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Future-Proof Your Workplace with Gen AI

Across Security, Networking, & Collaboration

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Cisco Live Distinguished Speaker
BRKAPP-2546

CISCO *Live!*

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Cisco Webex App

Questions?

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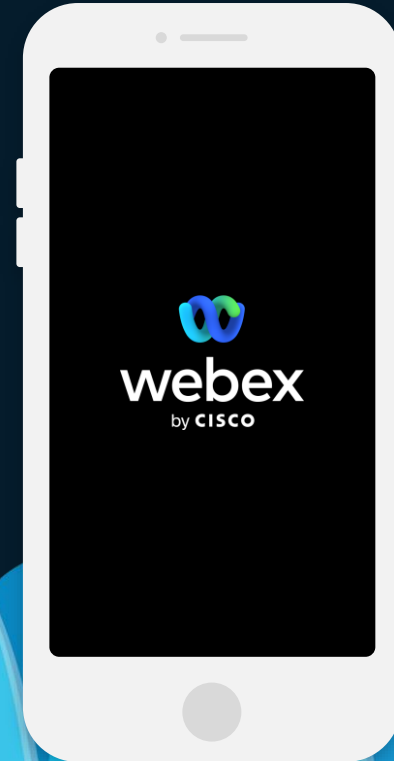
How

- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
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Webex spaces will be moderated by the speaker until November 15, 2024.



<https://ciscolive.ciscoevents.com/ciscolivebot/#BRKAPP-2546>



Agenda

- **What is AI?**
 - Background, key concepts, definitions
- **AI Deep Dive**
 - How AI, machine learning, deep learning
- **Generative AI Deep Dive**
 - Types of models, training, capabilities, prompt design, etc.
- **Cisco's Generative AI Strategy**
 - Generative AI Assistants for security, networking, collaboration
 - Unifying generative across Cisco with the Unified AI Assistant
- **Conclusion**

Richard Jang



Expertise

Generative AI, Cybersecurity, Enterprise Networking



Personal Life

Taiwanese American, Silicon Valley Native, San Jose State University



Hobbies

Playing Drum Set and Seeing The world!

Add me on LinkedIn! →

<http://linkedin.com/in/jangrichard/>



Artificial Intelligence

What is it?



“AI is software that mimics human intelligence and performs tasks to solve problems.”

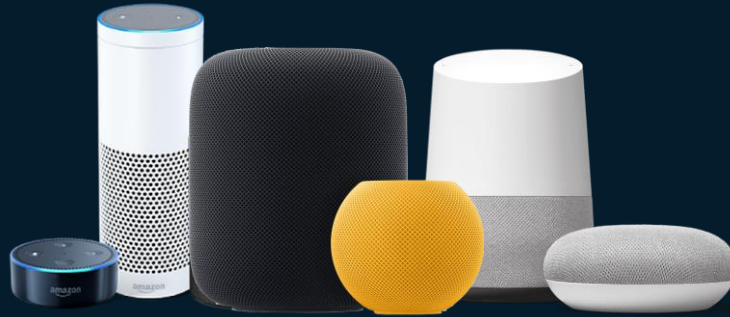
—

ChatGPT, November 7 2024

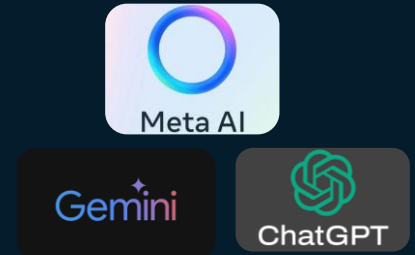
Artificial Intelligence is Everywhere



Facial Recognition
Deep Learning



Voice Activated Assistants
Natural Language Processing



Chat Bots
Generative AI

How Is AI Different From Regular Algorithms?



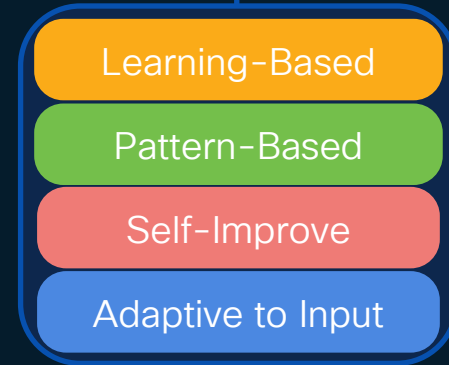
Input



Output



Input



Output

A Growing Phenomenon

ChatGPT Sprints to One Million Users

Time to Reach 100M Users

Months to get to 100 million global Monthly Active Users



Source: UBS / Yahoo Finance

[@EconomyApp](#)

APP ECONOMY INSIGHTS

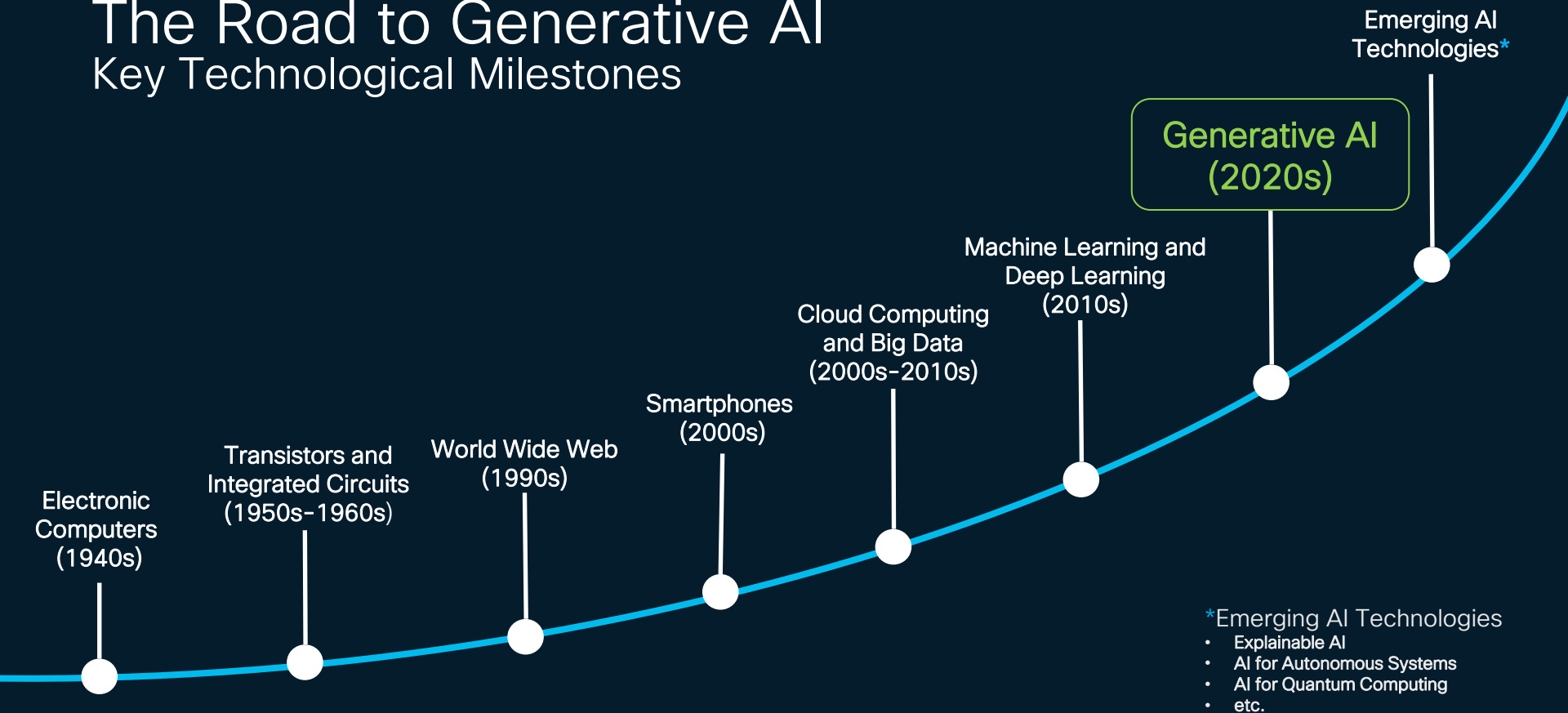
ChatGPT 2022 | 5 days

* one million backers ** one million nights booked *** one million downloads

Source: Company announcements via Business Insider/LinkedIn

The Road to Generative AI

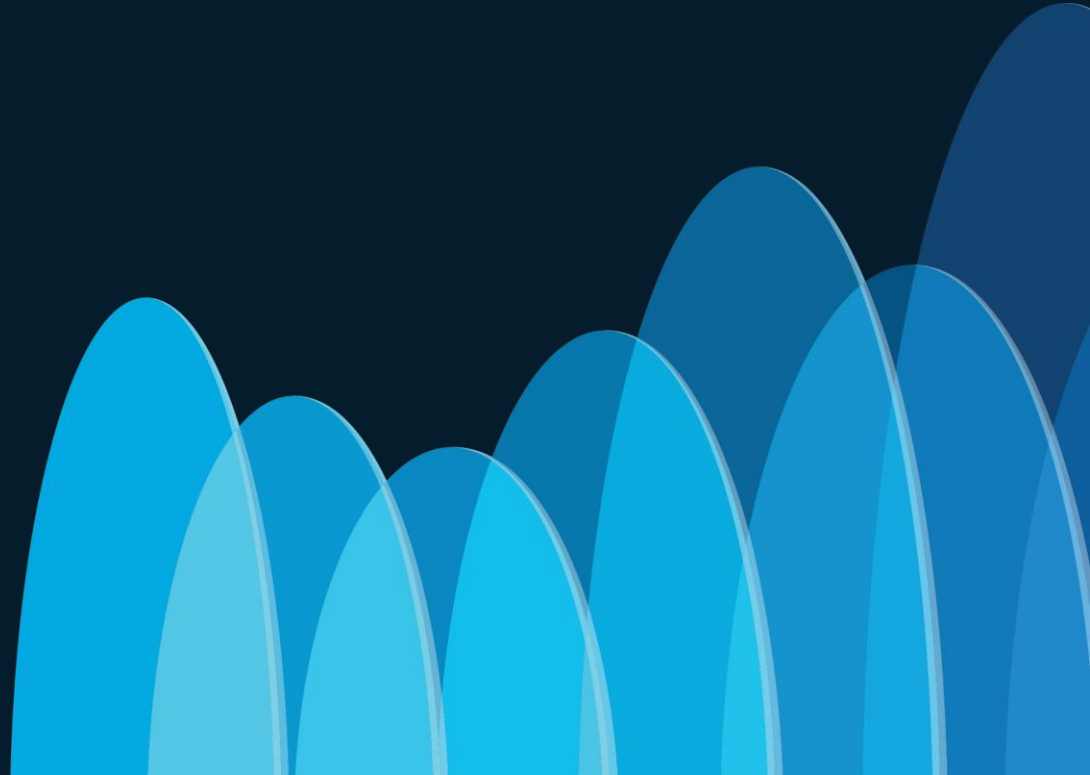
Key Technological Milestones



*Emerging AI Technologies

- Explainable AI
- AI for Autonomous Systems
- AI for Quantum Computing
- etc.

AI Technical Deep Dive

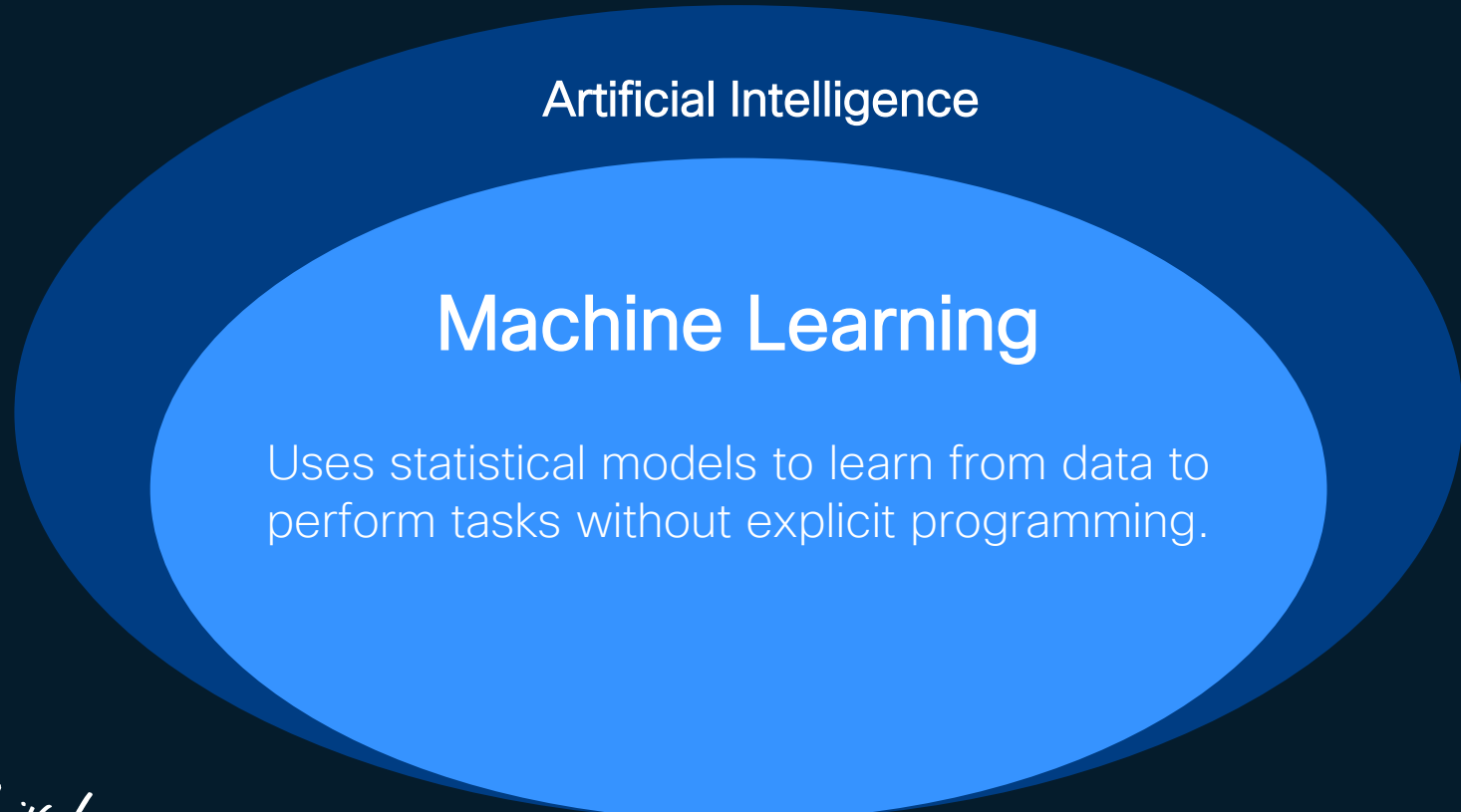


The Breakdown of Artificial Intelligence

Artificial Intelligence

A discipline that encompasses all aspects of simulating human intelligence in machines.

The Breakdown of Artificial Intelligence



Supervised Learning

Supervised Learning

Using past “labeled” data to predict future trends

- Spam email identifier
- Stock price prediction
- Sales forecast

Note: Labeled data is data that has been tagged with the correct answer or output.

Scenario: Predicting if an Email is Spam

Email 1

- To/From
- Subject
- Content

Email 2

- To/From
- Subject
- Content

Email 3

- To/From
- Subject
- Content

Email 4

- To/From
- Subject
- Content

Labels →  Spam  Not Spam

Unsupervised Learning

Unsupervised Learning

Using “Unlabeled” data to learn patterns

- User segmentation
- Anomaly detection
- Image/Video analysis

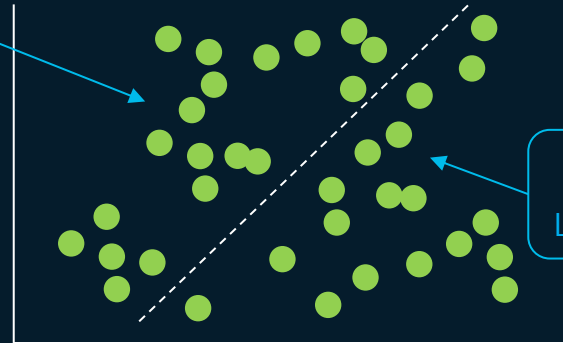
Note: Unlabeled data refers to data that does not have predefined categories or outputs.

Scenario: Predicting if an employee is going to be a top performer

Clustering Employee Data

Cluster 1
High Performers

Salary



Cluster 2
Low Performers

Years at Company

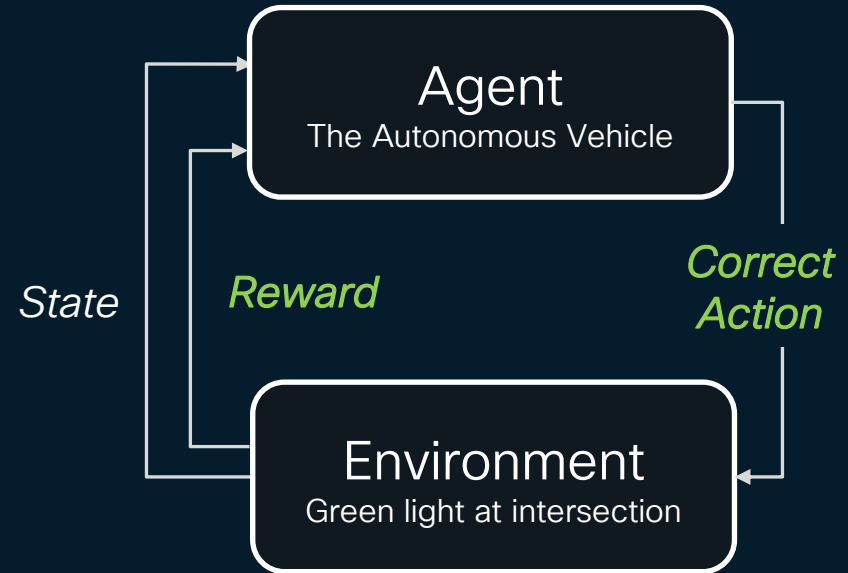
Unlabeled Data → ● Employee Data

Reinforcement Learning

Reinforcement Learning

Trained on reward or penalty feedback loop based on its actions during simulations.

