



Chatting with your SD-WAN Network – Power of AI & LLMs to Simplify SD-WAN Network Operations

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About Me – Sai Suchandan

- TME – Technical Leader @ SD-WAN & Cloud Networking Team
- **Focus:** Analytics, Cloud Networking, Network Wide Path Insights
- **Hobbies:** Hiking

 <https://www.linkedin.com/in/saisuchandanreddy/>



Webex App

Questions?

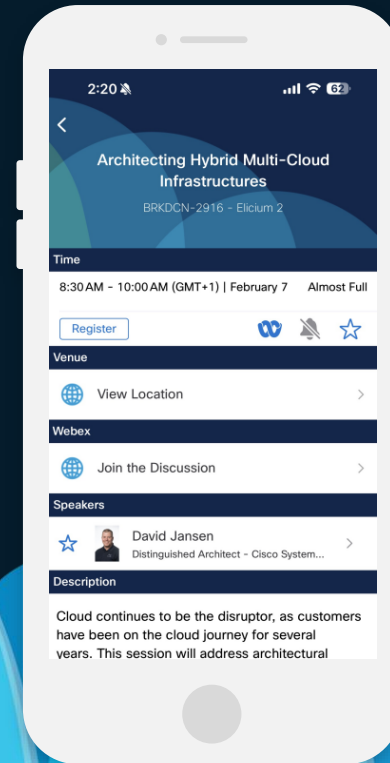
Use the Webex app to chat with the speaker after the session

How

- 1 Find this session in the Cisco Events mobile app
- 2 Click “Join the Discussion”
- 3 Install the Webex app or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until February 28, 2025.

CISCO *Live!*

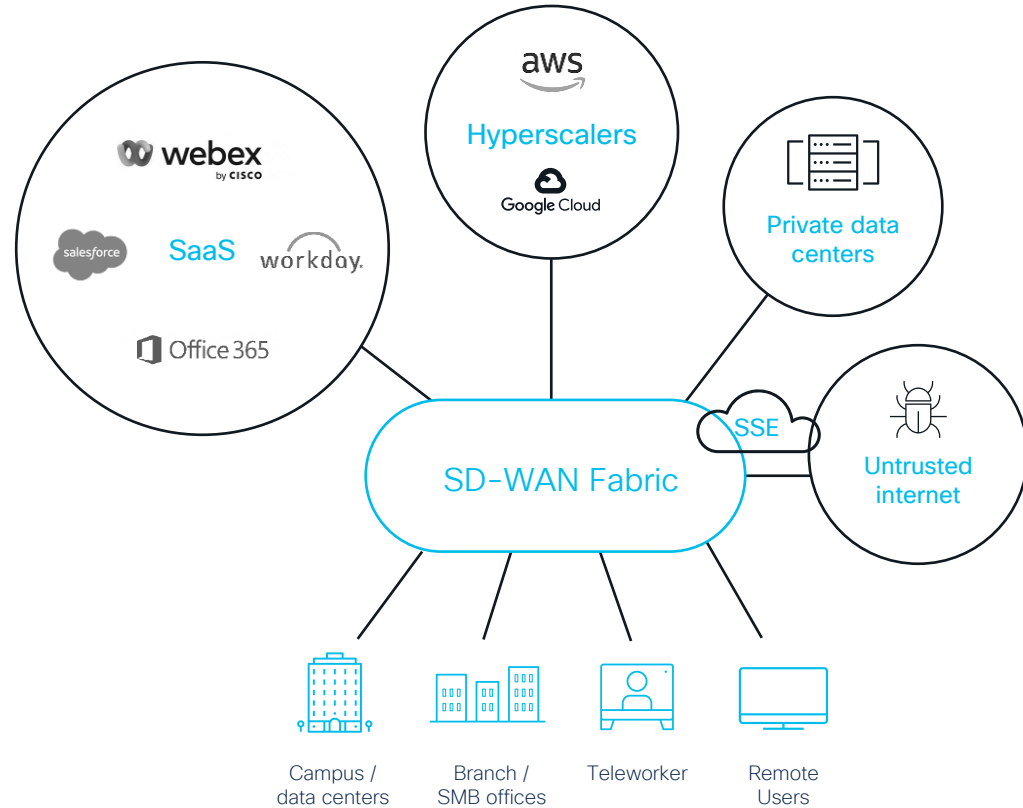


Agenda

- Introduction
- Catalyst SD-WAN Analytics & Insights
- GenAI, LLM & RAG Essentials
- AIOps in Catalyst SD-WAN
- Demo
- Resources & Call to Action

Monitoring Applications over WAN

- Adoption of Multi-Cloud and SaaS Apps and Users working from anywhere.
- Network Operations teams need to have extensive visibility into network and traffic patterns.
- Use Digital \ Application experience Monitoring and trends to Simplify IT Operations.



slido

Please download and install the Slido app on all computers you use

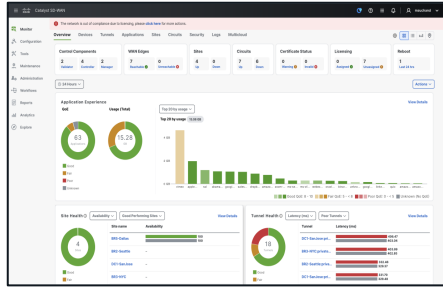


What are your most common network monitoring & visibility challenges?

① Start presenting to display the poll results on this slide.

Catalyst SD-WAN Analytics & Insights

Visibility into Network & App Performance



Application Experience

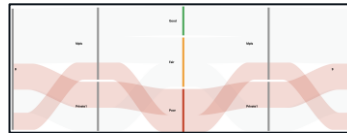
Scheduled Reports

Historical Trends & Daily/Weekly/Monthly Aggregates

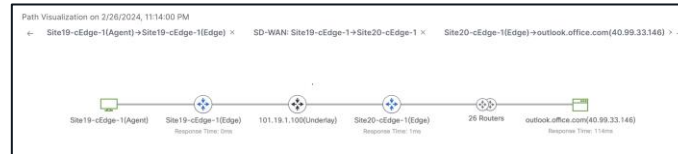


Troubleshooting w/ Extensive Traffic Analysis

Traffic flow patterns

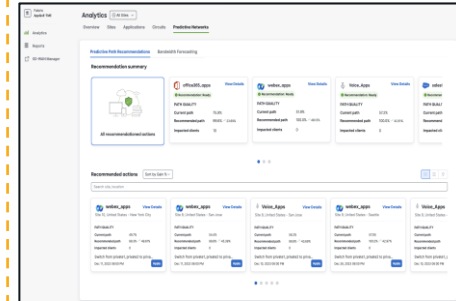


App distribution across circuits



End-to-End Path Visualization

Adaptive & Predictive Networking



Predictive Path Recommendations

Bandwidth Forecasting

Anomaly Detection

SaaS Traffic Optimization

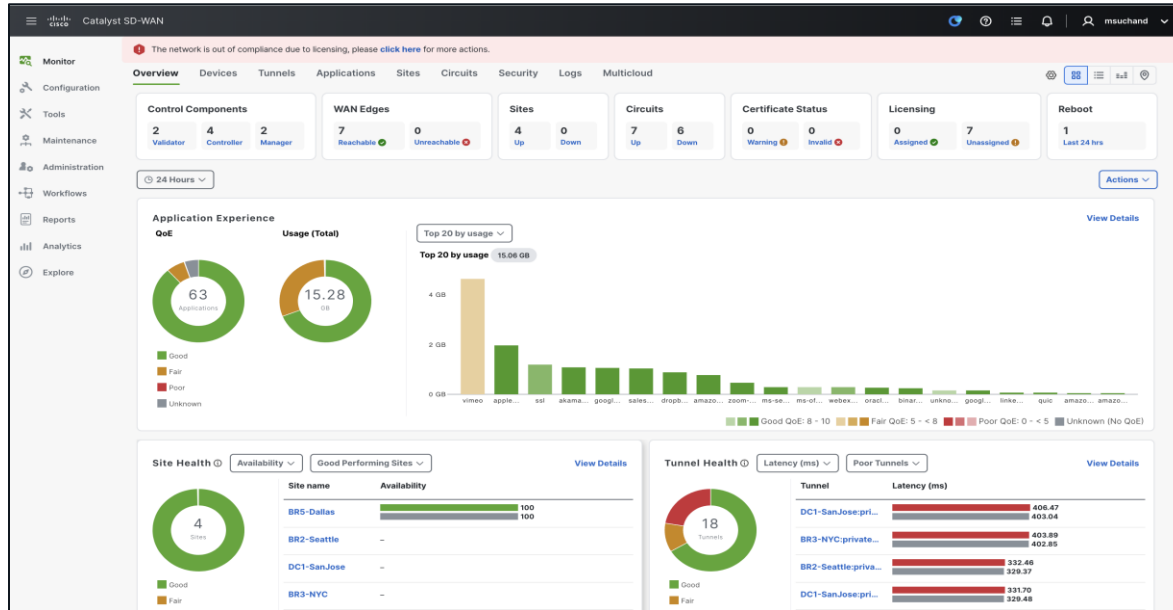
Catalyst SD-WAN Manager Overview Dashboard

Benefits

Quickly gain operational insights into overall applications and network health

Highlights

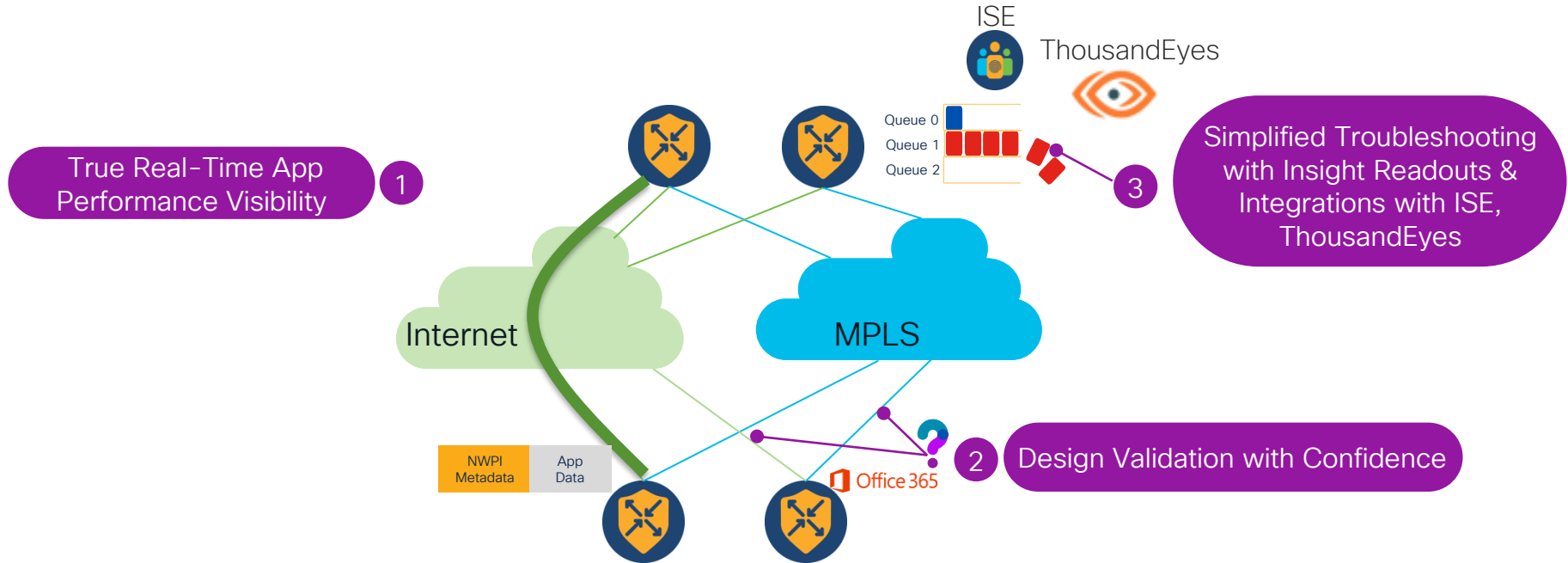
- Snapshot view of your overall application experience and network health (sites, tunnels, circuits)
- Identify top apps across entire network
- Compare with previous time periods



