Synapse Serverless vs Fabric Warehouse

What is what and how do I choose

twoday

SOLISYON
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Tabular Editor

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MVP Microsoft Most Valuable Professional

Microsoft
FastTrack Recognized
Solution Architect
Power BI
2022 >>

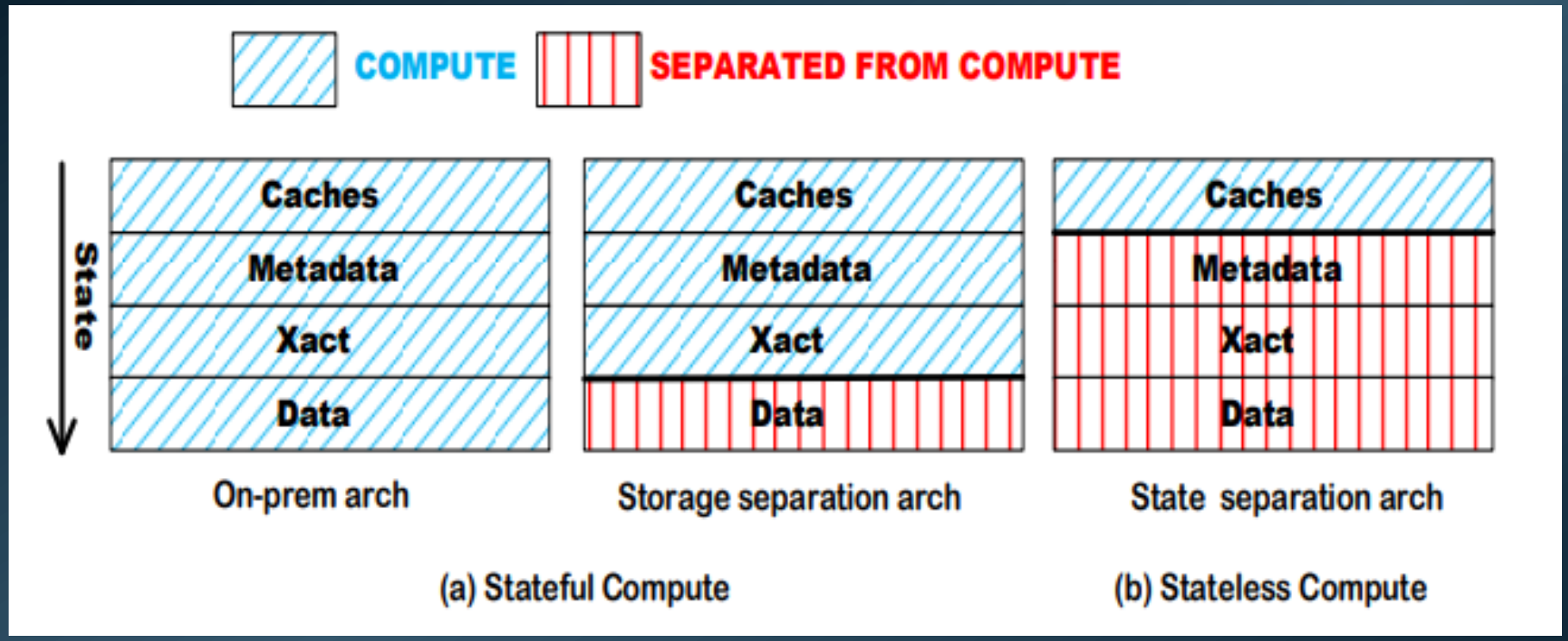
Microsoft
Certified Trainer
Data Platform
2018 >>

