



# Streaming Telemetry for your Low Latency Network

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June 2019

# Data Center Visibility Use Cases

## Network Health

- CPU and memory utilization
- Forwarding table utilization
- Protocol state and events
- Environmental data



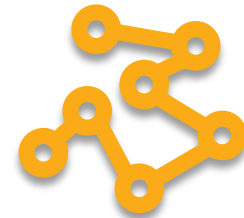
## Path and Latency Measurement

- End-to-end visibility
- Path tracing over time
- Flow latency monitoring



## Network Performance

- Interface utilization
- Buffer monitoring
- Microburst detection
- Drop event correlation



Streaming Telemetry in Nexus 9300 FX2 addresses the above use cases

# Telemetry in Nexus 9300 FX2

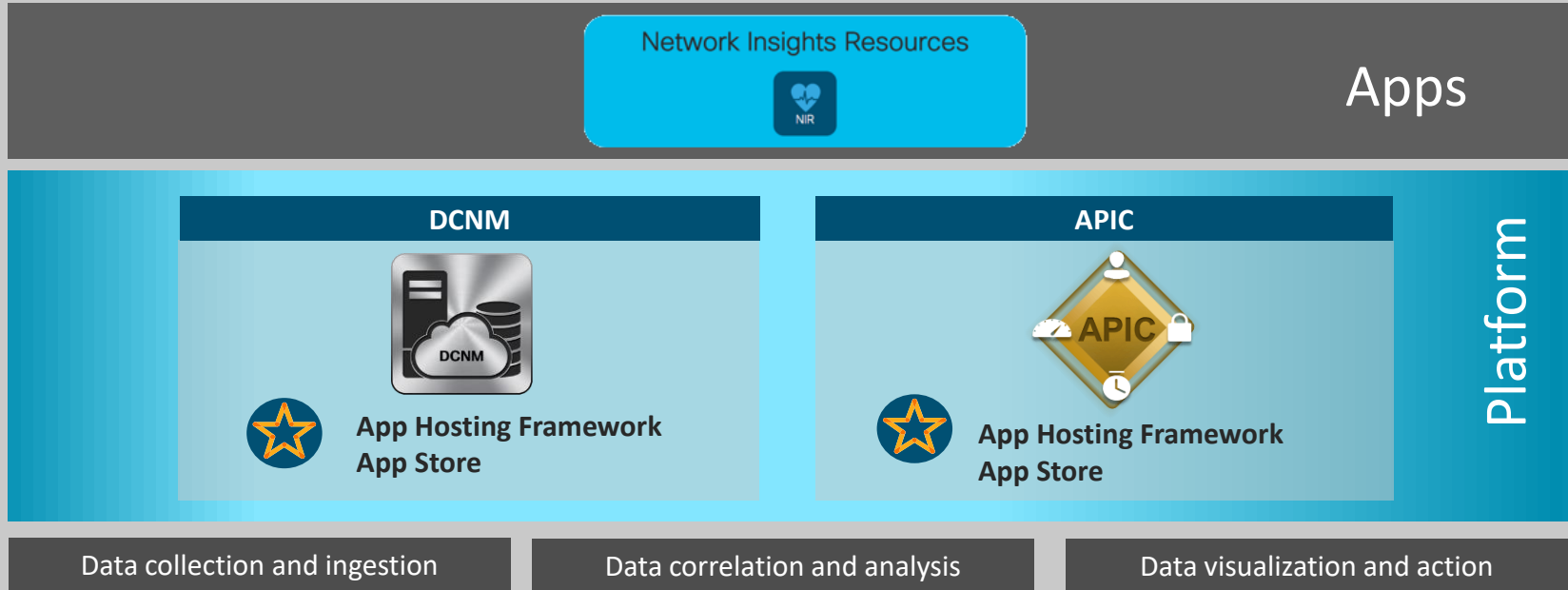
## Software Telemetry

- Provides visibility to control-plane state, environmental info, counters, etc.
  - Data retrieved from the system object model
- **Resource Utilization**
    - MAC address, Routing & Host tables, TCAM, VLANs, VRFs, EPGs, BD
  - **Switch Environmentals**
    - CPU, Memory, Temperature, Power, Fan speed
  - **Interface statistics**
    - Rate, counters, CRC errors, LLDP flaps, routing layer errors

## Hardware Telemetry

- Visibility into data-plane and ASIC state
  - Data sent directly by the ASIC without involving CPU / control plane
- **Data Plane Flow**
    - 5-tuple flow info with timestamp, Interface/queue info, drop indication (buffer, forwarding, ACL..), Latency threshold exceeded indication
  - **ASIC State**
    - Interface counters (packets/bytes/drops), Ingress/Egress queue depth, Egress queue microbursts, Buffer depth

# Telemetry Collector for Nexus Platforms



## Visibility

Learn from your network and recognize anomalies



## Insights

See problems before your end users do



## Proactive Troubleshooting

Find root cause faster with granular details

# Summary

- Nexus leads the industry in telemetry capabilities
- Combination of software and hardware streaming provides deepest level of network visibility
- Platforms for consuming, analyzing, visualizing telemetry data available or being developed for both ACI and NXOS
- Cisco Nexus 9300-FX2 Switches - <https://www.cisco.com/c/en/us/products/collateral/switches/nexus-9000-series-switches/datasheet-c78-742282.html>
- Cisco DCNM - <https://www.cisco.com/c/en/us/products/cloud-systems-management/prime-data-center-network-manager/index.html>
- Cisco ACI - <https://www.cisco.com/c/en/us/solutions/data-center-virtualization/application-centric-infrastructure/index.html>

