AI Troubleshooting for Industrial Networks

Overview

Q: What is Cisco AI Troubleshooting for Industrial Networks?

A: Cisco AI Troubleshooting for Industrial Networks is an ambient AI agent designed to help Operational Technology (OT) teams quickly detect, diagnose, and resolve network issues in industrial environments. The system sends real-time alerts on network issues with probable root cause and step-by-step recommendations to resolve the issue. It includes a conversational interface that uses natural language for seamless interactions for frontline teams to troubleshoot network issues without waiting on specialist support.

Q: What industries can benefit from this tool?

A: It interacts with Cisco Industrial Ethernet (IE) switches and therefore ideally suited for manufacturing and similar environments (e.g. food and beverage, chemical plants, ports and terminals, warehouses, and distribution centers). More network types and industry verticals will be supported in future updates.

Q. Why is this important for industrial operations?

A: When a network issue hits the factory floor, every minute of uncertainty is a minute of lost production. When troubleshooting modern industrial networks, correlating issues to a root cause is a manual, time-intensive process spread across multiple tools and relies on onsite availability of engineers. First responders are typically maintenance technicians on the plant floor, but they struggle to diagnose network-related issues and require escalation that are absorbed by network experts. High volume of escalations not only create bottlenecks that increase Mean Time To Resolution (MTTR), but it also strains bandwidth and resources of IT specialists. Overall, this leads to increased production downtime that ultimately impacts revenue, output, and order fulfillment.

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Q: What are the key benefits from implementing these agentic capabilities?

A: It supports OT teams at every level of the escalation chain through always-on detection of network disruptions and accelerating the diagnosis and resolution of network issues. For first responders like maintenance technicians, it provides intuitive troubleshooting guidance that instills greater confidence to resolve common network issues independently. For networking experts higher up in the escalation chain, it curbs routine escalations that can stretch already-limited resources. When common networking issues are addressed at the frontlines, specialists can prioritize directives require their networking expertise. The outcome is a more resilient and self-sufficient OT organization. Issues are detected sooner, common problems are resolved closer to the source, and escalations to networking specialists are reduced.

Q: How is this different from using Catalyst Center or Cyber Vision?

A: This system is purpose-built for OT teams like technicians and maintenance personnel. Its core focus is to help maximize industrial network uptime for optimal factory production. Cisco Cyber Vision is designed to help security and networking teams assess the OT security posture and protect industrial networks through segmentation and secure remote access. Cisco Catalyst Center is designed for network administrators. While Catalyst Center can track network and device health, it is mainly a strategic tool for centralized control, network-wide automation, and assurance.

How it works

Q: Where is AI Troubleshooting for Industrial Networks and language models installed?

A: AI Troubleshooting for Industrial Networks runs on a server installed as a Virtual Machine (VM) on-premises, either in the industrial DMZ or within the industrial zone (Level 3 in the Purdue model). Access to network devices are restricted to AI Troubleshooting for Industrial Networks running on the local server. In the future, it will also be available to download from Cisco Cloud Control.

Q: What is Cisco Cloud Control and do I need it to download AI Troubleshooting?

A: Cisco Cloud Control is the unified operations platform for AgenticOps. It brings Cisco infrastructure into one governed environment where operators and AI agents can manage infrastructure, resolve issues across domains, and add custom or third-party capabilities. The integration of AI Troubleshooting for Industrial Networks to Cisco Cloud Control will take phases. The future download site from Cisco Cloud Control Marketplace will be an addition to the Cisco.com download site. Further integration with Cisco Cloud Control is under planning and will be down the road. AI Troubleshooting for Industrial Networks will continue to be an on-prem AI agent with customer sensitive information kept on-prem.

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Q: How does the system receive updates to its knowledge base or AI model, and can these updates be performed in a restricted network environment?

