



CDC/Data Source Monitoring Demo

July 2019

CDC/Data Source Monitoring

Customer Challenge

Process events as they happen in real-time.

Update data by writing back to data sources as events are processed.

Use self-serve analytics to provision data to communities of interest.

Index-based Data Virtualization Solution

Access data with index-based adapters, regardless of location or type.

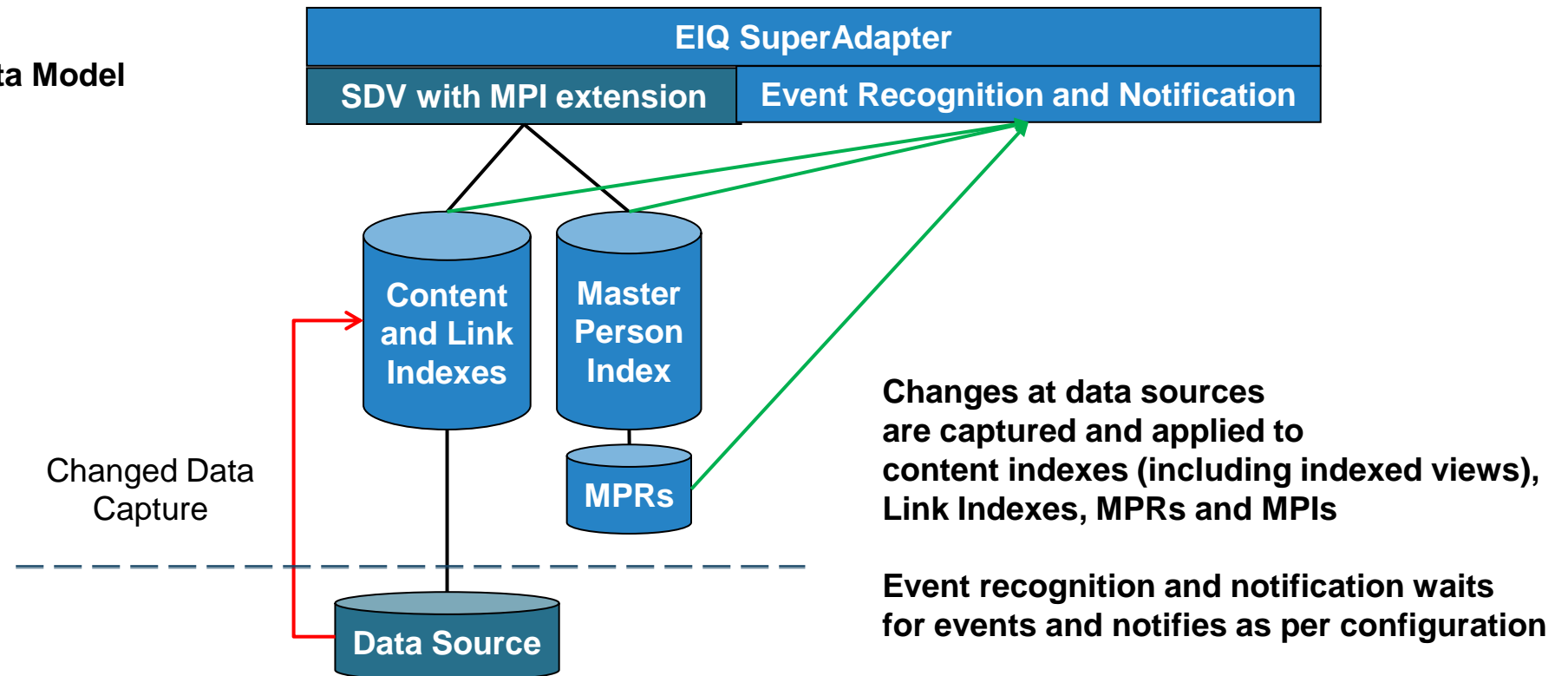
Index data create indexed views for pre-aggregated results that support near real-time changes and write back to data sources.

Set up CDC, query based polling or other monitoring methods to poll for changes in data.

Provision data on an ad hoc basis or by using a subscription/stored query.

