Agenda

- Introduction to Application Insights
- Lifecycle Services (LCS): When a change is needed
- Capabilities in D365 F&O apps and demo
- D365 Warehouse telemetry in Application Insights
- Capabilities in D365 CE Apps (CS, FS, Dataverse) and demo
- Alerting set up
- Understanding the cost model
- Q&A
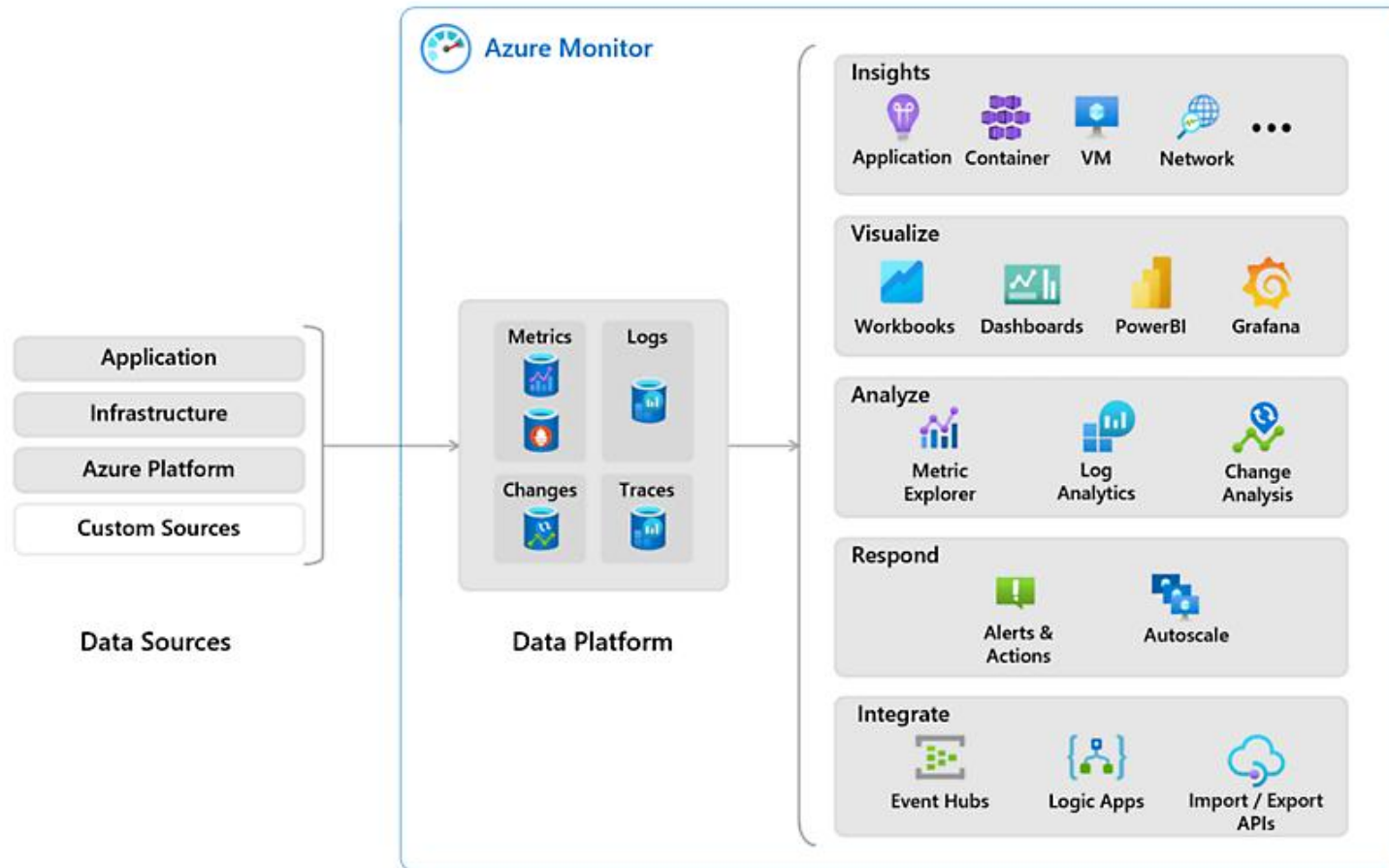
Microsoft Dynamics 365

Application Insights Overview

Overview of Application Insights for Dynamics 365

A powerful, extensible Application Performance Management (APM) service extending Azure Monitor.

- Monitoring and Diagnostics

  - Monitor live applications and provide detailed insights into application performance, user activities, and diagnostic data.

- User Interaction Analysis

  - Understand how users interact with the application through detailed telemetry data.

- Custom Metrics and Logs

  - Define custom metrics and log events to track specific parts of your application.

- Enhanced Performance

  - Identify and resolve performance bottlenecks quickly.

- Proactive Issue Detection

  - Automatically detect and diagnose issues before they impact users.

- Data-Driven Decisions

  - Use detailed insights to make informed decisions, improve user experience, and drive application development.

Solution Architecture Overview

Microsoft Dynamics 365

Lifecycle Services:

When a change is needed...

Outgrowing the solution...

How can I gain **visibility** to who is using the software?

How can I **monitor** for performance?

How can I stay on top of **configuration** changes?

How can I easily **search** logs for troubleshooting?

Lifecycle Services ☰ > Lane Test project (Immobiliere Global, LLC.)   United States ☺ ⚙ ? Lane

Environment monitoring (LaneTier2)

Overview   Activity   Health metrics   SQL Insights

Some capabilities of the Environment Monitoring page are now deprecated. **More Information**

Raw logs

Query name
All logs ⌄

Start date (UTC)
2025/01/20 13:23:37 📅

End date (UTC)
2025/01/20 13:38:37 📅

Search terms

Note: Multiple search terms are combined as AND conditions.

| TIMESTAMP ↑	Tenant	Role	RoleInstance	Level	ProviderGuid	ProviderName	Event
2025-01-20T13:36:25.2005823Z	b7e96e9e-a77e-473a-bdc9-c52b3ca83043	Interactive	AOS1-b7e96e9e-a77e-473a-bdc9-c52b3ca83043	4	19231b63-445f-48fc-a8df-b1d1a5c362f9	Microsoft-Dynamics-AX-XppRuntime	56
2025-01-20T13:30:25.7117638Z	b7e96e9e-a77e-473a-bdc9-c52b3ca83043	Interactive	AOS1-b7e96e9e-a77e-473a-bdc9-c52b3ca83043	4	56ff7baa-cb5a-470e-bfbb-6161ca6248aa	Microsoft-Dynamics-AX-SecurityManagement	236
2025-01-20T13:30:07.2128813Z	b7e96e9e-a77e-473a-bdc9-c52b3ca83043	Interactive	AOS1-b7e96e9e-a77e-473a-bdc9-c52b3ca83043	4	86c27f7f-2a1a-4900-af02-ab605d56e67b	Microsoft-Dynamics-AX-SysOperation	4
2025-01-20T13:35:45.8908947Z	b7e96e9e-a77e-473a-bdc9-c52b3ca83043	Interactive	AOS1-b7e96e9e-a77e-473a-bdc9-c52b3ca83043	4	19231b63-445f-48fc-a8df-b1d1a5c362f9	Microsoft-Dynamics-AX-XppRuntime	56
2025-01-20T13:35:01.6577636Z	b7e96e9e-a77e-473a-bdc9-c52b3ca83043	Interactive	AOS1-b7e96e9e-a77e-473a-bdc9-c52b3ca83043	5	b518fd3f-6d6f-46d3-bc51-f765226a4fe2	Microsoft-Dynamics-AX-SystemRuntime	1348

Evolving Landscape   Drive to unlock AI-driven scenarios | Growing app sophistication | Evolving regulatory requirements | Increasingly dynamic workforce

Capabilities migration

Feature Set	Direction	Communications
Activity Queries	AppInsights	Message Center, LCS Banner
SQL Insights	AppInsights	Message Center, LCS Banner
Health Metrics	AppInsights	LCS Banner
SQL Actions	Support / Internal Automation	Message Center, LCS Banner

Microsoft Dynamics 365

Dynamics 365
Finance and SCM

Getting started – Monitoring and Telemetry feature

- Configure what type of telemetry to emit.
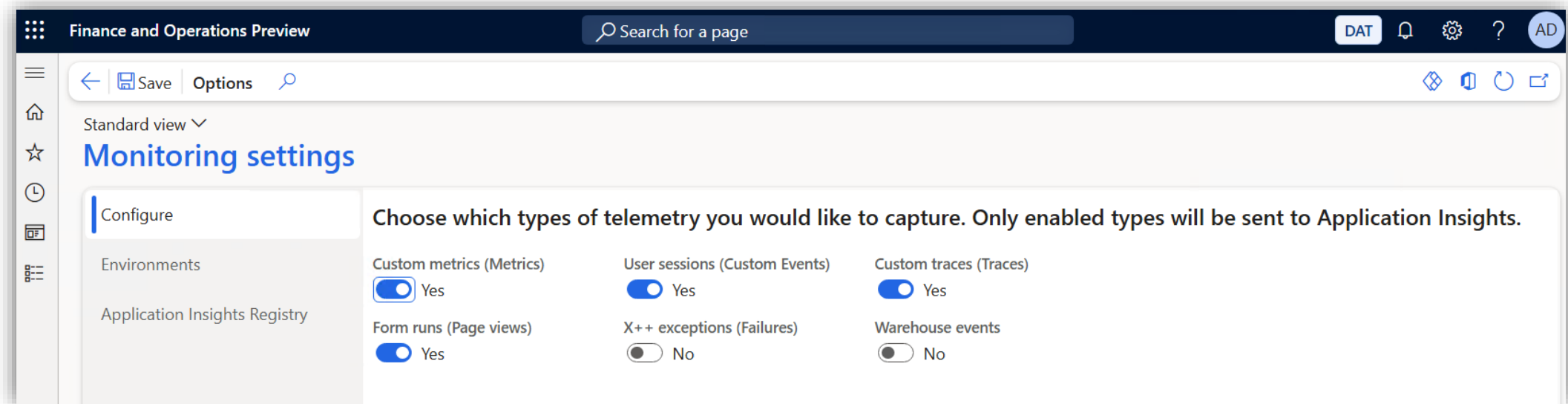
Getting started – Monitoring and Telemetry feature

- Configure the connection to your Application Insights instance.

