

# HawkEye

Performance Monitoring for Data Centers

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# Intuition

- Chatty App → Low Performance
- Measure by counting TCP/IP Packets
  - $\text{Throughput} = \text{Total Packets} / \text{Time}$
- How to measure latency ?
  - Throughput =
    - $\text{Total Time of Packets Delivery} / \text{Total Packets} / \text{Time}$

# HawkEye

- HawkEye Monitor
  - Hardware, Infra Software, Applications
  - Drill down to SW Tasks, HW Devices
  - Group based Monitors
- Detects anomalies and alerts now!
  - Throughput now vs. historical

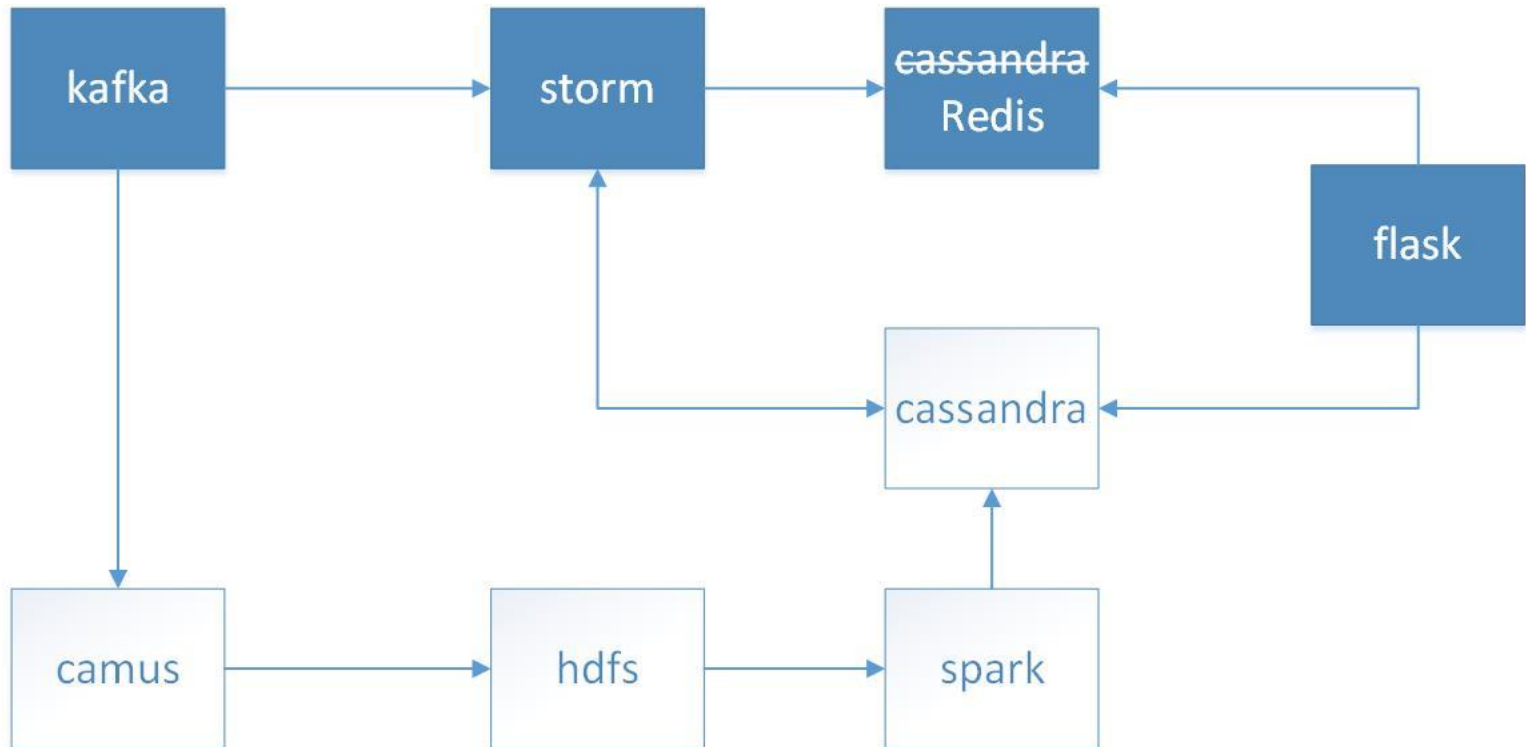
# Data

- Event:
  - TCP/IP packet timestamp In / Out
  - List of Monitors
- Engineered Data for Insight Project
- Real World
  - Hook into kernel: network stack, scheduler
  - Hi priority demon using \*top\*
  - Hypervisor

# Data

```
HawkeyeEvent: {  
    //Timestamp in/out  
    "TsIn": 1453407175613828,  
    "TsOut": 1453407175614662,  
    //Monitors:  
    "SwType": "SWTYPE42",  
    "SwID": "SWID20",  
    "TaskType": "TASKTYPE217",  
    "HwID": "HWID85730",  
    "HwType": "HWTYP48",  
    "TaskID": "TASKID154",  
    "AppID": "HawkEye",  
    //Track packets across the network  
    "PacketID": "PACKET79217"  
}
```

# Pipeline



# Challenges

- Picking the right technology
- Tuning & Debugging
- Cassandra schema / design

# Shabbir Suterwala

- Team Lead, Architecture / Principal Architect @ Infor
  - Cloverleaf → Ingestion & processing engine healthcare market.
- Previously worked at Cisco, AMD and Storage Startup