- Autonomous vehicles
- Robotics
- Resource management

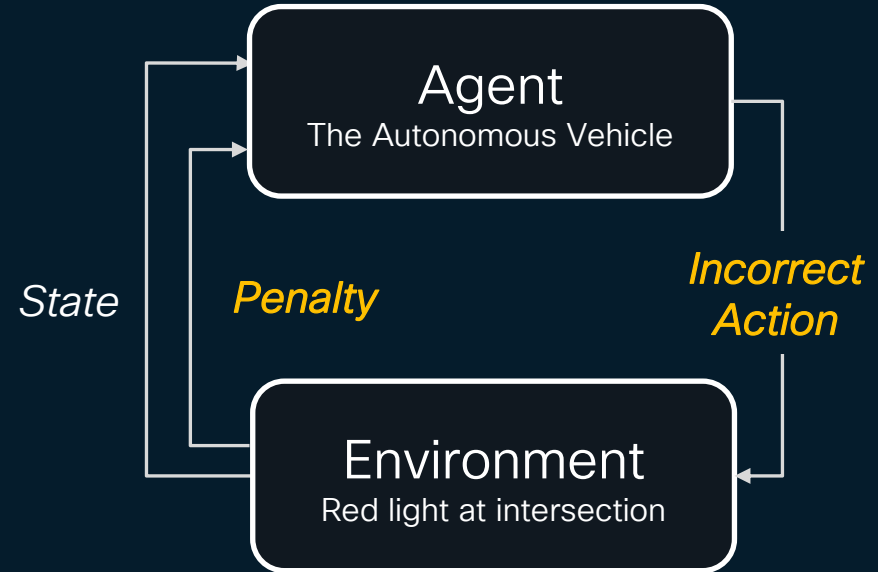


Reinforcement Learning

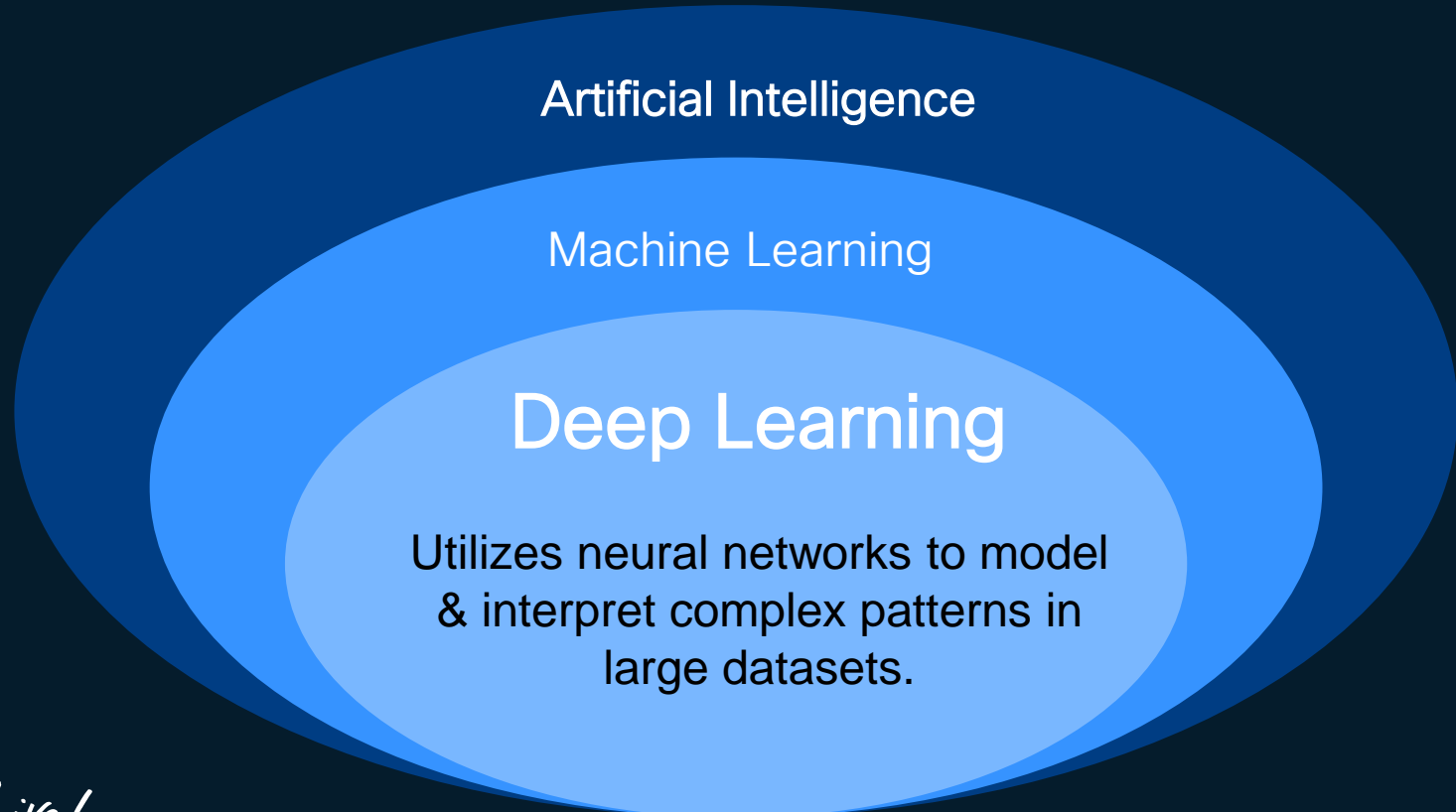
Reinforcement Learning

Trained on reward or penalty feedback loop based on its actions during simulations.

- Autonomous vehicles
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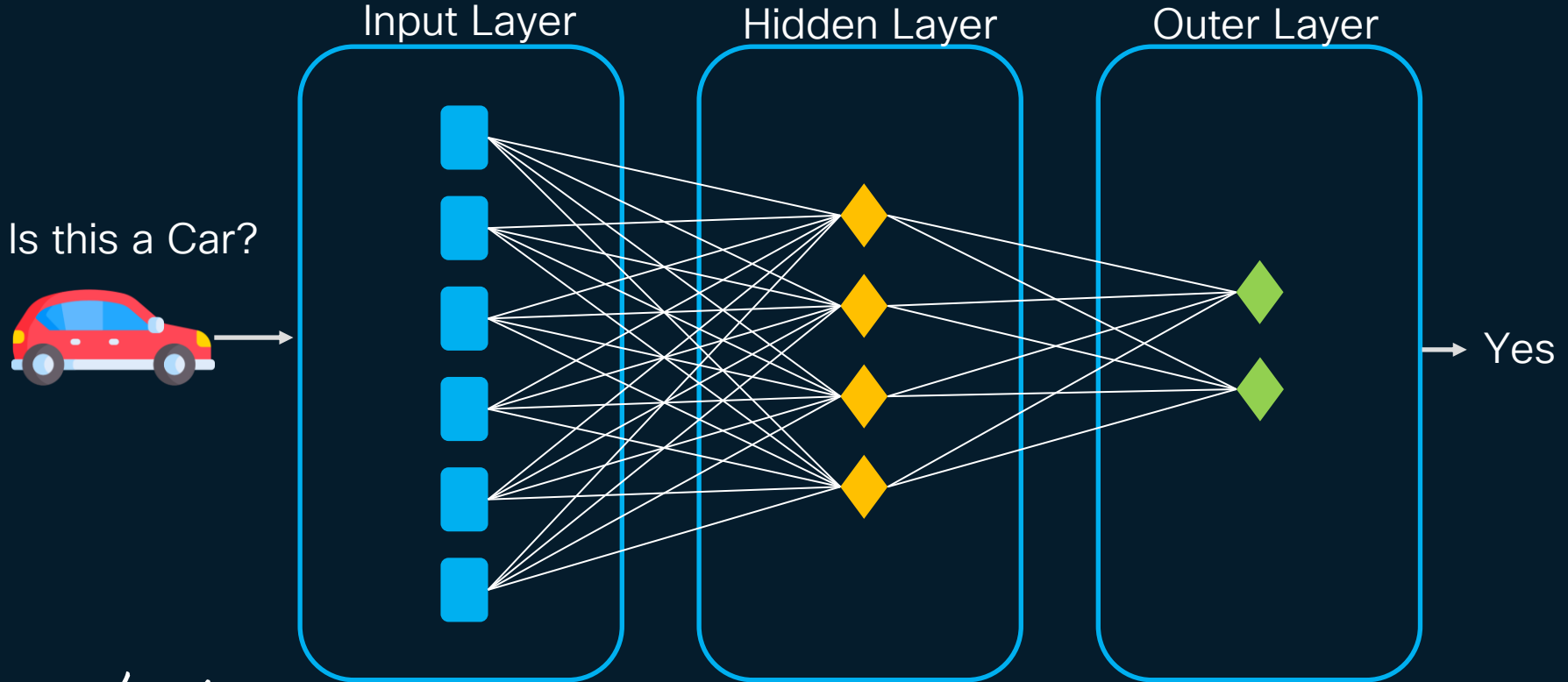


The Breakdown of Artificial Intelligence

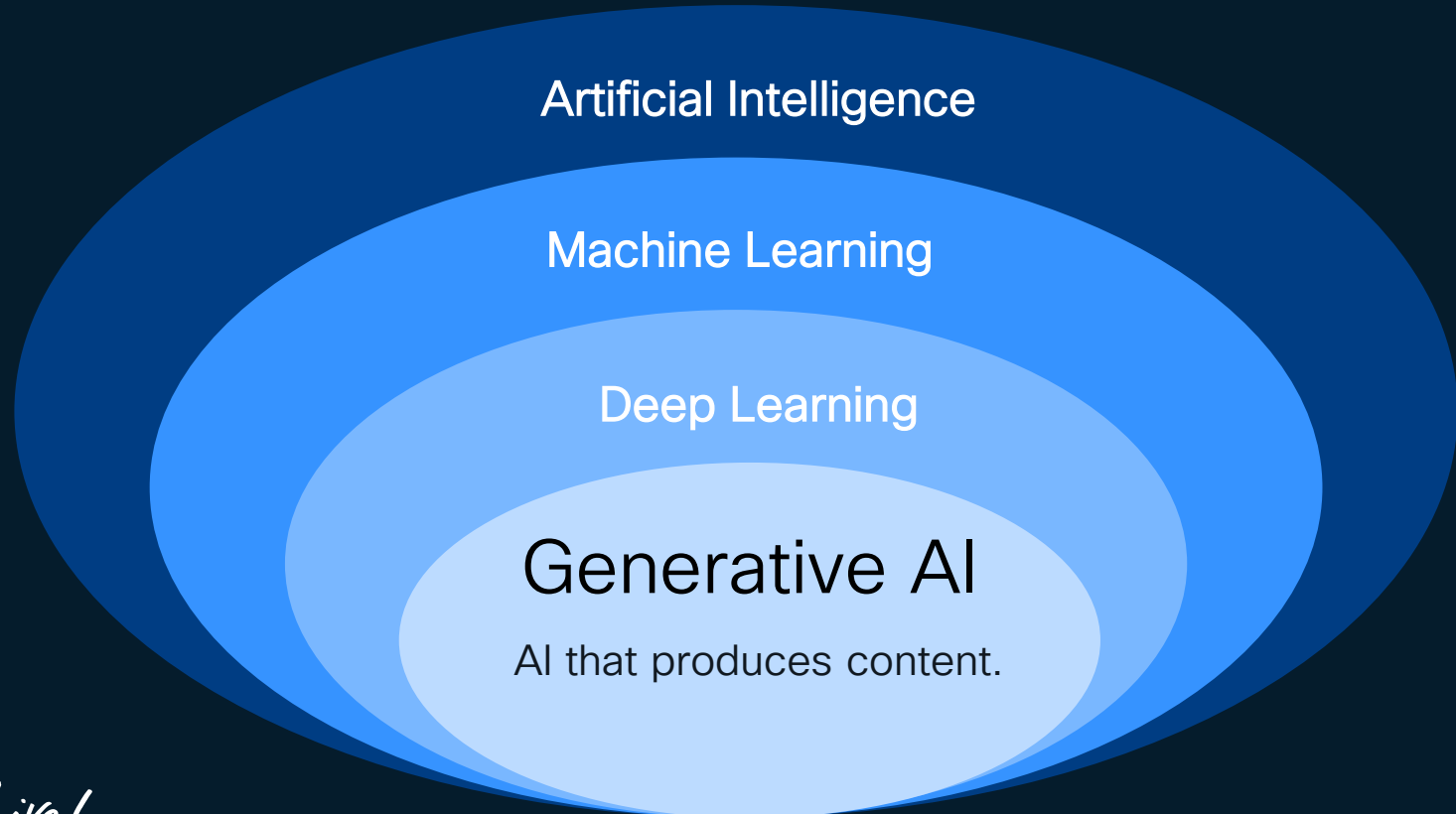


Deep Learning Uses Neural Networks to Identify Patterns

Divide and conquer large amounts of complex data



The Breakdown of Artificial Intelligence



LLMs vs Diffusion Models vs GANs

Few key Generative AI models

Large Language Models

Trained to create text content.

Ex: ChatGPT 4o

Diffusion Models

Trained to create artsy
image and video content.

Ex: DALL·E 3

How Does Generative AI Training Work?

Training Text

Large Language Models

New Text



Training Images & Videos

Diffusion Models

New Images & Videos



Generative AI Capabilities



Generative AI: Text Capabilities in Creative Writing

Prompt: Write a poem of Richard's Presentation at Cisco Live Melbourne

Generated Text

In Melbourne's heart, where tech's alive,
It's Cisco Live, 2024, we thrive!
Richard Jang takes the stage with pride,
The Cisco AI Assistant by his side.

We'll laugh, we'll learn, we'll reach new heights,
With AI guiding through the bytes.
So buckle up, and take the ride,
At Cisco Live, tech's on our side!

Generative AI: Text Capabilities in Planning

Prompt: I'm visiting Melbourne for the first time in Nov I want some recommendations

Generated Text

Day 1: Explore the Heart of Melbourne

8:00 AM – 9:00 AM: Breakfast at a Laneway Café

Start your day with a coffee and breakfast at a popular laneway café like **Manchester Press** or **Hardware Société**. Melbourne is known for its amazing coffee and brunch culture.

9:15 AM – 11:00 AM: Walk Through Hosier Lane and Laneways

Explore **Hosier Lane** and surrounding laneways, famous for street art. Snap some photos of the murals and wander through Flinders Lane.

11:15 AM – 12:30 PM: Federation Square & ACMI

Visit **Federation Square** and spend some time at the **ACMI** (Australian Centre for the Moving Image) to explore digital culture and film history.

...

Generative AI: Text Capabilities at Work

Prompt: Enhance my email to become more professional

Before

Hi [Coworker's Name]

I'm not happy with how things went today. You missed important deliverables, and it looked bad in front of the client. You need to need to fix this.

Let's talk soon,
Richard

After

Hi [Coworker's Name]

I wanted to bring up the recent client meeting where a few deliverables were overlooked. To ensure we stay on track and maintain client confidence, could we arrange a time to discuss how we can prevent this moving forward?

I value your input, and I believe we can address this effectively together.

Let's talk soon,
Richard

Generative AI: Code Capabilities for Games

Prompt: Provide me code to build the Flappy Bird game.

python

```
import pygame, random

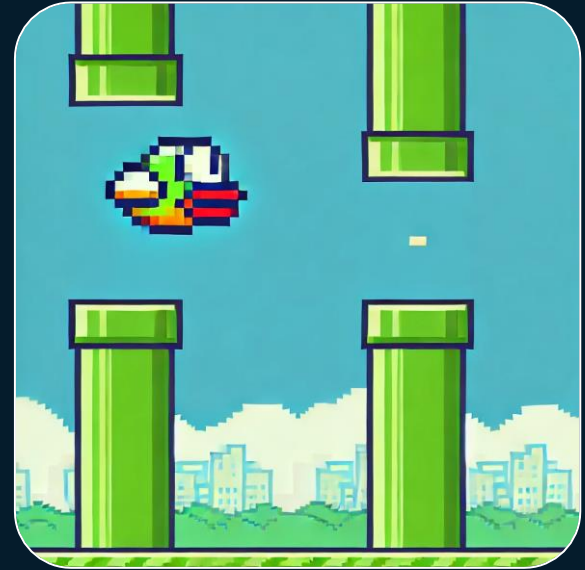
# Initialize the game
pygame.init()

# Game variables
WIDTH, HEIGHT = 400, 600
BIRD_X, BIRD_Y, GRAVITY = 50, HEIGHT // 2, 0.5
bird_movement = 0
screen = pygame.display.set_mode((WIDTH, HEIGHT))

# Load images
bird_img = pygame.image.load('bird.png')
bg_img = pygame.image.load('background.png')
pipe_img = pygame.image.load('pipe.png')

# Function to create pipes
def create_pipe():
    pipe_height = random.randint(150, 450)
    return pipe_img.get_rect(midtop=(WIDTH, pipe_height)), pipe_img.get_rect(midbottom=(WIDTH, pipe_height - 150))

# Main game loop
pipes = [create_pipe()]
clock = pygame.time.Clock()
```



Generated with DALL·E 3

Generative AI: Code Capabilities for IT Admins

Prompt: Automate VLAN Creation on a Cisco Catalyst Switch

Scenario:

You want to automate the process of creating and managing VLANs across multiple network devices using the Cisco Meraki Dashboard API.

1. Install Required Libraries:

To interact with the Meraki API, you need to install the `requests` library if you don't have it:

```
bash

pip install requests
```

2. Sample Code:

a. Automating VLAN Creation on a Cisco Meraki Device:

```
python

import requests

# Define API credentials and base URL
API_KEY = 'your_meraki_api_key'
BASE_URL = 'https://api.meraki.com/api/v1'
HEADERS = {'X-Cisco-Meraki-API-Key': API_KEY, 'Content-Type': 'application/json'}

# Define network and VLAN parameters
network_id = 'your_network_id'
vlan_id = 100
vlan_name = 'New_VLAN'
subnet = '192.168.100.0/24'
gateway_ip = '192.168.100.1'

# Create the VLAN configuration payload
vlan_data = {
    'id': vlan_id,
    'name': vlan_name,
    'subnet': subnet,
    'applianceIp': gateway_ip
}
```

Generative AI: Image Capabilities

Prompt: Generate an image representing Melbourne Australia



Generative AI: Image Capabilities

Prompt: Have a dog on a rocket fly over



Generative AI: Image Capabilities

Prompt: Make it intense and cyberpunk.



If Use Correctly, The Possibilities are Endless



Large Language Models (LLMs) Deep Dive

How are LLMs Trained for Text and Code?

Step 1: Data Collection
(Feeding Knowledge)

Step 2: Tokenization
(Breaking It Down)

Step 3: Parameter Learning
(Storing Knowledge)

Step 4: Fine-Tuning
(Specialized Learning)

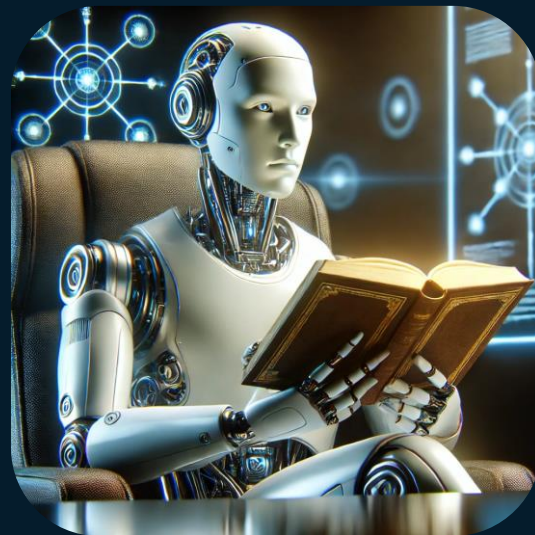
Step 1: Data Collection (Feeding Knowledge)

What Happens?

- LLMs are trained on massive amounts of text data—books, articles, websites, and more.

Analogy:

- Giving a child access to a library of books, the more they read, the more they learn.



Fun Fact: GPT-4 was trained on terabytes of text, equivalent to hundreds of millions of books.

Step 2: Tokenization and Vectorization

Breaking it Down

How It Works:

- The text is split into **tokens** (words, subwords, or characters) so the model can process it.
- Tokens are further split into vectors (numerical values)

Analogy:

- Teaching a child to break down sentences into words & letters.

Raw Text

"My name is Richard"

Tokenized Text

["My", "name", "is", "Richard"]

Vectorized Tokens

"My" -> [0.12, -0.43, 0.33, 0.85, -0.17]
"name"-> [0.52, 0.10, -0.21, 0.44, -0.09]
"is" -> [0.09, -0.15, 0.47, 0.13, 0.56]
"Richard" -> [0.67, -0.25, -0.33, 0.78, 0.45]

Step 3: Parameters Learning (Storing Knowledge)

What Happens?

- Vectors flow through neural networks; parameters learn token relationships.

Analogy:

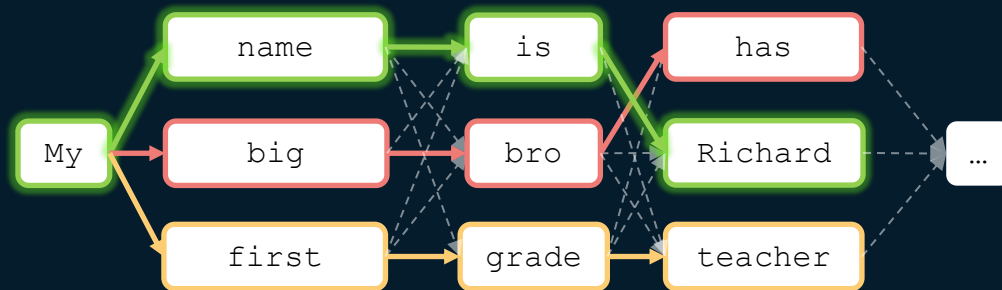
- A child learns how words fit together to form sentences.

