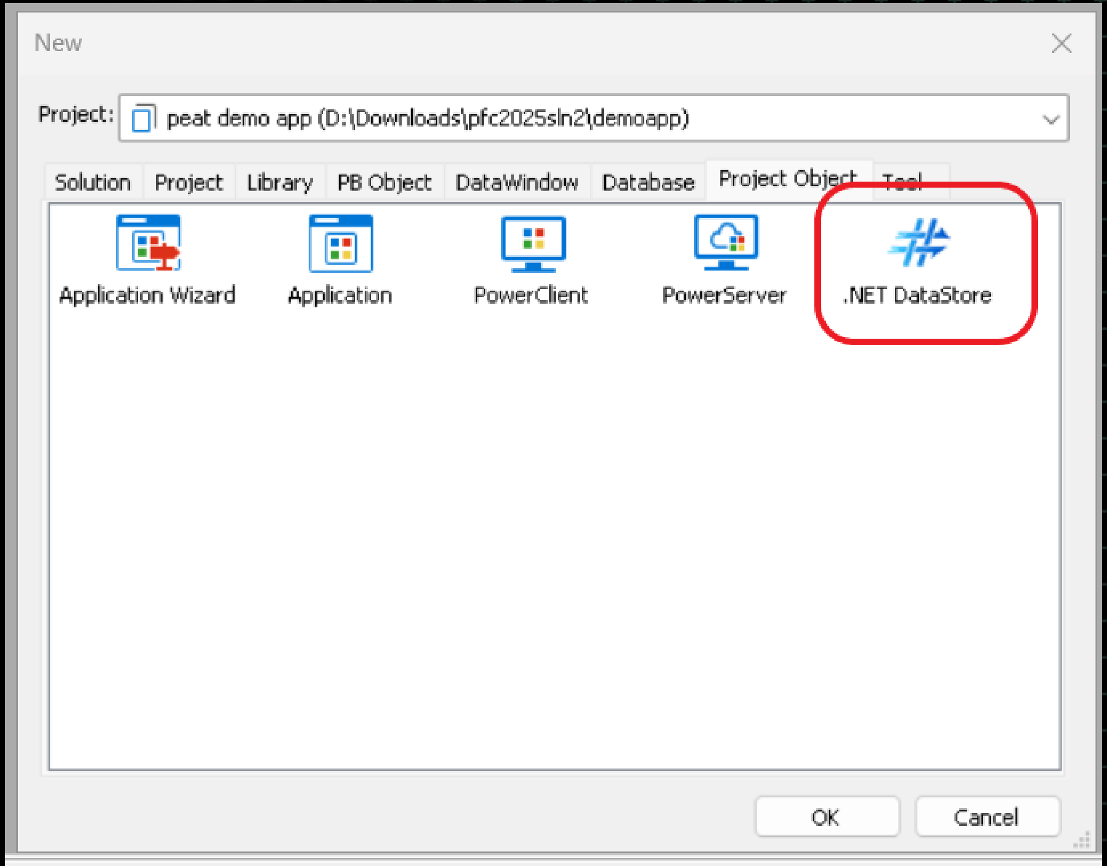
Company Profile

Integrated Data Services

IDS has delivered innovative program and financial management information system solutions to the Federal Government for nearly three decades. Our flagship Enterprise Requirements Management product, CCaR™ is used by the DoD and Federal Agencies including the Air Force, Space Force, Army, USSOCOM, DSCA, DHA, JSF and DOE.