Dynamics 365 Finance & SCM Available Telemetry

Dynamics 365 Finance & SCM maps 4 main telemetry types to Application Insights tables

Telemetry type	Application Insights table name
Form loads	pageViews
X++ exceptions	Exceptions
Custom Events	customEvents
Custom Metrics	customMetrics

CustomEvents will contain most of the telemetry
- Warehouse related telemetry events
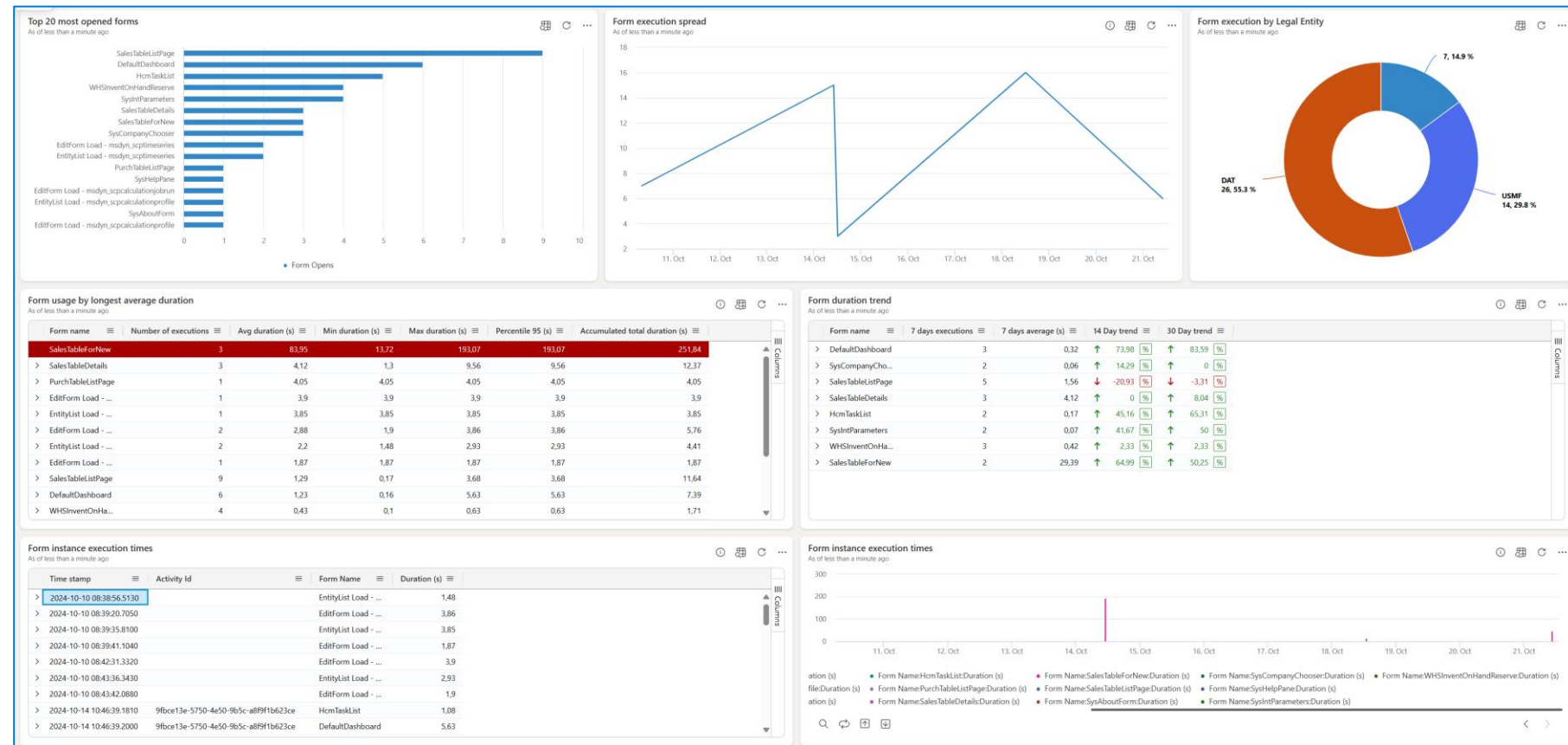- Slow queries
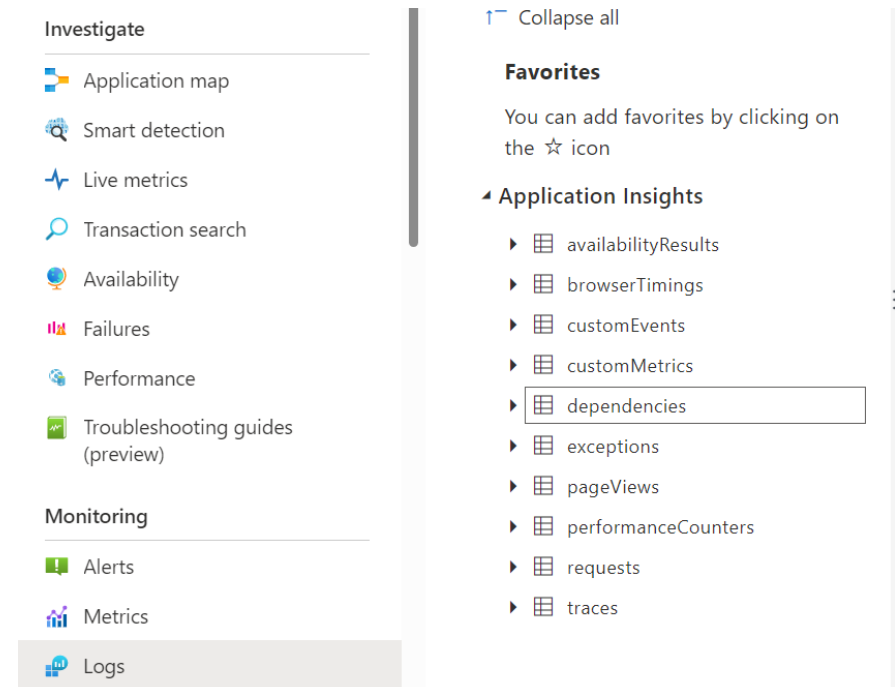
[Monitoring and Telemetry with Microsoft Dynamics 365 Finance and Microsoft Dynamics 365 Supply Chain Management | Microsoft Learn](#)

