

# Commerce Analytics & Operational Insights

Dynamics 365  
Architecture Insights

Rob Bertram



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# Agenda

- 
- Commerce Analytics
    - Existing material
    - Roadmap
  - Operational Insights
    - How to enable
    - Comparison to (preview) Monitoring and Telemetry
    - Roadmap
  - Deep Dive
    - Events shared
    - Anatomy of an event
    - Example dashboard

# Commerce Analytics (Preview)

TechTalk: [Native Analytics for Dynamics 365 Commerce | January 19 & 20, 2022 - Microsoft Dynamics Blog](#)

Documentation: [Commerce analytics \(Preview\) - Commerce | Dynamics 365 | Microsoft Docs](#)



## OMNI CHANNEL

Organization-wide sales performance across global geography for all retail channels.



## NATIVE WEB INTERACTIONS & NAVIGATION

Gain insights into shopper buying patterns and behavior.



## UNIFIED DATA MODEL

Commerce, Finance, SCM, Connected store data unified in the CDM format for easy consumption by external solutions



## TURN-KEY & COMPREHENSIVE

Prepackaged comprehensive, business-managed solution with automated orchestration of the data streams.



## EXTERNAL DATA INTEGRATION

Retailers can bring data feeds external to Dynamics eco-system into their own data lake.



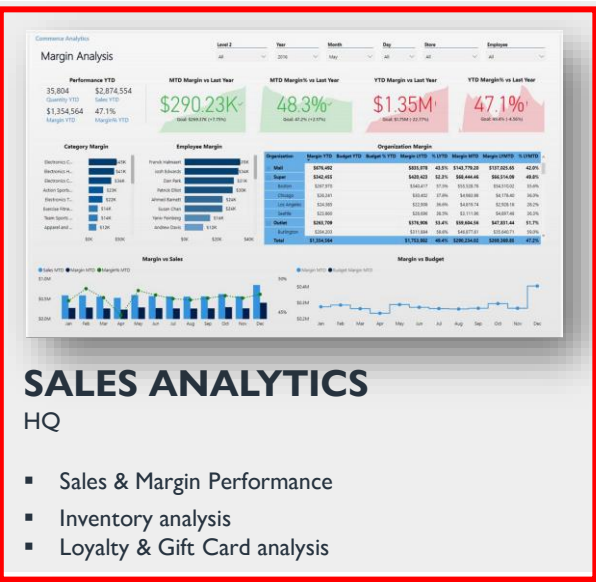
## PREDICTIVE & HIGH-VALUE INSIGHTS

Drive greater efficiency & boost sales by applying intelligence to their business operations.



# COMMERCE ANALYTICS (PREVIEW)

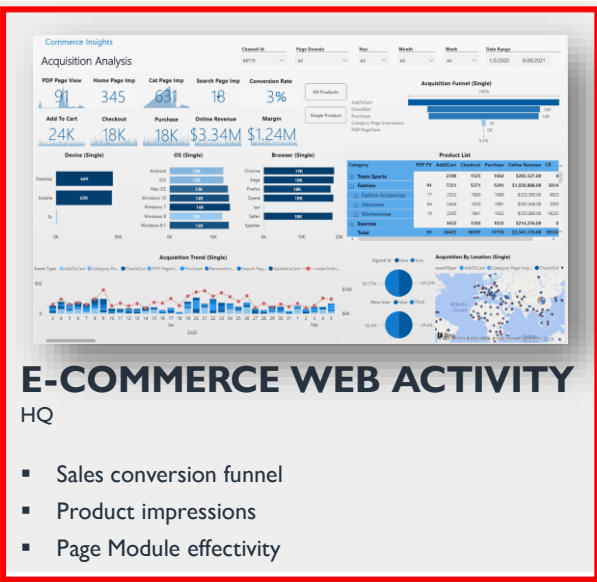
aka.ms/CommerceAnalyticsPreviewSignup



## SALES ANALYTICS

HQ

- Sales & Margin Performance
- Inventory analysis
- Loyalty & Gift Card analysis



## E-COMMERCE WEB ACTIVITY

HQ

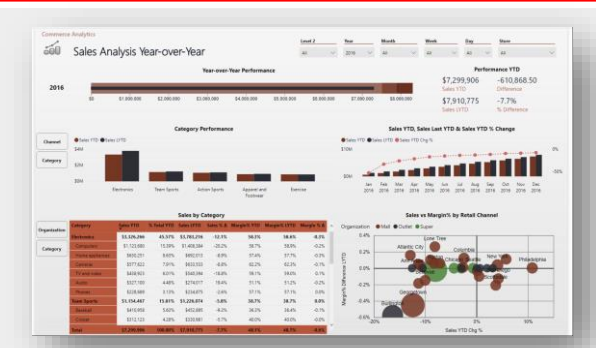
- Sales conversion funnel
- Product impressions
- Page Module effectivity