Vectorized Text

```
"My" -> [0.12, -0.43, 0.33, 0.85, -0.17]
"name"-> [0.52, 0.10, -0.21, 0.44, -0.09]
"is" -> [0.09, -0.15, 0.47, 0.13, 0.56]
"Richard" -> [0.67, -0.25, -0.33, 0.78, 0.45]
```

Neural Network

Parameters store relationships between tokens to predict next words.



Step 4: Fine-Tuning the Model (Optimizing Predictions)

What happens?

- Parameters are adjusted to minimize prediction errors.
- The model improves by learning from its mistakes

Analogy:

- A child practices speaking by receiving feedback & adjusting.

Scenario: Neural Network Prediction

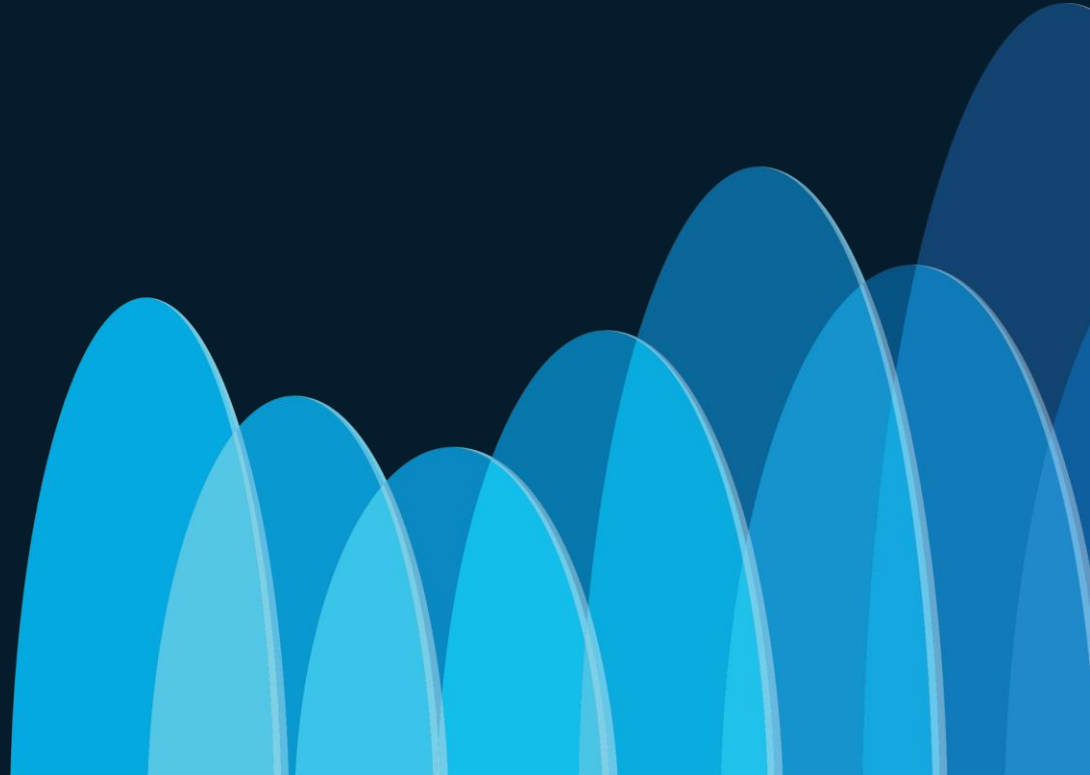


RLHF catches issue and provides feedback

Parameters Adjusted for Accuracy



Diffusion Model Deep Dive



How are Diffusion Models Trained for Images?

Step 1: Data Collection
(Feeding Knowledge)

Step 2: Noise Addition
(Disrupting the Image)

Step 3: Denoising
(Restoring the Image)

Step 1: Data Collection (Feeding Knowledge)

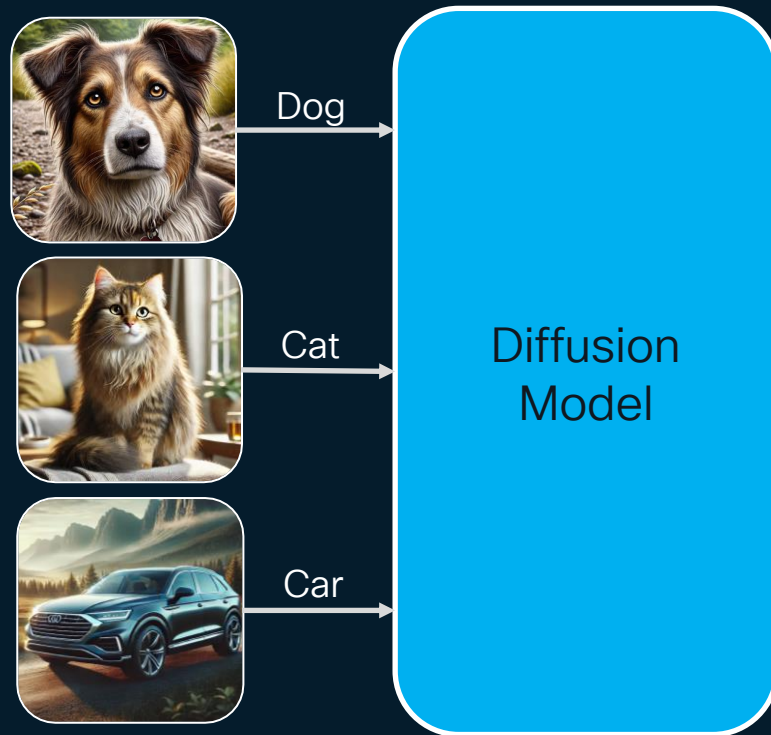
What Happens?

- Feed model large datasets of images paired with descriptive text to learn.

Analogy:

- Given a person photos with captions they learn to associate certain text with specific visual patterns.

Fun Fact: DALL-E is trained on billions of images with text descriptions.



Step 2: Add Noise (Disrupting the Image)

What Happens?

- The model adds noise to the image until it's unrecognizable.

Analogy:

- Crumpling a piece of so it's harder to recognize the original content.



Original



Noise Added

Fun Fact: The noise used in diffusion models isn't random—it's carefully structured to ensure that when the model learns to denoise, it's learning how to generate fine details.

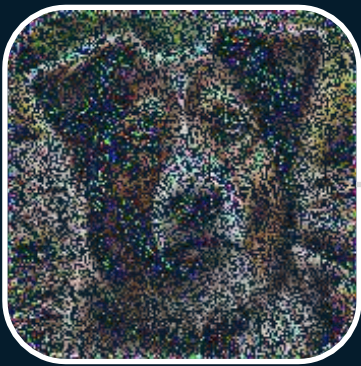
Step 3: Denoising (Restoring the Image)

What Happens?

- The model attempts to reconstruct the noisy image to its original form while learning in the process.

Analogy:

- Learning to draw the artwork from that crumpled paper.



Noise Added



Denoised

How Diffusion Model Converts Text to Image

Step 1: Understanding the Prompt

Step 2: Noise Initialization

Step 3: Denoising with Text

Step 4: Image Refinement

Step 1: Understanding the Prompt

Prompt: Generate an image of a dog on a flying carpet!

Tokenized Text

["Generate", "an", "image", "of", "a", "dog", "on", ...]

Vectorized Tokens

[0.23, -0.56, 1.04, 0.78, 0.99, 1.21, 0.89, 0.32, ...]

Neural Network Layers

Analyzes and understands the meaning and context

Step 2: Noise Initialization

Prompt: Generate an image of a dog on a flying carpet!

How It Works

- Start with a random noisy image.
- Text encoding guides the process using learned text-image pairs.

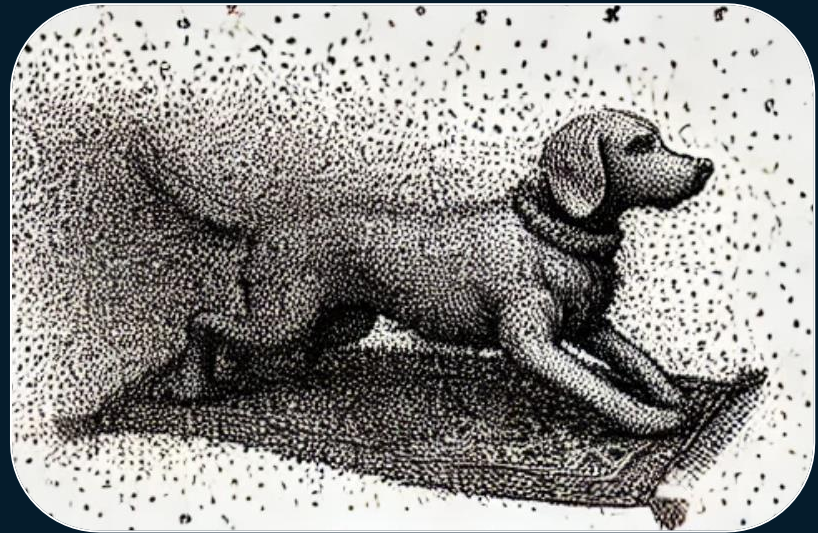


Step 3: Denoising with Text Guidance

Prompt: Generate an image of a dog on a flying carpet!

How It Works

- The model removes noise using patterns learned from training.
- The shapes of the dog and carpet become clearer.



Step 4: Refining the Image

Prompt: Generate an image of a dog on a flying carpet!

How It Works

- Noise is entirely removed.
- Final image of the dog flying on the magic carpet is complete.



What's a model trained
on everything called?

A **Foundational** Generative AI Model!

Jack of All Trades Model:

- Pre-trained on vast datasets including text, images, code, etc.
- Can handle a broad array of questions across domains.



However, foundational
models do have limitations...

Lack of

Real-Time Data

Domain Specific Data

Up-to-Date Data

can cause Hallucinations

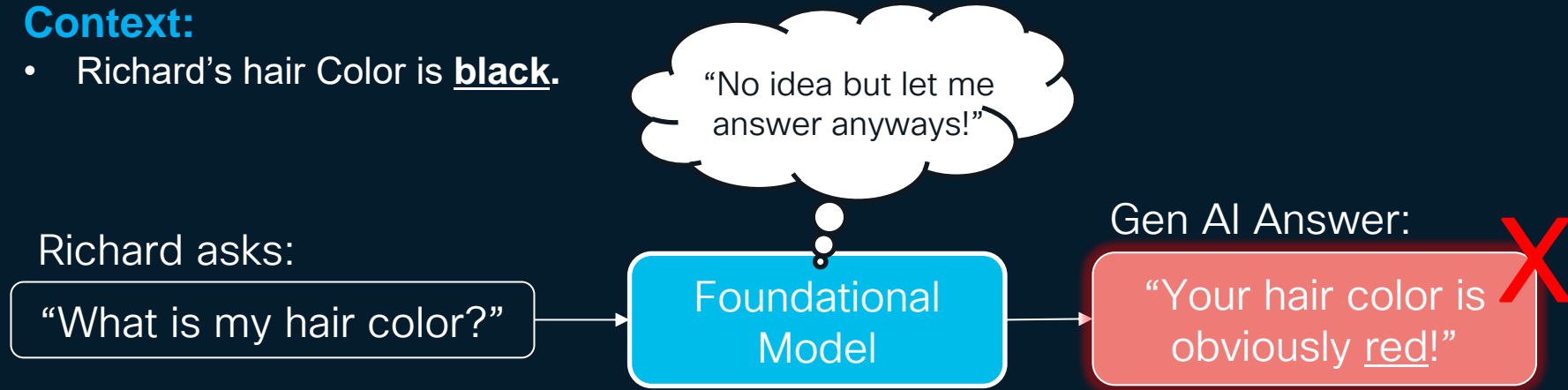
What is a Gen AI Hallucination?

Definition:

- When AI models generate information that is **plausible but incorrect** or completely made up often due to insufficient training data.

Context:

- Richard's hair Color is black.



How Are Hallucinations Mitigated?

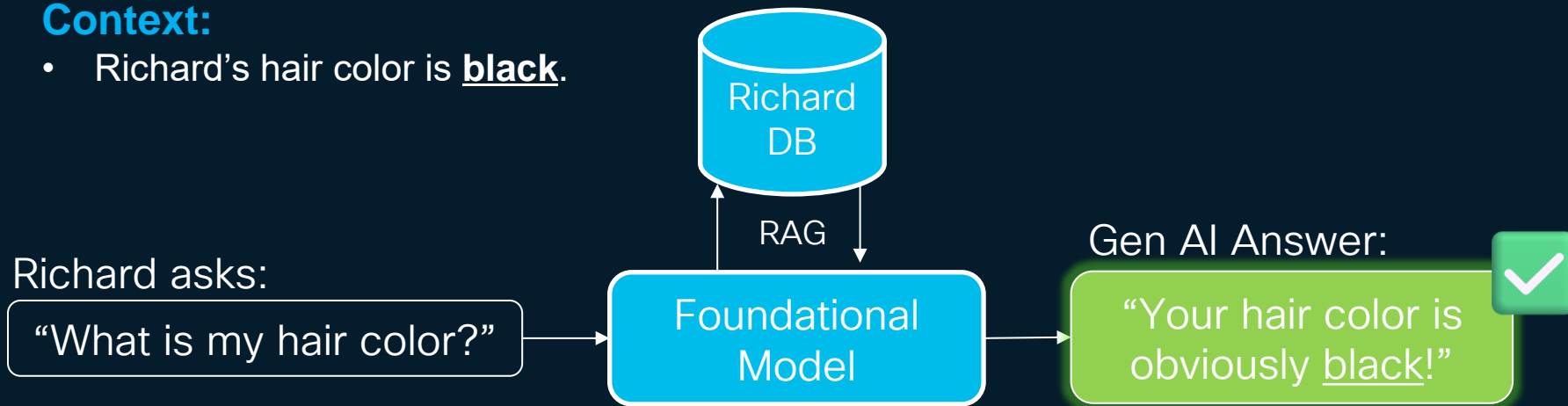
Retrieval Augmented Generation (RAG)

Definition:

- Allows the AI Model to query external sources for data.

Context:

- Richard's hair color is black.



How to use Gen AI effectively?

Prompt Design and Engineering!

The strategy of crafting specific input to produce the best response

Strong Search
Engine Prompt



Strong Gen
AI Prompt

With Gen AI, Context and Details Matter!

Prompt Design Example Scenario

User's Intent:

- Wants to plan a healthy meal for a family on a budget.

Likely Search Engine Prompt:

- “Healthy budget meal plan for family”

Not a good prompt for Gen AI



AI Response Using Search Engine Prompts

Original Prompt: “Healthy budget meal plan for family”

AI Response:

- **Meal 1: Spaghetti with Marinara Sauce**
Simple, affordable dish with pasta and tomato sauce.
- **Meal 2: Chicken Stir-Fry**
Stir-fry chicken with mixed vegetables and rice.

Guideline 1: Be Specific

Improved Prompt:

“What are some healthy meals I can prepare for a family of four on a budget?”

Guideline 2: Give Context

Improved Prompt:

“What are some healthy meals I can prepare for a family of four on a \$50 weekly grocery budget?”

Guideline 3: Use Examples

Improved Prompt:

“What are some healthy meals I can prepare for a family of four on a \$50 weekly grocery budget?

Include specific ingredients like pasta and chicken.”

Guideline 4: Breakdown Complex Tasks

Improved Prompt:

“First, list out healthy meals I can prepare for a family of four on a \$50 weekly budget including specific ingredients such as pasta and chicken.

Then, provide a simple recipe for each meal.”

Guideline 5: Refine – Add a Persona

Improved Prompt:

“Imagine you’re a professional chef creating a meal plan for a family of four on a \$50 weekly grocery budget including ingredients such as pasta and chicken.

First, list the meals you would suggest, then provide a simple recipe for each meal with affordable ingredients.”

After Prompt Design – Detailed & Precise

Improved Prompt: “Imagine you’re a professional chef creating a meal plan for a family of four on a \$50 weekly grocery budget....”

AI Response:

Meal 1: Lemon Garlic Chicken Pasta

- **Ingredients:** Chicken breast, pasta, garlic, lemon, olive oil, parmesan cheese.
- **Recipe:**
 - Cook pasta and set aside.
 - Sauté garlic in olive oil, then add chicken and lemon juice.
 - Toss with pasta and top with parmesan cheese.**Cost Estimate:** Around \$10 for 4 servings.

Meal 2: Chicken and Vegetable Stir-Fry

- **Ingredients:** Chicken thighs, frozen mixed vegetables, soy sauce, garlic, rice.
- **Recipe:**
 - Stir-fry chicken in a pan with garlic and soy sauce.
 - Add mixed vegetables and cook until tender.
 - Serve over rice.**Cost Estimate:** Around \$8 for 4 servings.

You've Mastered the the Basics!



What is Cisco's AI Strategy?

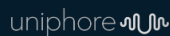
Our AI strategy...
To connect and protect the AI era.

Bolstering our AI capabilities with acquisitions, investments and strategic partnerships

Acquisitions



Investments



Partnerships



\$1B Investment Fund
AI Infrastructure and AI Software

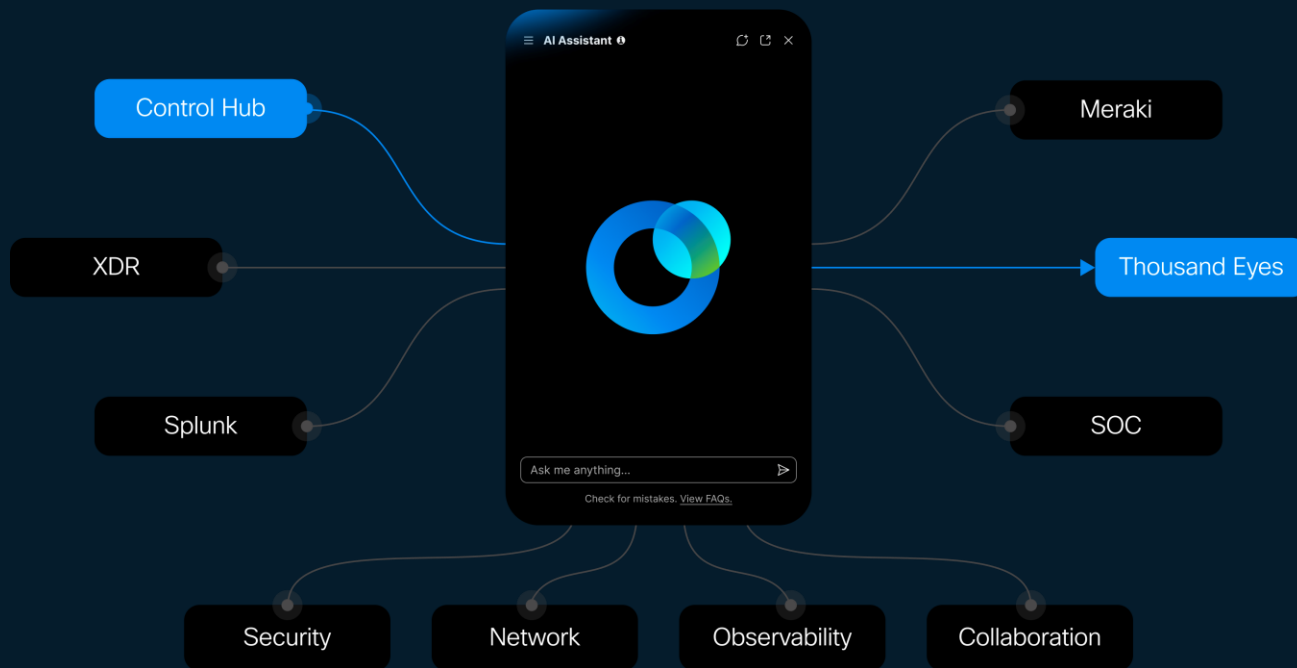
AI Partner Specialization Training for
Channel Partners

AI Across Cisco's Product Portfolio

AI		Networking	Security	Collaboration	Observability	CX
		Generative AI	Predictive AI	Predictive AI	Predictive AI	Predictive AI
	Generative AI	<ul style="list-style-type: none">Enabled by Silicon One Scheduled Fabric Ethernet SolutionNext-gen AIOps & AssuranceAI Assistant for Networking	<ul style="list-style-type: none">AI Assistant ExperiencePurpose-built LLMsAutonomous Actions	<ul style="list-style-type: none">Language IntelligenceNew Webex AI AssistantIntelligent Contact CenterRealtime Media Models	<ul style="list-style-type: none">Model observabilityPrompt interfaceAI assistant for summarization	<ul style="list-style-type: none">Engineer copilotsAutomated code creationCustomer Q&A & Sentiment analysisRoot cause analysisSelf-remediationAdoption advisory
	Predictive AI	<ul style="list-style-type: none">Network ManagementNetwork AssuranceAnomaly DetectionChange AutomationPredictive Internet	<ul style="list-style-type: none">Email Compromise AnalysisThreat DetectionEndpoint Trust MonitorMalware ProtectionData ProtectionAlert Prioritization	<ul style="list-style-type: none">Background noise removalVoice focusBandwidth extensionPeople focus / framesPersonal/Team insightsCinematic MeetingsMeeting Zones	<ul style="list-style-type: none">Statistical ModelingBaseliningAnomaly DetectionIntelligent AutomationData Tagging	<ul style="list-style-type: none">Virtual EngineersAnalytics EngineAnomaly DetectionSentiment PredictionManaged InsightsCX Cloud – Insights & Analytics

Cisco AI Assistant

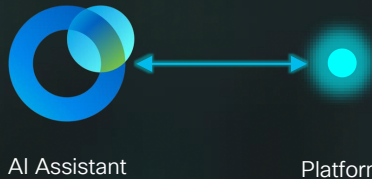
Bringing together “Skills” across Cisco to 10x customer experience



AI Assistants Have “Skills”, Not Features

AI Skills

- **Definition:** Any action that a Cisco AI Assistant can perform.
- **Skills:** Troubleshooting, configuration, recommendations, etc.



