Data sheet
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Cisco Crosswork Assurance User Experience

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Leveraging advancements in Artificial Intelligence and Machine Learning (AI/ML), Cisco® Crosswork Assurance has extended its network monitoring capabilities to enhance user Quality-of-Experience (QoE). **Crosswork Assurance User Experience** enables real-time, comprehensive visibility into network performance through the lens of the customers. Designed to support all types of networks—wireline, terrestrial wireless, and nonterrestrial—Crosswork Assurance User Experience provides actionable insights per user, per application, and per network endpoint. The solution can extend beyond traditional network visibility by providing an additional layer of actionable insights, improving customer experience during congestion and reducing Radio Access Network (RAN) energy waste dynamically for underutilized cells. It matches data plane and control plane information at the point of collection, so when data is ingested into Crosswork Assurance analytics, it is immediately ready to be consumed by network operations, and performance teams. User experience data records are specifically ingested, cleaned, and transformed for AI/ML model training.

Crosswork Assurance User Experience allows network performance, utilization and user experience scores to be correlated, visualized and acted upon for faster issue resolution, improving both performance and reliability. These advancements lead to reduced Operational Expenses (OpEx) and targeted Capital Expenditures (CapEx), allowing service providers to do more with fewer resources.

By improving network performance and user experience, the solution not only addresses existing challenges but also equips service providers to thrive in an increasingly complex and competitive network landscape, positioning them for long-term growth and innovation.

Product overview

Crosswork Assurance User Experience addresses consumer QoE through three key use case offerings:

- **Network Intelligence** captures end-to-end user experience data with granular detail (per flow, cell, application, and user). It identifies and characterizes all traffic types and encapsulations (Quick UDP Internet Connections [QUIC], TCP, User Datagram Protocol [UDP], GPRS Tunneling Protocol (GTP), Multiprotocol Label Switching [MPLS]/Segment Routing [SR]/SR over IPv6 [SRv6]), supporting use cases like network performance monitoring, customer care, and CapEx planning. Data is processed in real time and accessible via the dashboard.
- **Network Optimization** leverages the Network Intelligence data and applies traffic shaping to elephant flows, boosting user throughput during congestion and providing instant cell site capacity relief, thus reducing the need for frequent spectrum upgrades. It also protects real-time traffic (e.g., videoconferencing, collaboration) from high bandwidth flows, preserving user QoE.
- **Energy Reduction** uses the Network Intelligence data to predict which cellular network radios can be powered off based on real-time traffic demand without affecting user QoE. It sends energy-saving recommendations via API to the RAN controller, suggesting dynamic frequency band switching to optimize RAN energy consumption by redistributing users to fewer frequency bands.

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Features and benefits

Table 1. Key benefits of Crosswork Assurance User Experience

Feature	Benefit
Consumer QoE	• Provides real-time traffic insights with a router software add-on and offers actionable recommendations. • Benchmarks QoE and identifies sites with insufficient QoE before customers churn. • Correlation of Crosswork Assurance User Experience and Active monitoring (TWAMP) insights on the transport layer gives both the underlay and overlay QoE, helping to pinpoint the root cause of issues.
Monetization	• Provides deep insights into service provider network traffic (QUIC, TCP, UDP, GTP), driving new monetization use cases Examples include selling Fixed Wireless Access (FWA), converting consumers to higher-priced plans, recommending video upgrades based on usage, improving Net Promoter Score (NPS) for brand marketing, and leasing excess assets.
Reduced CapEx and OpEx	• Network Optimization delivers faster user speeds using existing hardware in both wireless and wireline networks. • Real-time congestion management reduces the need for frequent network or cell site upgrades, providing a cost-effective alternative to new RAN equipment and spectrum purchases and optimizing CapEx. • Increases cell site capacity by 40%, boosts average user throughput by 20% during congestion, and reduces CapEx and OpEx by 20%. • Proactively forecasts future cell site investment needs based on consumer Service-Level Agreements (SLAs).
Sustainability	• Efficient spectrum energization helps achieve sustainability and OpEx goals. • Energy Reduction delivers ~40% energy savings by using real-time consumer experience metrics to control spectrum energization with existing hardware.