## MASHUPS

SALES + WEB ACTIVITY UNIFIED

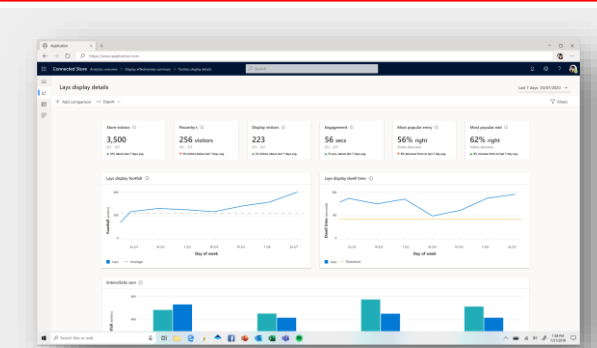
- E-com conversion funnel by Customer LTV
- E-com Acquisition analysis by GMROI
- E-com Product impressions by Category hierarchy



## SALES ANALYTICS

POS

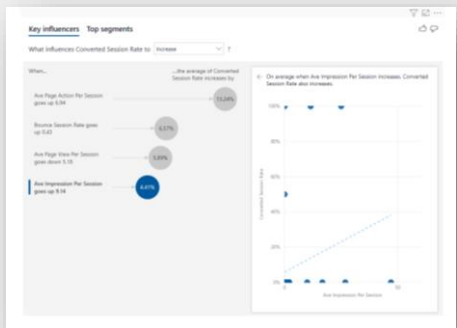
- Channel sales
- Customer RFM & Spend
- Order activity



## CONNECTED SPACES ANALYTICS

POS

- Foot traffic analysis
- Queue length
- Display effectiveness



## INTELLIGENT INSIGHTS

HQ WORKFLOWS

- Key Influencers
- Merchandizing quality scoring
- Sales & demand forecasting



# COMMERCE ANALYTICS (PREVIEW)

## – HIGHLIGHTS

25+ interactive reports

250+ visual controls

50+ views and tables

30+ ontologies

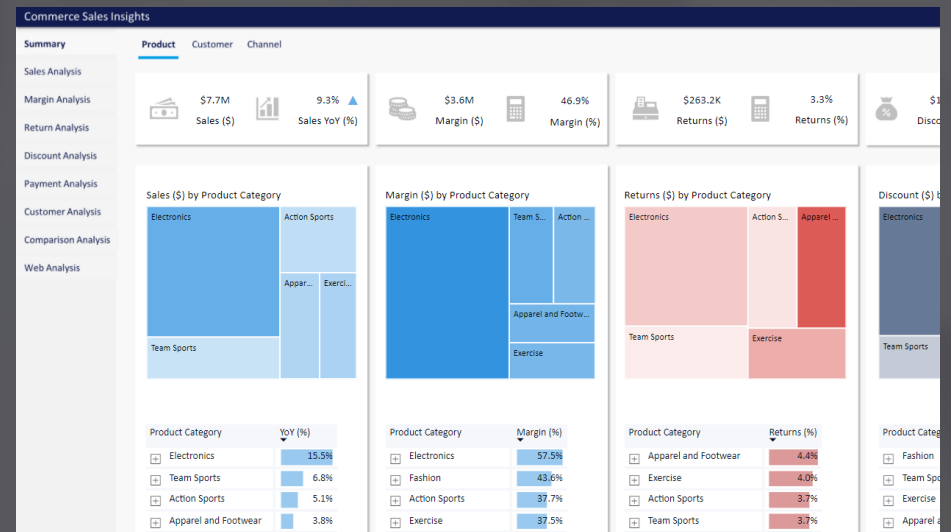
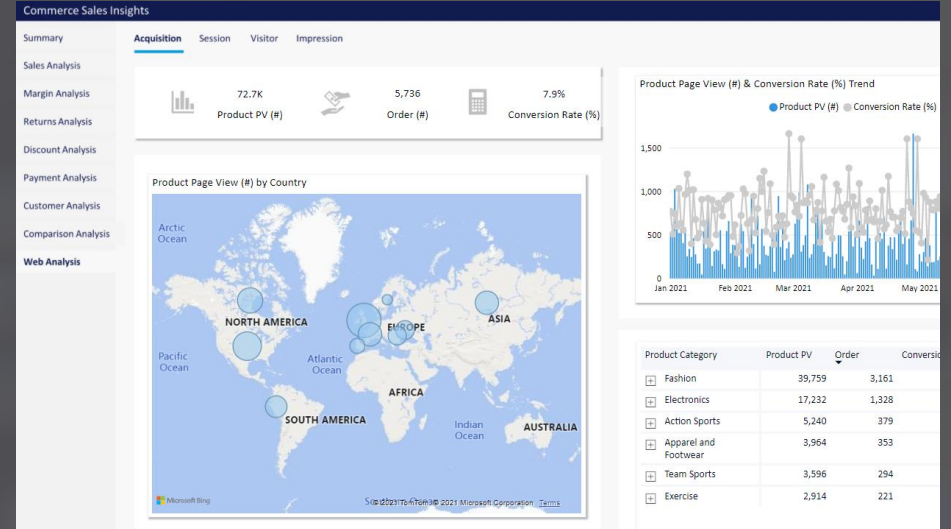
1,000+ fields and metrics