New .NET DataStore project

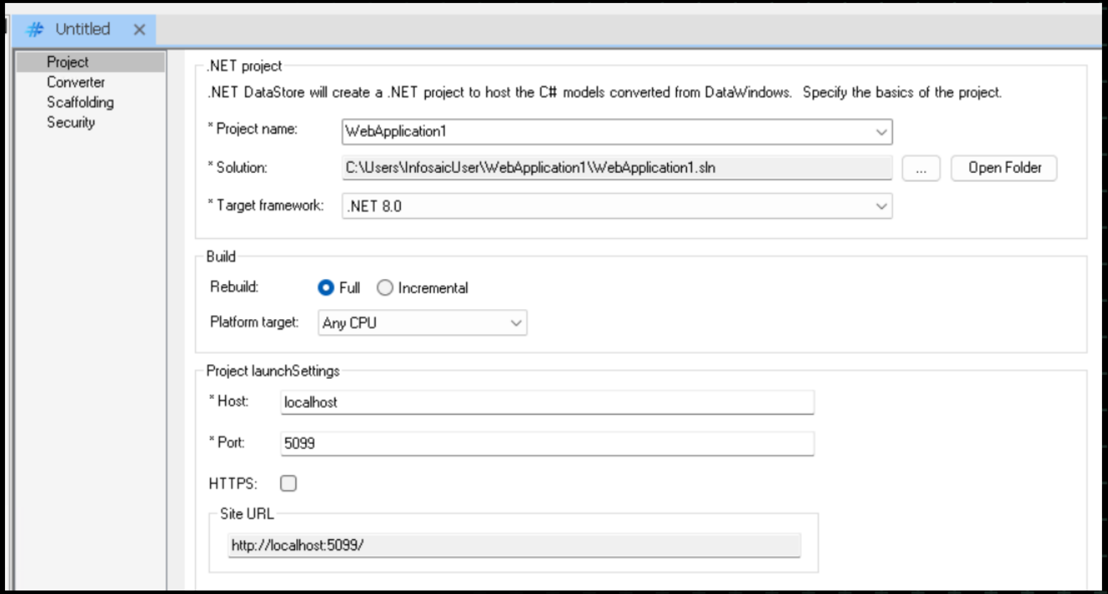
- The new project type is available in the New dialog



Project: peat demo app (D:\Downloads\pfc2025sln2\demoapp)

New .NET DataStore project

- Project tab
  - Be sure to change the Name/Solution if you are generating more than one project
  - Otherwise, you'll overwrite previous projects.



.NET project

.NET DataStore will create a .NET project to host the C# models converted from DataWindows. Specify the basics of the project.

* Project name: WebApplication1

* Solution: C:\Users\InfosaicUser\WebApplication1\WebApplication1.sln

* Target framework: .NET 8.0

Build

Rebuild: ● Full ○ Incremental

Platform target: Any CPU

Project launchSettings

* Host: localhost

* Port: 5099

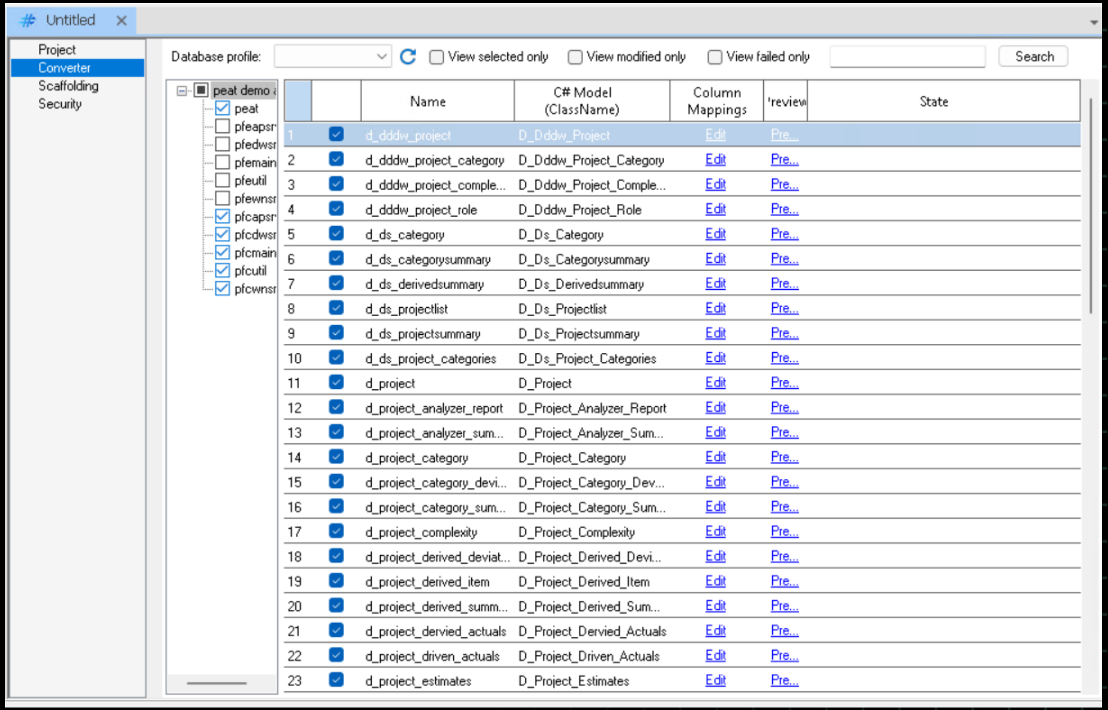
HTTPS: □

Site URL

http://localhost:5099/

New .NET DataStore project

- Converter Tab
  - Lists all of the DataWindow objects in the application
  - Selects them all by default
  - You do need to create a Database profile
  - You can customize the entity names, mappings, etc. or just leave the defaults



