

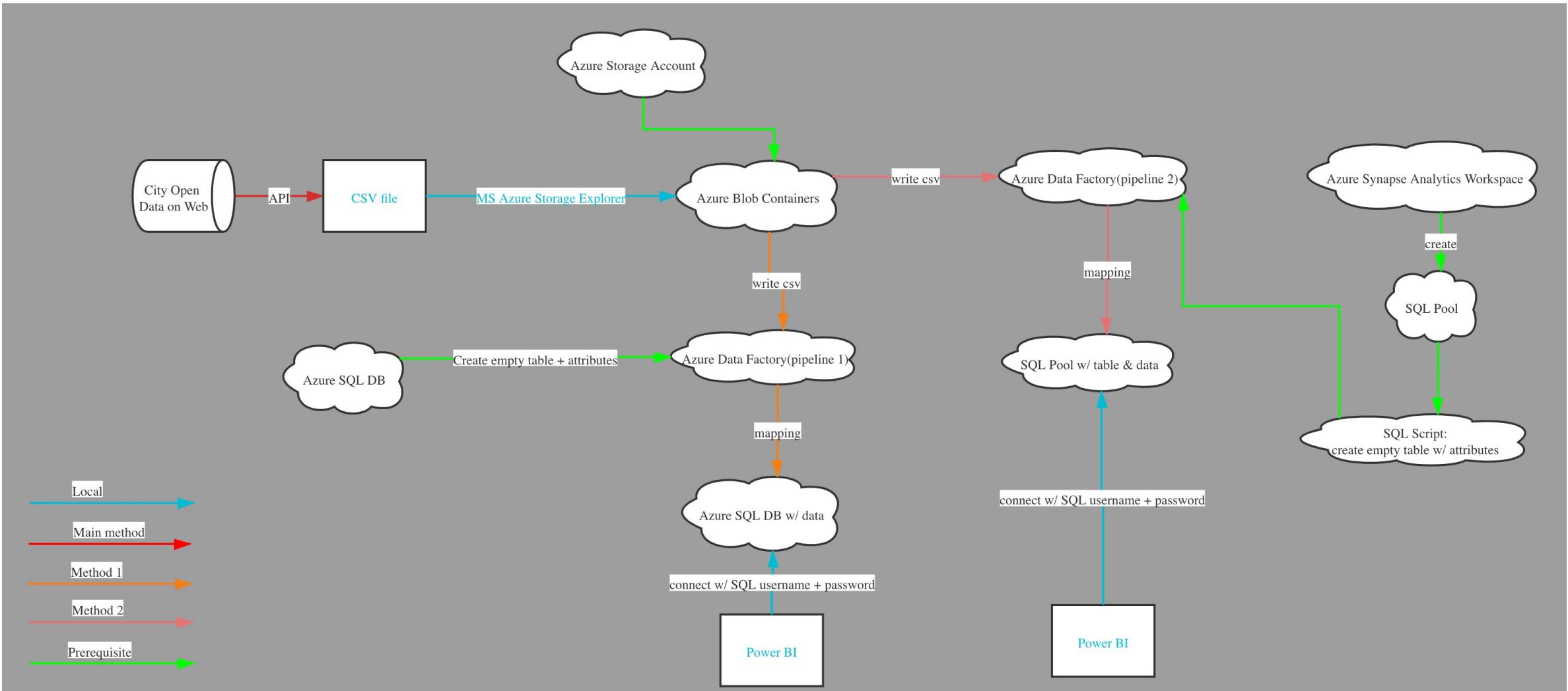


Guide to Collect Data for Smart City Project Using Azure Synapse

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2021年7月

Azure Synapse/Azure SQL DB for Smart City Data Collection

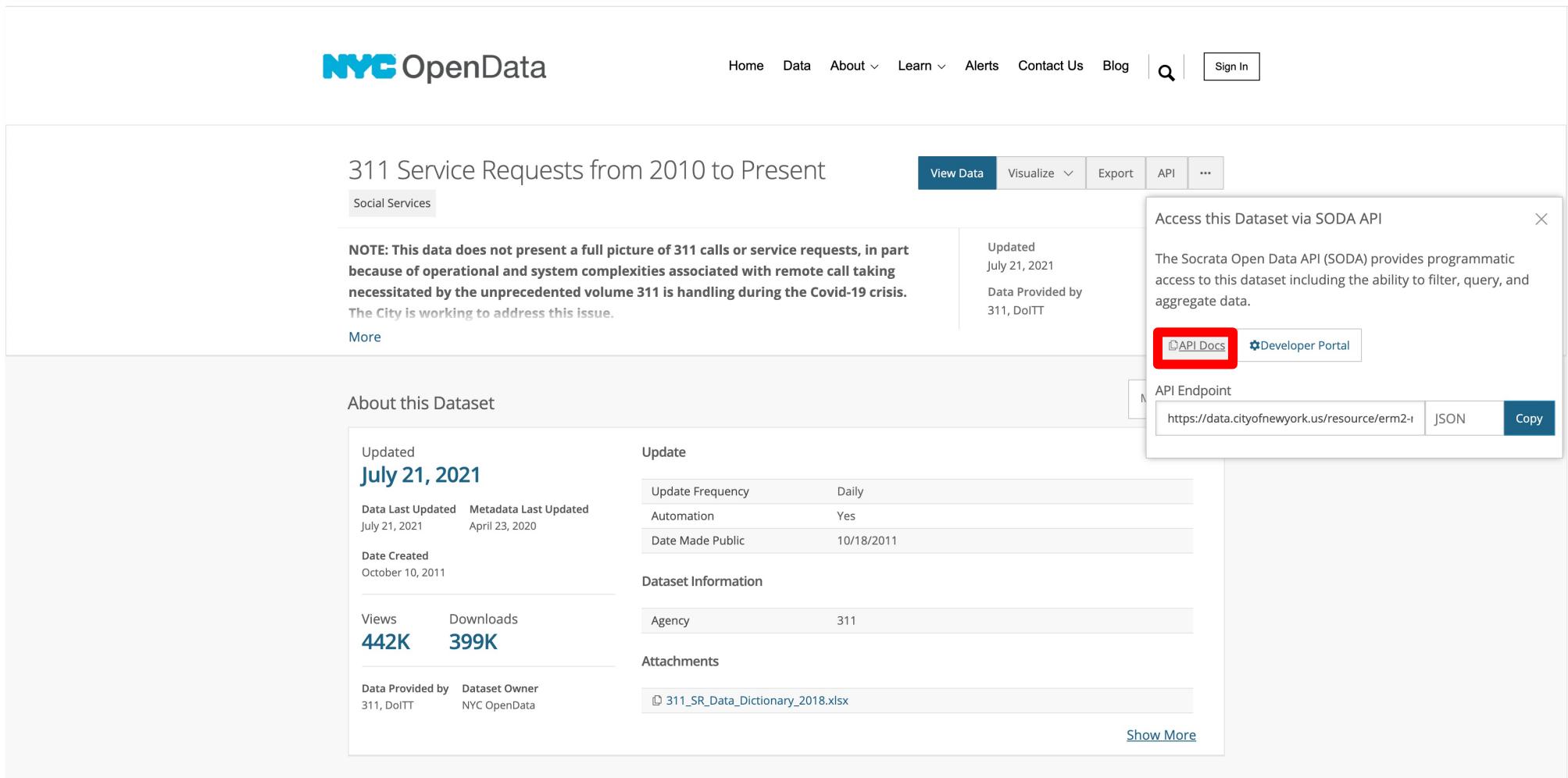
Flow Chart



Web to Local

Download the Open Datasets from City's Website to Local Directory

NYC Open Data is Used Here for Demonstration



The screenshot shows the NYC OpenData website interface. At the top, there is a navigation bar with links for Home, Data, About, Learn, Alerts, Contact Us, Blog, a search bar, and a Sign In button. Below the navigation bar, the main content area displays a dataset titled "311 Service Requests from 2010 to Present". The dataset is categorized under "Social Services". A note states: "NOTE: This data does not present a full picture of 311 calls or service requests, in part because of operational and system complexities associated with remote call taking necessitated by the unprecedented volume 311 is handling during the Covid-19 crisis. The City is working to address this issue." To the right of the note, it says "Updated July 21, 2021" and "Data Provided by 311, DoITT". Below the note, there is a "More" link. On the right side of the page, a modal window titled "Access this Dataset via SODA API" is open. It contains information about the Socrata Open Data API (SODA) and provides links for "API Docs" (which is highlighted with a red box) and "Developer Portal". It also shows the "API Endpoint" URL: <https://data.cityofnewyork.us/resource/erm2-i>. There are buttons for "JSON" and "Copy". The main content area also includes sections for "About this Dataset", "Update", "Dataset Information", and "Attachments".