5 geos availability

Extensible Power BI template app

Petabyte scale storage with Azure Datalake

Custom scalable T-SQL querying w/ Azure Synapse





# COMMERCE ANALYTICS (PREVIEW)

## – REPORTS

SALES

RETURNS

DISCOUNTS

PAYMENTS

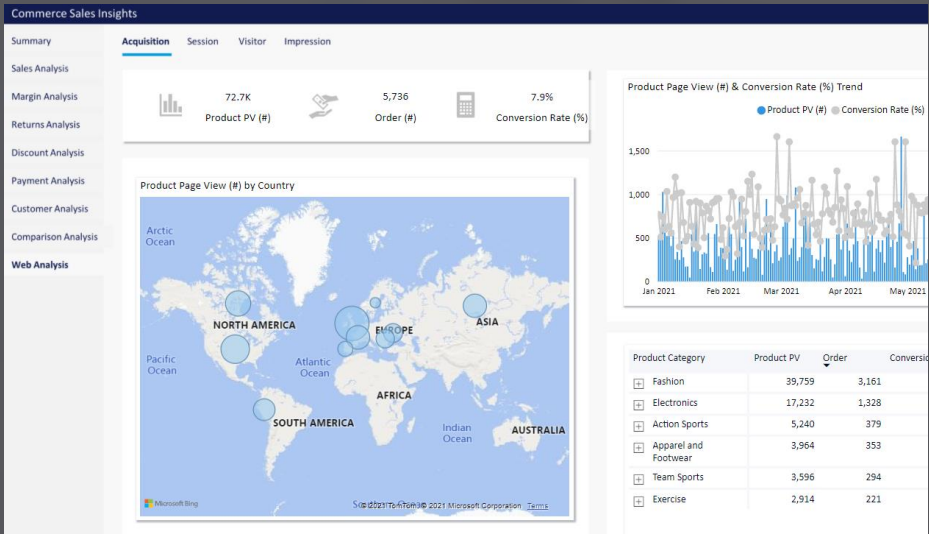
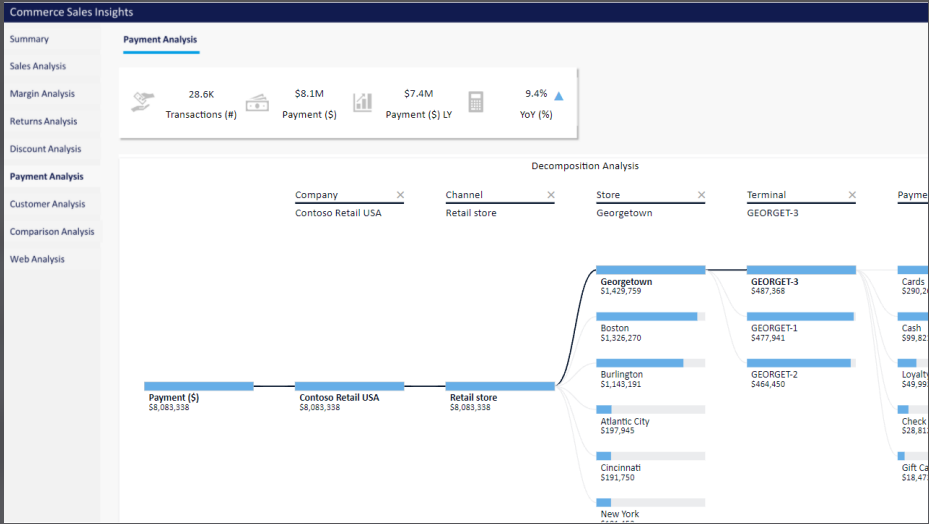
CUSTOMER

