

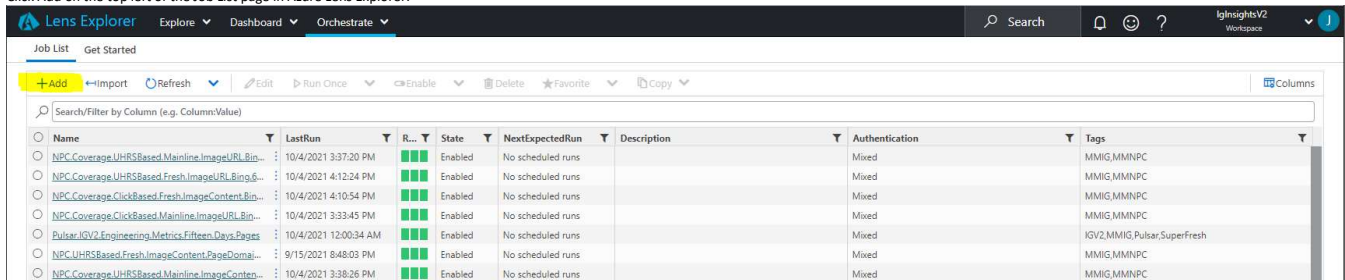
For kKibana to ADE + IcM

Friday, October 1, 2021 5:39 PM

Moving Data from Cosmos Stream to Kusto Table

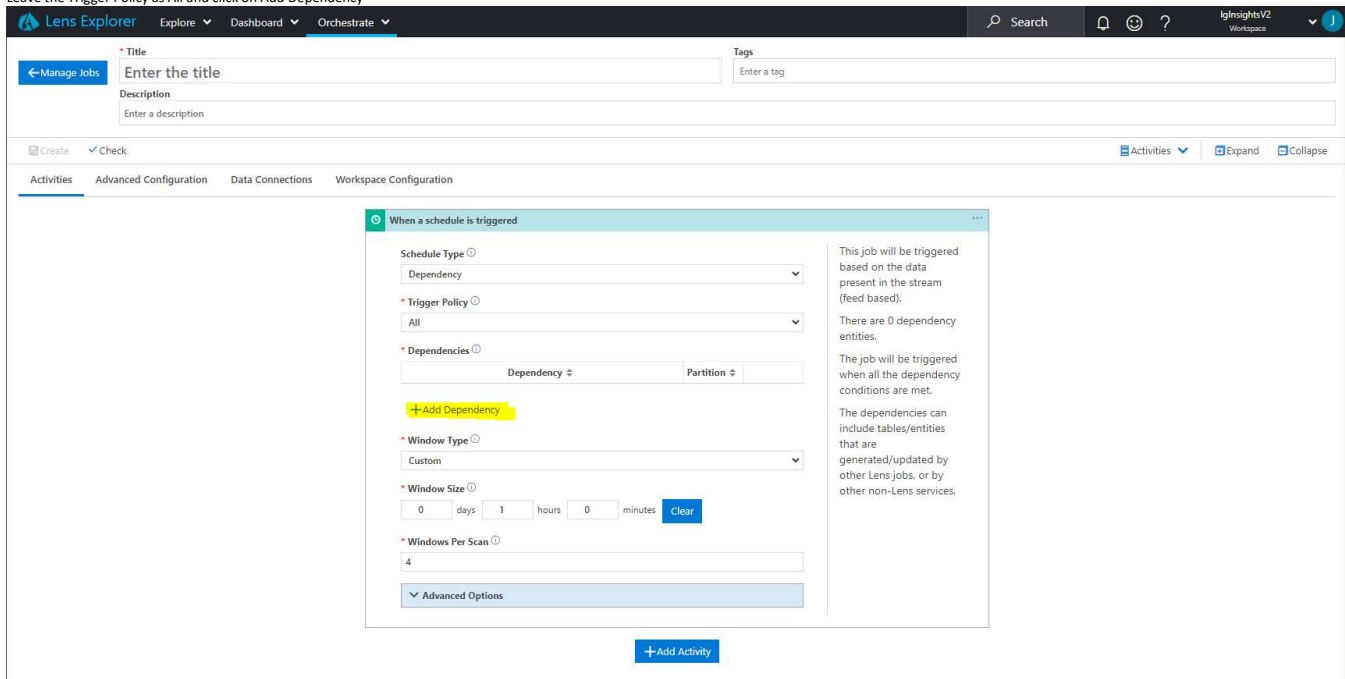
1. Find your Cosmos data stream in [Source Status - Data Insights \(ap.gbl\)](#) (ex: [Pulsar IGV2 Engineering Metrics Fifteen Days - Page 01/EngineeringUniversalGDI_FifteenDays/EngineeringGoldenSetCoverage-Page.ss \(osinfra.net\)](#))
2. Before we can inject the Cosmos data stream into Kusto, we need to make sure that the stream has a Date column of type DateTime ([COSMOS cosmos/MMRepository.prod/local/Prod/Image/Metrics/Superfresh/Reports/Pulsar/2021_10_01/EngineeringUniversalGDI_FifteenDays/EngineeringGoldenSetCoverage-Page.ss \(osinfra.net\)](#))
3. Within [Azure Lens Explorer](#), create an ingestion job from Cosmos to Kusto