Serverless

Warehouse

Polaris

Stateless compute



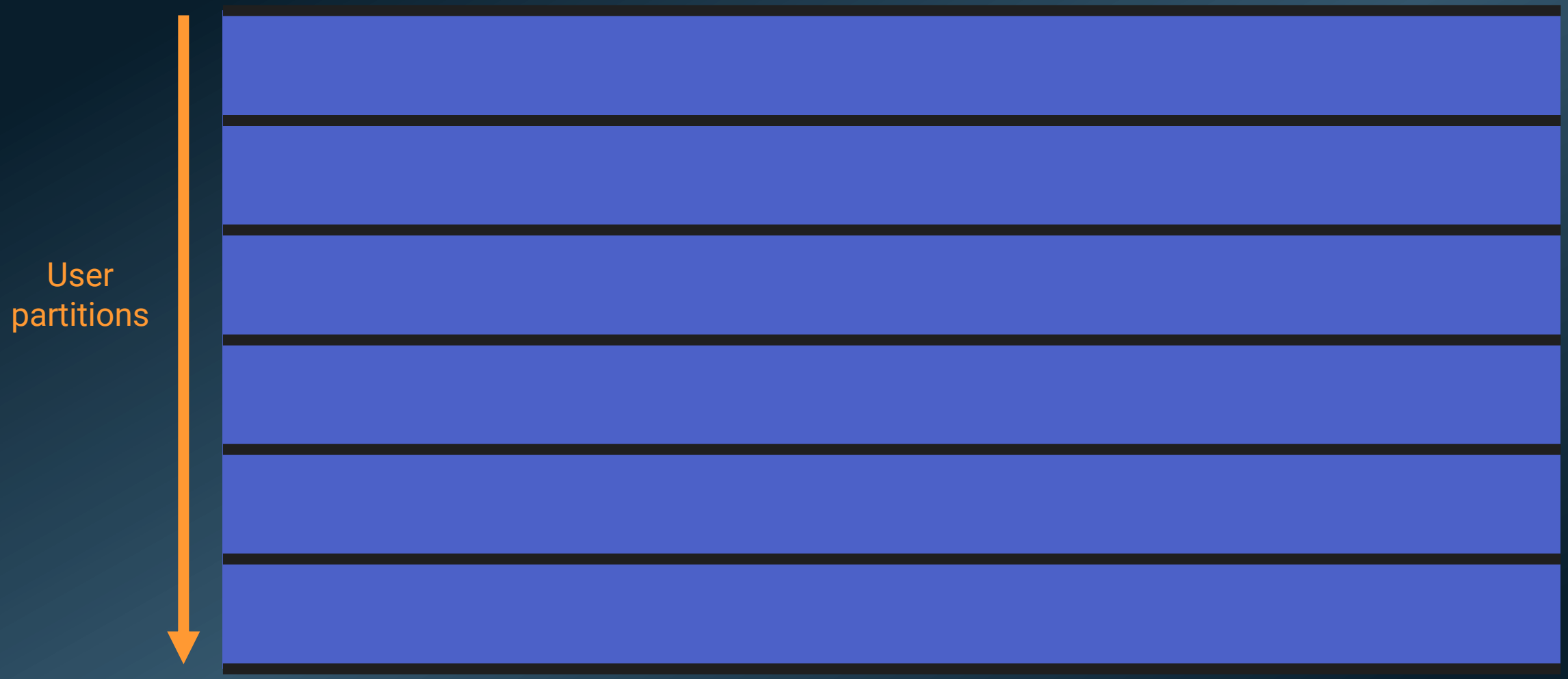
Synapse and Fabric

Polaris

Data abstraction

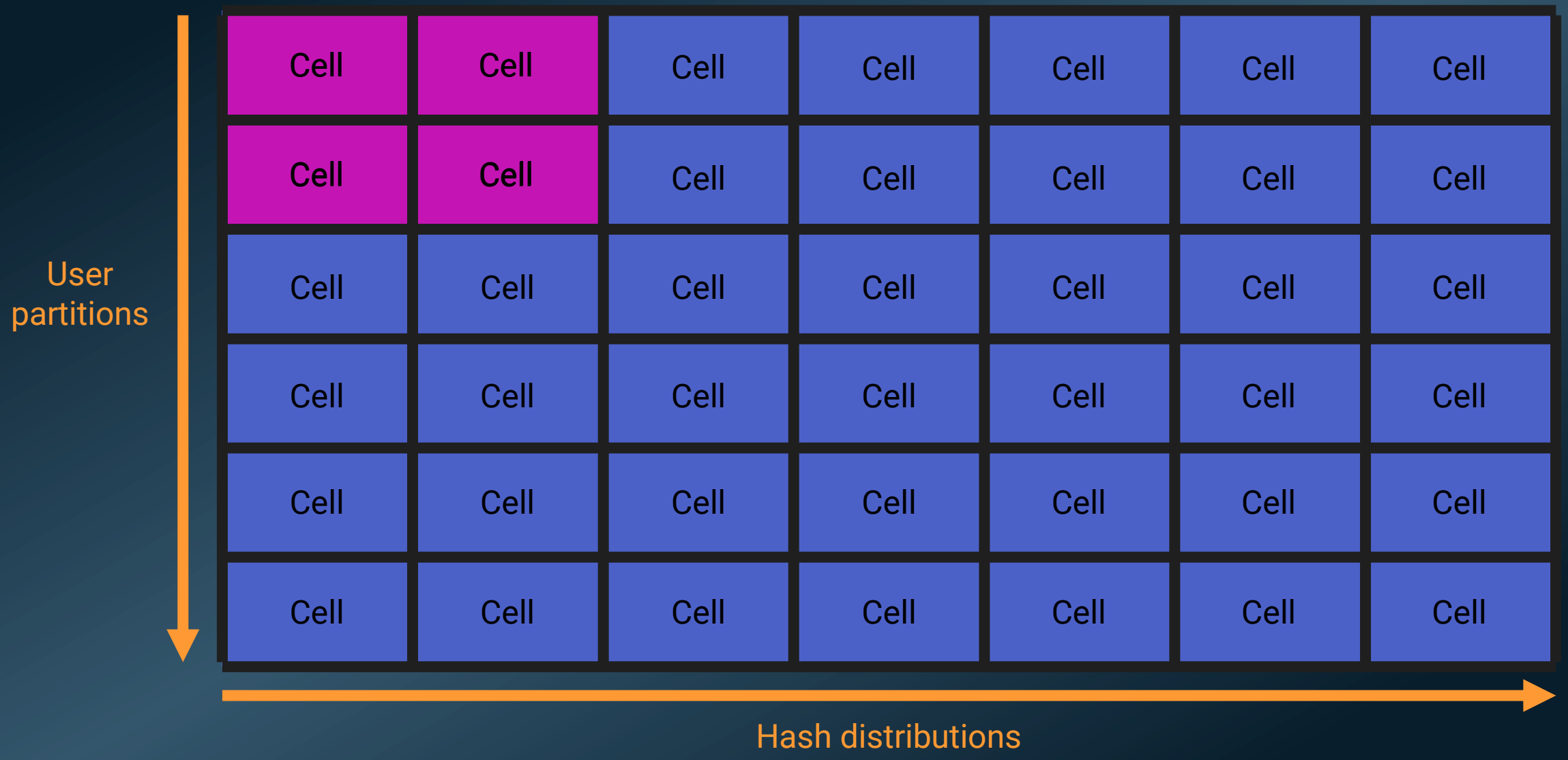
Polaris