WEB -  
ACQUISITION

WEB -  
IMPRESSION

WEB -  
SESSION

WEB -  
VISITOR





# COMMERCE ANALYTICS (PREVIEW)

## – KEY DIMENSIONS

**BY PRODUCT  
& CATEGORY**

**BY CHANNEL,  
STORE,  
TERMINAL**

**BY DAY**

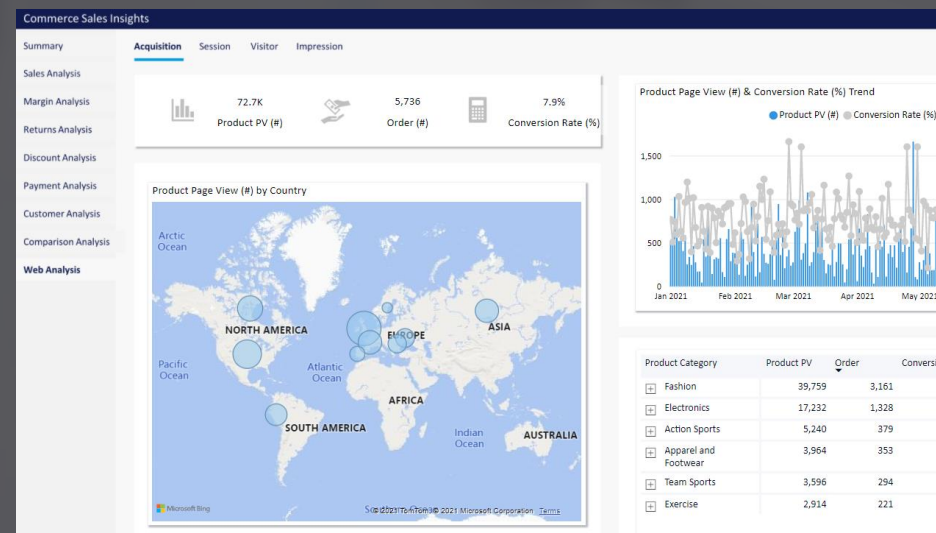
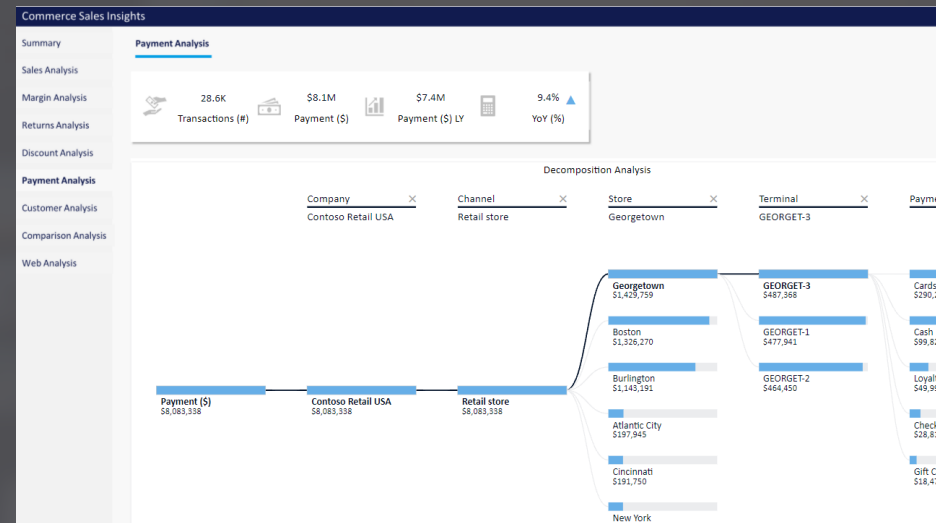
**BY HOUR OF  
DAY**

**BY EMPLOYEE**

**BY CUSTOMER  
RFML**

**BY LOCATION**

**WEB - BY  
SESSION  
ORIGIN**







# COMMERCE ANALYTICS – FUTURE ENHANCEMENTS

## GA PLAN\* *(Subject to change)*

- Power BI template app
  - Improved visual design
  - Improved accessibility
  - Improved localization
  - Discoverable in AppSource
- Improved installation experience
- Improved serviceability
- Incremental data export from HQ and incremental processing
- Point of Sale embedded reports
- Inventory reports
- Vendor performance reports
- **Timeline Oct. 2022\*** *(Tentative)*





# COMMERCE ANALYTICS (PREVIEW)

## –REQUIREMENTS

### FUNCTIONAL REQUIREMENTS

- Using at-least 1 Dynamics 365 Commerce sales channel (POS, E-comm, Call Center)