Converged SD-WAN Manager Overview Dashboard (20.15)

Navigation path: Overview Dashboard (Landing page)

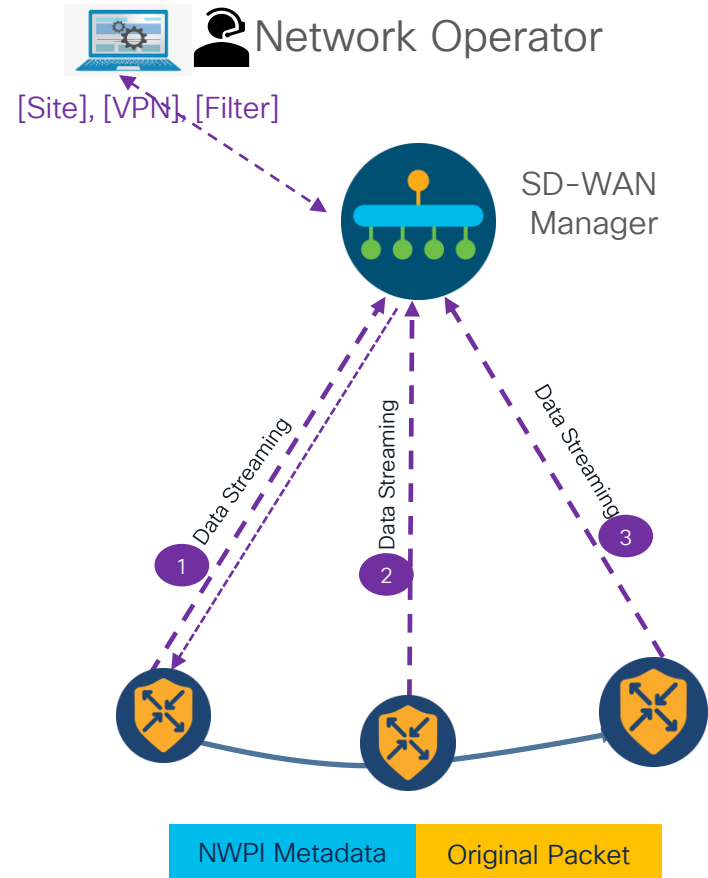
NWPI: Confidant for SD-WAN Operations



Network-Wide Path Insights

How NWPI works?

- Network operator creates trace
- SD-WAN Manager instructs first router to write NWPI metadata into SD-WAN header
- Subsequent routers in path use NWPI metadata to send flow information to SD-WAN Manager
- SD-WAN Manager correlates into a single view



NWPI Release Timeline

17.4/20.4

- On-demand Trace with basic filters
- Flow-level Insight
 - Flow path, DSCP, Loss, Delay and Jitter
 - Flow journey inside SD-WAN edge, e.g., data policy, queueing etc.

17.6/20.6

- DNS Domain Discovery
- More advanced filters and options (e.g., ART and app visibility)
- App Domain Insight
- Flow-level Insight (Advanced View)
 - App Trend, Flow Trend
 - Intelligent Readout for Critical Use Cases

17.9/20.9

- Insight Summary
 - Overview
 - App Performance Insight
 - Event Insight
 - QoS Insight
- Flow-level Path Insight

NWPI Release Timeline

17.12/20.12

- Synthetic Traffic for Design Validation
- Multiple VPNs Trace Supported
- UX 2.0 Global Topology and NWPI Integration
- Auto On NWPI Tasks for SLA Violation and QoS Congestion events

17.13/20.13

- NWPI and ISE Integration.
- User ID Grouping field

17.14/20.14

- NWPI and ThousandEyes Integration

17.15/20.15

- NWPI support in SD-Routing Mode

17.16/20.16

- Packet Capture Replay

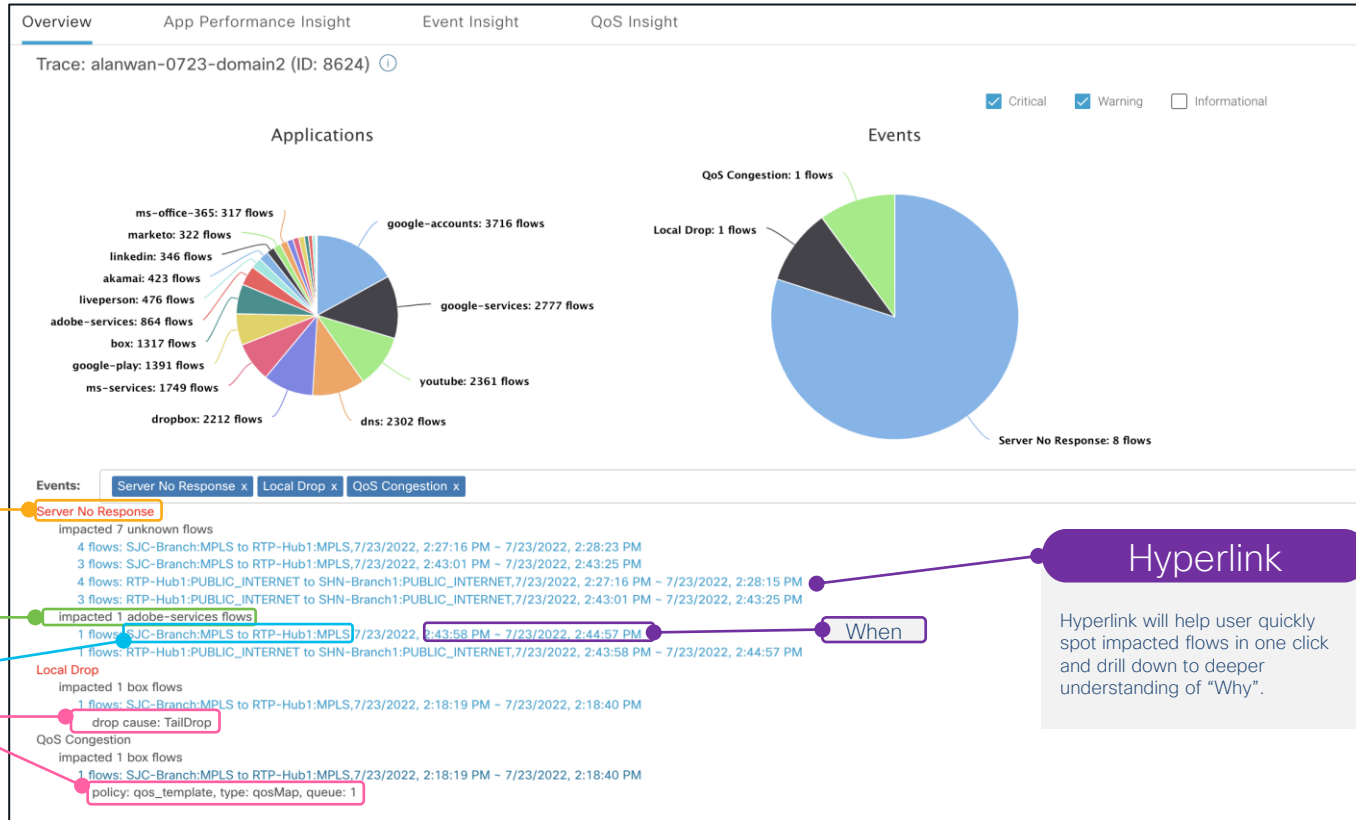
How to Start a NWPI Trace?

On SD-WAN Manager, Tools -> Network-Wide Path Insights

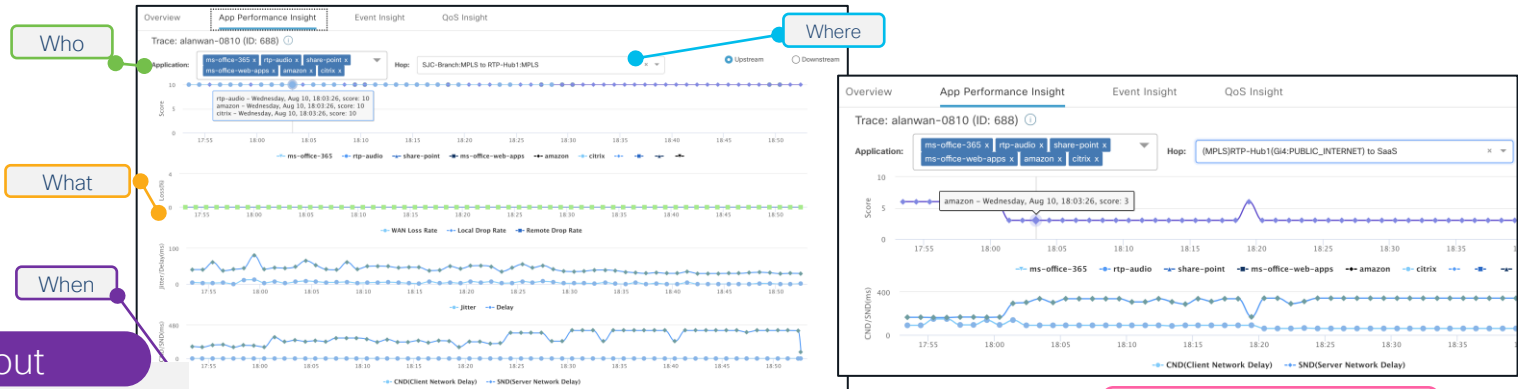
The screenshot shows the 'TRACE' configuration interface in the Cisco Catalyst SD-WAN Manager. The interface includes a sidebar with navigation options: Monitor, Configuration, Analytics, Workflows, Tools (highlighted), Reports, Maintenance, Administration, and Explore. The main content area is titled 'TRACE' and contains the following elements:

- Buttons: 'New Trace' and 'New Auto-on Task'.
- Link: 'How to Get Started | FAQ | Administration Setting'.
- Text: 'Please click 'View Insight' to load data for 'INSIGHT'.'
- Form fields:
 - Enable DNS Domain Discovery
 - Trace Name: e.g trace_[site ID]
 - Trace Duration(minutes): 60
 - Filters (highlighted with a red box):**
 - Select Site(branch site only)*: Please select a site
 - VPN*: Please select one or more vpns
 - Source Address/Prefix: [Empty]
 - Destination Address/Prefix: [Empty]
 - Application Group: Application, Application Group
 - Application: Please select one or more applications
 - Advanced Filters: [Dropdown]
 - Monitor Settings: [Dropdown]
 - Grouping Fields: [Dropdown]
 - Synthetic Traffic: [Dropdown]
- Buttons: 'Cancel' and 'Start'.

