

Internet of Things (IoT)

What is the Internet of Things?

- Connecting any device with an on and off switch to the Internet (and/or to each other)
 - Examples: cell phones, coffee makers, washing machines, headphones, lamps, wearable devices, and almost anything else you can think of
 - This also applies to components of machines, for example a jet engine of an airplane or the drill of an oil rig



Gartner predicts that by 2020 there will be over 26 billion connected devices

[illegible]

Scenario

- You are on your way to a meeting
 - Your car accesses your calendar and already knows the best route to take
 - If traffic is heavy, your car might send a text to the other party notifying them that you will be late

Potential Impact of IoT

- Your alarm clock wakes you up at 6 am and then notifies your coffee maker to start brewing coffee for you
- Your office equipment knew when it was running low on supplies and automatically re-ordered more
- The wearable device you use in the workplace tells you when and where you were most active and productive and shares that information with other devices that you used while working

Consumer Packaged Goods – Amazon Dash



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Consumer Packaged Goods – Amazon Dash



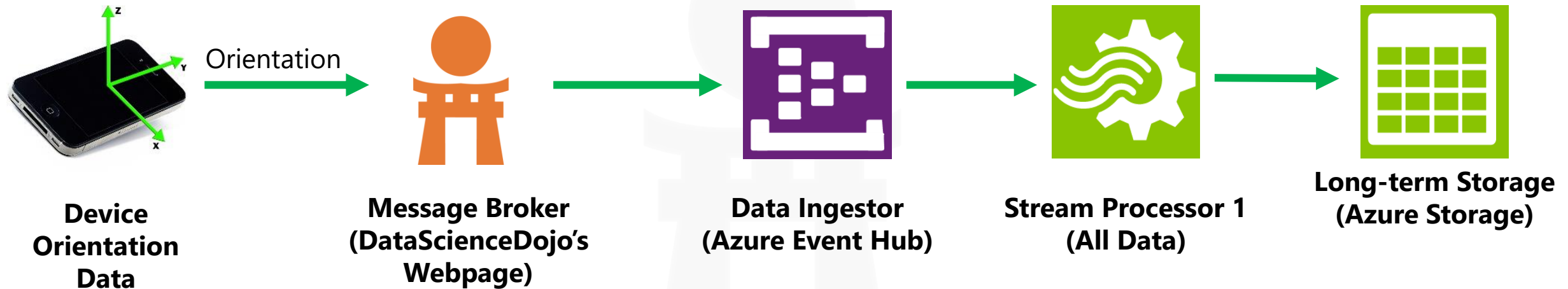
IOT HACK DAY PROJECT



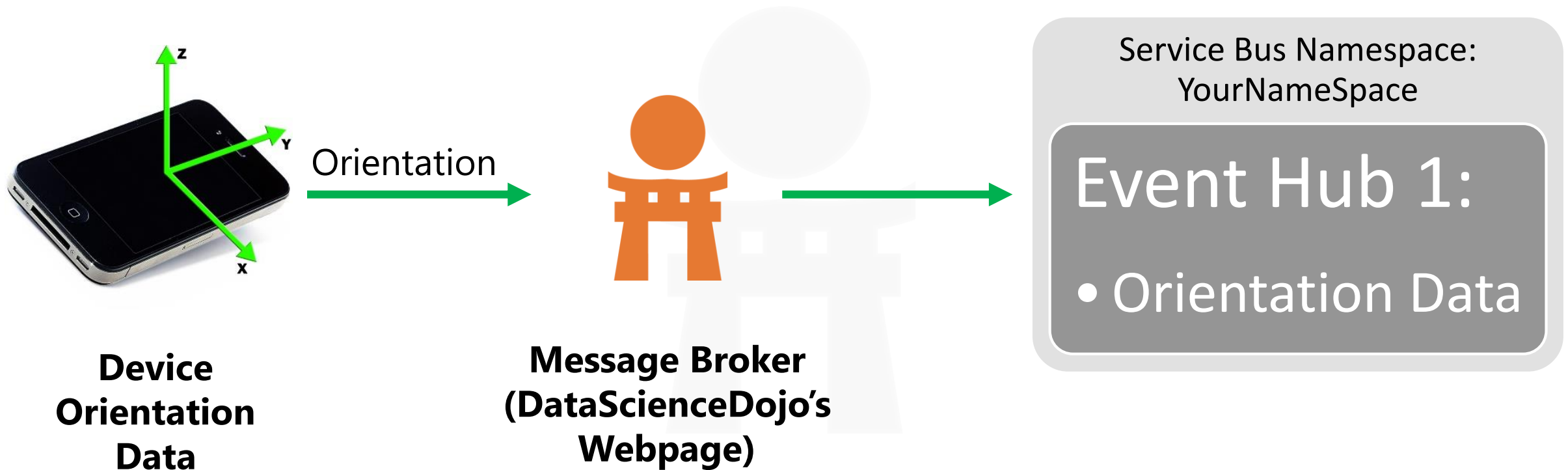
Smart Device Orientation



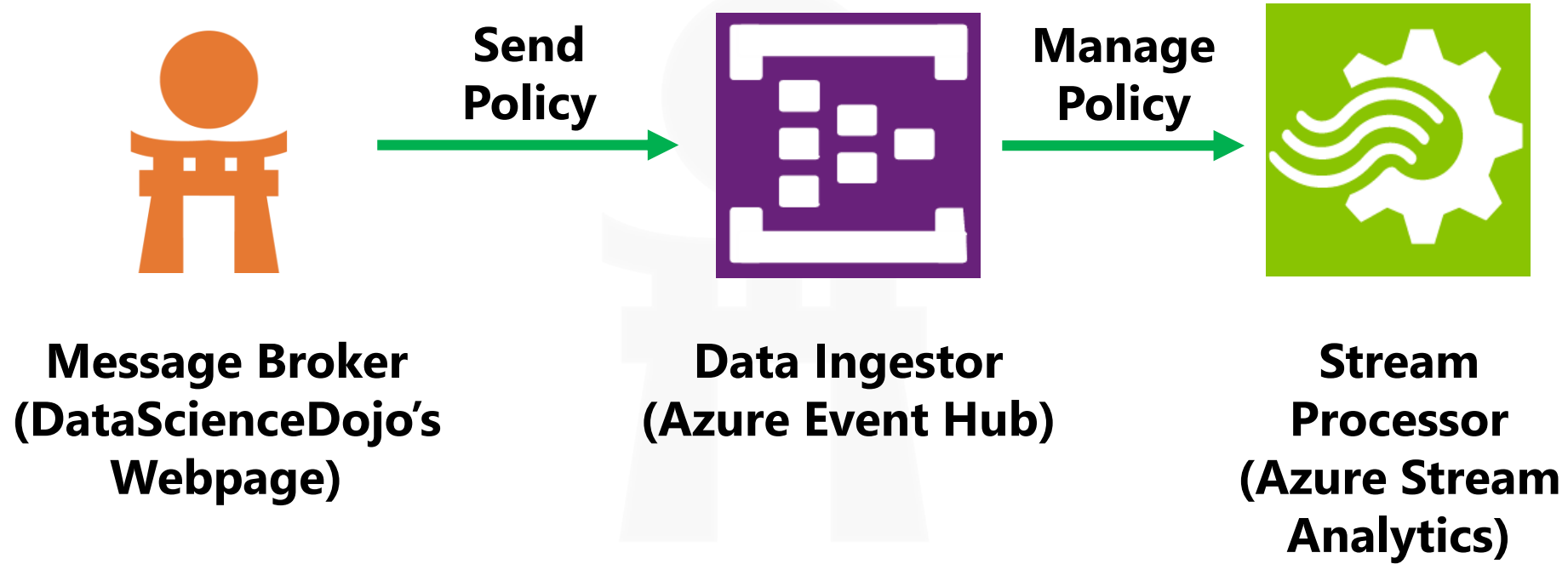
Pipeline



Inside the Event Hub



Setting Policies




The Streamer

- <http://demos.datasciencedojo.com/app/iot/>

IoT Phone App

Hooks up your phone's telemetry to the cloud. Takes orientation data (x, y, z) from your phone and sends it into an Azure Event Hub as a stream. Phones use gyroscope, accelerometer, and magnetometer, to detect its orientation for games, apps, and window orientation. This web app will collect the same kind of information a phone app game would, and sends it to an Azure Event Hub.