<https://opendata.cityofnewyork.us/>

API Provided by NYC

</> SODA Developers

App Developers ▾

Data Publishers ▾

API Docs ▾

Libraries & SDKs

Search



location

location

Location

Code Snippets

The following are grab-and-go code samples you can use with popular programming languages and data science tools.

jQuery

Python Pandas

PowerShell

RSocrata

SAS

soda-ruby

SODA.NET

Stata

Python package using Pandas to easily work with JSON data

```
#!/usr/bin/env python

# make sure to install these packages before running:
# pip install pandas
# pip install sodapy

import pandas as pd
from sodapy import Socrata

# Unauthenticated client only works with public data sets. Note 'None'
# in place of application token, and no username or password:
client = Socrata("data.cityofnewyork.us", None)

# Example authenticated client (needed for non-public datasets):
# client = Socrata(data.cityofnewyork.us,
#                   MyAppToken,
#                   username="user@example.com",
#                   password="AFakePassword")

# First 2000 results, returned as JSON from API / converted to Python list of
# dictionaries by sodapy.
results = client.get("erm2-nwe9", limit=2000)

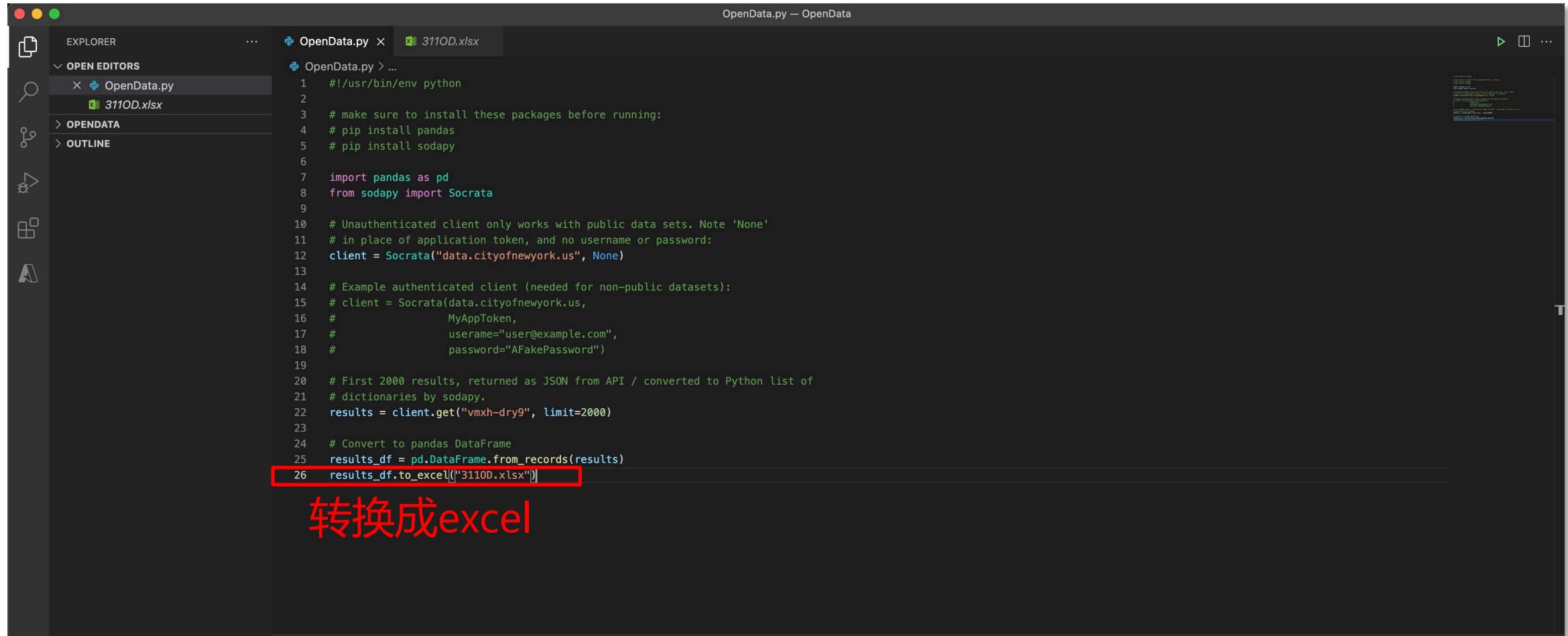
# Convert to pandas DataFrame
results_df = pd.DataFrame.from_records(results)
```



The following resources might also be helpful:

<https://dev.socrata.com/foundry/data.cityofnewyork.us/erm2-nwe9>

Copy the API Code to VS Code



The screenshot shows the Visual Studio Code interface with a dark theme. The left sidebar has icons for Explorer, Search, Open Editors, OpenData, and Outline. The main area shows two tabs: 'OpenData.py' and '311OD.xlsx'. The 'OpenData.py' tab contains the following Python code:

```
#!/usr/bin/env python
# make sure to install these packages before running:
# pip install pandas
# pip install sodapy
import pandas as pd
from sodapy import Socrata
# Unauthenticated client only works with public data sets. Note 'None'
# in place of application token, and no username or password:
client = Socrata("data.cityofnewyork.us", None)
# Example authenticated client (needed for non-public datasets):
# client = Socrata(data.cityofnewyork.us,
#                   MyAppToken,
#                   username="user@example.com",
#                   password="AFakePassword")
# First 2000 results, returned as JSON from API / converted to Python list of
# dictionaries by sodapy.
results = client.get("vmxh-dry9", limit=2000)
# Convert to pandas DataFrame
results_df = pd.DataFrame.from_records(results)
results_df.to_excel("311OD.xlsx")
```

A red box highlights the final line of code: 'results_df.to_excel("311OD.xlsx")'. Below the code, the text '转换成excel' (Convert to Excel) is displayed in red.

Azure SQL DB

(Method 1)

Azure SQL Database

Prerequisite

The screenshot shows the Microsoft Azure portal interface for a deployment overview. The top navigation bar includes the Microsoft Azure logo, a search bar, and various navigation icons. The main title is "Microsoft.SQLDatabase.newDatabaseNewServer_c15ca9260b0840349327a | Overview". On the left, there is a sidebar with navigation links: "Overview" (which is selected and highlighted in grey), "Inputs", "Outputs", and "Template". The main content area displays a message: "Your deployment is complete" with a green checkmark icon. Below this, deployment details are listed: Deployment name: Microsoft.SQLDatabase.newDatabaseNewServer..., Subscription: Azure subscription free, Resource group: smart_city_test. To the right, deployment metadata is shown: Start time: 7/22/2021, 3:32:03 PM and Correlation ID: dbecd47e-377d-4152-8286-6801a72755a8. There are also sections for "Deployment details" (with a download link) and "Next steps", along with a "Go to resource" button.

Azure Storage Account

Azure Storage Account

Prerequisite

Home > smartcitystorageacc_1626940464780 >

smartcitystorageacc Storage account

Search (Cmd+ /) Open in Explorer Delete Move Refresh Feedback

Microsoft recommends upgrading to the new alerts platform to ensure no interruptions in your alerts. Classic alerts will be retired starting in 2021. Upgrade to the new alerts platform. [Learn more](#)

Overview Activity log Tags Diagnose and solve problems Access Control (IAM) Data migration Events Storage Explorer (preview)

Resource group : smart_city_test Location : East Asia Primary/Secondary Location : Primary: East Asia, Secondary: Southeast Asia Subscription : Azure subscription free Subscription ID : 8ce0c54d-a63b-41d7-b113-54e3cb2c4386 Disk state : Primary: Available, Secondary: Available

Performance/Access tier : Standard/Hot Replication : Read-access geo-redundant storage (RA-GRS) Account kind : StorageV2 (general purpose v2) Provisioning state : Succeeded Created : 7/22/2021, 3:54:30 PM

Tags (change) :

Properties Monitoring Capabilities (7) Recommendations Tutorials Developer Tools

Blob service

Hierarchical namespace	Disabled
Default access tier	Hot
Blob public access	Enabled
Blob soft delete	Enabled (7 days)
Container soft delete	Enabled (7 days)
Versioning	Disabled
Change feed	Disabled
NFS v3	Disabled

File service

Large file share	Disabled
Active Directory	Not configured
Soft delete	Enabled (7 days)

Security

Require secure transfer for REST API operations	Enabled
Storage account key access	Enabled
Minimum TLS version	Version 1.0
Infrastructure encryption	Disabled

Networking

Allow access from	All networks
Number of private endpoint connections	0
Network routing	Microsoft network routing
Access for trusted Microsoft services	Yes

JSON View

Azure Data Factory

Microsoft Azure

Search resources, services, and docs (G+/)

Home > Create a resource > Marketplace >

Create Data Factory

Basics Git configuration Networking Advanced Tags Review + create

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ

Resource group * ⓘ [Create new](#)

Instance details

Region * ⓘ

Name * ⓘ

Version * ⓘ

[Review + create](#) [< Previous](#) [Next : Git configuration >](#)

Microsoft Azure

Search resources, services, and docs (G+/-)

Home > Microsoft.DataFactory-20210722155827 >

smartCityDF

Data factory (V2)

Search (Cmd+/)

Delete

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Networking

Managed identities

Properties

Locks

Getting started

Quick start

Monitoring

Alerts

Metrics

Diagnostic settings

Logs

Automation

Tasks (preview)

Support + troubleshooting

Resource health

New support request

Essentials

Resource group (change) : smart_city_test

Status : Succeeded

Location : East Asia

Subscription (change) : Azure subscription free

Subscription ID : 8ce0c54d-a63b-41d7-b113-54e3cb2c4386

Type : Data factory (V2)

Getting started : Quick start

JSON View

Getting started

Open Azure Data Factory Studio
Start authoring and monitoring your data pipelines and data flows.
[Open](#)

Read documentation
Learn how to be productive quickly. Explore concepts, tutorials, and samples.
[Learn more](#)

Monitoring

PipelineRuns

Succeeded pipeline runs... smartcitydf 0 Failed pipeline runs... smartcitydf 0

ActivityRuns

Succeeded activity runs... smartcitydf 0 Failed activity runs... smartcitydf 0

TriggerRuns

Succeeded trigger runs... smartcitydf 0 Failed trigger runs... smartcitydf 0

Microsoft Azure | Data Factory > smartCityDF

» [Azure Data Factory allows you to configure a Git repository with either Azure DevOps or GitHub. Git is a version control system that allows for easier change tracking and collaboration. Learn more](#)

[Set up code repository](#)

Data factory
smartCityDF

New ▾

Ingest
Copy data at scale once or on a schedule.

Orchestrate
Code-free data pipelines.

Transform data
Transform your data using data flows.

Configure SSIS
Manage & run your SSIS packages in the cloud.

Discover more

[Browse partners](#) [Pipeline templates](#)

Recent resources

No items to show

Your recently opened resources will show up here.