NWPI Insight Summary - Overview



NWPI Insight Summary - App Performance Insight



Who

What

When

Readout

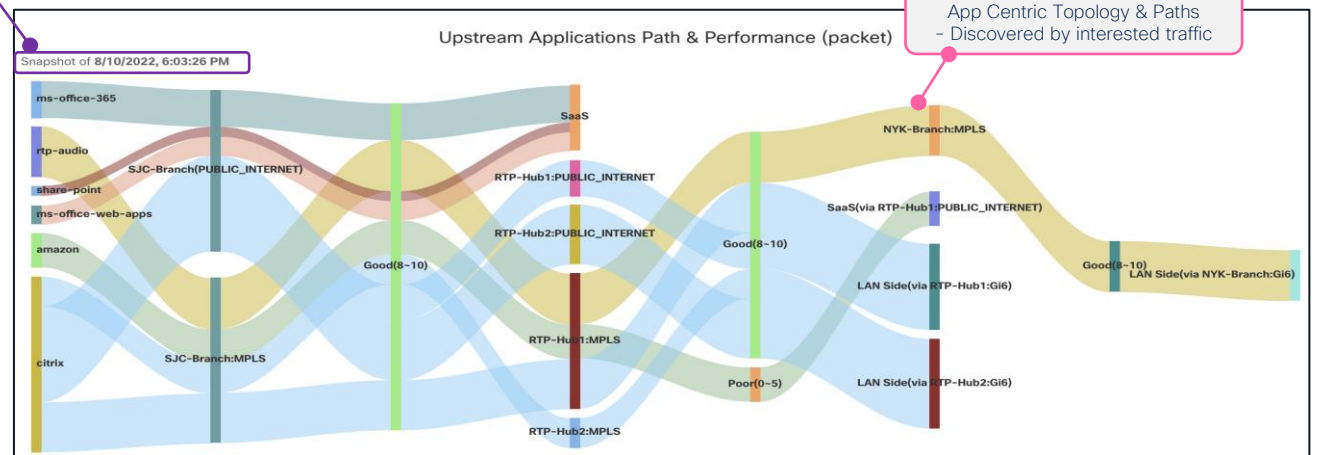
M365: SJC-Branch local breakout to SaaS Cloud via INET(DIA).

Amazon: Backhaul from SJC-branch to RTP-Hub1 via MPLS, then breakout to SaaS Cloud via INET(DIA).

Poor performance on the hop:
RTP-Hub1 to SaaS (via INET)
high server network delay, score 3

rtp-audio: SJC-Branch to NYK-Branch via RTP-Hub1 (MPLS)

Citrix: Load balance from SJC-branch to RTP-Hub1/Hub2 via MPLS/INET, then toward Campus/DC via LAN.

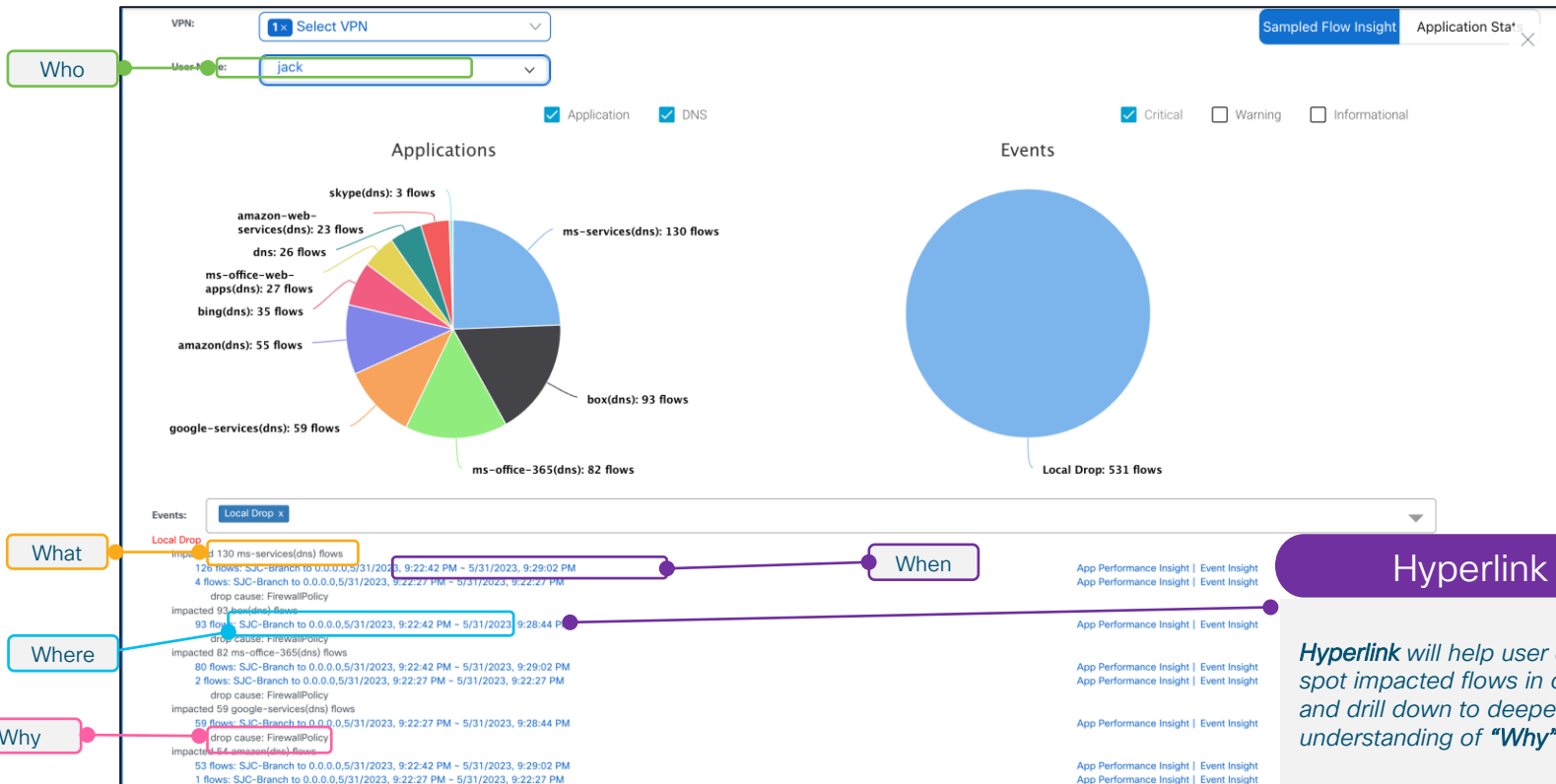


Scenario 1



User Unable To Access Application!!

User Jack complains internet access issue



Hyperlink

Hyperlink will help user quickly spot impacted flows in one click and drill down to deeper understanding of "Why".

User(Jack) traffic is dropped on SJC-Branch

INSIGHT Selected trace: ISE_FW_Demo (Trace Id: 21792)

Applications Active Flows **Completed Flows** Selected Flow Id: 221

Filter: VPN Id:10 | Application:box(dns) | Event:Local Drop

Search by Domain, Application, Readout, etc.

Readout Legend: Error, Warning, Information, Synthetic Traffic, ThousandEyes.

Search

Overall 3093 flows traced, 93 flows traced during May 31, 2023 9:22:42 PM to May 31, 2023 9:28:44 PM Total Rows: 93

>	Start - Update Time	Flow Id	Readout *	VPN Id	Source IP	Src Port	Destination IP	Dest Port	Protocol	Username	DSCP Upstream/Downstream	Application	App Group	Domain ...	AF
>	9:22:42 PM-9:22:42 PM	221		10	192.168.1.32	59784	208.67.222.222	53	UDP(DNS)	jack	DEFAULT + / N/A +	box(dns)	box-group	www.box.com	N/
	Direction	HopIndex	Local Edge	Remote Edge	Local Color	Remote Color	Local Drop(%)	Wan Loss(%)	Remote Drop(%)	Jitter(ms) *	Latency(ms) *	ART CND(ms)/SND(ms) *	Total Packets	Total Byte	
	Upstream	0	SJC-Branch	0.0.0.0	INVALID	INVALID	100.00	N/A	N/A	N/A			1	71	
>	9:22:42 PM-9:22:42 PM	222		10	192.168.1.32	61689	208.67.222.222	53	UDP(DNS)	jack	DEFAULT + / N/A +	box(dns)	box-group	Unknown	N/

Annotations:
- A red circle highlights the 'Local Drop(%)' value of 100.00 in the expanded flow details.
- A red arrow points from the 'Local drop' text box to the circled value.
- A pink box highlights the text 'Jack is accessing box app' with an arrow pointing to the 'Domain' field 'www.box.com' in the flow details row.

View Policy & Config applied for user traffic

Hostname: SJC-Branch Event List: FIRST_PACKET/DPLONGOING Expand All Features
Version: 17:13.01.0.1247, Input: GigabitEthernet4, Output: Tunnel2

Ingress Feature	Egress Feature
<ul style="list-style-type: none">Ingress ReportCEF ForwardingSDWAN ACL IN >> View Policy <<NBARSDWAN App Route Policy >> View Policy <<SDWAN Data Policy IN >> View Policy <<SDWAN Forwarding	<pre>Early cls priority: 20 Permit apps list id: 0 Sdavn Early priority as app: 0 Classification visibility name: google-service Classification visibility ID: 1456 [CANA-L7:52] Number of matched sub-classifications: 0 Number of extracted fields: 0 Is PA (split) packet: False Is FIF (first in flow) packet: False TPH-MQC bitmask value: 0x0 Source MAC address: 00:50:56:83:59:13 Destination MAC address: 00:50:56:A5:B2:C9 Traffic Categories: N/A ZBFW >> View Policy << Action : Drop Reason : Policy drop:classify result Zone-pair name : ZP_vpn10_vpn10_yicliu Class-map name : yicliu-unified-policy Policy name : yicliu-unified-policy Input interface : GigabitEthernet4 Egress interface : Tunnel2 Input VPN ID : 10 Output VPN ID : 10 Input VRF ID:Name : 1:10 Output VRF ID:Name : 1:10 AVC Classification ID : 0 AVC Classification name: N/A UTD Context ID : 0 DROP_REPORT</pre>

FW Drop

FW Class-map

ZBFW

```
name:yicliu-unified-policy
type:zoneBasedFW
description:yicliu-unified-policy
isActivatedByVsmart:false

sequences:
  sequenceId: 1
  sequenceType: zoneBasedFW
  baseAction: drop
  sequenceIpType ipv4
  match sourceIdentityList yicliu-user-block-list
  user: jack

default-action
  pass
```

GenAI, LLM & RAG Essentials

AI, ML, Deep Learning, Gen AI..

Artificial Intelligence

A discipline that encompasses all aspects of Machine Learning and Deep Learning.

AI, ML, Deep Learning, Gen AI..