Finance & SCM – Form loads

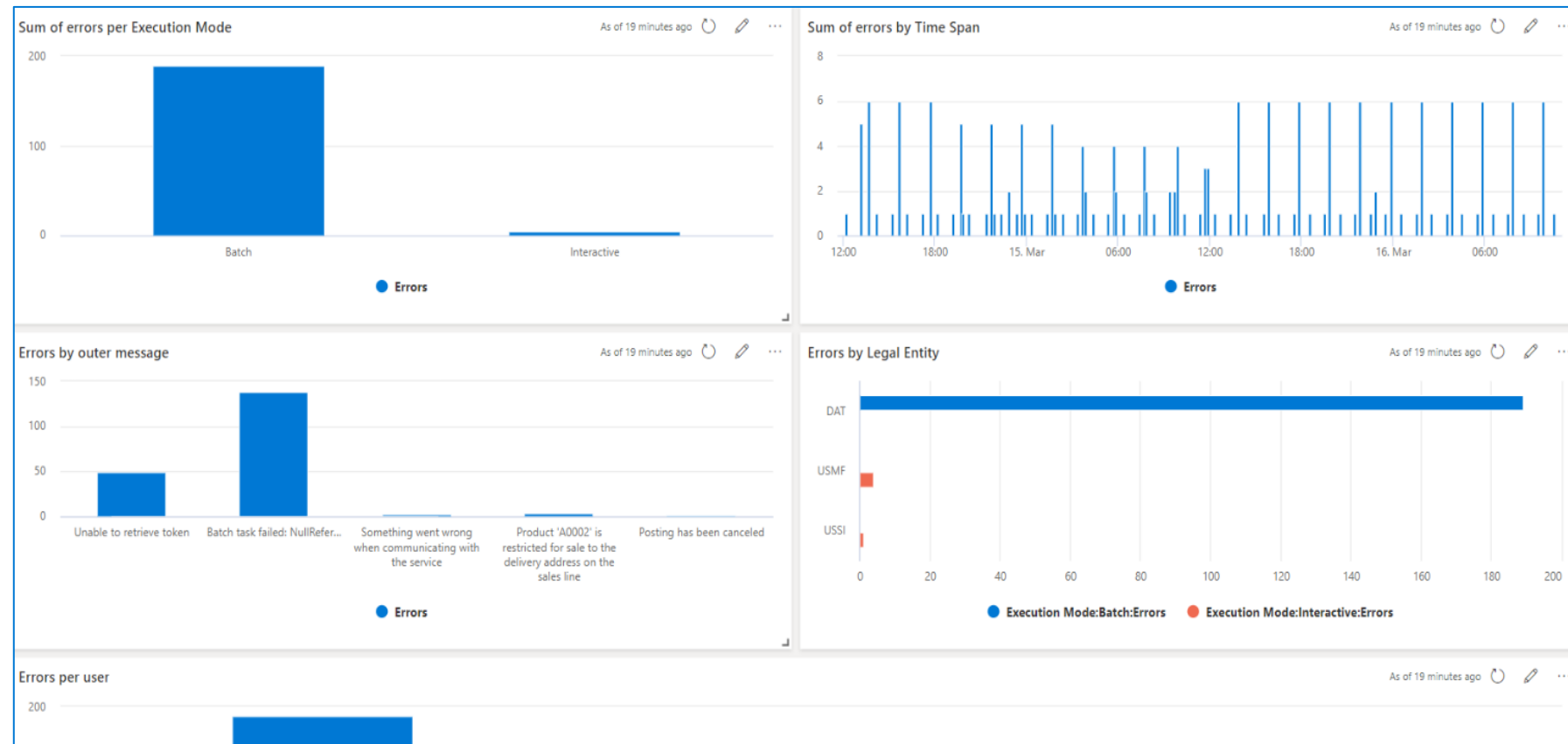Provides telemetry on form executions:

- Most used forms
- Executions, min / max / avg timings
- Form duration trend
- ActivityId correlation

Finance & SCM – X++ errors

Provides telemetry on X++ errors:

- Error information including callstack
- Summarization by execution mode / timeline / error message

Finance & SCM – Slow queries

Provides telemetry on slow query statements reported by the AOS:

- Slow queries by query type
- Top slow queries with callstack
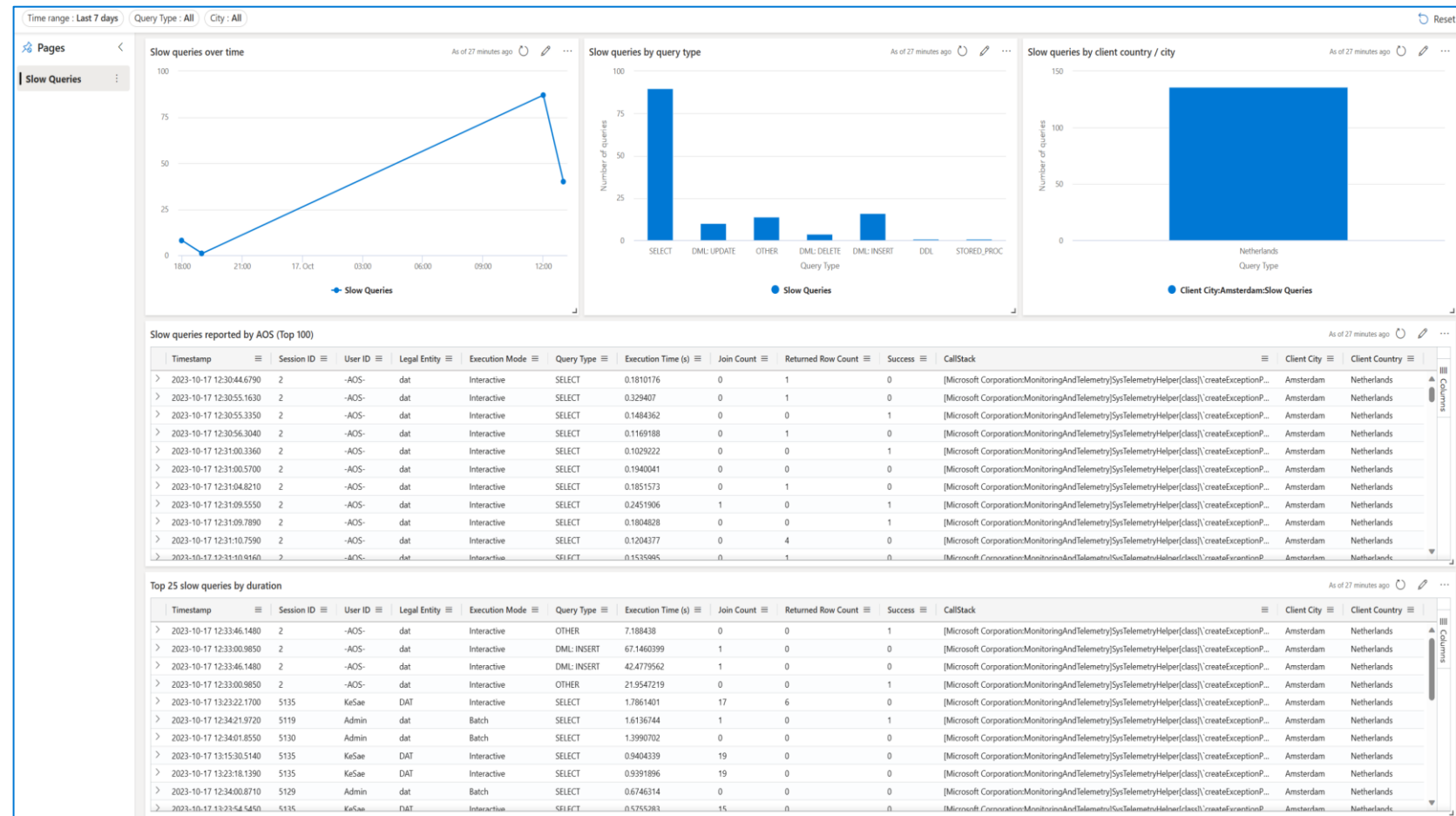
* Requires flight

* Should be used in sandboxes to reproduce issues and in combination with Query Store to retrieve query plans.

https://github.com/microsoft/Dynamics-365-FastTrack-FSCM-Telemetry-Samples

Adding custom telemetry through the API

```
[PostHandlerFor(tableStr(SysUserLog), tableMethodStr(SysUserLog, insert))]
internal static void logUserLogOn(XppPrePostArgs _args)
{
    if(    SysIntParameters::Find().CaptureUserSessions
        && SysApplicationInsightsTelemetryHelper::useSysApplicationInsightsTelemetryLogger())
    {
        SysUserLog  sysUserLog = _args.getThis();
        UserInfo    userInfo;

        select firstonly RecId, ObjectId
            from    userInfo
            where   userInfo.id == sysUserLog.UserId;

        SysApplicationInsightsEventTelemetry eventTelemetry = SysApplicationInsightsEventTelemetry::newFromEventIdName('Admin001', 'UserLogOn');
        eventTelemetry.addProperty(SysApplicationInsightsUserIdProperty::newFromValue(sysUserLog.UserId));
        eventTelemetry.addProperty(SysApplicationInsightsUserObjectIdProperty::newFromValue(guid2Str(userInfo.ObjectId)));
        eventTelemetry.addProperty(SysApplicationInsightsUserLogBuildNumberProperty::newFromValue(sysUserLog.BuildNum));
        eventTelemetry.addProperty(SysApplicationInsightsUserLogSessionIdProperty::newFromValue(int2Str(sysUserLog.SessionId)));
        eventTelemetry.addProperty(SysApplicationInsightsUserLogBuildNumberProperty::newFromValue(sysUserLog.BuildNum));
        eventTelemetry.addProperty(SysApplicationInsightsComputerNameProperty::newFromValue(sysUserLog.Computername));

        SysApplicationInsightsTelemetryLogger::instance().trackEvent(eventTelemetry);
    }
}
```