A: AI Troubleshooting for Industrial Networks receives updates from cloud tether. In the admin dashboard, admins can see available updates including version and description of the updates. Updating the agent just takes one click to pull software from cloud tether. Deployments in environments isolated using firewalls are supported with appropriate firewall rule configurations. For firewall rule configuration requirements, please refer to the Installation Guide in the **Resources** section.

Q: What kind of networking issues can AI Troubleshooting for Industrial Networks diagnose?

A: The system focuses on common access-layer and industrial network issues that slow down production troubleshooting. On finding any of these issues, it alerts users through a notification that includes a description of the problem, the probable root cause, and recommended steps for resolution. For detailed coverage of issues, refer to the **Resources** section.

Issue Detected	Examples
Endpoint offline or degraded	Port down, err-disabled port, endpoint moved, VLAN mismatch, device unreachable, duplex or error issues
Link, cable, and media faults	Link down or flapping, copper cable faults, fiber/SFP issues, unsupported or degraded transceivers
Power over Ethernet (PoE) and endpoint power	PoE disabled, power budget exhausted, port power limit issue, powered device not detected
Switch power and health	Power supply issue, input power loss, redundancy degraded, voltage warning, CPU or memory pressure
Power-loss events	Dying gasp, input-power fault, device dark after power loss or unplugging

Q. What happens if the internet goes down?

A: AI Troubleshooting for Industrial Networks will remain functional and accessible in the event of a network outage. However, it will not be able to receive updates. If disconnected from cloud tether for >60 consecutive days, the system will no longer function.

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Requirements and compatibility

Q: What are the platform requirements for installing AI Troubleshooting for Industrial Networks?

A: The server the system it is installed on should meet the following minimum requirements:

- 48 GB RAM, 32 CPU Cores (x86)
- ESXi hypervisor (8.0.3 and above)
- Connectivity to cloud tether

Q: What are the firmware requirements for compatible IE switches?

A: The switches must be running IOS XE, but there are no specific version requirements. Note that switches running classic IOS are not supported.

Q: Which switches are compatible with AI Troubleshooting for Industrial Networks? Does it support integration with non-Cisco networking equipment?

A: Currently, the system supports only the Cisco switches listed below.

- Cisco Catalyst IE3100 Rugged Series
- Cisco Catalyst IE3100 Heavy Duty Series
- Cisco Catalyst IE3200 Rugged Series
- Cisco Catalyst IE3300 Rugged Series
- Cisco Catalyst IE3400 Rugged Series
- Cisco Catalyst IE3400 Heavy Duty Series
- Cisco IE3500 Rugged Series
- Cisco IE3500 Heavy Duty Series
- Cisco Catalyst IE9300 Rugged Series

Onboarding

Q: Where can I download AI Troubleshooting for Industrial Networks?

A: Navigate to this Support page and under the 'Downloads' tab, locate the latest release and click 'Download'. You will need to login using your Cisco.com user ID. After downloading and installing the solution, the customer's administrator connects it to the cloud tether, selects the US or EU region, and configures a proxy if required. The administrator then signs in with Cisco SSO and enters the customer's Cisco Smart Account number or domain. The cloud tether will verify the account and activate the instance. The customer's free term begins when their first instance is activated. The complete installation guide can be found here.

Q: How does the 3-year promotion work and how is support provided?

A: AI Troubleshooting for Industrial Networks is offered temporarily free to download and access to mark the GA milestone in Phase 1. Cisco may charge a license fee at a future date following a Phase 2 Monetization Date.

Phase 1: Full featured software with 3-year free term. Customers can download it directly from this webpage. The 3-year free term begins upon first instance of activation where they can onboard supported IE switches to their agents without charge.

Phase 2: Existing customers can continue to monitor already onboarded IE switches without a fee until the free term is expired or terminated. Additional switches onboarded after the Monetization Date is subject to a fee. All new customers that activate during the Monetization Date will be subject to a fee. Support will be aligned to the subscription licenses.

