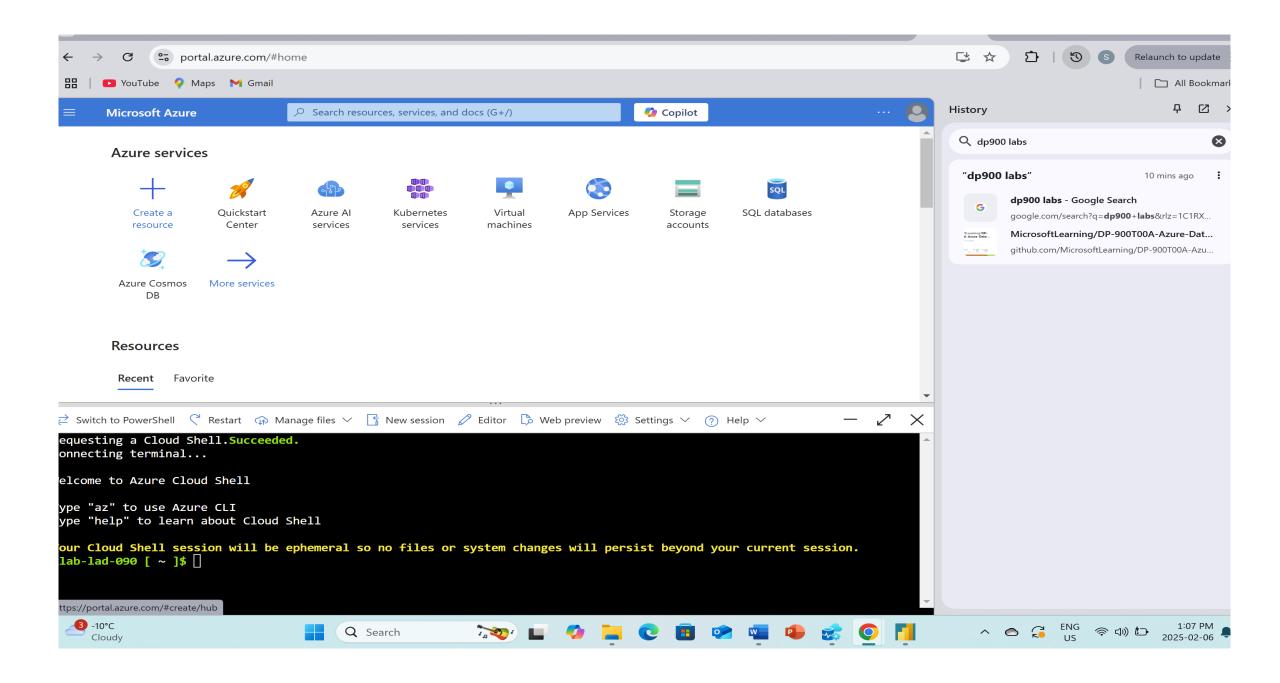# Explore Azure Stream Analytics

SUBMITTED BY:

SHARNDEEP KAUR

https://www.linkedin.com/in/sharndeep-kaur-b866441a6/

LEARNING OUTCOMES:

❑ **Provisioning Azure Resources** – Learn how to create and configure essential Azure services, including IoT Hub, Storage Account, and Stream Analytics Job, using Azure Cloud Shell and scripts.

❑ **Real-time Data Processing** – Understand how Azure Stream Analytics processes streaming data in real time, aggregating and analyzing incoming IoT device messages.

❑ **Data Storage & Output Management** – Gain hands-on experience storing processed data in Azure Storage and navigating through its structured hierarchy for data retrieval.

❑ **Simulating & Monitoring Streaming Data** – Learn how to simulate IoT data streams, monitor job execution in the Azure portal, and analyze the processed output in JSON format

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

History

dp900 labs

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google.com/search?q=dp900+labs&rlz=1C1RX...

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github.com/MicrosoftLearning/DP-900T00A-Azu...

Azure services

Create a resource | Quickstart Center | Azure AI services | Kubernetes services | Virtual machines | App Services | Storage accounts | SQL databases

Azure Cosmos DB | More services

Resources

Recent | Favorite

Switch to PowerShell | Restart | Manage files | New session | Editor | Web preview | Settings | Help

```
bash: cd: dp-900/streaming: No such file or directory
xlab-lad-090 [ ~ ]$  git clone https://github.com/MicrosoftLearning/DP-900T00A-Azure-Data-Fundamentals dp-900
Cloning into 'dp-900'...
remote: Enumerating objects: 4465, done.
remote: Counting objects: 100% (230/230), done.
remote: Compressing objects: 100% (61/61), done.
remote: Total 4465 (delta 214), reused 169 (delta 169), pack-reused 4235 (from 3)
Receiving objects: 100% (4465/4465), 11.94 MiB | 22.64 MiB/s, done.
Resolving deltas: 100% (1175/1175), done.
xlab-lad-090 [ ~ ]$  cd dp-900/streaming
xlab-lad-090 [ ~/dp-900/streaming ]$  bash setup.sh
Installing required Azure CLI extensions - this may take a few minutes...
 - Installing ..
```