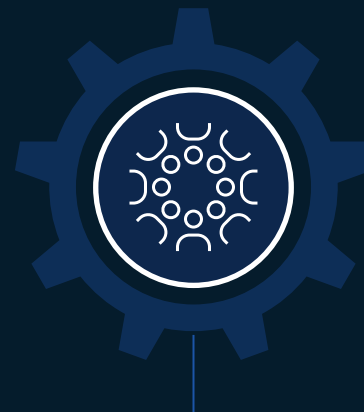
Let's Deep Dive into Cisco's Generative AI Portfolios!



Generative AI
for Security



Generative AI
for Networking



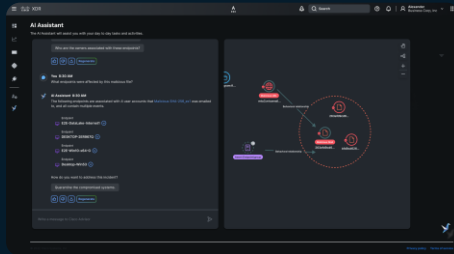
Generative AI
for Collaboration

Generative AI for for Security



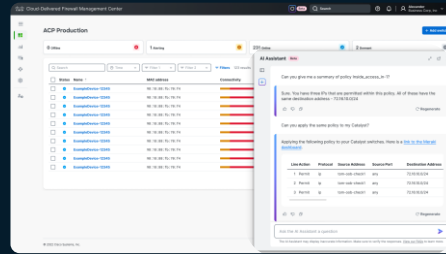
Cisco Security's Suite of AI Assistants

XDR



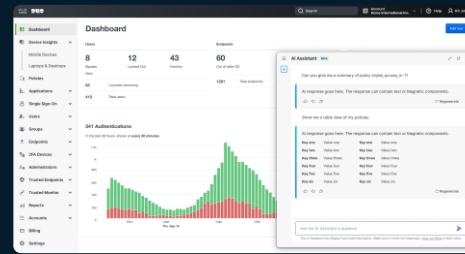
Detect a **phishing attack** that has setup a C&C and is exfiltrating data outside the network.

Firewall



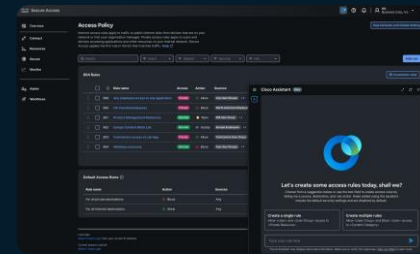
Block any **outbound** exfiltration to the IP address identified from the C&C

Duo



Lock affected user out of critical applications

Secure Access



Ensure users **access** only resources they need securely

AI Assistant for Firewall Management Center



Cisco Firewall AI Assistant Skills

Documentation Summarization

Search Cisco's product docs for clear, actionable, and simplified insights

Policy Rule Creation

Create policies with natural language

Ticketing Integration with CX

Enables TAC case creation and modification



Firewall

Policy Insights

Enables quick discovery of policies with fast, rich data responses on-demand

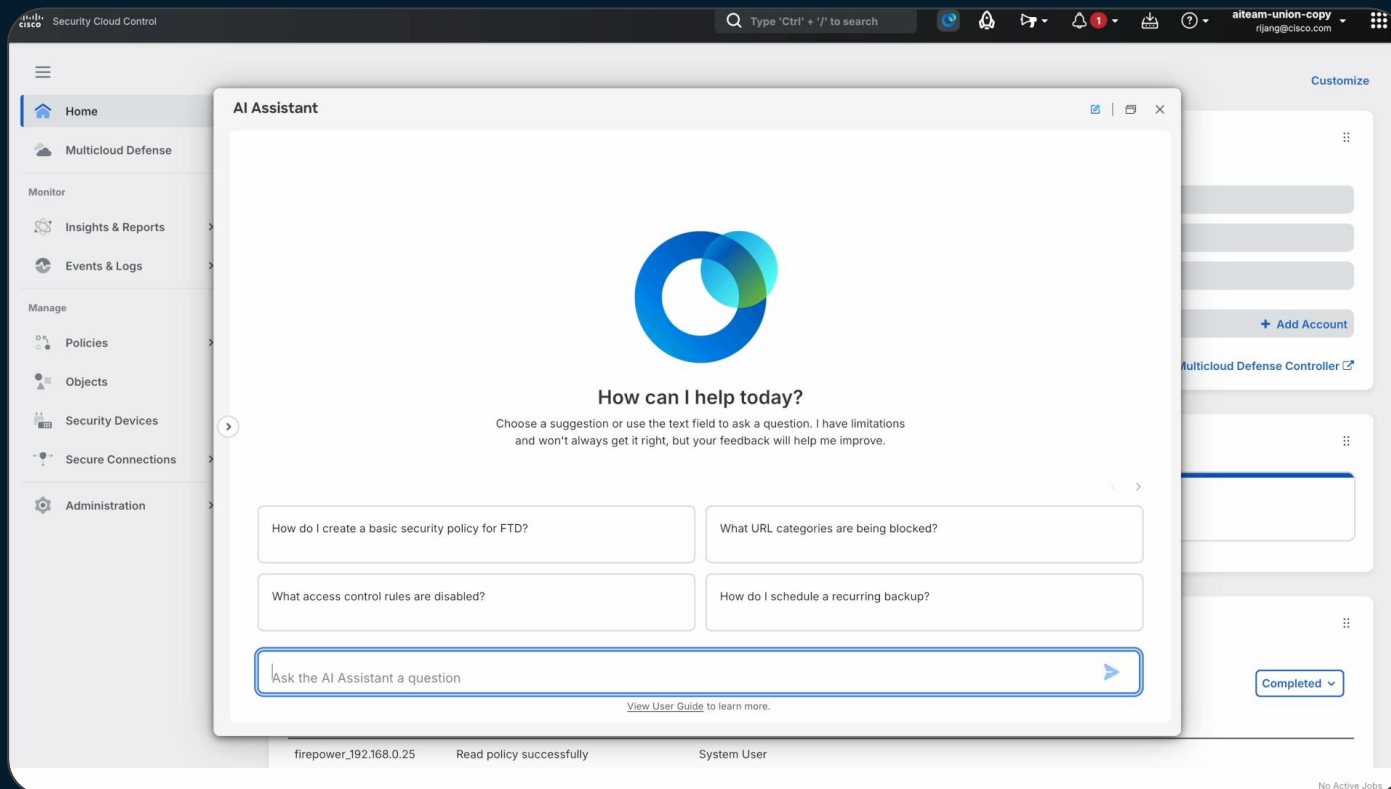
Policy Analysis & Optimization

Proactively discover and remediate policy misconfigurations and anomalies

AIOps Integration

Insights into firewall traffic, configuration, capacity to enhance security posture.

CX Ticketing Skill

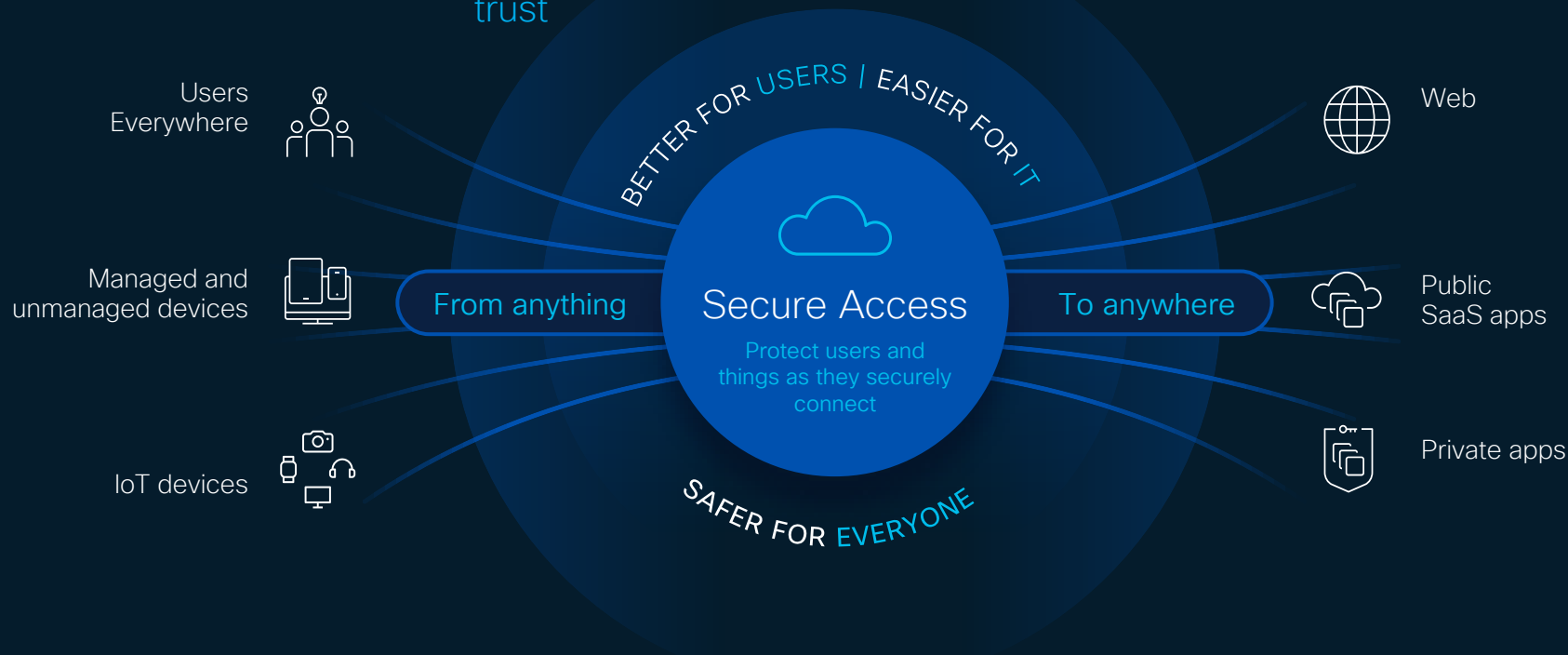


AI Assistant for Cisco Secure Access



Modernize your defense with Cisco Secure Access

Converged cloud-native security grounded in zero trust



Cisco Secure Access AI Assistant Skills

Documentation Summarization

Search Cisco's product docs for clear, actionable, and simplified insights

Policy Rule Creation

Create policies with natural language

Troubleshooting User Access

Automates triaging for access issues



Secure Access

Policy Insights

Enables quick discovery of policies with fast, rich data responses on-demand

Policy Analysis & Optimization

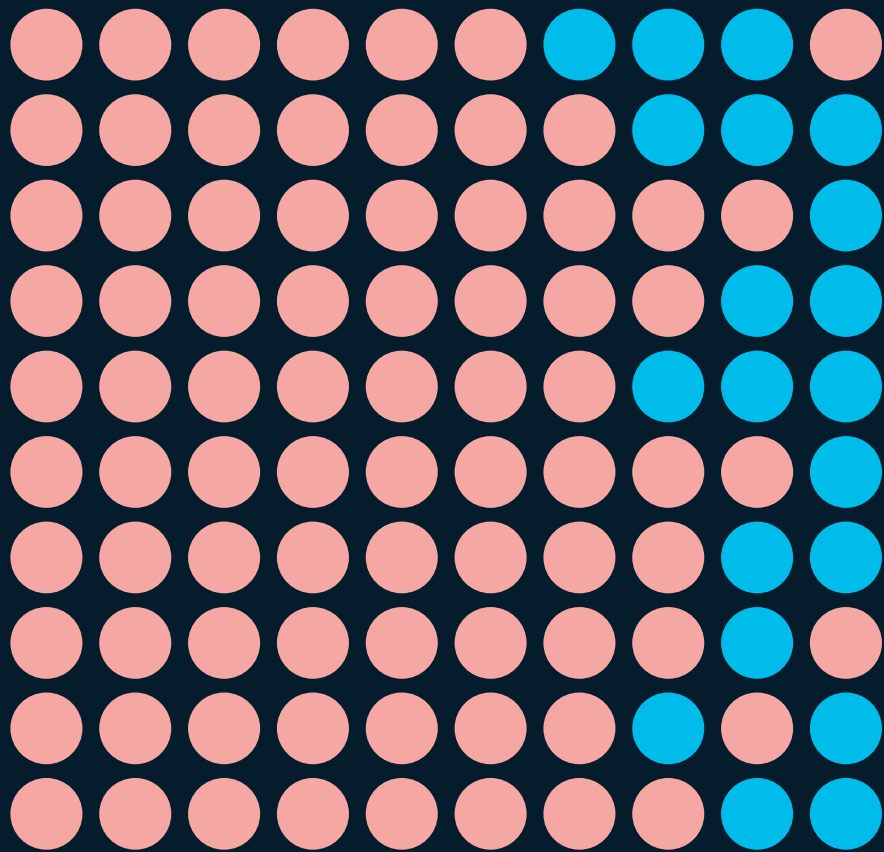
Proactively discover and remediate policy misconfigurations and anomalies

Digital Experience Monitoring

Quick issue research, trend analysis, insights

AI Assistant for Cisco Duo





80%

of breaches leveraged
identity as a key component

Cisco Talos Incident Response Data 2023-2024

Protect Against Identity Threats with Cisco Duo



Identify

- Cross-platform identity visibility
- Identity posture evaluation
- Baseline of identity behavior



Protect

- Enforce most effective MFA
- Establish device trust
- Build dynamic, risk-based access policy



Detect

- Monitor threats & changes in posture
- Correlate activity across IAM platforms
- Detect identity-based attack patterns



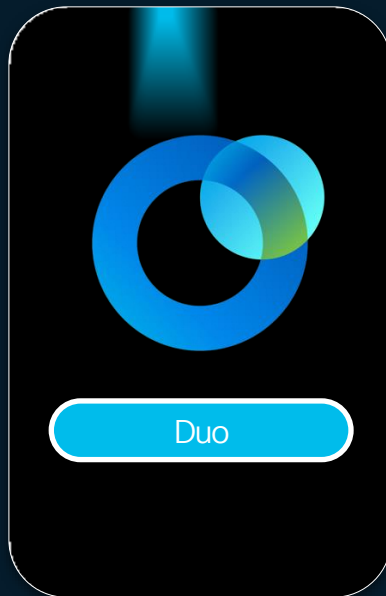
Respond

- Step-up or block risky logins
- Powerful remediation actions
- Automate quarantine actions

Cisco Duo AI Assistant Skills

Documentation Summarization

Search Cisco's product docs for clear, actionable, and simplified insights



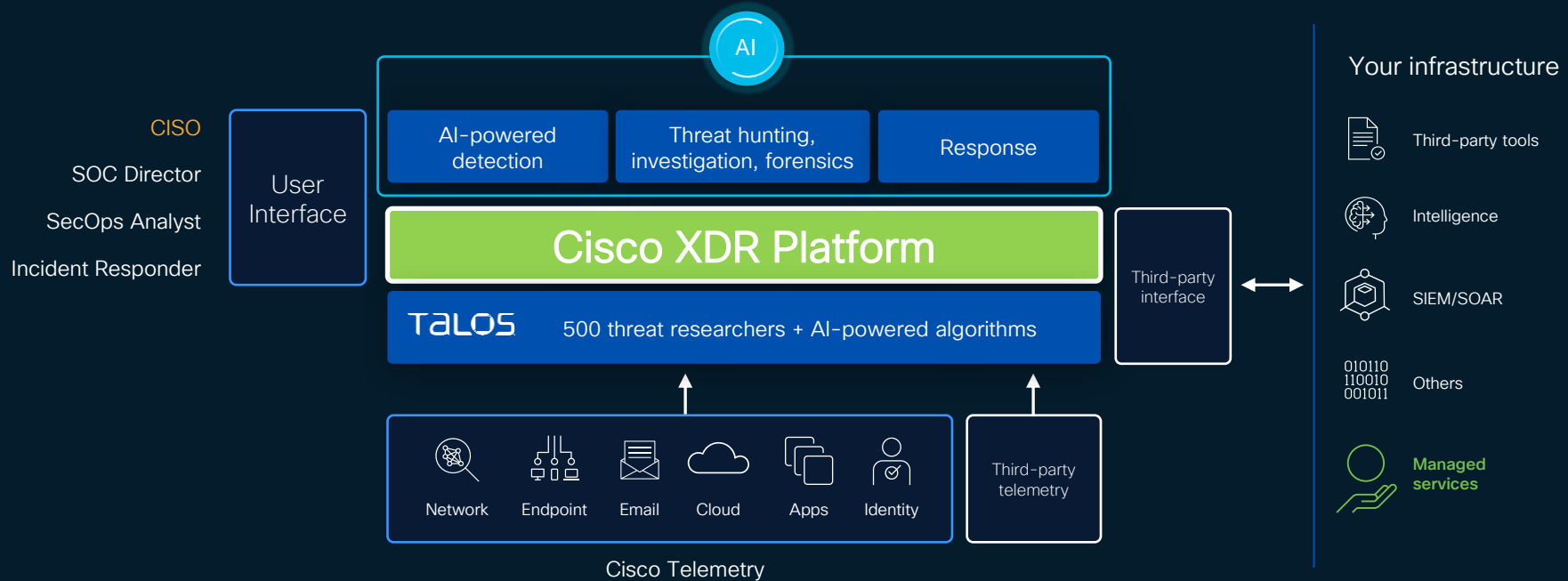
Troubleshooting User Access

Troubleshoots auth issues by looking at auth sequences, policy breakdown, group status, etc.