### SYSTEM REQUIREMENTS

- Dynamics 365 Commerce Sandbox UAT (or Prod) environment
- *Export to Data lake* enabled
- Azure Synapse SQL workspace
- Power BI Pro or Premium ( at-least 1 license per org)

### LICENSE REQUIREMENTS

- No separate Dynamics license required for Commerce Analytics



# COMMERCE ANALYTICS – PREVIEW PROGRAM



Self-service deployment in Sandbox



Go-live in Production on case-by-case basis



Live demo



Preview limitations

- Limited Power BI report accessibility
- Limited Power BI report localization
- No uptime SLA
- Limited regions
- Customer support ad-hoc - on best effort basis
- No backwards compatibility guarantee during Preview



# COMMERCE ANALYTICS (PREVIEW) - RESOURCES

Resource	Link
Live demo	<a href="https://aka.ms/CommerceAnalyticsDemo">aka.ms/CommerceAnalyticsDemo</a>
Preview sign-up	<a href="https://aka.ms/CommerceAnalyticsPreviewSignup">aka.ms/CommerceAnalyticsPreviewSignup</a>
Documentation	<a href="https://aka.ms/CommerceAnalyticsDocs">aka.ms/CommerceAnalyticsDocs</a>
Ideas	<a href="https://aka.ms/CommerceAnalyticsIdeas">aka.ms/CommerceAnalyticsIdeas</a>
Preview engagement /feedback	<a href="mailto:Aamir.Allagaband@microsoft.com">Aamir.Allagaband@microsoft.com</a>
TechTalk	<a href="https://microsoft.com/dynamics365/blog/2022/01/native-analytics-for-dynamics-365-commerce-january-19-20-2022">Native Analytics for Dynamics 365 Commerce   January 19 &amp; 20, 2022 - Microsoft Dynamics Blog</a>

# Operational Insights (preview)

Announced with [Commerce analytics - Dynamics 365 Release Plan | Microsoft Docs](#)

# Operational Insights is ...

- A **Bring-Your-Own**-App-Insights feature allowing customers to receive diagnostic events into their own Application Insights instance.
- Available (preview) in 10.0.22
- Currently only for Commerce Scale Unit (CSU) telemetry

The screenshot displays the 'Feature management' page in the Dynamics 365 'Finance and Operations' application. The interface includes a top navigation bar with the 'feature management' search bar and user information (USRT, AD). A left sidebar contains navigation icons. The main content area shows a summary of feature counts: 108 New, 515 Not enabled, and 0 Scheduled. Below this, a table lists features, with 'Operational Insights' highlighted. The right-hand pane provides details for the selected feature, including its addition date, enablement status, and description.

**Feature management**

Do not enable new features automatically

New: 108 | Not enabled: 515 | Scheduled: 0

[Enable all] [Check for updates]

Filters: New | Not enabled | Scheduled | All

Search: operational insights

Feature name	Status	Enable date	Feature added	Feature state	Module
Operational Insights	✓	1/12/2022	11/24/2021		System administration

