Delivering Real-time Data with Azure and Power BI Streaming

REAL-TIME DATA AND AZURE

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What's in This Module?

What is Real-time Data?

Azure Architectures

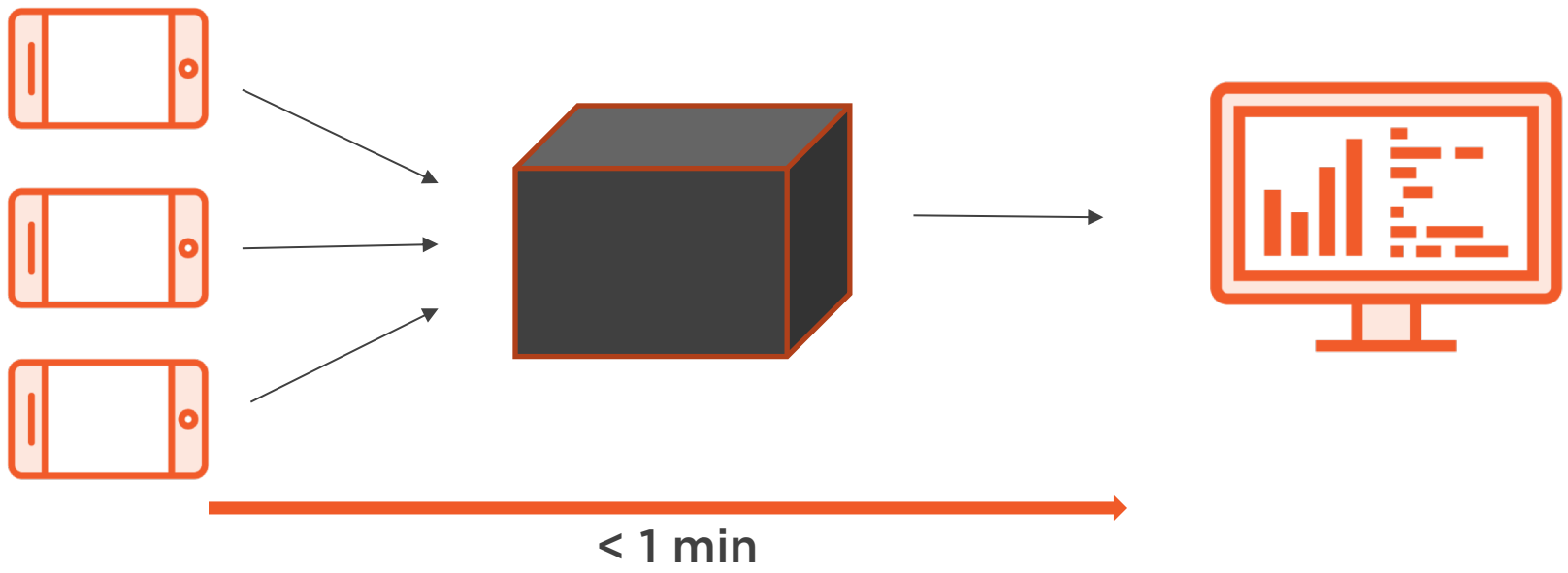
Azure Components

Solution Overview

What is Real-time?

Data delivered to the end consumer at the same rate as it is generated.

In realistic terms, we're looking at generation to consumption delay of 1 minute or less.