Microsoft Azure Storage Explorer

Load the Data From the Extracted xlsx NYC data to the Blob Containers at Microsoft Azure Storage Explorer

The screenshot shows the Microsoft Azure Storage Explorer interface. The left sidebar displays a tree view of Azure resources under the 'smartcityadmin' account, including Storage Accounts, Blob Containers, and Disks. The 'blobContainers' section is expanded, showing a folder named 'synapse'. Inside 'synapse', there is a file named '311OD.xlsx'. The main pane shows a table with details for this file: Name (311OD.xlsx), Access Tier (Hot (inferred)), Access Tier Last Modified (7/23/2021, 4:53:56 PM), Last Modified (7/23/2021, 4:53:56 PM), Blob Type (Block Blob), and Content Type (application/vnd.openxmlformats-officedocument.spreadsheetml.sheet). The size of the file is listed as 541.4 KB. At the bottom of the main pane, it says 'Showing 1 to 2 of 2 cached items'. The bottom left shows the 'Properties' tab for the selected file, with URL (https://smartcityadmin.blob.core.windows.net/synapse/311OD.xlsx), Type (Blob Container), and other properties like HNS Enabled (true) and DFS Endpoint (https://smartcityadmin.dfs.core.windows.net). The bottom right shows the 'Activities' tab, which lists a successful transfer of the file and two account additions.

Name	Access Tier	Access Tier Last Modified	Last Modified	Blob Type	Content Type	Size	Lease State
311OD.xlsx	Hot (inferred)		7/23/2021, 4:53:56 PM	Block Blob	application/vnd.openxmlformats-officedocument.spreadsheetml.sheet	541.4 KB	

Showing 1 to 2 of 2 cached items

Actions Properties Activities

Clear completed Clear successful

Transfer of '/Users/jinlinchen/smartCityNYC/311OD.xlsx' to 'smartcityadmin' complete: 1 item transferred (used SAS, discovery completed)
Started at: 7/23/2021, 4:53:54 PM, Duration: 3 seconds

Copy AzCopy Command to Clipboard

Added Azure account 'jinlin.cen@outlook.com'

Added Azure account 'jinlin.cen@outlook.com'

URL: https://smartcityadmin.blob.core.windows.net/synapse/311OD.xlsx
Custom Domain:
Type: Blob Container
HNS Enabled: true
DFS Endpoint: https://smartcityadmin.dfs.core.windows.net
Lease State: available
Lease Status: unlocked
Public Read Access: off

Create connection to Azure Data Factory to Blob Container

Microsoft Azure | Data Factory > smartCityDF

Copy Data tool

Properties

Source

Dataset

Configuration

Target

Settings

Review and finish

Source data store

Specify the source data store for the copy task. You can use an existing data store connection or specify a new data store.

Source type: Azure Blob Storage

Connection: AzureBlobStorage1

File or folder *: smartcityadmin/

Options:

- Binary copy
- Recursively
- Enable partition discovery

Max concurrent connections: (empty input field)

Filter by last modified

Start time (UTC): (empty input field)

End time (UTC): (empty input field)

< Previous Next > Cancel

The screenshot shows the 'Copy Data tool' interface in the Microsoft Azure Data Factory. The left sidebar lists five steps: Properties, Source, Dataset, Configuration, Target, Settings, and Review and finish. The 'Source' step is currently selected, indicated by a blue circle with the number '2'. The main panel is titled 'Source data store' and contains fields for 'Source type' (set to 'Azure Blob Storage'), 'Connection' (set to 'AzureBlobStorage1'), and 'File or folder' (containing the path 'smartcityadmin/'). Below these are 'Options' for 'Binary copy', 'Recursively' (which is checked), and 'Enable partition discovery'. There are also fields for 'Max concurrent connections' and 'Filter by last modified' with 'Start time (UTC)' and 'End time (UTC)' inputs. At the bottom are navigation buttons for 'Previous' and 'Next' and a 'Cancel' button.

Load data from blob to SQL database

Microsoft Azure | Data Factory > smartCityDF

Copy Data tool

Properties

Source

Target

Dataset

Configuration

Settings

Review and finish

Destination data store

Specify the destination data store for the copy task. You can use an existing data store connection or specify a new data store.

Target type: Azure SQL Database

Connection: AzureSqlDatabaseSmartCity

Source: Azure Blob Storage file

Target: dbo . smartcity (auto-create)

Use existing table

Skip column mapping for all tables

< Previous Next > Cancel

The screenshot shows the 'Copy Data tool' interface in the Microsoft Azure Data Factory. The left sidebar lists five steps: Properties, Source, Target, Dataset, Configuration, Settings, and Review and finish. The 'Target' step is currently selected, indicated by a blue dashed border around its section. In the main panel, under 'Destination data store', the 'Target type' is set to 'Azure SQL Database' and the 'Connection' is 'AzureSqlDatabaseSmartCity'. Below this, the 'Source' is specified as 'Azure Blob Storage file' and the 'Target' is 'dbo . smartcity (auto-create)'. There is also a link to 'Use existing table'. At the bottom of the panel, there is a checkbox for 'Skip column mapping for all tables'. At the very bottom of the interface are navigation buttons: '< Previous' and 'Next >' on the left, and 'Cancel' on the right.

Microsoft Azure | Data Factory ▶ smartCityDF

Copy Data tool

Properties

Source

Target

Dataset

Configuration

Table mappings (1)

Column mapping

Choose how source and destination columns are mapped

Column mappings

Type conversion settings

New mapping Clear Reset Delete

Source	Type	Destination	Type
unique_key	String	unique_key	String
descriptor	String	descriptor	String
incident_zip	String	incident_zip	String
created_date	String	created_date	String
city	String	city	String
:@computed_region...	String	:@computed_region...	String
cross_street_2	String	cross_street_2	String
:@computed_region...	String	:@computed_region...	String
park_facility_name	String	park_facility_name	String

Azure SQL Database sink properties

Pre-copy script

Advanced

◀ Previous

Next >

Cancel

Microsoft Azure | Data Factory > smartCityDF

Copy Data tool

Properties ✓
Source ✓
Target ✓
Settings 4
Review and finish 5

Settings

Enter name and description for the copy data task, more options for data movement

Task name * CopyPipeline_fr1

Task description

Data consistency verification

Fault tolerance

Enable logging

Enable staging

Advanced

< Previous Next > Cancel

Copy Data tool

Properties
Source
Target
Settings
Review and finish
Review
Deployment

Summary
You are running pipeline to copy data from Azure Blob Storage to Azure SQL Database.