Data source monitoring and event processing demo

SDV = Standard Data View
aka Standard/Common Data Model
MPI = Master Person Index
MPR = Master Person Record





WT -> Data source monitoring and event processing

- As indexes and indexed views are updated, they can be monitored for data source and Key Performance Indicator (KPI) changes, with triggers to process events **DEMO**
- REST APIs in conjunction with open source and commercial Business Process Management (BPM) software
- Can use JavaScript and other code-based middleware – same data backend REST APIs

No backup screenshots

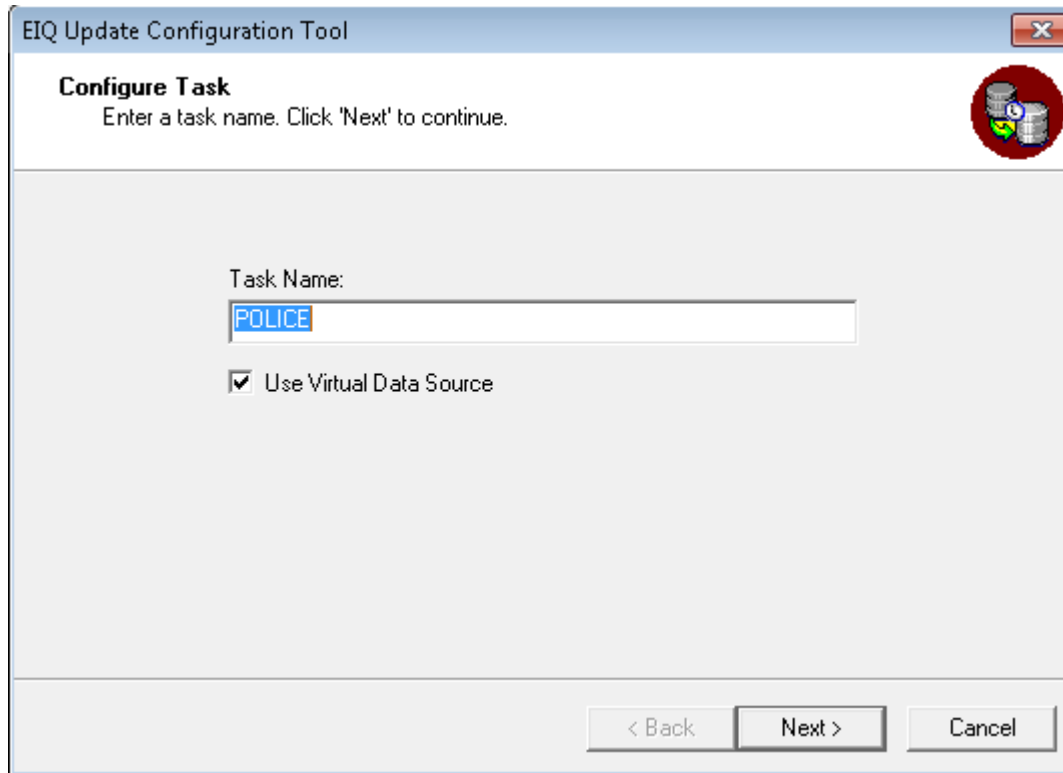


Enable CDC on SQL server

- Use POLICE
- GO
-
- exec sys.sp_cdc_enable_db
- GO
-
-
- exec sp_cdc_enable_table @source_schema =N'dbo',@source_name = 'LOPERSON', @role_name = null, @filegroup_name = null, @supports_net_changes = 1;
- GO
-
-
- Then activate CDC on the remaining two tables:
-
- exec sp_cdc_enable_table @source_schema =N'dbo',@source_name = 'INCIDENT', @role_name = null, @filegroup_name = null, @supports_net_changes = 1;
- GO
-
-
- exec sp_cdc_enable_table @source_schema =N'dbo',@source_name = 'PERSINCIDENT', @role_name = null, @filegroup_name = null, @supports_net_changes = 0;
- GO