1. Click Add on the top left of the Job List page in Azure Lens Explorer:



Name	LastRun	R...	State	NextExpectedRun	Description	Authentication	Tags
NPC.Coverage.UHRSBased.Mainline.ImageURL.Bin...	10/4/2021 3:37:20 PM		Enabled	No scheduled runs		Mixed	MMIG,MMNPC
NPC.Coverage.UHRSBased.Fresh.ImageURL.Bing...	10/4/2021 4:12:24 PM		Enabled	No scheduled runs		Mixed	MMIG,MMNPC
NPC.Coverage.ClickBased.Fresh.ImageContent.Bin...	10/4/2021 4:10:54 PM		Enabled	No scheduled runs		Mixed	MMIG,MMNPC
NPC.Coverage.ClickBased.Mainline.ImageURL.Bin...	10/4/2021 3:33:45 PM		Enabled	No scheduled runs		Mixed	MMIG,MMNPC
Pulsar.IGV2.Engineering.Metrics.Fifteen.Days.Pages	10/4/2021 12:00:34 AM		Enabled	No scheduled runs		Mixed	IGV2,MMIG,Pulsar,Superfresh
NPC.UHRSBased.Fresh.ImageContent.PageDomai...	9/15/2021 8:48:03 PM		Enabled	No scheduled runs		Mixed	MMIG,MMNPC
NPC.Coverage.UHRSBased.Mainline.ImageConten...	10/4/2021 3:38:26 PM		Enabled	No scheduled runs		Mixed	MMIG,MMNPC

2. Enter a title for your Cosmos to Kusto ingestion job (add Tags for easier filtering and sorting later in the Job List page)
3. Set the Schedule Type to Dependency meaning that the ingestion job will trigger everytime a new Cosmos stream is created
4. Leave the Trigger Policy as All and click on Add Dependency



Title
Enter the title

Tags
Enter a tag

Description
Enter a description

Create ☒ Check

Activities Advanced Configuration Data Connections Workspace Configuration

When a schedule is triggered

Schedule Type
Dependency

Trigger Policy
All

Dependencies

Dependency Partition

+Add Dependency

Window Type
Custom

Window Size
0 days 1 hours 0 minutes Clear

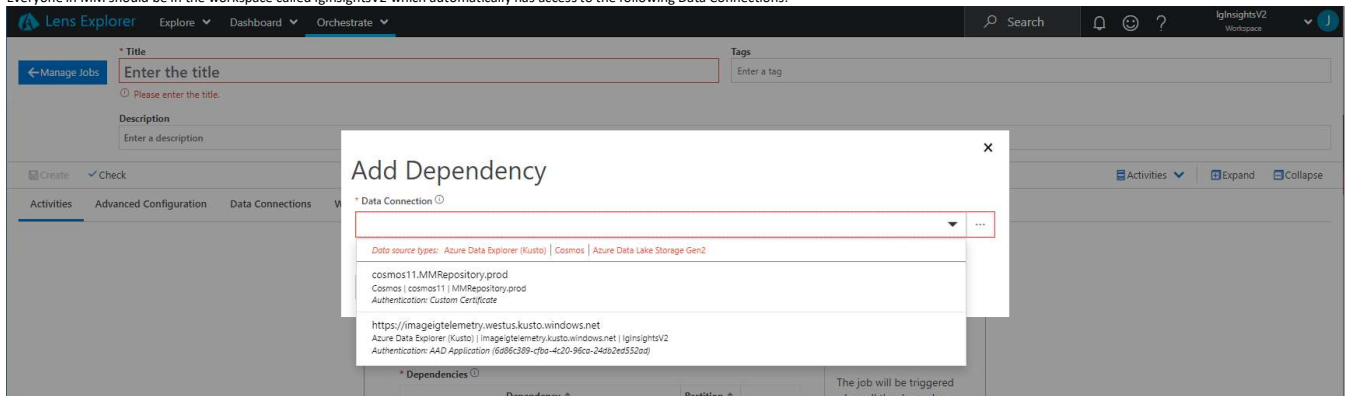
Windows Per Scan
4

Advanced Options

+Add Activity

This job will be triggered based on the data present in the stream (feed based). There are 0 dependency entities. The job will be triggered when all the dependency conditions are met. The dependencies can include tables/entities that are generated/updated by other Lens jobs, or by other non-Lens services.

5. Everyone in MM should be in the workspace called IgInsightsV2 which automatically has access to the following Data Connections:



Title
Enter the title

Tags
Enter a tag

Description
Enter a description

Create ☒ Check

Activities Advanced Configuration Data Connections Workspace Configuration

Add Dependency

Data Connection

Data source types: Azure Data Explorer (Kusto) | Cosmos | Azure Data Lake Storage Gen2

cosmos11.MMRepository.prod
Cosmos | cosmos11 | MMRepository.prod
Authentication: Custom Certificate

https://imageigtelemetry.westus.kusto.windows.net
Azure Data Explorer (Kusto) | imageigtelemetry.kusto.windows.net | IgInsightsV2
Authentication: AAD Application (6d86c389-fba-4c20-96ca-246b2e552ad)

Dependencies

Dependency Partition

The job will be triggered when all the dependency

6. Put in your Cosmos stream in here following the example shown in the following screenshot

Edit Dependency

Data Connection

Cosmos | Cosmos11MMRepository.Prod

Entity

Geneva Data | **Cosmos Stream**

Stream Name / Folder

/local/Prod/Image/Metrics/Superfresh/Reports/Pulsar/

Pattern

%Y_%m_%d/EngineeringUniversalGDI_FifteenDays/EngineeringGoldenSetCoverage-Page.ss