AI Assistant for Cisco XDR



Complexity, simplified with an AI-first XDR



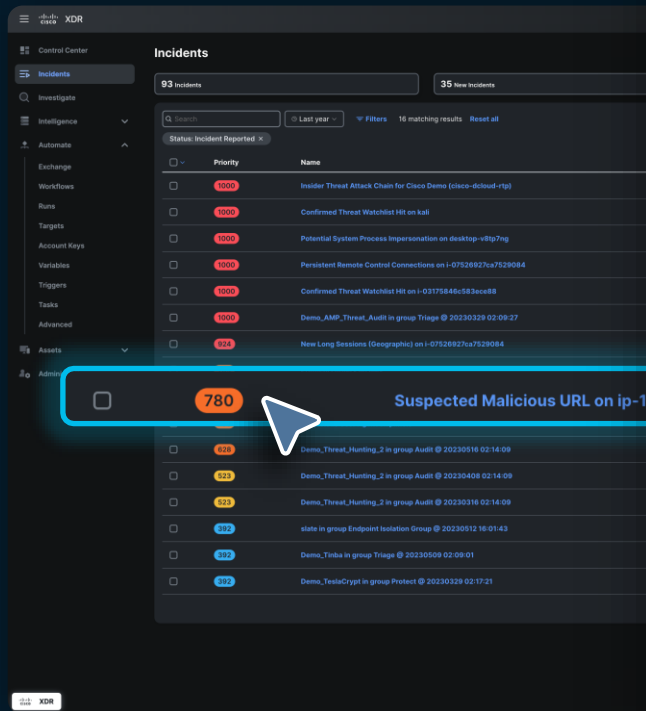
Improve alert fidelity | XDR + AI Assistant

Deliver risk- and impact-based prioritizations with **threat correlation**

Investigate, prioritize, respond, and recover **from one console**

Command every response and action with **AI-driven automation**

Get confident verdict with **cross-domain telemetry** and **threat intelligence enrichment**



Suspected Malicious URL on ip-192-168-249-115

Priority **780** Status Incident Report...

Reported by **Cisco XDR Analytics (cisco-dcloud-rtp)** 18 hours ago

Unassigned

MITRE ••••••••••

Priority score breakdown

780 | **78** Detection Risk | **10** Asset Value at Risk

Short description

The device communicated with a suspected malicious URL. The alert uses the Suspected Malicious URL observation and requires URL data provided by firewalls via the Cisco Security Analytics and Logging (SAL) integration or Enhanced Netflow.

Cisco XDR AI Assistant Skills

Documentation Summarization

Provides concise incident summary to enable quick understanding of an ongoing incident.

Respond and Remediate

Automate response actions, create Webex War rooms, and generate incident reports

AI-Generated Notes

Automatic generation of incident investigation notes of manual actions for XDR audit logs



XDR

Explain and Recommend

Provides recommendations to remediate incidents, thereby reducing response times

Interpret Incidents

Ask natural language questions to rapidly understand an ongoing incident

Preemptive Detection & Response

Augment attack chain detection in XDR with recommended response actions

AI Assistant for Security Cloud Control

Gain end-to-end visibility from a single screen



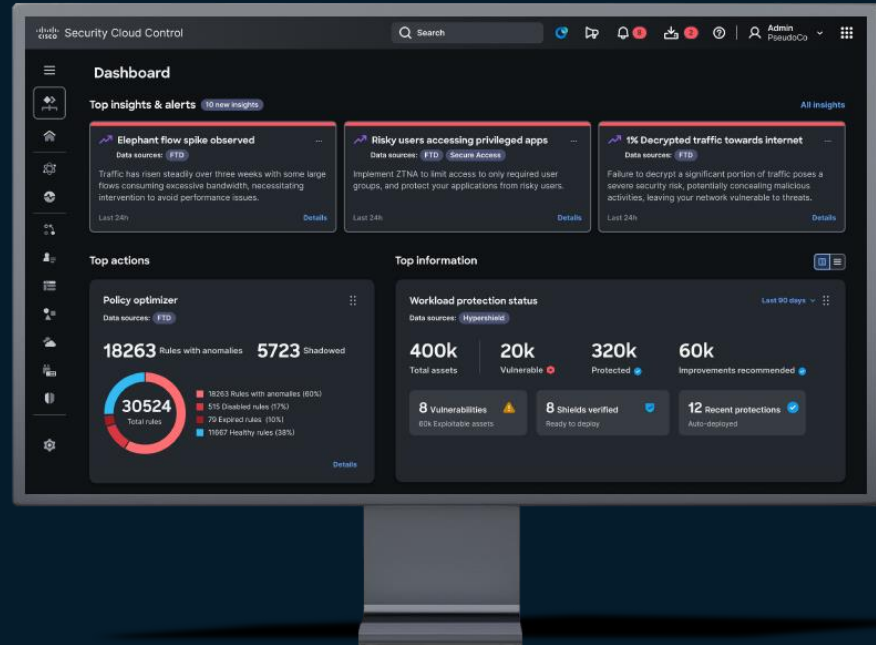
Access comprehensive insights across all security platforms.



Enable prompt issue resolution through a live view of network traffic and security events



Empower informed decisions with operational insights from network data



First Glimpse of the Unified AI Assistant

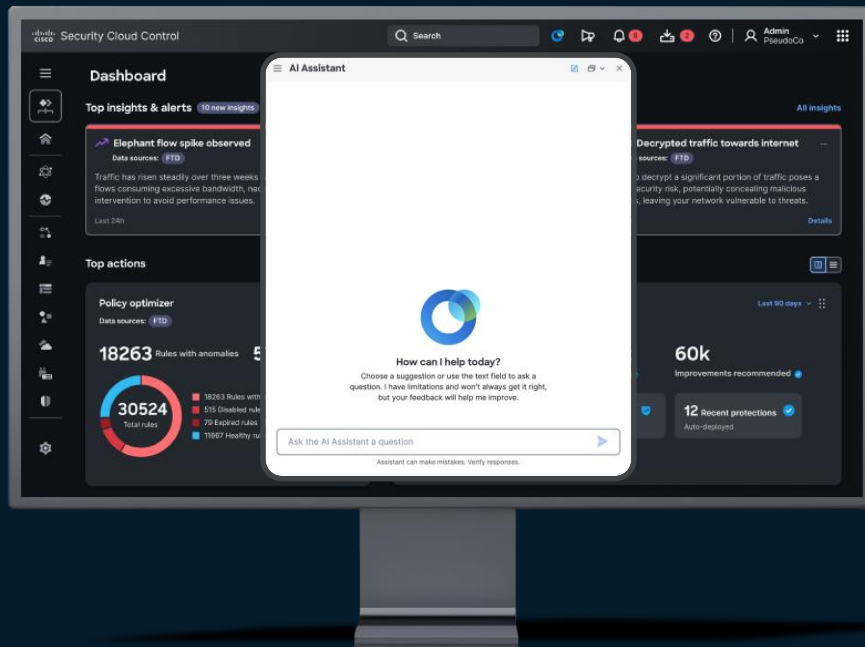
Single AI Assistant

- One assistant on SCC routes user questions to the appropriate platform.

Skills Integration

Includes skills from Firewall, Secure Access, and Hypershield AI Assistants

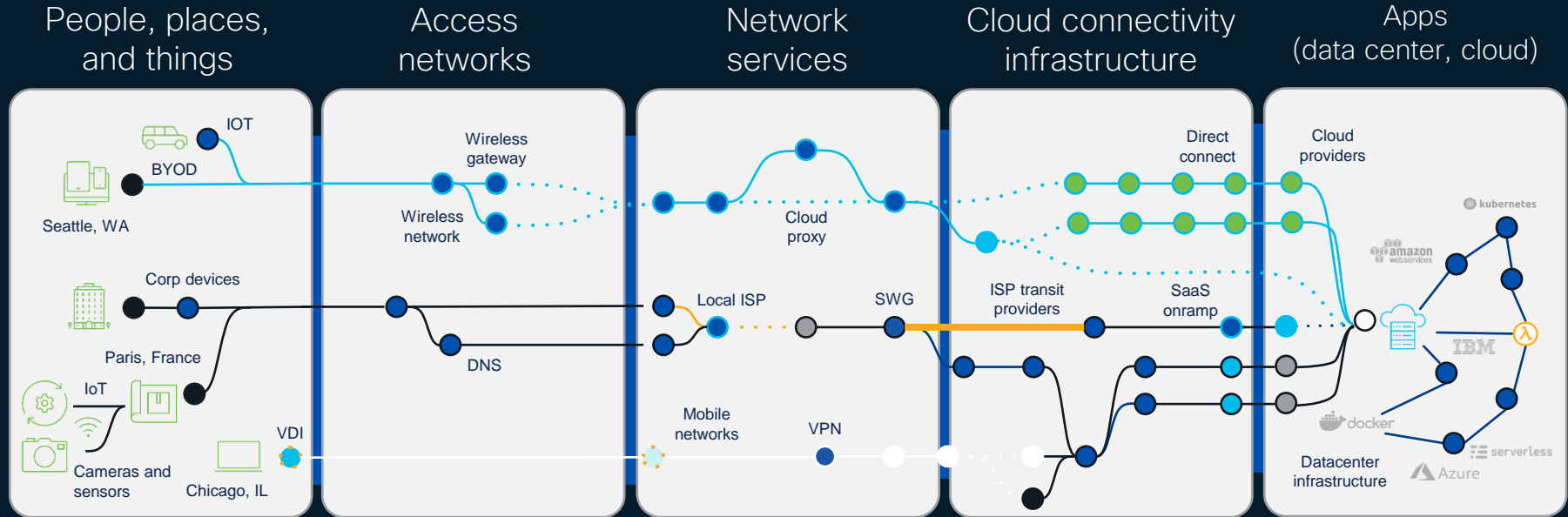
Note: For first phase.



Generative AI for Networking

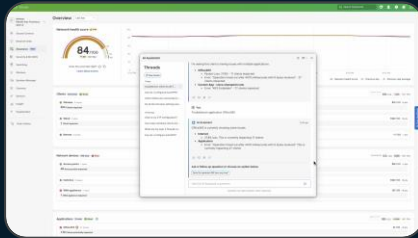


Networks Are Complex, AI Simplifies It!



Cisco Networking's Suite of AI Assistants

Meraki



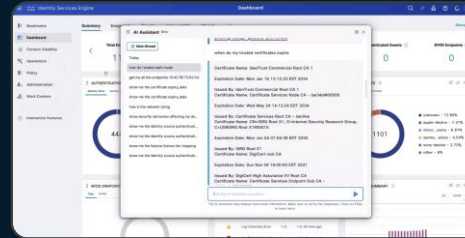
Cloud-managed networking with security, visibility, and device control.

Catalyst Center



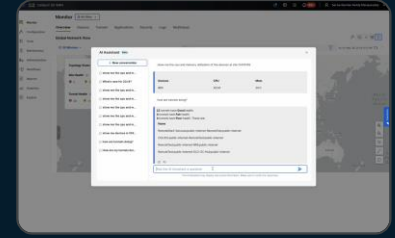
On-prem network management for automation, policy, security & assurance.

Identity Service Engine



Enforces identity-based access policies, ensuring secure network access and compliance

SD-WAN



Optimizes WAN traffic and security across remote sites.

Cisco Networking AI Assistant Skills

Documentation Summarization

Summarize key documentation and best practices for quick guidance.

Troubleshooting

Diagnose issues and recommend solutions based on network data.

Impact Analysis & Optimization

Assess impacts of changes and optimize for efficiency.



Networking

Network Visibility

Monitor real-time and historical network health and performance.

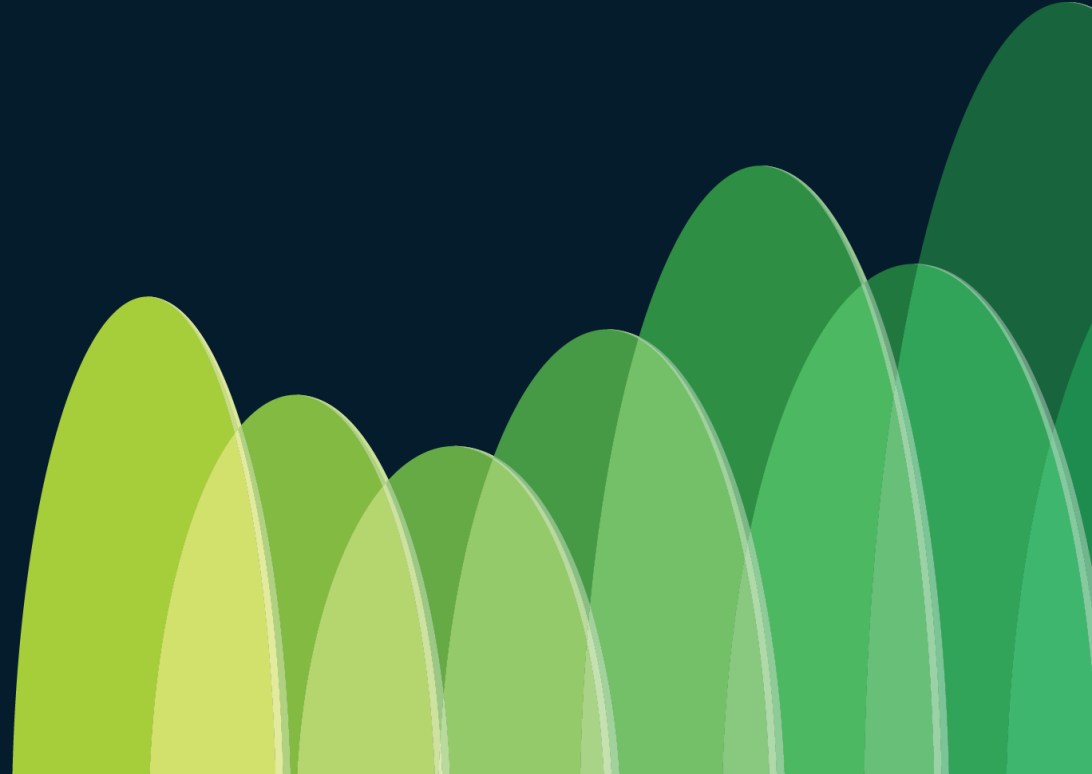
Configuration & Migration

Assist with feature setup and migration readiness.

Support & Case Management

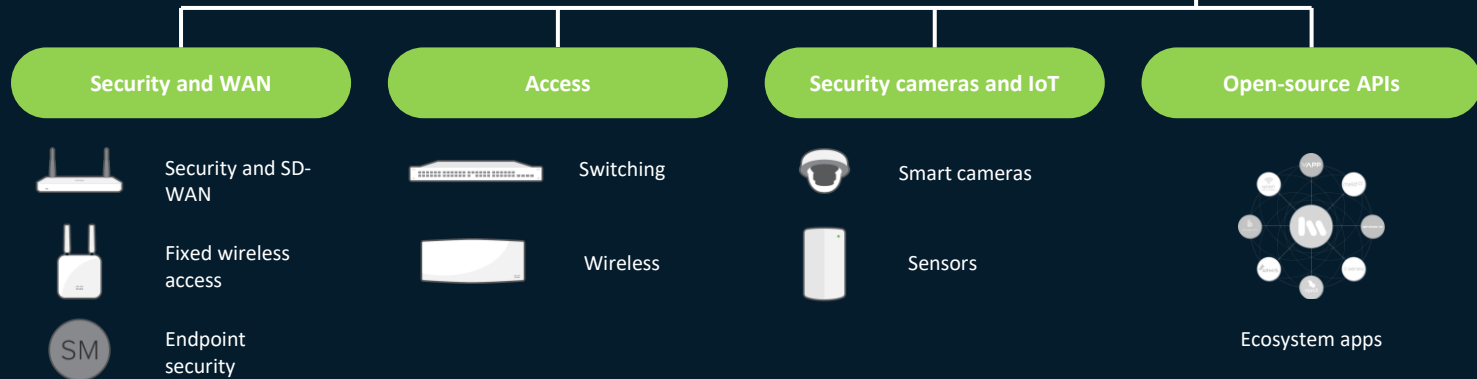
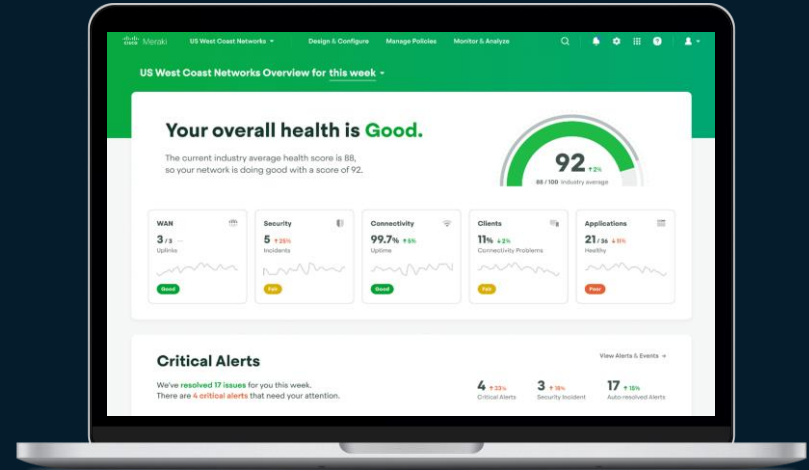
Streamline TAC support and automate case management tasks.

AI Assistant for Meraki



Built on an Intelligent cloud platform

94% of customers save time with a **single** intuitive dashboard



- Network Meraki San Francisco SFO12
- Secure Connect
- Network-wide
- Assurance New
- Security & SD-WAN
- Switching
- Wireless
- Systems Manager
- Cameras
- Sensors
- Insight
- Organization
- Find in Menu

Overview Last day

Your network health score is **Fair**
Some end clients are unable to access their applications and have moderate interruption from the network.



