

INTUITIVE

Cisco *live!*
June 10-14, 2018 • Orlando, FL

#CLUS



DevNet Workshop- Nexus Streaming Telemetry

Gerard Sheehan Product Manager
DevNet-2899

Cisco *live!*

#CLUS



INTUITIVE

Cisco Spark

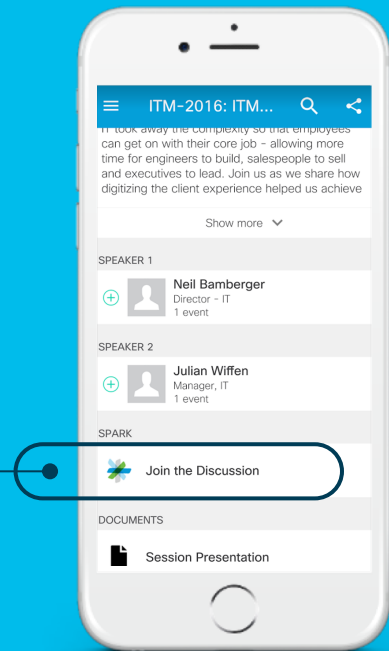
Questions?

Use Cisco Spark to chat with the speaker after the session

How

- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
- 3 Install Spark or go directly to the space
- 4 Enter messages/questions in the space

Cisco Spark spaces will be available until June 28, 2018.

