

NHS Data Engineering Project: Enhance Patient Care through Cutting Edge Solution

Presented by: Rita Uzoka

Date: 5th August 2024

Background:

AnyHospital, a leading healthcare institution, is dedicated to the continual enhancement of patient care through innovative approaches.

Acknowledging the transformative potential of data-driven insights, the hospital has embarked on a strategic initiative to harness the power of its extensive medical records. The Hospital plans to leverage cloud technologies to propel healthcare research, with a primary focus on disease prediction, prevention, and better patient care/experience. Clinicians, IT personnel, management, and patients are the stakeholders.

In pursuit of this mission, the Hospital recognizes the need to adopt cutting-edge solutions to effectively analyze and extract meaningful insights from vast and diverse medical datasets they collect.

The objective is to harness their data assets for making informed decisions and accomplishing their business objectives by navigating the intricacies of data management, analytics, and strategy by offering knowledge, direction, and advice.

Relevance: - Facilitate data-driven choices to improve patient outcomes and healthcare delivery. To address this challenge, the hospital is implementing a data analytics solution on Azure, to enable seamless and efficient querying and analysis of medical data.

Business Requirement

- A daily report of admitted Patients and discharged Patients
- How long between admitted and discharged Patients
- A daily report of diagnosis and treatment of patients
- A daily report of scans and tests done
- A daily report with the gender and age of patients

Conceptual Modelling

Decision on Technology/Infrastructure

- Ingestion: Azure Data factory (ADF) is best suited for ongoing ingestion of files from onprem database to azure.
- Storage: Based on the CAP Theorem, Azure sql database was chosen because in rare partition instances, it may temporarily become unavailable while providing high availability characteristics, because its primary goal is to guarantee data accuracy and consistency.
- Visualization: easy compatibility with Microsoft applications, affordable licensing, intuitive user interfaces, wide data connectivity, and robust security features,PowerBI appeared to be most suitable.

OLTP Entity Relationship Diagram(ERD)

ERD (OLTP)

patients_data	
PK	<u>patient_id</u>
	first_name
	last_name
	date_of_birth
	gender
	ethnicity
	address
	contact_number

medical_records_data	
PK	<u>record_id</u>
	patient_id
	admission_date
	discharge_date
	diagnosis
	treatment_description
	prescribed_medications

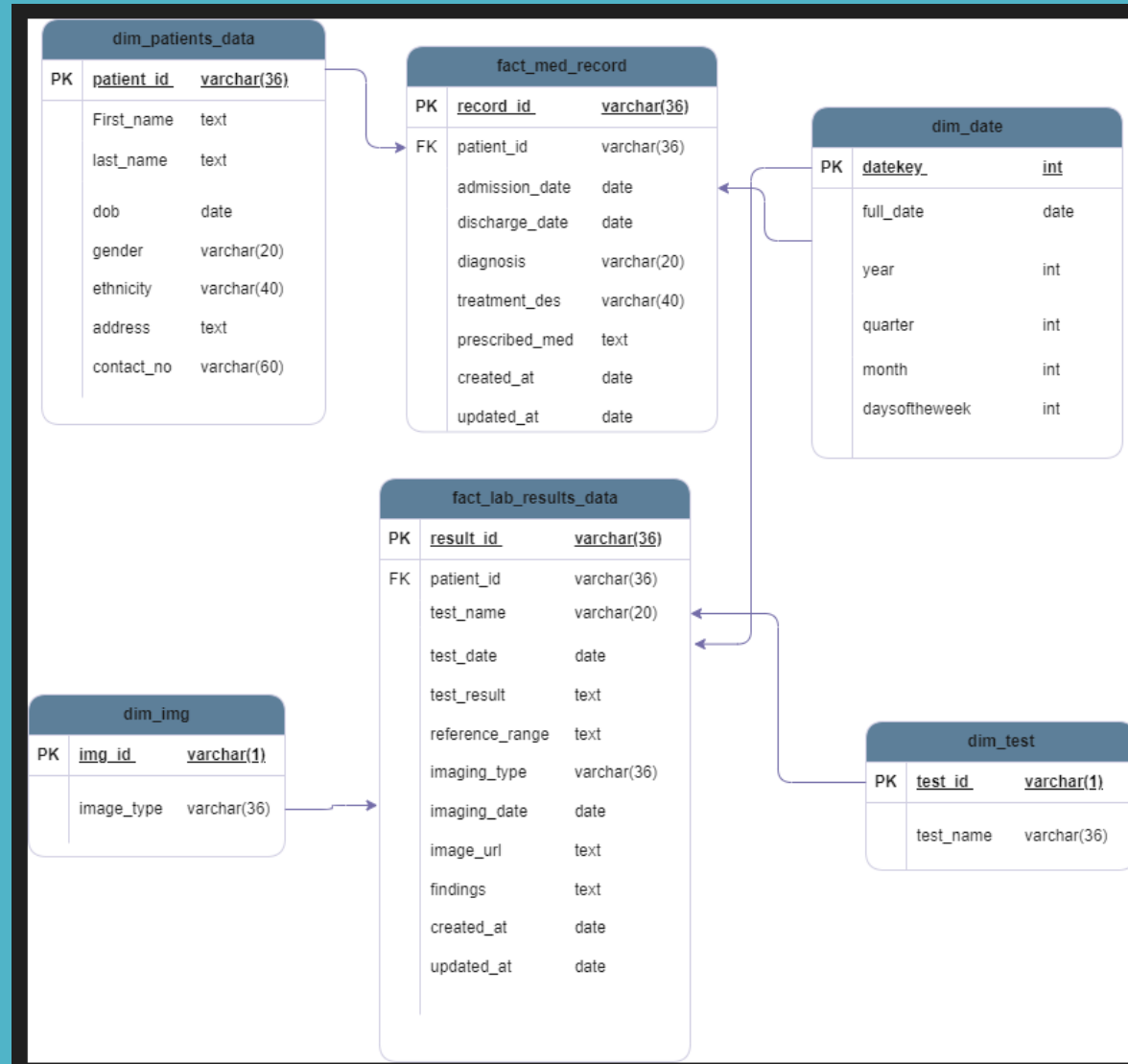
imaging_results_data	
PK	<u>result_id</u>
	patient_id
	imaging_type
	imaging_date
	image_url
	findings

