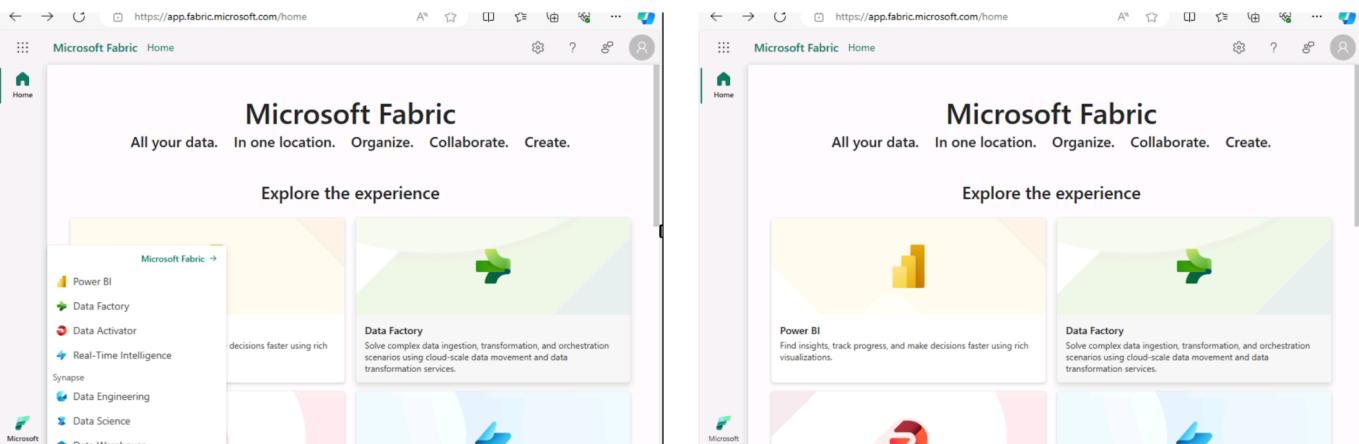


# Data analytics with Fabric

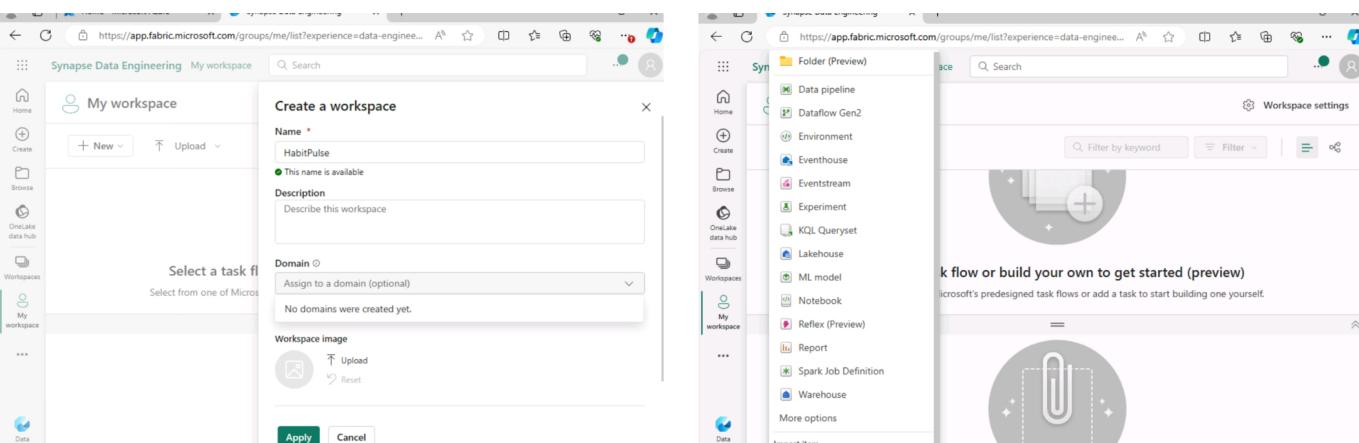
## Fabric



The Microsoft Fabric home page displays various data engineering and analysis services. Key features shown include:

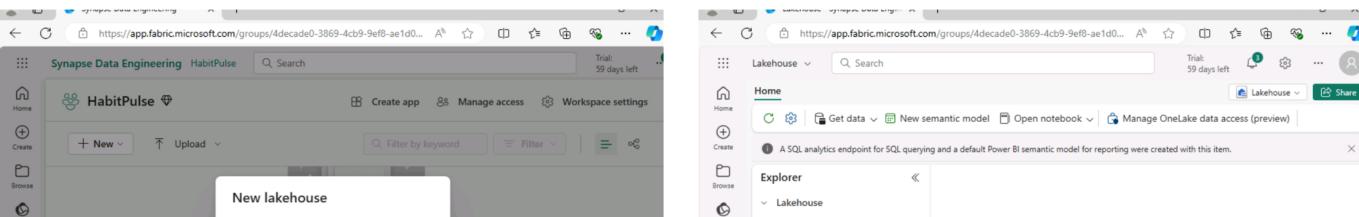
- Power BI**: Find insights, track progress, and make decisions faster using rich visualizations.
- Data Factory**: Solve complex data ingestion, transformation, and orchestration scenarios using cloud-scale data movement and data transformation services.

## Data engineering with Synapse

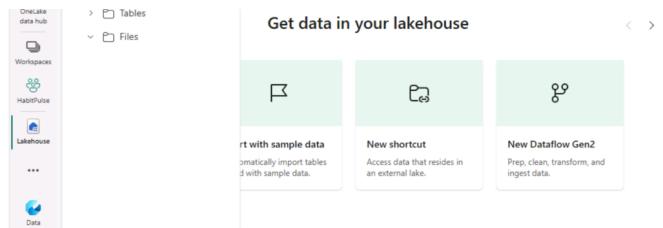
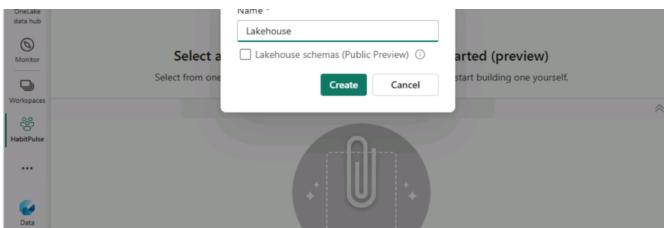


The Synapse Data Engineering workspace provides tools for building and managing data flows. Key features shown include:

- Create a workspace**: A dialog for creating a new workspace named "HabitPulse".
- Task flows**: A workspace-level feature for defining and executing data processing logic.
- Lakehouse**: A semantic model endpoint for SQL querying and reporting.



The Synapse Data Engineering workspace continues to show the "HabitPulse" workspace and its associated lakehouse configuration.



A screenshot of the OneLake data hub interface showing the 'Ingest Data' section. It includes four cards: 'Upload files' (upload data from local machine), 'Start with sample data' (automatically import tables filled with sample data), 'New shortcut' (access data that resides in an external lake), and 'New Dataflow Gen2' (prep, clean, transform, and ingest data). A message at the top indicates that a default Power BI semantic model for reporting was created with this item.

A screenshot of the OneLake data hub interface showing the 'New pipeline' creation dialog. The dialog title is 'New pipeline' and it has a 'Name' input field containing 'Ingest Data'. There are 'Create' and 'Cancel' buttons at the bottom.

A screenshot of the OneLake data hub interface showing the 'Copy data into Lakehouse' step. It includes a 'Choose data source' section with options like 'Connect to data source' and 'Choose data destination'. To the right, a preview window shows the 'NYC Taxi - Green' dataset, which is 2 GB in Parquet format. The preview table lists vendor ID and pickup location details.

