

Developer Days
Automation

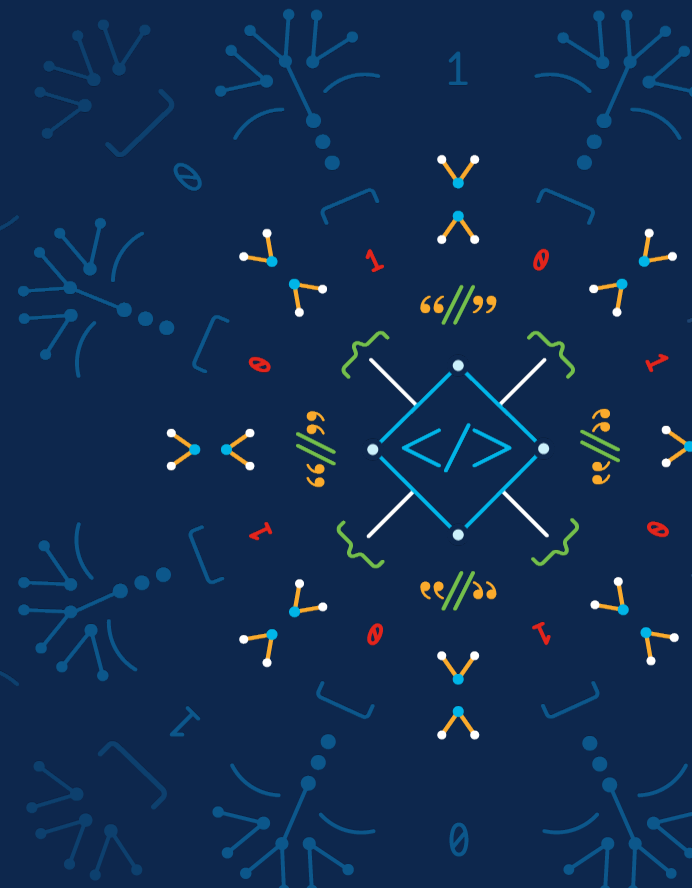


The bridge to possible

Cisco Crosswork Network Controller NSO Lifecycle Operations

Distributed Tracing using Observability

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Agenda

- 1 What is Observability
- 2 Crosswork NSO – Observability Explorer
- 3 CNC NSO Service Lifecycle
- 4 Crosswork NSO Personas- Demo
- 5 Roadmap

What is Observability?



Being able to debug the system and gain insights into the system's behavior



Monitoring tells you whether the system works.



Observability lets you ask why it's not working

Pillars of Observability



Logs

Application's recording of an event, including timestamps and other data about the nature of the event.



Metrics

Application's recording of a data point. A metric event consists of the measurement, the time it was captured, and associated metadata (labels).



Traces

The progression of a single request as it is handled by various services throughout an application.