**Operational Insights** ✓

Feature added 11/24/2021  
System administration

This feature was enabled on 1/12/2022

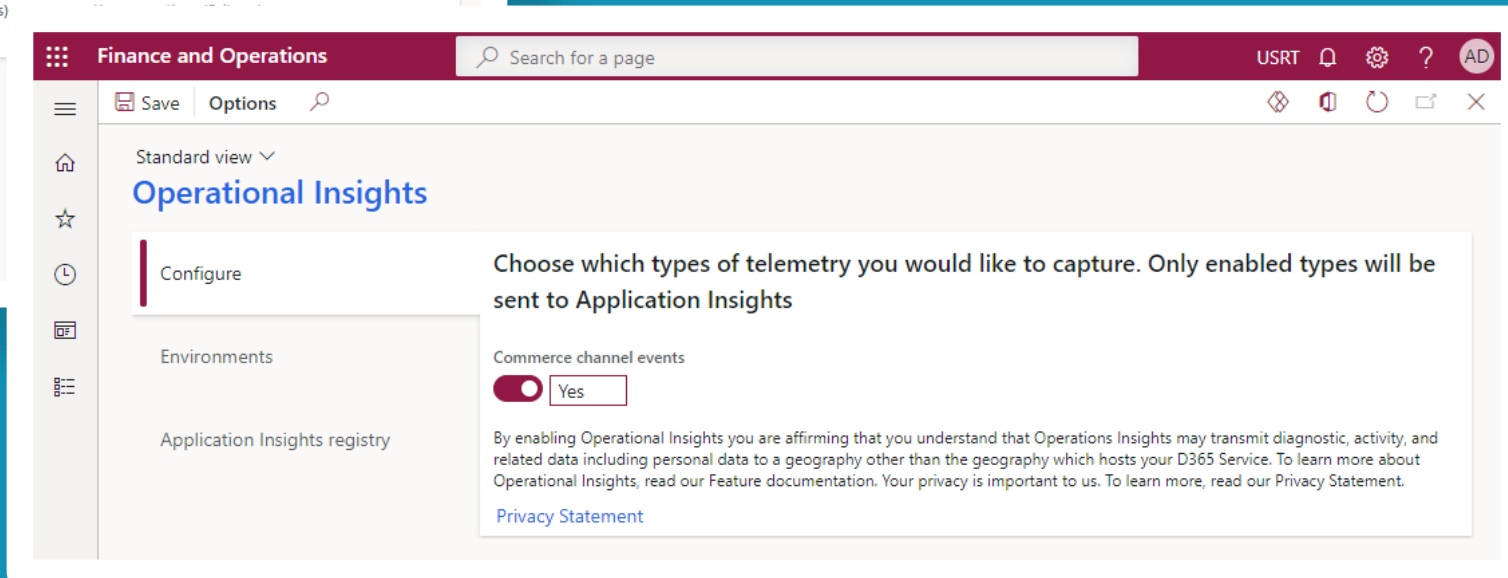
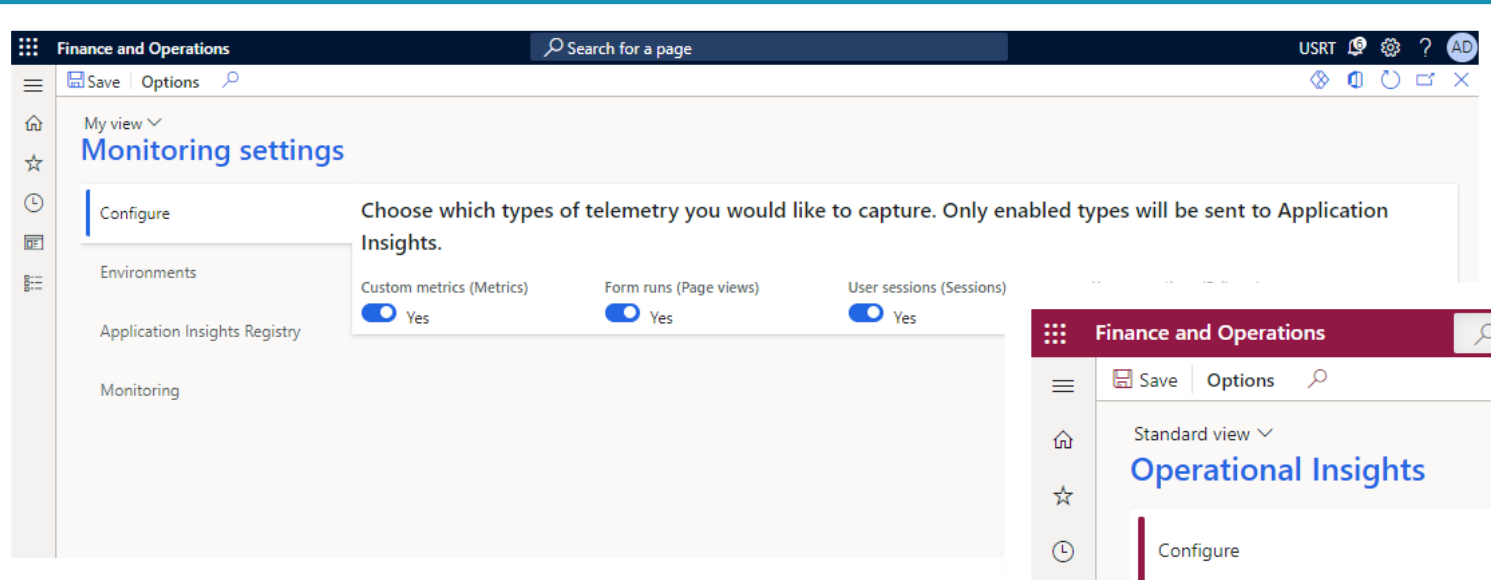
**Description**

Operational Insights is a Bring-Your-Own-App-Insights feature allowing customers to receive diagnostic events in their own Application Insights instance.

