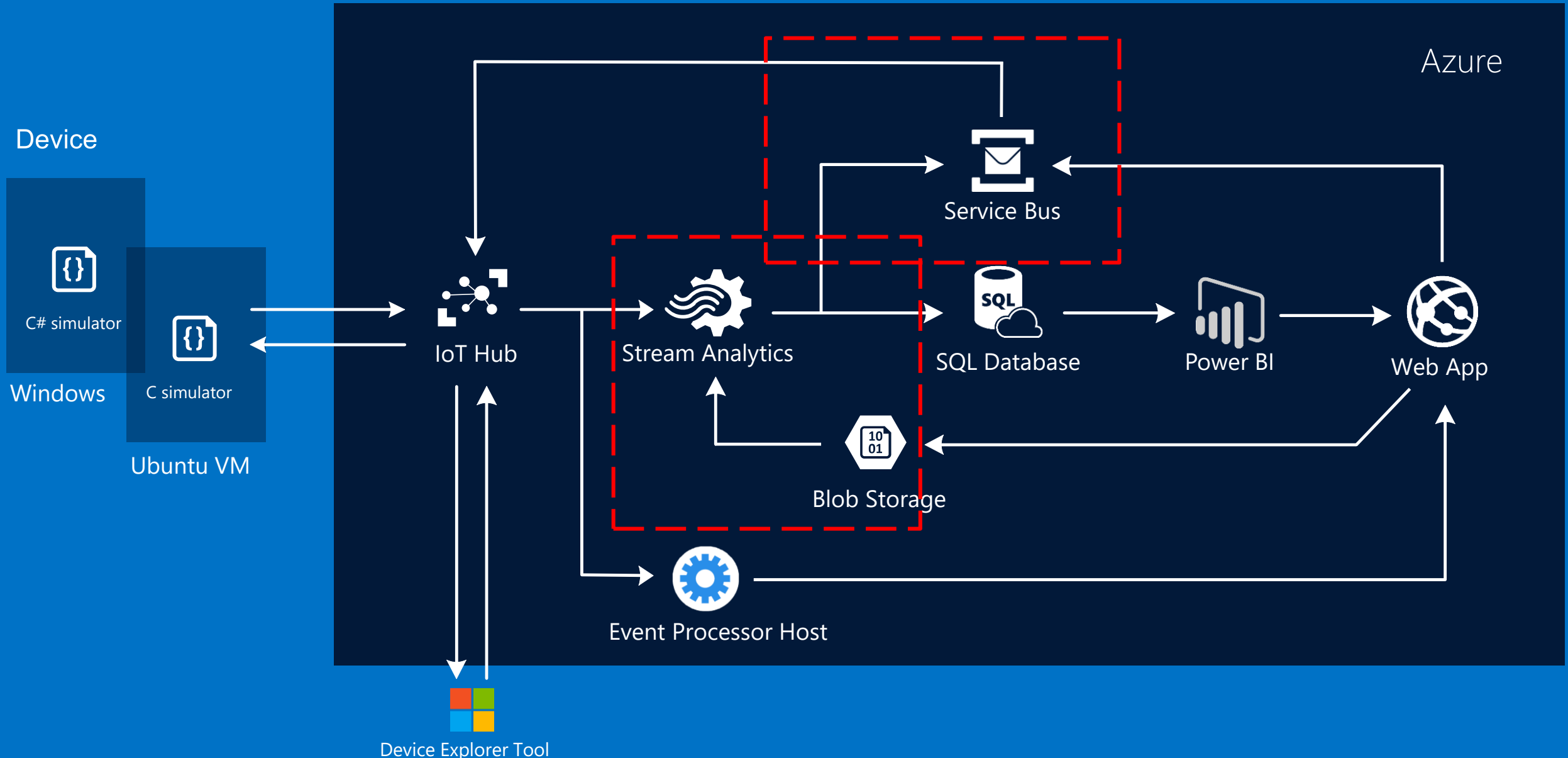


Data Processing and Device Alert Part II

Cloud to Device Alarm with Service Bus



HOL 5 – Cloud to Device Alarm with Service Bus



Service Bus

Messaging

A good messaging / streaming system

- Low-latency
- Immutable
- Time-based
- **Everything** is stored
- Pub-sub semantics with efficient serializers
- Messages are now **master data**!