Clients 2029 total Fair 86/100 -1 pts last day

Wireless 6 issues 86/100 -8 pts
540 Clients impacted

Remote 0 issues —/100 — pts

Wired 2 issues 100/100 +0 pts
24 Clients impacted

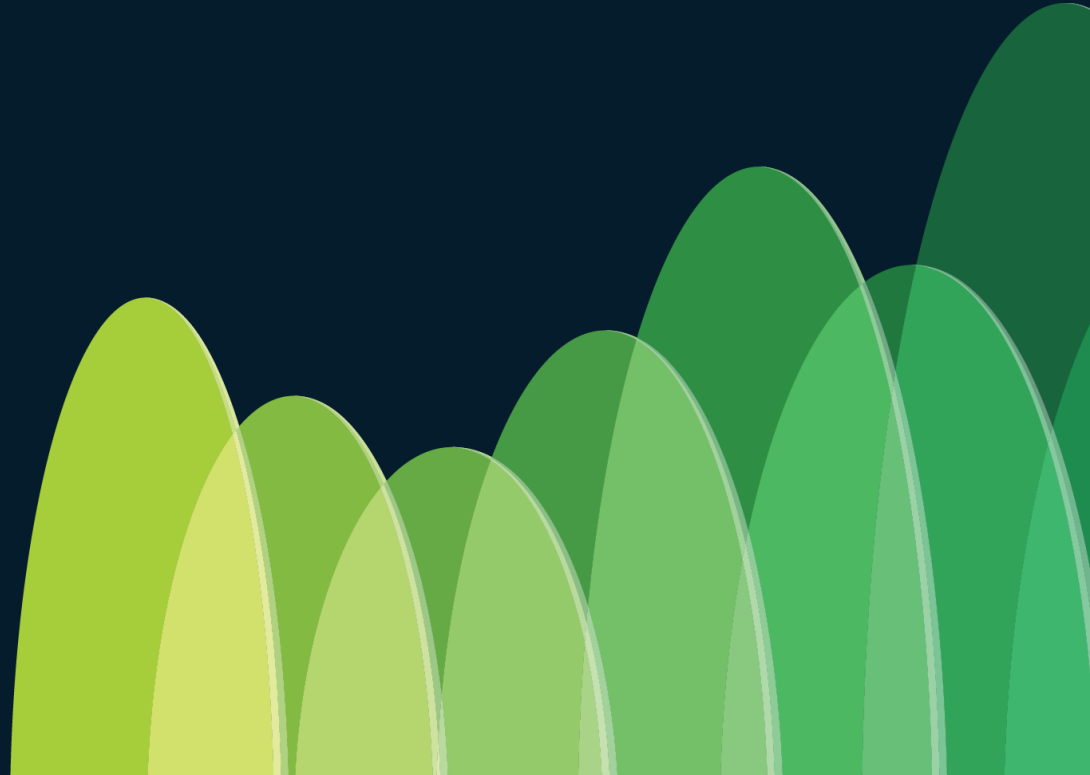
Applications 11 total Good 99/100 0 pts last day

Salesforce - meraki 98/100 +0 pts

meraki.enterprise.slack.com 98/100 +0 pts

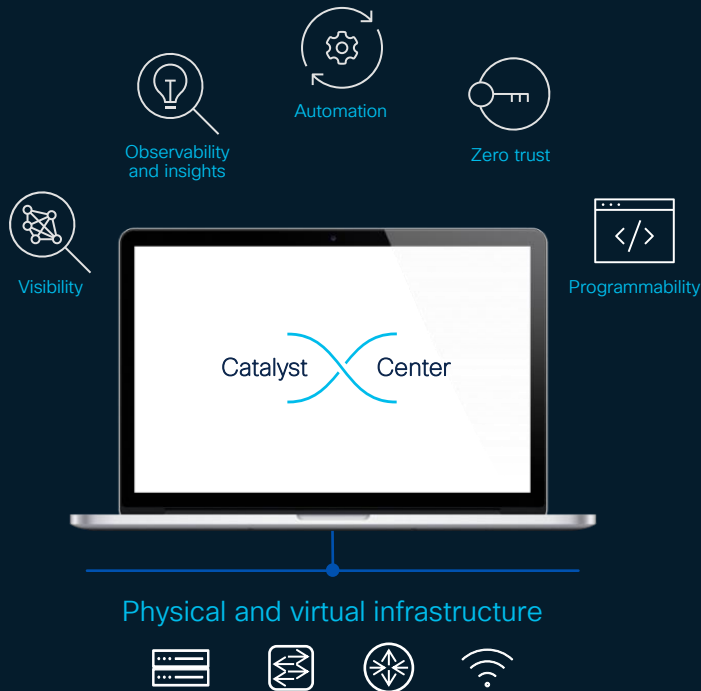
Webex - cisco 98/100 +0 pts

AI Assistant for Catalyst Center



Catalyst Center use cases and personas

The 5 use cases



NetOps Automation and workflows to streamline and simplify complex or repetitive tasks

AIOps AI/ML to ensure consistent performance and **optimal user experience**

SecOps Complete **zero trust** solution for flexible segmentation and policy enforcement including AI-driven device identification

DevOps APIs combined with playbooks for managing networks at scale and numerous **out-of-the-box integrations**

AI Assistant Beta

+ New conversation

New Chat

how is the network doing?

New Chat

New Chat

New Chat

New Chat

New Chat

New Chat

New Chat

New Chat

New Chat

New Chat

how is the network doing?

05/31/24, 12:56 AM

Ask the AI Assistant a question



The AI Assistant may display inaccurate information. Make sure to verify the responses. View our FAQs to learn more.

5 PM



Data Refresh in 05:00



10:35p



6p

8p

10p

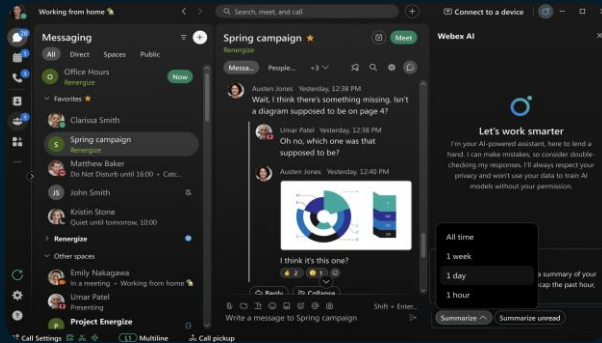
Actions

Generative AI for Collaboration

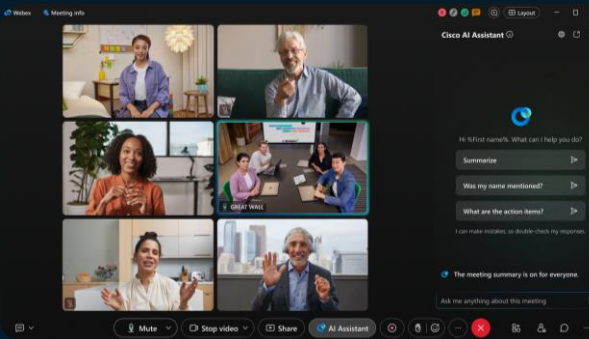


Cisco Webex's Suite of AI Assistants

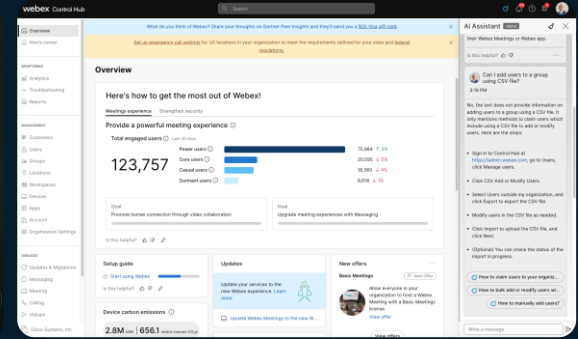
Teams



Meetings



Control Hub

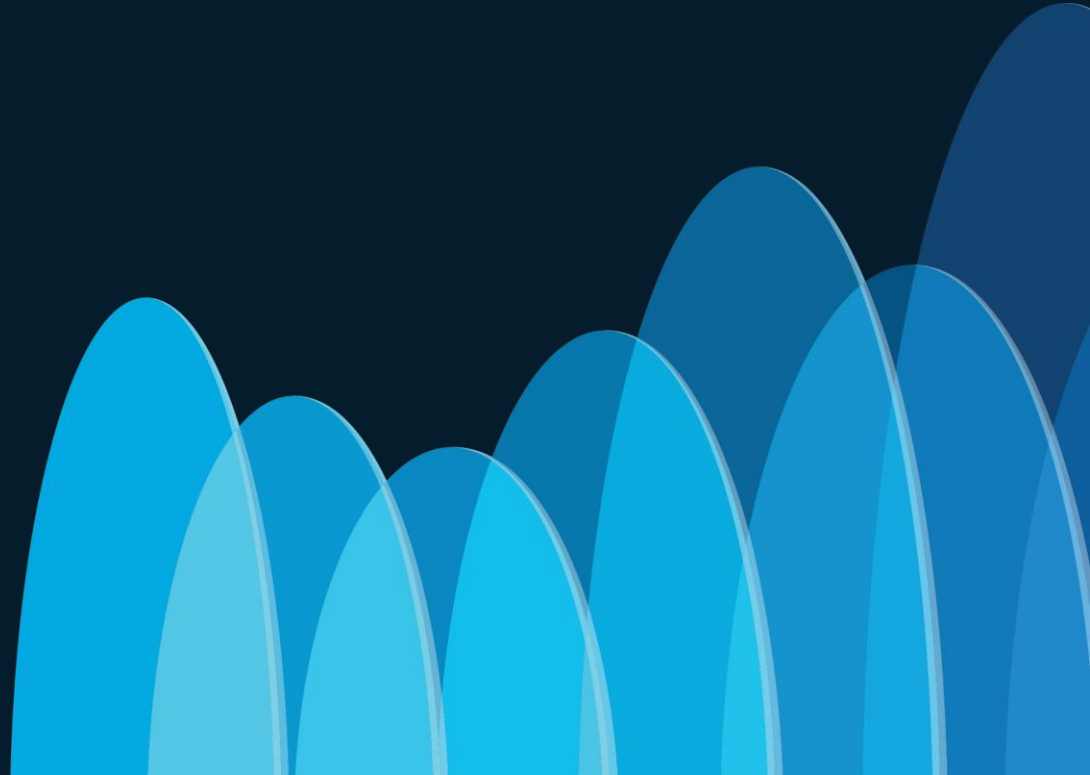


Collaboration workspace with chat, file sharing, and video meetings

High-quality video conferencing for virtual meetings and webinars.

Centralized management for Webex services, users, and security

AI Assistant for Control Hub



Control Hub

A single-pane-of-glass management

Webex Control Hub



Webex Contact Center



Webex Suite



Cisco Devices



Meetings



Messaging



Calling



Webinars



Events



Whiteboarding



Polling



Video Messaging

Cisco Control Hub AI Assistant Skills

Setup and Configure

Easily configure settings and manage setups.
Ask “How do I...?” or request, “Do it for me.”

Troubleshooting

Receive proactive notifications of issues,
along with root cause analysis.

Contextual Q&A with Recall

Get answers with context-based memory for
accurate, relevant responses.



Control Hub

Analytics and Insights

Query your data for valuable insights and
metrics to enhance decision-making.

Converse with Reports

Engage with your reports seamlessly for
enhanced, conversational insights.

Smart Search with AI

Leverage AI-driven search for faster, smarter
information retrieval.



Hi there.

I'm Cisco AI Assistant. I can guide you through Control Hub and help with admin tasks. I can make mistakes, so consider double-checking my responses. I'll always respect your privacy and won't use your data to train AI models without your permission.

How do I add new users?

What are the benefits of SSO?

How do I enable transcription?

Write a message to the Cisco AI Assistant



AI assistant may provide inaccurate information. Please verify answers and check sources.

Unifying Cisco's AI Assistants

across security, networking, collaboration



Individual AI Assistants Are Integrated Across Cisco



Security

Firewall, Secure Access, XDR, Hypershield, Duo



Networking

Meraki, Catalyst Center, ISE, Catalyst SD-WAN



Observability

Splunk Enterprise Security, Splunk Observability, Splunk Enterprise



Collaboration

Webex Meeting, Webex Teams, Webex Control Hub

AI Assistants Increase Intra-Product Productivity

Documentation
Summarization

Troubleshooting
& Visibility

Configuration

Recommendation
& Optimization

Cross-Platform Troubleshooting is Complex



Integrations Are Seldom Comprehensive

- Cisco platforms often only have basic integrations with each other.
- Users must manually correlate data across platforms for troubleshooting.

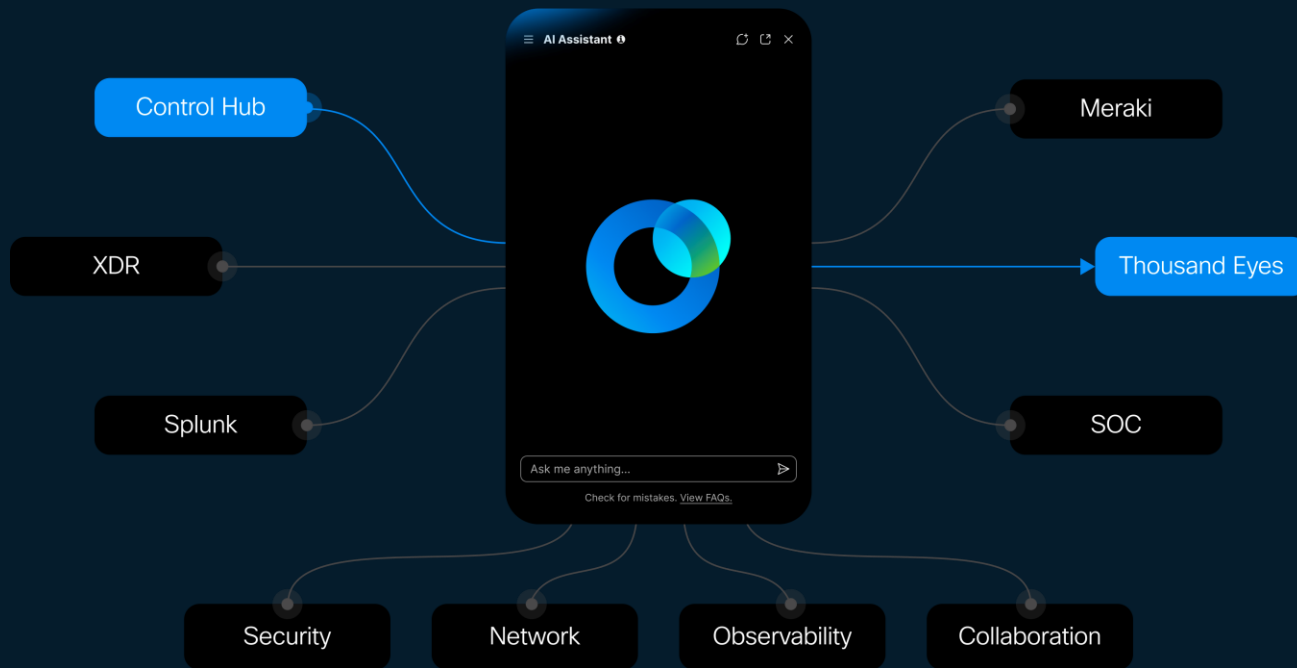


Troubleshooting Experience Can be Time-consuming

- It can require multiple teams & tickets, hours to days to resolve.
- Example: Poor Webex experience could require Meraki, ThousandEyes, & Firewall teams.

Unifying Cisco AI Assistants

Bringing together “Skills” across Cisco to 10x customer experience



Unified AI Assistant introduces “Composite” Skills

Simple Skills

- **Definition:** Insights and actions taken for a single platform at a time.
- **Example:** Checking the client's health on Meraki.

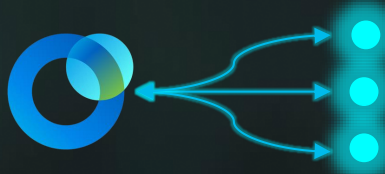


Individual AI Assistant

Skills for One Platform

Composite Skills

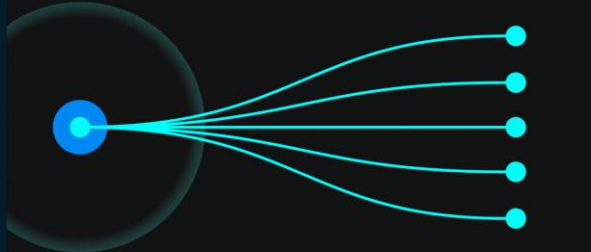
- **Definition:** Combines intelligence across multiple products for enriched insights to accelerate RCA action.
- **Example:** Correlating a poor-performing Meraki client with XDR, Firewall, & ThousandEyes data for cross-domain context.



Unified AI Assistant

Skills for Many Platforms

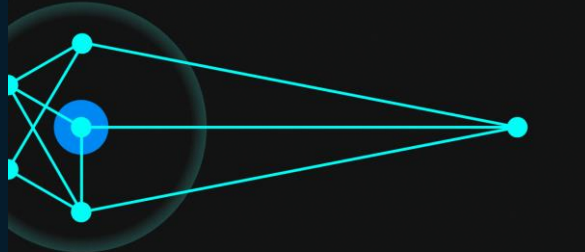
Benefits of the Unified AI Assistant



The diagram shows a single blue dot on the left, representing the Unified AI Assistant, with seven lines radiating from it to seven separate blue dots on the right, representing various skills. The entire set is enclosed in a dark, rounded rectangular frame.

One assistant, many skills


Each Cisco product enhances the Unified AI Assistant with additional “simple” skills to troubleshoot issues.



The diagram shows a central blue dot connected to a network of other blue dots on the left, representing cross-platform skills. Lines from this network converge on a single blue dot on the right, representing the compounded value. The entire set is enclosed in a dark, rounded rectangular frame.

Compounding value

Combines cross-platform ‘simple’ skills into ‘composite’ skills—more Cisco products mean exponentially richer context and smarter recommendations.



The diagram shows a blue dot on the left connected by a curved line to a final blue dot on the right, which is highlighted with a larger circle. In between are four smaller blue dots, representing a sequence of steps or insights. The entire set is enclosed in a dark, rounded rectangular frame.

Accelerated resolution

Troubleshooting is consuming, but the AI Assistant enables RCA in minutes by correlating cross-domain insights!

Troubleshooting with the Unified AI Assistant

Issue Identified

AI Assistant 11:05 am

⚡ **AI Assistant** ⚠️ **Severe warning**

Degraded connectivity for user Chuck Robbins detected via **Severe Critical Risk**.

Webex service status has been checked, and all statuses are up and running.

Would you like to raise a ticket?

You

Yes, raise ticket.

AI Assistant 11:06 am

Ticket #7078 has been raised.

View client network details via **Meraki**?

You

Yes, view client details.

Ask the AI Assistant a question

Assistant can make mistakes. Verify responses.

Network Assessed

AI Assistant 11:06 am

The following is your client's connection topology queried from **Meraki**.

No Wi-Fi nor switching issues have been detected.

Check Network Setup: Webex → WPA2-Personal-Meraki-Coupler → Access Switch → WAN Appliance

Check WAN and Internet status via **ThousandEyes**?

You

Yes, check WAN and Internet status via **ThousandEyes**.

Ask the AI Assistant a question

Assistant can make mistakes. Verify responses.

WAN Analyzed

AI Assistant 11:07 am

ThousandEyes observes spikes in WAN latency and Webex app response time.

WAN Appliance → ... → Webex Application

Run **Firewall** diagnostics via **Splunk**?

You

Yes, run **Firewall** diagnostics via **Splunk**.

Ask the AI Assistant a question

Assistant can make mistakes. Verify responses.

Issue Resolved!

AI Assistant 11:07 am

Analysis of **Splunk** ingested **Firewall** logs shows that policy "new-rule-block" is blocking the UDP port.

Updating the firewall policy will resolve this issue.

What would you like to do?

You

Update the firewall policy

AI Assistant 11:08 am

Policy "new-rule-block" has been adjusted to allow traffic through the UDP port.

The issue has been resolved!

Can I help you with anything else?

Ask the AI Assistant a question

Assistant can make mistakes. Verify responses.