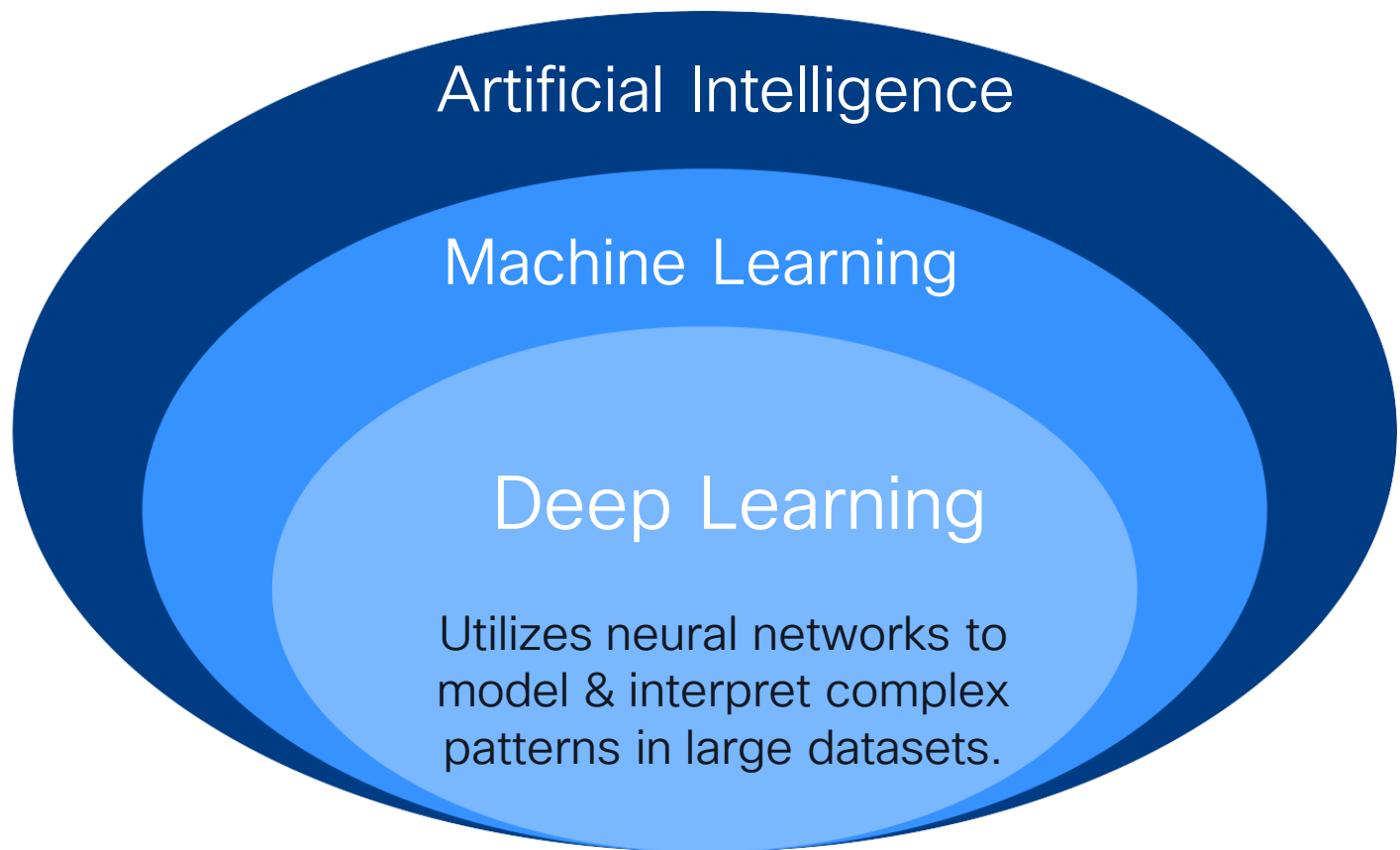
Artificial Intelligence



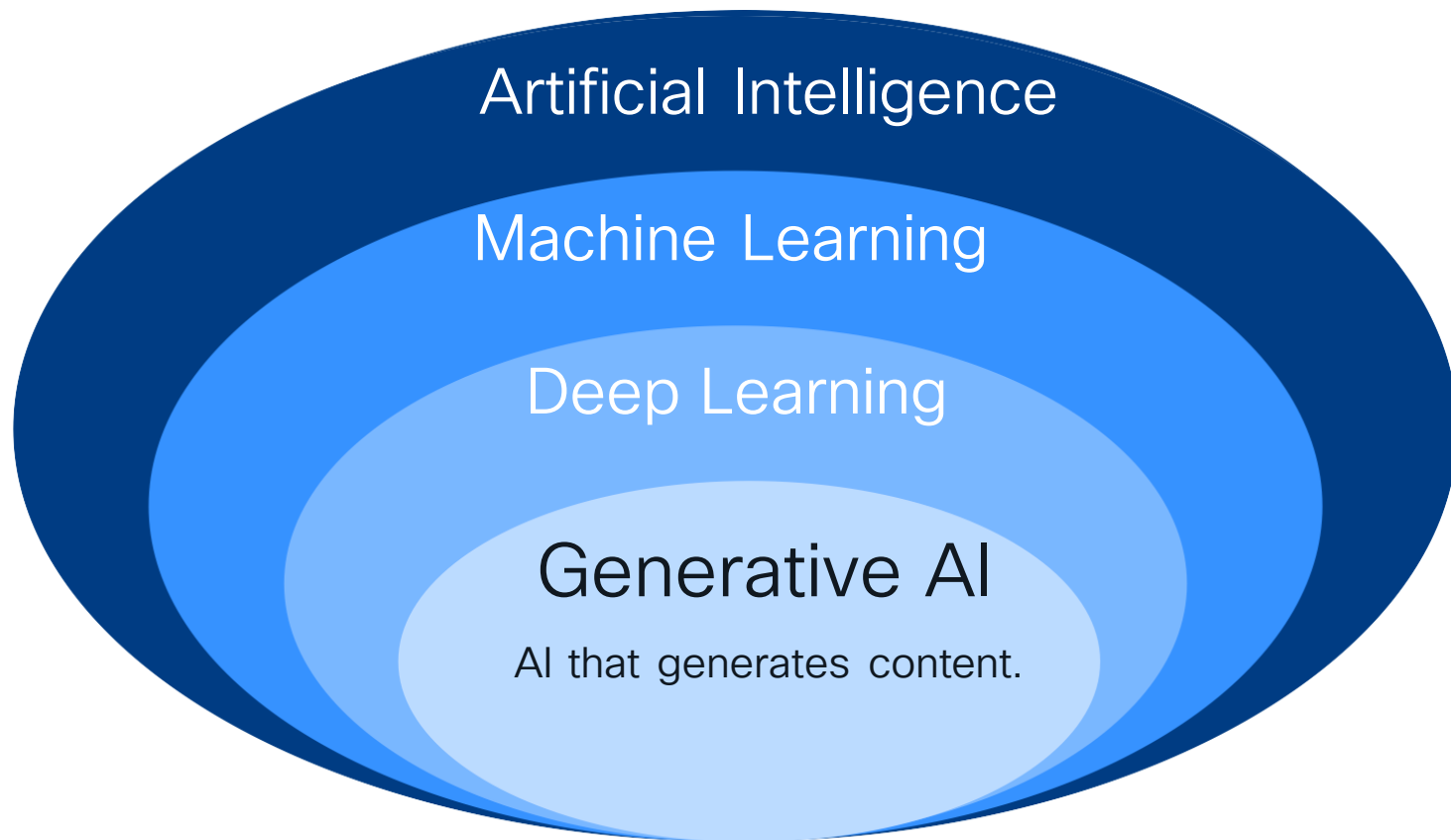
Machine Learning

Uses statistical models to learn from data to perform tasks without explicit programming.

AI, ML, Deep Learning, Gen AI..



AI, ML, Deep Learning, Gen AI..



What is Large Language Model (LLM)?



LLMs

- GPT (OpenAI)
- Gemini (Google)
- Llama 3 (Meta)
- Ollama (framework)
- ...

Consider Data privacy, Cost and Use Cases

- Large Language Model are designed to understand and generate content in human language
- LLMs are trained on massive amounts of data sets by Tokenization & Vectorization and Fine tuning the learning.
- Answers our query, using natural language, based on the similarity search results
- Provide other advanced features, like tool/function calling

Challenges with Generic LLM models is it doesn't have access to...

Real-Time Data

Domain Specific Data

Latest Data

This results in Hallucinations!

Retrieval Augmented Generation (RAG)

Allows LLM Model to have access to external sources of data

Retrieves matches in provided dataset and uses LLMs to create high-confidence content



SD-WAN
Manager
APIs



Retrieval Augmented
Generation

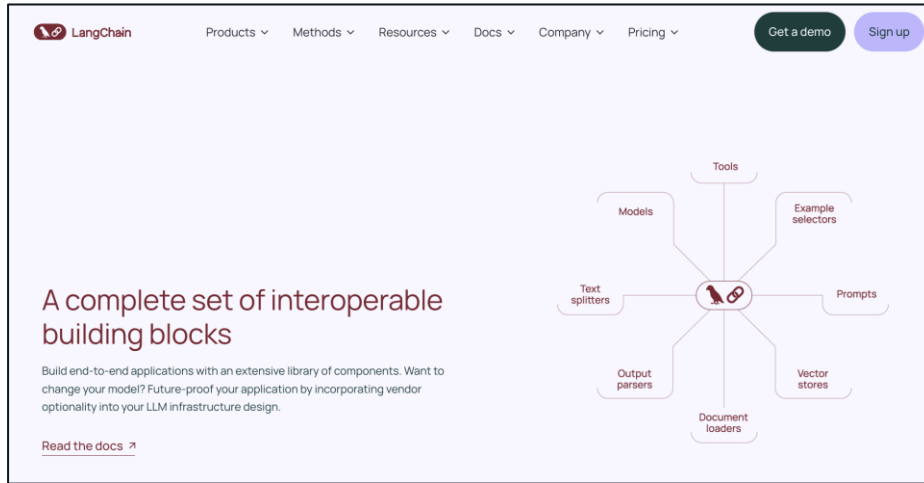
LLM



- Configuration and Operational data collected from SD-WAN Manager using APIs
- Parse this data through various steps i.e., data transform, embeddings, store in Vector Database, and then answer user queries