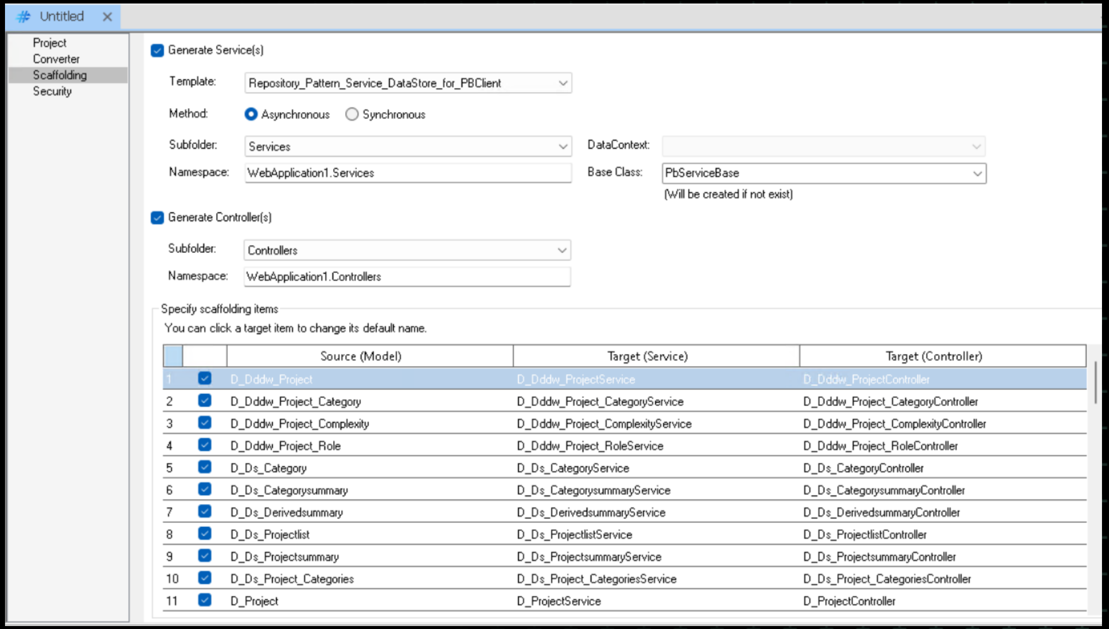
Database profile: □ View selected only □ View modified only □ View failed only

- ■ peat demo
  - ☑ peat
  - □ pfeapsr
  - □ pfedwsr
  - □ pfemain
  - □ pfeutil
  - □ pfewnsr
  - ☑ pfcapsr
  - ☑ pfcdwsr
  - ☑ pfcmain
  - ☑ pfcutil
  - ☑ pfcwnsr

		Name	C# Model (ClassName)	Column Mappings	'review	State
1	☑	d_dddw_project	D_Dddw_Project	Edit	Pre...	
2	☑	d_dddw_project_category	D_Dddw_Project_Category	Edit	Pre...	
3	☑	d_dddw_project_comple...	D_Dddw_Project_Comple...	Edit	Pre...	
4	☑	d_dddw_project_role	D_Dddw_Project_Role	Edit	Pre...	
5	☑	d_ds_category	D_Ds_Category	Edit	Pre...	
6	☑	d_ds_categorysummary	D_Ds_Categorysummary	Edit	Pre...	
7	☑	d_ds_derivedsummary	D_Ds_Derivedsummary	Edit	Pre...	
8	☑	d_ds_projectlist	D_Ds_Projectlist	Edit	Pre...	
9	☑	d_ds_projectsummary	D_Ds_Projectsummary	Edit	Pre...	
10	☑	d_ds_project_categories	D_Ds_Project_Categories	Edit	Pre...	
11	☑	d_project	D_Project	Edit	Pre...	
12	☑	d_project_analyzer_report	D_Project_Analyzer_Report	Edit	Pre...	
13	☑	d_project_analyzer_sum...	D_Project_Analyzer_Sum...	Edit	Pre...	
14	☑	d_project_category	D_Project_Category	Edit	Pre...	
15	☑	d_project_category_devi...	D_Project_Category_Dev...	Edit	Pre...	
16	☑	d_project_category_sum...	D_Project_Category_Sum...	Edit	Pre...	
17	☑	d_project_complexity	D_Project_Complexity	Edit	Pre...	
18	☑	d_project_derived_deviat...	D_Project_Derived_Devi...	Edit	Pre...	
19	☑	d_project_derived_item	D_Project_Derived_Item	Edit	Pre...	
20	☑	d_project_derived_summ...	D_Project_Derived_Sum...	Edit	Pre...	
21	☑	d_project_dervied_actuals	D_Project_Dervied_Actuals	Edit	Pre...	
22	☑	d_project_driven_actuals	D_Project_Driven_Actuals	Edit	Pre...	
23	☑	d_project_estimates	D_Project_Estimates	Edit	Pre...	