lab_results_data	
PK	<u>result_id</u>
	patient_id
	test_name
	test_date
	test_result
	reference_range

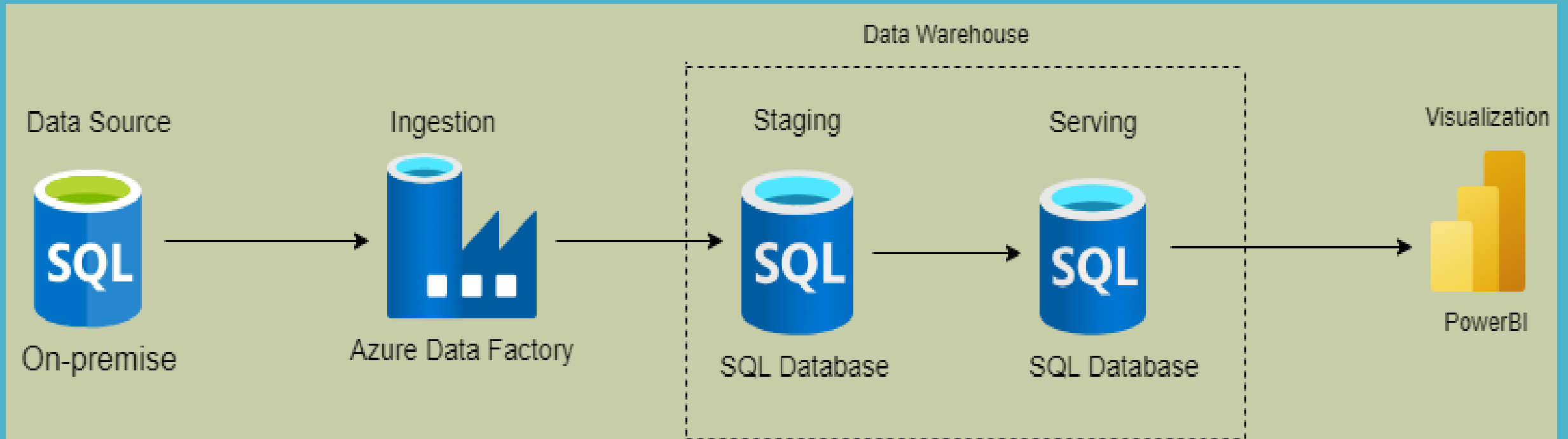
trials_data	
PK	<u>trial_id</u>
	trial_name
	principal_investigator
	start_date
	end_date
	trial_description

participants_data	
PK	<u>participant_id</u>
	trial_id
	patient_id
	enrollment_date
	participant_status

AnyHospital Star Schema



Solution Architecture:



Data Solution(ETL Process):

- Ingest data frequently from on-prem sql database to azure sql database.
- Transform data into the star schema model for seamless extraction of business reports.
- Load data into production Datawarehouse for analysis and visualization.

Project Challenges:

1. Avoid Extraction of Duplicate record
2. Efficient Incremental data process
3. Different schemas
4. Different keys

Solution to Challenge 1: Avoid Extraction of Duplicate record

Watermark Table

When processing data in batch or streaming mode, a watermark table is a useful tool for monitoring the progress of the processing. When it comes to managing late-arriving data and preserving the state of incremental data processing, watermark tables can be extremely helpful in ensuring that data is processed precisely once.

- Watermark tables store metadata about the current state of data processing
- By monitoring the most recent processed timestamp, they assist in handling data that arrives late.

Watermark tables facilitate incremental data processing by allowing systems to process just data that has changed or been added since the last update. This improves efficiency and speeds up processing.

- The watermark table – stores the table names and the last updated time, this table is in the Sink
- The Old watermark table(Old WM)-this table is updated from the last updated time at the watermark table
- The New watermark table(New WM)- this table is updated from the last updated time at the source table.