What's a good message?

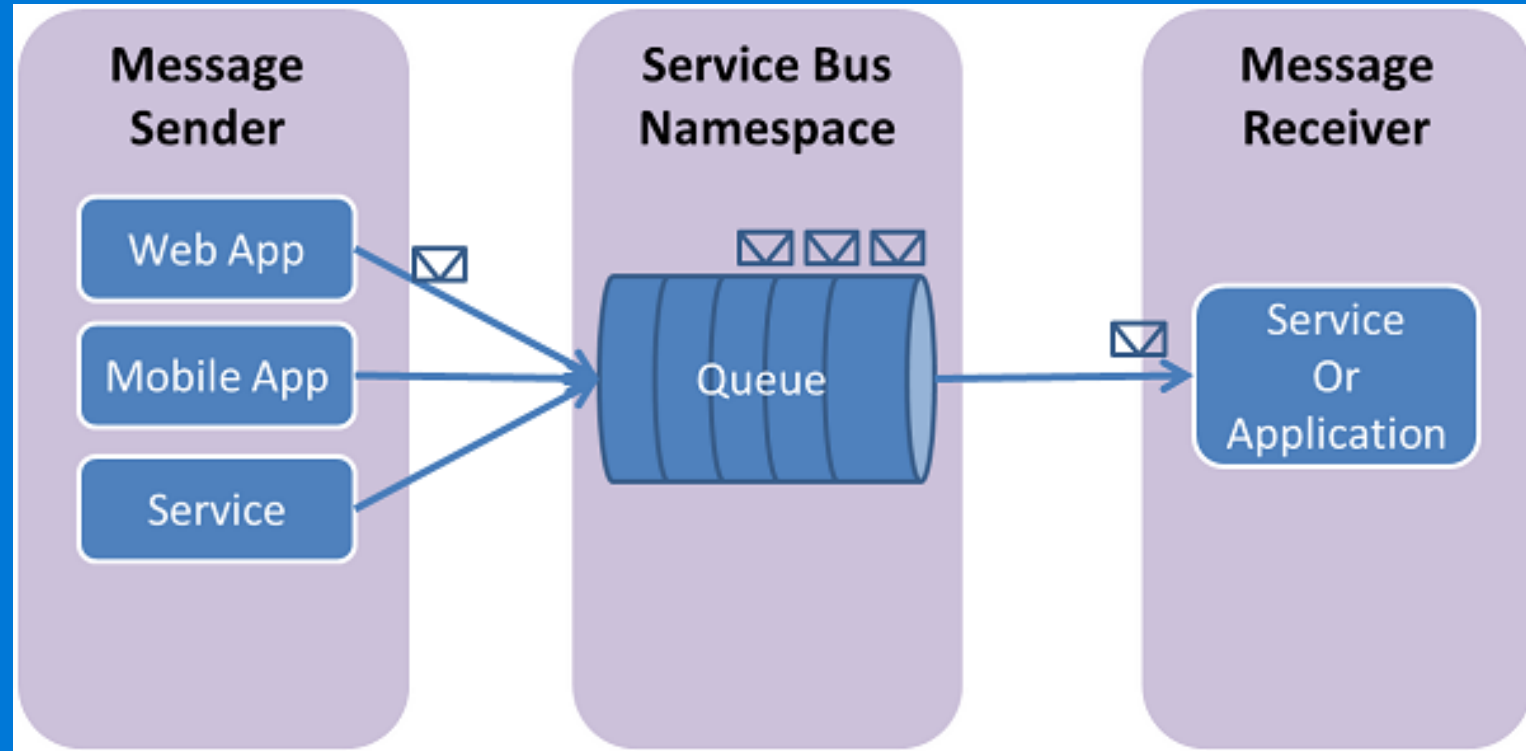
- Small (XML vs. JSON vs. AVRO)
- Unique
- Informative (duh!)
- Multi-Part
- Extensible

```
{
  "ver": "Ms.Video.Played",
  "time": "2014-10-28T06:17:13.4850994Z",
  "sampleRate": 10,
  "seq": "39DJVNHXI40XURYHE:1",
  "iKey": "5e23524a-89a5-4718-b8cc-af8fb5677464",
  "deviceId": "FFFF1234",
  "os": "Win32NT",
  "osVer": "6.2.9200.0",
  "appld": "S:ExampleClient.vshost.exe",
  "appVer": "12.0.30602.0",
  "userId": "x:123123123123",
  "tags": {
    "brand": "Nokia",
    "model": "920",
    "imei": "676AD7B65E",
    "serialNumber": "345646342626",
    "inheritancePath": "PageView|Ms.Video.Played",
    "version": "1.0.0.0"
  },
}
```