Custom X++ code

Telemetry Datacontract

SysApplicationInsights TelemetryLogger
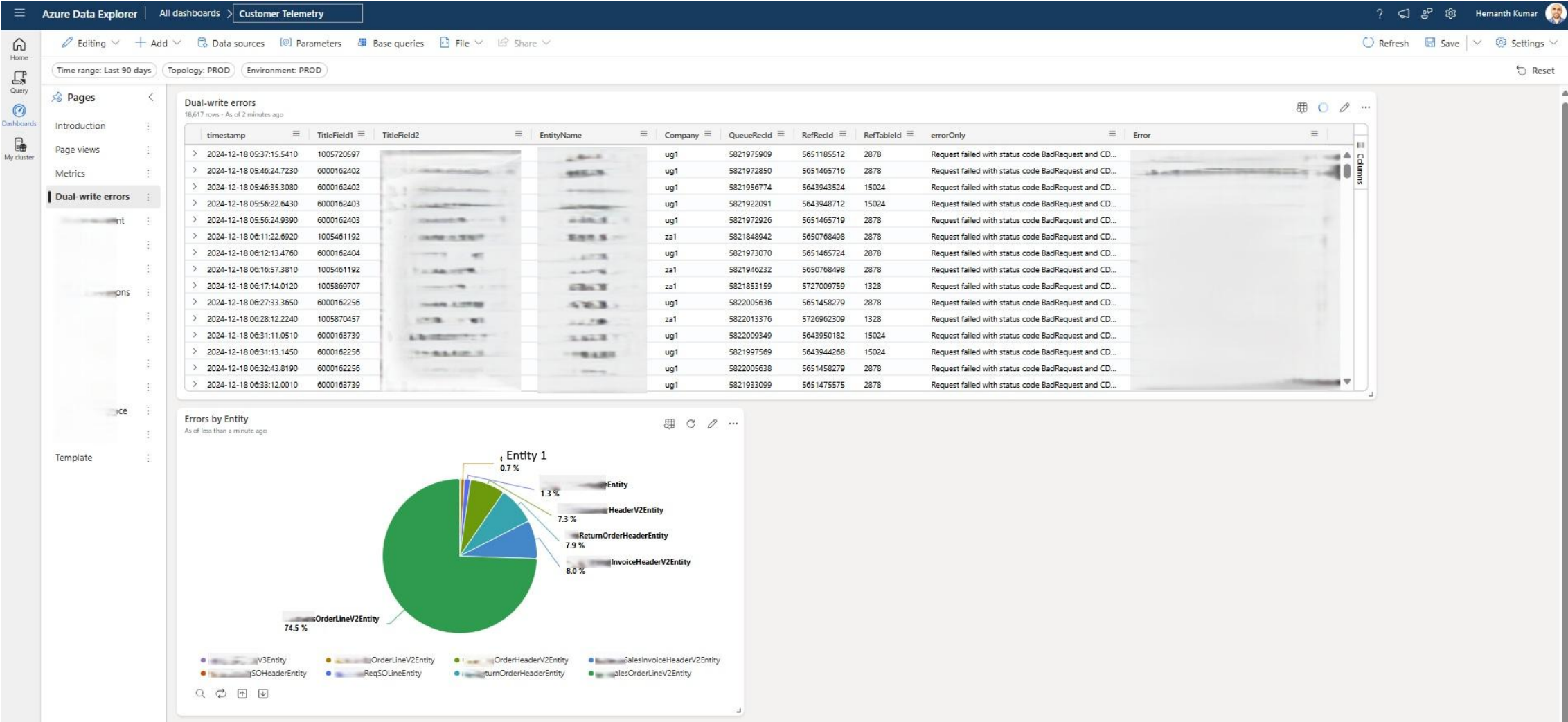
Application Insights resource

Custom dual write telemetry

https://usnconeboxax1aos.cloud.onebox.dynamics.com/?cmp=usmf&mi=DefaultDashboard

Finance and Operations Preview

Search for a page

USMF | Contoso Entertainment System...

Contoso Entertainment System USA

Search people ...

January 2025

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Work items assigned to me

Cash advance request : Record ret...
Expense reports : Record returned
Catalog : catalog approval
Expense reports : Expense report a...
Cash advance request : Cash adva...
Approve travel requisition
Catalog : catalog approval

APPS

Business performance analytics
Business performance planning
Copilot for Finance (Preview)
Demand planning
Human Resources
Inventory Visibility
Invoice capture
Recruiting add-on (Preview)

WORKSPACES

Bank management
Channel deployment
Customer credit and collections
Expense management
Leave and absence
People
Recruitment management
System administration

Benefits
Channel merchandising configuration validator
Customer invoicing
Feature management
Ledger budgets and forecasts
Personnel management
Released product maintenance
Task management

Budget planning
Collections coordinator
Customer payments
Financial analysis - all companies
Maintenance request management
Product readiness for discrete manufacturing
Reservation management
Vendor bidding

Business document management
Commerce pricing and discount management
Data management
Financial analysis - current company
Master planning
Product readiness for process manufacturing
Resource lifecycle management
Vendor information

Business processes for human resources
Compensation management
Data validation checklist
Financial period close
My business processes
Product variant model definition
Retail and Commerce IT
Vendor invoice automation

Business processes for payroll
Confirmed purchase orders with changes
Distributed order management
Fixed asset management
Optimization advisor
Production floor management
Sales order processing and inquiry
Vendor invoice entry

Cash overview - all companies
Cost accounting ledger administration
Electronic reporting
General journal processing
Outbound work monitoring
Project management
Sales return processing
Vendor payments

Cash overview - current company
Cost administration
Employee development
Globalization studio
Outbound work planning
Purchase order confirmation
Store financials
Warehouse implementation tasks

Catalog management
Cost analysis
Employee self service
Invoicing
Payment workspace
Purchase order preparation
Store management
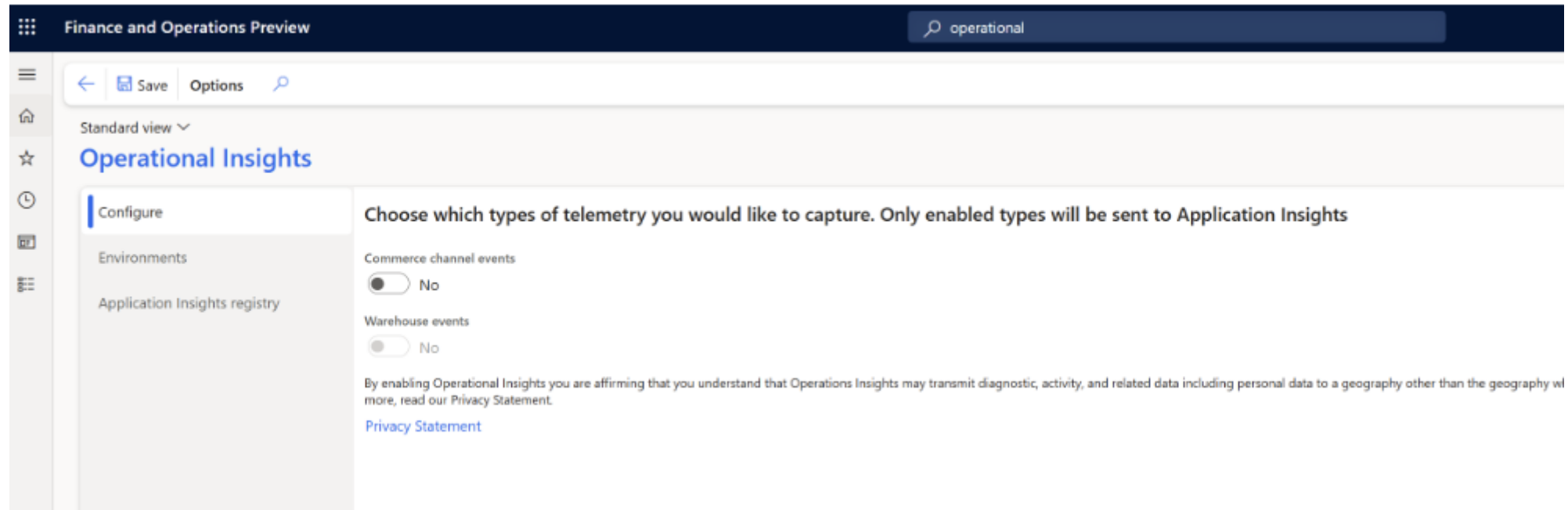Work order management