 Event Hub Credentials

Event Hub Name

field required

Endpoint Connection String

field required

Test Connection

Stream Data

Device Orientation

Event Supported

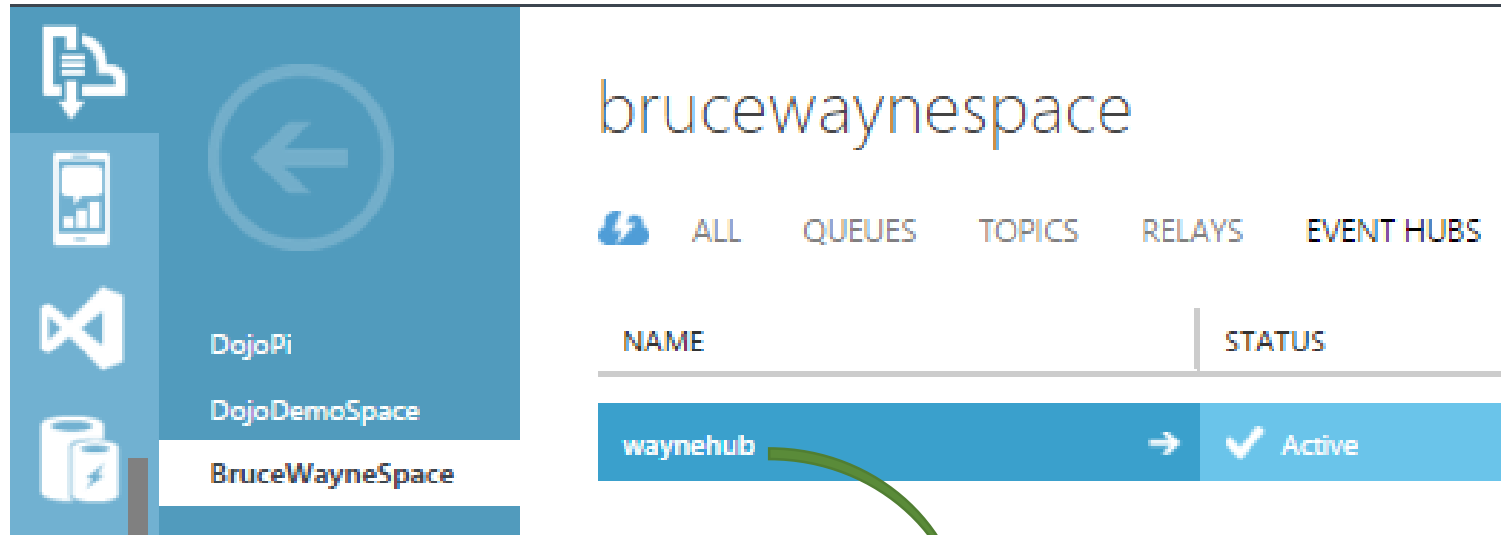
Tilt Left/Right [gamma]
Tilt Front/Back [beta]
Direction [alpha]