<https://github.com/langchain-ai/rag-from-scratch>

LangChain

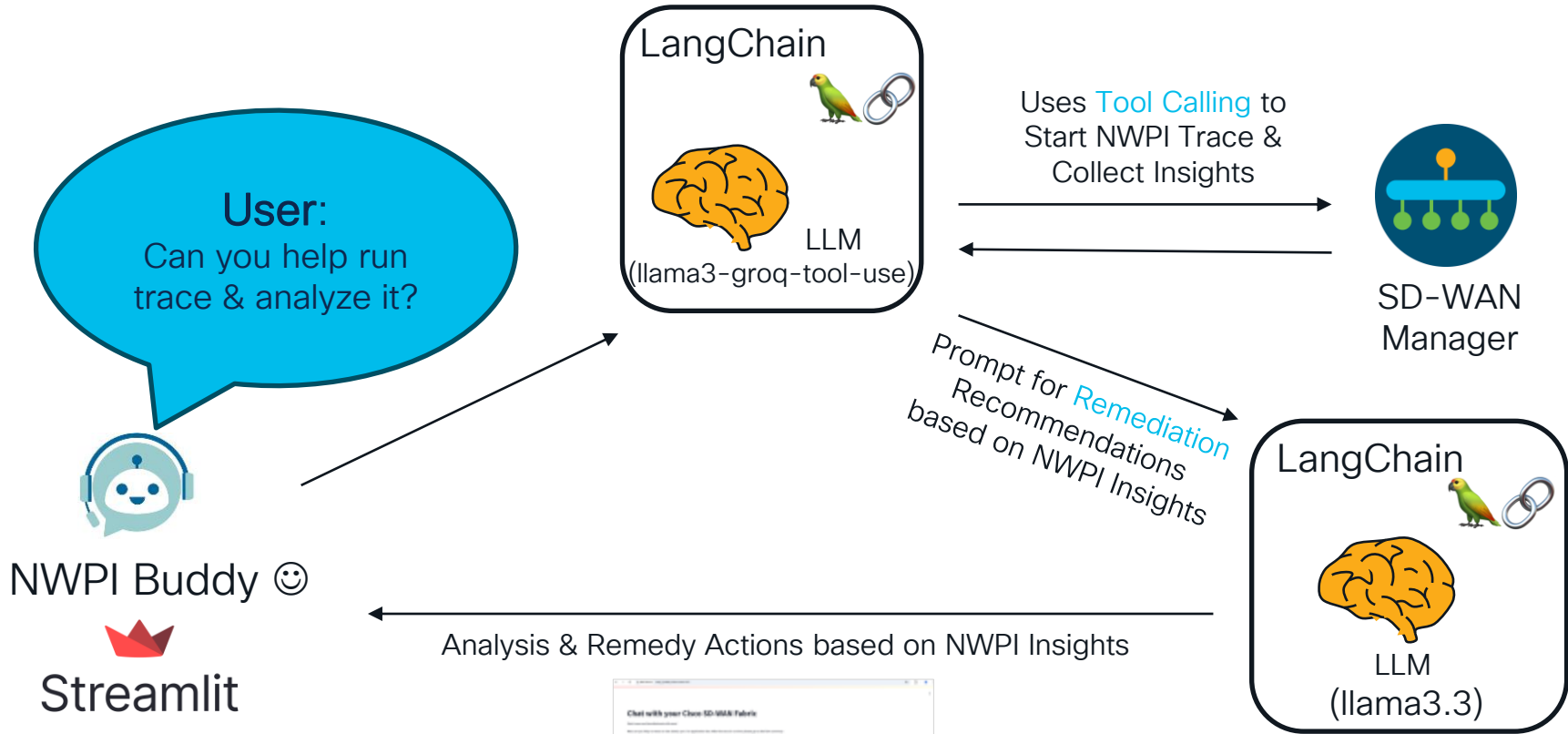


The screenshot shows the LangChain website interface. At the top, there is a navigation bar with links for Products, Methods, Resources, Docs, Company, and Pricing, along with buttons for 'Get a demo' and 'Sign up'. The main content area features a central diagram with a red and black logo in the center, surrounded by eight building blocks: Tools, Example selectors, Prompts, Vector stores, Document loaders, Output parsers, Text splitters, and Models. To the left of the diagram, there is a text block that reads: 'A complete set of interoperable building blocks' followed by a paragraph: 'Build end-to-end applications with an extensive library of components. Want to change your model? Future-proof your application by incorporating vendor optionality into your LLM infrastructure design.' and a link 'Read the docs'.

- **Seamlessly integrates** dataset imports, models, Vector Databases, and LLMs.
- **Modular design** enables easy swapping of apps, LLM models, and Vector Databases.
- **Streamlines** development of **Retrieval Augmented Generation (RAG)** solutions.

<https://python.langchain.com/docs/introduction/>

Chat with your SD-WAN Fabric!



Chat with your Cisco SD-WAN Fabric

Start traces and troubleshoot with ease!

You: can you help run trace on site 10105, vpn 1 for application box. After the trace is run then please get us the flow summary

Assistant: 🗨️ It looks like you have a Box Application flow drop issue on your Cisco Catalyst SD-WAN Network at Site DC1-SanJose 📍. Based on the NWPI (Network Wide Path Insights) trace, I've identified the root cause and suggested remediation actions for the impacted application 📄.

Root Cause: 😞 The Box Application flows are being dropped due to a Zone-Based Firewall Policy (ZBFW) with a `drop` action. The policy is applied to the `VPN1-Main_zone` source zone and `untrusted` destination zone, with a match on the `Box-Apps` local application list 📄.

Remediation Actions: 📋 To resolve this issue, consider the following steps:

1. **Review and Update ZBFW Policy** 📄: Re-evaluate the ZBFW policy `SecPolicy-npitaev_930_1692422194` and update the `Box-App` sequence to allow the Box Application traffic instead of dropping it 🔄.
2. **Adjust Classification** 🔍: Verify that the classification is correct, and the `Box-Apps` local application list is properly configured 📄. Ensure that the `box` application is correctly identified and matched 📄.
3. **Check NAT Configuration** 🌐: Review the NAT configuration to ensure that it's not interfering with the Box Application traffic 🔄.
4. **Validate VRF and VPN IDs** 🔍: Confirm that the input and output VRF IDs, as well as the VPN IDs, are correctly configured and matching the expected values 📄.

Example Configuration Update: 📄 Update the `SecPolicy-npitaev_930_1692422194` policy to allow Box Application traffic:

```
rules:
  zones:
    sourceZone: VPN1-Main_zone
    vpn: VPN1-Main
    destinationZone: untrusted
  sequences:
    sequenceId: 1
    sequenceName: Box-App
    sequenceType: ngfirewall
    baseAction: **allow** 🔄
    match localApplist Box-Apps
      apps: "box"
```

Demo

1. Using **LLM Tool Calling** to interact with SD-WAN Manager to start NWPI trace.
2. Get summarized **analysis** and **remediation suggestions** from **LLM** based on NWPI Insights



slido

Please download and install the Slido app on all computers you use

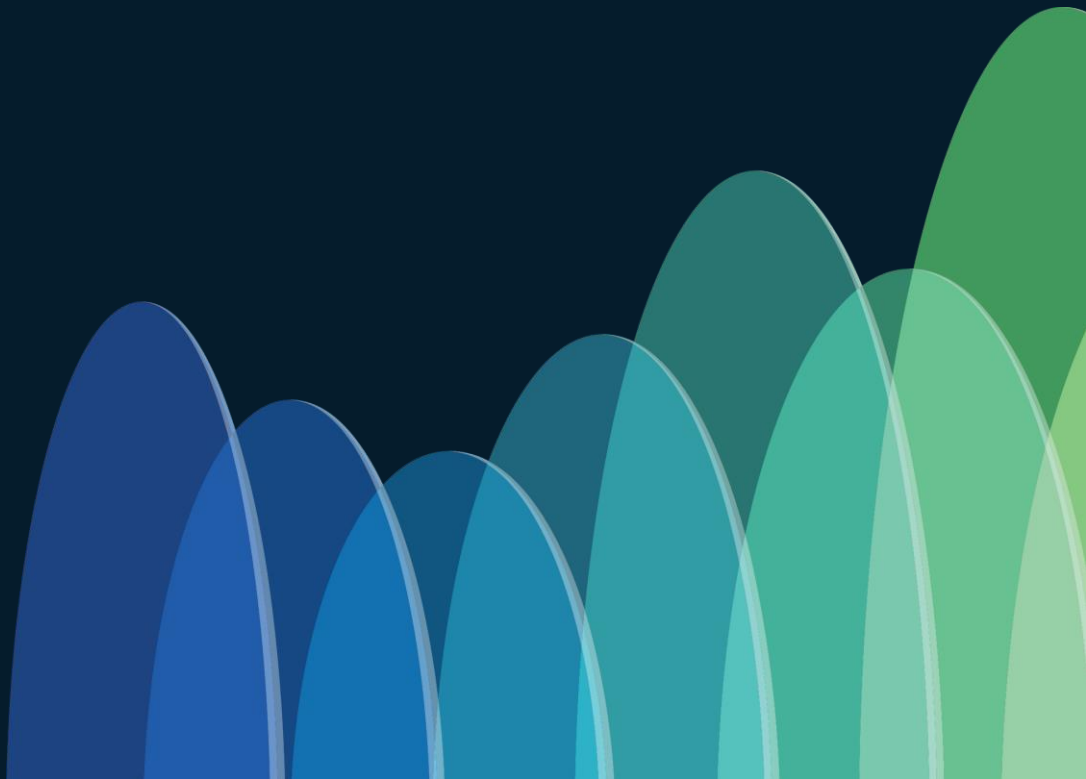


In which similar use cases or scenarios, you would like to have troubleshooting help from AI Assistant?

① Start presenting to display the poll results on this slide.

AIOps

CISCO *Live!*



AI Ops: Simplifying Day-2 Operations

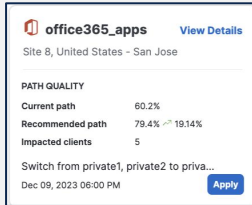


Optimize network and application performance to achieve higher operational efficiency



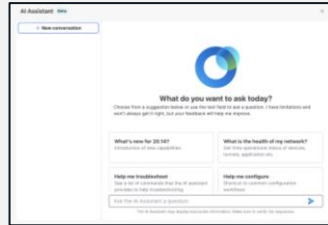
Mitigate issues before they impact. In case issues do occur, offer root cause analysis to reduce MTTR

Predictive Path Recommendations



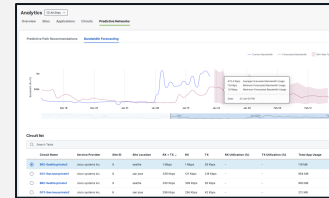
Path recommendations to Improve Application Performance

AI Assistant for Networking



Interactive LLM-based AI Assistant for Networking (Gen AI)

