

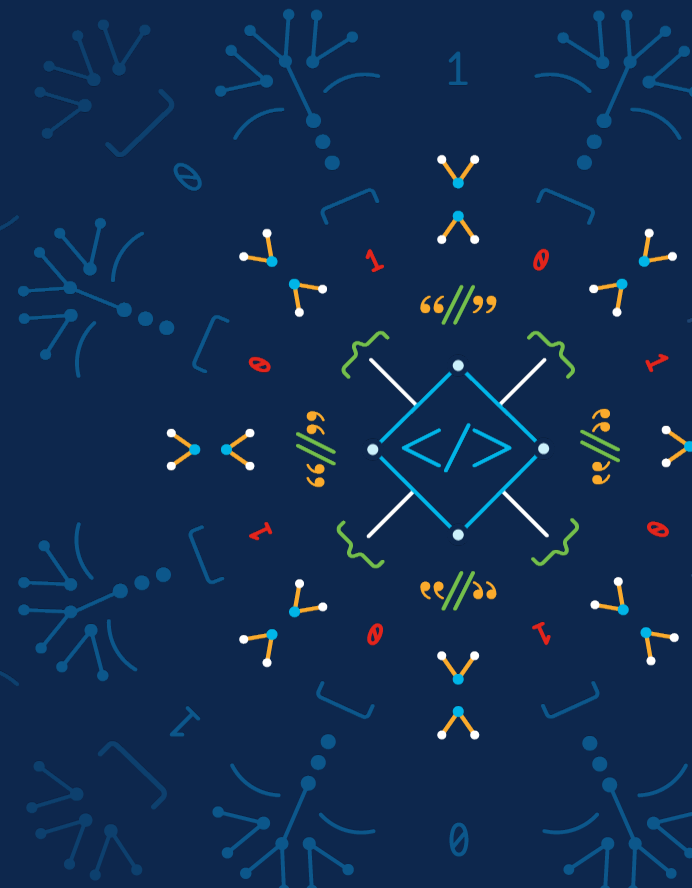
Towards Intent-Based Service Assurance

With Cisco CNC/NSO and Accedian Skylight

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Who?



Who am I? Who is Accedian?



Tom

- Head of product for Accedian for the last 5 years
- Have been building software in the telecom space for more than 20 years, and I'm here today with my software engineer hat on

ACCEDIAN

- <https://accedian.com/>
- We've been doing network/packet-based performance visibility since 2004
- Cisco partner since 2021

SKYLIGHT

- The Accedian product for performance visibility

What?



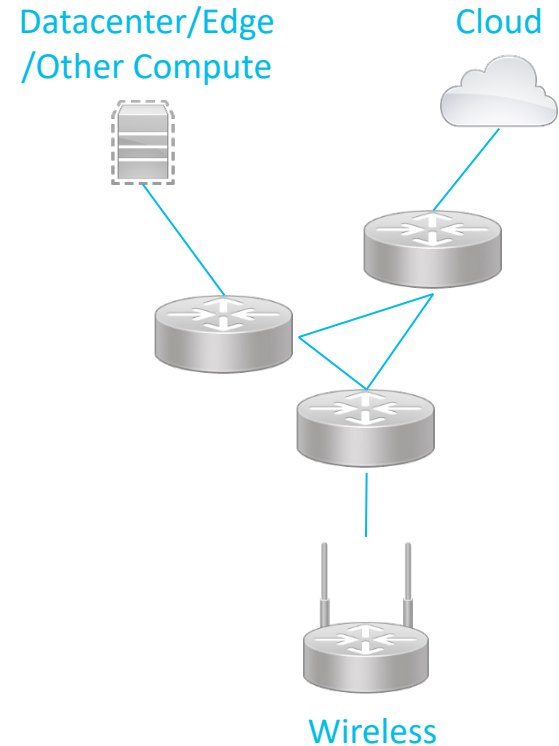
Focus on end-to-end visibility

- The thesis of Accedian Skylight is fairly simple: packets don't lie
- You can look at how a packet traverses a network and learn a lot about how the network and applications on that network perform
- Use data from streams of those packets to build a statistical model of the behavior of the network
- Bring all of this statistical data into one place, combine it with other sources of performance data, and you can learn a lot about what has happened in your network and to your users and what might be happening in the future



So what is end to end?