Microsoft Dynamics 365

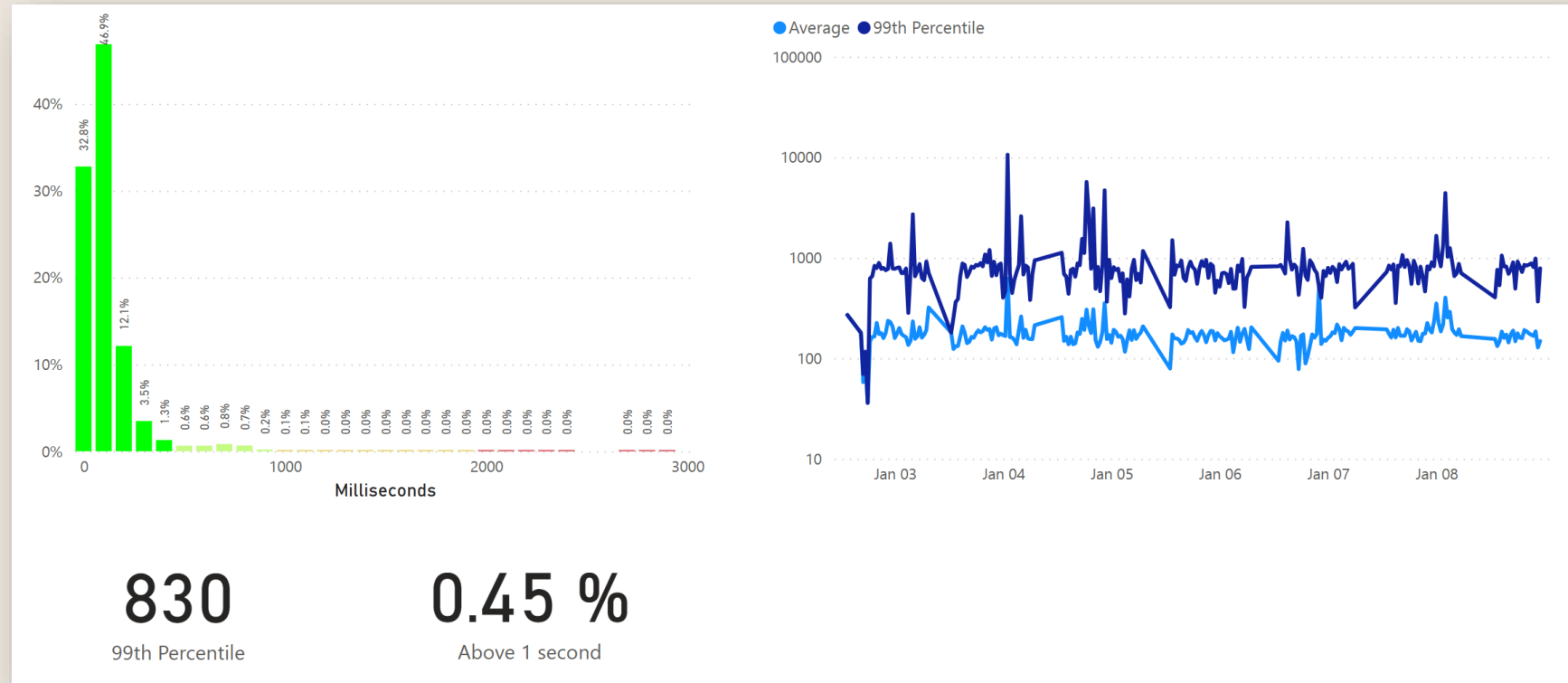# Dynamics 365 Commerce

D365 Commerce Operational Insights

Commerce channels can send performance data, transaction details, and user interaction logs to Application Insights, enabling end-to-end visibility. https://learn.microsoft.com/en-us/dynamics365/commerce/dev-itpro/operational-insights#enable-diagnostic-events-in-application-insights

Microsoft Dynamics 365

D365 Warehouse telemetry

Examples

Understand the responsiveness of mobile devices

Examples

client_OS	client_Model	client_Type	Samples	Authorization	Rendering
And 04.4.3	Zebra Technologies	TC55	33533	62.29	427.50
And 08.1.0	Zebra Technologies	TC51	7	4.57	169.71
And 08.1.0	Zebra Technologies	TC56	96	751.22	199.79
And 08.1.0	Zebra Technologies	TC57	36	107.22	306.03
And 10	Zebra Technologies	TC57	153	11.52	187.59
And 11	Zebra Technologies	TC57	1064	15.36	184.03
Total			**34889**	**62.57**	**418.21**

Understand your fleet of mobile devices
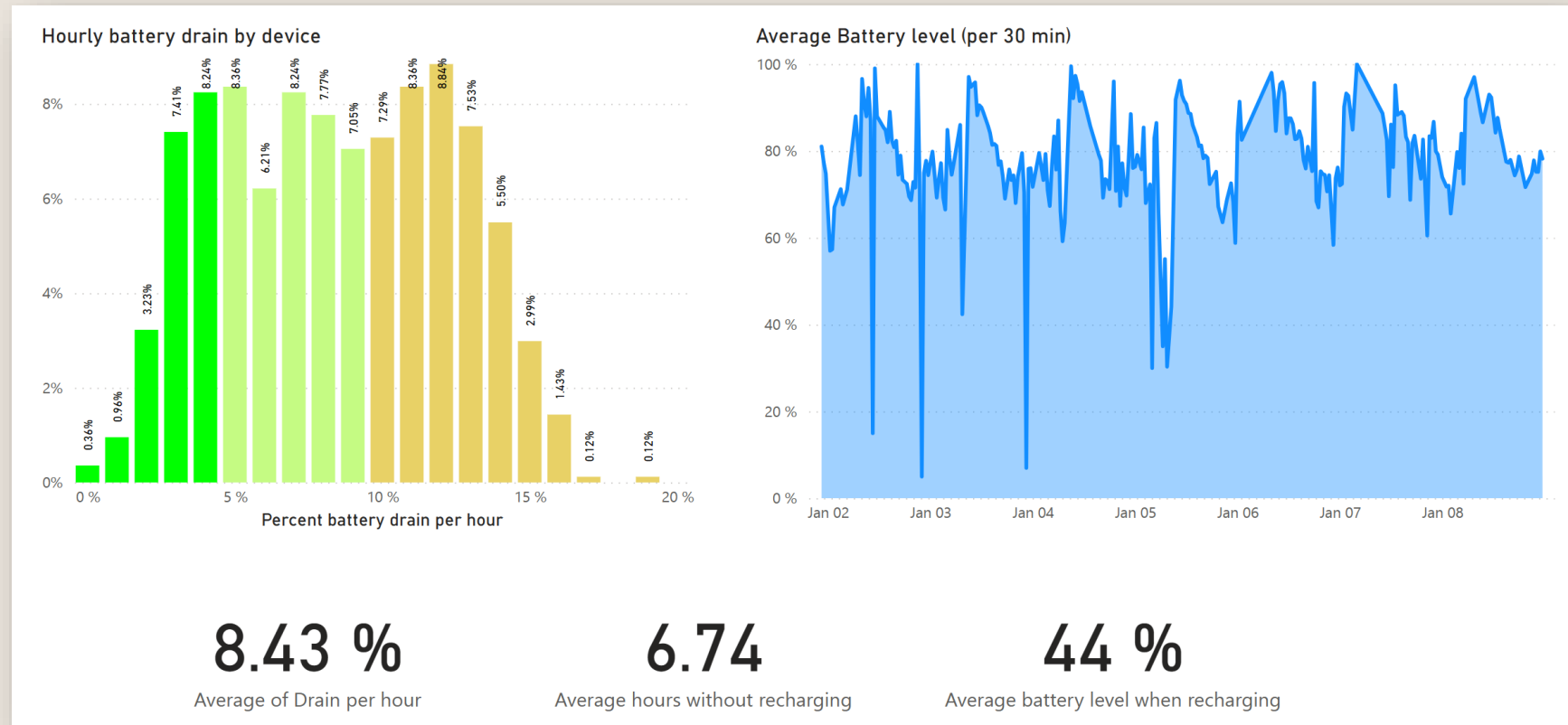
Examples

Understand the battery health of mobile devices

Examples

Transaction type	Work type	Count	Total (ms)	Each (ms)	Locations visited (each)	Location actions (each)
Sales	Pick	710,550	198,277K	279	1.29	1.13
Replenishment	Put	23,559	5,561K	236	4.19	1.09
Replenishment	Pick	17,093	3,428K	201	1.07	1.03
Purch	Put	1,044	3,366K	3,224	11.41	1.29
Invent	Put	1,595	2,304K	1,444	4.36	1.06
TransferIssue	Pick	282	1,084K	3,844	1.20	1.05
SortedInventoryPicking	Put	5,682	916K	161	1.00	1.00
Sales	Put	7,755	755K	97	1.00	1.00
TransferReceipt	Put	62	256K	4,132	138.61	1.98
TransferIssue	Put	273	42K	155	1.00	1.00
Total		**767,895**	**215,989K**	**281**	**184.72**	**10.35**

Understand Location Directives performance

Bring your own App Insights:

Warehouse monitoring and troubleshooting

- OOB insights for monitoring and troubleshooting:
  - Mobile app processing time.
  - Mobile app network latency.
  - Mobile device rendering speed.
  - Mobile device battery usage.
  - Backend next page preparation time.
  - Backend image preparation time.
  - Location directive performance.
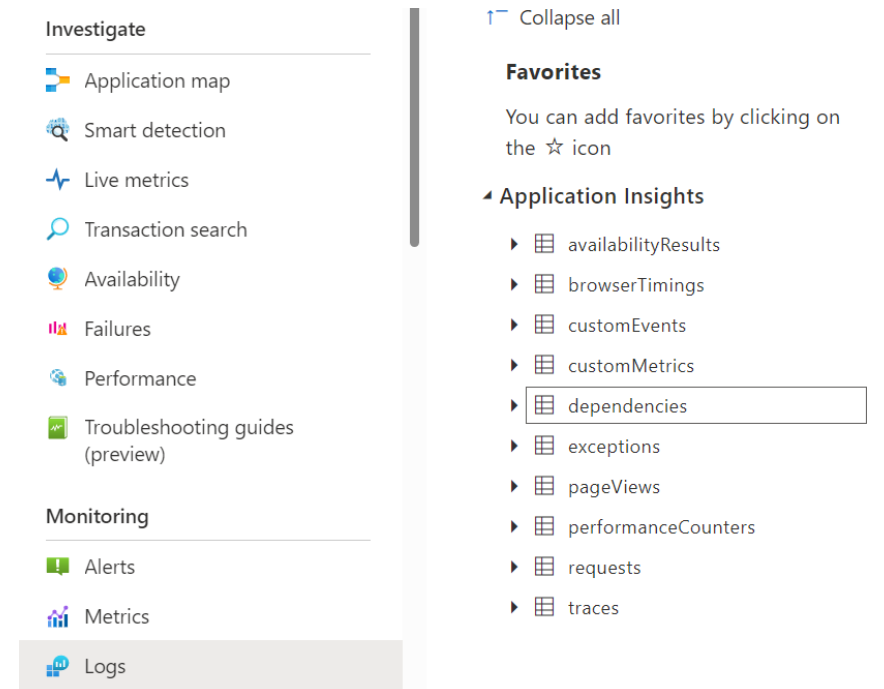 - Wave processing performance.
  - and so on.