Data abstraction



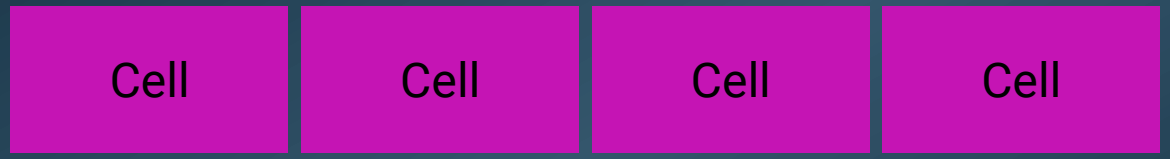
Polaris

Data abstraction



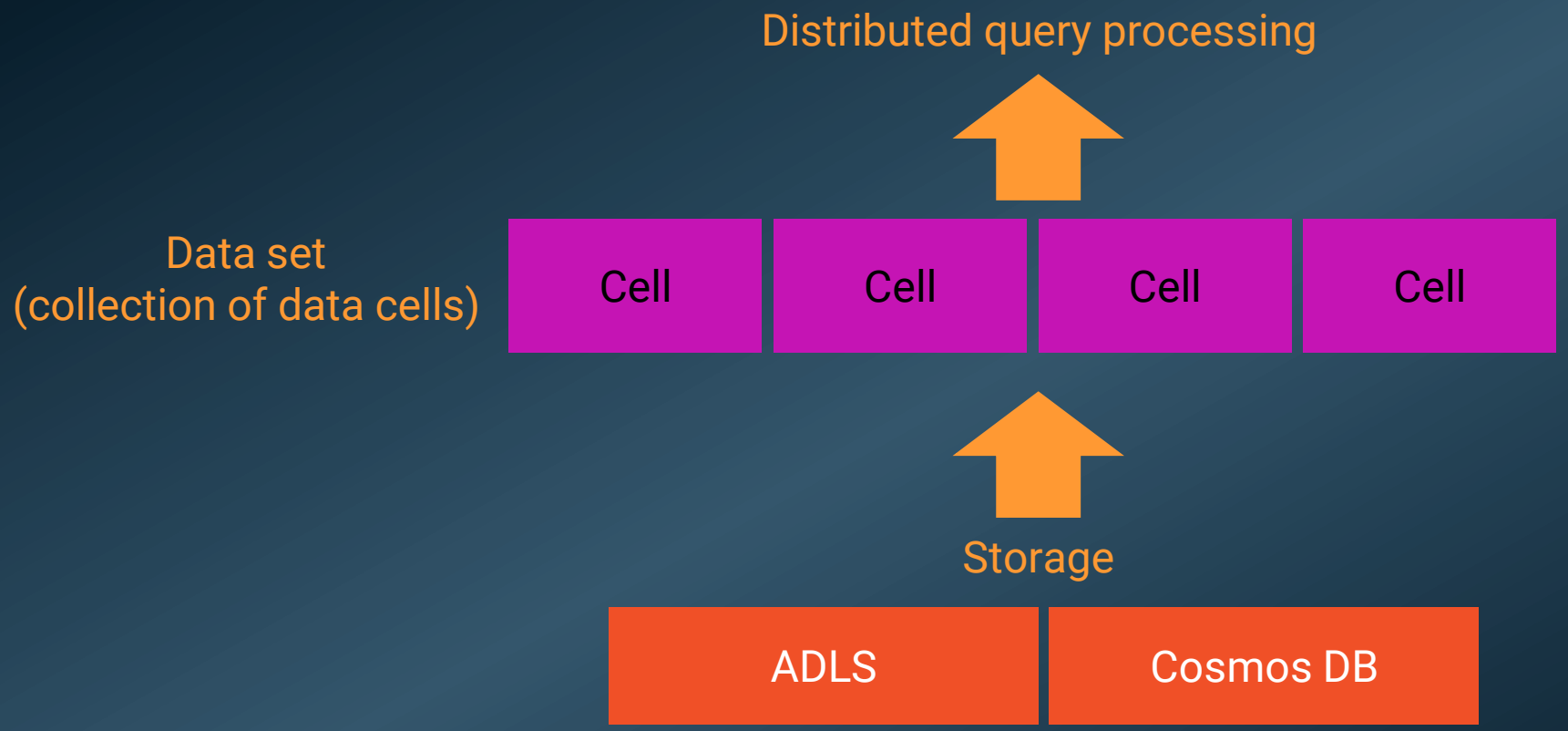
Polaris

Data abstraction



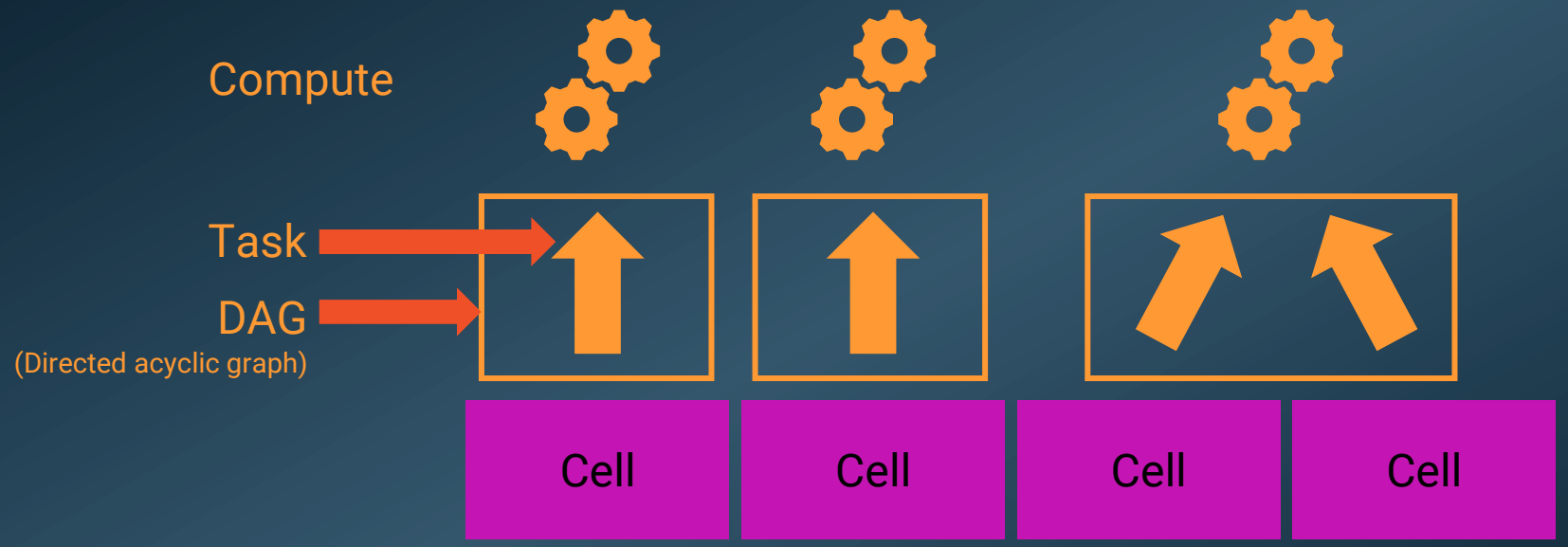