Partition Size

1 days 0 hours 0 minutes **Clear**

Save **Cancel**

7. You can also specify which day you want this ingestion stream to begin, i.e. when to start backfilling

Advanced Options

Re-Trigger Policy

Never

Start Time

21 September, 2021 10 : 29 PM UTC

☐ **Run Oldest First**

Submission Delay

0 days 0 hours 15 minutes **Clear**

☒ **Only Finished Windows**

Timeout

0 days 0 hours 0 minutes **Clear**

8. The next step is to edit the Process data block and put in the same information as above in the Source portion (this is the Cosmos data stream you are injecting) and then make sure to select the correct Kusto data connection (imageig telemetry)

Process data

Source

Data Connection

Cosmos | Cosmos11MMRepository.Prod

Entity

Geneva Data | **Cosmos Stream**

Stream Name / Folder

/local/Prod/Image/Metrics/Superfresh/Reports/Pulsar/

Pattern

%Y_%m_%d/EngineeringUniversalGDI_FifteenDays/EngineeringGoldenSetCoverage-

Target

Data Connection

Azure Data Explorer (Kusto) | **https://imageigtelemetry.westus.kusto.windows.net**

Data source types: Azure Data Explorer (Kusto) | Azure Storage | Geneva Metrics (MDM) | SQL

Advanced Options

Retry Configuration

Parameters

This is a data processing/movement activity.
It moves data from Cosmos to a Kusto table.
This activity will replace/update the recent time window.
If this activity fails, the job will be failed immediately, there will be no retries.

9. Now you can specify the name of the table that you want the data to ingest to, note that it cannot contain special characters such as '.' or ''

Process data

Source

* Data Connection

Cosmos | Cosmos11MMRepositoryProd

Entity

Geneva Data | **Cosmos Stream**

* Stream Name / Folder

/local/Prod/Image/Metrics/Superfresh/Reports/Pulsar/

Pattern

%Y_%m_%d/EngineeringUniversalGDI_FifteenDays/EngineeringGoldenSetCoverage-

Target

* Data Connection

Azure Data Explorer (Kusto) | **Https://Imageigtelemetry.Westus.Kusto.Windows.Net**

* Table

PulsarIGV2EngineeringMetricsFifteenDaysPages

* Table Type

Append (Timeseries)

Advanced Options

Retry Configuration

Parameters

This is a data processing/movement activity.
It moves data from Cosmos to a Kusto table.
This activity will replace/update the recent time window.
If this activity fails, the job will be failed immediately, there will be no retries.

10. Once you press Save this lens explorer job will automatically start to scan the Cosmos stream path you have provided and begin ingesting data into the Kusto table. (easiest way to check is through imageigtelemetry.westus.lginsightsV2 | [Azure Data Explorer](#), your table should appear under imageigtelemetry.westus - lginshgtsV2

Visualizing in Azure Data Explorer [See below for visualization in Jarvis]

- Now that the Cosmos data is in Kusto, we can start to visualize the data in the table
- A good way to learn how to write Kusto queries is to use the command EXPLAIN, this allows you to type SQL queries and have them translated directly to Kusto Query Language

3.

Scope: @imageigtelemetry.westus.lginsightsV2

```

1 EXPLAIN
2 SELECT * FROM PulsarIGV2EngineeringMetricsFifteenDaysPages

```

Table 1 | Stats

Search | UTC | Done (0.074 s) | 1 records

Query

```

1 "Query": PulsarIGV2EngineeringMetricsFifteenDaysPages
2 | project PageStageName, PageStageLossName, PageBucket, NoduleStageName, NoduleStageLossName, NoduleBucket, IGV2, CumulativeIGV2,
3 Date,

```

4. Now in order to visualize the data within the Kusto Table that you have created, you will need to first create a dashboard

Azure Data Explorer | All dashboards

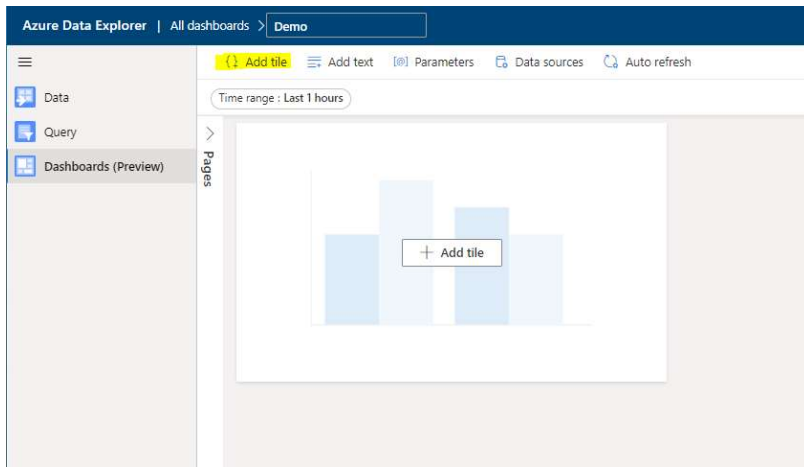
125 New dashboards

Search your dashboards...