https://learn.microsoft.com/en-us/dynamics365/supply-chain/warehousing/application-insights-monitor-usage-performance

Microsoft Dynamics 365
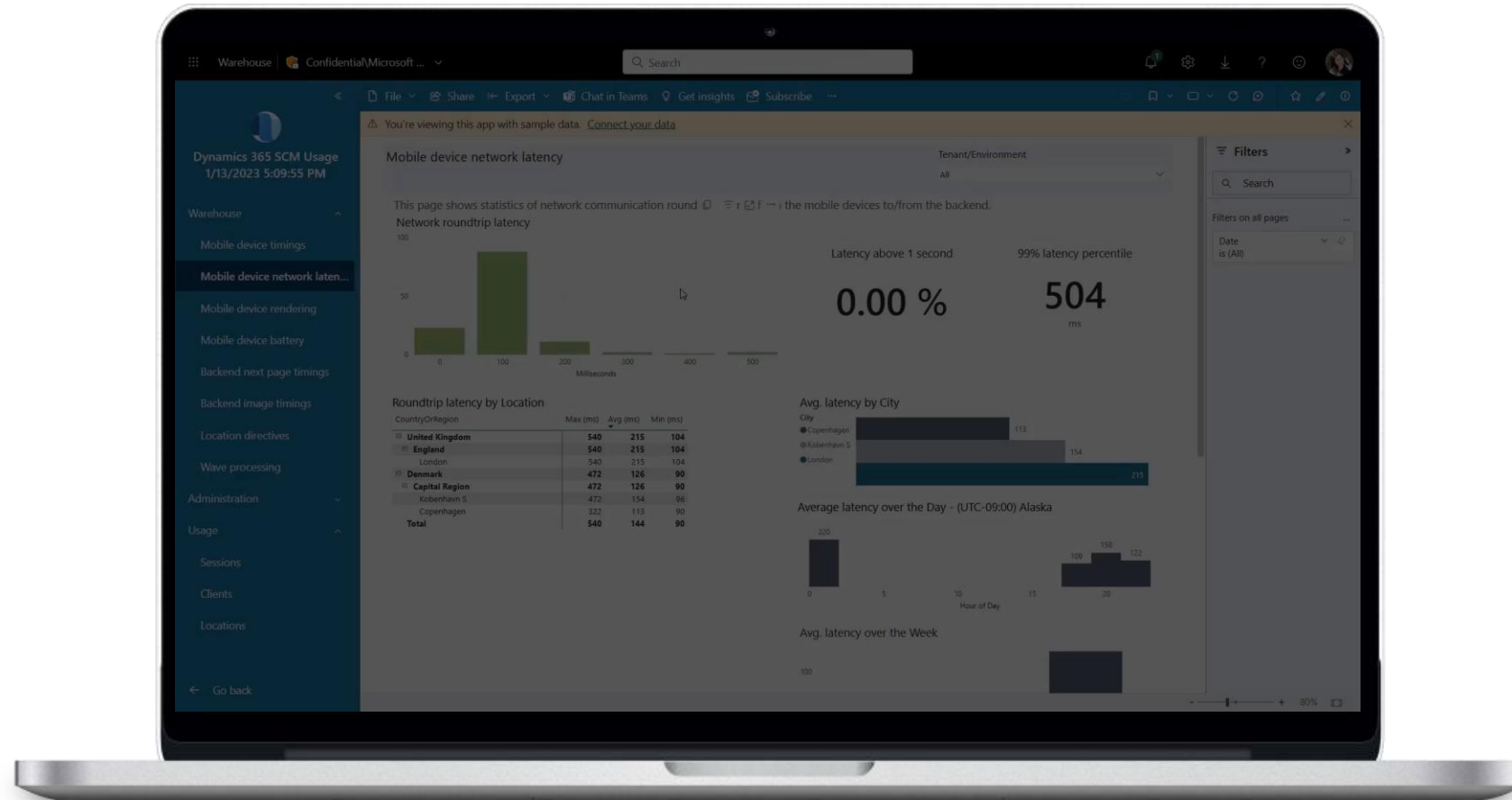
Dataverse
Application Insights

Hemanth Kumar

D365 CE Applications available telemetry

D365 CE telemetry is mapped to standard schema tables defined by App Insights and stored in Logs

Telemetry type	Application Insights table name
Unified Interface page loads	pageViews
Unified Interface outbound network requests	Dependency
Dataverse API incoming calls	Request
Plug-in executions	Dependency
SDK executions (Retrieve, RetrieveMultiple, FetchXML transformation, and so on)	Dependency
Exceptions during the execution of plug-in and SDK calls	Exceptions

Investigate

- Application map
- Smart detection
- Live metrics
- Transaction search
- Availability
- Failures
- Performance
- Troubleshooting guides (preview)

Monitoring

- Alerts
- Metrics
- Logs

↑ Collapse all

Favorites

You can add favorites by clicking on the ☆ icon

▲ Application Insights
- ▸ availabilityResults
- ▸ browserTimings
- ▸ customEvents
- ▸ customMetrics
- ▸ dependencies
- ▸ exceptions
- ▸ pageViews
- ▸ performanceCounters
- ▸ requests
- ▸ traces

[Overview of integration with Application Insights - Power Platform | Microsoft Learn](#)

Key Use Cases

Performance Monitoring

Error Detection

Dependency Analysis

User Interaction Tracking

Callout: "Telemetry provides insights, not activity logs"

Activity Logging and Auditing

Resources

- Application Insights focuses on telemetry and monitoring.
- Use comprehensive auditing for detailed activity logs.
- Admin activity logging for governance and compliance.

- https://learn.microsoft.com/en-us/power-platform/admin/enable-use-comprehensive-auditing

- https://learn.microsoft.com/en-us/power-platform/admin/admin-activity-logging

Implementing Custom Telemetry in Dataverse

Introducing Custom Telemetry:

- Utilize the *ILogger* interface in plug-ins for tailored telemetry.
- Directly logs data to your Application Insights resource.

Benefits:

- Gain deeper insights into custom plug-in performance.
- Facilitate proactive issue detection and resolution.
- Enhance overall system observability.

Reference: [Write Telemetry to your Application Insights resource using Ilogger](#)

Demo

Hemanth Kumar

Microsoft Dynamics 365 for Operations Lab

Power Platform admin center

Try the new admin center

- Home
- Environments
- Environment groups
- Advisor
- Security
- Analytics
- Billing
- Settings
- Copilot
- Resources
- Help + support
- Data integration
- Data (preview)
- Policies
- Admin centers

Welcome, SA
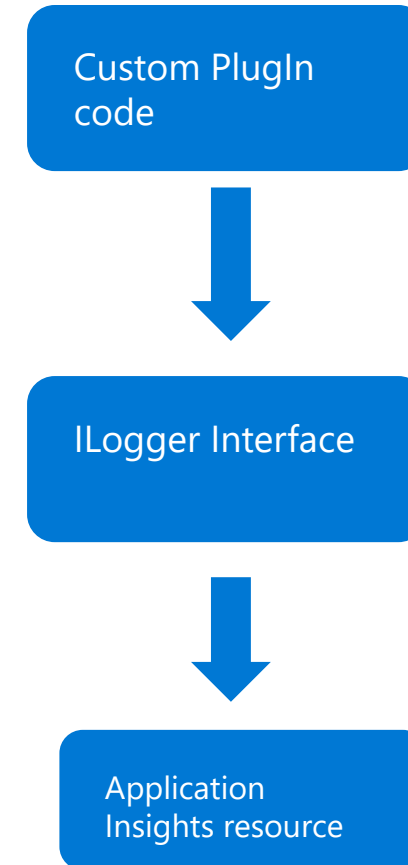
The Power Platform admin center is the place
to manage users, environments, policies, and more.

+ Add cards   Share feedback

Service health

Some advisories reported.