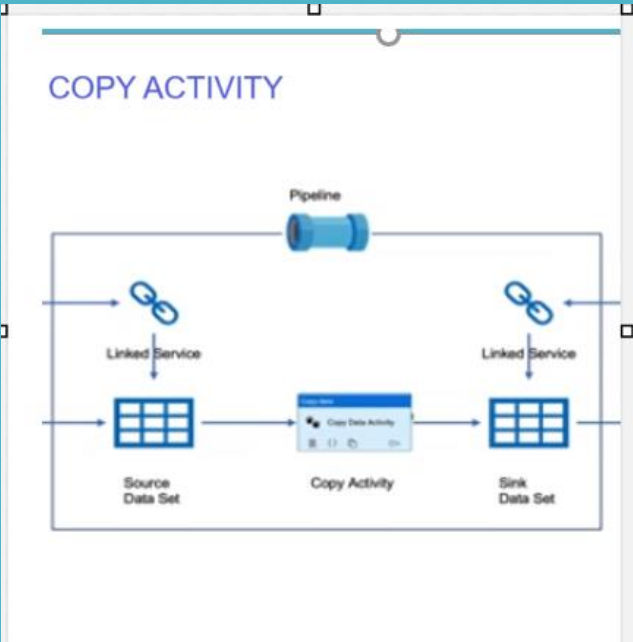
Therefore the Source data will copy data that falls between the Old WM and the New WM

Data Pipeline Solution for Challenge 2:

- Extract first row of the watermark value of the watermark table(OLDWWM) and first row of the Max(updated at)column of the source data(NEWWWM).
- Extract data from source within the range of OLDWWM and NEWWWM
- Upsert the data into destination using keys
- Update the watermark table(NEWWWM) using stored procedure.

Data Ingestion

ADF-Copy Activity



Microsoft recently announced the puanyhosp-df of Microsoft Fabric, a brand new and exciting way to build cloud-first data analytics. Click [here](#) to get started with Fabric Data Factory!

Data Factory

Validate all

Publish all 3

Preview experience Off

Factory Resources

Filter resources by name

Pipelines 1

anyhosp_pl

Change Data Capture (preview) 0

Datasets 2

azuress_ds

onpremss_ds

Data flows 0

Power Query 0

onpremss_ds

azuress_ds

anyhosp_pl

Validate

Debug

Add trigger

Copy data

Copyonprem

Parameters

Variables

Settings

Output

Pipeline run ID: 292eefba-01a2-4c02-b97d-aa95978b3790

Pipeline status Succeeded

View debug run consumption

Monitor in Azure Metrics

Export to CSV

Activity name	Activity status	Activity type	Run start	Duration	Integrati
Copyonprem	Succeeded	Copy data	7/27/2024, 9:01:25 AM	17s	anyhosp-

»

Data Factory

Validate all

Publish all 3

Preview experience

Off

Factory Resources

Filter resources by name

Pipelines1

anyhosp_pl

Change Data Capture (preview)0

Datasets2

azuess_ds

onpremss_ds

Data flows0

Power Query0

Activities

Search activities

Stored procedure

Script

Set variable

Validation

Web

WebHook

Wait

HDInsight

Iteration & conditionals

Machine Learning

onpremss_ds

azuess_ds

anyhosp_pl

Validate

Debug

Add trigger

Lookup

OLDWM

Copy data

Copyonprem

Parameters

Variables

Settings

Output

Pipeline status

Succeeded

view debug run consumption

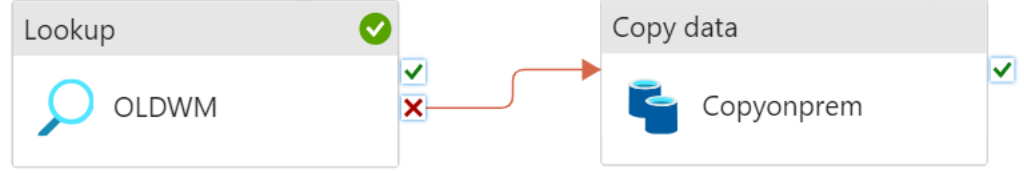
All status

Monitor in Azure Metrics

Export to CSV

Showing 1 - 1 of 1 items

Activity name	Activity status	Activity type	Run start
OLDWM	Succeeded	Lookup	7/27/2024, 9:32:22 AM



Parameters	Variables	Settings	Output
Pipeline status Succeeded view debug run consumption			
All status ▼ Monitor in Azure Metrics Export to CSV ▼			
Showing 1 - 1 of 1 items			
Activity name	Activity status	Activity type	Run start
OLDWM	Succeeded	Lookup	7/27/2024, 9:32:22 AM

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>> Data Factory Validate all Publish all 3

Preview experience Off

Factory Resources

Filter resources by name

Pipelines 1

anyhosp_pl

Change Data Capture (preview) 0

Datasets 2

azuress_ds

onpremss_ds

Data flows 0

Power Query 0

onpremss_ds

azuress_ds

anyhosp_pl

Validate Debug Add trigger

Lookup

OLDWM

Lookup

NEWWM

Copy data

Copyonprem

Parameters Variables Settings Output

Activity name	Activity status	Activity type	Run start	Duration	Integr:
NEWWM	Succeeded	Lookup	7/27/2024, 3:14:33 PM	7s	anyho:
OLDWM	Succeeded	Lookup	7/27/2024, 3:14:33 PM	3s	AutoR:

Dynamic Pipeline:

Output

Copy to clipboard

```
{
  "firstRow": {
    "OLDWM": "2010-01-01T00:00:00Z"
  },
  "effectiveIntegrationRuntime":
"AutoResolveIntegrationRuntime (UK South)",
  "billingReference": {
    "activityType": "PipelineActivity",
    "billableDuration": [
```

Output

Copy to clipboard

```
{
  "firstRow": {
    "NEWM": "2024-07-25T19:54:09.043Z"
  },
  "effectiveIntegrationRuntime": "anyhosp-selfir",
  "billingReference": {
    "activityType": "PipelineActivity",
    "billableDuration": [
      {
```

Pipeline expression builder

Add dynamic content below using any combination of [expressions](#), [functions](#) and [system variables](#).

