

08/09/2023

CDC implementation approaches

Timestamp/Incremental Columns

Database Change Tracking

CDC Features in Source Databases

Database level CDC

Log-based CDC

Streaming CDC

Data Volume and Frequency

Data Retention and Purging

Data Transformation and ETL

Data Consistency and Order

Azure Monitor

Azure Automation

Scheduling

Best Practices (error handling, debugging, monitoring in Azure, troubleshooting techniques,

Approaches for Azure applications and services)

The screenshot shows the Microsoft Azure SQL Database Query Editor (preview) interface. The top navigation bar includes 'Microsoft Azure', a search bar, and user information. Below the navigation is a breadcrumb trail: 'me > Microsoft.SQLDatabase.newDatabaseNewServer_2b8a7149d67b4f4daf5ab | Overview > sql-DB (server-javascript/sql-DB)'. The main title is 'sql-DB (server-javascript/sql-DB) | Query editor (preview)'.

The left sidebar displays the database structure for 'sql-DB (juhilogin)'. It shows a note: 'Showing limited object explorer here. For full capability please click here to open Azure Data Studio.' Below this are links for 'Tables', 'Views', and 'Stored Procedures'.

The central area is titled 'Query 1' and contains the following SQL code:

```
1 CREATE TABLE CITIZENS (
2   ID INT PRIMARY KEY,
3   NAME VARCHAR(50))
```

Below the query, the status message 'Query succeeded: Affected rows: 0' is displayed. At the bottom right, a green bar indicates 'Query succeeded | 0s'.

Microsoft Azure Search resources, services, and docs (G+/-) Shellunext_1693422651... UNEXT (NPUNEXT ONMICROSO...

Home > Microsoft.SQLDatabase.newDatabaseNewServer_2b8a7149d67b4f4daf5ab | Overview > sql-DB (server-js/sql-DB)

sql-DB (server-js/sql-DB) | Query editor (preview)

SQL database

Login New Query Open query Feedback Getting started

sql-DB (juhilogin)

Showing limited object explorer here. For full capability please click here to open Azure Data Studio.

Tables Views Stored Procedures

Query 1

Run Cancel query Save query Export data as Show only Editor

```
1 INSERT INTO CITIZENS VALUES(1, 'MAHESH');
2 INSERT INTO CITIZENS VALUES(2, 'RAVI');
3 INSERT INTO CITIZENS VALUES(3, 'MIKE');
```

Results Messages

Query succeeded: Affected rows: 3

Query succeeded | 0s

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Home > Microsoft.SQLDatabase.newDatabaseNewServer_2b8a7149d67b4f4daf5ab | Overview > sql-DB (server-js/sql-DB)

sql-DB (server-js/sql-DB) | Query editor (preview)

SQL database

Login New Query Open query Feedback Getting started

sql-DB (juhilogin)

Showing limited object explorer here. For full capability please click here to open Azure Data Studio.

Tables Views Stored Procedures

Query 1

Run Cancel query Save query Export data as Show only Editor

```
1 SELECT * FROM CITIZENS;
```

Results Messages

1	MAHESH
2	RAVI
3	MIKE

Query succeeded | 0s

Query 1 ×

Run Cancel query Save query Export data as Show only Editor

```
1 CREATE TABLE CITIZENSDW (
2   ID INT,
3   NAME VARCHAR(50))
```

Results Messages

Query succeeded: Affected rows: 0

Query succeeded | 0s

Query 1 ×

Run Cancel query Save query Export data as Show only Editor

```
1 EXEC sys.sp_cdc_enable_db
2 GO
```

Results Messages

Query succeeded: Affected rows: 0

Query succeeded | 0s

Microsoft Azure | Search resources, services, and docs (G+/-) Shellunext_1693422651... UNEXT (NPUNEXT.ONMICROSOFT.COM)

Home > Microsoft SQLDatabase.newDatabaseNewServer_2b8a7149d67b4f4daf5ab | Overview > sql-DB (server-js/sql-DB)

sql-DB (server-js/sql-DB) | Query editor (preview)

SQL database

Login New Query Open query Feedback Getting started

sql-DB (juhilogin)

Showing limited object explorer here. For full capability please click here to open Azure Data Studio.