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Event Hub Name



brucewaynespace

ALL QUEUES TOPICS RELAYS EVENT HUBS

NAME	STATUS
waynehub	Active

Event Hub Credentials

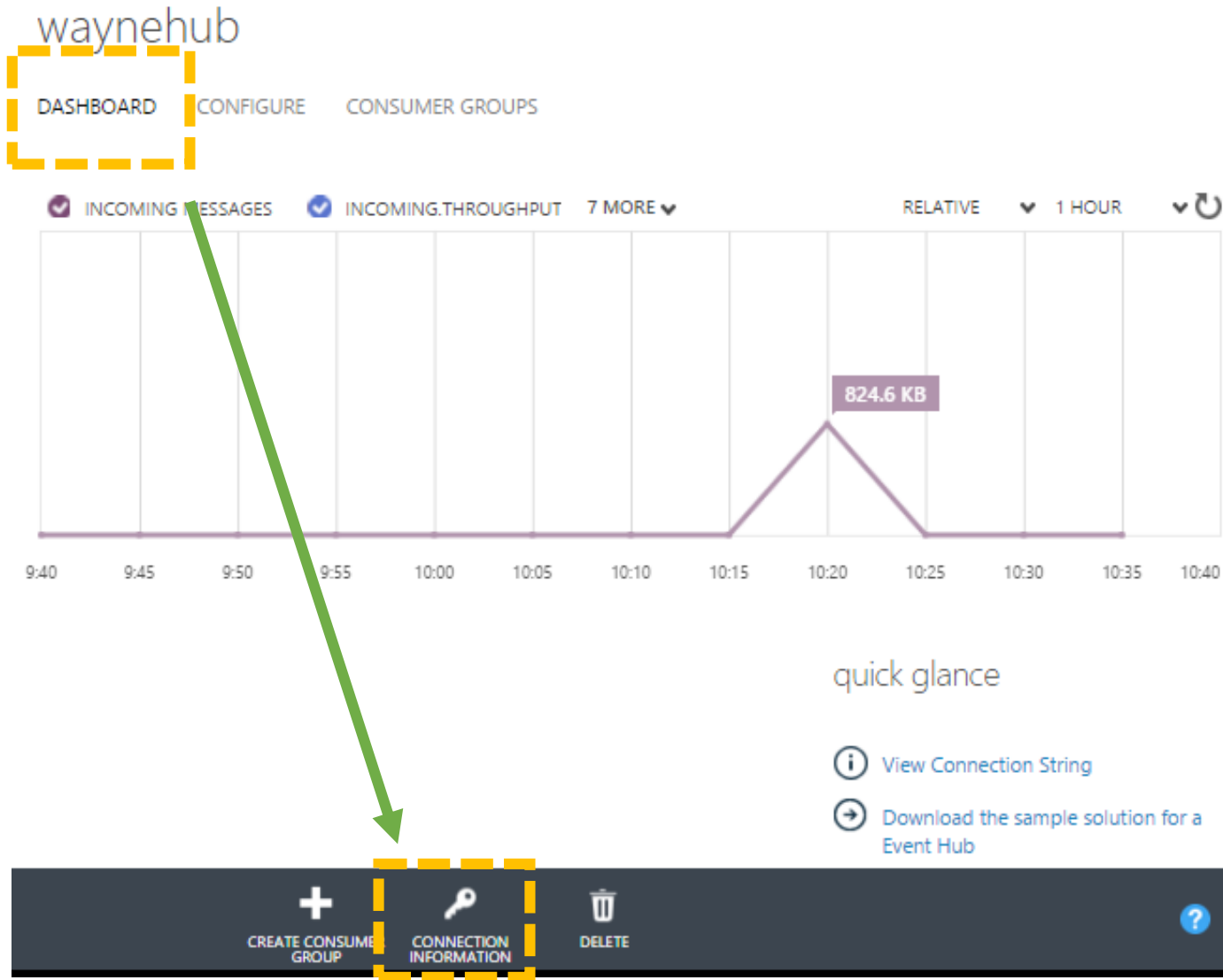
Event Hub Name

waynehub

Endpoint Connection String

field required

Connection String





Connection String

Access connection information

Use this connection information to connect to event hub 'waynehub'.

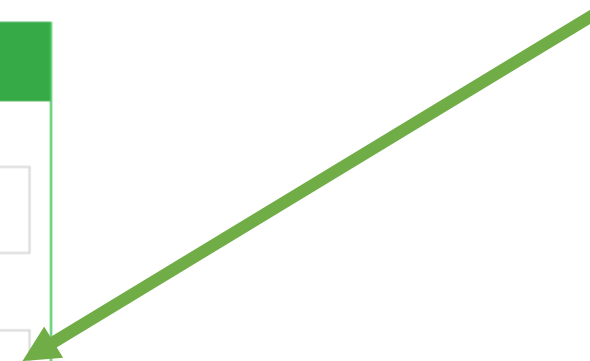
SAS ?

NAME	CONNECTION STRING	
sendkey	Endpoint=sb://brucewaynespace.servicebus.windows.net/;SharedAccessKeyName=	

 Event Hub Credentials

Event Hub Name

Endpoint Connection String



Testing Connection

The screenshot displays the 'IoT Phone App' interface. A modal dialog titled 'Server Response' is centered on the screen, displaying the message 'Successfully sent test data to the Azure Event Hub.' with an 'Okay' button. Below the dialog, the 'Event Hub Credentials' section is visible, containing two input fields: 'Event Hub Name' with the value 'waynehub' and 'Endpoint Connection String' with the value 'Endpoint=sb://brucewaynespace.servicebus.windows.net/;SharedAcc'. At the bottom of this section, two buttons are present: 'Test Connection' (highlighted with a yellow dashed border) and 'Stream Data'. To the right, the 'Device Orientation' section lists supported events: 'Tilt Left/Right [gamma]', 'Tilt Front/Back [beta]', and 'Direction [alpha]'. A small graphic of a phone is visible in the bottom right corner.

QUESTIONS