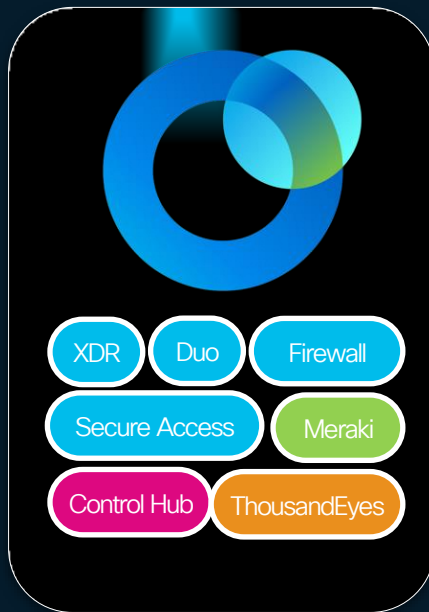
Key Composite Skill Use Cases

Multi-Source Docs
Summarization

All Platforms

Cross-Platform Correlation
for Threat Investigation

XDR + Any Other Platform



Cross-Platform Correlation
for Troubleshooting

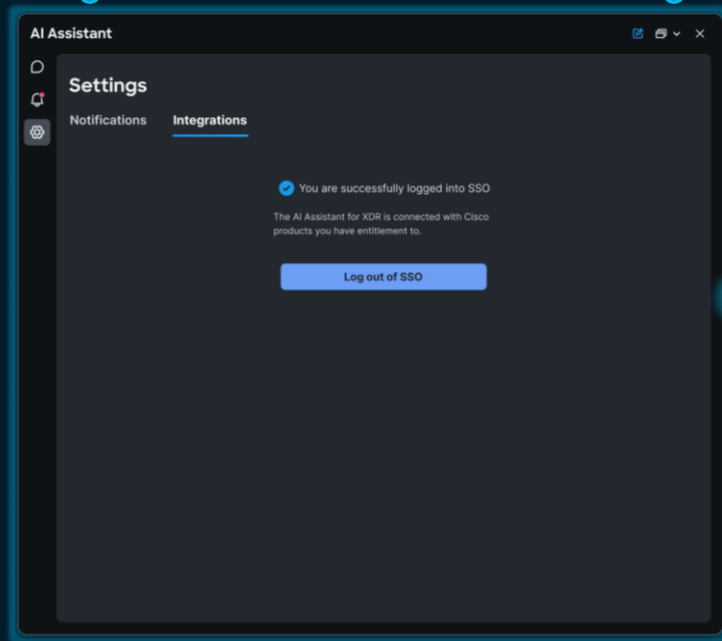
Any Platform + Any Other Platform

Cross-Platform Correlation
for Threat Mitigation

XDR + Any Other Platform

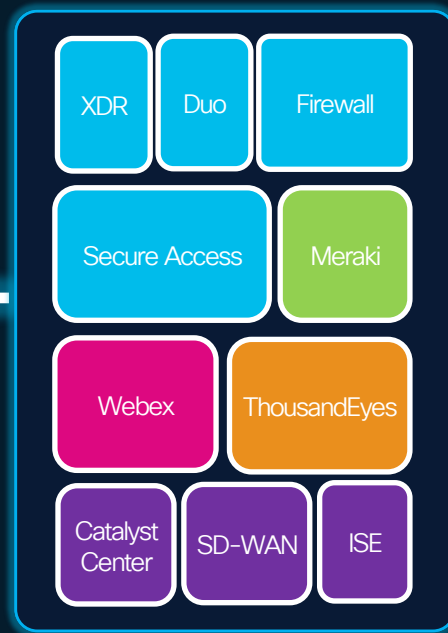
Connect Cisco's AI Assistant to All Platforms

Log into SSO in AI Assistant Settings

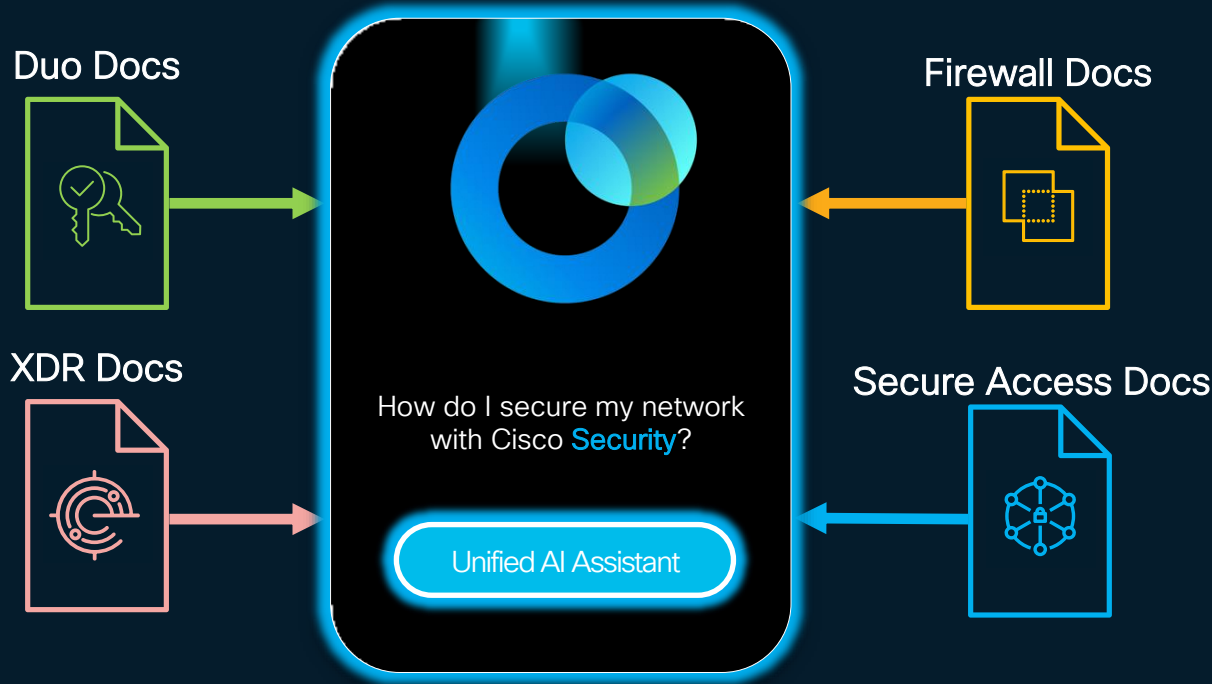


SSO

User's Platforms



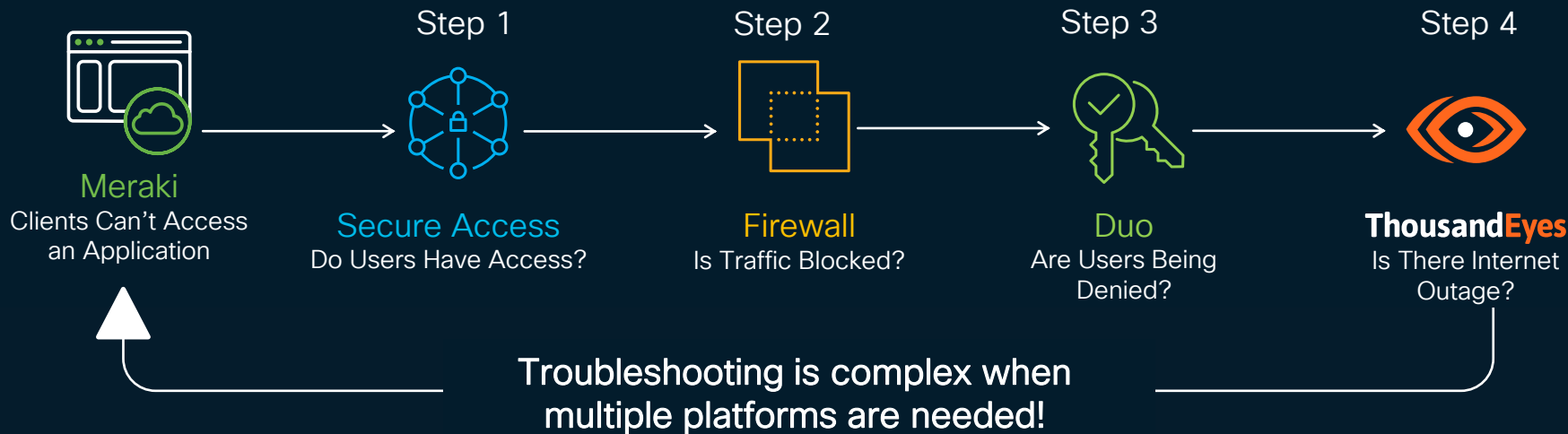
Seamless Knowledge Access Across Cisco Products



Cross-Platform Correlation for Troubleshooting

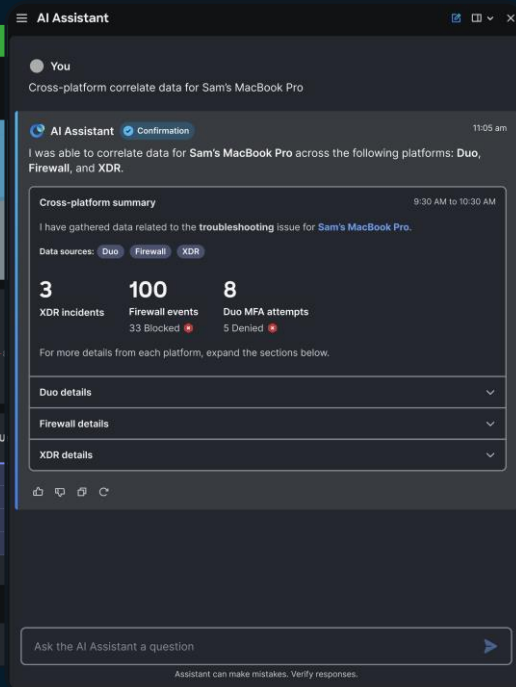
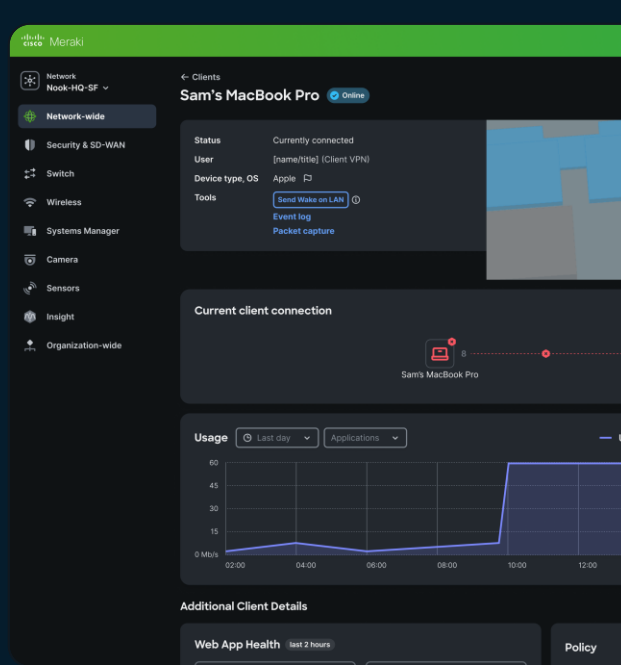
Any Platform + Any Platform

Troubleshooting Clients, Devices, & Apps Often Require Data From Multiple Platforms



Accelerate Troubleshooting with Cross-Platform Insights

Client with Performance Issue Discovered



User's Platforms



Firewall



XDR

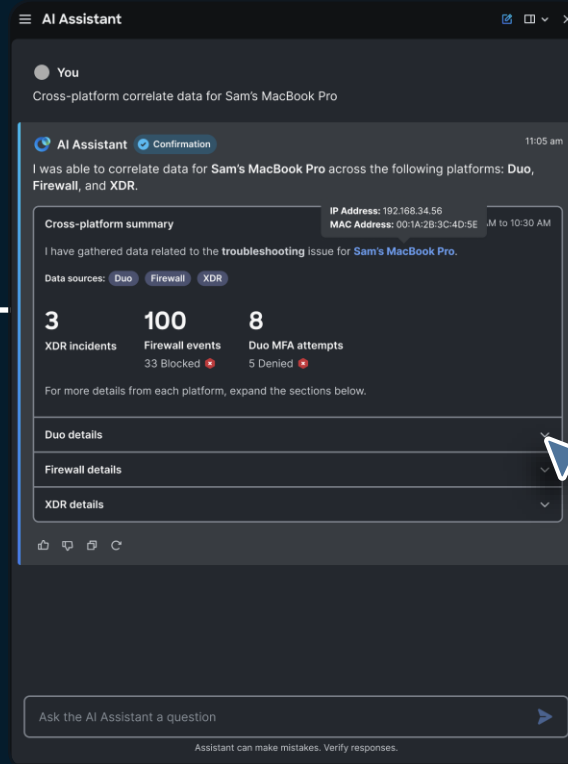


Relevant Data

Cross-Platform Data Summary for Troubleshooting

Cross-Platform Summary

Key troubleshooting insights across all correlated platforms



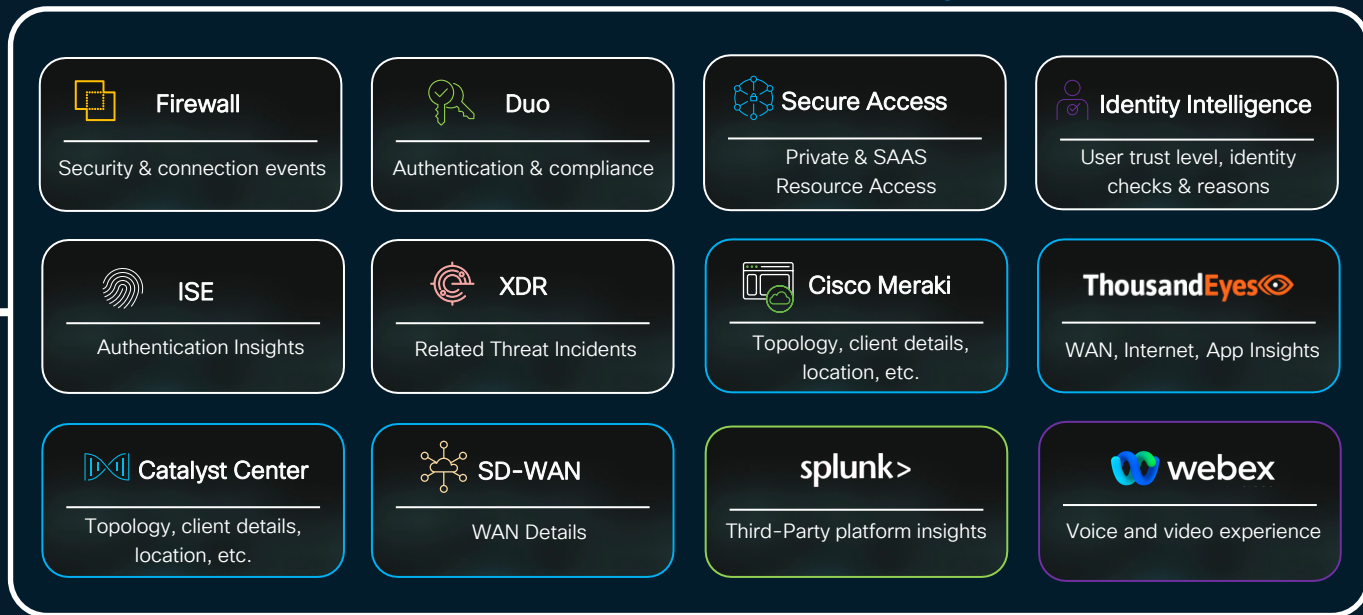
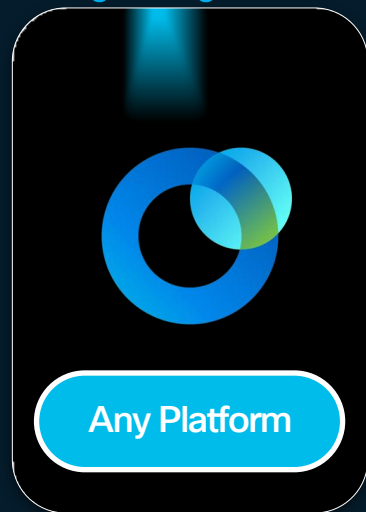
Individual Platform Details

Expandable sections for additional cross-platform

Correlate Any Data From Anywhere for Full Context

All Platforms That Supplement the Issue Being Troubleshooted

Originating Platform



Note: List of platforms above isn't comprehensive to all that is supported.

Cross-Platform Correlation Types

General Correlation

Default data correlated when no filters are specified



Identity, Access, Threat Data

Firewall, Secure Access, Duo, XDR



Client, Device, App Data

Meraki, Catalyst Center

Specific Correlation

Specific platforms and data correlated based on filters below



Time

Specify time range to correlate data



Platform

Specify exact platforms to correlate data



Specific Data

Specify exact data from exact platform(s) to correlate



Source to Destination

Specify destination IPs to filter traffic logs for insights



Issue

Specify issue being troubleshooted to correlate relevant platform & data

Cross-Platform Correlation Entry Point: Natural Language

General Correlation

*"Cross-platform troubleshoot
[client, device, app, user]"*

Correlation Filters



Time-Range

"Correlate [Richard-MBP] for the [past hour]"



Platform

"Correlate [Richard-MBP] across [Firewall and Meraki]"



Destination

"Correlate traffic from [Richard-MBP] to [192.168.1.5]"

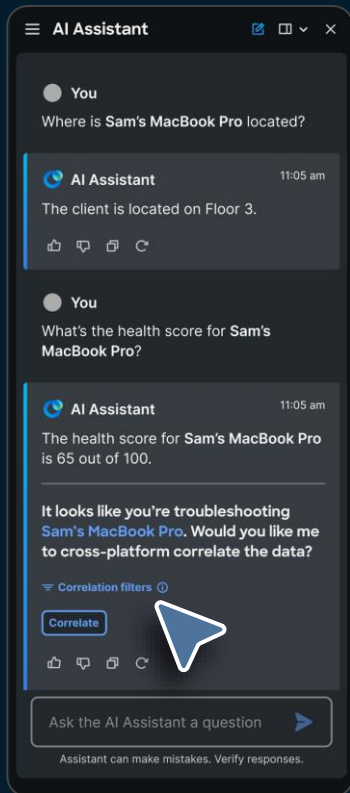


Issue

"Correlate [Richard-MBP] for [performance issues]"

Cross-Platform Correlation Entry Point: Suggested Actions

User Troubleshooting
Intent Detected



Correlation Filters

Time range	▼
Jun 12, 2024 03:00 PM → 03:30 PM	
Platforms	▼
Duo, Firewall, XDR	
Issue	▼
General	
Source and destination	▼
192.168.1.45	

Cross-Platform Correlation Entry Point: Suggested Actions

Time Range

Time range ^

Jun 12, 2024 📅

03:00 PM → 03:30 PM ⌚

Platforms v

Duo, Firewall, XDR

Issue v

General

Source and destination v

192.168.1.45

Platform

Time range v

Jun 12, 2024 03:00 PM → 03:30 PM

Platforms ^

☒ Duo

☒ Firewall

☐ Identity Intelligence

☐ Meraki

☐ Secure Access

☒ XDR

Issue v

General

Source and destination v

192.168.1.45

Issue

Time range v

Jun 12, 2024 03:00 PM → 03:30 PM

Platforms v

Duo, Firewall, XDR

Issue ^

☐ Client connectivity

☐ Client onboarding

☐ Client performance

☐ Device connectivity

☐ Device performance

☒ General

Source and destination v

192.168.1.45

Destination

Time range v

Jun 12, 2024 03:00 PM → 03:30 PM

Platforms v

Duo, Firewall, XDR

Issue v

General

Source and destination ^

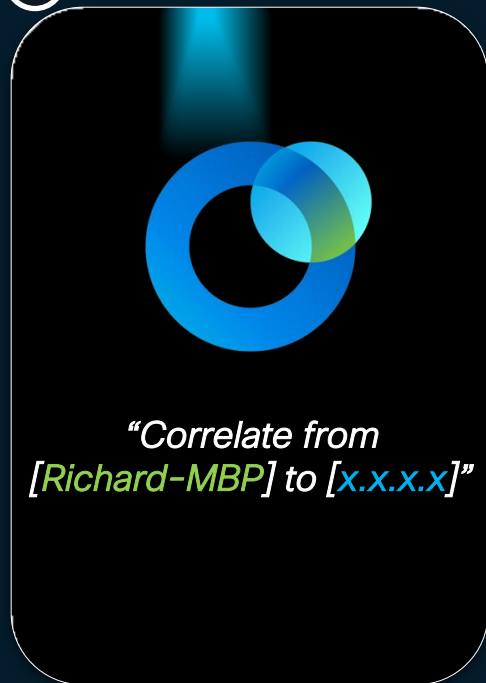
Source IP address *

192.168.1.45

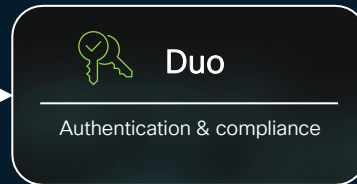
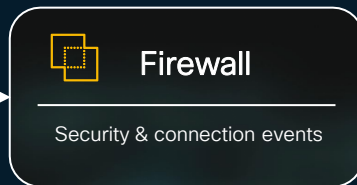
Destination IP address

How Source to Destination, Specific Correlation Works

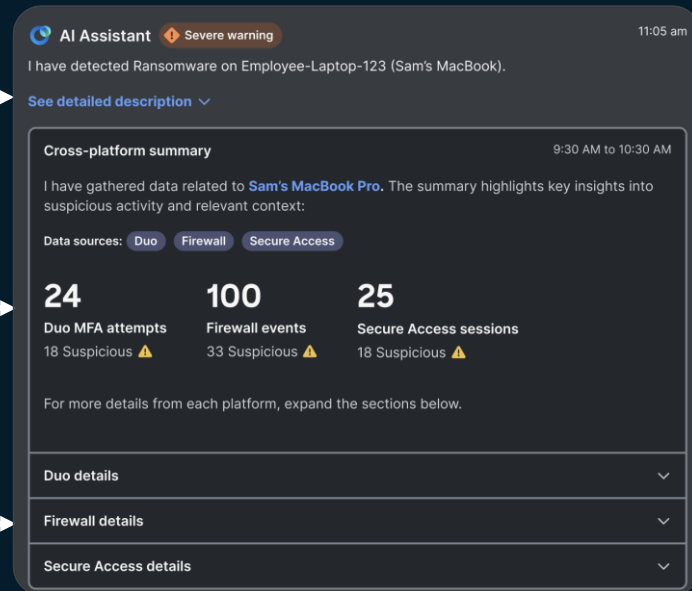
1. Specify source and destination.