Tables Views Stored Procedures

Query 1

Run Cancel query Save query Export data as Show only Editor

```
1 EXEC sys.sp_cdc_enable_table
2 @source_schema='dbo',
3 @source_name='citizens',
4 @role_name=NULL,
5 @supports_net_changes=1
```

Results Messages

Query succeeded: Affected rows: 0

Query succeeded | 2s

Microsoft Azure | Data Factory | jadft | Search factory and documentation Shellunext_1693422651722@npunext.onmicrosoft.com UNEXT

Microsoft recently announced the public preview of Microsoft Fabric, a brand new and exciting

Data Factory Validate all Publish all

Factory Resources

Pipelines 0 Change Data Capture (preview) 0 Datasets 0 Data flows 0 Power Query 0

Filter resources by name

Set properties

Name Citizens

Linked service * AzureSqlDatabase1

Table name dbo.CITIZENS

Import schema From connection/store None

OK Back Cancel

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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!

Factory Resources > Citizens

Pipelines: 0
Change Data Capture (preview): 0
Datasets: 1
Citizens
Data flows: 0
Power Query: 0

Set properties

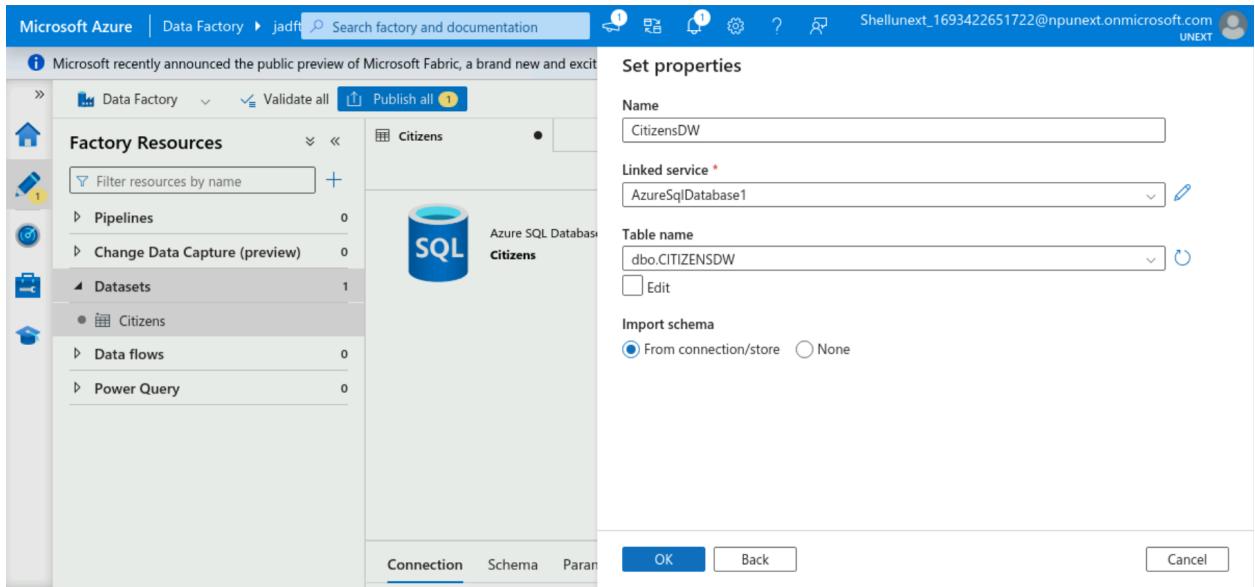
Name: CitizensDW

Linked service: AzureSqlDatabase1

Table name: dbo.CITIZENSDW

Import schema: From connection/store (selected) None

Connection Schema Parameters OK Back Cancel



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Preview experience: Off

Factory Resources > CitizensDW

Pipelines: 0
Change Data Capture (preview): 0
Datasets: 2
Citizens
CitizensDW
Data flows: 0
Power Query: 0