Azure Blob Storage → Azure SQL Database

Properties

Task name: CopyPipeline_jx6
Task description:
Source
Connection name: AzureBlobStorage1
Dataset name: SourceDataset_jx6
Column delimiter: ,
Escape character: \\\
Quote char: "
First row as header: true
Container: smartcityadmin
Target
Connection name: AzureSqlDatabaseSmartCity
Dataset name: DestinationDataset_jx6
Table name: dbo.smartcity
Copy settings
Timeout: 7.00:00:00
Retry: 0
Retry interval: 30
Secure output: false
Secure input: false

< Previous Next >

Factory > smartCityDF

Azure Blob Storage → Azure SQL Database

Deployment complete

Deployment step **Status**

Deployment step	Status
> Creating datasets	Succeeded ✓
> Creating pipelines	Succeeded ✓

Finish Edit pipeline Monitor



Search (Cmd+/)

Login New Query Open query Feedback

Overview

Activity log

Tags

Diagnose and solve problems

Quick start

Query editor (preview)

Power Platform

Power BI (preview)

Power Apps (preview)

Power Automate (preview)

Settings

Compute + storage

Connection strings

Maintenance

Properties

Locks

Data management

Replicas

Sync to other databases

Integrations

Stream analytics (preview)

Add Azure Search

SmartCityDB (altumcaelum)

Showing limited object explorer here. For full capability please open SSDT.

Tables

> dbo.BuildVersion ...

> dbo.ErrorLog ...

> dbo.NYCOD_311First2000 ...

> SalesLT.Product ...

> SalesLT.ProductCategory ...

> SalesLT.ProductDescription ...

> SalesLT.ProductModel ...

> SalesLT.ProductModelProductDesc ...

Views

Stored Procedures

Query 1 × dbo.NYCOD_311First2000 ×

Create New Row Save Refresh Discard Delete Row

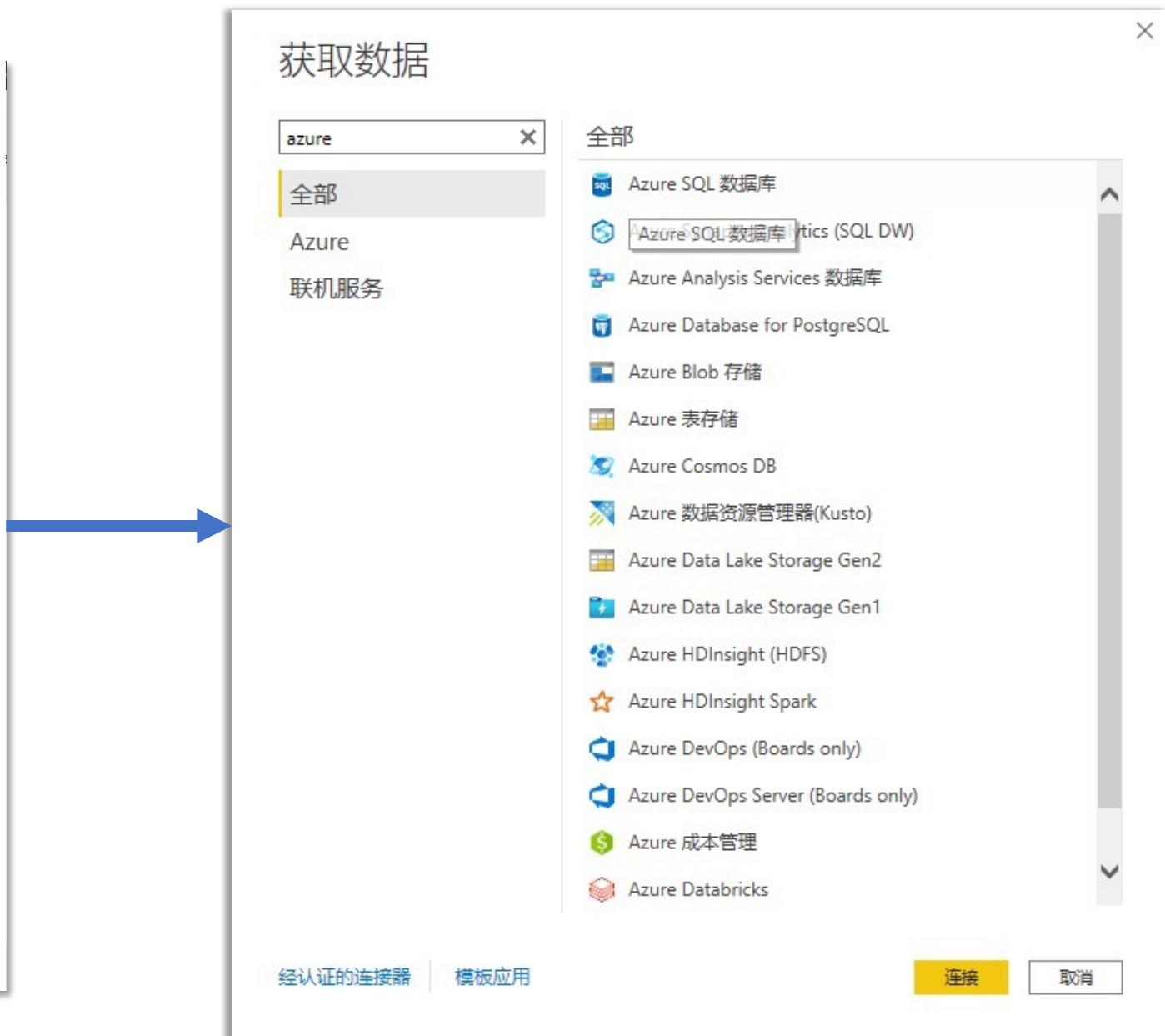
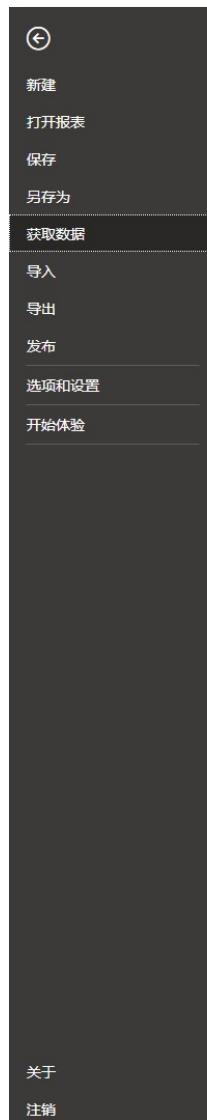
Search to filter items...