A screenshot of the OneLake data hub interface showing the 'Connect to data source' step. It includes a 'Select a dataset' section with 'NYC Taxi - Green' selected. To the right, a preview window shows the same NYC Taxi dataset with a table of vendor ID and pickup location data.

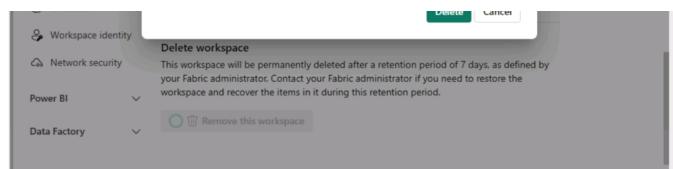
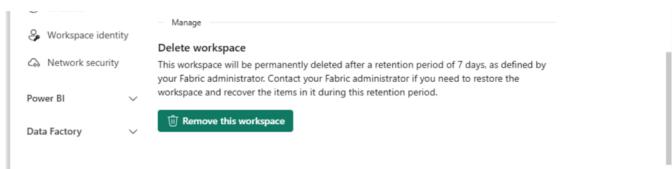
A screenshot of the OneLake data hub interface showing the 'Connect to data destination' step. It includes a 'Connection' section for 'Lakehouse', 'Root folder' (set to 'Tables'), 'Load settings' (set to 'Load to existing table'), and 'Table' (loading status). The 'Table action' is set to 'Append'. There are 'Back' and 'Next' buttons at the bottom.

A screenshot of the OneLake data hub interface showing the 'Review + save' step. It includes a 'Copy data into Lakehouse' summary, a 'Source' section with 'sample dataset' (NYC Taxi - Green Parquet), a 'Destination' section with 'Connection' and 'Table name', and an 'Options' section with a checked 'Start data transfer immediately' checkbox. There are 'Back' and 'Save + Run' buttons at the bottom.

A screenshot of the OneLake data hub interface showing the 'Copy data into Lakehouse' step. It includes a 'Choose data source' section and a 'Connect to data source' section. The 'Connection' dropdown is set to 'Lakehouse'. The 'Root folder' is 'Tables'. The 'Load settings' dropdown is set to 'Load to existing table'. There are 'Back' and 'Next' buttons at the bottom.

A screenshot of the OneLake data hub interface showing the 'Copy data' history. It lists a single entry: 'Copy\_kki' with a green checkmark. There are 'Run', 'Validate', and 'Edit' buttons above the history list.





## Real-time engineering with Azure Stream Analytics

The screenshot shows the 'Real-Time Intelligence' home page. It features a 'New' section with icons for Eventhouse, KQL Queryset, Real-Time Dashboard, Eventstream, Reflex (Preview), and Use a sample. Below this is a 'Recommended' section with cards for 'Get started' links.

The screenshot shows the 'Real-Time Intelligence' home page with a 'New Eventhouse' dialog open. The 'Eventhouse name' field is filled with 'Eventhouse'. A 'Create' button is visible at the bottom right of the dialog.

The screenshot shows the 'Real-Time Intelligence' home page with a 'New Eventstream' dialog open. The 'Name' field is filled with 'Real'. An 'Enhanced Capabilities (preview)' checkbox is checked. A 'Create' button is visible at the bottom right of the dialog.

The screenshot shows the 'Real-Time Intelligence' Data preview page for an Eventstream named 'Real'. It displays a flow diagram with a 'New source' box connected to a 'Real' box, which is then connected to a 'New destination' box. Below the diagram, it says 'Data preview' and 'Data insights' with a 'Refresh' button. The last refresh time is 07/30/24 11:56:51 AM.