Polaris

Data abstraction



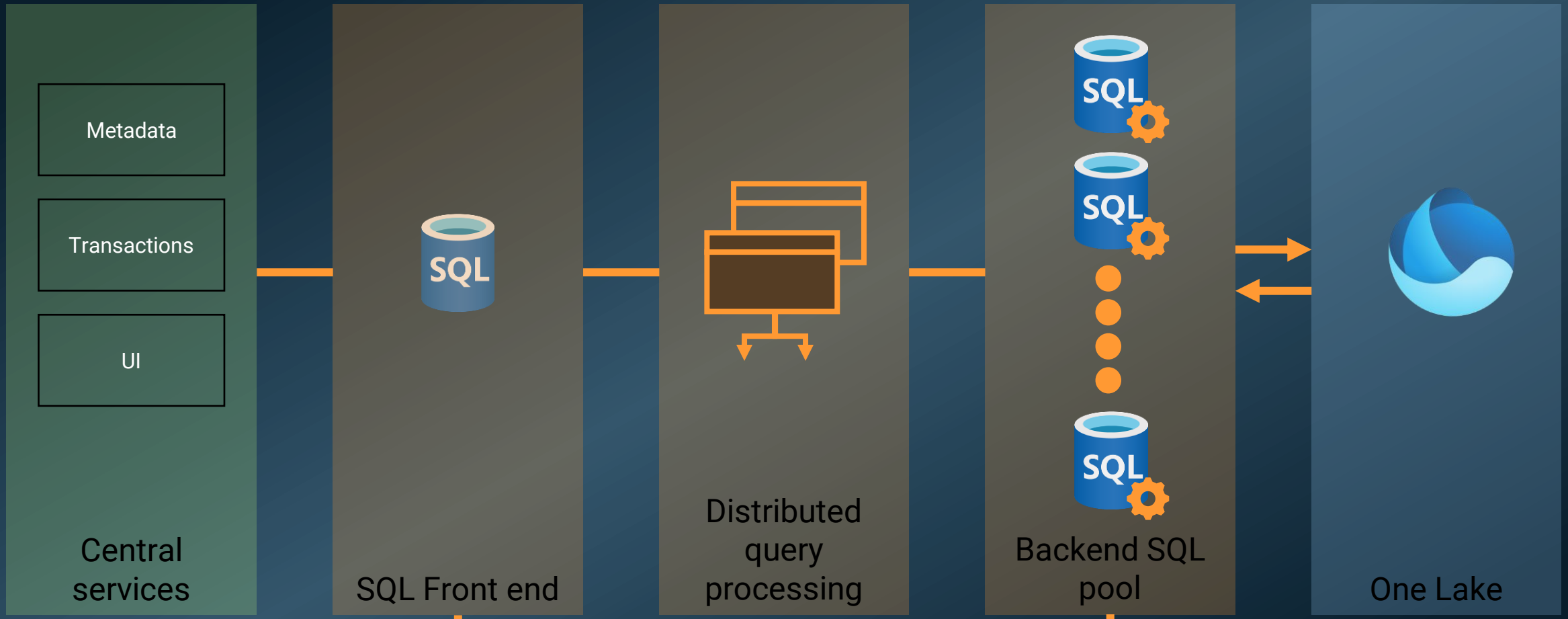
Polaris

Query processing and compute



Polaris

Service architecture



Polaris

Read more here

Whitepaper on Polaris:
https://www.vldb.org/pvldb/vol13/p3204-saborit.pdf

Broken down to a blogpost:
https://www.linkedin.com/pulse/microsoft-fabric-data-warehouse-polaris-engine-tiago-balabuch/

