

Microsoft Azure Batch: Fundamentals

UNDERSTANDING AZURE BATCH



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Course Overview



Understanding Azure Batch

Executing a job from the Azure portal

Executing a job from a .NET application

Utilizing GPUs

Utilizing Docker containers



Module Overview



Problems Azure Batch solves

Typical use cases

Typical system architecture



Batch Processing 101

Input data

1	1	0	1	0
0	1	0	1	1
0	0	1	0	1

1	1	0	1	0
0	1	0	1	1
0	0	1	0	1

1	1	0	1	0
0	1	0	1	1
0	0	1	0	1

Processing
algorithm

Output data

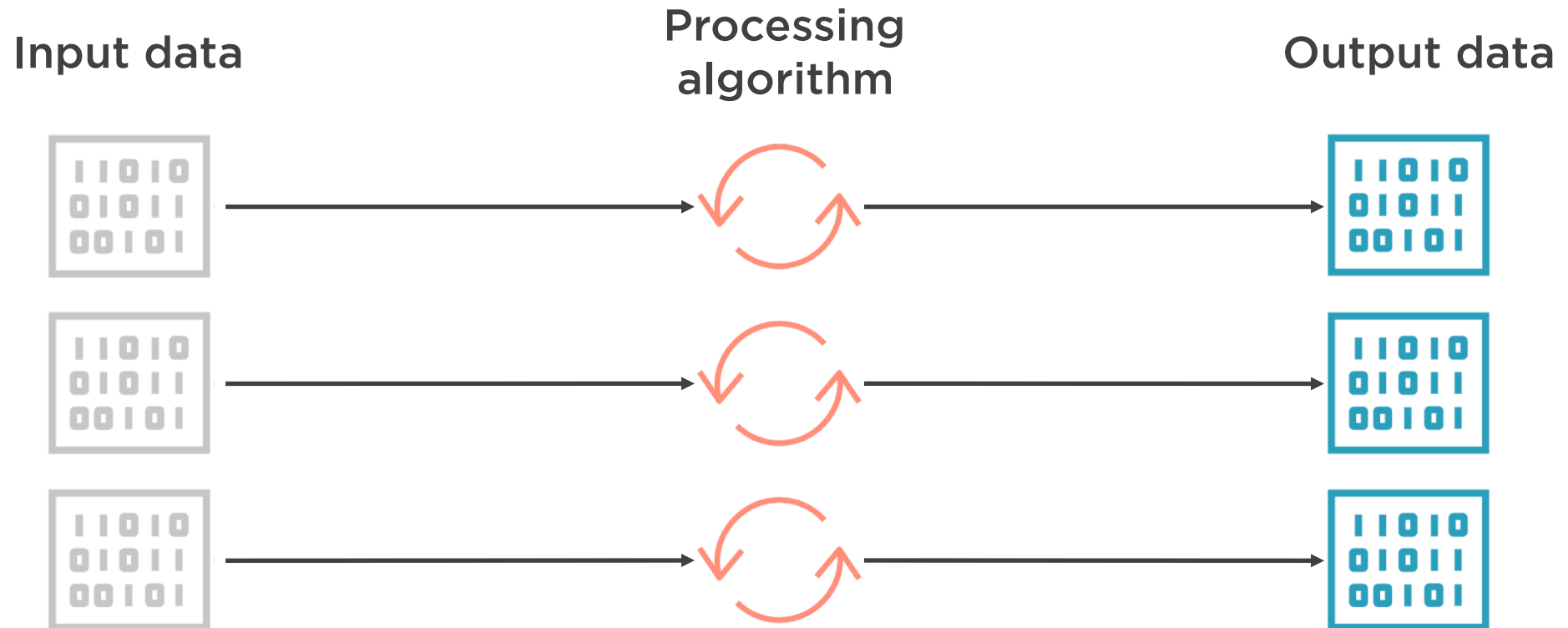
1	1	0	1	0
0	1	0	1	1
0	0	1	0	1

1	1	0	1	0
0	1	0	1	1
0	0	1	0	1

1	1	0	1	0
0	1	0	1	1
0	0	1	0	1



Parallel Batch Processing



Batch Processing Requirements

Failed job

Job never
completes

Increase in input
data

Job priorities

Job schedules

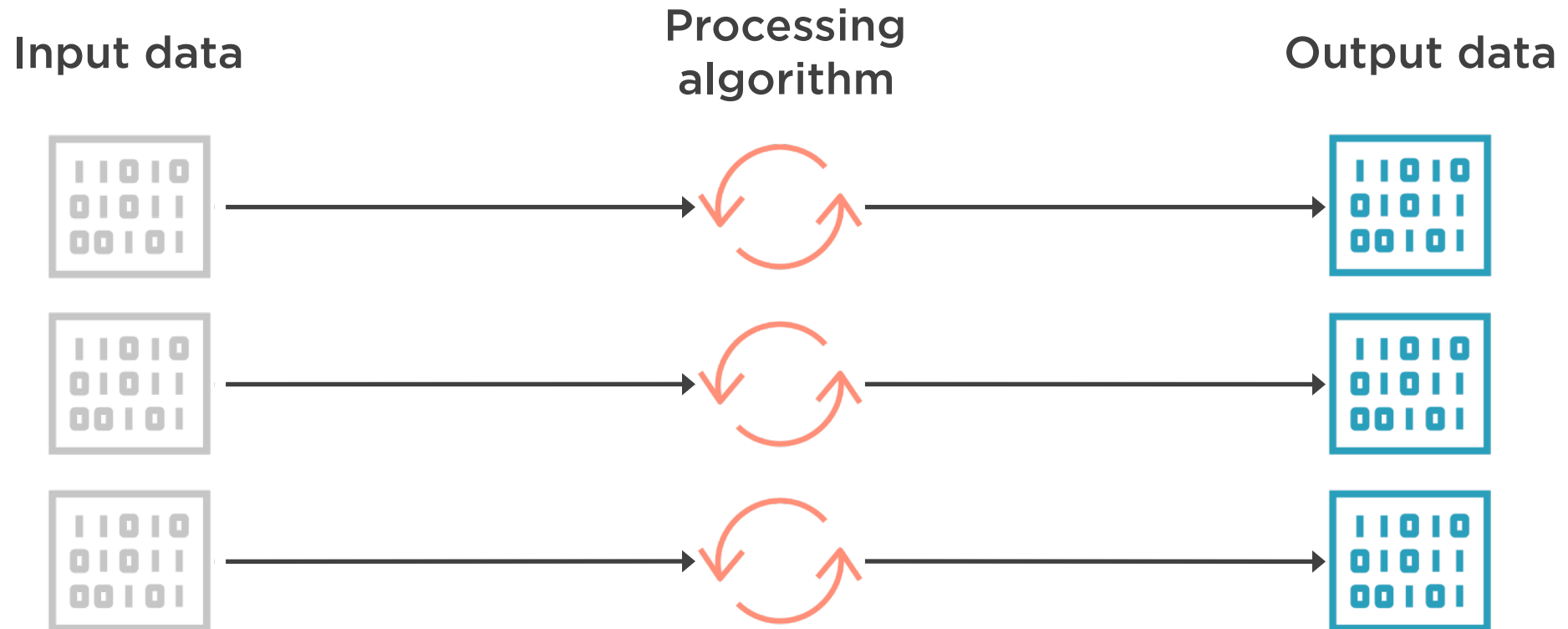
And more...