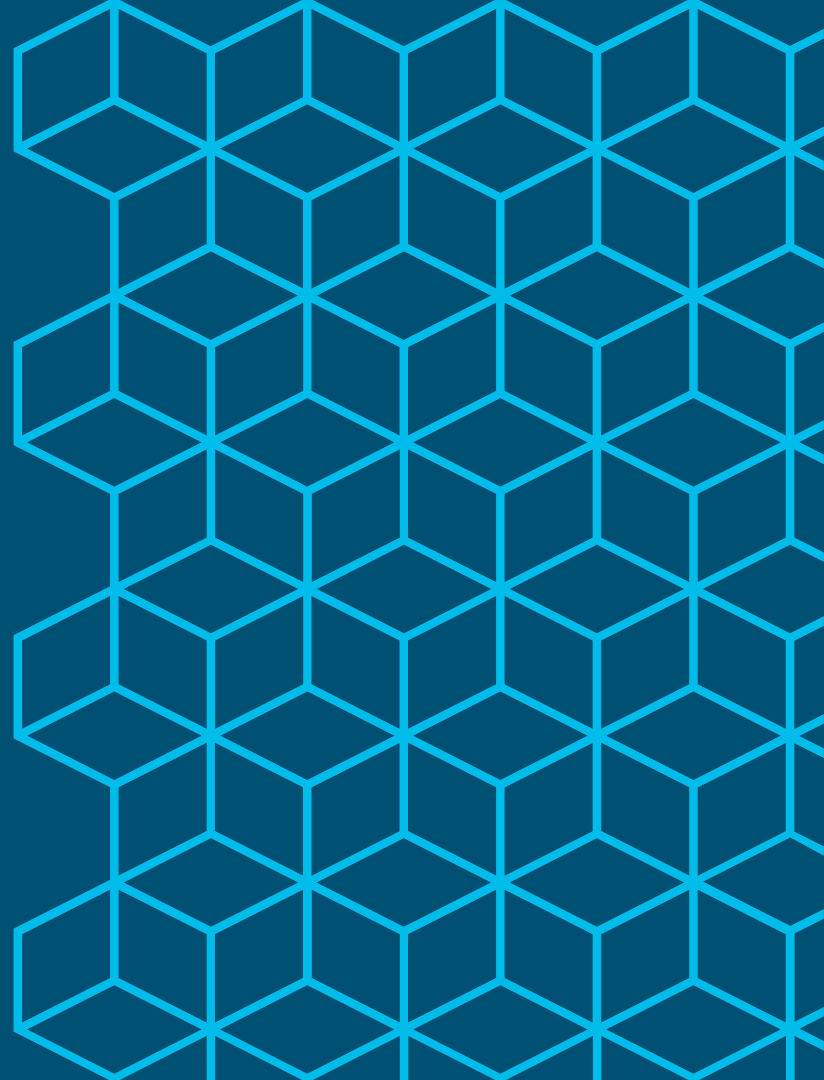


cs.co/ciscolivebot#DEVNET-2899

Agenda

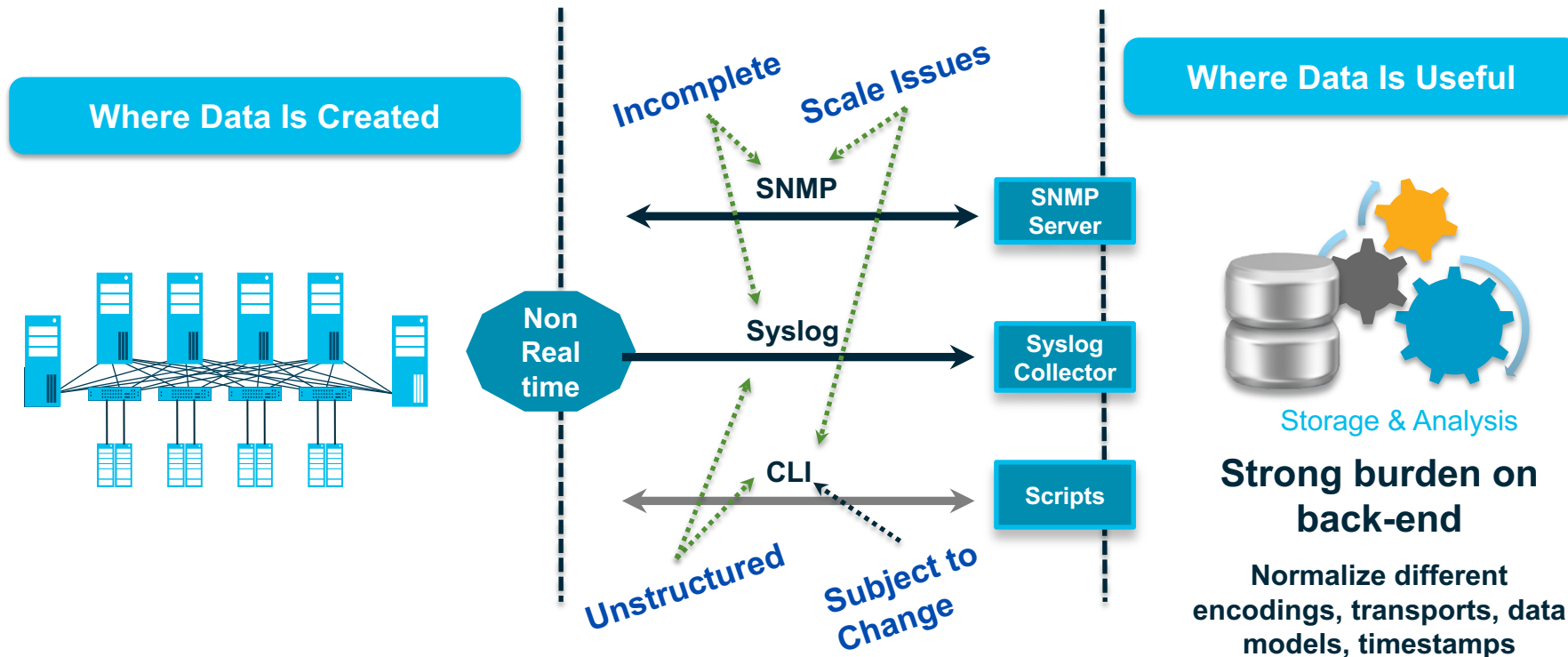
- Introduction to Telemetry
- Data Center Use Cases
- Formats and Transports
- Consumption and Display
- Lab/Demonstration
- Q&A

Introduction to Telemetry



Traditional Monitoring Is Showing Its Age

Not Suited for Modern Network and Security Operations



Data Center Use Cases for Telemetry

Availability

- Interface/Link Status
- Data Plane Statistics
- Environmental Monitoring
- Protocol State

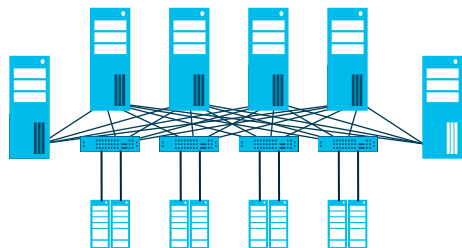


Network Operations

- Hotspot Detection & Congestion Monitoring
- Buffer Utilization
- Queue-Level Microburst Detection