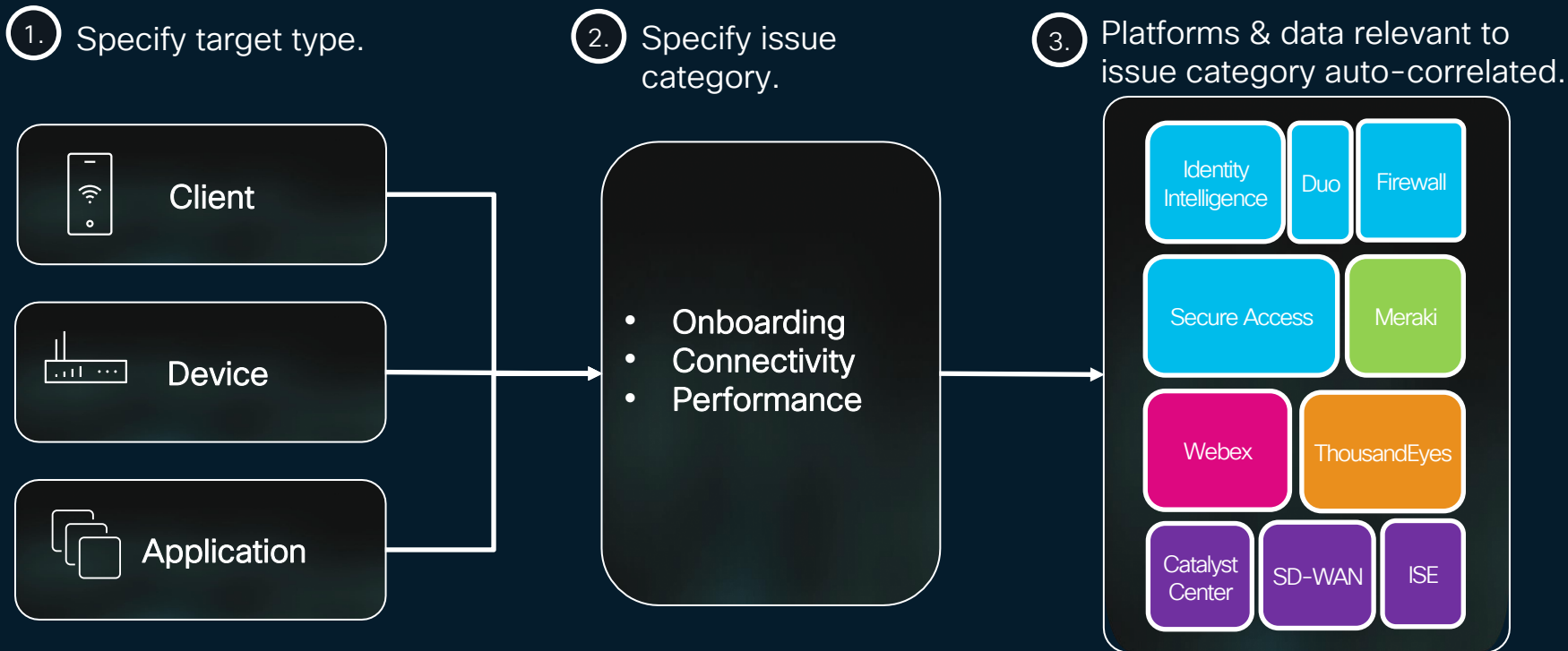
2. Traffic platforms are correlated by specified source & destination.



3. Cross-platform data filtered by source & destination.

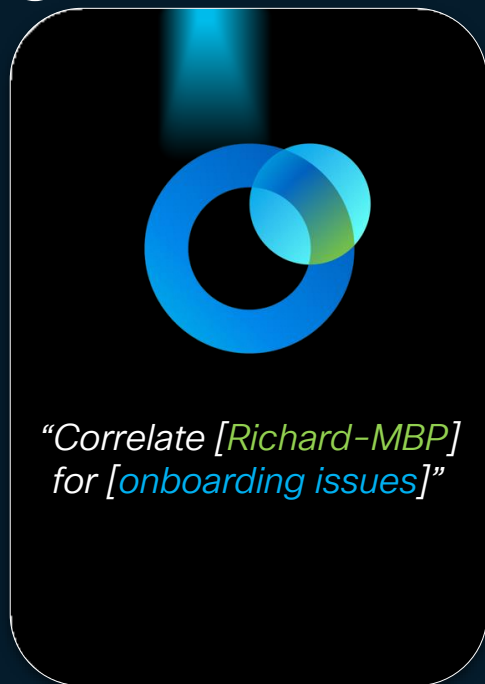


How Issue-Based, Specific Correlation Works

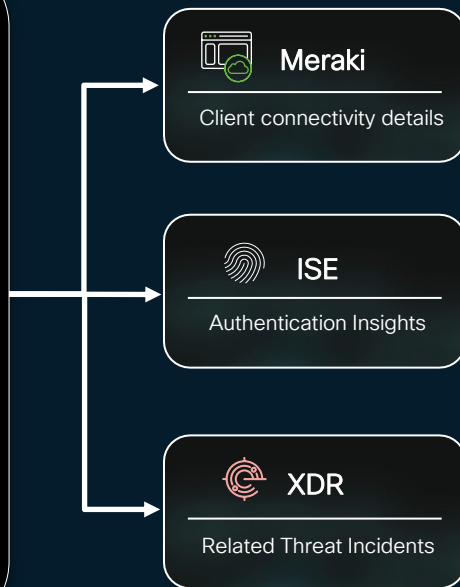


Issue-Based, Specific Correlation Example

1. Specify target & issue category.



2. AI Assistant chooses relevant platform data to correlate.



Cross-Platform Correlation for Troubleshooting Demo

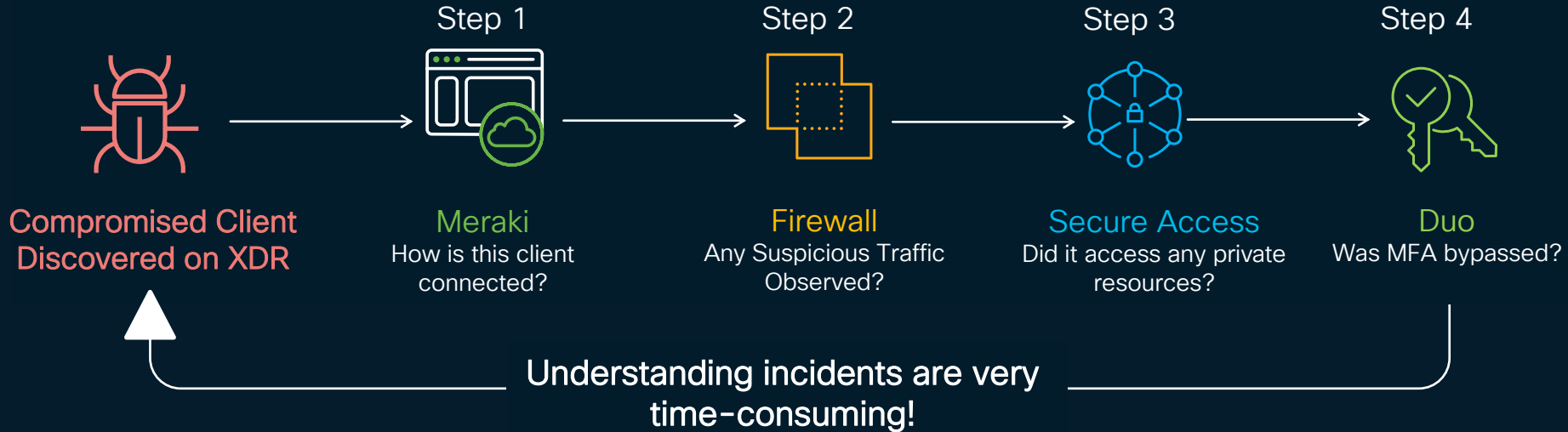
Benefits of Cross-Platform Correlation for Troubleshooting



Cross-Platform Correlation for Threat Investigation

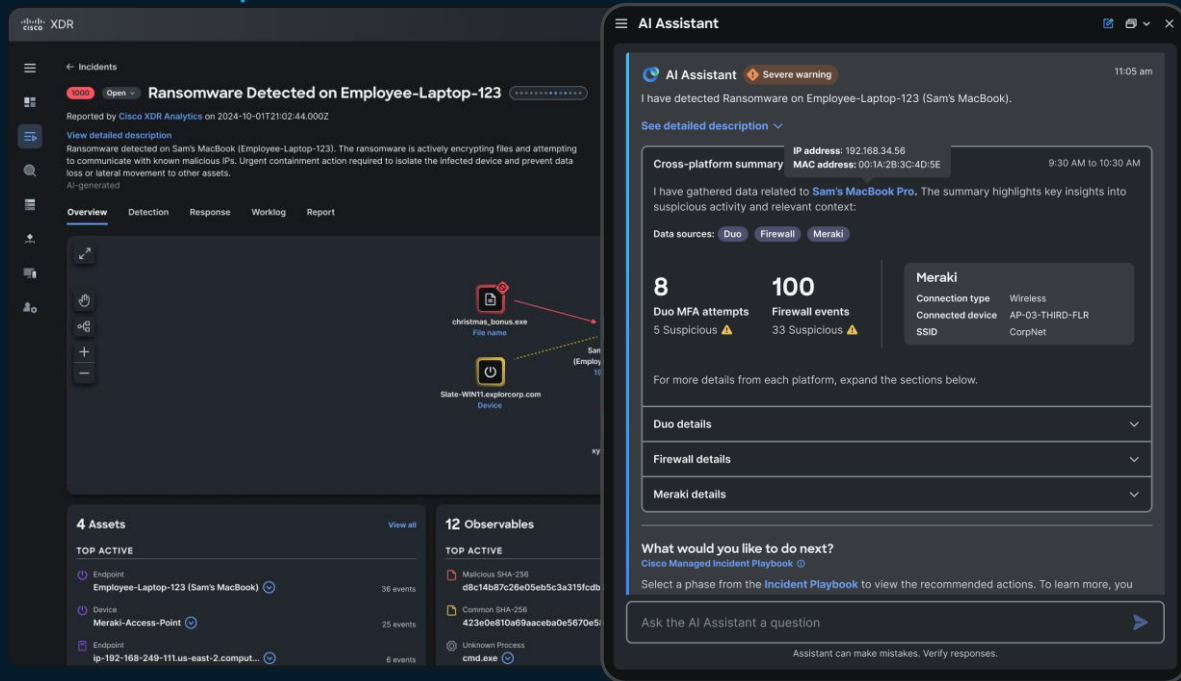
XDR + Any Platform

Manual Threat Investigations Can Be Complex



Accelerate Threat Investigations with Cross-Platform Insights

Compromised Client Discovered on XDR



User's Platforms



Firewall



Meraki

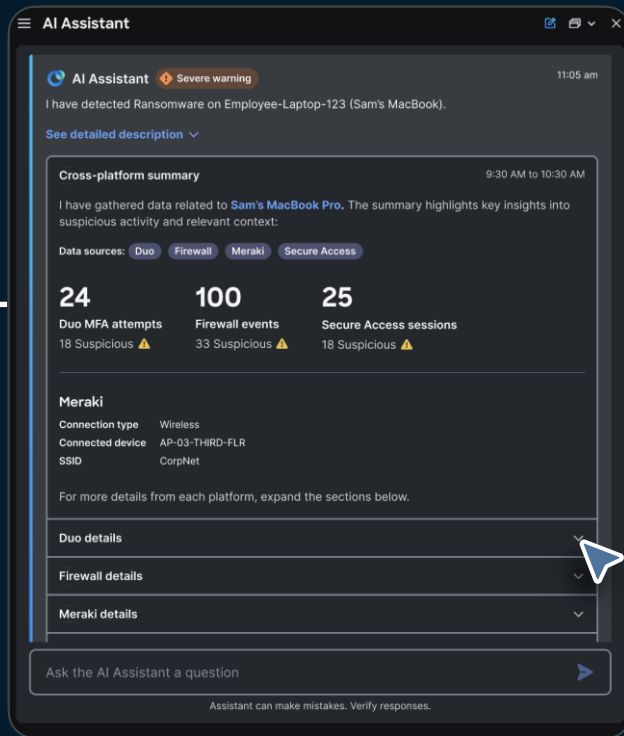


Relevant Data

Cross-Platform Data Summary for Investigations

Cross-Platform Summary

Key investigation insights
across all correlated platforms

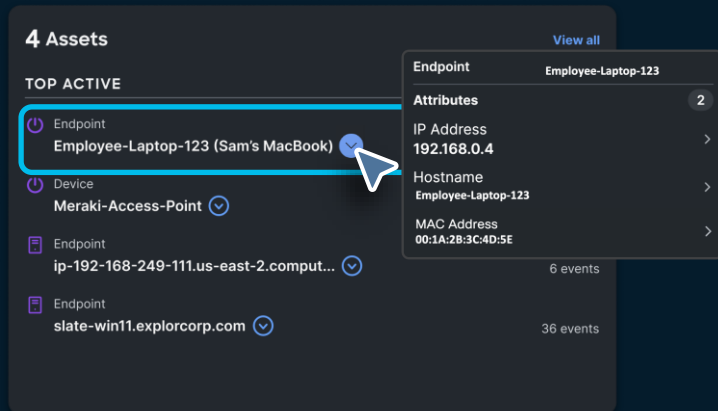


Individual Platform Details

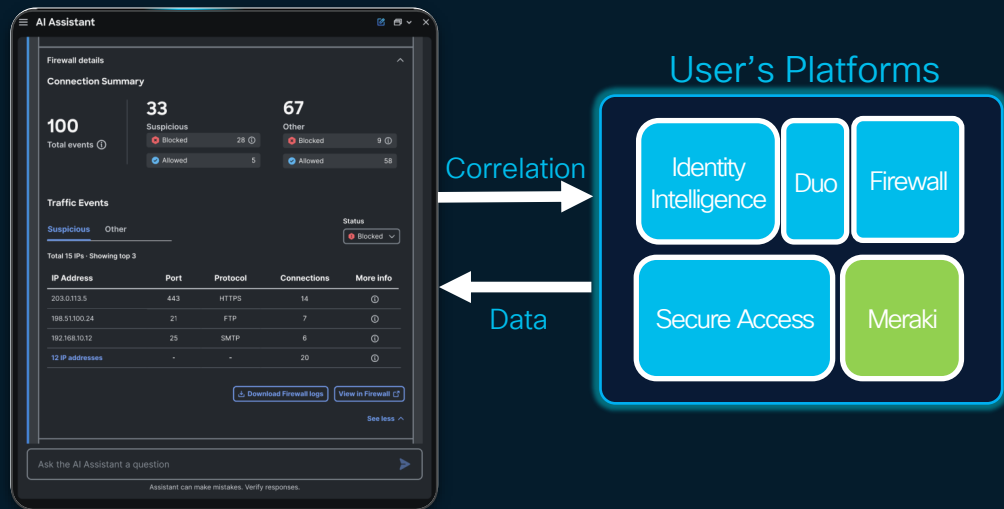
Expandable sections for
additional cross-platform

AI Assistant Auto-Correlates Data Using XDR Assets

1. Upon launch, AI Assistant identifies the top asset & its attributes.



2. Attributes are used to auto-correlate with relevant platform for data.



AI Assistant Highlights Suspicious Cross-Platform Data

1. AI Assistant identifies potentially malicious observables that interacted with the asset.

12 Observables

TOP ACTIVE

- Malicious SHA-256
d8c14b87c26e05eb5c3a315fdb237... (blue checkmark)
- Common SHA-256
423e0e810a69aaceba0e5670e58aff... (blue checkmark)
- Unknown Process
cmd.exe (blue checkmark)
- Unknown File Path
rubeus.exe (blue checkmark)
- Unknown File Path
\\?C:\Windows\System32\rubeus.exe (blue checkmark)

IP Address 198.63.231.43

Verdict Source Umbrella - ExplorCorp

1 Verdict (1 dropdown)

[Investigate observable](#)

Create Judgment

- [Copy value](#)
- [Copy defanged value](#)
- [Add to new case](#)

AlienVault Open Threat Exchange

[Search for this IP](#)

cisco-explorcorp-earth

[Traffic Summary for 198.63.231.43](#)

[Session Traffic for 198.63.231.43](#)

CrowdStrike Falcon

[Add indicator - Detect only](#)

2. Interactions with observables are flagged as “Suspicious” insights.

AI Assistant

Firewall details

Connection Summary

100 Total events (1 dropdown)

33 Suspicious (28 Blocked, 5 Allowed)

67 Other (9 Blocked, 58 Allowed)

Traffic Events

Suspicious Other (Status: Blocked)

Total 15 IPs - Showing top 3

IP Address	Port	Protocol	Connections	More info
203.0.113.5	443	HTTPS	14	(1 dropdown)
198.51.100.24	21	FTP	7	(1 dropdown)
192.168.10.12	25	SMTP	6	(1 dropdown)
12 IP addresses	-	-	20	(1 dropdown)

[Download Firewall logs](#) [View in Firewall](#)

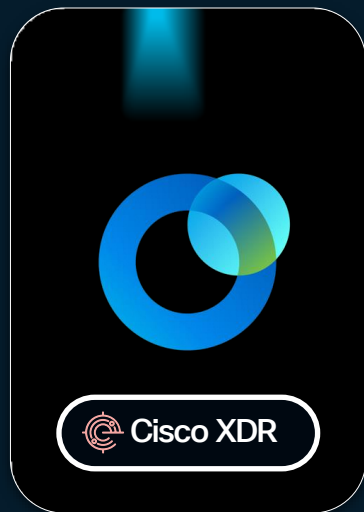
[See less](#)

Ask the AI Assistant a question

Assistant can make mistakes. Verify responses.

Relevant Cross-Platform Data is Auto-Correlated

Originating Platform



Any Threat Investigation Supplementing Platforms



Note: List of platforms above isn't comprehensive to all that is supported.

Cross-Platform Correlate Additional Assets

Option 1: Natural Language

*"Cross-platform correlate
[asset name or attribute]"*

Note: In XDR incidents, cross-platform correlated assets will always filter traffic data by observables and label it as 'Suspicious'.

Add Filters



Time

"Correlate [asset] for the [timeframe]"



Platform

"Correlate [asset] across [platform]"



Specific-Observable

"Correlate traffic from [asset] to [Observable IP]"

Cross-Platform Correlation for Threat Investigation Demo

Benefits of Cross-Platform Correlation for Threats



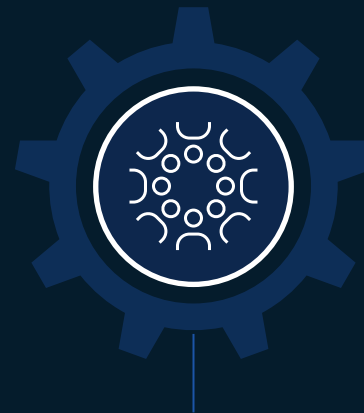
AI Assistant Simplifies User Experience Across Cisco



Generative AI
for Security



Generative AI
for Networking



Generative AI
for Collaboration

Keynote Deep Dives

Wednesday
10:30am – 11:30am



Experiences Amplified:
How AI Can Fuel
Better Employee
and Customer
Experiences

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Application and
Everything in
Between

Level 2
Melbourne Room 2



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Thank you

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