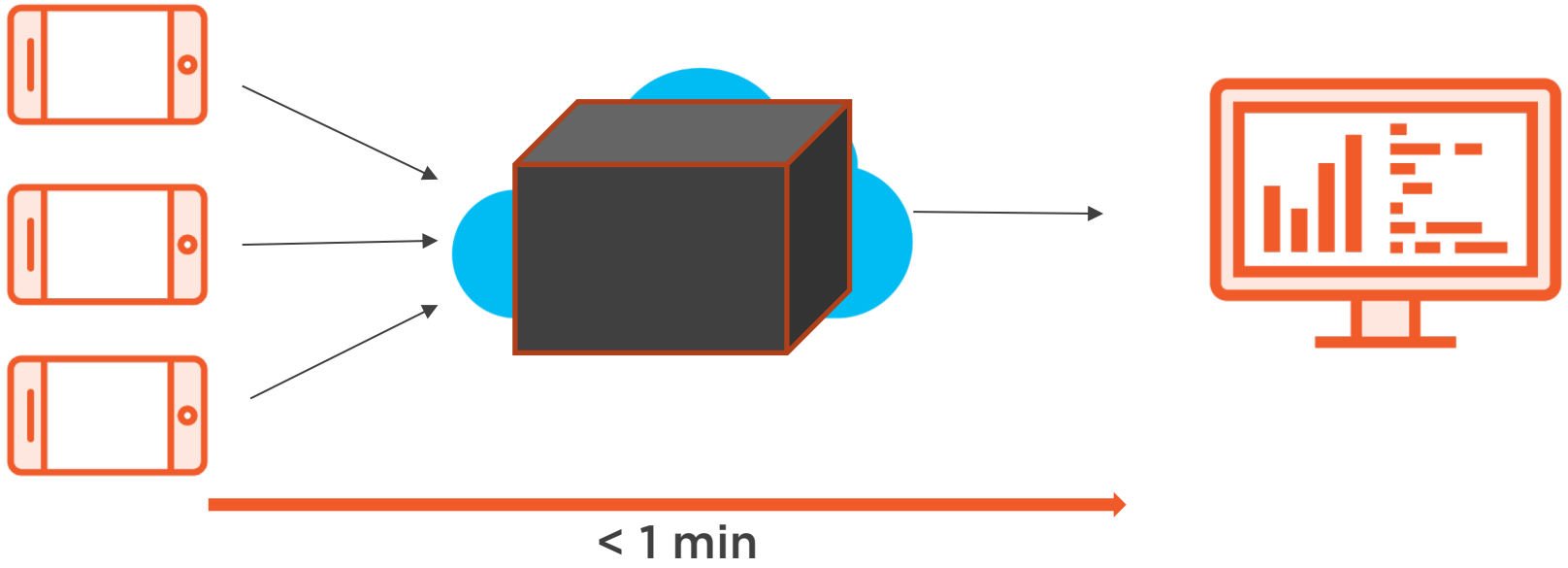


Why Real-time?

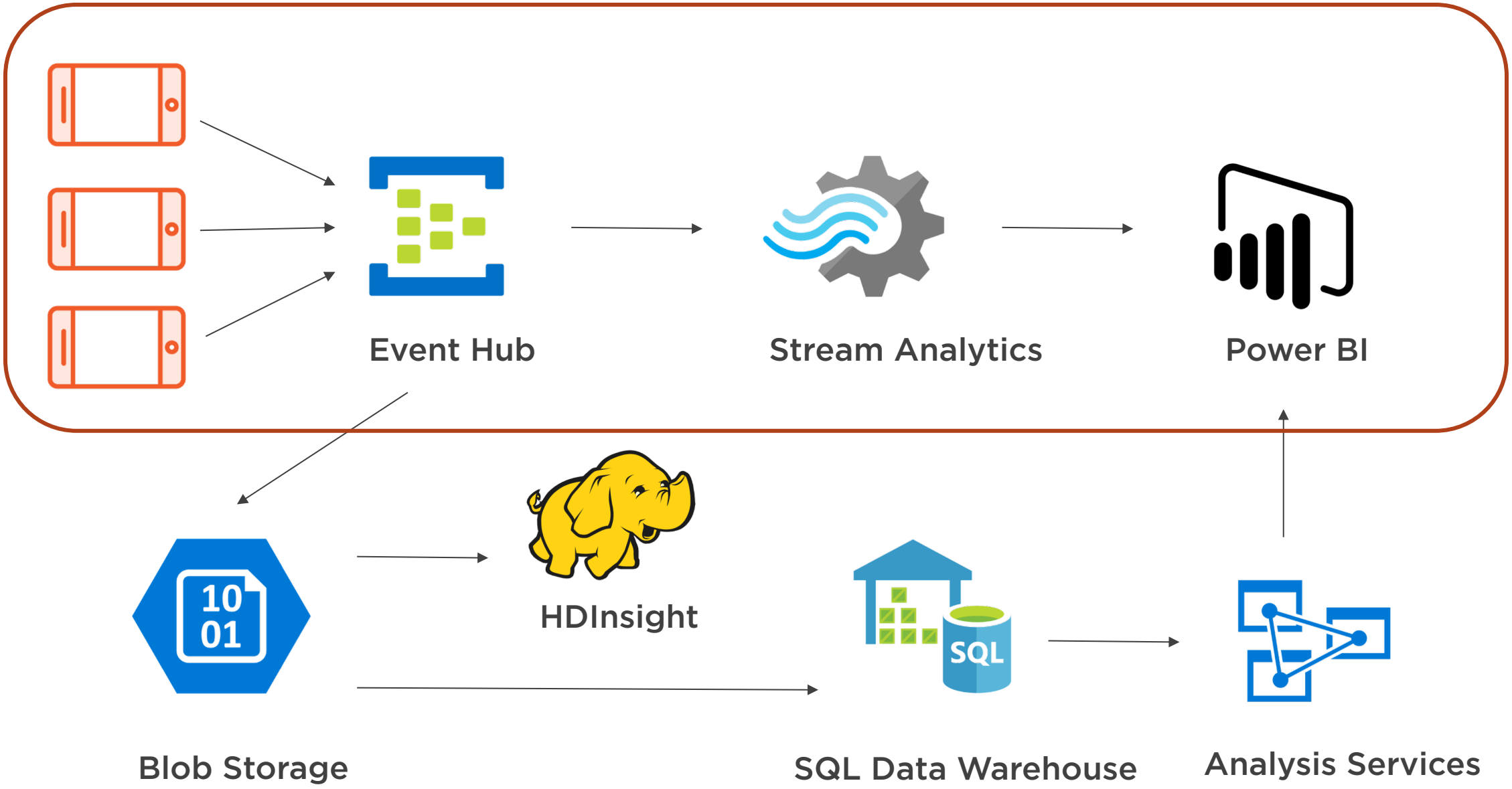
Modern business competitiveness and user expectations demand faster time to insight