Crosswork NSO Observability Exporter

Observability Exporter


Adapts NSO progress-trace data to Open Telemetry format



Utilizing Open Telemetry Collector for processing telemetry data

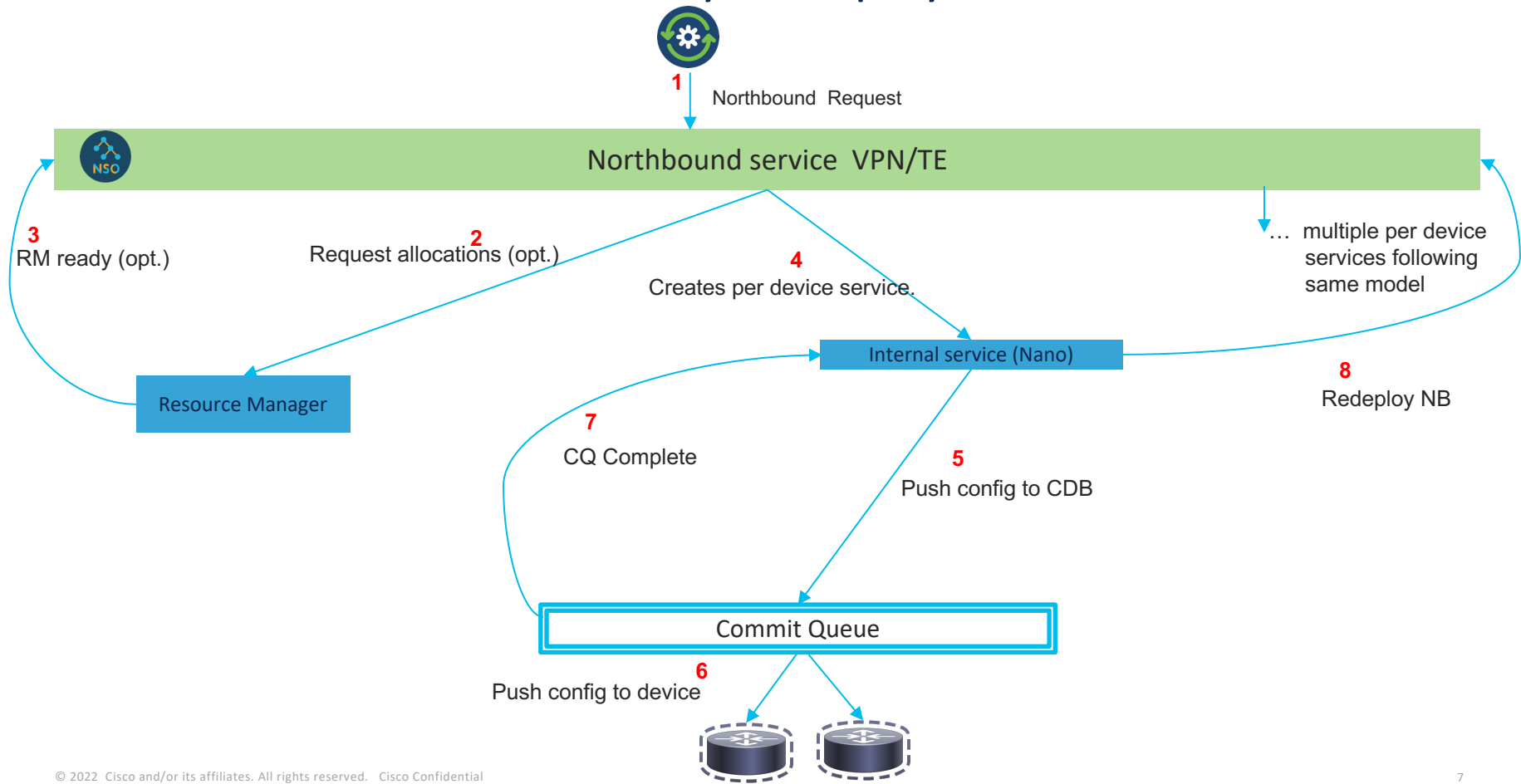


Integrating with open-source data and visualization tools such as Jaeger and Grafana