@activity('OLDWM').output.firstRow

Clear contents

Activity outputs

Parameters

System variables

Functions

Variables

OLDWM

OLDWM activity output

OLDWM

OLDWM pipeline return value

OLDWM first row

Data of the first row

Results		Messages
	TableName	WatermarkValue
1	patient_data	2010-01-01 00:00:00.000

Results		Messages
	TableName	WatermarkValue
1	patient_data	2024-07-25 19:54:09.043

Results		Messages
	TableName	WatermarkValue
1	patient_data	2024-07-27 23:19:03.710

Dynamic Pipeline:

» Data Factory | Validate all | Publish all 1 | Preview experience | Off

Factory Resources

- Pipelines 1
 - anyhospital_pl
- Change Data Capture (preview) 0
- Datasets 2
 - azuress_ds
 - onpremss_ds
- Data flows 0
- Power Query 0

onpremss_ds | azuress_ds | anyhospital_pl

» | Validate | Debug | Add trigger

Lookup (OLDWM) → Copy data (Copyonprem) → Stored procedure (UpdateWM)

Parameters | Variables | Settings | **Output**

Activity name	Activity status	Activity type	Run start	Duration	Integ
UpdateWM	✓ Succeeded	Stored procedure	7/27/2024, 10:55:16 PM	3s	Auto
Copyonprem	✓ Succeeded	Copy data	7/27/2024, 10:54:59 PM	16s	anyh
NEWWM	✓ Succeeded	Lookup	7/27/2024, 10:54:51 PM	8s	anyh
OLDWM	✓ Succeeded	Lookup	7/27/2024, 10:54:51 PM	4s	Auto

Dynamic Pipeline:

110 %

Results Messages

	patient_id	first_name	last_name	date_of_birth	gender	ethnicity	address	cor
1	0e49a1c1-002e-4d19-ae1b-6fbce74bf401	Jeremy	Carr	1949-12-26	Male	African-American	042 Miller Way West Nicholasberg, PR 23996	(78
2	39c3682e-c26e-4168-9b9a-b44c12223573	Melanie	Quinn	1978-12-29	Male	Caucasian	64066 Kayla Track East Adrian, SC 86082	+1-
3	5e262703-f907-403a-b9ad-8c6dc67b8058	Kenneth	Stevens	1958-12-24	Female	Other	76793 Audrey Glens West Katelyntown GU 51604	57-
4	b19d3823-5a0c-407d-bee2-cd52528cda11	Jason	Pruitt	1957-06-30	Male	Asian	71380 John Manor Suite 706 South Robin DC 47340	00
5	ca3475f3-7788-4f8d-a9a6-af8da0c4be93	Richard	Gibbs	1997-03-05	Male	Other	123 Nathan Mall Suite 250 Armstrongmouth TX 10044	+1-
6	ea5e27a0-7b94-4919-acdc-f1d61acf79d8	Stephen	Moses	1934-06-11	Male	Other	69952 Webb Streets Vanessaview, MO 55560	46-
7	fb3eec34-897f-47ac-ac66-752af482e14c	Nicole	Davenport	2003-06-06	Female	Asian	84026 David Cove Gardnerville WY 68752	(26

anyhospital-ss.d...

Tables

dbo.patient_data

Columns

Keys

Constraints

Triggers

Indexes

Statistics

dbo.watermarktable

Dropped Ledger Tables

Views

Synonyms

Programmability

External Resources

28

29

30

31

SELECT * FROM watermarktable

WHERE TableName = 'patient_data'

select * from patient_data;

Results

Messages

	contact_number	created_at	updated_at
olnasberg, PR 23996	(781)519-7336	2024-07-25 19:54:09.043	2024-07-25 19:54:09.043
adrian, SC 86082	+1-791-683-4781x441	2024-07-27 23:19:03.710	2024-07-27 23:19:03.710
Katelyntown GU 51604	575.281.3383x8094	2024-07-25 19:54:09.043	2024-07-25 19:54:09.043
064South Robin DC 47340	001-550-368-7566x85738	2024-07-25 19:54:09.043	2024-07-25 19:54:09.043
04Armstrongmouth TX 10044	+1-815-569-3723x1409	2024-07-25 19:54:09.043	2024-07-25 19:54:09.043

Solution to Challenge 3 and 4 :Metadata driven Pipeline

Metadata is the data related to the structure of the table or pipeline

Need to design a pipeline for multiple tables

Options:

- Loop

- Pipeline Parameters

```
[{"TABLE_NAME": "patient_data", "WaterMark_Column": "updated_at", "MERGE_KEY": ["patient_id"]}, {"TABLE_NAME": "medical_records_data", "WaterMark_Column": "updated_at", "MERGE_KEY": ["record_id"]}]
```

Solution to Challenge 3 and 4 :Metadata driven Pipeline

Microsoft recently announced the public preview of Microsoft Fabric, a brand new and exciting way to build cloud-first data analytics. Click [here](#) to get started with Fabric Data Factory!