**Comments**

# Operational Insights vs Monitoring and Telemetry (Preview)

- The Monitoring and Telemetry (Preview) solution will be replaced by Operational Insights
- Monitoring and Telemetry was focused on (custom) HQ/X++ event and metric telemetry. Operational Insights is currently limited to CSU telemetry



# Enabling Operational Insights

- The service is still in preview, so enabling the feature is the first step but not the only one
- Submit a support request with the following information:
  - Environment ID
  - Application Insights Instrumentation Key
  - CSU Scale Unit ID(s)
- Wait for confirmation, then configure in HQ
- Run CDX job 1110
- Restart the CSU(s)
- Telemetry should begin to appear in your Application Insights in 2-5 minutes



# Deep Dive





# Application Insights > Logs > Traces

Create a resource

Home

Dashboard

All services

FAVORITES

All resources

Recent

DevTest Labs

Application Insights 1

Virtual machines

Storage accounts

Key vaults

Azure Active Directory

Logic apps

Storage Explorer

Resource groups

Monitor

Help + support

Subscriptions

Cost Management + Billing

Azure AD Identity Protection

API Management services

Dashboard > Application Insights > D365Commerce-OperationalInsights

D365Commerce-OperationalInsights | Logs

Application Insights

Search (Ctrl+/)

Application map

Smart detection

Live metrics

Transaction search

Availability

Failures

Performance

Troubleshooting guides (preview)

Monitoring

Alerts

Metrics

Diagnostic settings

Logs 2

Workbooks

Usage

Users

Sessions

Events

Funnels

User Flows

Cohorts

More

New Query 1\* x New Query 2\* +

D365Commerce-O... Select scope

Run

Time range : Set in query

Save

Share

New alert rule

Export

Pin to

...

Tables Queries Functions ...

Search

Filter

Group by: Solution

Collapse all

Favorites

You can add favorites by clicking on the ☆ icon

Application Insights

availabilityResults

browserTimings

customEvents

customMetrics

dependencies

exceptions

pageViews

performanceCounters

requests

traces 3

1 traces

2 where timestamp > ago(7d)

Run

Results Chart Columns Display time (UTC+00:00) Group columns

Completed with partial results. 00:16.8 30,000+ records

Showing the first 30,000 results. Learn more on how to narrow down the result set.

timestamp [UTC]	message	severityLevel	itemType
> 2/14/2022, 10:39:40.263 P...	Retail Server web request finished. RequestUri: http://scun91eh...	1	trace
> 2/14/2022, 10:43:55.863 P...	Retail Server web request finished. RequestUri: http://scubftud...	1	trace
> 2/14/2022, 10:44:40.391 PM	Retail Server web request finished. RequestUri: http://scun91eh...	1	trace
> 2/14/2022, 10:48:56.095 P...	Retail Server web request finished. RequestUri: http://scubftud...	1	trace

timestamp [UTC]

2022-02-14T22:48:56.095Z

message

Retail Server web request finished. RequestUri: http://scubftud5y039061437-rs.su.retail.dynamics.com

severityLevel

1

itemType

trace

> customDimensions

{"EventId":"5009","userType":"Anonymous","appSessionId":"00000000-0000-0000-0000-000000000000"

operation\_Id

3e407edcda6bcc4fbb07b94380deba9c

operation\_ParentId

ecd39fcdd298854e

session\_Id

00000000-0000-0000-0000-000000000000

Page 1 of 600 50 items per page 1 - 50 of 30000 items



# Event Types

Event Codes 18xx: Commerce Runtime (CRT) data access

- Event Code 1804: SQL stored procedure finished
- Event Code 1809: SQL select command finished
- Event Code 1810: SQL server error
- Event Code 1811: SQL data type not supported

Event Codes 50XX: Retail Server

- Event Code 5009: API request finished
- Event Code 5008: API request error [[Roadmap – after GA](#)]



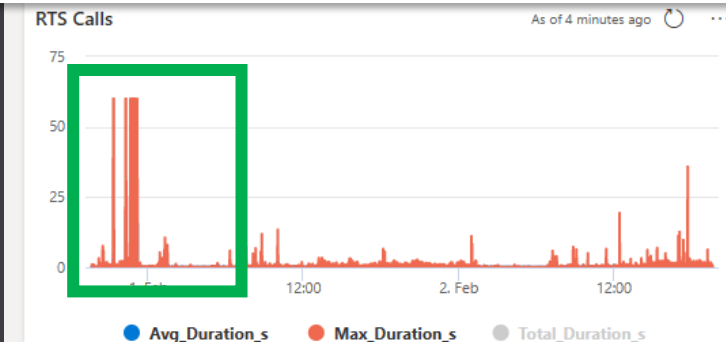
# What can you do with telemetry data?