New .NET DataStore project

- Scaffolding tab
  - The main item of interest there is the Template (covered in later slide)
  - You can customize the model/service/controller names here



☑ Generate Service(s)

Template: Repository_Pattern_Service_DataStore_for_PBClient

Method: ● Asynchronous ○ Synchronous

Subfolder: Services

DataContext:

Namespace: WebApplication1.Services

Base Class: PbServiceBase

(Will be created if not exist)

☑ Generate Controller(s)

Subfolder: Controllers

Namespace: WebApplication1.Controllers

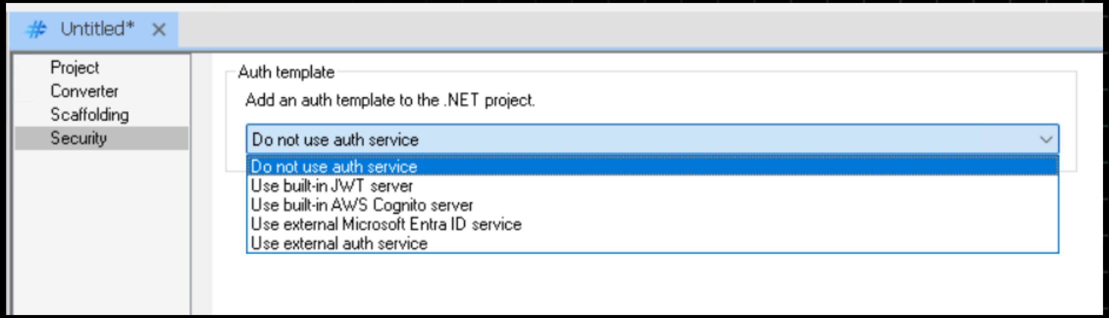
Specify scaffolding items

You can click a target item to change its default name.

		Source (Model)	Target (Service)	Target (Controller)
1	☑	D_Dddw_Project	D_Dddw_ProjectService	D_Dddw_ProjectController
2	☑	D_Dddw_Project_Category	D_Dddw_Project_CategoryService	D_Dddw_Project_CategoryController
3	☑	D_Dddw_Project_Complexity	D_Dddw_Project_ComplexityService	D_Dddw_Project_ComplexityController
4	☑	D_Dddw_Project_Role	D_Dddw_Project_RoleService	D_Dddw_Project_RoleController
5	☑	D_Ds_Category	D_Ds_CategoryService	D_Ds_CategoryController
6	☑	D_Ds_Categorysummary	D_Ds_CategorysummaryService	D_Ds_CategorysummaryController
7	☑	D_Ds_Derivedsummary	D_Ds_DerivedsummaryService	D_Ds_DerivedsummaryController
8	☑	D_Ds_Projectlist	D_Ds_ProjectlistService	D_Ds_ProjectlistController
9	☑	D_Ds_Projectsummary	D_Ds_ProjectsummaryService	D_Ds_ProjectsummaryController
10	☑	D_Ds_Project_Categories	D_Ds_Project_CategoriesService	D_Ds_Project_CategoriesController
11	☑	D_Project	D_ProjectService	D_ProjectController

New .NET DataStore project

- Security Tab
  - Allows you to select authentication method (or none at all)



Auth template

Add an auth template to the .NET project.

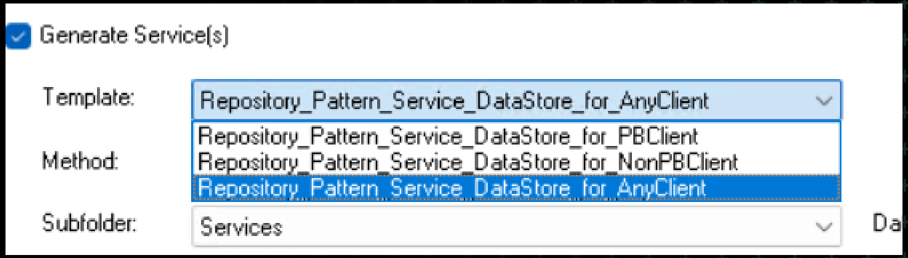
Do not use auth service

Do not use auth service
Use built-in JWT server
Use built-in AWS Cognito server
Use external Microsoft Entra ID service
Use external auth service