Where do I send my messages?

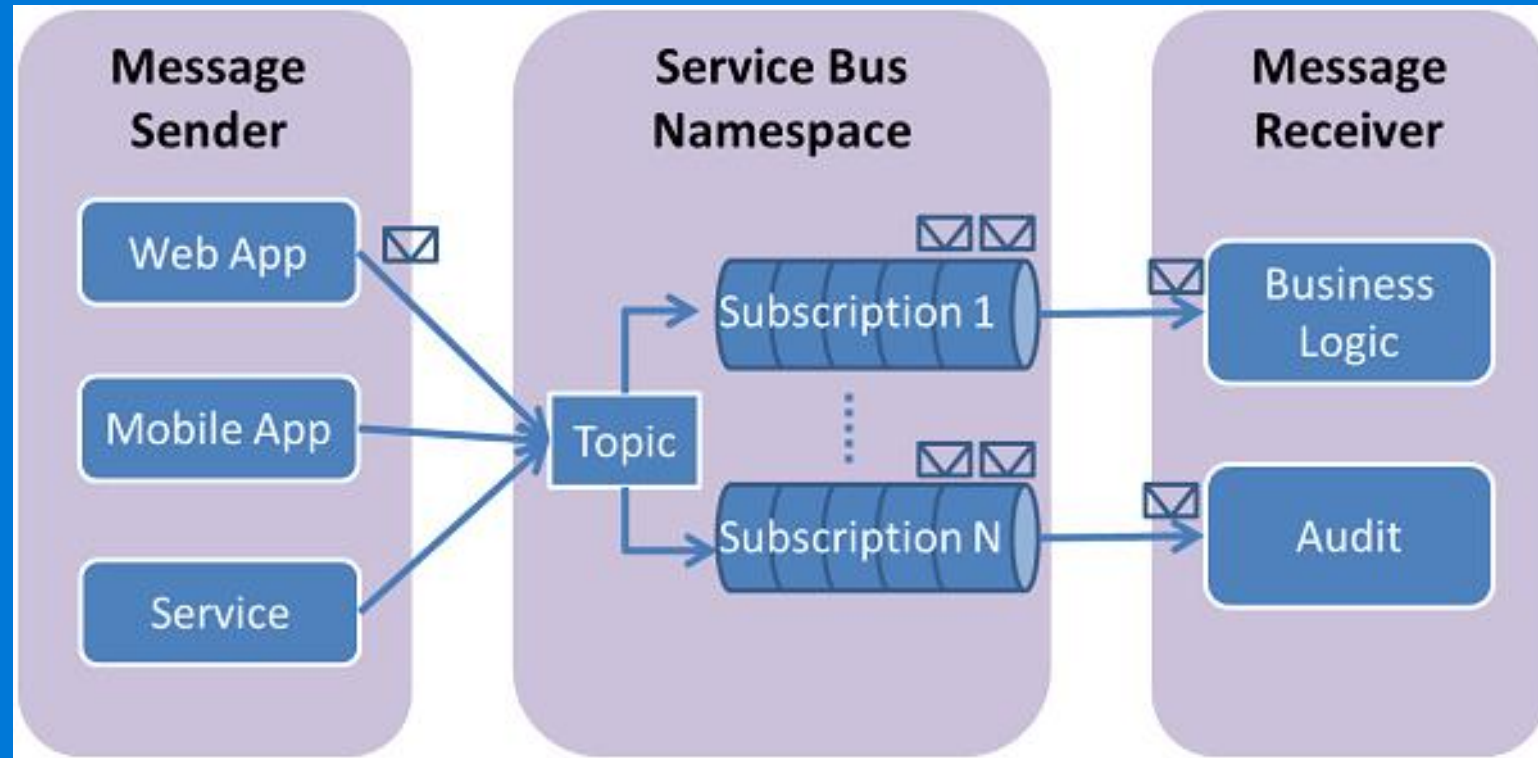
Service Bus - Queues

- Flexible Delivery Options (at most once, at least once)
- Message Time to Live
- Dead lettering
- Scheduled Messages
- Good for load leveling
- All senders know where they're sending
- But Readers compete to read (Competing Consumer problem)