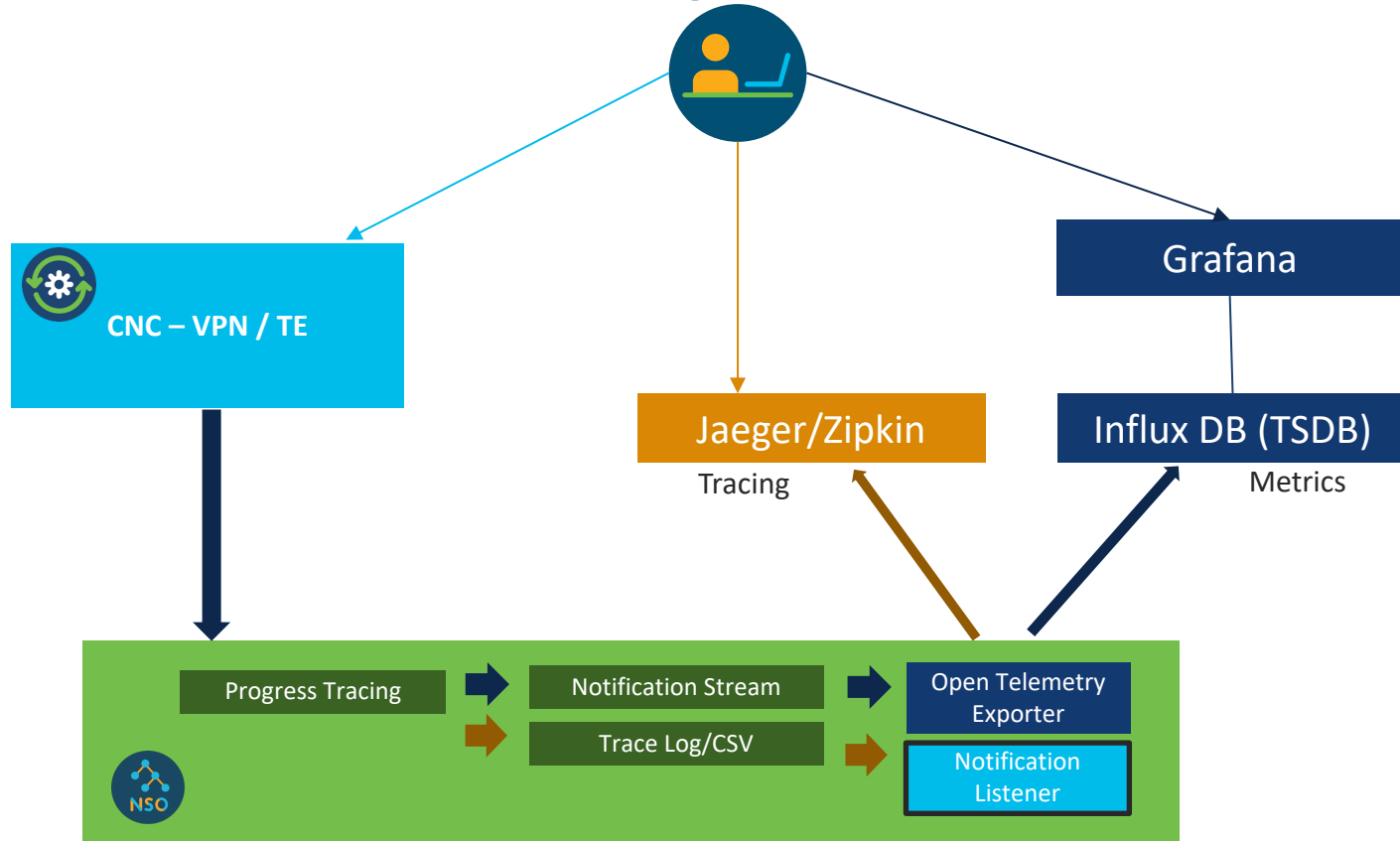


Available with NSO 6.0

CNC NSO TSDN Service Lifecycle Deployment



Crosswork NSO Distributed Tracing and Metrics



Sample Use Cases

Visualizing transaction traces with external tools

- Jaeger or Grafana with real-time or historical data

Grouping transactions to create a histogram for analysis

- Longest running transactions
- Determine duration of transaction locks indicating NSO may require scale up
- Show number of on-going transactions queued and waiting for lock
- Total time spent in service phases (create, validation, device..) for service optimization

Insight into areas for performance gains

- Developers - Enabling commit queues, LSA, code optimization etc.
- Operators - Mean time of transaction, service operations for various types