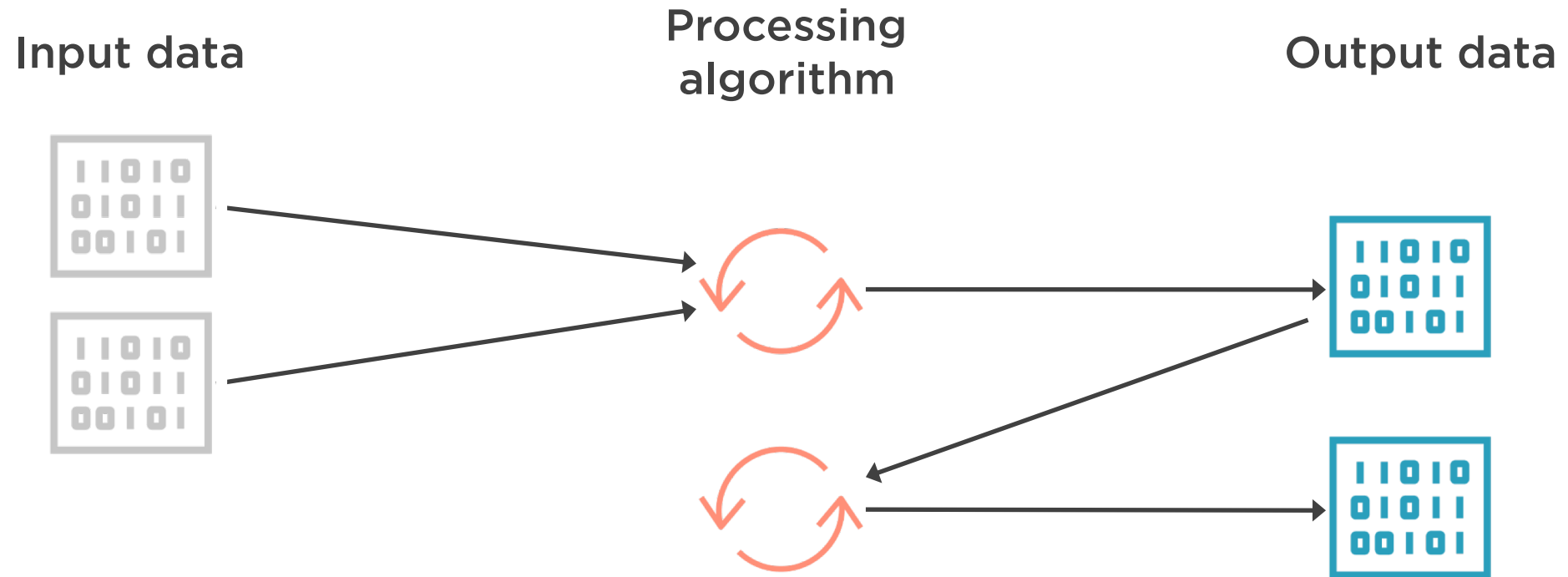
Azure Batch is free - you
only pay for the compute
and storage resources used



