WHAT'S THE DEAL WITH SCHEDULE API IN DYNAMICS 365 PROJECT OPERATIONS?

Joe Griffin

https://crmchap.co.uk

joe@griffin.gb.net

joejgriffin

joejgriffin

JJGriffin

AGENDA

- Dynamics 365 Project Operations Overview
- Schedule API
  - What is it?
  - Why should we use it?
  - How can we use it?
  - Gotchas and Limitations
- Demo:
  - C# Console Application
  - Power Automate Cloud Flow
- Closing Thoughts
- Additional Resources
- Q&A

ABOUT ME

- Business Applications MVP & MCT
- Managing Director @ SOLO Cloud Solutions, Microsoft Gold Partner
- Hold 30+ certifications covering Dynamics 365 Customer Engagement, Power Platform and Microsoft Azure
- 5+ years experience working with these products, and the following technologies:
  - Dynamics CRM / CE / Power Platform
  - Microsoft 365
  - SQL Server / T-SQL
  - C# / .NET
- Industry experience:
  - Print/Direct Mail
  - Energy & Utilities
  - Housing Associations
  - Retail
  - Managed Services
  - Construction

joejgriffin joejgriffin

WHAT IS DYNAMICS 365 PROJECT OPERATIONS?

- An application that empowers services organizations with the visibility, collaboration and insight needed to drive success across operations – from prospect to cash. Microsoft Dynamics 365 Project Operations connects sales, resourcing, project management, and finance teams within a single application to win more deals, accelerate project delivery, and maximize profitability.