New .NET DataStore project

Templates option

- NonPBClient
  - Creates 5 methods for every DataWindow object (covered in later slide)
- PBClient
  - Creates 3 methods, regardless of number of DataWindow objects (covered in later slide)
- AnyClient
  - Generates both sets of methods



☑ Generate Service(s)

Template: Repository_Pattern_Service_DataStore_for_AnyClient

Repository_Pattern_Service_DataStore_for_PBClient
Repository_Pattern_Service_DataStore_for_NonPBClient
Repository_Pattern_Service_DataStore_for_AnyClient

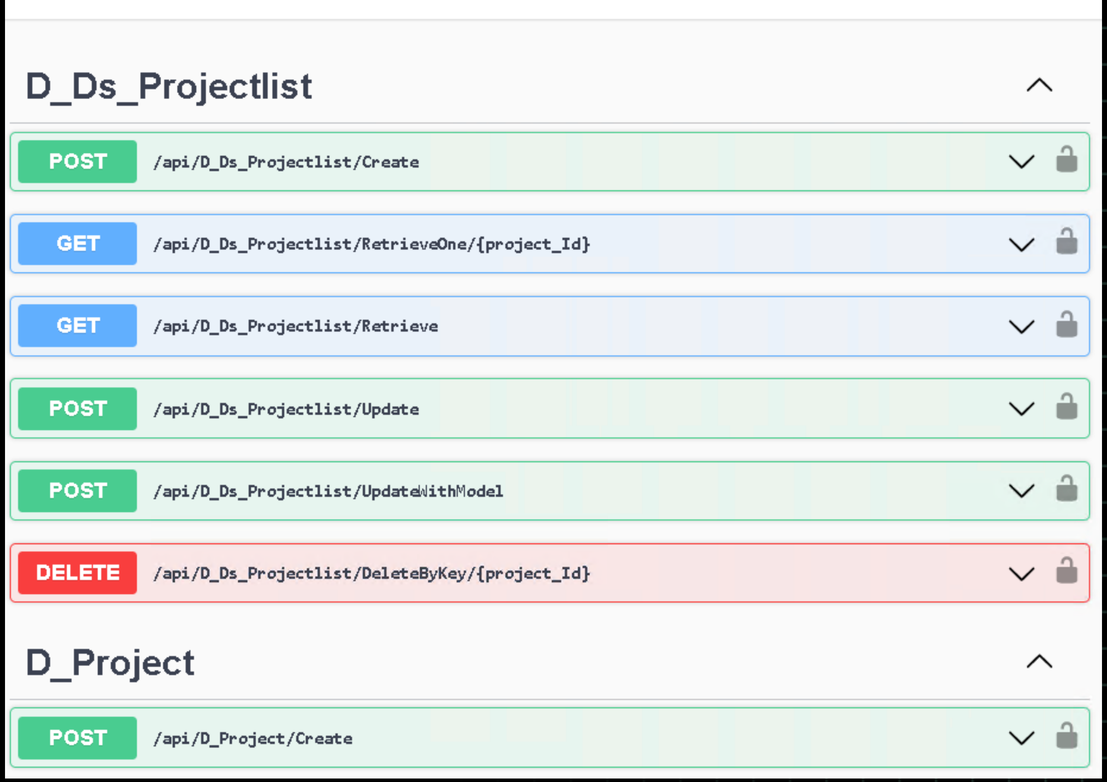
Method:

Subfolder: Services

Da

New .NET DataStore project

- NonPB Client API methods
  - With the exception of Delete, all take and/or return plain JSON
    - Delete does not take or return any JSON