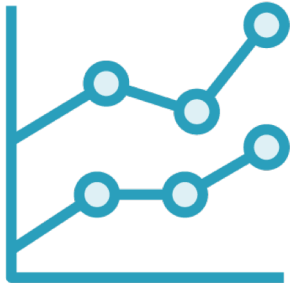
Embarrassingly Parallel Processes



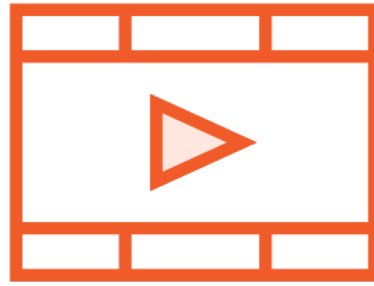
Inherently Serial Processes



Typical Use Cases



Financial simulation



Media encoding



Software testing



Cryptography search



Face recognition



Stress analysis

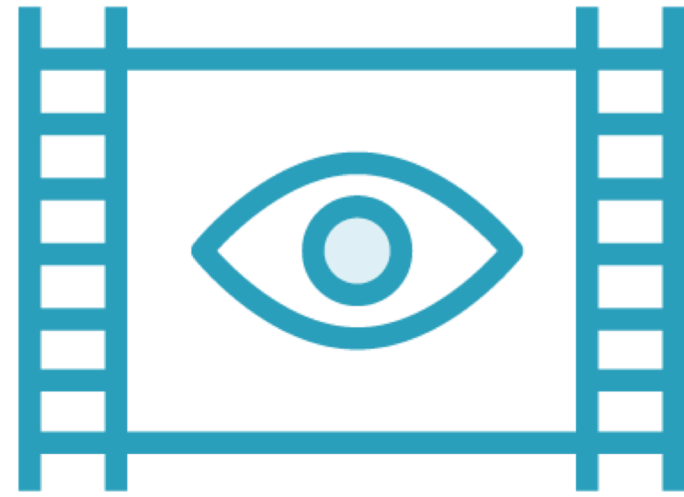


Special Use Cases



Convolutional neural networks

Azure Batch AI

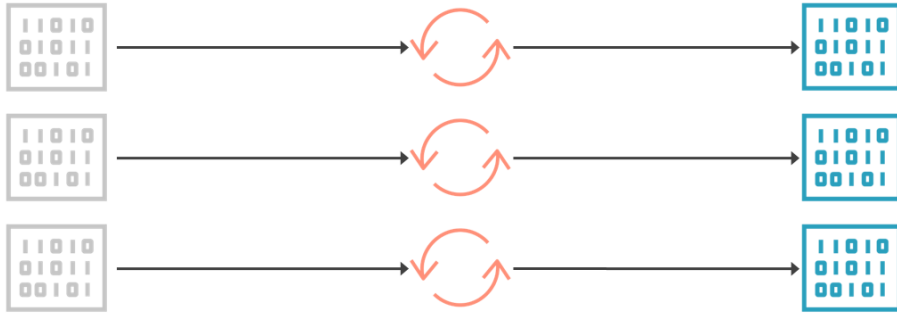


Rendering

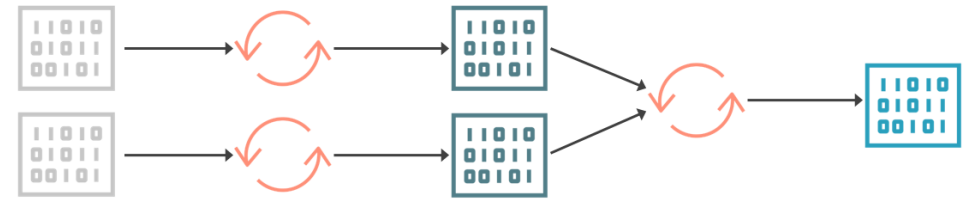
Azure Batch Render



Azure Batch Suitability



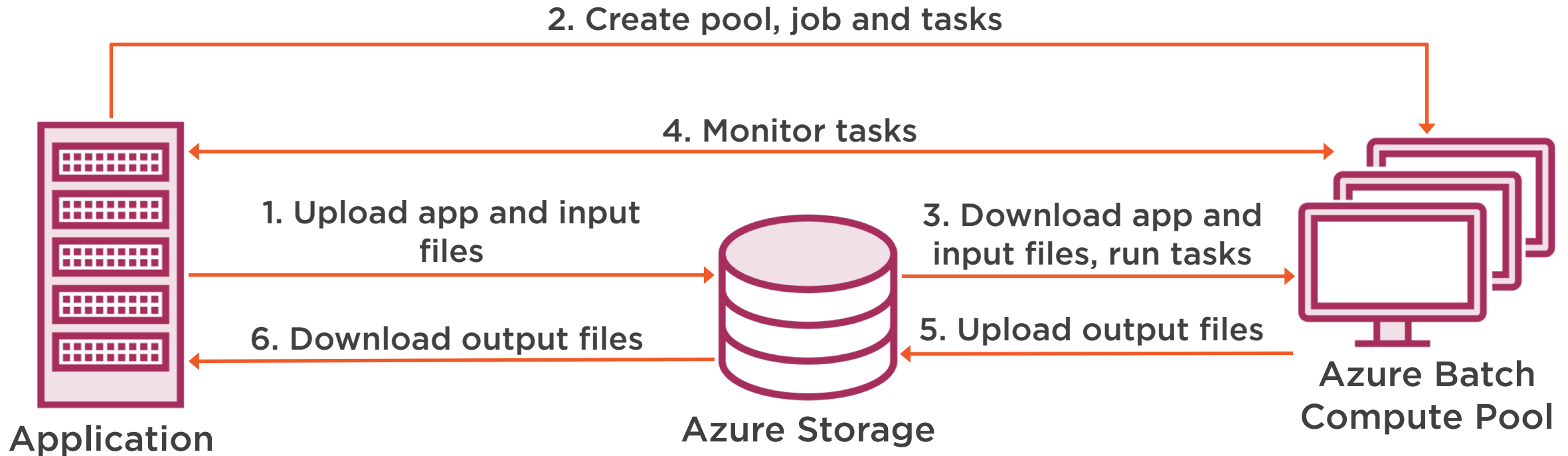
Embarrassingly parallel is best



Some task dependencies are ok



Typical System Architecture



Demo



Setting things up in the Azure portal:

- Azure Batch
- Azure Storage



Summary



Azure Batch simplifies batch processing

Embarrassingly parallel processes work best

Only Azure Batch and Storage services are required