Data Factory

Validate all

Publish all

Factory Resources

Filter resources by name

Pipelines

anyhospital_pl

Change Data Capture (preview)

Datasets

azuresse_ds

onpremsse_ds

Data flows

Power Query

onpremsse_ds

azuresse_ds

Validate

Debug

Add trigger

ForEach

ForEachTable

Activities

OLDWM

General

Settings

Activities (4)

Sequential

Items

Pipeline expression builder

Add dynamic content below using any combination of expressions, functions and system variables.

@pipeline().parameters.TableList

Clear contents

Activity outputsParametersSystem variablesFunctionsVariables

Search

TableList

OKCancel

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Data Factory

Validate all

Publish all

Factory Resources

Filter resources by name

Pipelines

anyhospital_pl

Change Data Capture (preview)

Datasets

azuresse_ds

onpremsse_ds

Data flows

Power Query

onpremsse_ds

azuresse_ds

anyhospital_pl

Validate

Debug

Add trigger

Preview experience

ForEach

ForEachTable

Activities

OLDWM

Copyonpre

UpdateW

Parameters

Variables

Settings

Output

New

Delete

Name	Type	Default value
TableList	Array	[{"TABLE_NAME":"patient_d

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Data Factory

Validate all

Publish all

Factory Resources

Filter resources by name

Pipelines

anyhospital_pl

Change Data Capture (preview)

Datasets

azuresse_ds

onpremsse_ds

Data flows

Power Query

onpremsse_ds

azuresse_ds

anyhospital_pl

Validate

Debug

Add trigger

Preview experience

ForEach

ForEachTable

Activities

OLDWM

Coovonore

UpdateW

General

Settings

Activities (4)

User properties

Sequential

Items

@pipeline().parameters.TableList

Solution to Challenge 3 and 4 :ForEach Loop

»

Data Factory

Validate all

Publish all 3

Preview experience Off

Factory Resources

Filter resources by name

Pipelines 1

anyhospital_pl

Change Data Capture (preview) 0

Datasets 2

azuress_ds

onpremss_ds

Data flows 0

Power Query 0

onpremss_ds

azuress_ds

anyhospital_pl

Validate

Debug

Add trigger

ForEach

ForEachTable

Activities

OLDWM

Copyonpre

UpdateW

+

Parameters

Variables

Settings

Output

Activity name	Activity status	Activity type	Run start	Duration	Integ
UpdateWM	Succeeded	Stored procedure	7/28/2024, 8:26:39 PM	3s	Auto
Copyonprem	Succeeded	Copy data	7/28/2024, 8:26:28 PM	11s	anyh

»

Data Factory

Validate all

Publish all 3

Preview experience Off

Factory Resources

Filter resources by name

Pipelines 1

anyhospital_pl

Change Data Capture (preview) 0

Datasets 2

azuress_ds

onpremss_ds

Data flows 0

Power Query 0

onpremss_ds

azuress_ds

anyhospital_pl

Validate

Debug

Add trigger

Parameters

Variables

Settings

Output

Activity name	Activity status	Activity type	Run start	Duration	Integ
UpdateWM	Succeeded	Stored procedure	7/28/2024, 8:26:39 PM	3s	Auto
Copyonprem	Succeeded	Copy data	7/28/2024, 8:26:28 PM	11s	anyh
NEWWM	Succeeded	Lookup	7/28/2024, 8:26:18 PM	10s	anyh
OLDWM	Succeeded	Lookup	7/28/2024, 8:26:18 PM	3s	Auto
UpdateWM	Succeeded	Stored procedure	7/28/2024, 8:26:14 PM	3s	Auto
Copyonprem	Succeeded	Copy data	7/28/2024, 8:26:04 PM	10s	anyh
OLDWM	Succeeded	Lookup	7/28/2024, 8:25:56 PM	3s	Auto
NEWWM	Succeeded	Lookup	7/28/2024, 8:25:56 PM	7s	anyh
ForEachTable	Succeeded	ForEach	7/28/2024, 8:25:56 PM	49s	

Metadata Table was created in the sink to complement the pipeline parameters

SERVICES

anyhospital-ss.d...

Tables

dbo.patient_data

Columns

Keys

Constraints

Triggers

Indexes

Statistics

dbo.watermarktable

Columns

TableName (varchar(255), null)

WatermarkValue (datetime, n...