D_Ds_Projectlist

POST /api/D_Ds_Projectlist/Create

GET /api/D_Ds_Projectlist/RetrieveOne/{project_Id}

GET /api/D_Ds_Projectlist/Retrieve

POST /api/D_Ds_Projectlist/Update

POST /api/D_Ds_Projectlist/UpdateWithModel

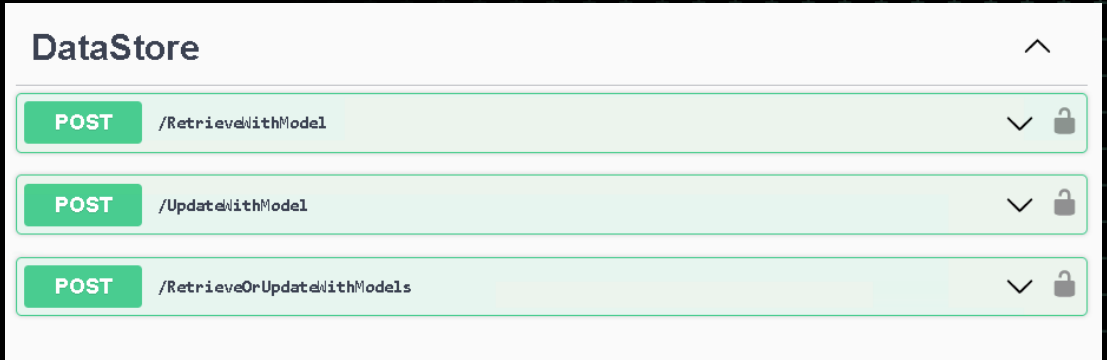
DELETE /api/D_Ds_Projectlist/DeleteByKey/{project_Id}

D_Project

POST /api/D_Project/Create

New .NET DataStore project

- PB Client API methods
  - RetrieveWithModel
    - Used to retrieve a single DataWindow control or datastore
  - UpdateWithModel
    - Used to update a single DataWindow control or datastore
  - RetrieveOrUpdateWithModels
    - Used with the BatchDataObjects object to do retrieve and/or update any number of DataWindow controls or datastores in a single call