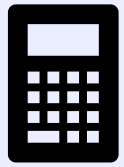
Project Sales

Project Planning

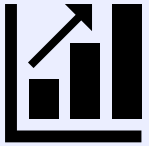
Resource Utilization

Team Collaboration

Time And Expenses



Project Accounting

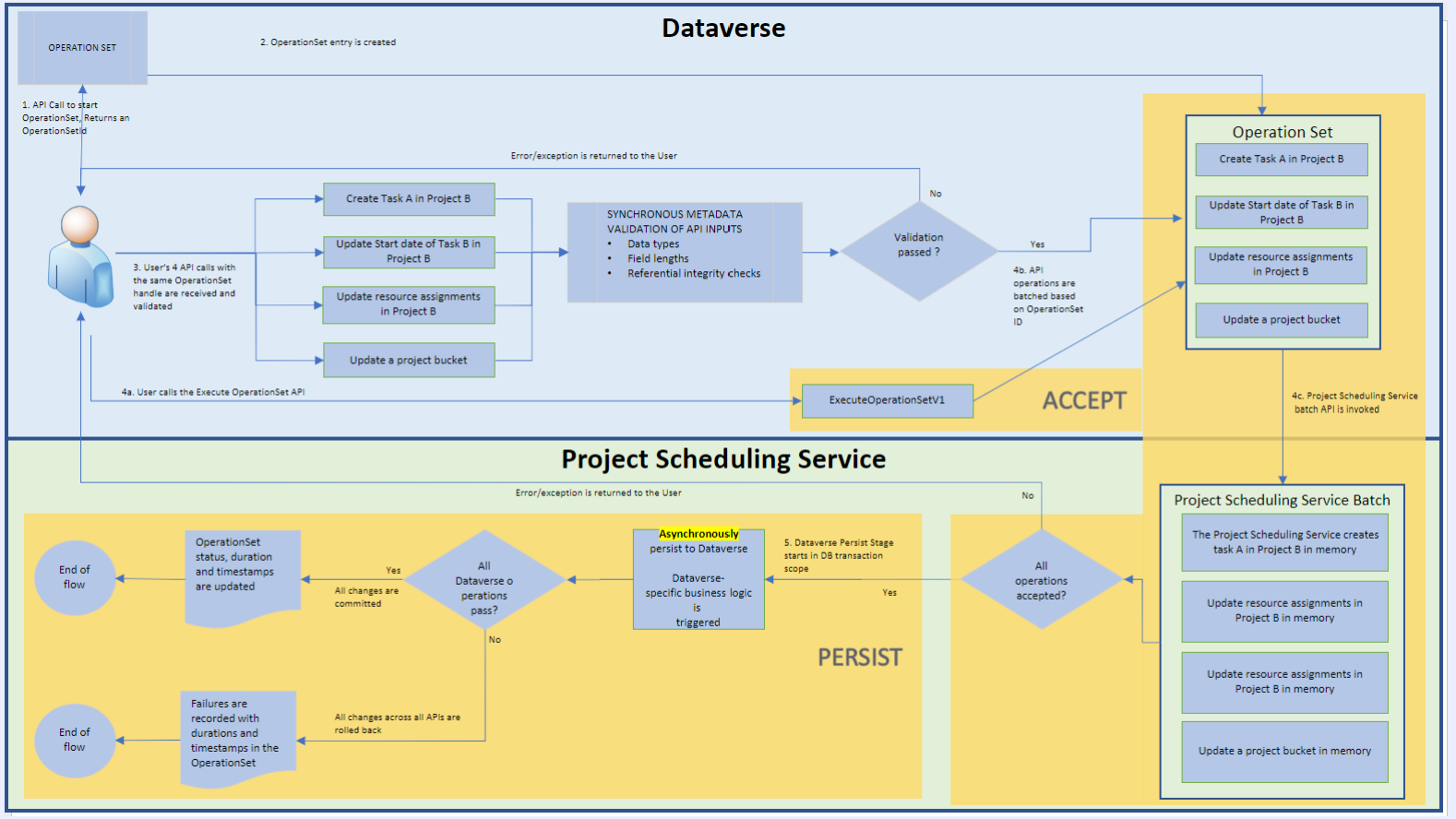


Project Accounting

SCHEDULE API OVERVIEW

- A core set of API's that developers can leverage for Project Operations, to ensure actions are replicated correctly between Dataverse and Project Online.
- Provides the **only** supported mechanism to create the following row types:
  - Project Task (msdyn_projecttask)
  - Project Task Dependency (msdyn_projecttaskdependency)
  - Resource Assignment (msdyn_resourceassignment)
  - Project Bucket (msdyn_projectbucket)
  - Project Team Member (msdyn_projectteam)
- Callable in the same manner as Custom Action's / Custom API's
- Built upon a shared platform hosted by Microsoft in Azure.