ⓘ 2 advisories

Message center

57 unread messages

- Final Reminder: Upcoming changes to email service notification recipients
- Dynamics 365 Finance and Operations Apps – Transition to Object ID and Tenant ID for user authentication
- Microsoft Copilot Studio – Tenant Graph grounding and autonomous actions
- Power Pages version 9.7.1.1 Pre-Production Release

Show all

Documentation

- 📖 Power Platform admin center
- ⚙ Activate Managed Environment
- ▤ Licensing overview for Microsoft Power Platform
- ❓ Power Apps and Power Automate licensing FAQs
- 🏅 Microsoft Power Platform Center of Excellence Kit
- 📖 Microsoft Power Platform Adoption
- Power Platform Community

Advisor

Recommendation may show for up to a week once acted on.

6 recommendations

Secure agents by setting up data loss prevention policies for Copilot Studio items View details

Review Power Apps license recommendations View details

Improve performance of the websites by migrating them to Bootstrap version 5 View details

Review and move websites from standard data model to enhanced data model View details

Resources

- [Telemetry events for Microsoft Dataverse - Power Platform | Microsoft Learn](#)

- [Application Insights telemetry with Microsoft Dataverse - Dynamics 365 | Microsoft Learn](#)

- [Conversation diagnostics in Azure Application Insights (preview) - Power Platform | Microsoft Learn](#) *-> refer to us for more information on how to access the preview*

- *Email for private preview of Unified Routing diagnostics telemetry in Application Insights:* D365CS_Diagnostics@microsoft.com

- ***Dataverse dashboards :*** [Dynamics-365-FastTrack-Implementation-Assets/Customer Service/ComponentLibrary/AppInsights-Telemetry/Dataverse at master · microsoft/Dynamics-365-FastTrack-Implementation-Assets · GitHub](#)

Microsoft Dynamics 365

D365 Field Service

Dynamics 365 Field Service Monitoring

Monitoring

Leverage standard Model-driven and Dataverse telemetry for Field Service Scenarios including

- Network Availability and Performance
- Page Load Times
- Detailed UCI failure events

Field Service Mobile Offline specific telemetry provides insights into the synchronization process

- Sync Summary
- Sync Errors
- Sync Performance
- Sync payload
- Sync Details
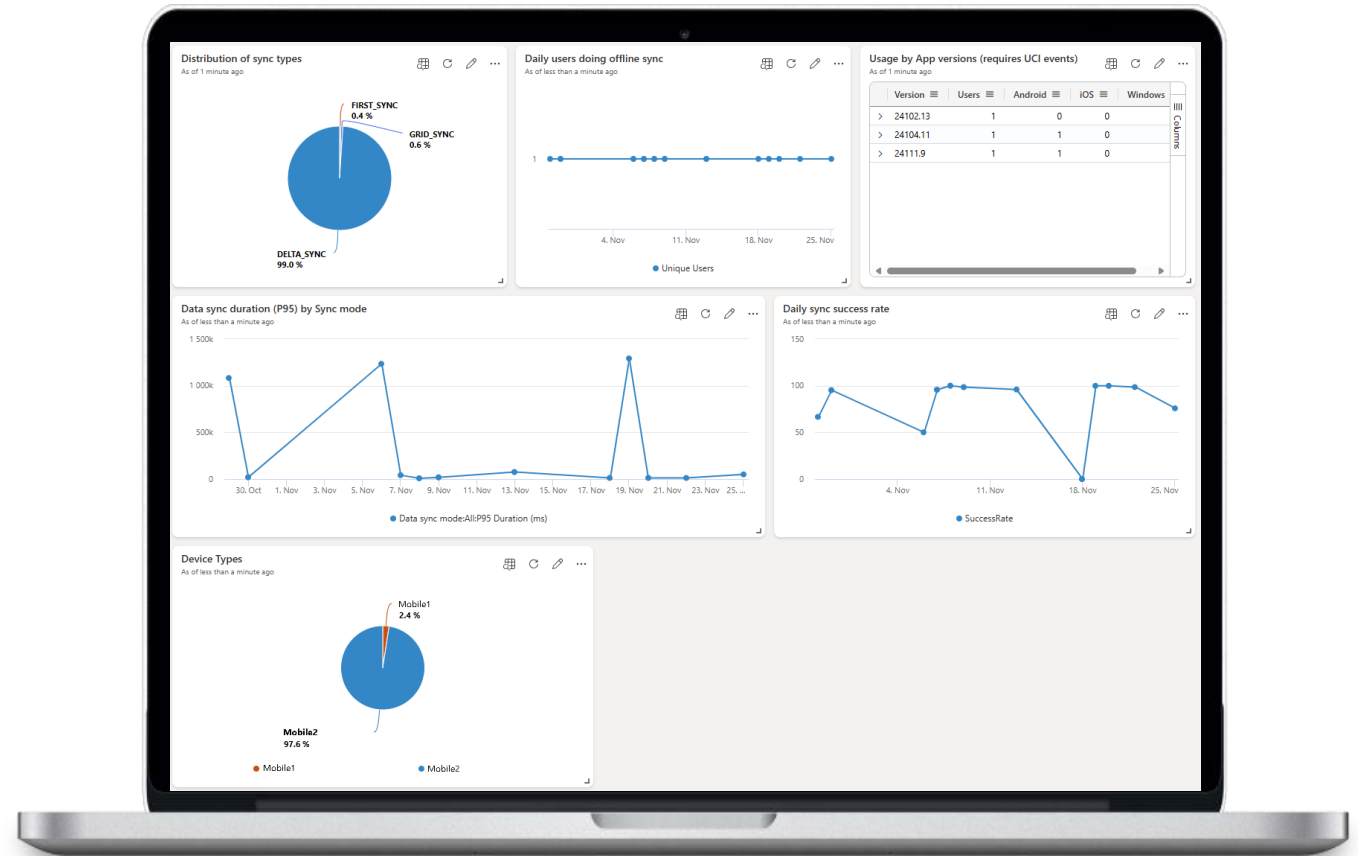
Field Service Mobile Offline Telemetry

- Admins can now proactively identify challenges, monitor Mobile Offline telemetry, and optimize offline sync performance.
  - Gain early visibility into potential issues.
  - Enhance the performance of offline sync processes
  - Keep track of data changes

  Separate telemetry export enabled under **Power Apps -> Mobile app synchronization and actions,** exported to the dependencies table in Azure Application Insights

Distribution of sync types
As of 1 minute ago

- FIRST_SYNC 0.4 %
- GRID_SYNC 0.6 %
- DELTA_SYNC 99.0 %
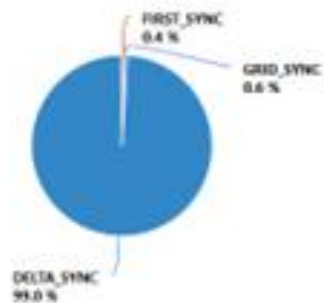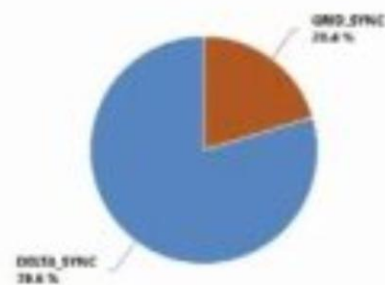
Daily users doing offline sync:
As of less than a minute ago

- Unique Users

Usage by App versions (requires UCI events)
As of 1 minute ago

Version	Users	Android	iOS	Windows
> 24102.13	1	0	0	
> 24104.11	1	1	0	
> 24111.9	1	1	0	

Data sync duration (P95) by Sync mode
As of less than a minute ago

- Data sync mode:A0:P95 Duration (ms)
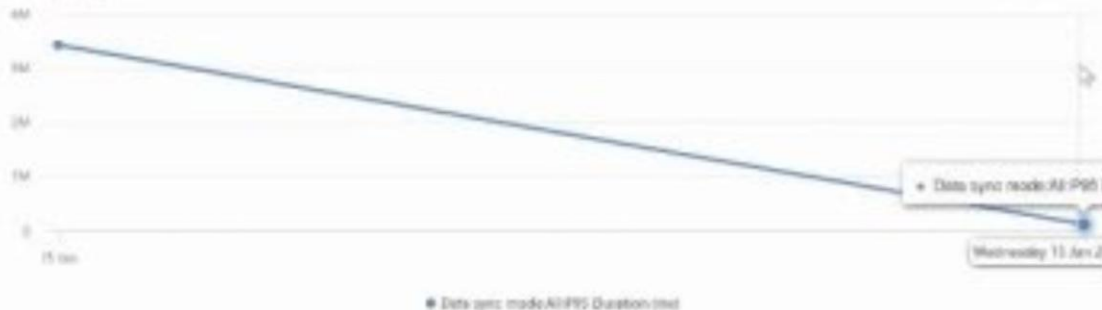
Daily sync success rate
As of less than a minute ago

- SuccessRate

Device Types
As of less than a minute ago

- samsung SM-A536B 2.4 %
- LENOVO 20Y0S02830 97.6 %

- samsung SM-A536B
- LENOVO 20Y0S02830

Microsoft Dynamics 365

Alerting Setup

Alerts

Microsoft Dynamics 365

Application Insights Cost Model

Application Insights Cost Model

Understanding the Azure Monitor costing model

- Azure monitor pricing calculator

  - [Azure Monitor cost and usage - Azure Monitor | Microsoft Learn](#)

- Ingestion, retention, and export of data in Log Analytics workspaces is the main cost driver.