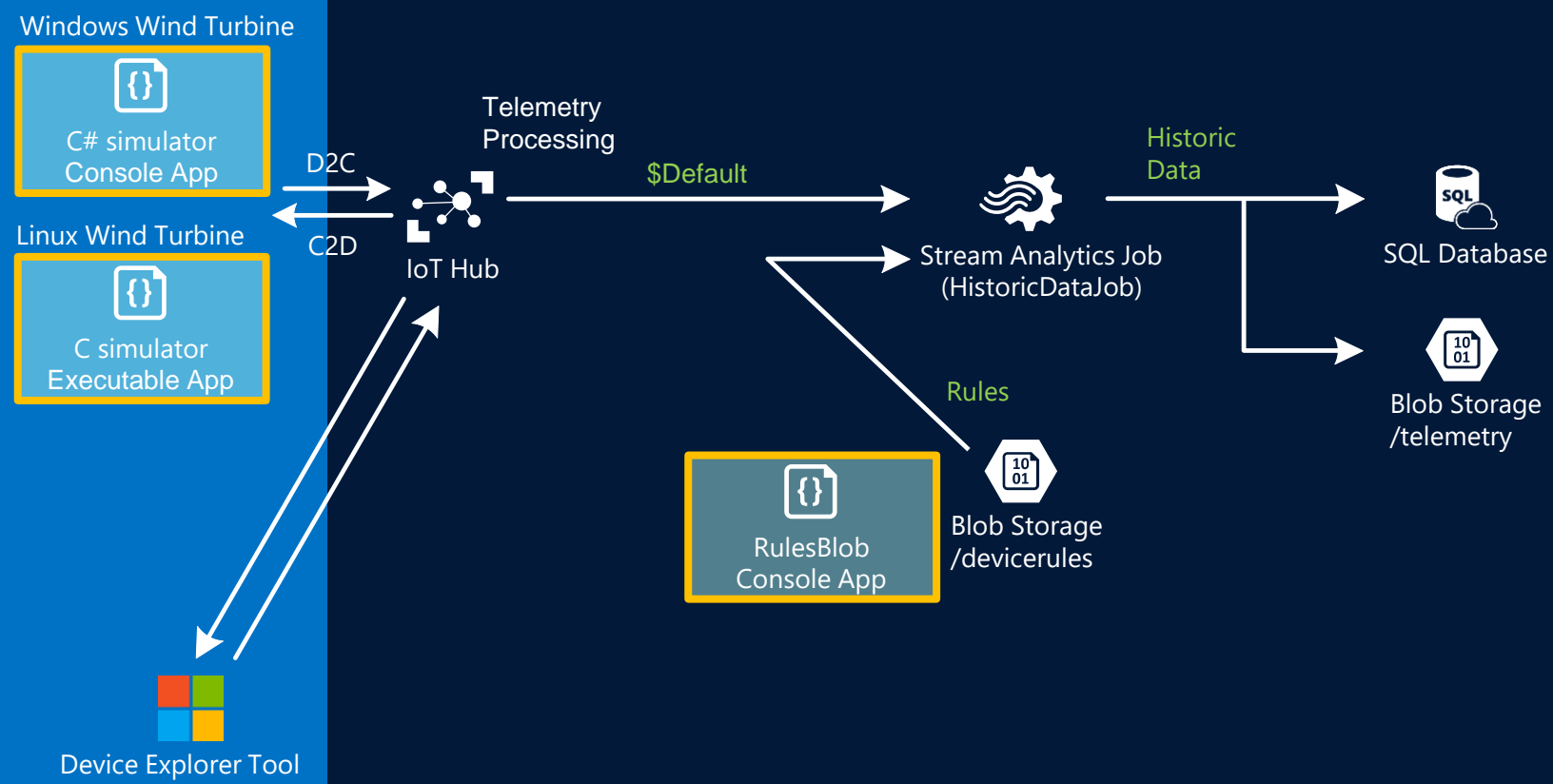
Service Bus - Topics

- Publish Subscribe Messaging
- Same features as queues + SQL like Subscriptions
- Good for sending data to multiple recipients (fan out)