unique_key	descriptor	incident_zip	created_date	city	:@computed_region...	cross_street_2	:@computed_region...	par...
51279295	Loud Music/Party	10024	2021-07-22T02:07:1...	NEW YORK	15	AMSTERDAM AVENUE	12421	Uns...
51276756	Non-Chronic	N/A	2021-07-22T02:05:3...	N/A	4	N/A	11723	Uns...
51280279	Loud Music/Party	10455	2021-07-22T02:04:3...	BRONX	23	EAST 156 STREET	10934	Uns...
51277354	Loud Music/Party	10466	2021-07-22T02:03:3...	BRONX	30	WHITE PLAINS ROA...	11275	Uns...
51281358	Loud Music/Party	11210	2021-07-22T02:03:1...	BROOKLYN	40	EAST 32 STREET	17217	Uns...
51286812	Blocked Hydrant	11208	2021-07-22T02:02:2...	BROOKLYN	47	DUMONT AVENUE	17215	Uns...
51277334	Loud Music/Party	10466	2021-07-22T02:01:0...	BRONX	30	WHITE PLAINS ROA...	11275	Uns...
51277228	Blocked Hydrant	10035	2021-07-22T02:00:3...	NEW YORK	16	METRO NORTH-CO...	13093	Uns...
51284642	Banging/Pounding	10002	2021-07-22T02:00:0...	NEW YORK	4	CHERRY STREET	11723	Uns...
51285845	Loud Television	10455	2021-07-22T01:59:5...	BRONX	23	RAE STREET	10933	Uns...
51286838	Loud Music/Party	10466	2021-07-22T01:59:5...	BRONX	30	WHITE PLAINS ROA...	11275	Uns...
51280287	Loud Music/Party	10466	2021-07-22T01:58:4...	BRONX	30	WHITE PLAINS ROA...	11275	Uns...
51279125	Loud Music/Party	10040	2021-07-22T01:58:4...	NEW YORK	22	TED BUCZEK WAY	13098	Uns...
51281468	No Access	10462	2021-07-22T01:58:4...	BRONX	26	WOOD AVENUE	11271	Uns...
51284571	Engine Idling	11201	2021-07-22T01:58:3...	BROOKLYN	55	NAVY WALK	16865	Uns...
51286810	Blocked Hydrant	11207	2021-07-22T01:58:2...	BROOKLYN	53	CENTRAL AVENUE	17214	Uns...
51287029	Loud Music/Party	10466	2021-07-22T01:57:4...	BRONX	30	WHITE PLAINS ROA...	11275	Uns...

Screenshot

Ready

Power BI



SQL Server 数据库

服务器①

数据库(可选)

数据连接模式①

导入

DirectQuery

▷ 高级选项

确定

取消

导航器

smartcityaltumcaelum.database.windows.net [1]	
SmartCityDB [7]	
<input type="checkbox"/>	sys.database_firewall_rules
<input type="checkbox"/>	BuildVersion
<input type="checkbox"/>	ErrorLog
<input type="checkbox"/>	NYCOD_311First2000
<input type="checkbox"/>	smartcity_vehiclecrash
<input type="checkbox"/>	ufnGetAllCategories
<input type="checkbox"/>	ufnGetCustomerInformation

未选中任何供预览的项

选择相关表

加载

转换数据

取消

导航器

显示选项 

smartcityaltumcaelum.database.windows.net [1]

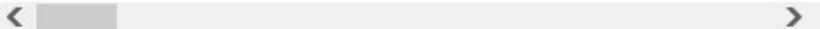
SmartCityDB [7]

- sys.database_firewall_rules
- BuildVersion
- ErrorLog
- NYCOD_311First2000
- smartcity_vehiclecrash
- fx ufnGetAllCategories
- fx ufnGetCustomerInformation

smartcity_vehiclecrash

collision_id	crash_date	crash_time	on_street_name	n
2864524	2013/3/19	15:32:00	N/A	
4027122	2018/11/14	13:30:00	HENRY HUDSON PARKWAY	
4136992	2019/5/21	22:50:00	GOLD STREET	
4277087	2020/1/21	15:49:00	BRUCKNER BLVD	
4336560	2020/8/6	5:30:00	N/A	
4339927	2020/8/14	23:00:00	PROSPECT EXPRESSWAY EAST	
4345591	2020/9/6	18:05:00	WHitestone EXPRESSWAY	
4359355	2020/10/19	16:00:00	BRUCKNER EXPRESSWAY	
4360880	2020/10/25	2:00:00	BELT PARKWAY	
4361875	2020/10/25	10:40:00	THROGS NECK BRIDGE	
4362238	2020/10/29	0:16:00	east 183 street	
4362632	2020/10/30	0:55:00	BROOKLYN QUEENS EXPRESSWAY RAMP	
4363081	2020/10/31	14:40:00	BROOKLYN QNS EXPRESSWAY	
4371057	2020/11/27	12:06:00	168 STREET	
4374395	2020/12/8	4:30:00	BRONX WHitestone BRIDGE	
4374781	2020/12/4	15:05:00	N/A	
4375546	2020/12/13	8:30:00	N/A	

 由于大小限制，已截断预览中的数据。



选择相关表

加载

转换数据

取消

无标题 - Power BI Desktop

文件 主页 插入 建模 视图 帮助

剪切 复制 粘贴 格式刷 获取数据 Excel Power BI SQL 输入数据 Dataverse 最近使用的源 工作簿 数据集 Server

新建视觉对象 文本框 更多视觉对象 新速度量值 快度量值 敏感度 发布

重用 插入 计算 数表度 共享

筛选器 可视化 字段

使用数据生成视觉对象
从“字段”窗格中选择字段或将字段拖到报表画布上。

The screenshot shows the Power BI Desktop interface. The ribbon at the top has tabs for File, Home, Insert, Model, View, and Help. Below the ribbon are various icons for file operations like Cut, Copy, Paste, and Format. The main area is titled 'Fields' and shows the 'smartcity_vehiclecrash' dataset. A search bar is at the top of the Fields pane. Below it are sections for 'This page's filters' and 'All pages' filters. The right side of the Fields pane lists numerous fields from the dataset, such as 'borough', 'collision_id', 'contributing_fact...', 'crash_date', 'crash_time', 'cross_street_name', 'latitude', 'longitude', and various count measures like 'Σ number_of_cyclists'. A small preview of a donut chart is visible on the left.

文件 主页 插入 建模 视图 帮助 格式 数据/粘取

剪切 复制 粘贴 格式刷 获取数据 Excel Power BI SQL 输入数据 Dataverse 最近使用的源 工作簿 数据集 Server

新建视觉对象 文本框 更多视觉对象 新速度量值 快度量值 敏感度 发布

重用 插入 计算 数表度 共享

筛选器 可视化

The screenshot shows the Power BI Desktop interface with the same ribbon and toolbars as the top window. The main area displays a donut chart titled 'borough 的计数 按 borough' (Count of borough by borough). The chart shows the following data:

Borough	Count	Percentage
BROOKLYN	5.52 千	(36.79%)
QUEENS	5.36 千	(22.37%)
BRONX	2.49...	(16.12%)
MANHATTAN	1.8...	(12.39%)
STATEN ISLAND	0.36 千	(2.39%)
N/A	0.36 千	(2.39%)

The Fields pane on the right shows filters applied to the 'borough' field, including 'borough' (is (全部)) and 'borough' (的计数 (是 (全部)))

Azure Synapse Analytics (Method 2)

[Home >](#)

Microsoft.Azure.SynapseAnalytics-20210721144838 | Overview

Deployment

<<

Delete

Cancel

Redeploy

Refresh

Overview

Inputs

Outputs

Template

We'd love your feedback! →

✓ Your deployment is complete



Deployment name: Microsoft.Azure.SynapseAnalytics-20210721144...