Telemetry Workflow



COLLECT

Rich network data including Flow Level data, Buffer depth, Interface data, Environmental information



FIX

Fix real time issues and get insight into historic trends and errors



PREDICT

Predict network issues before they occur



Network Data



0100101100010111001
00101011001011000

Storage &
Analysis

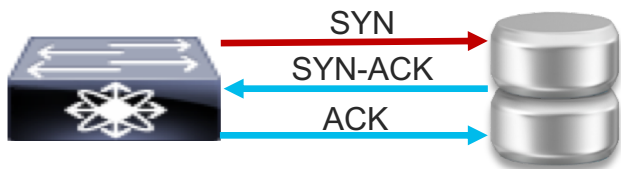


Alerting &
Insights

Formats And Transports

Transport Options

Dial Out



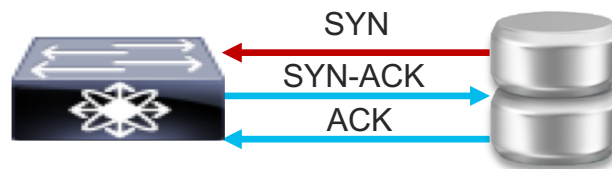
gRPC: 7.0(3)|5(1)

HTTP: 7.0(3)|5(2)

UDP: 7.0(3)|7(1)

Supported

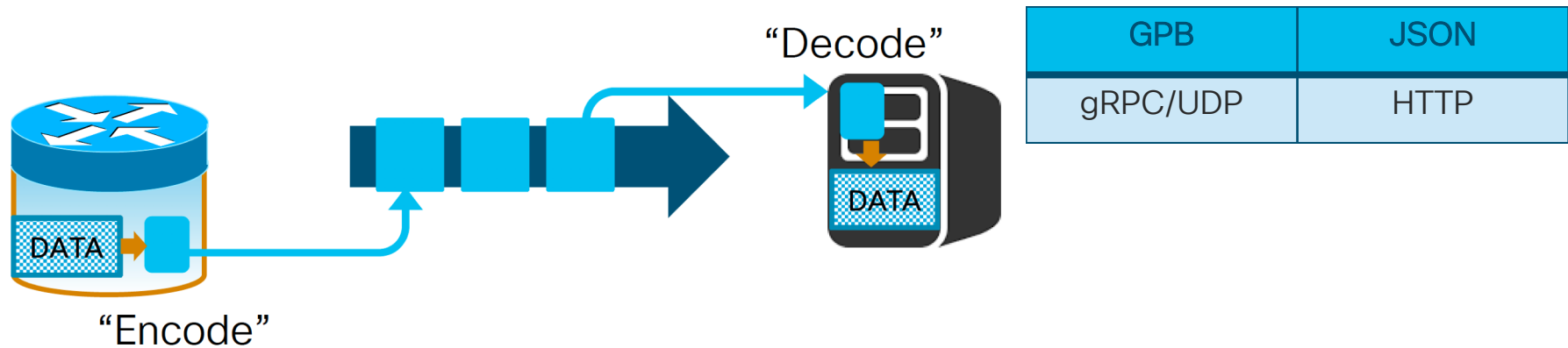
Dial In



gNMI: 9.3.1

Planned

Encoding



Encoding (or “serialization”) translates data (objects, state) into a format that can be transmitted across the network. When the receiver decodes (“de-serializes”) the data, it has an semantically identical copy of the original data.

NX-OS Software Telemetry

- Streams DME object data and/or CLI output from NX-OS control plane.*
- Encryption supported across all transports
- Provides visibility to counters, protocol state, environmental info, etc. collected from switch control plane
- Not designed for very high frequency export (intervals measured in seconds)