DataStore

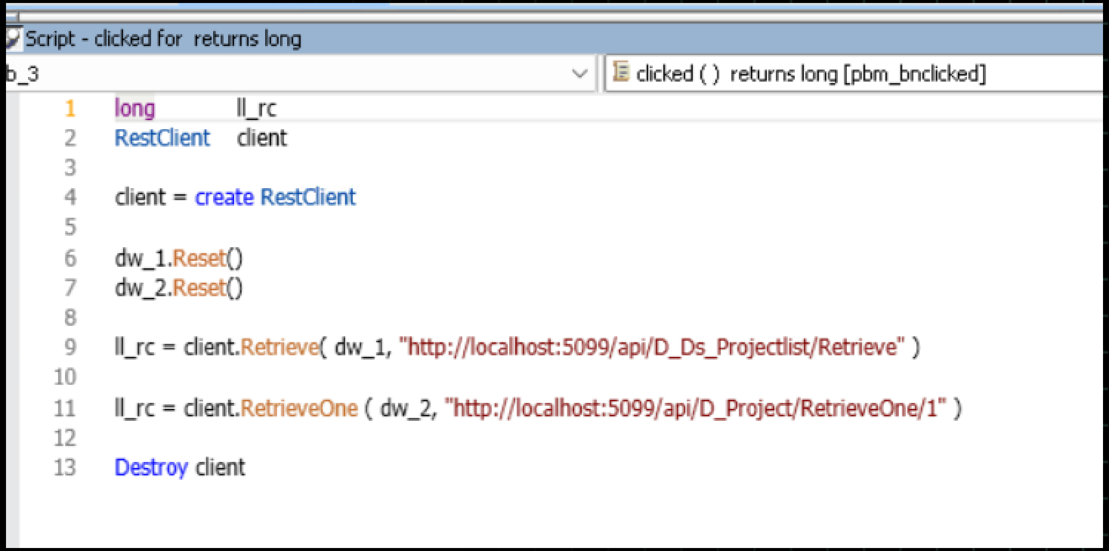
POST /RetrieveWithModel

POST /UpdateWithModel

POST /RetrieveOrUpdateWithModels

New .NET DataStore project

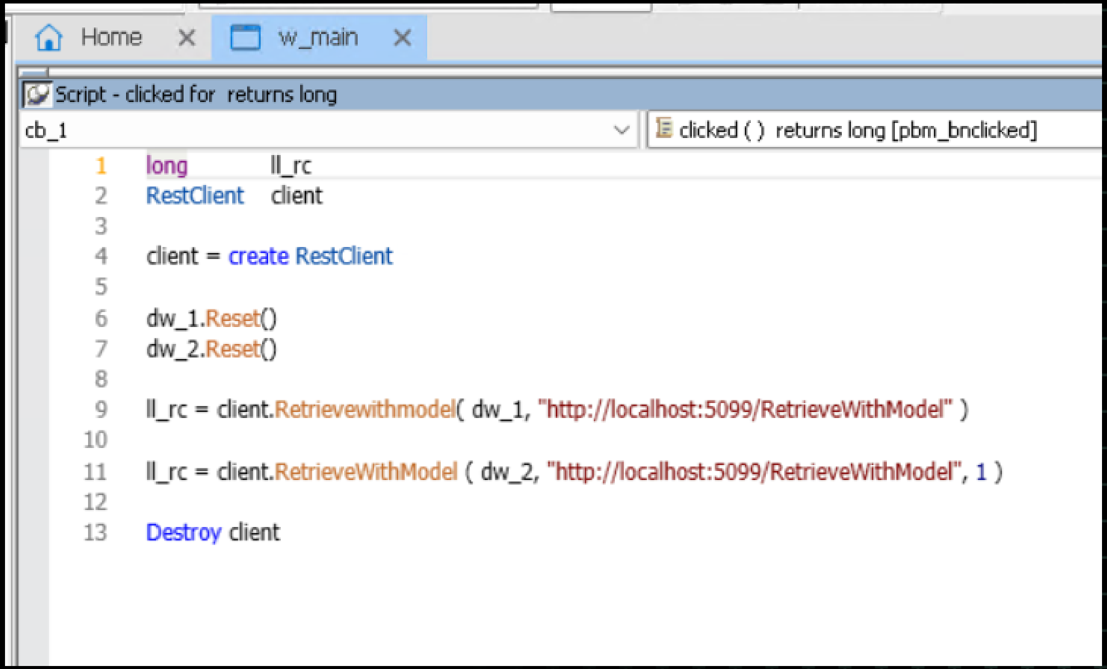
- Retrieve/Retrieve One sample code (plain JSON)


Script - clicked for returns long
b_3
clicked ( ) returns long [pbm_bnclicked]

```
long        ll_rc
RestClient  client

client = create RestClient

dw_1.Reset()
dw_2.Reset()

ll_rc = client.Retrieve( dw_1, "http://localhost:5099/api/D_Ds_Projectlist/Retrieve" )

ll_rc = client.RetrieveOne ( dw_2, "http://localhost:5099/api/D_Project/RetrieveOne/1" )

Destroy client
```

New .NET DataStore project

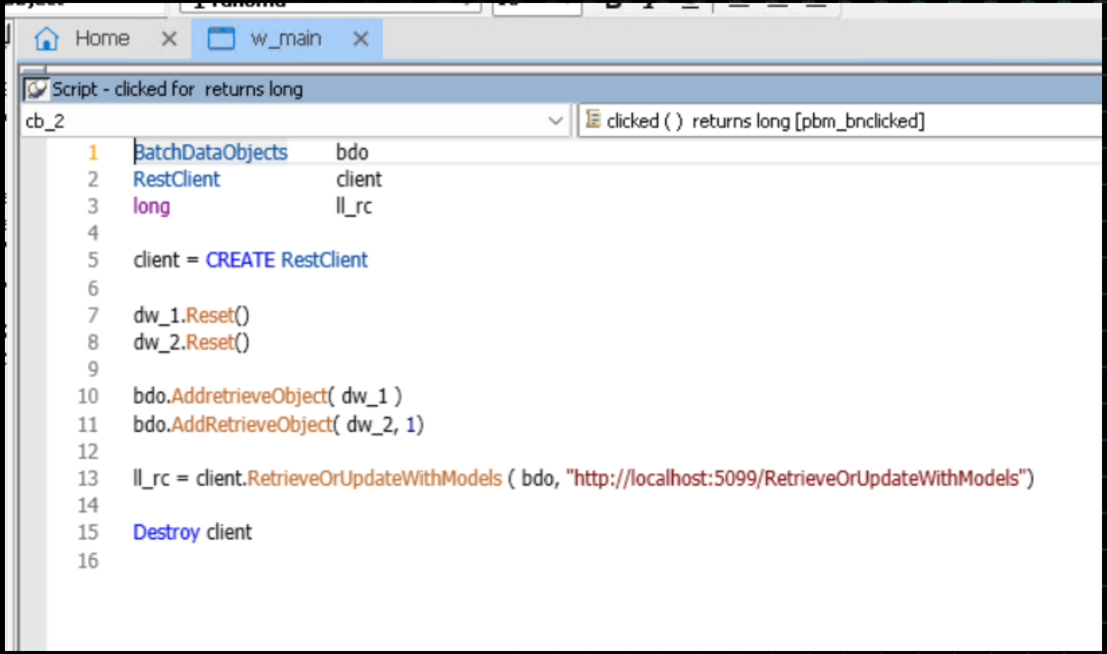
- RetrieveWithModel sample code (PowerBuilder custom JSON)