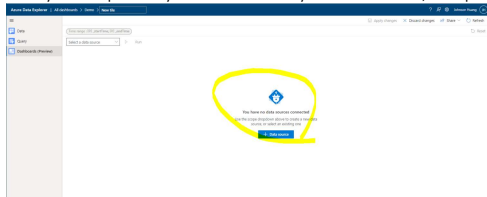
All (5) | Recent (5) | Favorites (0)

Name ?	Last accessed	Created date	Created by
NPC - Fresh Clicked	7 days ago	8/13/2021	Johnson Huang
NPC - Fresh Scaped	14 days ago	8/12/2021	Johnson Huang
NPC - Mainline Clicked	7 days ago	8/9/2021	Johnson Huang
NPC - Mainline Scaped	4 days ago	8/12/2021	Johnson Huang
Pulsar	3 days ago	8/30/2021	Johnson Huang

5. And you want to click add tile to start creating individual visualizations



6. When you attempt to add your first tile in a newly created dashboard, it will prompt you to connect the said dashboard to a specific data source



7. Fill in the data source as specified in the below screenshot (this is the configuration for our team's workspace but you can have a different Database if you desire)

×

Edit data source

Data source name

imageigtelemetry.westus

Cluster URI *

https://imageigtelemetry.westus.kusto.windows.net/

Connect

Database *

IgInsightsV2

8. You can write any sort of Kusto queries to visualize your data, the example shown is for grouping different IGV2 numbers by their respective stages and date

?

Johnson Huang

JH

Apply changes

Discard changes

Share

Refresh

Reset

Time range: Last 30 days

Bucket: [0]_bucket

Market: [0]_market

imageigtelemetry.westus

Run

```

1 let ['startTime'] = _startTime;
2 let ['endTime'] = _endTime;
3 PulsarIGV2EngineeringMetricsFifteenDaysPages
4 | where Date > _startTime and Date <= _endTime
5 | project CumulativeIGV2, Date, PageStageName, ModuleStageName
6 | summarize Coverage = max(CumulativeIGV2) by __sql_add('__sql_add(PageStageName, " | ")", ModuleStageName), bin(Date, 1d);
7
8

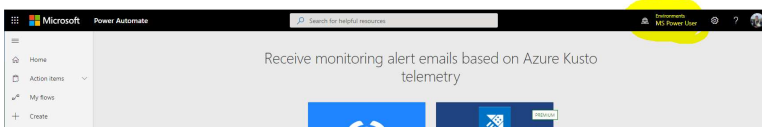
```

You can format the visual only from the visual tab

9. You can choose from a variety of different graphs as well as parameters, more info here: [Visualize data with the Azure Data Explorer dashboard | Microsoft Docs](#)

Setting up Icm & Email Alerts

- We use Microsoft Flow to automate alerts (Icm/email)
- Flow uses multiple Connectors to create a flow of actions that are interdependent on each other
- If you are looking for email alerts only, you can use this template to create email alerts based on a Kusto query: [Receive monitoring alert emails based on Azure Kusto telemetry | Microsoft Power Automate](#)
- In order to automatically create ICM tickets, we will need to gain access to the Flow environment MS Power User (the old ICM connector was deprecated: [Power Automate ICM Connector Deprecation \(microsoft.com\)](#))
- A new connector has been rewritten by the CSEO team ([MS Digital Power Platform and Dynamics Governance - CSEO Power Platform Wiki - Home \(sharepoint.com\)](#))
- Follow the instructions here to gain access for MS Power User: [MS Digital Power Platform and Dynamics Governance - CSEO Power Platform Wiki - Home \(sharepoint.com\)](#)
- Access will be granted between 24-48 hours, once you have access, make sure to switch your environment to MS Power User before attempting to create a Flow using ICM connector



8. Using the same template as above ([Receive monitoring alert emails based on Azure Kusto telemetry | Microsoft Power Automate](#)), write the appropriate Kusto query that will trigger an alert like the one below
9. This particular flow runs the Kusto query to check if any results are returned where the cumulative IGV2 of the Pulsar Page level table drops below 0.7, if it does then we will trigger the flow to send an email + open an ICM incident

Initialize variable KustoQuery

Set KustoQuery variable

Name: KustoQuery

Type: String

Value:

```
PulsarIGV2[EngineeringMetricsPresetDaysPages]
| where Date >= ago(1d) and PageStageName <= 'LighDU success' and
NodeStageName <= 'Published and notified back'
| project Stage = __setAddSetAdd(PageStageName, '1'),
NodeStageName, CumulativeIGV2, Date
| summarize Coverage = max(CumulativeIGV2) by Stage, bin(Date, 1d)
| where Coverage < 0.7
```

Initialize variable AlertAction

Set AlertAction variable (If left blank no Action will be added to the Email Alert)

Name: AlertAction

Type: String

Value: Enter initial value

Run query and list results (Preview)

Set Kusto Cluster Name (URL) and Database Name

Cluster URL: https://imagejetelemetry-nexuskusto.windows.net/

Database Name: igvnightv2

Query: KustoQuery

Condition

If KustoQuery returns results then send email else do nothing

10. After creating the trigger, you can now add an action to send an ICM incident based on the Kusto query

If yes

Create HTML table

Compose

Send an email

Choose an operation

Search: Icm

Filters: All, Built-in, Standard, Premium, Custom, My clipboard

Results:

- Workday HCM
- IA-Connect Session
- Cleveland e image
- ICM Connector

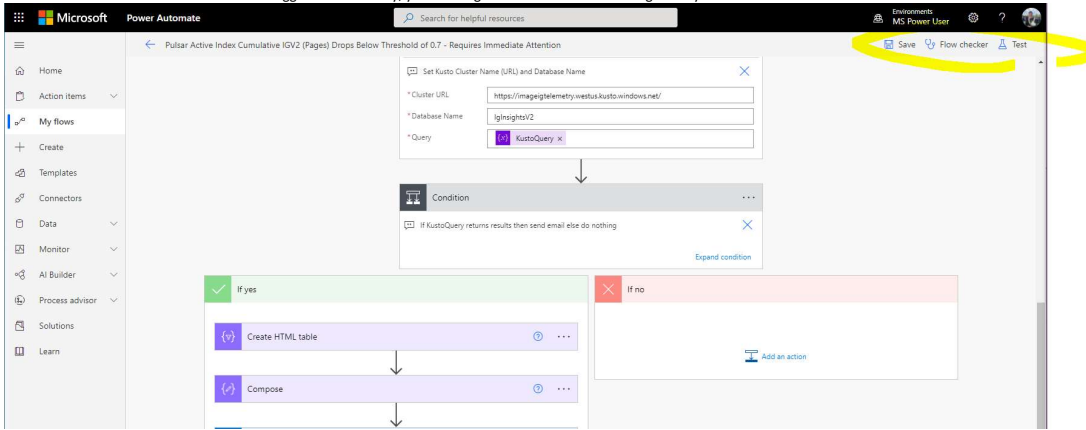
Triggers:

- Add or Update Address Information (preview) PREMIUM
- Get Employee Personal Info (preview) PREMIUM
- Get Employee Employment Info (preview) PREMIUM
- Add or Update Phone Information (preview) PREMIUM
- Add or Update Email Address Information (preview) PREMIUM
- Add or Update Instant Messenger Information (preview) PREMIUM

Actions:

11. Fill in the appropriate ICM incident info, this particular one triggers when cumulative IGV2 for Pulsar pages drop below 0.7

12. You can save the Flow and Test it which will trigger a run instantly, you should get an email + an ICM alert right away

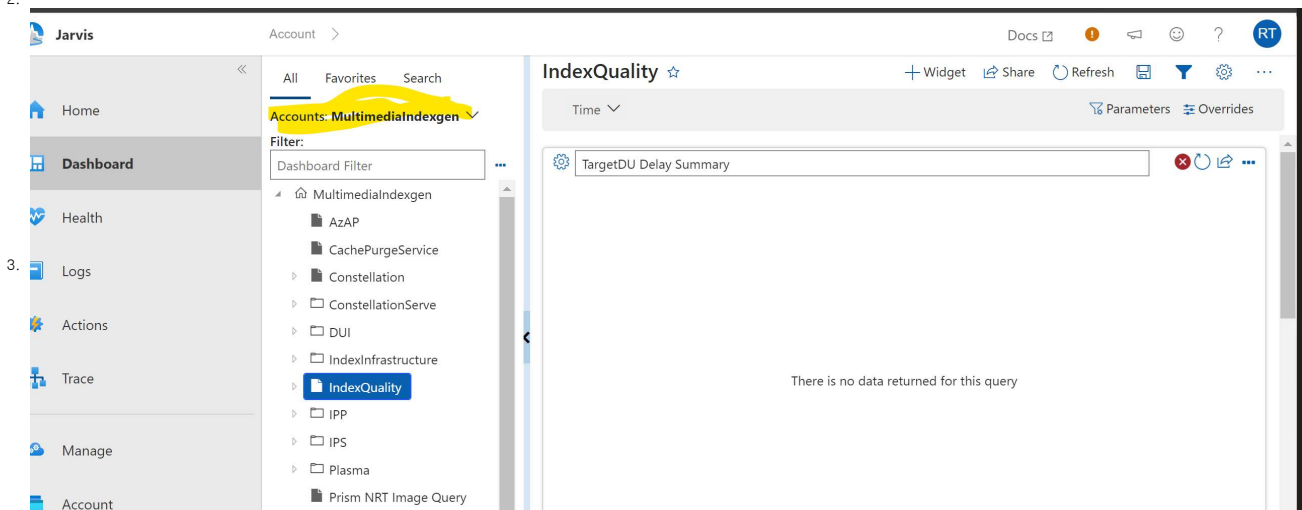


Scope for Data Command in Lens Explorer to add a DateTime column to existing cosmos stream while ingesting:

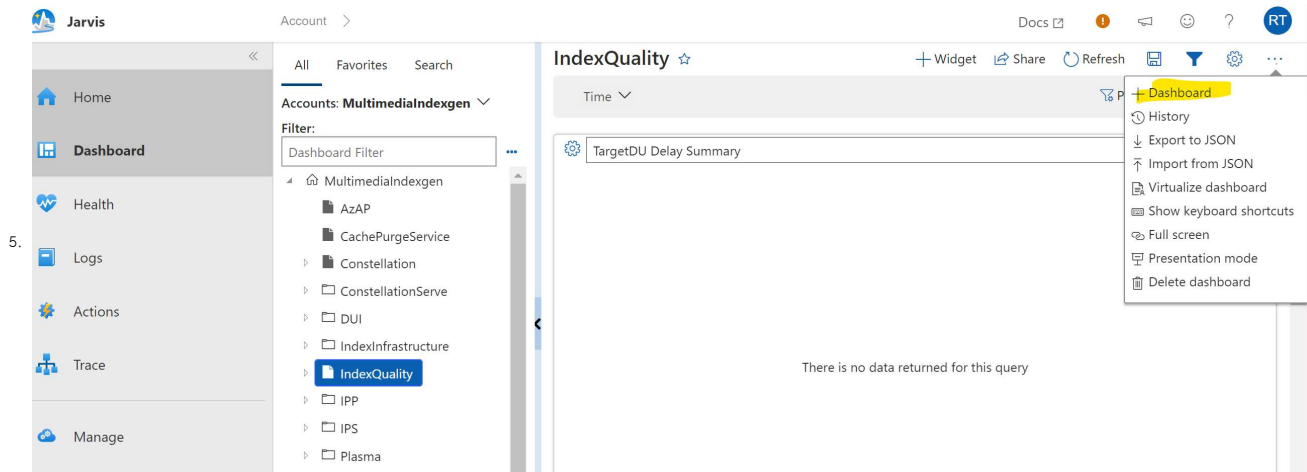
```
#DECLARE PulsarIGV2Pages string = "/local/Prod/Image/Metrics/Superfresh/Reports/Pulsar/" + @@startDateTime@@.Substring(0, @@startDateTime@@.IndexOf(" ")).Replace("-", "_") +
"/EngineeringUniversalGDI_FifteenDays/EngineeringGoldenSetCoverage-Page.ss";
#DECLARE PulsarIGV2PagesOutput string = "/local/Prod/Image/Metrics/Superfresh/Reports/Pulsar/" + @@startDateTime@@.Substring(0, @@startDateTime@@.IndexOf(" ")).Replace("-", "_") +
"/EngineeringUniversalGDI_FifteenDays/EngineeringGoldenSetCoverage-Page_Test.ss";
Pulsar = SELECT *, @@startDateTime@@.Substring(0, @@startDateTime@@.IndexOf(" ")).Replace("-", "_") AS DateTimeString FROM (SSTREAM @PulsarIGV2Pages);
Pulsar = SELECT *, DateTime.Parse(DateTimeString.Replace("-", "_")).Date AS Date FROM Pulsar;
Pulsar = SELECT *.Except(DateTimeString) FROM Pulsar;
OUTPUT TO SSTREAM @PulsarIGV2PagesOutput;
```

VISUALIZATION IN JARVIS

1. Click on accounts and select the desired account .
- 2.



2. Select the desired folder under which you want to create the dashboard.
3. On the top right corner click on the 3 dots and select 'New DashBoard'
- 4.



4. Change the Data Source to "Kusto"
Cluster to "<https://imageigetelemetry.westus.kusto.windows.net>"
And select the desired data base

5. Enter the query in the space provided and click apply.

5. You should be able to see your graph in the box below.
6. In order to save it press control+s. Fill in the account , dashboard decription and click on save.
- 7.

base

sightsV2

me

Deleted_From

10.000

ted_From_1DayAg

rd_From_1DayAg

ted_From_1DayAg

rd_From_1DayAg

Save Dashboard

Save Location

Account

MultimediaIndexgen

+ Level

Dashboard Description

hash db comparison

Tags

Tags

Series Color Mapping

+ Color

Describe your change

Save

Cancel

- Click on the "Close" button on the top right hand corner and view your dashboard.
-

Short link

Inline

Close

Widget Time Range

1h 6h 12h 1d 7d 1m

Database

IgInsightsV2

Date

endTime

ICM Creation

- Click on the "Manage" from the left panel and click on automation

Jarvis

Account

Home

Dashboard

Health

Logs

Actions

Trace

Manage

Metrics (Preview)

Manage Metrics

If you are looking for some Metrics account le

Resources, etc), you can find them under the A

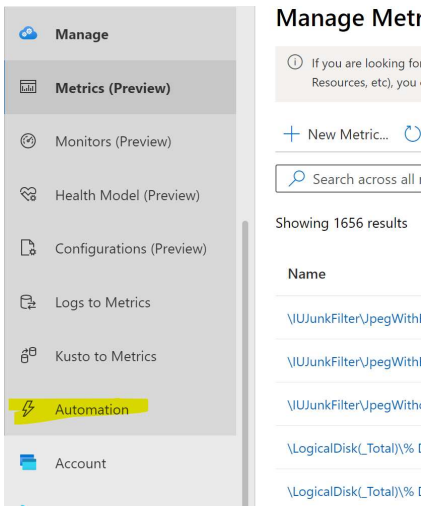
New Metric...

