Inventory Visibility Add-in for Dynamics 365 Supply Chain Management

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Agenda

• Overview
• Architecture
• Scenarios
• Setup and configuration
• Inventory visibility on hand and Reservation
• Demo
• Best practices
• Q&A
Overview / Architecture / Scenarios
Overview

- Scalable microservice to track near real time on-hand inventory
- Global view of inventory on hand across multiple systems
- View inventory on hand across sites, warehouses and other set of dimensions
- Provide set of restful APIs to view on hand, adjust on hand and reserve on hand
- Power App to configure new Data sources for external systems, Dimensions, Product index hierarchy, Measures and Calculated measures
- Built on Dataverse and provide extensibility
Scenarios

- Field service engineer need to view Inventory on hand in D365 Field Service before processing work order or sales agent need to have a global view of inventory on hand in D365 Customer Engagement before taking order

- Customer would like to ensure product is in stock when placing an order in a portal or e-commerce solution

- Sales manager, Purchase manager, Inventory manager, Warehouse manager organization wide would like to have global view of inventory on hand across external systems such as SCM, POS, 3PL, WMS or 3rd party ERP system

- A sales manager needs to plan for a new store launch with promotion events and would like to reserve certain product inventories beforehand to ensure it will be a successful launch

- Different personas organization wide or customer can request on hand inventory information using Bot framework and inventory visibility service

- Sales representative or inventory manager need to view inventory on hand on the go via mobile devices

- Intelligent Order Management fulfillment orchestration engine can use real-time inventory data to optimize fulfillment which in process help logistics manager to reduce order fulfillment cost
Setup Inventory Visibility
Pre-requisites

- Tier2 or higher Sandbox environment
- Enable the Microsoft Power Platform integration during environment deployment
- Contact the Inventory Visibility product team at inventvisibilitysupp@microsoft.com to get the latest package deployer and solution artifacts
- Register an application in AAD

Licensing
- No additional license cost for Inventory visibility add-in, It is included with Dynamics 365 SCM enterprise license.
- There can be additional cost for Dataverse storage, if storage exceed default storage size limit
Setup

Dataverse:
- Deploy solution using package deployer process in Dataverse
- Ability to install the solution directly from PPAC - (Resources > Dynamics 365 apps)

LCS:
- Install Inventory visibility add-in from Environment Add-ins

Dynamics 365 Supply chain:
- Enable the Inventory visibility integration feature in Feature management
- Setup Inventory visibility integration parameters
- Setup Inventory visibility integration job

*Updates to Inventory Visibility Add-in components:*
- D365 SCM - Inventory visibility add-in features will be updated through monthly service updates
- Dataverse – Inventory visibility app updates are visible in Power platform admin center to be updated
- Inventory Visibility Service – Microsoft will automatically apply updates to microservice
Near Real time inventory sync between D365 SCM and Inventory visibility service

- Configure inventory visibility endpoint
  - Max number of records to sync per request

- Enable Inventory visibility Integration
  - Initial push – Batch job copy data from InventSum table to staging table
  - Incremental push – Batch job can be set with minimum of 1 min interval
  - Automatically scale out using multithreading based on total no records to be processed and sync to IV
  - Force sync to troubleshoot sync
  - Disable to pause sync

- Tables in D365 SCM
  - InventInventoryDataServiceInventSumQueue
  - InventInventoryDataServiceInventSumQueueBackup

- Classes
  - InventInventoryDataServiceBatchJob
  - InventInventoryDataServiceBatchJobInitialPush
  - InventInventoryDataServiceBatchJobScheduler
  - InventInventoryDataServiceBatchJobTask
  - InventInventoryDataServiceDisable
  - InventInventoryDataServiceFeature
  - InventInventoryDataServiceForceSync

*For real time integration, extension needs to be built in D365 SCM to call Inventory Visibility APIs to sync inventory data when inventory posting takes place in D365 SCM
Configure Inventory Visibility
Data source configuration

- Configuration of new data sources (ERP, WMS, 3PL, POS...etc.)
- Dimension (dimension mapping)
- Physical Measures
- Calculated measures

Partition configuration

- Data operations in the same partition support high performance
- Default partition configuration is set to Site and Warehouse
- Partition configuration upgrade is not supported

Product index hierarchy configuration

- Configure to see results that are aggregated based on the inventory dimensions
- These indexes are based on a dimension or a combination of dimensions.
- An index consists of a set number (grouping), a dimension, and a hierarchy
  
  e.g., Set1: Location, License plate
  
  Set2: Config, Size, Color
- Configuring right product index hierarchy help query execution faster
Inventory On hand and Reservations
Inventory on hand Query

Power app
- View on hand by dimensions
- Group by based on product index hierarchy sets

APIs – Near real time inventory data directly from a cached instance

Read
- `/api/environment/{environmentId}/onhand/indexquery`

Create
- `/api/environment/{environmentId}/onhand`
- `/api/environment/{environmentId}/onhand/bulk`

Update
- `/api/environment/{environmentId}/setonhand/{inventorySystem}/bulk`
Inventory Reservation configuration

Soft reservation mapping
• Setup on which measure reservation can be done
• Setup to make sure on-hand inventory is available for reservation

Soft reservation Hierarchy
• Describes sequence of dimensions that must be specified when reservations are made

Inventory Soft Reservation

Power app
• Specify quantity, Data source, measure, item and dimensions setup in reservation hierarchy

API
• /api/environment/environment-ID)/onhand/reserve
• /api/environment/environmentId)/onhand/reserve/bulk

*Unreserve/offset qty using Reserve API by providing same parameters but with –ve quantity
Demo

- Inventory visibility PowerApp
- APIs via Postman
- APIs via Power Automate
Best practices
DO’s and DON’Ts – Inventory visibility service

**DO’s**

- ✓ Deploy Power platform instance when deploying F&O instance
- ✓ Deploy F&O instance and Power platform instance in same region
- ✓ Consider Inventory visibility service for scenarios when there is a need to view global inventory on hand
- ✓ For near real time F&O integration with Inventory visibility make sure dimension mapping and physical measures are setup correctly

**DON’Ts**

- × Do not use Inventory visibility endpoint region different than your F&O and power platform region
- × Do not add/update inventory in inventory visibility for F&O data source
- × Do not configure existing power platform instance with new F&O instance
Resources

- Inventory Visibility Add-in for Dynamics 365 Supply Chain Management - Dynamics 365 Release Plan | Microsoft Docs
- Inventory Visibility Add-in overview - Supply Chain Management | Dynamics 365 | Microsoft Docs
- Inventory Visibility Add-in APIs Postman collection

- Yammer : Finance and Operations Insider Program : D365 SCM Inventory Visibility
Thank you!

Contact: inventvisibilitysupp@microsoft.com for more information