Keys

Constraints

Triggers

Run Cancel Disconnect Change

Database: anyhosp-db

Estimated Plan Enable Actual Plan

Parse

1 CREATE TABLE Metadata(
2 TABLE_NAME VARCHAR(255),
3 MERGE_KEY VARCHAR(255),
4 Watermark_Column VARCHAR(255),
5 IsActive INT
6);
7
8
9 SELECT * FROM Metadata;

Results Messages

	TABLE_NAME	MERGE_KEY	Watermark_Column	IsActive
1	PATIENT_DATA	patient_id	updated_at	1
2	MEDICAL_RECORDS_DATA	record_id	updated_at	1
3	LAB_RESULTS_DATA	result_id	updated_at	1
4	IMAGING_RESULTS_DATA	result_id	updated_at	1

Data Factory

Validate all Publish all

Preview experience

Factory Resources

Filter resources by name

Pipelines

anyhospital_pl

Change Data Capture (preview)

Datasets

azures_ds

onprems_ds

Data flows

Power Query

onprems_ds azures_ds anyhospital_pl

Validate Debug Add trigger

Lookup GetMetadata

ForEach ForEachTable

Activities NEWWM Copyonpre m UpdateW M

Parameters Variables Settings Output

Pipeline status Succeeded

All status List

Monitor in Azure Metrics Export to C

Data Factory

Validate all Publish all

Preview experience

Factory Resources

Filter resources by name

Pipelines

anyhospital_pl

Change Data Capture (preview)

Datasets

azures_ds

onprems_ds

Data flows

Power Query

Parameters Variables Settings Output

Parameters	Variables	Settings	Output
NEWWM	Succeeded	Lookup	7/29/2024, 10:04:53 PM 6s anyh
UpdateWM	Succeeded	Stored procedure	7/29/2024, 10:04:48 PM 3s Auto
Copyonpre	Succeeded	Copy data	7/29/2024, 10:04:32 PM 15s anyh
NEWWM	Succeeded	Lookup	7/29/2024, 10:04:27 PM 4s anyh
OLDWM	Succeeded	Lookup	7/29/2024, 10:04:27 PM 4s Auto
UpdateWM	Succeeded	Stored procedure	7/29/2024, 10:04:23 PM 3s Auto
Copyonpre	Succeeded	Copy data	7/29/2024, 10:04:14 PM 9s anyh
NEWWM	Succeeded	Lookup	7/29/2024, 10:03:57 PM 15s anyh
OLDWM	Succeeded	Lookup	7/29/2024, 10:03:57 PM 3s Auto
ForEachTable	Succeeded	ForEach	7/29/2024, 10:03:57 PM 1m 57s
GetMetadata	Succeeded	Lookup	7/29/2024, 10:03:53 PM 3s Auto

Transformation and Load:

1. Created a serving/production database
2. Created tables as per production schema
3. load data into tables to be used for visualization.

This activity was added to the pipeline using stored procedure

- A stored procedure was created in the sink to load data into the production tables from the staging tables.

Outcome:

1. We improved the processing time for daily medical reports to provide near real-time analytics for business decision.
2. The analytics platform performed much better as a result of this project, which led to a 30% increase in operational efficiency and the creation of new initiatives.
3. Increased data accessibility and scalability and cut operational costs by 15% by moving clients data infrastructure to Azure.

Errors encountered in the Project

»

Data Factory

Validate all

Publish all 3

Preview experience

Off

onpremss_ds

azuress_ds

anyhospital_pl

Validate

Debug

Add trigger

Parameters

Variables

Settings

Output

Showing 1 - 8 of 8 items

Activity name	Activity status	Activity type	Run start	Duration	Integration runtime	User properties	Act
Copyonprem	Failed	Copy data	7/28/2024, 4:03:34 PM	Less than 1s	Unknown		38C
NEWWM	Succeeded	Lookup	7/28/2024, 3:50:57 PM	12m 36s	anyhosp-selfir		22C
OLDWM	Succeeded	Lookup	7/28/2024, 3:50:57 PM	3s	AutoResolveIntegrator		c00
UpdateWM	Succeeded	Stored procedure	7/28/2024, 3:50:53 PM	3s	AutoResolveIntegrator		4d7
Copyonprem	Succeeded	Copy data	7/28/2024, 3:50:40 PM	13s	anyhosp-selfir		d2C
					anyhosp-selfir		e4f
					AutoResolveIntegrator		b2f
							80t

Microsoft Azure

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Error details

Copyonprem

Error code

InvalidTemplate

Failure type

User configuration issue

Details

The expression 'activity('OLDWM').output.firstRow.OLDWM' cannot be evaluated because property 'firstRow' doesn't exist, available properties are 'effectiveIntegrationRuntime, billingReference, durationInQueue'.

Activity ID

380ec255-8be0-4e97-907a-e10e0574288f

How helpful or unhelpful was this error message?

★★★★★

in start

Duration

Integration runtime

28/2024, 4:03:34 PM

Less than 1s

Unknown

28/2024, 3:50:57 PM

12m 36s

anyhosp-selfir

28/2024, 3:50:57 PM

3s

AutoResolveIntegrator

28/2024, 3:50:53 PM

3s

AutoResolveIntegrator

28/2024, 3:50:40 PM

13s

anyhosp-selfir

28/2024, 3:50:30 PM

10s

anyhosp-selfir

28/2024, 3:50:30 PM

3s

AutoResolveIntegrator

28/2024, 3:50:29 PM

13m 8s

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Error details

ForEachTable

Error code

ActionFailed

Failure type

User configuration issue

Details

Activity failed because an inner activity failed

Activity ID

80b555a7-4b2b-4501-8e76-a08b114ee9be

How helpful or unhelpful was this error message?