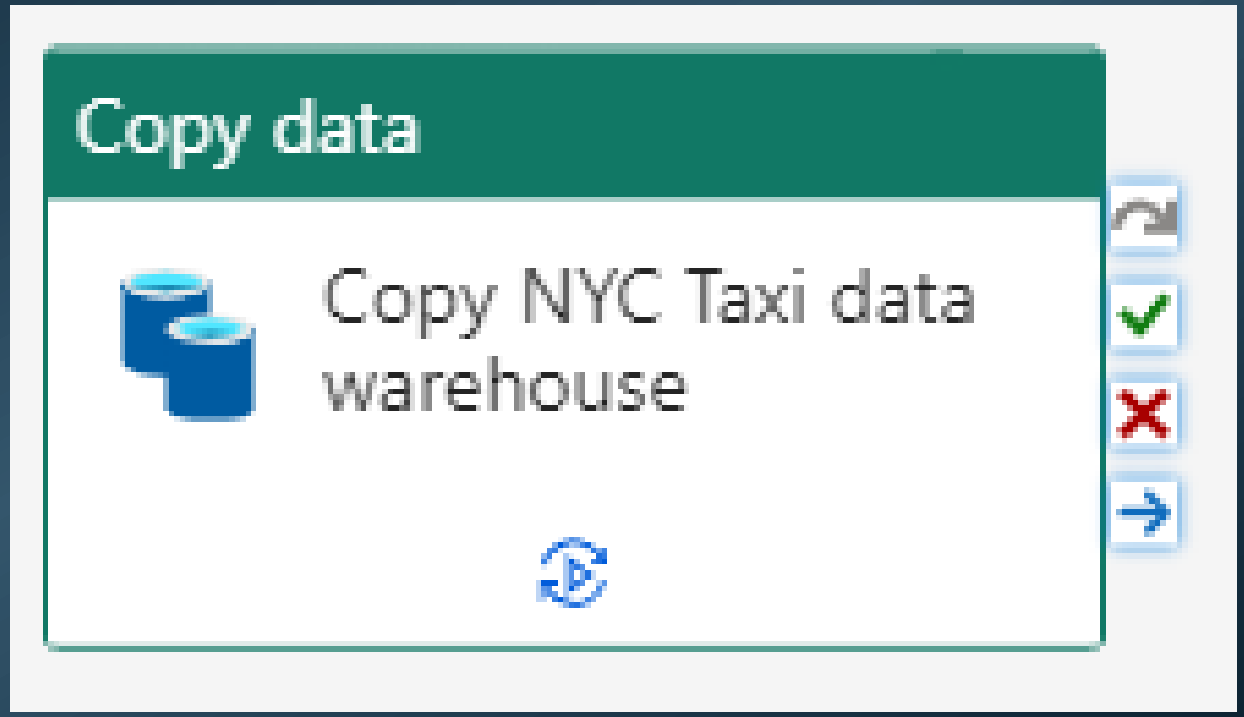
Serverless

Warehouse

Compute engine	Polaris distributed SQL Query engine

Demo setup

NYCTaxi source data from opendatastorage – staged in a Kusto Database for fastest delivery
https://opendatastorage.blob.core.windows.net



Demo setup

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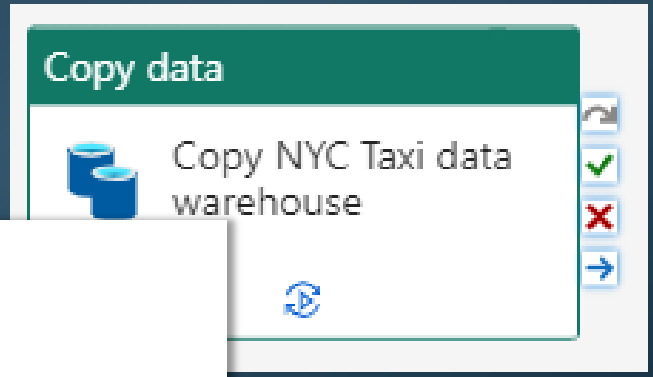

Throughput	15,63 MB/s
Total duration	00:59:09
Source to Staging duration	00:59:09
Start time	2/5/2024, 1:56:29 PM
Optimized throughput	Standard
Used parallel copies	1

Demo setup

NYCTaxi source data from opendatastorage – staged in a Kusto Database for fastest delivery
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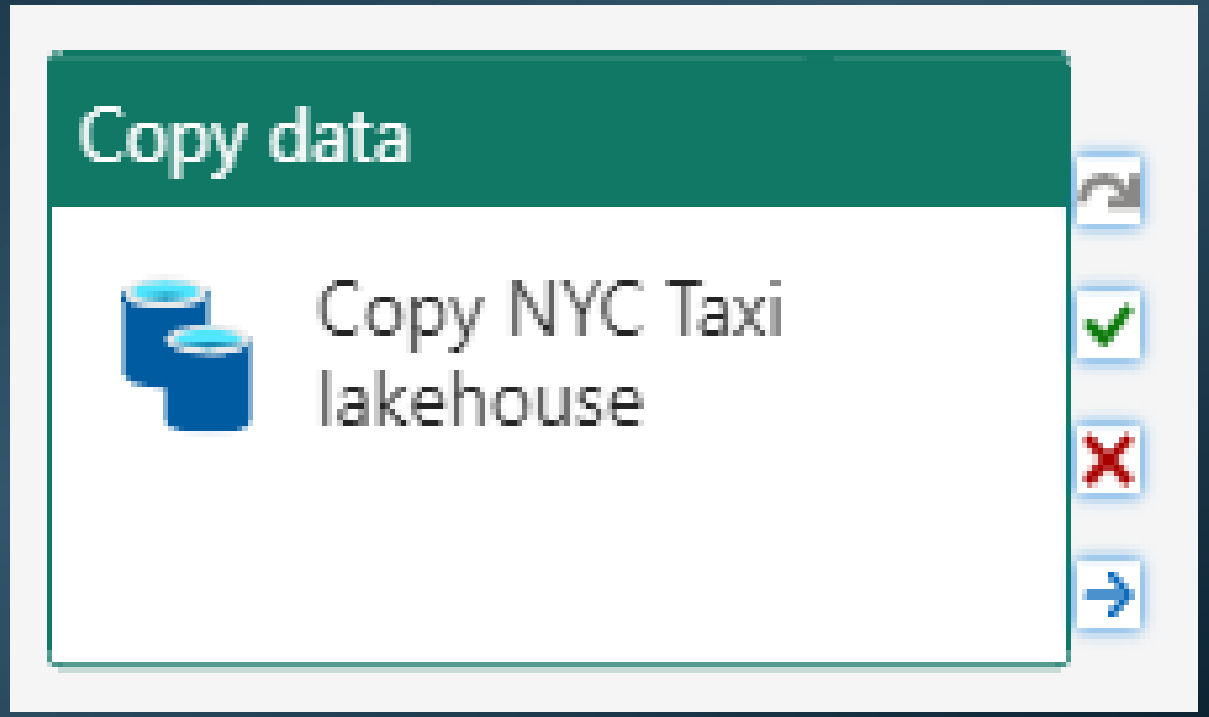