- End-to-end doesn't just mean from one router to another
- In many situations the user experience extends beyond into cloud, datacenter, wireless, etc.
- Understanding end-user experience means putting packets everywhere and measuring them



Breaking out of the network management mindset...

- User experience is more than just the status of the equipment in the network
- The network can be up, and all the lights are green and yet users are complaining of a poor experience
- Understanding user experience **starts** with understanding end to end visibility using packets, **then** correlating other sources of performance data to help drill down to root cause
- **In summary:** User experience is more than the sum of the devices in their network. Start with the user.



Why?



Why do we automate visibility?

We want continuous visibility

- Remember that this is not about troubleshooting or one-time tests, it is about building a continuous statistical model of network performance

Networks are not static

- If we want to have continuous visibility we need to be able to put that visibility in place automatically as the network changes and evolves

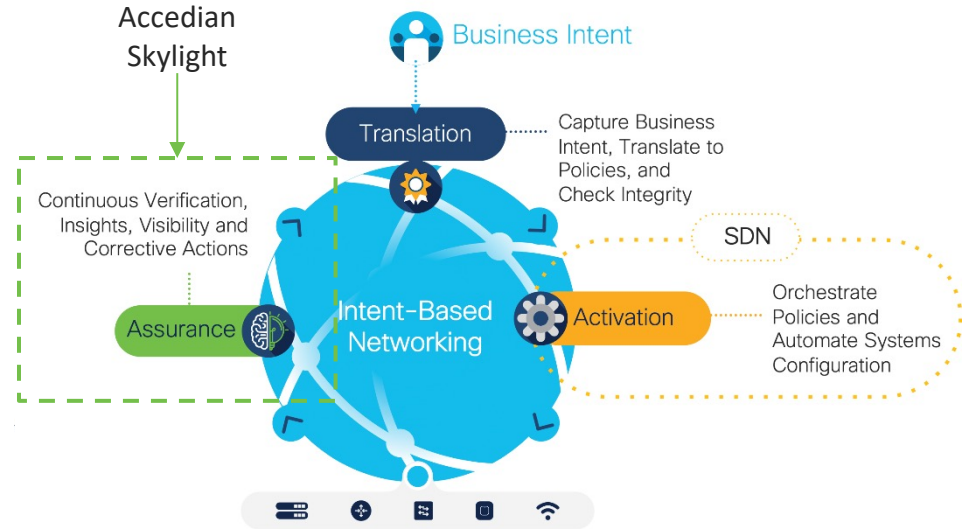
Intent-based networks require intent-based assurance

- In order to be able to ensure the network matches the intent you need to be able to automate the feedback loop



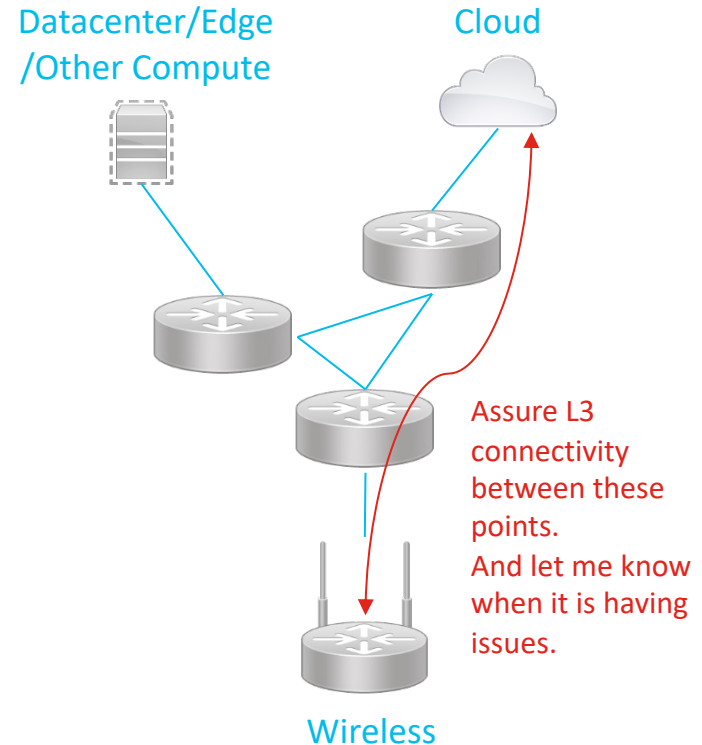
Why intent-based assurance?