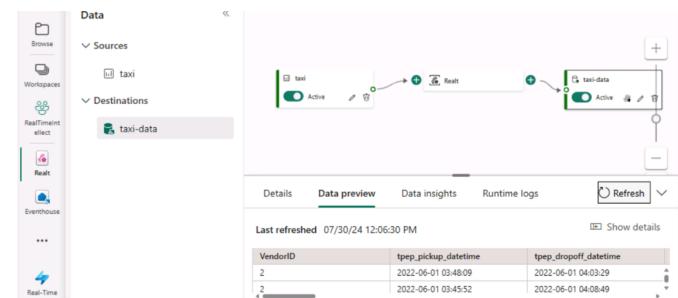
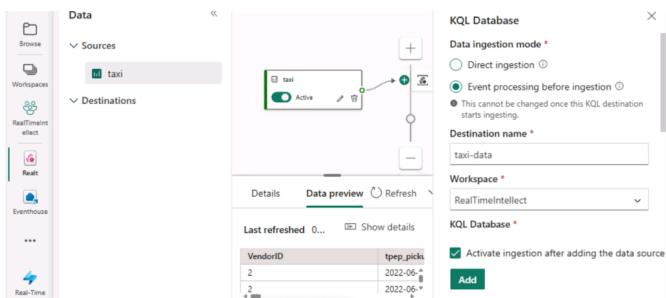
The screenshot shows the 'Real-Time Intelligence' Data preview page for an Eventstream named 'taxi'. It displays a flow diagram with a 'taxi' box connected to a 'New destination' box. Below the diagram, it says 'Data preview' and 'Data insights' with a 'Refresh' button. The last refresh time is 07/30/24 11:58:51 AM. A table below shows data from the 'taxi' source.

VendorID	tpep_pickup_datetime	tpep_dropoff_datetime
2	2022-06-01 00:22:41	2022-06-01 00:36:36
2	2022-06-01 00:03:53	2022-06-01 00:16:39

The screenshot shows the 'Real-Time Intelligence' Data preview page for an Eventstream named 'taxi'. It displays a flow diagram with a 'taxi' box connected to a 'taxi-data' destination box. The 'taxi-data' box is part of a 'KQL Database' configuration. The 'Destination table' is set to 'taxi-data'. The 'Input data format' is 'Create new'. A checkbox for 'Activate ingestion after adding the data source' is checked. A 'Add' button is visible at the bottom right.

The screenshot shows the 'Real-Time Intelligence' Data preview page for an Eventstream named 'taxi'. It displays a simplified navigation bar with 'Home', 'Settings', 'New source', 'New destination', 'Refresh', 'Activate all', and 'Deactivate all' buttons.

The screenshot shows the 'Real-Time Intelligence' Data preview page for an Eventstream named 'taxi'. It displays a simplified navigation bar with 'Home', 'Settings', 'New source', 'New destination', 'Refresh', 'Activate all', and 'Deactivate all' buttons.



The screenshot shows the Eventhouse interface. On the left, there's a sidebar with 'Eventhouse' selected, showing 'System overview', 'Databases', and 'QL databases'. Under 'QL databases', a new database named 'Eventhouse' is being created. The 'Tables' section lists 'taxi-data'. The 'Database details' pane shows the database was created by 'Eventhouse' in 'North Central US' on 'Today, 15m ago'. The size is listed as 308, 252, and 0.82.

This screenshot shows the results of a KQL query in the Eventhouse interface. The query is: 

```
14 // This query returns the number of ingestions per hour in the given table.
15 // YOUR_TABLE_HERE
16 // summarize IngestionCount = count() by bin(ingestion_time(), 1h)
17
18
19 // This query returns the number of taxi pickups per hour
20 [taxi-data]
21 | summarize PickupCount = count() by bin(todatetime(tpep_pickup_datetime), 1h)
```

. The results show four rows of data: 2022-05-31 17:00:00.0000 with PickupCount 1, 2022-05-31 20:00:00.0000 with PickupCount 1, 2022-05-31 22:00:00.0000 with PickupCount 1, and 2022-05-31 23:00:00.0000 with PickupCount 2.

## PowerBI

The screenshot shows the Power BI Desktop interface. The ribbon is at the top with tabs like File, Home, Insert, Modeling, View, Optimize, Help, and Share. The 'Data' tab is selected. The main area shows a placeholder for adding data with options like 'Import data from Excel', 'Import data from SQL Server', and 'Paste data into a blank table'.