Schedule a task for update using the Update Configuration Tool

- Configure a task
- Select the desired VDS and finish



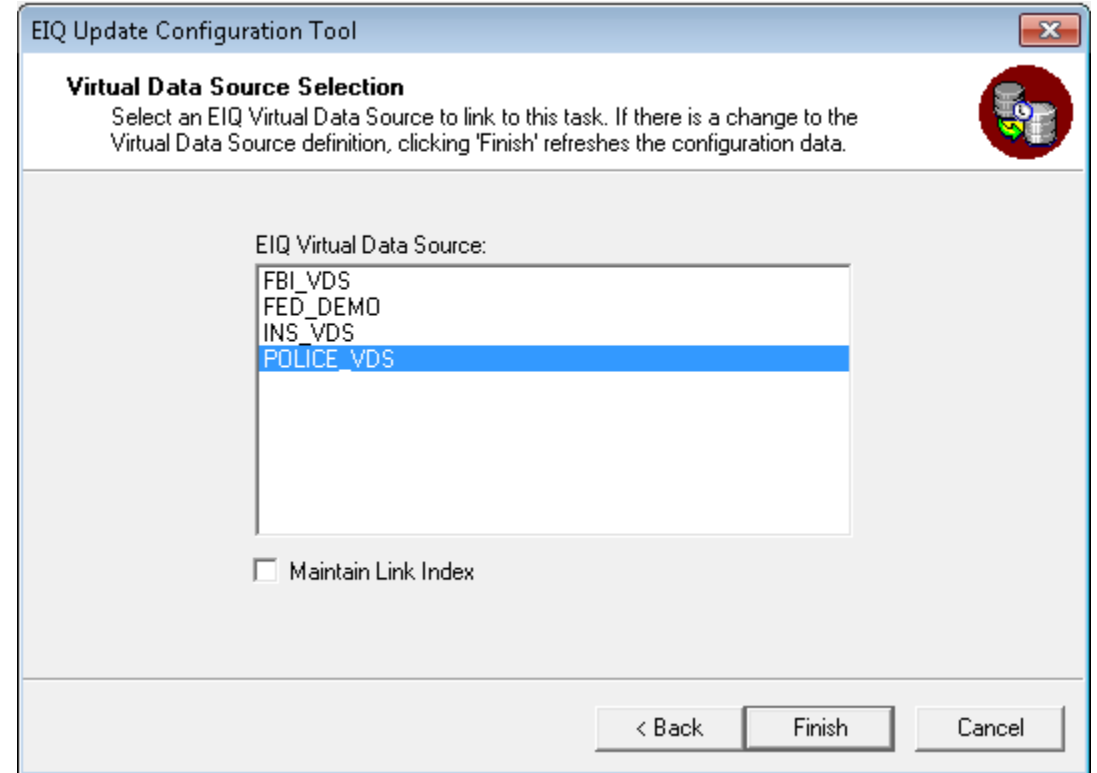
EIQ Update Configuration Tool

Configure Task
Enter a task name. Click 'Next' to continue.

Task Name:

☒ Use Virtual Data Source

< Back Next > Cancel



EIQ Update Configuration Tool

Virtual Data Source Selection
Select an EIQ Virtual Data Source to link to this task. If there is a change to the Virtual Data Source definition, clicking 'Finish' refreshes the configuration data.

EIQ Virtual Data Source:

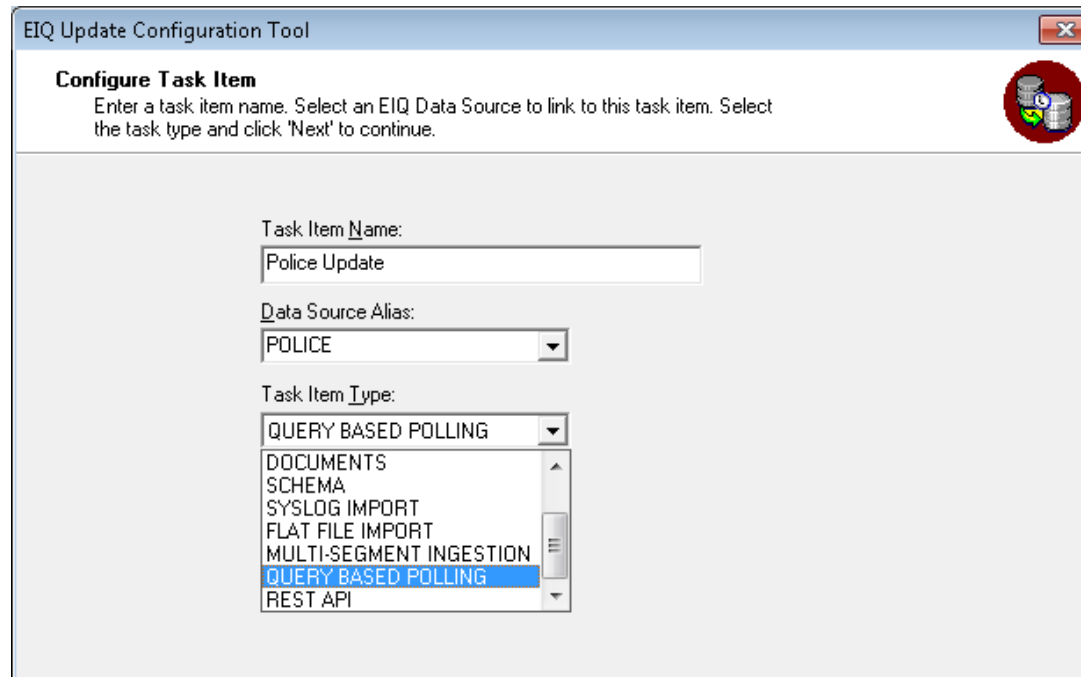
- FBI_VDS
- FED_DEMO
- INS_VDS
- POLICE_VDS**

☐ Maintain Link Index

< Back Finish Cancel

Configure the task item detail

**Configure the task Item:
Name the item and choose the template**



EIQ Update Configuration Tool

Configure Task Item

Enter a task item name. Select an EIQ Data Source to link to this task item. Select the task type and click 'Next' to continue.