- Intent-based networking requires a feedback loop on how well the network is delivering the intent
- The feedback loop needs to be able to be automatically set up when the service is set up
- **Intent-based assurance:** tell Skylight the service you want to monitor, and we'll monitor it and let you know when something goes wrong



Why intent-based assurance?

- The idea behind intent-based assurance is to make it easy to automate assurance when you deploy services on a network
- This moves beyond automation to leverage intelligence in deploying and monitoring a service
- Have Skylight deploy the testing, continuously send test packets, and notify you when there are issues or potential issues with the service

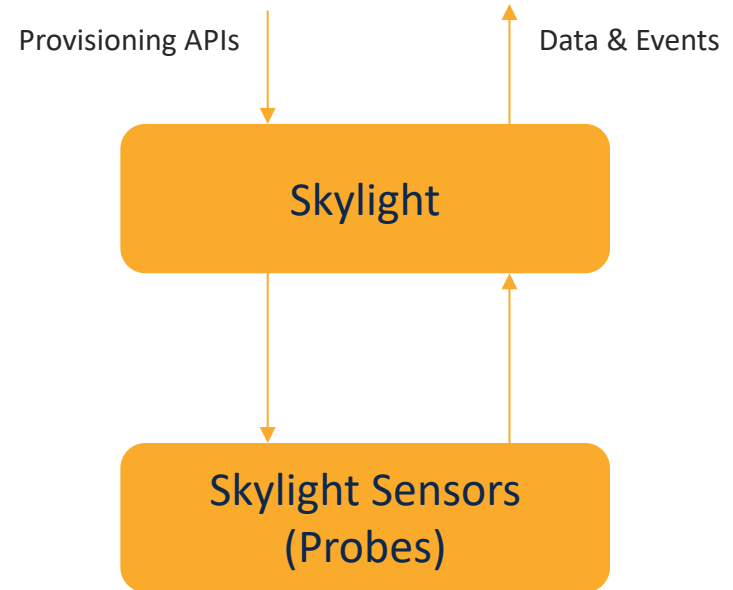


How?



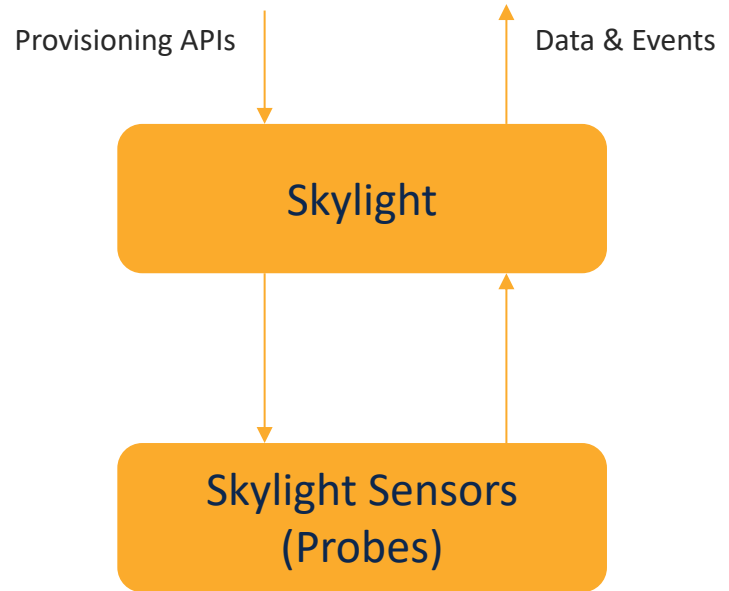
An overview of Skylight

- Skylight Sensors (Probes)
 - Variety of form factors:
 • Docker container, VM with HW assist, Smart SFP or Module with PM in FPGA
 - Variety of tests: L2, L3, L4 and L7 standards-based
 - Choose the layer and sensor that is right for the use-case and for your customers deployment model



An overview of Skylight (cont'd)

- Skylight Platform
 - APIs to automate provisioning of intent-based assurance
 - APIs to receive data and events from the platform
 - A streaming analytics / ML platform to analyze, correlate and find anomalies in the data
 - A user interface for both internal customer use (troubleshooting) and external use (user portals)