Properties

General Related

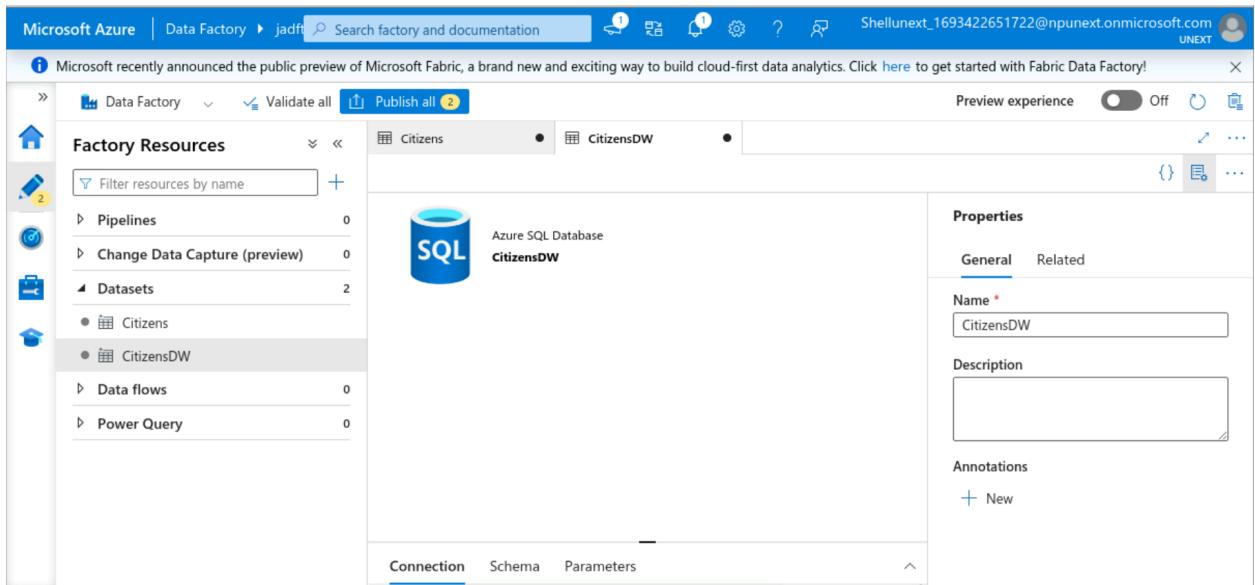
Name: CitizensDW

Description:

Annotations

+ New

Connection Schema Parameters



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Data Factory | Validate all | Publish all (3)

Preview experience: Off

Factory Resources:

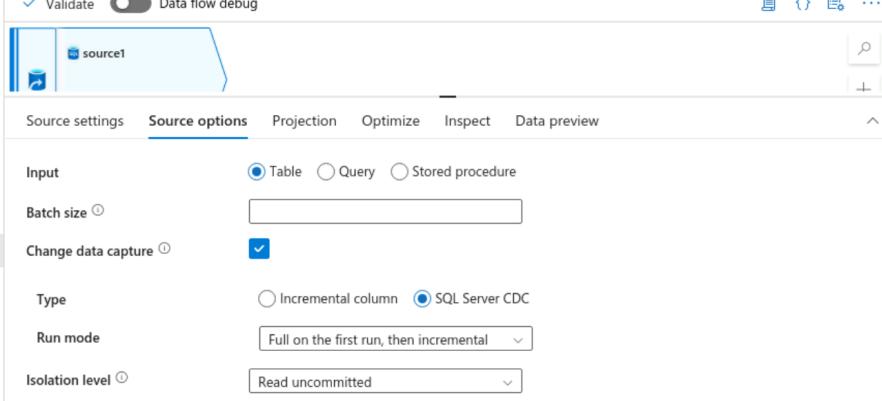
- Pipelines: 0
- Change Data Capture (preview): 0
- Datasets: 2
 - Citizens
 - CitizensDW
- Data flows: 1
 - dataflow1
- Power Query: 0

Filter resources by name: +

Validate | Data flow debug

Source settings | Source options (selected) | Projection | Optimize | Inspect | Data preview

Source1 (Table): Input | Batch size: [] | Change data capture: [] | Type: SQL Server CDC | Run mode: Full on the first run, then incremental | Isolation level: Read uncommitted



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Data Factory | Validate all | Publish all (3)

Preview experience: Off

Factory Resources:

- Pipelines: 0
- Change Data Capture (preview): 0
- Datasets: 2
 - Citizens
 - CitizensDW
- Data flows: 1
 - dataflow1
- Power Query: 0

Filter resources by name: +

Validate | Data flow debug

Sink | Settings (selected) | Errors | Mapping | Optimize | Inspect | Data preview

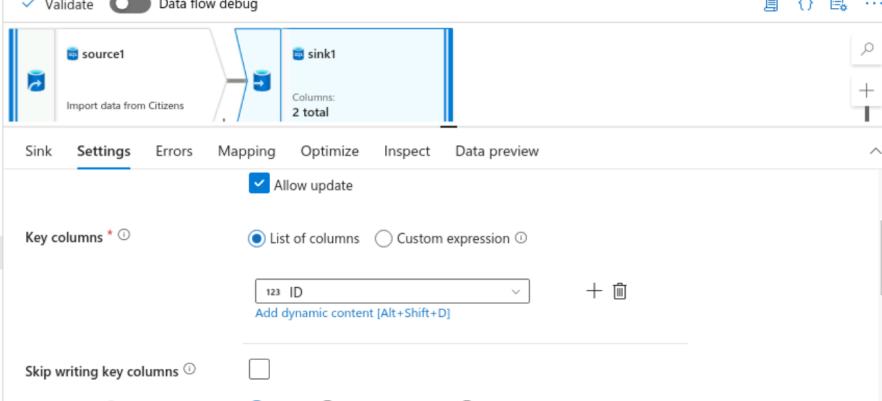
source1 (sink1): Import data from Citizens | Columns: 2 total | Allow update: checked