Refresh

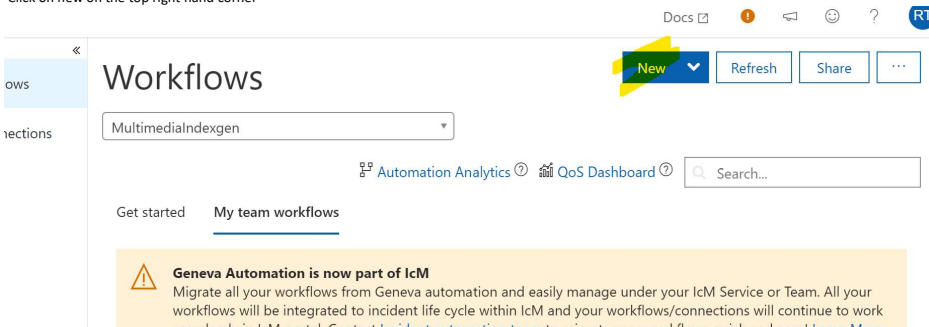
Share

Search across all metrics on Enter

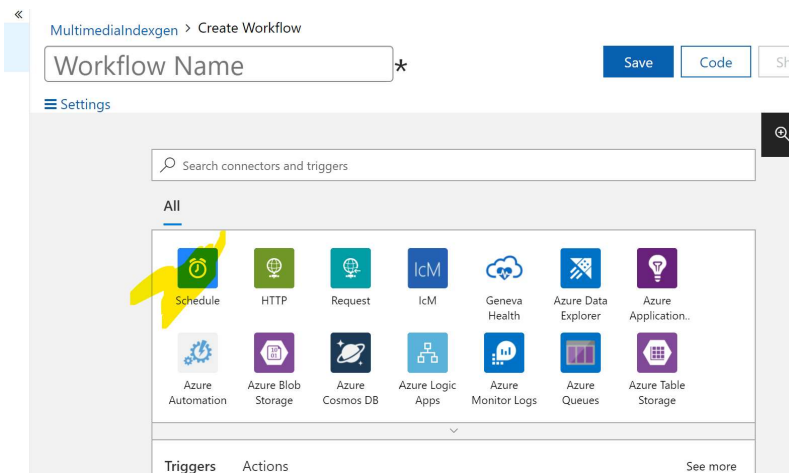
Name



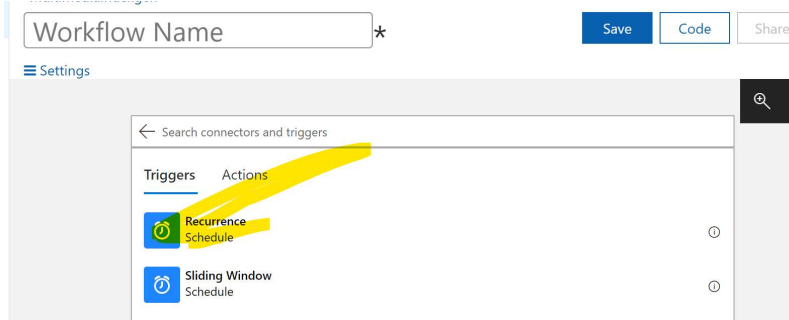
2. Click on new on the top right hand corner



3. Select "Schedule" if you require your workflow to trigger at a certain time



4. Click on Recurrence



6. Fill in the interval and frequency at which you want it to run.

Recurrence

*Interval: 1

*Frequency: Day

Add new parameter

+ New step

7. Click on new step

Recurrence

*Interval: 1

*Frequency: Day

Add new parameter

+ New step

8. Choose 'Azure data explorer' as the connector if your data is in Kusto

Choose an action

Search connectors and actions

All

Azure Data Explorer

Control

IcM

Schedule

Geneva Health

Request

Azure Application...

Triggers

Actions

Create job

Azure Automation

Create blob (V2)

Azure Blob Storage

9. Choose 'Run query and list results' in order to run a kusto query and get data

Choose an action

Search connectors and actions

All

Azure Data Explorer

Control

IcM

Schedule

Geneva Health

Request

Azure Application...

Triggers

Actions

Create job

Azure Automation

Create blob (V2)

Azure Blob Storage

Run async control command and wait until it is completed (preview)

Azure Data Explorer

Run control command and visualize results (preview)

Azure Data Explorer

Run control show command and list results (preview)

Azure Data Explorer

Run query and list results (preview)

Azure Data Explorer

Run query and visualize results (preview)

Azure Data Explorer

Don't see what you need?

Help us decide which connectors and triggers to add next with UserVoice

10. Enter the following values :

Cluster values = <https://imageigtelemetry.westus.kusto.windows.net>

Database : IgInsightsV2

Query : Enter your Kusto query to get results

Run query and list results (Preview)

*Cluster URL: https://imageigtelemetry.westus.kusto.windows.net

*Database Name: IgInsightsV2

*Query: HashDbComparison | where Delta == 1 | project Added , Date , Delta , HashType ;

Connected to kusto-2. [Change connection.](#)

Add dynamic content from the apps and connectors used in this flow.