TSX index
-0.54%

Search

ENG
US

1:21 PM
2025-02-06

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Microsoft Azure   🔍 Search resources, services, and docs (G+/)   🟦 Copilot

Home >

All resources 📌 ⋯

Lab Directory (xtremelabs.onmicrosoft.com)

+ Create   ⚙ Manage view ⌄   ↻ Refresh   ⬇ Export to CSV   🔗 Open query | 🏷 Assign tags   🗑 Delete

| Filter for any field... | Subscription equals **all** | Resource group equals **all** ✕ | Type equals **all** ✕ | Location equals **all** ✕ | + Add filter |

| 🛡 **0** Unsecure resources | ☁ **0** Recommendations | 📊 **3** Changed resources | No grouping ⌄ | ☰ List view ⌄ |

☐ Name ↑↓	Type ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓	
☐ 📡 iothub30d8d2f9ef224cd8be	IoT Hub	learnb587df80bcb0409082	Australia East	XLabs-090	⋯
☐ 📦 store30d8d2f9ef224cd8be	Storage account	learnb587df80bcb0409082	East US	XLabs-090	⋯
☐ 📈 stream30d8d2f9ef224cd8be	Stream Analytics job	learnb587df80bcb0409082	Australia East	XLabs-090	⋯

< Previous   Page 1 ⌄ of 1   Next >   Showing 1 to 3 of 3 records.   👥 Give feedback

---

History

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TX40 index
-0.74%   🔍 Search   ENG US   1:34 PM   2025-02-06

Microsoft Azure

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Home > All resources >

stream30d8d2f9ef224cd8be
Stream Analytics job

▷ Start job   🗑 Delete   → Move ⌄   ⟳ Refresh   🙂 Share feedback   ✓ Job ready to start

ⓘ Created ✕

🔍 Search

◇ «

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

> Job topology

> Settings

> Developer tools

> Monitoring

> Automation

> Help

Get started   **Properties**   Monitoring   Tutorials

↳ **Inputs (1)**
iotinput

<> **Query**
Edit query

↳ **Outputs (1)**
bloboutput

{fx} **Functions (0)**
Add function

🧰 **Settings**
Environment   Standard (multi-tenant)
Storage account settings   -
Scale   1 streaming units
Out of order tolerance
Error policy   Retry
Managed Identity   None

⏱ **Monitoring**
Alert rules

Feels colder
Now

Search

ENG
US

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portal.azure.com/#home

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Azure services

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Azure Cosmos DB   More services

Resources

Recent   Favorite

Switch to PowerShell   Restart   Manage files   New session   Editor   Web preview   Settings   Help

Installing required Azure CLI extensions - this may take a few minutes...
Using the learnb587df80bcb0409082 resource group...
Creating IoT hub...
Creating storage...
WARNING: [Warning] This output may compromise security by showing secrets. Learn more at: https://go.microsoft.com/fwlink/
?linkid=2258669
Creating Stream Analytics job...
xlab-lad-090 [~/dp-900/streaming]$ bash iotdevice.sh
This command is experimental and under development. Reference and support levels: https://aka.ms/CLI_refstatus
Device simulation in progress: 56%|############################### | 67/120 [01:27<01:09, 1.31s/it]
Device simulation in progress: 72%|###################################### | 86/120 [01:52<00:44, 1.31s/it]
Device simulation in progress: 100%|###| 120/120 [02:37<00:00, 1.31s/it]
xlab-lad-090 [~/dp-900/streaming]$ ss

S&P 500
+0.05%

Search

ENG
US

1:43 PM
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Relaunch to update

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History

··· > learnb587df80bcb0409082 > store30d8d2f9ef224cd8be | Containers > data >

dp900 labs

2025/02/06/20/0_e91662da638b4cf6935ebbdb7cfb8a62_1.json ···
Blob

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💾 Save   ✕ Discard   ⬇ Download   ↻ Refresh   🗑 Delete   ⇄ Change tier   🔑 Acquire lease   🔑 Break lease   👤 Give feedback

Overview   Versions   Snapshots   Edit   Generate SAS

Properties

URL   https://store30d8d2f9ef... 📋

LAST MODIFIED   6/2/2025, 1:43:23 pm

CREATION TIME   6/2/2025, 1:40:42 pm

VERSION ID   -

TYPE   Block blob

SIZE   28 KiB

ACCESS TIER   Hot (Inferred)