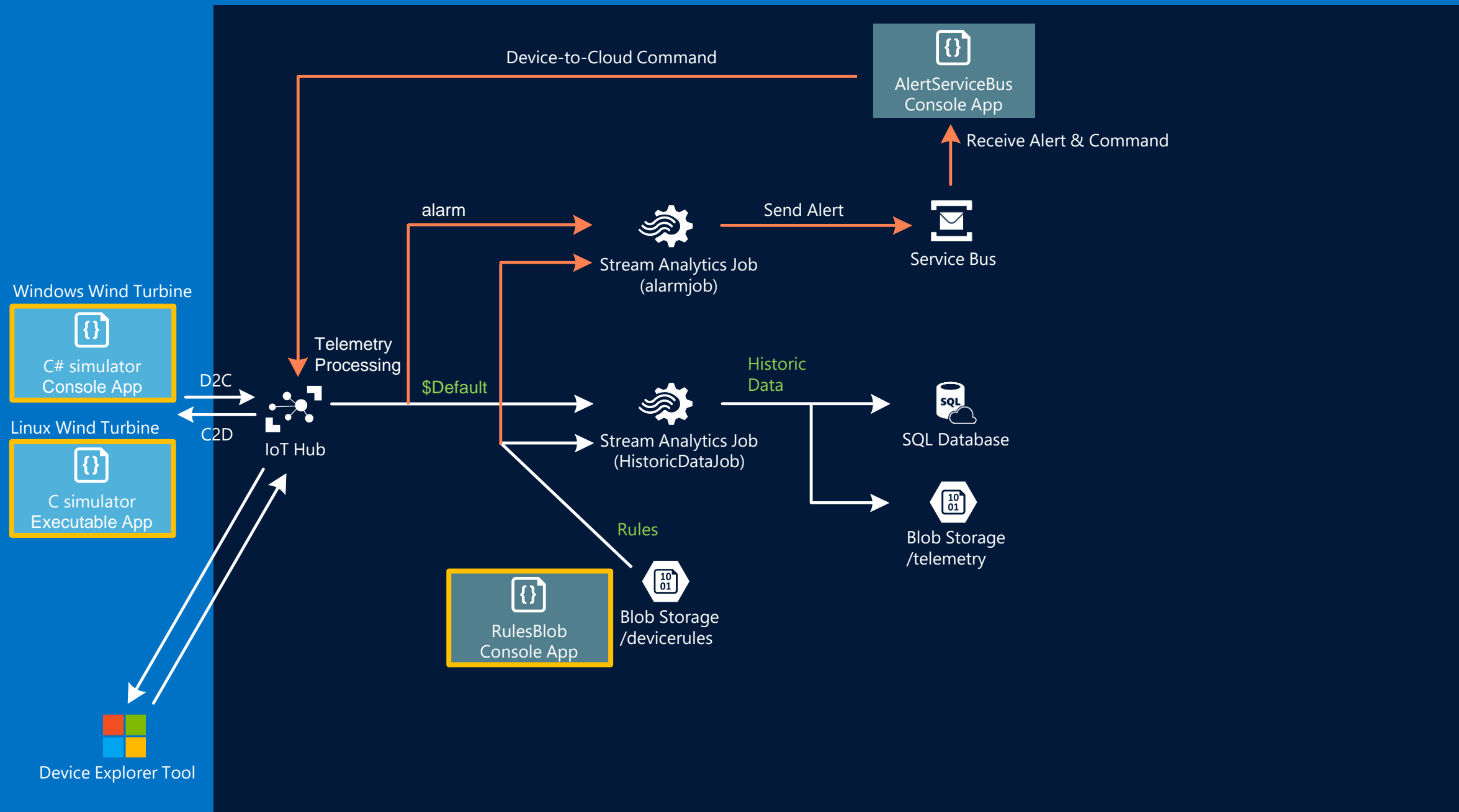


HOL 5 – Cloud to Device Alarm with Service Bus

Code & Modules



Code & Modules



Developer Services



Visual Studio Team Services



Azure DevTest Labs*



VS Application Insights*



HockeyApp



Developer Tools

Management & Security



Azure Portal



Scheduler



Automation



Log Analytics



Key Vault



Security Center*

Compute



Virtual Machines



Virtual Machine Scale Sets



Cloud Services



Batch



RemoteApp



Service Fabric



Azure Container Service



Web Apps



Mobile Apps



Logic Apps*



API Apps



API Management



Notification Hubs



Mobile Engagement



Functions*

Data & Storage



SQL Database



DocumentDB



Redis Cache



Storage: Blobs, Tables, Queues, Files and Disks



StorSimple



Search



SQL Data Warehouse*



SQL Server Stretch Database*

Analytics



Data Lake Analytics*



Data Lake Store*



HDInsight



Machine Learning



Stream Analytics



Data Factory



Data Catalog



Power BI Embedded*

Internet of Things & Intelligence



Azure IoT Suite



Azure IoT Hub



Event Hubs



Cortana Intelligence Suite



Cognitive Services*

Media & CDN



Media Services



Content Delivery Network

Identity & Access Management



Azure Active Directory



B2C*



Domain Services*



Multi-Factor Authentication

Hybrid Integration



BizTalk Services



Service Bus



Backup



Site Recovery

Networking



Virtual Network



ExpressRoute



Traffic Manager



Load Balancer



Azure DNS*



VPN Gateway



Application Gateway

Let's Go

- Send the alarm message from Cloud to Device in Stream Analytics
(Please refer the 05-HOL-Cloud to Device Alarm with Service Bus file)
 - Create a **Queue** of **Service Bus** in Azure Portal
 - Implement a Service Bus **Receiver**
 - Receive the alarm message
 - Send the Cloud to Device command
 - Provision a **Azure Stream Analytics Job** for the alarm rules processing
 - **Input**
 - IoT Hub (from another consumer group of IoT Hub)
 - Rules Blob
 - **Output**
 - Azure Service Bus