Time range UTC : Last 2 days    Controller : All    Action : All    Query Name : All    Method Name (RTS) : All    [Reset](#)

API Performance    As of 4 minutes ago    API Volume    As of 4 minutes ago    Query performance    As of 4 minutes ago

## Perf - Api Execution Time by Actions (SQL/RTS)

apiName	latency	activityId	action	actionType	invoked	execTime_Total	perc	execTime_Avg
> ScanResults	14,587	21ed2e8d-6990-4182-ab58-e7ff29c80cae	[crt].GETPRICETRADEAGREEMENTS_V2	SQL	1	14,472	0.99	14,472
> ScanResults	14,587	21ed2e8d-6990-4182-ab58-e7ff29c80cae	[crt].GETINVENTITEMBARCODES	SQL	1	3	0	3
> ScanResults	14,587	21ed2e8d-6990-4182-ab58-e7ff29c80cae	[crt].[CONVERTITEMANDINVENTDIMIDSTI	SQL	1	3	0	3
> ScanResults	14,587	21ed2e8d-6990-4182-ab58-e7ff29c80cae	[crt].[GETPRODUCTSBYIDS_V5]	SQL	1	5	0	5
> ScanResults	14,587	21ed2e8d-6990-4182-ab58-e7ff29c80cae	[crt].[GETPRODUCTDIMENSIONVALUESBY	SQL	1	5	0	5
> ScanResults	14,587	21ed2e8d-6990-4182-ab58-e7ff29c80cae	[crt].GETPRODUCTBEHAVIORBYPRODUCT	SQL	1	37	0	37
> ScanResults	14,587	21ed2e8d-6990-4182-ab58-e7ff29c80cae	[crt].[GETLINKEDPRODUCTRELATIONS_V4	SQL	1	3	0	3
> ScanResults	14,587	21ed2e8d-6990-4182-ab58-e7ff29c80cae	[crt].GETITEMSPRICE	SQL	1	4	0	4
> ScanResults	14,587	21ed2e8d-6990-4182-ab58-e7ff29c80cae	[crt].[GETVARIANTSBYITEMIDANDINVENT	SQL	1	5	0	5
> ScanResults	14,587	21ed2e8d-6990-4182-ab58-e7ff29c80cae	[crt].GETPRICEADJUSTMENTSFORITEMS_V	SQL	1	8	0	8
> AddCartLines	6,646	8954d169-8a37-4944-8317-87cfe9895fda	[crt].GETPRICETRADEAGREEMENTS_V2	SQL	1	5,833	0.88	5,833



RTS Calls Investigation    As of 4 minutes ago

NormalizedPath	MethodName
> /commerce/carts/updatecartlines	VTXRetailTransactionService
> /commerce/getpaymentpropertiesifmodified	GetMerchantPaymentInform
> /commerce/customers/getorderhistory	GetOrderHistoryList
> /commerce/carts/addcartlines	VTXRetailTransactionService
> /commerce/salesorders/getreceipts	GetReturnLocationByInfococ
> /commerce/orgunits/searchproductavailability	InventoryLookupByStoreXml
> /commerce/getcustomerbalance	GetCustomerBalance
> /commerce/orgunits/searchproductavailability	inventoryLookupByStoreV3

> ActivateDevice\ActivateDevice	[crt].[CHANNELPROPERTIESVIEW]
> ActivateDevice\ActivateDevice	[crt].[CHANNELPROFILEPROPERTYVIEW]
> ActivateDevice\ActivateDevice	[crt].[CHANNELPROFILEVIEW]
> ActivateDevice\ActivateDevice	[crt].[GETSALESORDERHEADERATTRIBUTE
> ActivateDevice\ActivateDevice	[crt].[GETSALESORDERLINESATTRIBUTEGR
> ActivateDevice\ActivateDevice	[crt].[CHANNELLANGUAGESVIEW]
> ActivateDevice\ActivateDevice	[crt].GETSTOREADDRESSBOOKS
> ActivateDevice\ActivateDevice	[crt].[FEATURESTATESVIEW]
> ActivateDevice\ActivateDevice	[crt].[TIMEZONEVIEW]
> ActivateDevice\ActivateDevice	[crt].[RETAILCONFIGURATIONPARAMETER



# COMMERCE ANALYTICS (PREVIEW) - RESOURCES

Thank you

Resource	Link
Writing queries	<a href="#">Get started with log queries in Azure Monitor - Azure Monitor   Microsoft Docs</a>
Building alerts	<a href="#">Log alerts in Azure Monitor - Azure Monitor   Microsoft Docs</a>
Assembling a dashboard	<a href="#">Create and share dashboards of Azure Log Analytics data - Azure Monitor   Microsoft Docs</a>
Smart detection	<a href="#">Smart detection in Azure Application Insights - Azure Monitor   Microsoft Docs</a>
Preview engagement /feedback	<a href="mailto:robertra@microsoft.com">robertra@microsoft.com</a>

Questions?