Crosswork Personas



Infra
Operations

I need to increase responsiveness and still lower opex – **Being decisive**



Service
Automation

I am on the front line for customer experience



Service
Developer

I need to out-innovate the competition– **Optimize Scale and**

Performance



Business
Owner

I don't care about the tech, show me how you can drive growth

Crosswork NSO Personas- Demo

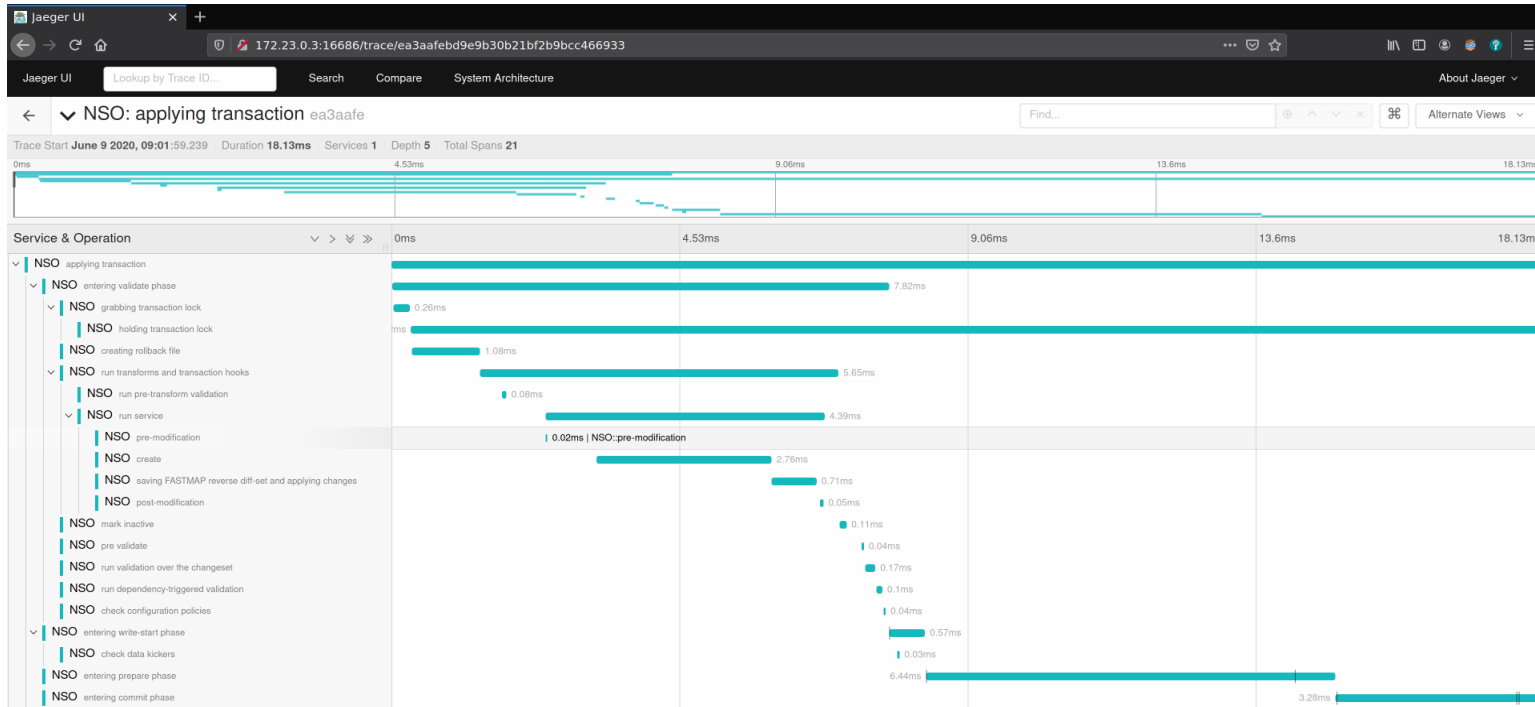
CNC Developer

- Build Service FP
- Scale and Performance Insights

CNC Operator

- Service Provisioning
- Identify bottlenecks in system

Observability Exporter – Jaeger Visualization



Observability Exporter Roadmap

- Committed new features with NSO 6.1 release in April
- Align with changes to NSO platform in NSO 6.1
 - Access to all Open Telemetry API options
 - Support span-id and parent-span-id in data conversion
- Build out Telemetry feature set by adding support to export NSO Counting framework metrics
 - Metrics are aggregations over a period of time of numeric data about your infrastructure or application.
 - tailf-ncs-metrics defines counters and gauges collected by NSO around admin, developer, and debug contexts
 - Implement polling data collection.
- Defect fixes



The bridge to possible