For more details of the offer, please refer to the Offer Description.

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Q: How is access control managed for the conversational interface to ensure only authorized OT personnel can query or act on network configurations?

A: It utilizes a role-based access control model that distinguishes between administrators and users to ensure operational security. Administrative privileges are required for critical system management, including the configuration of user accounts, maintenance of the inventory database, deployment of software updates, and management of syslog connections.

Q: What roles are available and what does each have access to?

A: Cisco supports two types of roles depending on level of networking expertise.

- User roles are generally for maintenance teams, controls engineers, electricians who use the product day-to-day. They can access notifications, navigate the topology and interact with the agent using a set of predefined prompts.
- Admin roles are reserved for IT specialists. This role grants configure and administer access with inventory or topology changes, including device onboarding, asset naming, and adding tags to the inventory. It also grants more autonomous agent interactions using natural language queries.

Q: What training is required for OT teams to effectively use the solution?

A: The system is designed with an intuitive, conversational interface that eliminates the need for specialized networking certifications or extensive technical training. By translating complex network data into simple, actionable insights, it empowers personnel to confidently resolve issues without requiring prior expertise.

Q: Does the system provide a history or audit log of previous troubleshooting sessions?

A: Yes, the platform maintains a searchable repository of all historical alerts, serving as an audit trail that ensures full operational transparency and regulatory compliance. Furthermore, this institutional knowledge base serves as a critical asset for workforce development, enabling teams to leverage past incident patterns to enhance training initiatives and refine long-term maintenance strategies.

Q: Does the AI hallucinate? Can it give false root cause or recommendations?

A: The generative capabilities of AI enable powerful reasoning, but in a production environment, accuracy is the highest priority. While Cisco takes strict measures to ensure accuracy, users should always use discretion to verify AI recommendations and stick to existing workflows and processes before making changes.

- Grounded in network data: Does not “guess” network states; it retrieves them directly from the IE switches (e.g. “Show” command outputs, syslogs). It cannot invent data that isn’t present in the switch
- Validated workflows: Operates within strict troubleshooting logic designed by Cisco engineering experts, ensuring it adheres to proven diagnostic paths
- Transparent traceability: Every conclusion is presented with “How this was determined”. Users can see exactly which step was run and the raw output that led to the diagnosis, allowing for instant human verification. For more details how AI is used, please refer to AI Transparency Technical Note.

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Security and data privacy

Q: What network data is retrieved and where does it go?

A: It retrieves the following network data, as required by use cases: “show” commands output, syslog messages, and configurations. For syslog connection, network admins can either configure the switch to export syslog to this agent or forward from a syslog server. The system also uses LLDP to build a network topology of connected assets. The solution, including the language model, is installed as a Virtual Machine (VM) onsite.

Q: What measures are in place to ensure that the AI model doesn’t transmit sensitive data to external cloud environments?

A: Cisco uses an open weights language model that operates on-premises. AI Troubleshooting for Industrial Networks collects and processes operational data within your facility’s own network infrastructure. Workload data remains behind your firewalls, maintaining data sovereignty without the dependency to an external cloud to operate. No sensitive data will leave your site, and neither Cisco nor a 3rd party vendor can use the data to train AI models. Cisco does not retain or train on the data and only collects operational telemetry from the agent, via cloud tether, to validate that the agent conforms to performance standards. For more details of how customer data is handled, please refer to Offer Disclosure.

More resources

Q: Can I request a demo?

A: Schedule a personalized demo with a Cisco networking expert to explore how AI Troubleshooting for Industrial Networks can support your environment.

Q: Where can I learn more?

A: Refer to the supporting links below for everything you need to know about AI Troubleshooting for Industrial Networks. You can also get in touch via email askiot@cisco.com.

- Product homepage
- Download and support
- Installation Guide
- Datasheet
- User Guide
- Offer Description
- Offer Disclosure
- Solution Overview
- Video
- Blog

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