This screenshot shows the same Power BI Desktop interface, but the 'File' tab is selected instead of 'Data'. The main area shows a placeholder for adding data with options like 'Import data from Excel', 'Import data from SQL Server', and 'Paste data into a blank table'.

The screenshot shows the Power BI Desktop interface with the 'Data' tab selected. A 'From Web' dialog is open, prompting for a URL. The URL entered is 'https://github.com/MicrosoftLearning/DP-900T00A-Azure-Data-Fundamentals/raw/master/power-bi/customers.csv'. The 'OK' button is highlighted.

This screenshot shows the Power BI Desktop interface with the 'Data' tab selected. A 'Access Web content' dialog is open, asking for a user account. Options include 'Anonymous', 'Windows', 'Basic', 'Web API', and 'Organizational account'. The 'Anonymous' option is selected. A 'Connect' button is visible at the bottom right.

The screenshot shows the Power BI Data view. On the left, a preview of a CSV file named 'File Origin' is displayed, containing data for customers from various cities and countries. On the right, the schema is shown with two tables: 'customers' and 'products'. The 'customers' table has columns for CustomerID, Name, PostalCode, City, and CountryRegion. The 'products' table has columns for ProductID, Category, and ProductName. Relationships between the tables are established via CustomerID and OrderID.

This screenshot shows the 'Properties' pane for the 'products' table in the Power BI Data view. The table contains columns for ProductID, Category, and ProductName. The 'Revenue' column is selected, and its properties are being edited. The 'Data type' is set to 'Decimal number' and the 'Format' is set to 'Currency'.

This screenshot shows the context menu for the 'products' table in the Power BI Data view. The 'Category Hierarchy' option is highlighted, which is used to create a hierarchy for the product categories.

This screenshot shows the 'Properties' pane for the 'products' table again, but now it includes a 'Category Hierarchy' section. The 'Category' column is expanded to show the hierarchy structure.

This screenshot shows the 'Column tools' view for the 'customers' table in Power BI. It displays the structure of the table, including columns for CustomerID, Name, PostalCode, and City. The 'City' column is currently selected.

### Options

The 'Options' dialog box is open, showing various settings. Under the 'GLOBAL' section, 'Data Load', 'Power Query Editor', 'DirectQuery', 'R scripting', 'Python scripting', 'Security', 'Privacy', 'Regional Settings', 'Updates', 'Usage Data', 'Diagnostics', 'Preview features', 'Save and Recover', 'Report settings', and 'Copilot (preview)' are listed. Under 'CURRENT FILE', 'Data Load', 'Regional Settings', and '...' are listed. A 'Learn more about data extensions' link is also present.

The 'Report' view displays a 'Sales Report' dashboard. It includes three visualizations: a donut chart titled 'Sum of Quantity by Category' showing categories like 'Mountain Bikes', 'Road Bikes', and 'Cycles'; a bar chart titled 'Sum of Revenue by ProductName' showing revenue for products like 'Mountain Bikes', 'Road Bikes', and 'Cycles'; and a map titled 'Sum of Revenue by City' showing the distribution of revenue across continents.

The Power BI ribbon is shown with the 'Home' tab selected. Other tabs include Insert, Modeling, View, Optimize, Help, and Copilot.

Sales Report

Sum of Revenue by ProductName

Enter your email address

Power BI Desktop and the Power BI service work better together. Sign in to enhance your collaboration and access organizational content.

Email:

Continue Cancel

Ask a question about your data

Try one of these to get started

maximum capacity | south country regions

Sum of Quantity by Category

Category

- Mountain Bikes (22.05%)
- Road Bikes (19.24%)
- Cross Bikes (12.44%)
- Hybrid Bikes (14.42%)
- Urban Bikes (13.07%)
- Helmets (6.46%)
- Wheels (4.46%)
- Pedals (3.46%)
- Others (2.46%)
- Tools (1.46%)

Map of Europe showing bike distribution

Page 1