Bandwidth Forecasting



AI/ML-based forecasting
Capacity planning

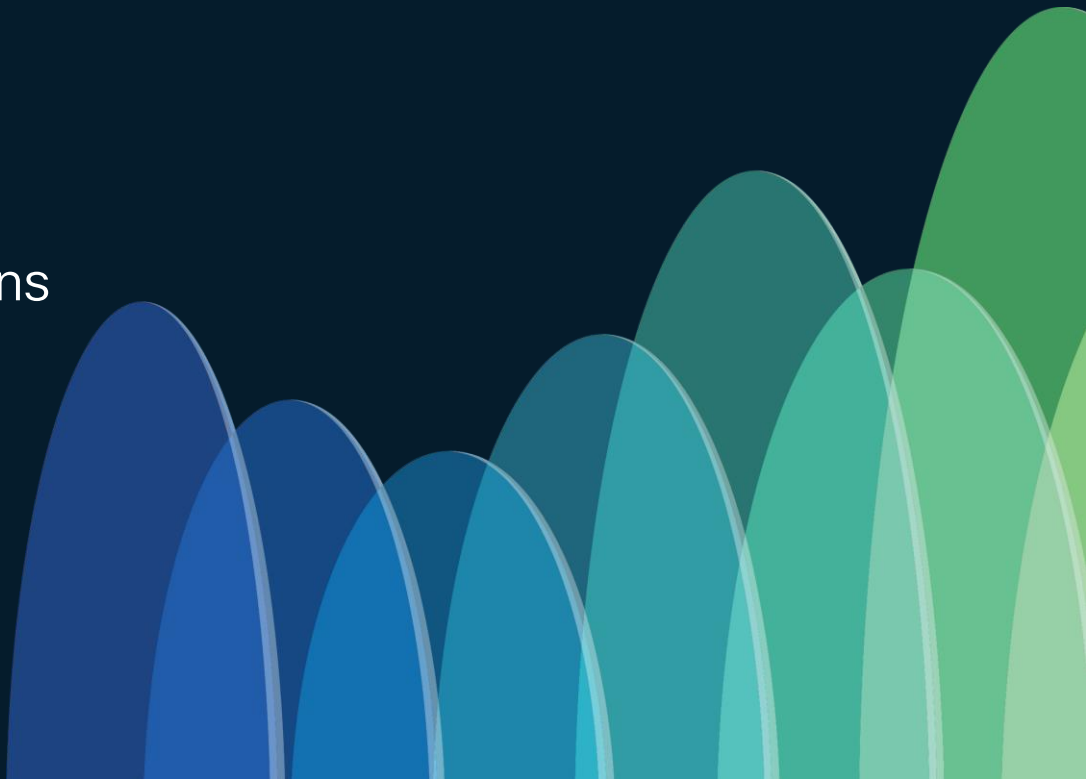
Anomaly Detection



Detect Network Anomalies

AIOps

Predictive Path Recommendations



AIOps: Predictive Path Recommendations

Powered by ThousandEyes WAN Insights 

Forecast issues and make policy recommendations

1. Ingest Telemetry

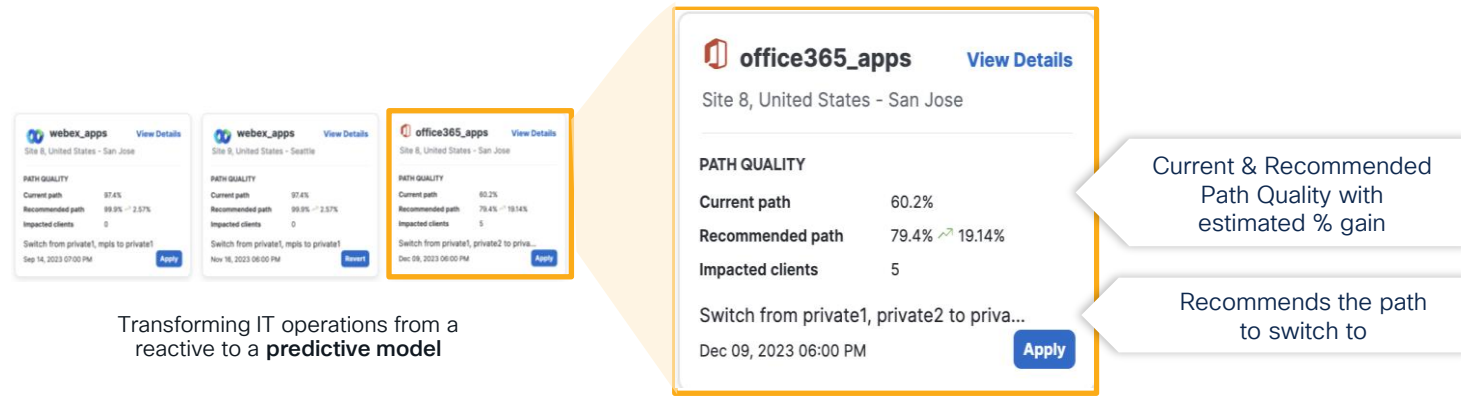
Collect network telemetry via SD-WAN Analytics

2. Data Analysis

Predictive modeling to forecast issues & make path recommendations

3. Feedback Loop

Fine-tune SD-WAN policies to make path changes to improve App experience



Site	Current Path Quality	Recommended Path Quality	Estimated % Gain	Impacted Clients
webex_apps - San Jose	97.4%	99.9%	+2.57%	0
webex_apps - Seattle	97.4%	99.9%	+2.57%	0
office365_apps - San Jose	60.2%	79.4%	+19.14%	5

office365_apps View Details
Site 8, United States - San Jose

PATH QUALITY

Current path	60.2%
Recommended path	79.4% ↗ 19.14%
Impacted clients	5

Switch from private1, private2 to private3
Dec 09, 2023 06:00 PM [Apply](#)

Current & Recommended Path Quality with estimated % gain

Recommends the path to switch to

Transforming IT operations from a reactive to a **predictive model**

Out-of-the-box Application Groups



• Included with SD-WAN DNA Advantage+ license; ThousandEyes Enterprise Agent not necessary



Activate Predictive Networks

- TE-EMBED-WANI license pre-deposited in 'eligible' brownfield customer accounts (DNA Advantage)
- The embed SKU will auto-expand for Greenfield DNA Advantage customers

Analytics

Overview Sites Applications Circuits **Predictive Networks**

Predictive Path Recommendations

Powered by **ThousandEyes** WAN Insights

Predictive Path Recommendations

The Predictive Path Recommendations powered by ThousandEyes WAN Insights analyzes historical data on application traffic flows across various network paths, forecasts future network connectivity issues, and makes recommendations for using alternate path(s) if appropriate. You can leverage these recommendations to adjust your SD-WAN policies to improve application experience for your users.

By clicking the "Activate" button you understand and agree that your SD-WAN analytics data will be shared with Cisco ThousandEyes WAN Insights to provide you with the Predictive Path Recommendations.

Depending on the size of your network, the activation may take up to several hours or days. Upon activation, the system will begin learning and analyzing from the historical data to make recommendations.

Please see the [ThousandEyes Privacy Data Sheet](#) for details regarding processing of personal data by ThousandEyes WAN Insights.

Activate ← **Activate Predictive Path Recommendations**

AI Ops: Predictive Path Recommendations

- Review Recommendation summary by App Group
- Click on an Application Group to view more details
- Per site recommendations across the Network

The screenshot displays the Cisco Catalyst SD-WAN Predictive Networks interface. The main section is titled "Predictive Path Recommendations" and shows a "Recommendation summary" for several application groups. The summary includes a "All recommended actions" icon and a table of recommendations. Below the summary, there are "Recommended actions" for various sites, including "Voice_Apps", "office365_apps", and "salesforce_apps". Each recommendation card shows the current path quality, the recommended path quality, and the impacted clients. The "Apply" button for the "Voice_Apps" recommendation is highlighted with a red box.

App Group	Current path	Recommended path	Impacted clients
Demo-App-Polic...	50.0%	50.0% 0.00%	0
Demo-App--1803...	94.1%	98.3% 4.16%	0
Demo-App-Po-18...	100.0%	100.0% 0.00%	2
office365...	100.0%	100.0% 0.00%	0

Site	App Group	Current path	Recommended path	Impacted clients	Action
Site 9, United States - Seattle	Voice_Apps	71.8%	100.0% 28.20%	0	Apply
Site 8, United States - San Jose	office365_apps	74.4%	100.0% 25.59%	0	Apply
Site 9, United States - Seattle	office365_apps	74.4%	100.0% 25.59%	0	Apply
Site 8, United States - San Jose	salesforce_apps	74.4%	100.0% 25.59%	0	Apply

Closed Loop Automation Guidelines

- On applying the recommendation via Closed Loop Automation
 - Workflow creates copy of AAR Policy and new site list with site-id of corresponding site.
 - Modifies AAR Policy sequence corresponding to App and applies it to Site where recommendation must be applied.
- User changes to Centralized Policy after deploying recommendations will trigger **revert action** and system removes all the recommendations applied and reverts the Centralized policy to the **state before applying the 1st recommendation**.
- After User changes to Centralized policy are complete, you can select bulk option to select multiple recommendations and re-apply all.

Recommended actions

2 Selected [Apply/Revert](#)

	Application	Site	Location	Current path	Recommended path	Current path quality	Recommended path quality	% Gain	Date	Impact
<input type="checkbox"/>	Voice_Apps	8	United States - San Jose	mpls_private1	mpls	71.8%	100.0%	28.23%	Jan 22, 2025 06:00 PM	1
<input checked="" type="checkbox"/>	Voice_Apps	9	United States - Seattle	mpls_private1	mpls	71.8%	100.0%	28.23%	Jan 23, 2025 06:00 PM	1
<input type="checkbox"/>	office365_apps	8	United States - San Jose	mpls_private1	mpls	74.4%	100.0%	25.60%	Jan 03, 2025 06:00 PM	2
<input checked="" type="checkbox"/>	office365_apps	9	United States - Seattle	mpls_private1	mpls	74.4%	100.0%	25.60%	Jan 03, 2025 06:00 PM	2



Apply predictive path recommendations

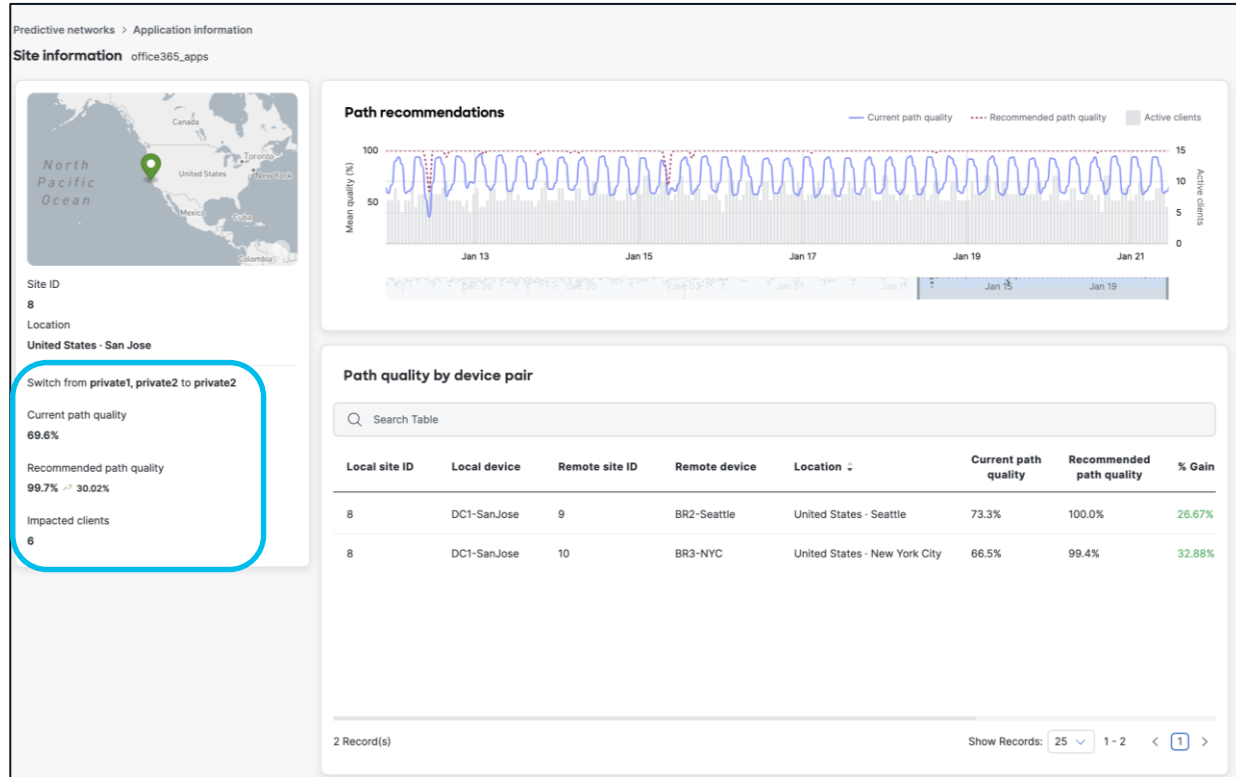
Confirm the selected predictive path recommendations below before proceeding to preview and deployment of active policy.