Task Item Name:

Data Source Alias:

Task Item Type:

- DOCUMENTS
- SCHEMA
- SYSLOG IMPORT
- FLAT FILE IMPORT
- MULTI-SEGMENT INGESTION
- QUERY BASED POLLING**
- REST API

**Configure the template specific details and
choose the table to maintain**



EIQ Update Configuration Tool

Change Query-based/Rest API Configuration Setup

Configure the Query-based Polling or REST API settings, specify the other task parameters, and click 'Finish'.

Task type: Query based Polling

QueryBased Polling Data Source

Data Source Name (DSN):

User ID (UID):

Password:

Data Source Platform:

Test Connection

Rest API Credentials

User Name:

Password:

File Path:

Browse

Polling Frequency for updates

Poll Interval (seconds):

Start/Last Timestamp:

Initial Timestamp:

Batch Size:

Schedule Polling

Start date:

Occurs at:

Occurs every: day(s)

☒ Enable Deletes

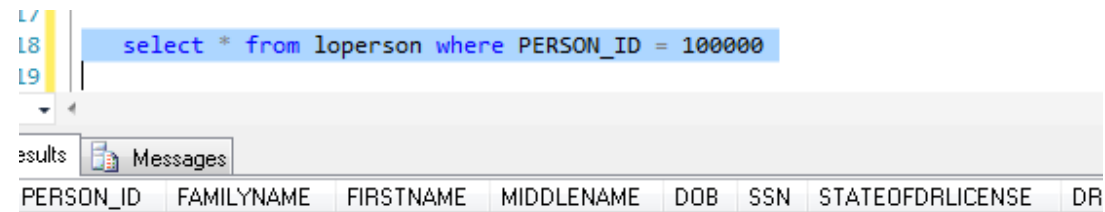
Table specific data:

Please select the table(s) by selecting any of its column name. ☐ Show only Timestamp columns

Schema Name	Table Name	Column Name1	Column Name2	Value
dbo	Clearance			
dbo	INCIDENT			
dbo	IncidentClassification			
dbo	LOPERSON	DATEENTERED		
dbo	PERSINCIDENT			

Verify record does not exist on SQL server and Index before inserting

SQL Server

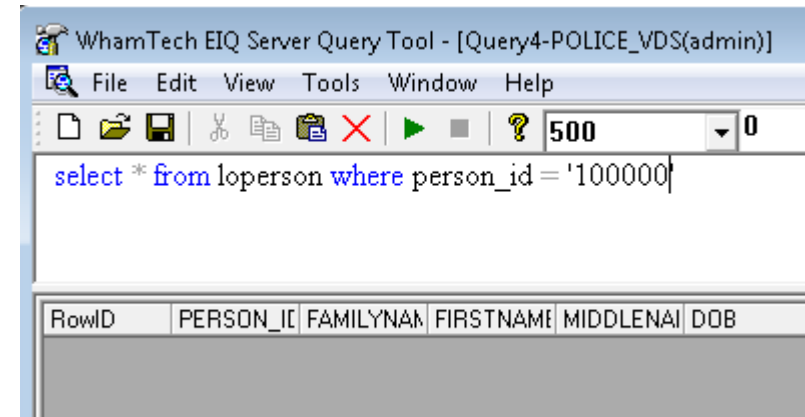


The screenshot shows the SQL Server Enterprise Manager interface. In the query editor, the following SQL query is entered:

```
select * from loperson where PERSON_ID = 100000
```

Below the query editor, the 'Results' pane is visible, showing a table with the following columns: PERSON_ID, FAMILYNAME, FIRSTNAME, MIDDLENAME, DOB, SSN, STATEOFDRLICENSE, and DR.

