HawkEye

Performance Monitoring for Data Centers

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Intuition

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

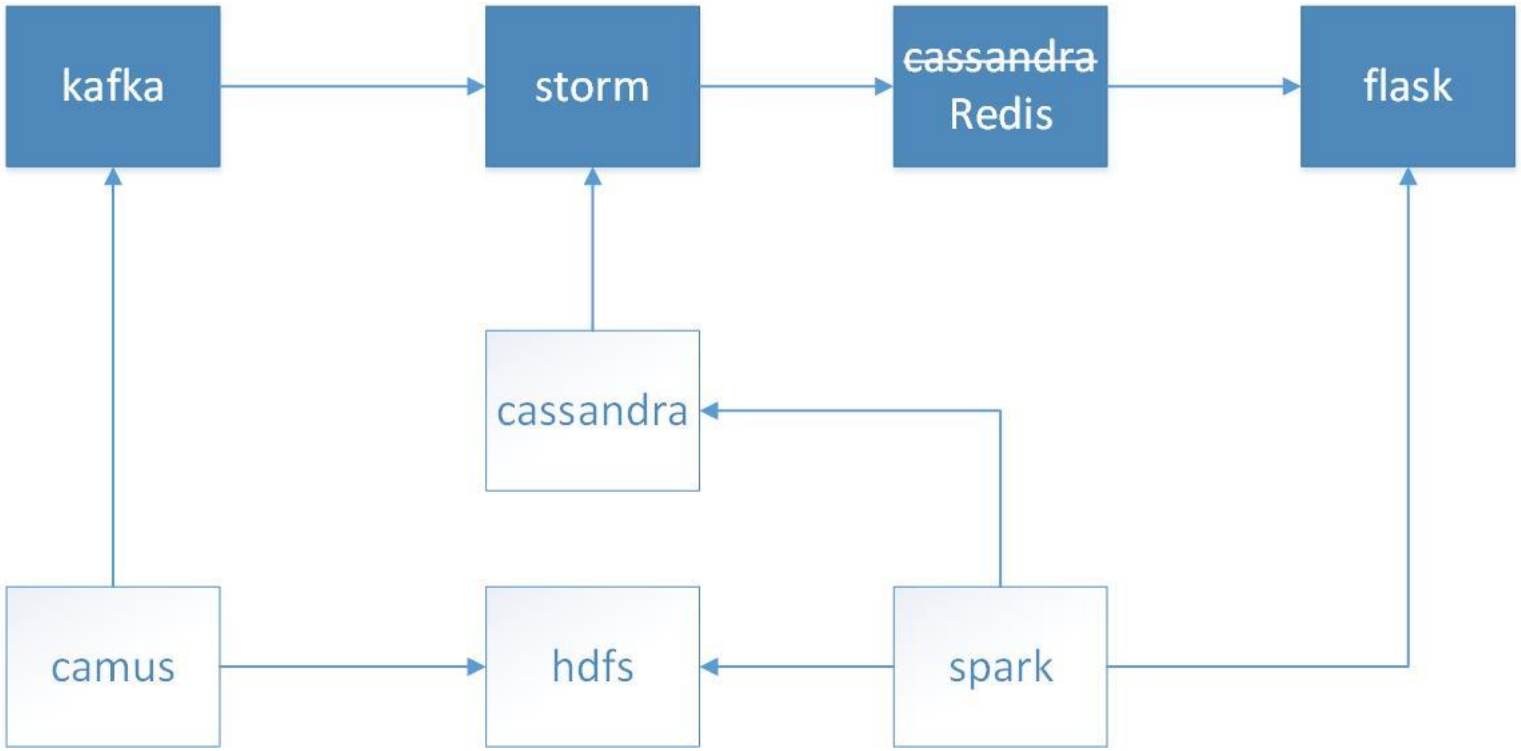
Data

- 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":          "HWTYPE48",
        "TaskID":          "TASKID154",
        "AppID":           "HawkEye",
        //Track packets across the network
        "PacketID": "PACKET79217“
}
```

Pipeline


kafka
storm
~~cassandra~~
Redis
flask
cassandra
camus
hdfs
spark

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