HOW IT ALL WORKS



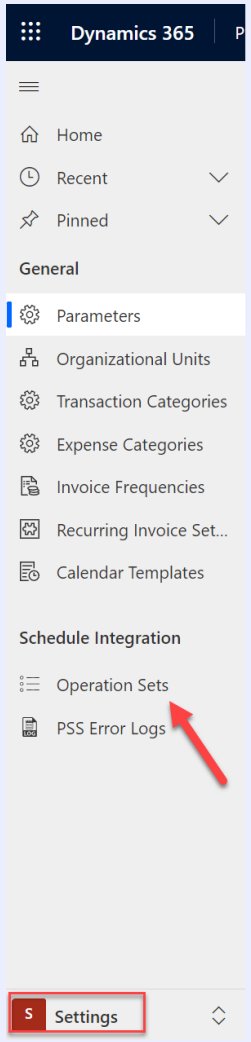
SUPPORTED API'S

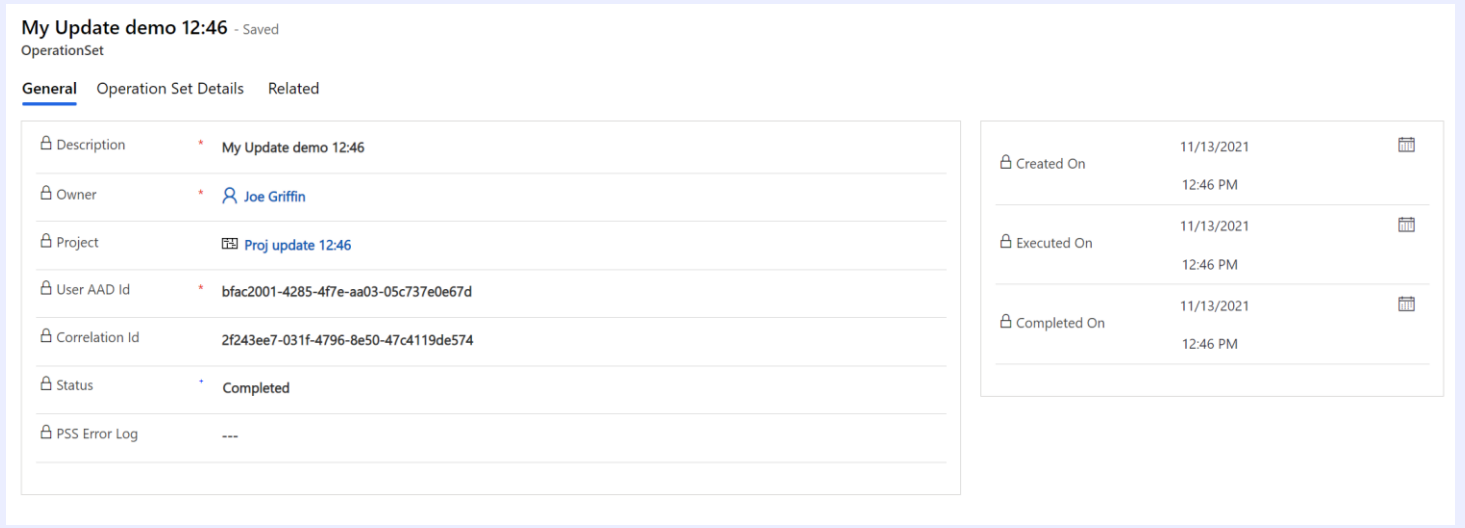
- For Project Create
  - msdyn_CreateProjectV1
  - Action is executed synchronously
- For Team Member Create:
  - msdyn_CreateTeamMemberV1
  - Action is executed synchronously
- For other Scheduling Entities and Update/Delete actions:
  - msdyn_PSSCreateV1
  - msdyn_PSSUpdateV1
  - msdyn_PSSDeleteV1