Subscription: [Azure subscription free](#)Resource group: [smart_city_test](#)

Start time: 7/21/2021, 2:53:04 PM

Correlation ID: fe530324-c614-44ba-9d93-cacc87c92f97

 Deployment details [\(Download\)](#)

Next steps

[Go to resource group](#)

Microsoft Azure

Search resources, services, and docs (G+/-)

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smartcitytest1

Synapse workspace

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Resource group (change) : smart_city_test

Status : Succeeded

Location : East Asia

Subscription (change) : Azure subscription free

Subscription ID : 8ce0c54d-a63b-41d7-b113-54e3cb2c4386

Managed virtual network : No

Managed Identity object ... : 71d1f842-9eaf-4f1a-a8b1-7ec8305fb6ad

Workspace web URL : <https://web.azuresynapse.net?workspace=%2fsubscriptions%2f8ce0c54d-a63b-41d7-b113-54e3cb2c4386%2fres>

Tags (change) : Click here to add tags

Getting started

 **Open Synapse Studio**
Start building your fully-integrated analytics solution and unlock new insights.
[Open](#)

 **Read documentation**
Learn how to be productive quickly. Explore concepts, tutorials, and samples.
[Learn more](#)

Analytics pools

Search to filter items...

Name	Type
Built-in	Serverless

SQL pools

 Built-in Serverless

Apache Spark pools

No pools provisioned

Create SQL Pools in Azure Synapse Workspace

The screenshot illustrates the process of creating a SQL pool in an Azure Synapse Workspace. It consists of two main windows:

- Left Window (List View):** Shows the "SQL pools" section of the "smartcitytest1" workspace. A blue arrow points from the "SQL pools" link in the left sidebar to this window. The table lists one item: "Built-in" (Type: Serverless, Status: N/A, Size: Auto). The "New" button is visible at the top.
- Right Window (Create Dialog):** The "Create dedicated SQL pool" dialog. The "Basics" tab is selected. The "Dedicated SQL pool name" field contains "smartCitySQLPool". The "Geo-redundant" setting is set to "Yes". The "Performance level" slider is set to "DW100c". The "Estimated price" section shows "Est. Cost Per Hour" as "2.06 USD" with a "View pricing details" link. A callout box highlights validation rules:
 - Dedicated SQL pool name should not match special patterns
 - The value has a length of at most 60.
 - Dedicated SQL pool name should not contain reserved words
 - No dedicated SQL pool with the same name exists in the workspace

Connect the Data in the existing SQL Database to Synapse SQL Pool Using the Newly Created Data Factory

Microsoft Azure | Data Factory > simoncen

Copy Data tool

Properties

Source

Dataset

Configuration

Target

Settings

Review and finish

Source data store

Specify the source data store for the copy task. You can use an existing data store connection or specify a new data store.

Source type: Azure SQL Database

Connection: AzureSqlDatabase1

Integration runtime: AutoResolveIntegrationRuntime (Ma...)

Interactive authoring enabled

Source tables: EXISTING TABLES

Filter by name... Show views Refresh

Showing 4 out of 4 tables, 0 out of 0 views (1 selected)

Select all

dbo.BuildVersion

dbo.ErrorLog

dbo.NYCOD_311First2000

dbo.smartcity_vehiclecrash

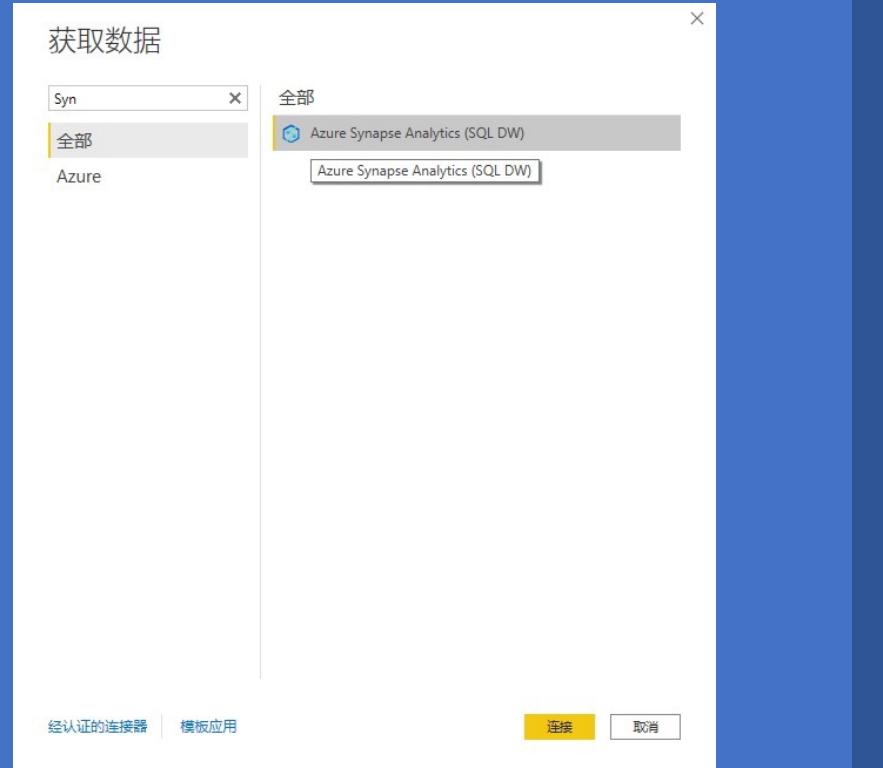
< Previous Next > Cancel

The screenshot shows the 'Copy Data tool' interface in the Microsoft Azure Data Factory. The left sidebar lists five steps: Properties, Source, Dataset, Configuration, Target, Settings, and Review and finish. The 'Source' step is currently active, indicated by a blue circle with the number '2'. The main panel is titled 'Source data store' and contains fields for 'Source type' (set to 'Azure SQL Database'), 'Connection' (set to 'AzureSqlDatabase1'), and 'Integration runtime' (set to 'AutoResolveIntegrationRuntime (Ma...)'). A checkbox for 'Interactive authoring enabled' is checked. Below these settings is a table selection section with 'EXISTING TABLES' selected. A list of four tables is displayed: 'dbo.BuildVersion', 'dbo.ErrorLog', 'dbo.NYCOD_311First2000', and 'dbo.smartcity_vehiclecrash'. The 'dbo.smartcity_vehiclecrash' table has a checked checkbox next to it. At the bottom of the panel are buttons for '< Previous' and 'Next >'.