Site	Application	Current path	Recommended path	% Gain
9	Voice_Apps	mpls_private1	mpls	28.23%
9	office365_apps	mpls_private1	mpls	25.60%

[Close](#) [Proceed to apply](#)

Recommendations – by App Group per Site

Predictive Path Recommendations is recommending to switch to “private2” instead of load balancing between private1 & private2 paths



Path Performance Details (Between 2 sites)

- Graphs showing default & recommended path quality between selected device pair
- Color-coded lines reflecting quality of network paths between selected pair
 - Also includes line charts showing loss, latency and jitter over these paths

Path quality by device pair

Search Table

Remote device	Location	Current path quality	Recommended path quality	% Gain	Impacted clients	Actions
BR2-Seattle	United States · Seattle	73.3%	100.0%	26.67%	2	Show Path and QOS Details
BR3-NYC	United States · New York City	66.5%	99.4%	32.88%	4	Show Path and QOS Details



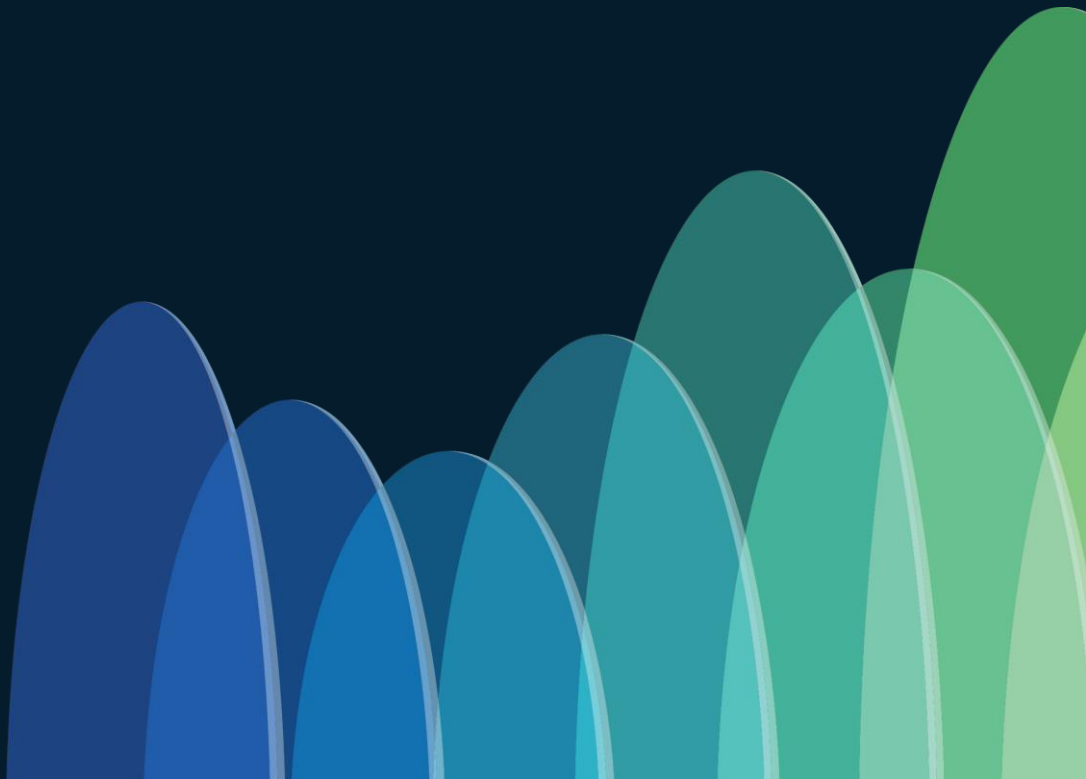
Demo

CISCO *Live!*



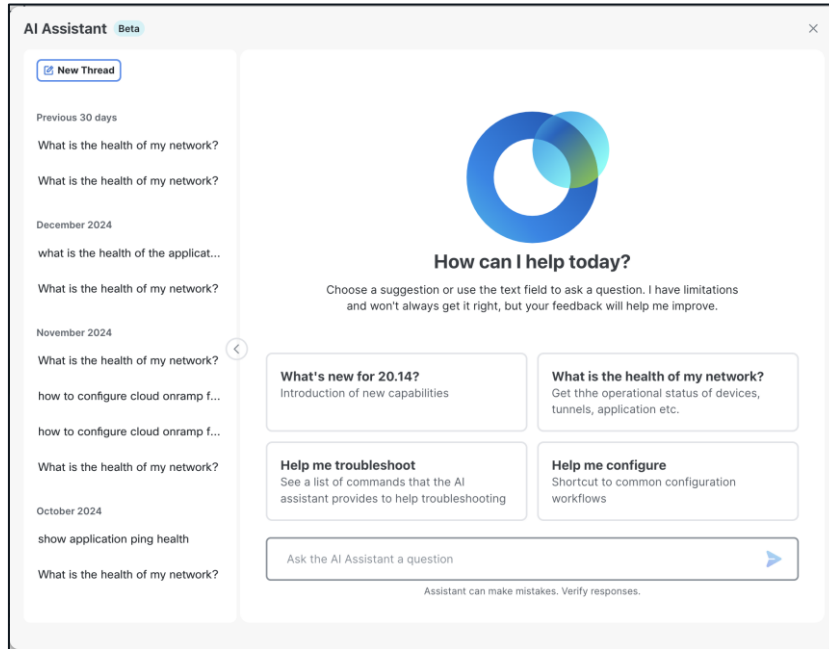
AIOps

AI Assistant for Networking



AI Ops: AI Assistant for Networking*

Beta



Benefits

- Interactive LLM-based AI Assistant
- Help with **feature-related user queries** w/ information fetched from documentation
- Help with **operational queries**, such as health information

*Requires connectivity to Cisco Cloud

Please reach out via cisco-sdwan-analytics@cisco.com or scan QR code to participate



AIOps: AI Assistant for Networking

Beta

Use Case: Knowledge Fetch

The screenshot shows the AI Assistant interface with a sidebar on the left containing various search suggestions. The main chat area shows a user query and a detailed response from the AI Assistant. The response includes instructions on how to configure custom applications for Cloud OnRamp for SaaS, with a specific link highlighted in blue. The interface includes a 'New Thread' button, a 'Today' section with search suggestions, and a 'Previous 7 days' section. At the bottom, there is a text input field for asking questions and a disclaimer: 'Assistant can make mistakes. Verify responses.'

AI Assistant Beta

New Thread

Today

how to configure custom apps f...

Help me troubleshoot

What is the health of my network?

Yesterday

how to configure one touch prov...

what is the site with the most tra...

Previous 7 days

What's new for 20.14?

show in a table

device health

secops dashboard?

What is the health of my network?

You

how to configure custom apps for cloud onramp for saas

AI Assistant

To configure custom apps for Cloud OnRamp for SaaS, you need to define the custom applications using the procedure described in "Define Custom Applications." Then, create an application list with one or more applications, and enable the application list in Cloud OnRamp for SaaS.

You can define custom applications by following the steps in "Create a User-Defined SaaS Application List Using Cisco SD-WAN Manager," which requires a minimum supported release of [Cisco IOS XE Catalyst SD-WAN Release 17.8.1a](https://www.cisco.com/c/en/us/td/docs/routers/sdwan/configuration/cloudonramp-xe-17/cloud-onramp-book-xe/m-application-lists.html) or Cisco vManage Release 20.8.1.

Specifically, you can follow these steps:

1. Open the Cloud OnRamp for SaaS page using one of the methods described in "Create a User-Defined SaaS Application List Using Cisco SD-WAN Manager."
2. In the Manage Cloud OnRamp for SaaS drop-down list, choose SaaS Application Lists.
3. Click New Custom Application List.
4. Enter a name for the list.
5. To add applications to the list, click the Search field and choose applications. The list includes standard applications and any custom applications that you have defined.
6. Optionally, to create a new custom application within this workflow, click the Search field and then click New Custom Application.

Source:

<https://www.cisco.com/c/en/us/td/docs/routers/sdwan/configuration/cloudonramp-xe-17/cloud-onramp-book-xe/m-application-lists.html>

Ask the AI Assistant a question

Assistant can make mistakes. Verify responses.

Use Case: Network Operational Queries

The screenshot shows the AI Assistant interface with a user query and a response. The response includes a table of top used applications and a list of network health summaries. The user query is highlighted in blue. The response includes a table with columns 'Applications' and 'Octets (MB)'. The table lists various applications and their corresponding octet counts. Below the table, there is a section titled 'AI Assistant' with a heading 'We support the following network health summaries.' and a grid of buttons for different health summaries.

You

what are top used applications

AI Assistant

Applications	Octets (MB)
box	60
rtp-audio	328
http	34
cisco-thousandeyes	137
ping	178
yahoo	164
dropbox	41
unknown	539
salesforce	35
akamai	50

You

What is the health of my network?

AI Assistant

We support the following network health summaries.

Site health Tunnel health Device health Top used applications Circuit Utilization

SSE Tunnel health CoR SaaS Security Policies Policy Groups AWS VPC Azure Vnet

Demo

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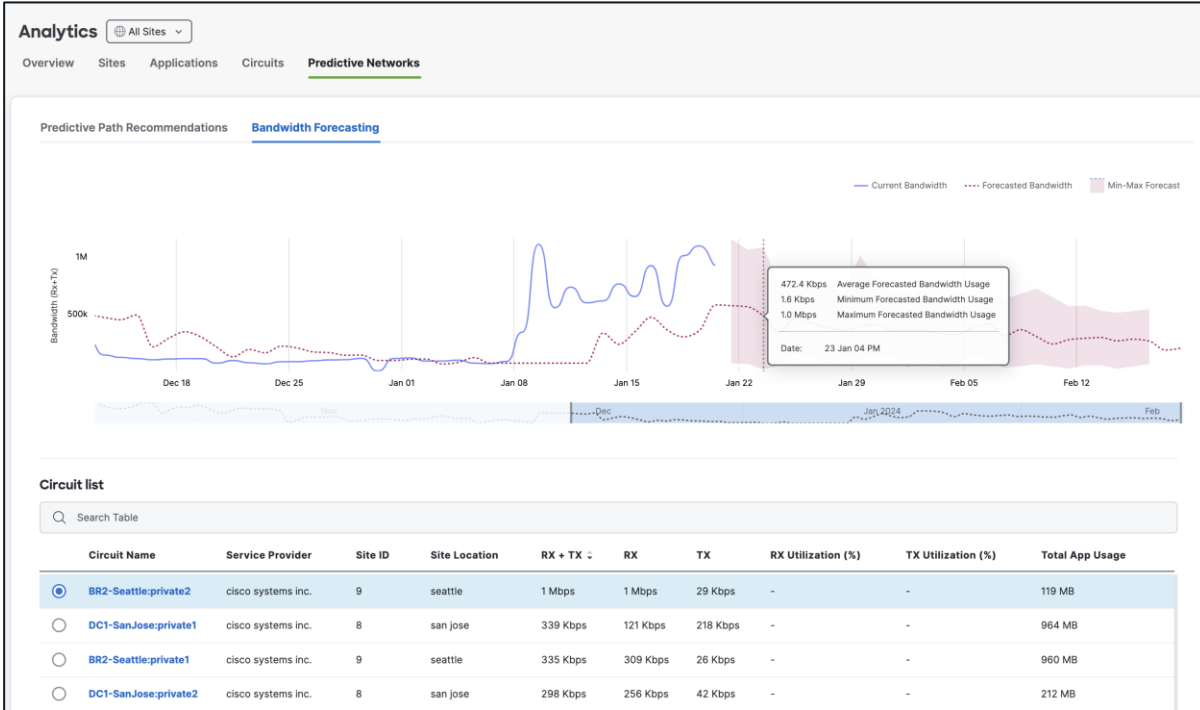


AIOps

Bandwidth Forecasting

AIOps: Bandwidth Forecasting

Beta



Benefits

Helps organizations with capacity planning.