Cost optimization best practices

- Configure the right pricing tier for storage based on overall estimated data volume.

  - https://learn.microsoft.com/en-us/azure/azure-monitor/logs/data-platform-logs#table-plans

- Configure data retention and archiving.

  - [Manage data retention in a Log Analytics workspace - Azure Monitor | Microsoft Learn](#)

- Setup alerting for high data collection.

- Set up alerts on Azure Advisor cost recommendations for Log Analytics workspaces.

- Use configuration / sampling / filtering where possible to reduce unneeded telemetry.

[Understand and control costs - Finance & Operations | Dynamics 365 | Microsoft Learn](#)

Cost Model – Plan comparison
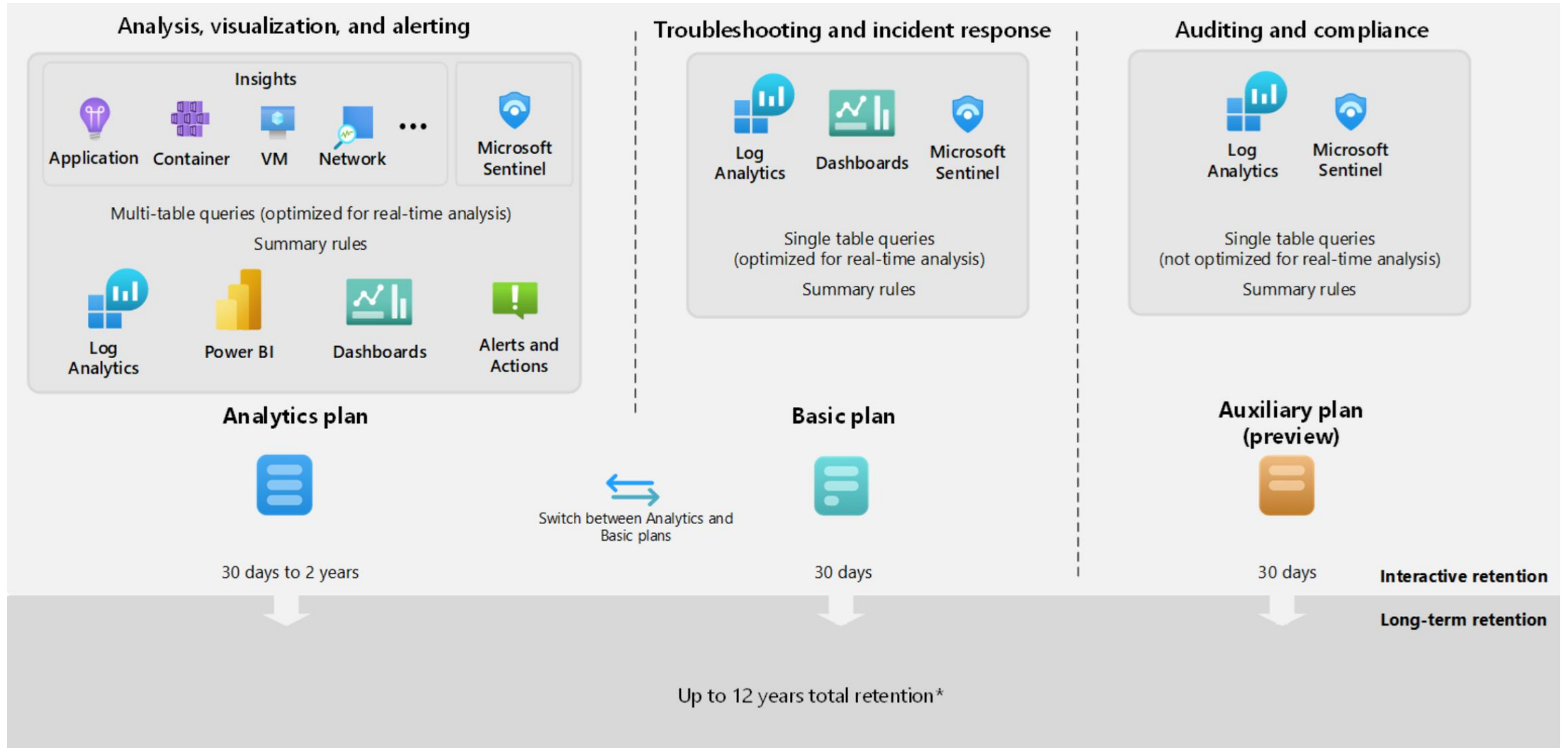
Cost Model – Different types of data retention

Azure Monitor cost and usage - Azure Monitor | Microsoft Learn

Microsoft Dynamics 365
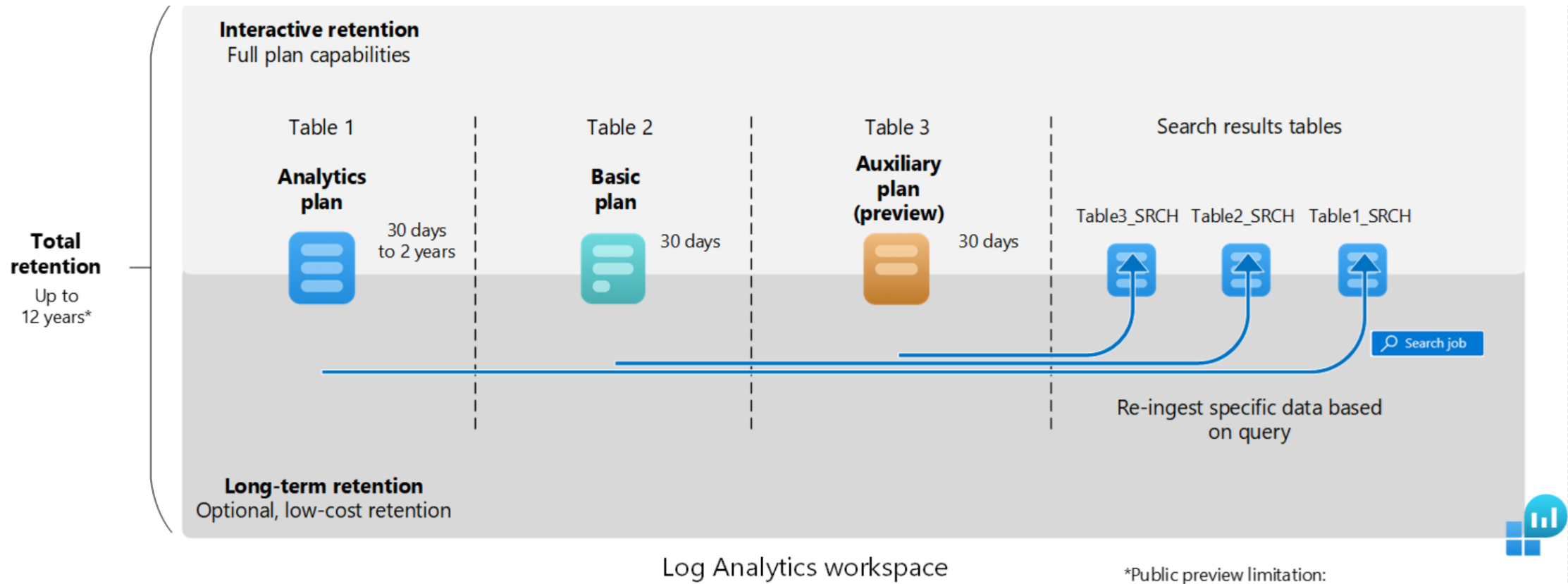
Resources

Field Service Mobile Offline Resources

[Telemetry events for mobile app synchronization and actions (preview) - Power Platform | Microsoft Learn](#)

[Sample telemetry dashboard for Field Service mobile app offline profile usage - Dynamics 365 | Microsoft Learn](#)

Follow the series of Mobile Offline best practices for assistance in mitigating common issues [Best Practices for Offline Mode in the Field Service mobile app - Part 1 - Microsoft Dynamics 365 Blog](#)

Microsoft Learn articles:
- **Warehouse**
- **Finance and SCM**
- **Dataverse Ilogger Interface**

Application Insights dashboard Resources:
- **Fast Track telemetry samples**
- **Dataverse dashboards**
- **Field service dashboard**

Prerequisites for using Application Insights in D365

1. Azure Subscription

2. Application Insights environment (Requires Contributor, Writer or Admin rights)

3. Application insights environment must be unique for an environment or tenant

4. Dataverse Environment (For Power Platform and D365 CE)

5. The feature is turned on & supported for Managed Environments only (For Power Platform)

Let's stay connected!

- FastTrack LinkedIn
  - https://www.linkedin.com/company/fasttrackdynamics365/
- Dynamics 365 Community YouTube page
  - https://www.youtube.com/@MSD365Community/
- Subscribe for upcoming TechTalk notification
  - https://aka.ms/D365TechTalksSubscribe
- Ask questions or suggest ideas to FastTrack for App Insights here
  - d365AppInsights@microsoft.com
- Application Insights Viva Engage:
  - (730) Viva Engage : Dynamics 365 and Power Platform Preview Programs : AppInsights Integration for Telemetry and Debugging : New Conversations

Thank you