*Native YANG support coming in 9.2.1

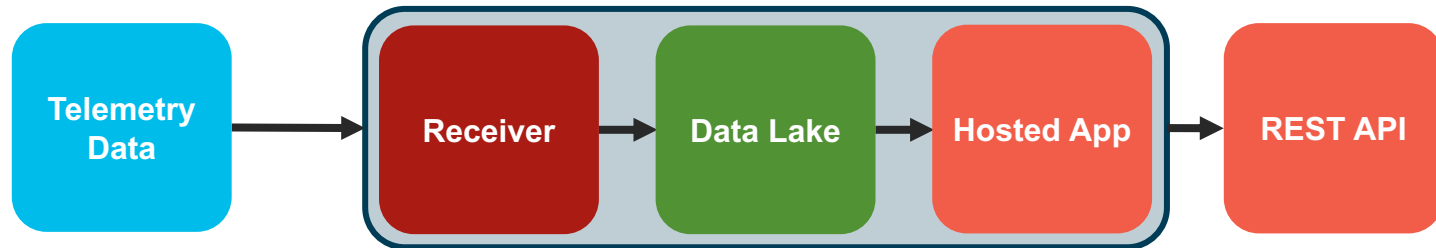
Consumption and Display

Telemetry and Analytics Deployment Models

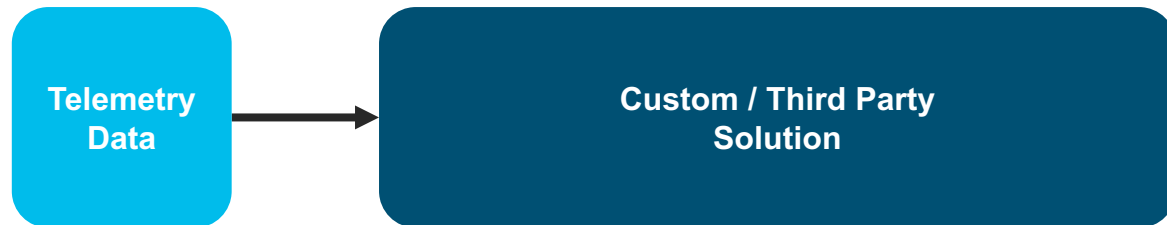
Nexus 9000

DCNM

Cisco Turnkey



Custom /
Third Party



Parsing the data

Rename attributes and transform data types dynamically, prior to export.

```
{
  "encodingpath": "show system resources",
  "function" :
  {
    "name" : "processGeneric",
    "index": {
      "index_prefix" : "lan_resources_stats_",
      "index_type" : "daily"
    },
    "members": [
      {"gpb_name": "memory_usage_total", "gpb_type": "string", "db_name": "memorytotal", "db_type": "float"},
      {"gpb_name": "memory_usage_free", "gpb_type": "string", "db_name": "memoryfree", "db_type": "float"},
      {"gpb_name": "memory_usage_used", "gpb_type": "string", "db_name": "memoryused", "db_type": "float"},
      {"gpb_name": "cpu_state_kernel", "gpb_type": "string", "db_name": "cpukernel", "db_type": "float"},
      {"gpb_name": "cpu_state_user", "gpb_type": "string", "db_name": "cpuuser", "db_type": "float"},
      {"gpb_name": "cpu_state_idle", "gpb_type": "string", "db_name": "cpuidle", "db_type": "float"},
      {"gpb_name": "Timestamp", "gpb_type": "string", "db_name": "timestamp", "db_type": "string"},
      {"gpb_name": "node_id", "gpb_type": "string", "db_name": "swname", "db_type": "string"}
    ]
  }
}
```

Lab/Demonstration

Cisco Spark

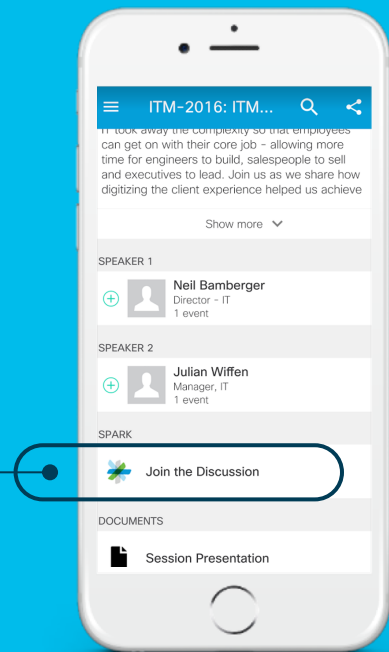
Questions?

Use Cisco Spark to chat with the speaker after the session

How

- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
- 3 Install Spark or go directly to the space
- 4 Enter messages/questions in the space

Cisco Spark spaces will be available until June 28, 2018.



cs.co/ciscolivebot#DEVNET-2899

Continue your education



Demos in the
Cisco campus



Walk-in
self-paced labs



Meet the engineer
1:1 meetings



Related
sessions



Thank you



INTUITIVE



INTUITIVE