Key columns*: [List of columns] (selected) | Custom expression: []

123 ID | Add dynamic content [Alt+Shift+D]

Skip writing key columns: []

Table action: None (selected) | Recreate table | Truncate table



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Data Factory Validate all Publish all 4 Preview experience Off

Factory Resources Filter resources by name +

Pipelines 1
CDC_pipeline
Change Data Capture (preview) 0
Datasets 2
Citizens
CitizensDW
Data flows 1
CDC_DF
Power Query 0

Citizens ● CitizensDW ● CDC_DF ● CDC_pipeline

Data flow CDC_DF

Properties General Related
Name * CDC_pipeline
Description
Annotations + New

General Settings Parameters User properties

Microsoft Azure | Data Factory | jadft | Search factory and documentation

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Data Factory Validate all Publishing 4 Preview experience

Factory Resources Filter resources by name +

Pipelines 1
CDC_pipeline
Change Data Capture (preview) 0
Datasets 2
Citizens
CitizensDW
Data flows 1
CDC_DF
Power Query 0

Citizens ● CDC_pipeline ● CDC_DF

Properties General Related
Name * CDC_pipeline
Description
Annotations + New

General Settings Parameters User properties

Publish all

You are about to publish all pending changes to the live environment. [Learn more](#)

Pending changes (4)

NAME	CHANGE	EXISTING
✓ Pipelines	CDC_pipeline (New)	-
✓ Datasets	Citizens (New)	-
✓ Datasets	CitizensDW (New)	-
✓ Data flows	CDC_DF (New)	-

Gen Publish Cancel

Microsoft Azure ...

Home > sql-DB (server-js/sql-DB)

sql-DB (server-js/sql-DB) | Query editor (preview)

SQL database

Login New Query Open query Feedback Getting started

sql-DB (juhilogin)

Showing limited object explorer here. For full capability please click here to open Azure Data Studio.

> Tables
> Views
> Stored Procedures

Query 1

Run Cancel query Save query Export data as Show only Editor

```
1 select * from [dbo].[CITIZENSDW]
```

Results Messages

1	MAHESH
2	RAVI
3	MIKE

Query succeeded | 0s

This screenshot shows the Microsoft Azure SQL Database Query Editor interface. The left sidebar displays the database name 'sql-DB (juhilogin)' and a note about the limited object explorer. Below the sidebar are links to 'Tables', 'Views', and 'Stored Procedures'. The main area is titled 'Query 1' and contains a query to select all columns from the table '[dbo].[CITIZENSDW]'. The results show three rows with names MAHESH, RAVI, and MIKE. A message bar at the bottom indicates 'Query succeeded | 0s'.

REAL-TIME CDC

Query 1

Run Cancel query Save query Export data as Show only Editor

```
1 CREATE TABLE CUSTOMER(
2     CUSTOMERID INT PRIMARY KEY,
3     FIRSTNAME VARCHAR(50),
4     LASTNAME VARCHAR(50),
5     EMAIL VARCHAR(100)
6 ) .
```

Results Messages

Query succeeded: Affected rows: 0

Query succeeded | 0s

This screenshot shows the Microsoft Azure SQL Database Query Editor interface. The main area is titled 'Query 1' and contains a SQL script to create a table named 'CUSTOMER' with four columns: CUSTOMERID (INT, primary key), FIRSTNAME (VARCHAR(50)), LASTNAME (VARCHAR(50)), and EMAIL (VARCHAR(100)). The 'Messages' tab below the query editor shows the message 'Query succeeded: Affected rows: 0'. A message bar at the bottom indicates 'Query succeeded | 0s'.