Demo setup

NYCTaxi source data from opendatastorage – staged in a Kusto Database for fastest delivery
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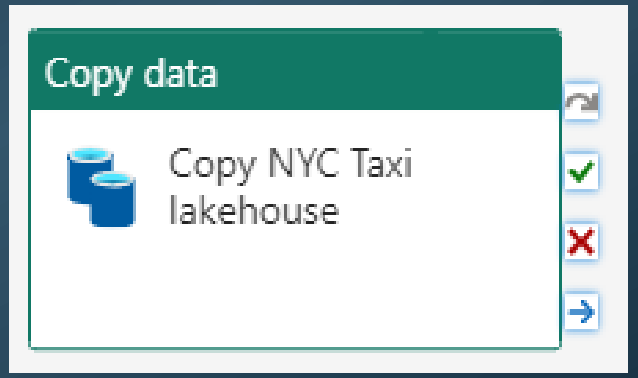
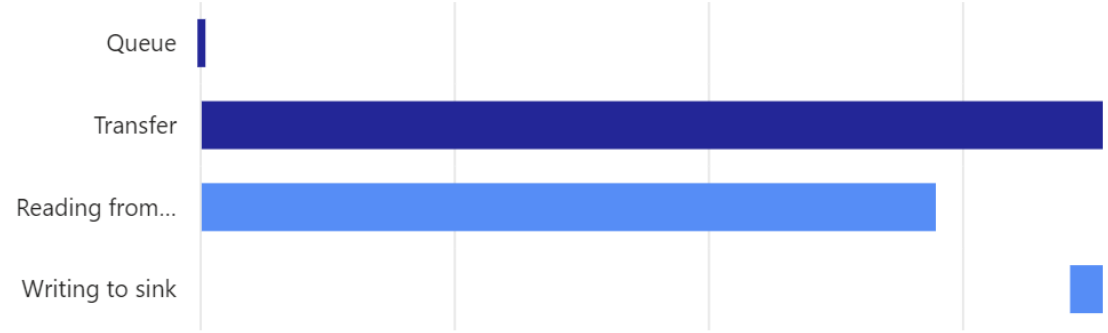


Throughput	13,973 MB/s
Total duration	00:59:12
Duration breakdown	
Start time	2/5/2024, 1:56:57 PM
Optimized throughput	Standard
Used parallel copies	1



Demo setup

NYCTaxi source data from opendatastorage – staged in a Kusto Database for fastest delivery
https://opendatastorage.blob.core.windows.net

Warehouse

Throughput	15,63 MB/s
Total duration	00:59:09
Source to Staging duration	00:59:09
Start time	2/5/2024, 1:56:29 PM
Optimized throughput	Standard
Used parallel copies	1

Lakehouse

Throughput	13,973 MB/s
Total duration	00:59:12
Duration breakdown	
Start time	2/5/2024, 1:56:57 PM
Optimized throughput	Standard
Used parallel copies	1