Home
w_main
Script - clicked for returns long
cb_1
clicked ( ) returns long [pbm_bnclicked]

```
long        ll_rc
RestClient  client

client = create RestClient

dw_1.Reset()
dw_2.Reset()

ll_rc = client.Retrievewithmodel( dw_1, "http://localhost:5099/RetrieveWithModel" )

ll_rc = client.RetrieveWithModel ( dw_2, "http://localhost:5099/RetrieveWithModel", 1 )

Destroy client
```

New .NET DataStore project

- RetreiveOrUpdateWithModels sample code (PowerBuilder custom JSON)



Script - clicked for returns long

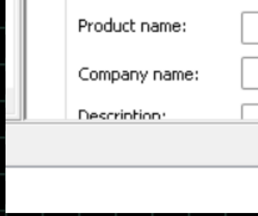
cb_2

clicked ( ) returns long [pbm_bnclicked]

```
BatchDataObjects        bdo
RestClient              client
long                    ll_rc

client = CREATE RestClient

dw_1.Reset()
dw_2.Reset()

bdo.AddretrieveObject( dw_1 )
bdo.AddRetrieveObject( dw_2, 1)

ll_rc = client.RetrieveOrUpdateWithModels ( bdo, "http://localhost:5099/RetrieveOrUpdateWithModels")

Destroy client
```

DEMO: New .NET DataStore project

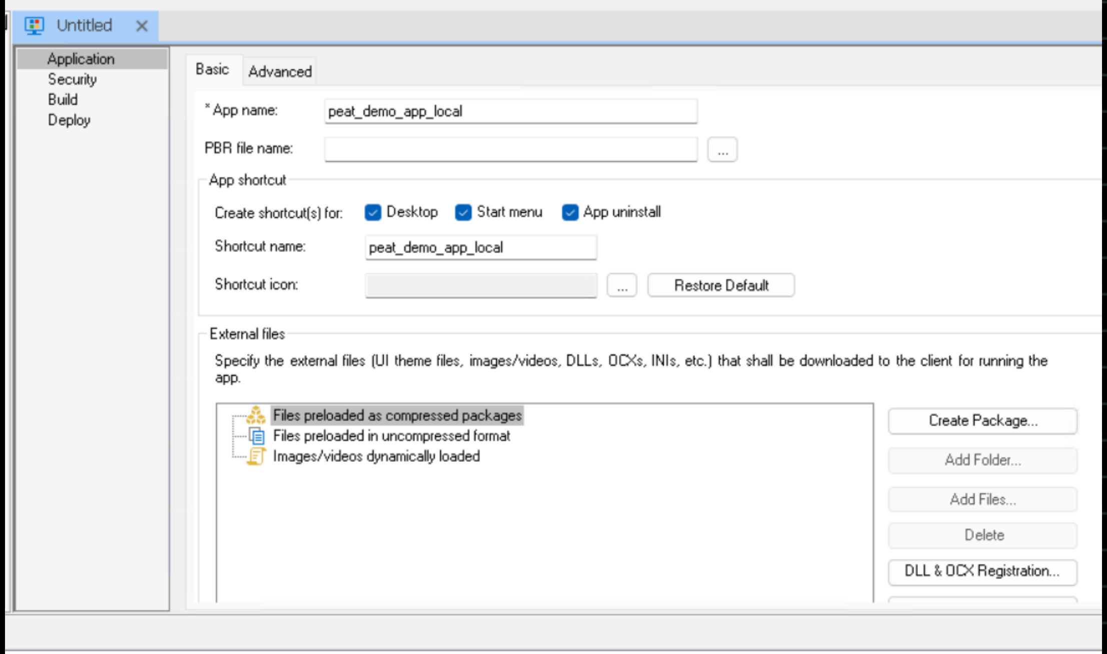
PowerClient project painter optimization



- PowerBuilder 2022
  PowerClient project painter

PowerClient project painter optimization

- PowerBuilder 2025 PowerClient project painter
  - FTP deployment is no longer an option
  - You can use a third-party tool to do FTP deployment



* App name: peat_demo_app_local

PBR file name:

App shortcut

Create shortcut(s) for: ☑ Desktop ☑ Start menu ☑ App uninstall

Shortcut name: peat_demo_app_local

Shortcut icon:

External files

Specify the external files (UI theme files, images/videos, DLLs, OCXs, INIs, etc.) that shall be downloaded to the client for running the app.

- Files preloaded as compressed packages
- Files preloaded in uncompressed format
- Images/videos dynamically loaded

Session Agenda (recap)

- New .NET DataStore project
- PowerClient project painter optimization

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Q&A Time