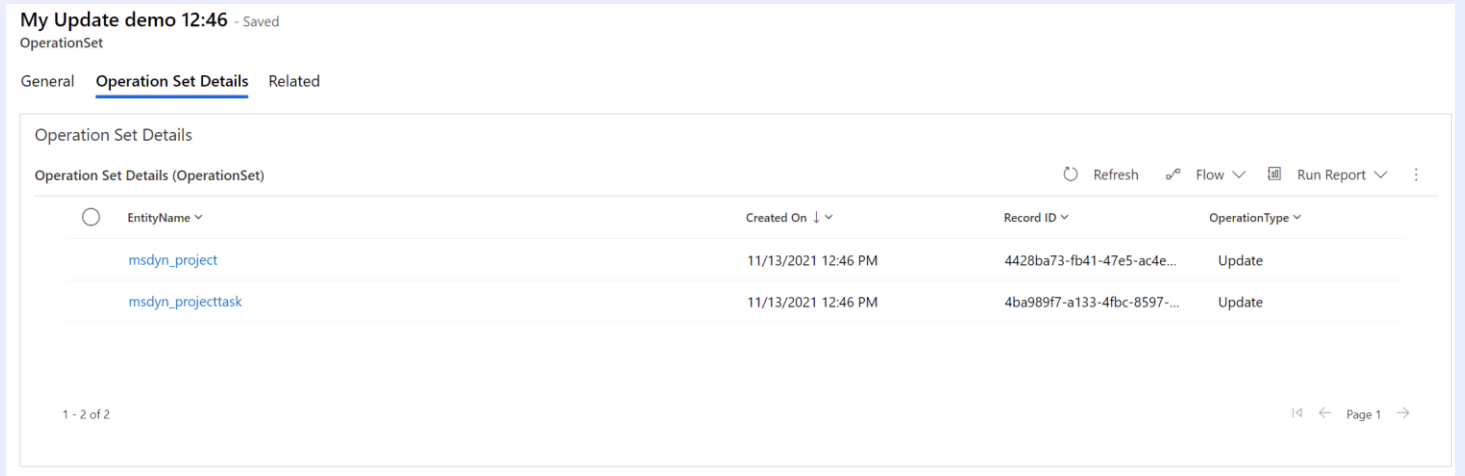
OPERATIONSETS

- A collection of operations to execute together as part of a single transaction.
- All requests **must** be contained within an OperationSet to be processed.
- Two-step process:
  - Initialise the OperationSet (via a **msdyn_CreateOperationSetV1** request)
  - Execute the OperationSet (via a **msdyn_ExecuteOperationSetV1**)
- All OperationSets are executed asynchronously

VIEWING OPERATIONSETS







SCHEDULE API USAGE SCENARIOS

- Batch Processing scenarios from external systems into Project Operations.
- Automating the creation of new Projects, based on existing template structures.
- Handling of complex Work Breakdown Structure’s (WBS’s) that are difficult to define manually in Project Operations.

HOW TO WORK WITH THE SCHEDULE API

- Via Code:
  - C# / VB.Net Application
  - Plug-ins
  - JavaScript / TypeScript (via Web API)
- Via Power Automate Cloud Flows:
  - Use the **Perform unbound action** action step
- Postman
  - Useful for testing / proof of concept designs.

GOTCHAS & LIMITATIONS

- All operations must execute as a fully licensed Project Operations user
- Some restrictions on targeting specific fields for certain actions:
  - https://docs.microsoft.com/en-us/dynamics365/project-operations/project-management/schedule-api-preview#restricted-fields?WT.mc_id=BA-MVP-5003861
- All operations are subject to Project Operations limitations and boundaries:
  - https://docs.microsoft.com/en-us/project-for-the-web/project-for-the-web-limits-and-boundaries?WT.mc_id=BA-MVP-5003861
- For full breakdown of limitations:
  - https://docs.microsoft.com/en-us/dynamics365/project-operations/project-management/schedule-api-preview#limitations-and-known-issues?WT.mc_id=BA-MVP-5003861

TROUBLESHOOTING SCHEDULE API

- PSS Error Log (**msdyn_psserrorlog**) will contain a full log for any failed operation.
- Errors will typically be thrown for any issue not relating to executing the OperationSet:
  - e.g. An invalid column has been specified for the target operation.
- No detailed OperationSet failure status / logs currently available within the app; open a support ticket for further assistance.

DEMO

ADDITIONAL RESOURCES (1)

- Demo Code and Solution for the Cloud Flows is available on my GitHub Page.

https://github.com/JJGriffin/talk-assets/tree/master/ScheduleAPI/D365.ScheduleAPIDemos

ADDITIONAL RESOURCES (2)

- Microsoft
  - Project Schedule API Performance Benchmarks:
    - https://docs.microsoft.com/en-us/dynamics365/project-operations/project-management/project-schedule-api-performance?WT.mc_id=BA-MVP-5003861
- Antti Pajunen:
  - Dynamics 365 Project Operations: Using Schedule APIs with Power Automate and custom project templates:
    - https://daytodaydynamics365.com/dynamics-365-project-operations-using-schedule-apis-with-power-automate-and-custom-project-templates
  - D365 Project Operations, Project for the web: Calling Schedule APIs from Power Automate without custom connectors:
    - https://daytodaydynamics365.com/d365-project-operations-project-for-the-web-calling-schedule-apis-from-power-automate-without-custom-connectors

THANK YOU FOR LISTENING!
ANY QUESTIONS...?

Joe Griffin

https://crmchap.co.uk

joe@griffin.gb.net

joejgriffin

joejgriffin

JJGriffin