★★★★★

in start

Duration

Integration runtime

User properties

Act

28/2024, 4:03:34 PM

Less than 1s

Unknown

38C

28/2024, 3:50:57 PM

12m 36s

anyhosp-selfir

22C

28/2024, 3:50:57 PM

3s

AutoResolveIntegrator

c00

28/2024, 3:50:53 PM

3s

AutoResolveIntegrator

4d7

28/2024, 3:50:40 PM

13s

anyhosp-selfir

d2C

28/2024, 3:50:30 PM

10s

anyhosp-selfir

e4f

28/2024, 3:50:30 PM

3s

AutoResolveIntegrator

b2f

28/2024, 3:50:29 PM

13m 8s

80t

Error Notification: Logic Apps

Home > healthresearch-la

healthresearch-la | Logic app designer

Logic app

Search

Run Save Discard Parameters Code view Errors Info File a bug Enable Legacy Designer

OverviewActivity logAccess control (IAM)TagsDiagnose and solve problemsDevelopment ToolsLogic app designerLogic app code viewRun HistoryVersionsAPI connections

When a HTTP request is received

Send email (V2)

Send email (V2)

ParametersSettingsCode ViewTestingAbout

ADF Pipeline pipelineName x has failed for RunId RunId x

Body

Hi Team:
Below is the error message
Error Message ErrorMessage x
Thanks

Data Factory Validate all Publish all

anyhospital_pl

Validate Debug Add trigger

GetMetadataForEachForEachTableStored procedureexecute serving procedureSet variableerror_handling

ParametersVariablesSettingsOutput

Pipeline run ID: 7b53b868-b4da-405b-ad5b-8c534f77c31d Pipeline status Succeeded

View debug run consumption

All status List

Showing 1 - 19 of 19 items

Activity nameActivity statusActivity typeRun startDurationIntegration runtimeUser propertiesAct

Data Factory Validate all Publish all

anyhospital_pl

Validate Debug Add trigger

GetMetadataForEachForEachTableStored procedureexecute serving procedureSet variableerror_handling

ParametersVariablesSettingsOutput

Parameters	Variables	Settings	Output
senderrormessage	Succeeded	Web	8/3/2024, 11:57:44 AM 2s AutoResolveIntegrator ddC
error_handling	Succeeded	Set variable	8/3/2024, 11:57:43 AM Less than 1s cFB:
execute_serving_procedure	Failed	Stored procedure	8/3/2024, 11:57:40 AM 3s AutoResolveIntegrator dcb
UpdateWM	Succeeded	Stored procedure	8/3/2024, 11:57:34 AM 2s AutoResolveIntegrator 3bC
Copyonprem	Succeeded	Copy data	8/3/2024, 11:57:24 AM 10s anyhosp-selfir 189

ADF Pipelineanyhospital_pl has failed for RunId311a652b-a5a2-4b11-9483-389c380882a3

Me

3 Aug at 11:57

Hi Team:

Below is the error message

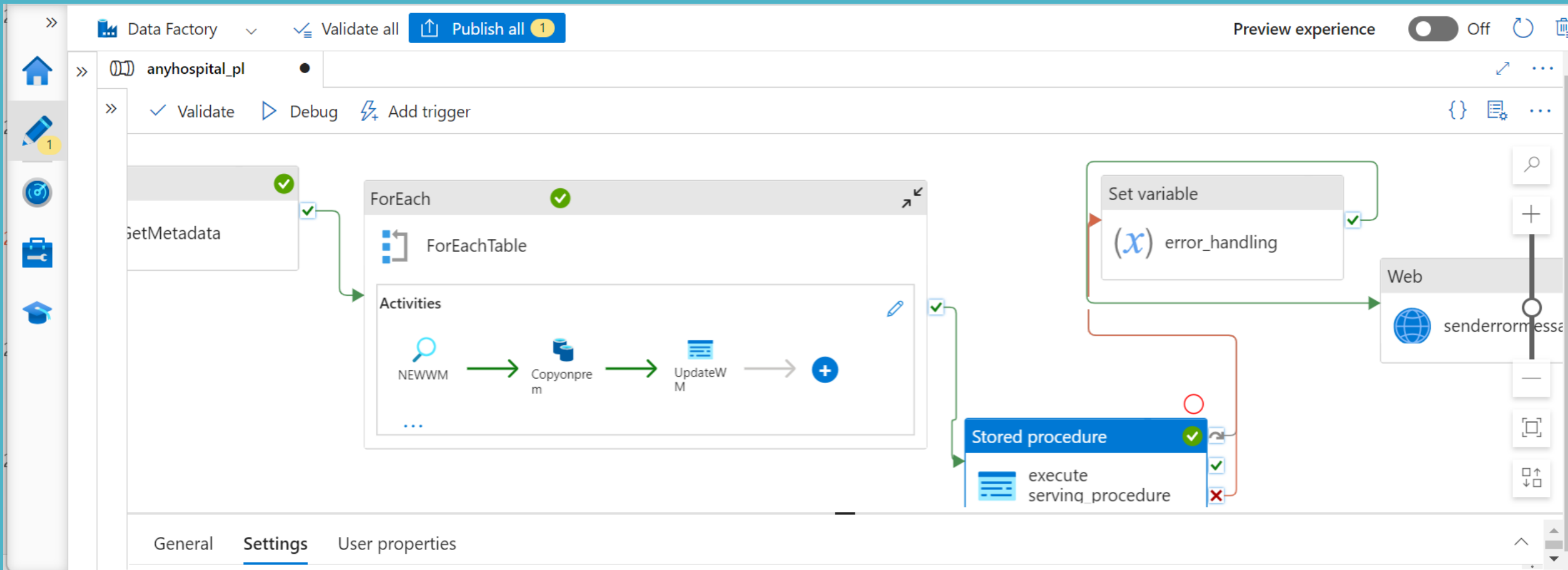
Error Message||Execution fail against sql server. Please contact SQL Server team if you need further support. Sql error number: 208. Error Message: Invalid object name 'dim_date'.