DEMO

The choice and migration options

From current setup to Fabric

On prem SQL DWH

The choice and migration options

From current setup to Fabric

SSIS

Data Pipeline

Stored procedure

Stored procedure

SQL View

SQL View

The choice and migration options

From current setup to Fabric

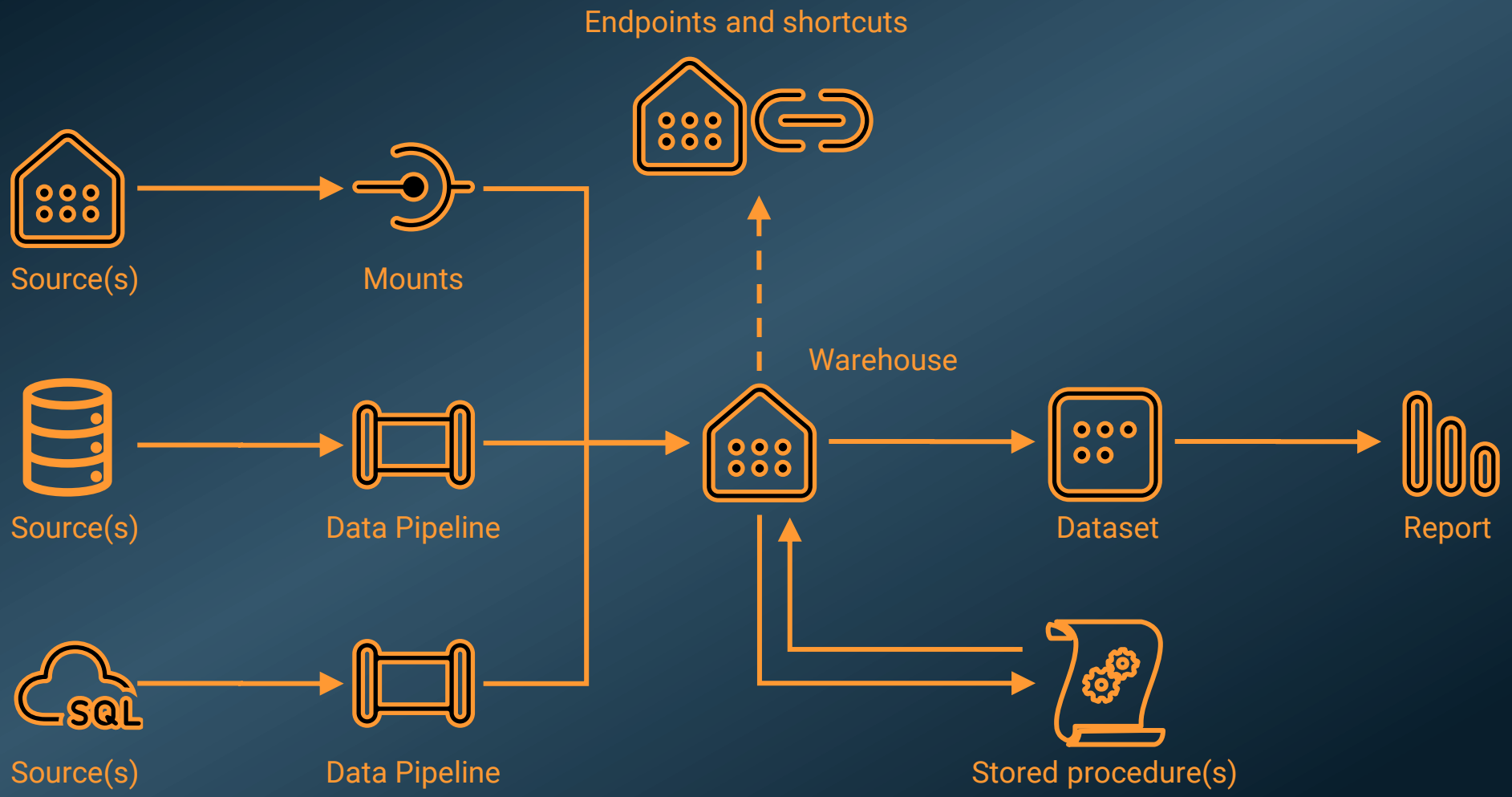
Synapse Serverless

The choice and migration options

From current setup to Fabric

Fabric Warehouse

Architecture example



Scaling of Fabric

Trial

SKU	Capacity unit (CU)	Pay-as-you-go (USD/Month)	Reserved (USD/Month)
F 2	2	262,80	156,34
F 4	4	525,60	312,67
F 8	8	1.051,20	625,34
F 16	16	2.102,40	1.250,67
F 32	32	4.204,80	2.501,34
F 64	64	8.409,60	5.002,67
F 128	128	16.819,20	10.005,34
F 256	256	33.638,40	20.010,67
F 512	512	67.276,80	40.021,34
F 1024	1024	134.523,60	80.042,67
F 2048	2048	269.107,20	160.085,34

Thank you

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Feedback