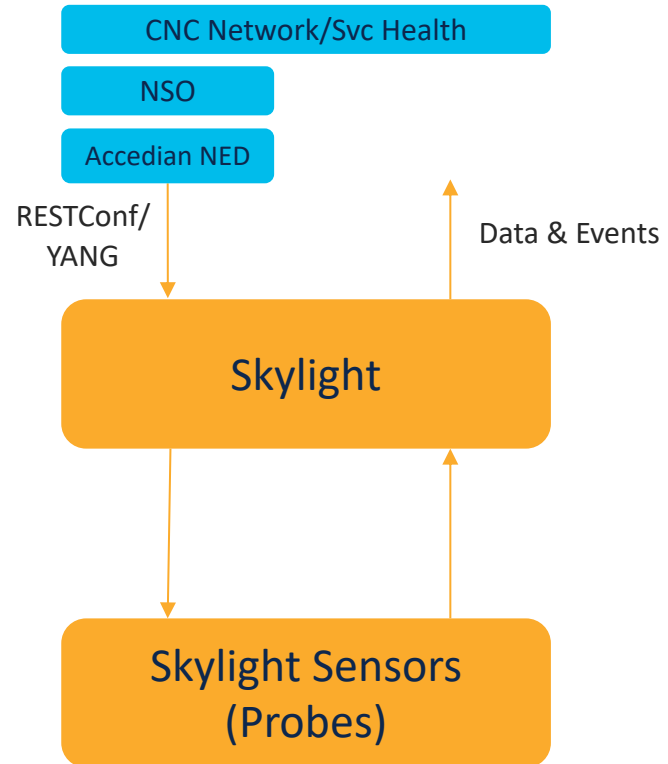


An overview of Skylight – user interface



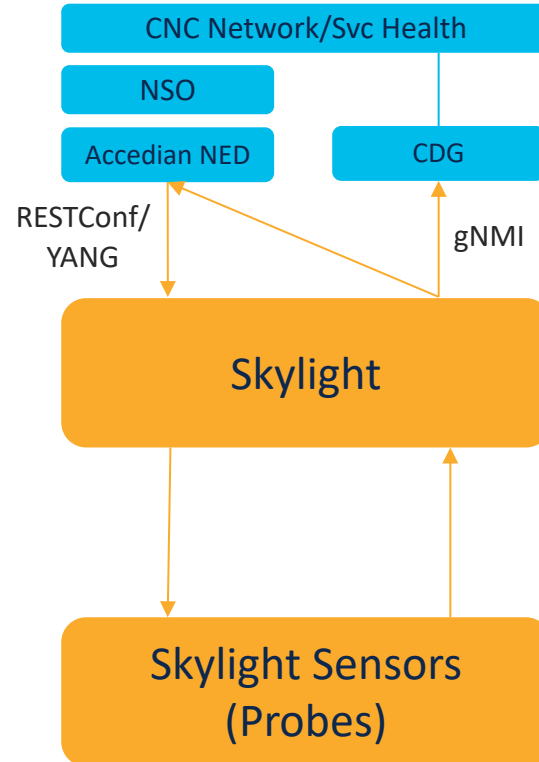
Automating performance monitoring with CNC/NSO

- Skylight has REST as well as RESTConf/YANG interfaces for automating the provisioning of service assurance
- Accedian NED for NSO to interface with Skylight to automate provisioning from NSO