Dynamic content Expression

NO DYNAMIC CONTENT AVAILABLE

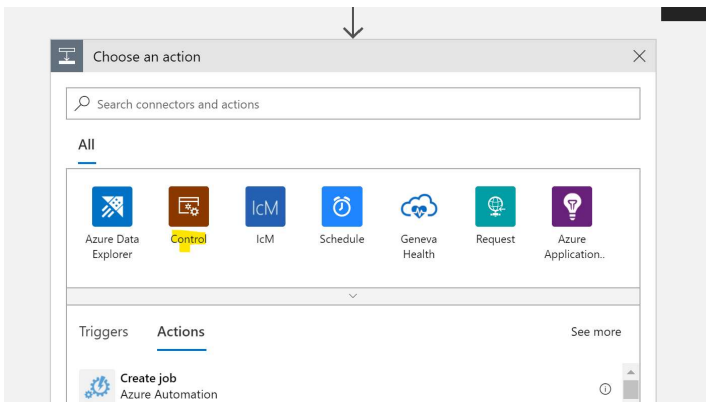
There is no content available

INCLUDING DYNAMIC CONTENT

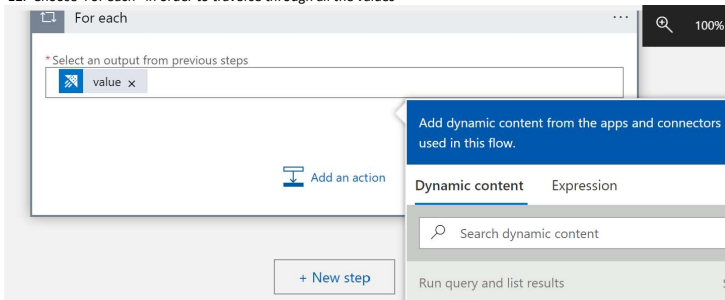
If available, dynamic content is automatically generate connectors and actions you choose for your flow.

Dynamic content may also be added from other sources.

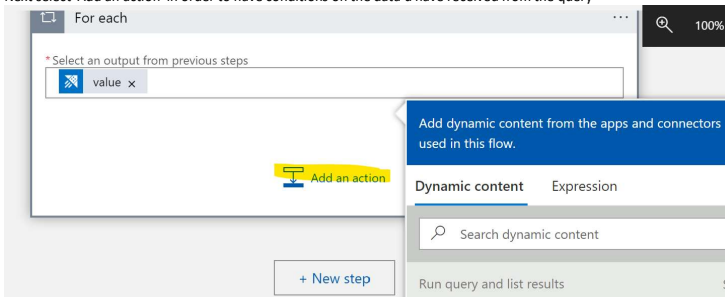
11. Choose your desired action :



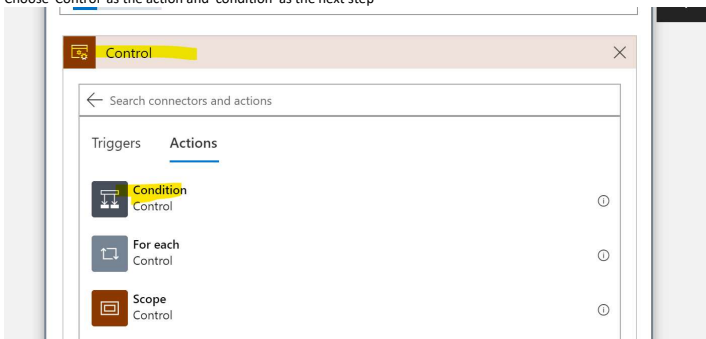
12. Choose 'For each' in order to traverse through all the values



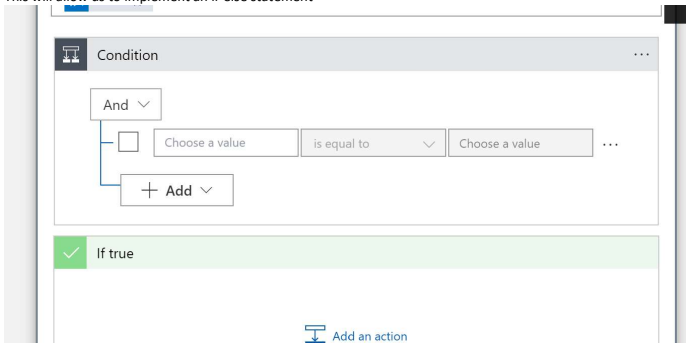
13. Next select 'Add an action' in order to have conditions on the data u have received from the query



14. Choose 'Control' as the action and 'condition' as the next step



15. This will allow us to implement an if-else statement



16. We have the ability to run loops on dynamic content received from the Kusto query

Workflow Name *

Save

Code

Share

Settings

Choose a value is equal to Choose a value ... 100%

Add dynamic content

+ Add

If true

If false

Add dynamic content from the apps and connectors Hide used in this flow.

Dynamic content Expression

Search dynamic content

Run query and list results

Body

value

For each

Current item

17. If the condition is true we can create an icm . Click on add an action

If true

Add an action

If false

18. Choose icm for when u click on add an action

Choose an action

Search connectors and actions

All

Azure Data Explorer Control ICM Schedule Geneva Health Request Azure Application..

19. Click on create an ICM Incident

- ICM
- Change the owner of an ICM incident
- Create ICM incident
- Create incident recommendation
- Create or Update root cause

20. Fill in the following details for the ICM incident :

ICM Create ICM incident

Connector Id

ffad109a-0f9b-4b1a-a235-f5941454efe0

Title

[CP] [HashDb] UnTrust Bad Images Added From 1 Day Ago Are too low

* How found

Other

* Discussion entry

UnTrusted Bad Images Added are very low from previous date.

Last Scan Date = Date

Number of Added Images of type untrust good = Added

Comparison with day = Delta day ago.

Owning service

Image IndexGen

▼

Owning team

Bing Image IG DRI

▼

Severity

3

▼

Summary

UnTrusted Bad Images Added From 1 Day Ago Are too low

Owner

viktorb

Add new parameter

▼

Connected to lcM. [Change connection.](#)

1

21. Click on save
22. Enable the workflow and you can test it in order to see if it is successfully creating an incident.