Identify Growth Trends, Visualize Seasonality & Surges in Circuit Usage.

Highlights

- Track historical usage of individual circuits and forecast future usage (Top 50 circuits)
- Provide forecast for several weeks in future
- Compare historical and forecasted bandwidth usage

How does Bandwidth Forecasting work?

- For forecast we use **statistical models** and machine learning techniques, including **neural networks**.
- Historical interface statistics is used as training data, and the final forecast is generated by using the most suitable models based on **MAPE scores**
- Generates **3-month** forecast horizon based on **latest 52 weeks** of Interface stats data for the top 50 circuits.
- As new data becomes available, the forecast horizon is continuously updated, refining models and improving long-term predictions.

Demo

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AIOps

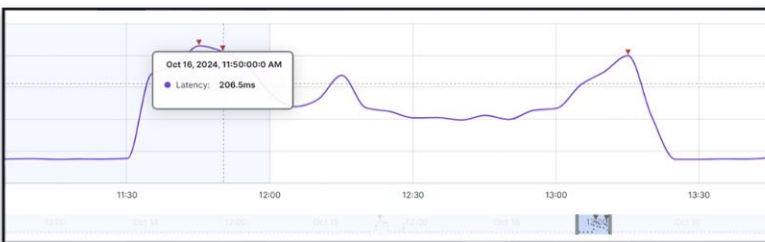
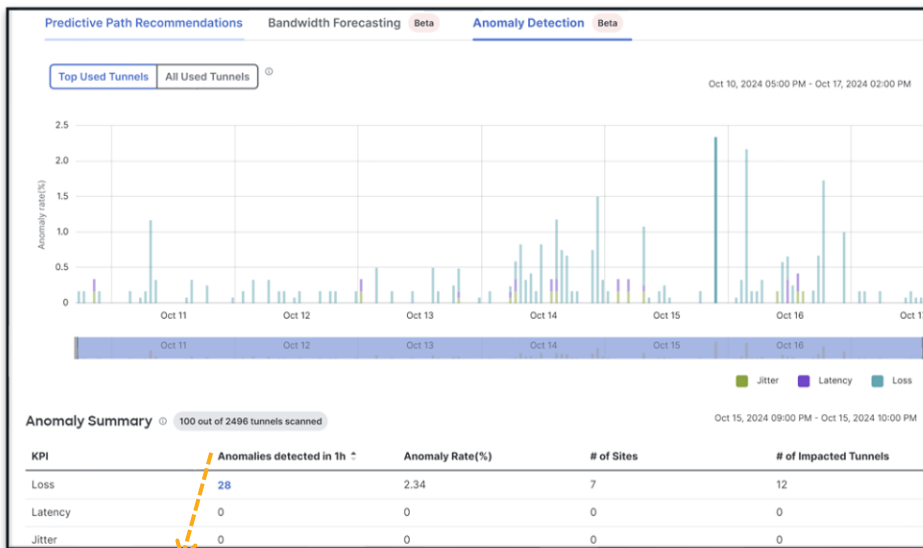
Anomaly Detection

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AIOps: Anomaly Detection

Beta

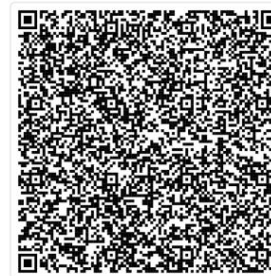


Benefits

- Early problem detection: Identify unusual patterns before they manifest into larger issues
- Optimize network performance: Fine-tune your network to improve end-user experience

Highlights

- Identify tunnels with anomalies across key network KPIs (loss, latency, jitter)
- Determine impact radius based on site count, usage & app count
- Determine if it's a chronic issue by viewing the trend information



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Demo

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Resources & Call to Action

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- For Technical Questions on Analytics, ask cisco-sdwan-analytics@cisco.com

watch



[Predictive Path Recommendations](#)



[SD-WAN Analytics Circuits Dashboard](#)

read



[SD-WAN Analytics](#)



[SD-WAN Analytics User Guide](#)

play

Analytics demo access

URL: <https://us01.analytics.sdwan.cisco.com>

User: vanalytics_demo@external.cisco.com

Password: SDWANanalytics#3

Open AI Based SD-WAN Assistant to Run & Analyze NWPI Traces

GitHub Repos: <https://github.com/arui-z-p/sdwan-assistant>

<https://github.com/arui-z-p/sdwan-langgraph>

Cisco Live EMEA - Catalyst WAN Learning Map

Sunday – 9th

TECENT-2000 1:30 PM

Understanding Cisco Catalyst SD-WAN Design for Scale with High Availability

TECARC-2407 1:45 PM

Architecture, Deployments and Troubleshooting deep dive for Cisco Catalyst 8000 series edge platforms

Monday – 10th

TECENT-3998 8:30 AM

Catalyst SD-WAN Cloud deep dive

TECENT-3999 8:45 AM

Complete deep dive of Catalyst WAN Security Technologies and use-cases

BRKENT-2108 2:00 PM

Cisco SD-WAN: Start Here

Tuesday – 11th

BRKENT-2139 8:00 AM

How to choose the correct Branch Router

BRKENT-1039 2:30 PM

Power your WAN with SD-Routing

BRKENT-1313 2:30 PM

Making SD-WAN Easy: Operational Simplification and User Experience

BRKENT-2630 3:00 PM

How to Optimize SaaS Applications using Cisco Catalyst SD-WAN?

BRKENT-3482 4:15 PM

The Small Branch ISR: More Powerful Than you think

Wednesday – 12th

BRKENT-2156 8:00 AM

Chatting with your SD-WAN Network - Power of AI & LLMs to Simplify SD-WAN Network Operations

BRKENT-2609 1:00 PM

Solving Global WAN Challenges with Multi-Region Fabric

BRKENT-2660 5:30 PM

Customer Case Studies: Lessons learned from the Cisco SD-WAN Design Council

Thursday – 13th

DEVNET-1318 2:30 PM

Cisco SD-WAN: Better NetOps for better DevOps

BRKARC-2885 3:45 PM

Cisco Catalyst 8500 Series Edge Platform Deep Dive

Friday – 14th

BRKENT-2520 9:00 AM

Segment Routing Innovations in IOS XE

BRKCLD-1512 9:00 AM

Untangling the Multi Cloud Maze: Simplify Hybrid Connectivity with Catalyst SD-WAN

LTRATO-2596 9:00 AM

Own your SDWAN Fabric via SD-WAN Manager API's.

BRKENT-2666 9:15 AM

Breaking Barriers: An Automation Framework for Multicloud Access with the SP Service Exchange

BRKENT-2428 11:00 AM

Catalyst SD-WAN Application-Aware Routing, SASE, and Policy Innovations

Interested to learn more on Cisco Unified AI Assistant?

BRKAI-2655 Generative AI for Unifying User Experience Across Security, Networking, & Collaboration

FULL CONFERENCE IT LEADERSHIP

Generative AI for Unifying User Experience Across Security, Networking, & Collaboration [BRKAI-2655] ★

Richard Jang, Senior Product Manager, Cisco Systems, Inc. - **Distinguished Speaker**

[Join Waitlist](#) **Wednesday, Feb 12 | 9:30 AM - 11:00 AM CET | Session Room A13**

AI is reshaping the world, from facial recognition and voice-enabled IoT devices to the latest generative AI-powered chatbots. Its integration into our daily lives has unlocked unparalleled convenience and innovation. But how does AI actually work, and how is it transforming IT operations? Join this session to explore the technical fundamentals of how AI works, including machine learning, neural networks, and a focus on generative AI. Once we've covered the technical fundamentals, we'll dive into Cisco's cutting-edge generative AI technology across each domain, with a special focus on the Unified AI Assistant. This innovative solution integrates Cisco's platforms, delivering unified insights across networking, security, and collaboration—dramatically improving IT efficiency and creates a cohesive experience across all Cisco software platforms! Don't miss the opportunity to learn how generative AI works and see how Cisco is driving the future of IT through the Unified AI Assistant.

Session Type: Breakout

Technical Level: Intermediate

Technology: AI, Analytics, Security

Percentage of New Content: 100% New

Resources

[↓ Session Presentation](#)

Webex App

Questions?

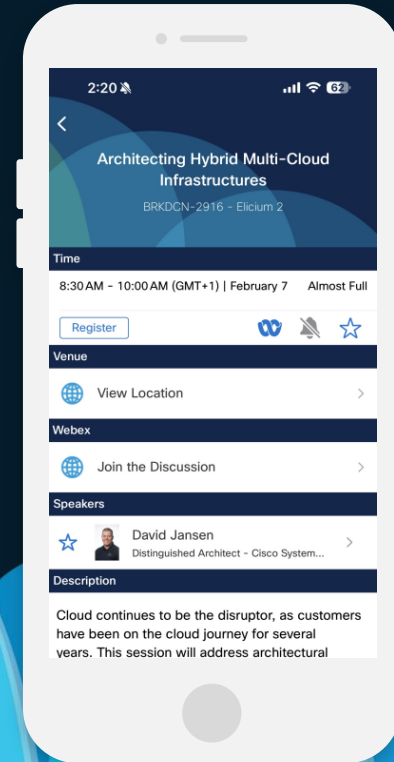
Use the Webex app to chat with the speaker after the session

How

- 1 Find this session in the Cisco Events mobile app
- 2 Click “Join the Discussion”
- 3 Install the Webex app or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until February 28, 2025.

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Fill Out Your Session Surveys



Participants who fill out a minimum of 4 session surveys and the overall event survey will get a unique Cisco Live t-shirt.

(from 11:30 on Thursday, while supplies last)



All surveys can be taken in the Cisco Events mobile app or by logging in to the Session Catalog and clicking the 'Participant Dashboard'



Content Catalog

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Contact me at: msuchand@cisco.com



Thank you

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GO BEYOND

A series of overlapping, vertically-oriented ovals in various shades of blue, ranging from light to dark, positioned on the right side of the image. The ovals are layered, with some appearing in front of others, creating a sense of depth and movement.