ACCESS TIER LAST MODIFIED   N/A

ARCHIVE STATUS   -

REHYDRATE PRIORITY   -

SERVER ENCRYPTED   true

ETAG   0x8DD46EEE62E5A4C

VERSION-LEVEL IMMUTABILITY POLICY   Disabled

CACHE-CONTROL

CONTENT-TYPE   application/octet-stream

CONTENT-MD5

CONTENT-ENCODING

-10°C
Cloudy

Search

ENG
US

1:48 PM
2025-02-06

Microsoft Azure — Search resources, services, and docs (G+/) — Copilot

··· > learnb587df80bcb0409082 > store30d8d2f9ef224cd8be | Containers > data >

2025/02/06/20/0_e91662da638b4cf6935ebbdb7cfb8a62_1.json ···
Blob

Save   Discard   ↓ Download   ↻ Refresh   🗑 Delete

Overview   Versions   Snapshots   **Edit**   Generate SAS

```
1   {"starttime":"2025-02-06T20:40:19.3489289Z","endtime":"2025-02-06T20:40:29.3489289Z","device":"iotdevice","messages":2}
2   {"starttime":"2025-02-06T20:40:20.6628559Z","endtime":"2025-02-06T20:40:30.6628559Z","device":"iotdevice","messages":3}
3   {"starttime":"2025-02-06T20:40:21.9750347Z","endtime":"2025-02-06T20:40:31.9750347Z","device":"iotdevice","messages":4}
4   {"starttime":"2025-02-06T20:40:23.2876402Z","endtime":"2025-02-06T20:40:33.2876402Z","device":"iotdevice","messages":5}
5   {"starttime":"2025-02-06T20:40:24.4907970Z","endtime":"2025-02-06T20:40:34.4907970Z","device":"iotdevice","messages":6}
6   {"starttime":"2025-02-06T20:40:25.7878305Z","endtime":"2025-02-06T20:40:35.7878305Z","device":"iotdevice","messages":7}
7   {"starttime":"2025-02-06T20:40:27.2094712Z","endtime":"2025-02-06T20:40:37.2094712Z","device":"iotdevice","messages":8}
8   {"starttime":"2025-02-06T20:40:27.9033563Z","endtime":"2025-02-06T20:40:37.9033563Z","device":"iotdevice","messages":7}
9   {"starttime":"2025-02-06T20:40:28.4126304Z","endtime":"2025-02-06T20:40:38.4126304Z","device":"iotdevice","messages":8}
10  {"starttime":"2025-02-06T20:40:29.3489289Z","endtime":"2025-02-06T20:40:39.3489289Z","device":"iotdevice","messages":7}
11  {"starttime":"2025-02-06T20:40:29.7252644Z","endtime":"2025-02-06T20:40:39.7252644Z","device":"iotdevice","messages":8}
12  {"starttime":"2025-02-06T20:40:30.6628559Z","endtime":"2025-02-06T20:40:40.6628559Z","device":"iotdevice","messages":7}
13  {"starttime":"2025-02-06T20:40:31.0690170Z","endtime":"2025-02-06T20:40:41.0690170Z","device":"iotdevice","messages":8}
14  {"starttime":"2025-02-06T20:40:31.9750347Z","endtime":"2025-02-06T20:40:41.9750347Z","device":"iotdevice","messages":7}
15  {"starttime":"2025-02-06T20:40:32.3813961Z","endtime":"2025-02-06T20:40:42.3813961Z","device":"iotdevice","messages":8}
16  {"starttime":"2025-02-06T20:40:33.2876402Z","endtime":"2025-02-06T20:40:43.2876402Z","device":"iotdevice","messages":7}
17  {"starttime":"2025-02-06T20:40:33.6939074Z","endtime":"2025-02-06T20:40:43.6939074Z","device":"iotdevice","messages":8}
18  {"starttime":"2025-02-06T20:40:34.4907970Z","endtime":"2025-02-06T20:40:44.4907970Z","device":"iotdevice","messages":7}
19  {"starttime":"2025-02-06T20:40:35.0067176Z","endtime":"2025-02-06T20:40:45.0067176Z","device":"iotdevice","messages":8}
20  {"starttime":"2025-02-06T20:40:35.7878305Z","endtime":"2025-02-06T20:40:45.7878305Z","device":"iotdevice","messages":7}
```

Json   ✎ Preview

History

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Home > All resources > stream30d8d2f9ef224cd8be > learnb587df80bcb0409082 >

⚙ stream30d8d2f9ef224cd8be ☆ ⋯
Stream Analytics job

Search

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☐ Stop job   🗑 Delete   → Move ∨   ⟳ Refresh   ☺ Share feedback

ⓘ Stopping   ✕

∧ Essentials   JSON View

Resource group (move)   Created
learnb587df80bcb0409082   Thursday, February 6, 2025 1:25 PM

Location   Started
Australia East   Thursday, February 6, 2025 1:39 PM

Status   Output watermark
Stopping   Thursday, February 6, 2025 1:54 PM

Subscription (move)   Cluster
XLabs-090   Shared

Subscription ID   Hosting environment
05c684f0-1ac5-42d6-91d6-b47183b47765   Cloud

Pricing plan   Virtual Network
Standard (manage)   Disabled

Tags (edit)
Add tags

Get started   Properties   **Monitoring**   Tutorials

∨ Troubleshooting

Errors and warnings

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github.com/MicrosoftLearning/DP-900T00A-Azu...

❄2 Light snow
Sunday   Search   🎸   ⊞ 🔷 📁 🌐 🏪 📧 W P 🔲 🌀   ENG US   1:55 PM 2025-02-06

THANK YOU!!!!!!!!!