Index



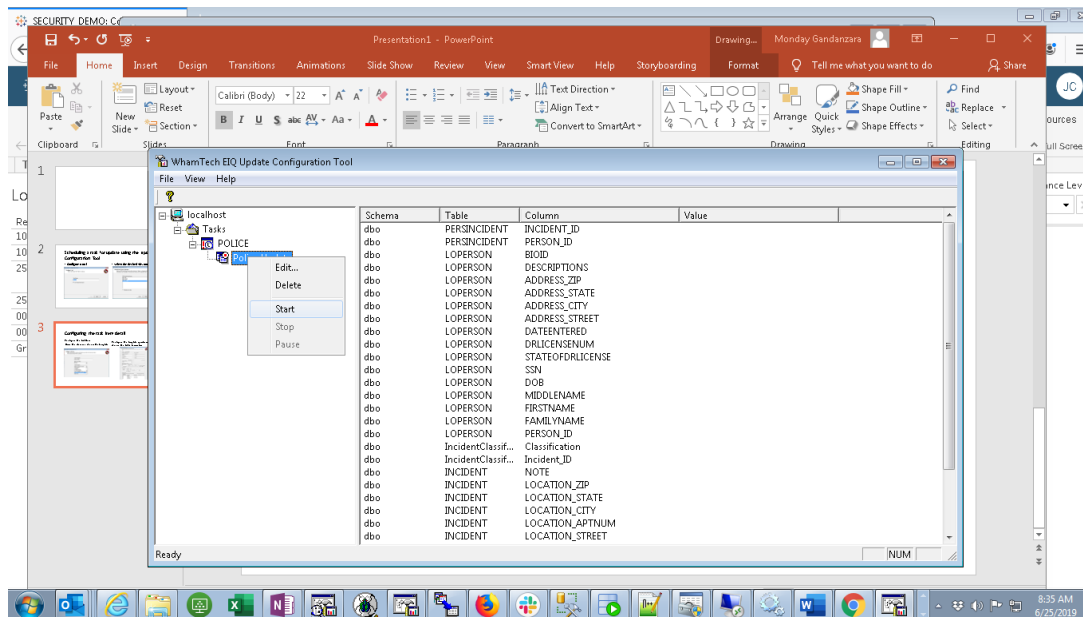
The screenshot shows the WhamTech EIQ Server Query Tool interface. In the query editor, the following SQL query is entered:

```
select * from loperson where person_id = '100000'
```

Below the query editor, the 'Results' pane is visible, showing a table with the following columns: RowID, PERSON_ID, FAMILYNAME, FIRSTNAME, MIDDLENAME, and DOB.

Start the task

- Insert record on SQL server and monitor changes on index
- INSERT into LoPerson (PERSON_ID, FAMILYNAME, FIRSTNAME, MIDDLENAME, DOB, SSN, STATEOFDRLICENSE, DRLICENSENUM, DATEENTERED, ADDRESS_STREET, ADDRESS_CITY, ADDRESS_STATE, ADDRESS_ZIP, DESCRIPTIONS, BIOID)
- VALUES (100000, 'Cyber', 'Monica', 'Keane', '1980-01-01', '123456789', 'TX', '7654321', getdate(), '312 UTA Blvd', 'Arlington', 'TX', '76010', 'Record inserted', NULL)



Verify Insert

SQL Server after Insert

```

SQLQuery3.sql - I...CORP\mondayg (60)) * X SQLQuery1.sql - I...CORP\mondayg (62)) *
15
16 INSERT into LoPerson (PERSON_ID, FAMILYNAME, FIRSTNAME, MID
ADDRESS_CITY, ADDRESS_STATE, ADDRESS_ZIP, DESCRIPTIONS, BIOID)
17 VALUES (100000, 'Cyber', 'Monica', 'Keane', '1980-01-01', '1
'76010', 'Record inserted', NULL)
18
19
20
21 select * from loperson where PERSON_ID = 100000
22

```

100 %

Results Messages

	PERSON_ID	FAMILYNAME	FIRSTNAME	MIDDLENAME	DOB
1	100000	Cyber	Monica	Keane	1980-01-01 00:00:00.000

Index after insert

WhamTech EIQ Server Query Tool - [Query4-POLICE_VDS(admin)]

File Edit View Tools Window Help

500 0

select * from loperson where person_id = '100000'

RowID	PERSON_ID	FAMILYNAME	FIRSTNAME	MIDDLENAME	DOB
0	100000	Cyber	Monica	Keane	1980-01-01

Write back to data sources

- Supports interoperability, master data and other updates
- Depends on data source system, data importance to schema and transaction processing
- Can be simple or require stored procedures at some level(s)



Data provisioning to Communities of Interest (COIs)

- Similar to supporting self-serve analytics, can provision data on an ad hoc basis or using a subscription/stored query, support a COI
- Tie-in with Feature 11. Data source monitoring and event processing



End of CDC/Data Source Monitoring Demo