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Data Factory | Validate all | Publish all

Factory Resources

- Pipelines: 1
 - CDC_pipeline
- Change Data Capture (preview): 0
- Datasets: 2
 - Citizens
 - CitizensDW
- Data flows: 1
 - CDC_DF
- Power Query: 0

Choose Your Sources

CDC name *

Source type *

Azure SQL Database

Source linked service *

AzureSqlDatabase1

Source tables

Filter by table

Showing 1 - 2 of 2 tables (1 selected)

	Name	Incremental column	Preview
<input type="checkbox"/>	dbo.CITIZENS	SQL Server CDC	
<input checked="" type="checkbox"/>	dbo.CUSTOMER	SQL Server CDC	

Continue | Cancel

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Data Factory | Validate all | Publish all

Factory Resources

- Pipelines: 1
 - CDC_pipeline
- Change Data Capture (preview): 0
- Datasets: 2
 - Citizens
 - CitizensDW
- Data flows: 1
 - CDC_DF
- Power Query: 0

Choose Your Targets

Change Data Capture (CDC) automatically detects data changes at the source and then sends the updated data to the destination.

Target type *

Azure SQL Database

Target linked service *

AzureSqlDatabase1

Target tables

Filter by table

New entities Existing entities

Showing 1 - 13 of 13 tables (existing:1, total:13 tables selected)

	Name	Preview
<input type="checkbox"/>	dbo.CUSTOMER	
<input checked="" type="checkbox"/>	dbo.CustomerDW	

Continue | Back | Cancel

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Data Factory Validate all Publish all 1 Preview experience Off

Factory Resources CustomerCDC

Pipelines 1 CDC_pipeline

Change Data Capture (preview) 1 CustomerCDC

Datasets 2 Citizens CitizensDW

Data flows 1 CDC_DF

Power Query 0

CustomerCDC

Target Table: dbo.CustomerDW

Columns mapped: 4 mappings: 0 unmapped

Auto map Keys Column mappings

Source Target

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Data Factory Validate all Publish all 1 Preview experience Off

CustomerCDC

Start Set Latency Data flow debug

o.CustomerDW

source table: dbo.CUSTOMER

Mapping method

	Source column	Target column	Key
Direct	123 CUSTOMERID	123 CUSTOMERID	
Direct	abc EMAIL	abc EMAIL	
Upper	FIRSTNAME	abc FIRSTNAME	
Upper	LASTNAME	abc LASTNAME	

Data preview

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Data Factory CustomerCDC

Start Set Latency Data flow debug

dbo.CustomerDW

Primary source table : dbo.CUSTOMER

New mapping Reset mapping Delete

Mapping method

Source column

Direct CUSTOMER

Direct EMAIL

Upper FIRSTNAME

Upper LASTNAME

Data preview

Real-time

15 minute

30 minute

1 hour

2 hours

Apply Cancel

Microsoft Azure | Search resources, services, and docs (G+)

Home > Microsoft.AutomationAccount | Overview > automationacc

automationacc | Schedules Automation Account

Search Update management

Schedules

Modules Python packages Credentials Connections Certificates Variables

Related Resources Linked workspace Event grid

Add a schedule Feedback Refresh

Name Next run Time zone

No schedules found.

New Schedule

Name * WeekDays at 8 AM

Description

Starts * 09/09/2023 8:00 AM

Time zone India - India Standard Time

Recurrence Once Recurring

Recur every * 1 Week

Create

Microsoft Azure Search resources, services, and docs (G+) Home > Microsoft.AutomationAccount | Overview > automationacc

automationacc | Schedules

Automation Account

Search Add a schedule Feedback Refresh

Update management Shared Resources Schedules Modules Python packages Credentials Connections Certificates Variables

Related Resources Linked workspace Event grid

Name	Next run	Time zone	Status
WeekDays at 8 AM	9/11/2023, 8:00 AM	India Standard Time	✓ On

Microsoft Azure Search resources, services, and docs (G+) Home > Microsoft.AutomationAccount | Overview > automationacc

automationacc | Runbooks

Automation Account

run Create a runbook Import a runbook Browse gallery Learn more Feedback Refresh

Process Automation Runbooks Try the new Azure Automation Extension to create and manage runbooks using Visual Studio Code. Download the extension from [Visual Studio Marketplace](#). For more information, see [Azure Automation extension](#).

Account Settings Run as accounts (retiring soon)

Search runbooks... Runbook type : All Authoring Status : All

Showing 1 to 2 of 2 records.

Name	Authoring status	Runbook type	Runtime version	Last modified	Tags
AzureAutomationTut...	Published	PowerShell	5.1	9/8/2023, 11:08 AM	
AzureAutomationTut...	Published	Graphical PowerShell	5.1	9/8/2023, 11:08 AM	