Thanks

Rita

DeleteReplyForwardMoveMore

ETL Pipeline



Further Errors

»

Data Factory

Validate all

Publish all 1

anyhospital_pl

Validate Debug Add trigger

GetMetadata

ForEach

ForEachTable

Activities

Stored procedure

Set variable

Web

Activity name	Activity status	Activity type	Run start	Duration	Integration runtime	User properties	Act
execute_serving_procedure	✓ Succeeded	Stored procedure	8/1/2024, 11:27:25 PM	3s	AutoResolveIntegrator		16c
UpdateWM	✓ Succeeded	Stored procedure	8/1/2024, 11:27:19 PM	4s	AutoResolveIntegrator		0ac
Copyonprem	✓ Succeeded	Copy data	8/1/2024, 11:27:09 PM	10s	anyhosp-selfir		830

CONNECTIONS

1 - anyhos...padmin)

SQLQuery_5 - anyhos...padmin) 9+

SQLQuery_6 - anyhos...padmin) 6

SERVERS

agrofarm-sql-ss.database.windows....

anyhospital-ss.database.windows.n...

Tables

dbo.Imaging_results_data

dbo.lab_results_data

dbo.medical_records_data

dbo.Metadata

dbo.patient_data

dbo.procedure_logs

Columns

Runtime (datetime, not null)

Status (text, null)

Error_Message (text, null)

Keys

Constraints

Triggers

Indexes

Run Cancel Disconnect Change Database: anyhosp-db Estimated Plan

Enable Actual Plan Parse

60

61

62 select * from edw.fact_med_record;

63 drop PROCEDURE prc_meds_records;

64

65 select * from dbo.procedure_logs;

66

67

68

Results Messages

Runtime	Status	Error_Message
2024-08-01 22:27:27.823	Failed	Violation of PRIMARY KEY constraint 'PK_dim_date__5CF963...

PowerBI Visualization

FileHomeTransformAdd ColumnViewToolsHelp

Close & ApplyClose

New SourceNew Query

Recent Sources

Enter Data

Data source settingsData Sources

Manage ParametersParameters

Refresh PreviewQuery

PropertiesAdvanced EditorManage

Choose ColumnsManage Columns

Remove Columns

Reduce RowsSort

Split ColumnGroup By

Data Type: TextUse First Row as HeadersReplace ValuesTransform

Combine

Text AnalyticsVisionAzure Machine LearningAI Insights

Queries [6]

EDW dim_date

EDW dim_img

EDW dim_test

EDW fact_lab_records

EDW fact_med_record

EDW dim_patient

fx

= #"

anyhosp-db"

{[Schema="

EDW"

,Item="

fact_med_record"

]}

[Data]

}

AB record_id

AB patient_id

admission_date

discharge_date

1	044ea493-7f8f-4467-9a69-c5fa55be8100	c7f6daf8-66c0-4697-9615-728f03a79313	11/20/2020
2	393a827e-9ded-4ac3-9f25-7b1f0f2524d9	fbfd1e32-73e1-4097-8536-8a1cac9c8a74	9/4/2020
3	50ed8a25-50de-42e8-855a-1c964880c0c5	2e386e26-473a-4b9b-9231-3e3f74312f64	2/19/2020
4	74a6332c-37fd-4bb4-b8e7-41adc2c626d9	7023d2eb-455e-449e-93bd-af52cceb11a	9/24/2023
5	8e1d95ea-1df9-4cae-b0f8-ed89067061b4	7724043e-3cbc-48f7-bbe1-be70c9e4b842	12/7/2023
6	8e8cdc5c-cf21-455b-8826-9c6c03ea6662	4be39931-fc23-46f3-a77a-b26b4e5e1437	9/2/2020
7	d3d60902-6978-4165-89f2-5d91773c1203	c7c9cdc2-b8a8-43ba-965e-b6eca49829c0	2/16/2023
8	e0999e46-ba68-4c4c-a816-782f549c682f	9aacf358-7647-4ad5-8466-36b41abdc8d9	5/26/2022
9	ebc03938-8a71-4a84-be60-c41cd01b4626	c862da88-4b29-4255-88a6-2d3086f119a9	9/6/2023

9 COLUMNS, 9 ROWS

Column profiling based on top 1000 rows

Query Settings

PROPERTIES

Name

EDW fact_med_record

All Properties

APPLIED STEPS

Source

Navigation

PREVIEW DOWNLOADED AT 1:18 PM

THANK YOU