Select Azure Synapse Analytics as the Target Type

The screenshot shows the Microsoft Azure Data Factory Copy Data tool interface. The top navigation bar displays 'Microsoft Azure | Data Factory > simoncen'. The main title is 'Copy Data tool'. On the left, a vertical navigation pane lists steps: Properties (checked), Source (checked), **Target** (checked), Dataset, Configuration, Settings, and Review and finish. The 'Target' step is currently active. The main content area is titled 'Destination data store' with the sub-instruction: 'Specify the destination data store for the copy task. You can use an existing data store connection or specify a new data store.' A dropdown menu for 'Target type' is open, showing 'All' at the top, followed by a highlighted item 'synapse', then 'Azure', 'Database', 'File', 'Generic protocol', 'NoSQL', and 'Services and apps'. Below the dropdown is a '+ New connection' button. At the bottom of the page are buttons for '< Previous', 'Next >', and 'Cancel'.

Power BI



导航器

显示选项显示所有搜索

- smartcityaltum.sql.azureSynapse.net [1]
- smartcitySQLPool [1]
- smartcity_vehiclecrash

未选中任何供预览的项

选择相关表

加载

转换数据

取消

文件 主页 插入 建模 视图 帮助

剪切 复制 粘贴 格式刷

获取数据 Excel Power BI SQL 输入数据 Dataverse 最近使用的源 工作簿 数据集 Server

转换数据 刷新 新建视觉对象 文本框 更多视觉对象 新建度量值 快度量值 敏感度 新视觉 对象 共享

数据 插入 计算 钻取 跨报表

可视化

字段

搜索 smartcity_vehiclecrash

在此处添加数据字段

钻取

跨报表

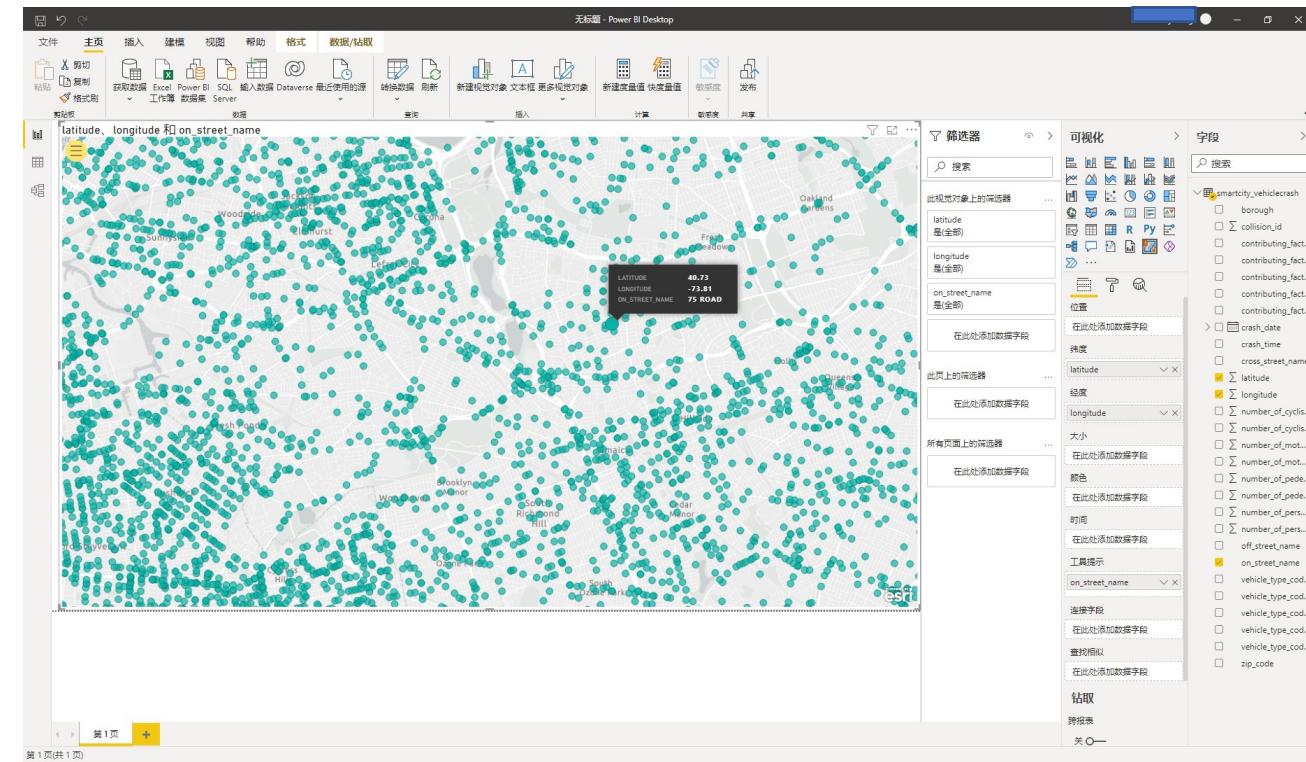
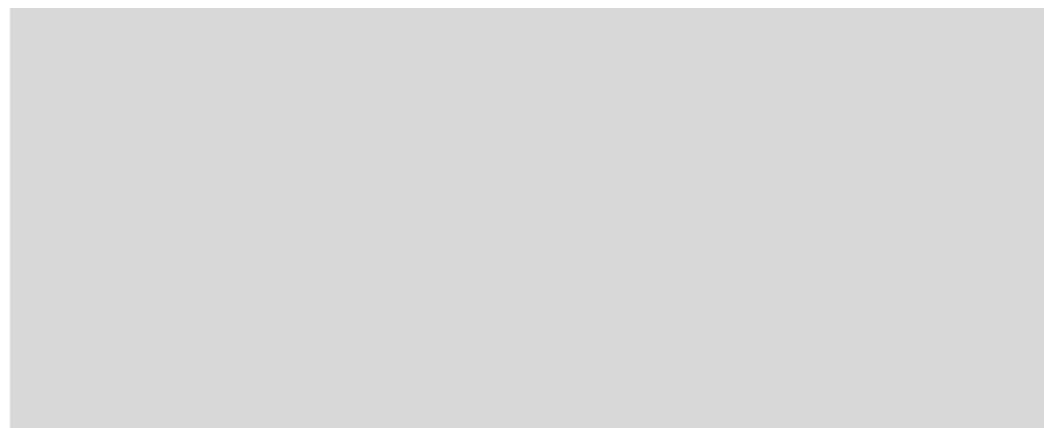
保留所有筛选器

开

在此处添加钻取字段

使用数据生成视觉对象

从“字段”窗格中选择字段或将字段拖到报表画布上。



Thank you!