Traditional	Modern
Batch style processing	Streaming data
Delay of hours or days	Delay of seconds or minutes
Infrastructure expertise	Cloud turnkey components
Reporting and visualization tools gated by dedicated IT or BI teams	Dynamic self-service BI

Let’s check an example architecture



We’re going to look at one (not the only one) reference architecture to do this in Azure and Power BI.


Event Hub
Stream Analytics
Power BI
HDInsight
Blob Storage
SQL Data Warehouse
Analysis Services

Let’s look at the components of our solution

1. Azure Event Hubs

The landing pad to Azure

Consumes data in any form

Supports stream and batch

Highly scalable

Fully managed

2. Azure Stream Analytics

Analyze your data on the fly

Use SQL and JavaScript to query a stream

Transforms the data in-flight

Highly scalable

Fully managed

3. Microsoft Power BI

Rich self-service reports and dashboards

Fully integrated with Azure

Easy to pick up

Built for collaboration

Fully managed

The Cloud Advantage

Deploy within minutes

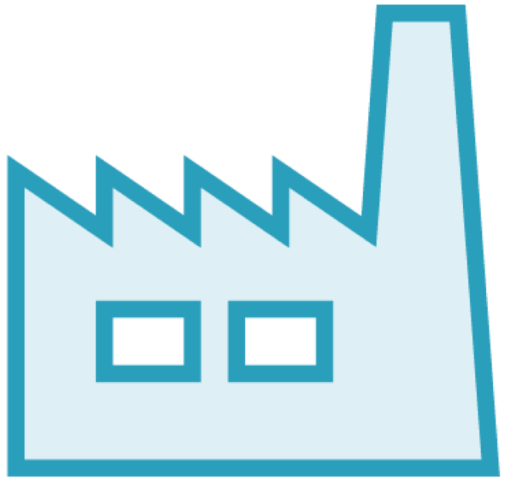
No infrastructure to manage

Scale up or down as needed

Tightly integrated services

Let’s go over the solution we are building

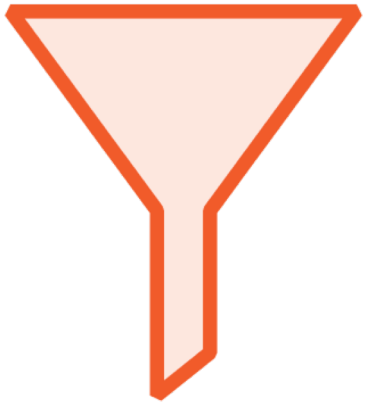
Machinery Temperature Monitoring



We have a warehouse connected to Azure

We stream the machines temperature readings multiple times per second to Azure

Machinery Temperature Monitoring



We want to aggregate the temperature readings and add reference information to it

We want users to visualize and receive alerts on this data in real-time

Applications in Many Industries

Analyze user behavior

Monitor a fleet of vehicles

Visualize sales and inventory movements

Keeping up to Date

In the cloud, service details can change.
Refer to azure.com and powerbi.com for the latest information.

Summary

The demand for real-time data is increasing

In Azure we can architect a solution that requires no infrastructure management

We are going to build a temperature monitoring dashboard

This architecture can be applied to solutions on many industries

Next Module:
Consuming Data Through Event Hubs