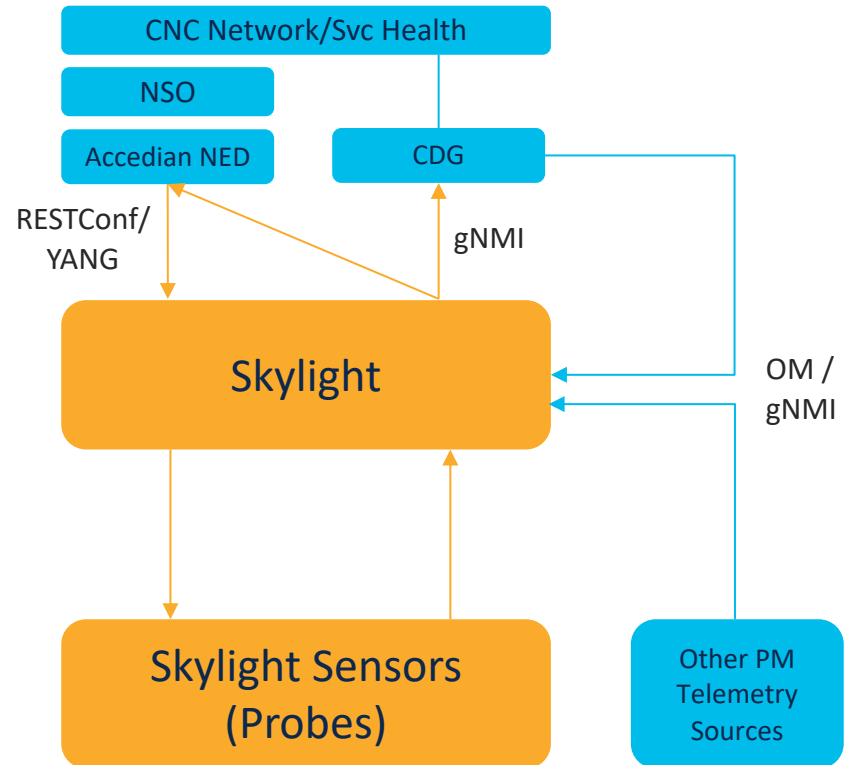
Collecting data & alerts with CNC/NSO/CDG

- Skylight has MQTT/Kafka/RESTConf/gNMI interfaces for data and events back northbound
- Integrating gNMI interface with Cisco CDG to feed data into Network & Service Health platforms
- Accedian NED supports RESTConf alerts



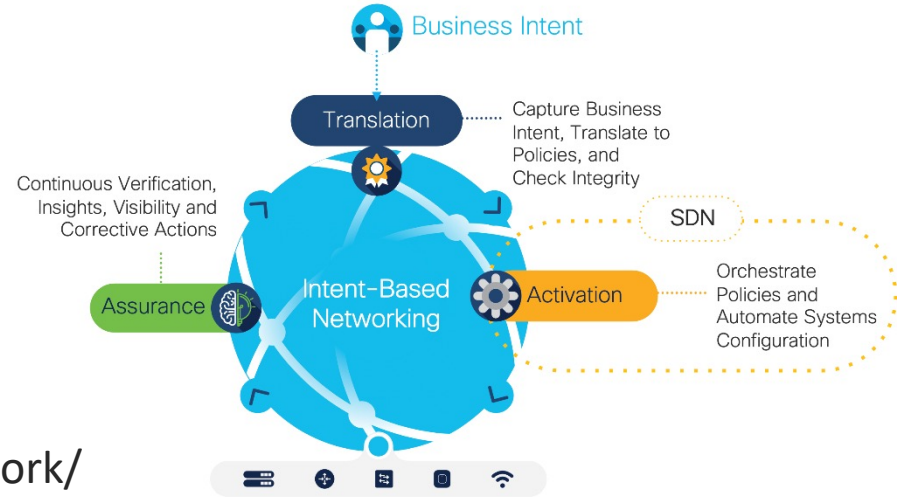
Adding more performance data to the equation

- Skylight supports OpenMetrics (i.e. Prometheus) <https://openmetrics.io/> a CNCF standard for data ingestion
- We mediate several other protocols into that, including Cisco Model-Driven Telemetry (MDT) via gNMI, and also good old fashioned SNMP



What is the end result?

- Can use Cisco NSO with Skylight to automate the provisioning of service assurance, and to collect alerts when there are issues with the service and automate remediation actions
- Integration of Skylight data into CNC Network/Service health via CDG to view service assurance data in the Cisco CNC platform
- Leverage Skylight as a service assurance platform, correlating Skylight probe data alongside other PM data sources for a single pane of glass for internal performance troubleshooting and also end customer portal views
- Let's see it in action...



Demo



LEARN MORE



- All of the code/examples that are shown in the demo can be found in <https://github.com/accedian/cisco-devdays>
- Accedian Skylight documentation can be found at <https://docs.accedian.io/>
- API documentation can be found at <https://api.accedian.io/> and <https://docs.accedian.io/docs/skylight-analytics-integrations>
- More questions? Want to try this out? Find me on email at tfoottit@accedian.com or tfoottit@cisco.com or on Cisco WebEx



The bridge to possible