Solution differentiation

Crosswork Assurance User Experience provides compact, actionable data with efficient AI-ready metrics, and is scalable with minimal back-end resources. This closed-loop solution correlates Consumer Experience (CX) metrics from each user IP traffic flow and cell site / endpoint with metadata such as geo-coordinates, site information, as well as, dynamic RAN and mobile core data (S1-U/S1-MME/S11/N4) to proactively manage network performance and customer experience.

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Crosswork Assurance User Experience Solution Overview

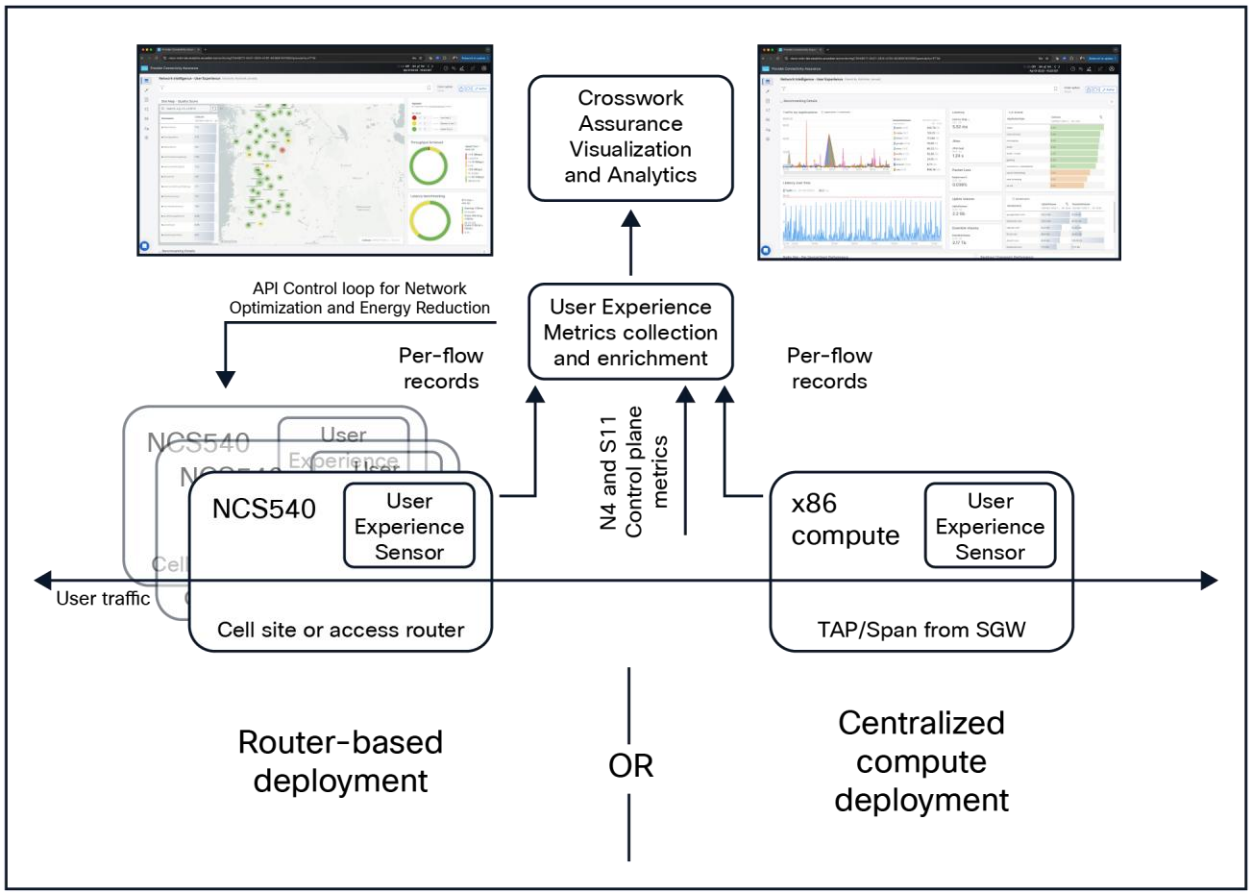


Figure 1.
High-level architectural topology

Crosswork Assurance User Experience consists primarily of two key elements:

- **User Experience Traffic Processor Sensor:** A Docker container hosting a software agent on a Cisco Cell Site Router (CSR) or on dedicated x86 compute.
- **Crosswork Assurance analytics:** The router monitors the desired interface and sends packets via the Switched Port Analyzer (SPAN) to the User Experience Traffic Processor Sensor. The sensor analyzes and characterizes traffic flows, exporting metrics through the metrics collection and enrichment, to the data platform for visualization, analysis and actions.

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Supported router product IDs

Supported platforms

- N540-24Q2C2DD-SYS
- N540-24Q8L2DD-SYS
- N540(X)-ACC-SYS
- N540-24Z8Q2C-SYS
- N540X-16Z4G8Q2C-D/A
- N540-12Z20G-SYS-D/A
- N540X-16Z8Q2C-D
- N540-28Z4C-SYS-A/D
- N540X-12Z16G-SYS-D/A

We also offer a server-based solution for customers who do not currently have the Cisco CSR platforms deployed. In this deployment mode the User Experience Sensor software runs on one or more dedicated servers that connect via SPAN from aggregation routers with connectivity supported through 10/25/40/100 Gbps interfaces.

Like the integrated router solution, the server-based solution comprises two components:

- **User Experience Traffic Processor Sensor:** The sensor can be deployed back in the aggregation network on Cisco UCS® rack servers. A typical Cisco UCS deployment can scale up to 320 Gbps of raw user data per server.
- **Crosswork Assurance:** In both the integrated and standalone offering, the platform has two components:
    - Crosswork Assurance
        - Ingestion of site and flow records from the data collector(s), and an AI-driven analytics solution that can be deployed on a customer premises or hosted by Cisco.
        - System compute requirements vary based on the amount of data ingested and how long data is retained.
        - Please contact your Cisco account representative to get the appropriate sizing for your use case.
    - Metrics collector
        - The metrics collector supports collecting data over a variety of protocols and securely streaming to Crosswork Assurance.
        - It is commonly deployed near the User Experience Traffic Processor Sensors.

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Licensing

The three Crosswork Assurance User Experience use cases are available as separate per-endpoint add-on licenses

SKY-ADV-UE-NI	Per endpoint license for Network Intelligence metrics
SKY-ADV-UE-NO	Per endpoint license for Network Optimization
SKY-ADV-UE-ER	Per endpoint license for Energy Reduction

The three use case licenses are independent and can be ordered separately or together depending on the required feature set.

Ordering information

Contact your Cisco account representative today for pricing and ordering information.

Cisco and partner services

Services from Cisco and our partners help you get the most value from the Crosswork Assurance User Experience solution, quickly and cost-effectively. In addition, we can help you:

- Solidify your vision
- Create a strategy
- Develop a roadmap
- Build a scalable design
- Strengthen your team by sharing what we know

Cisco Services (CX) delivers award-winning services with a history of market-changing innovation. In addition, Cisco Services is globally recognized for expertise in engineering IP next-generation network solutions and managing large system and network integration projects.

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Cisco environmental sustainability

Information about Cisco's environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the "Environmental Sustainability" section of Cisco's Corporate Social Responsibility (CSR) report.

Reference links to information about key environmental sustainability topics (mentioned in the "Environmental Sustainability" section of the report) are provided in the following table.

Table 2. Links to sustainability topics

Sustainability topic	Reference
Information on product material content laws and regulations	Materials
Information on electronic waste laws and regulations, including products, batteries, and packaging	WEEE compliance

Cisco makes the packaging data available for informational purposes only. It may not reflect the most current legal developments, and Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice.

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More information

Let's build the efficient network together

Working together, we can build a more efficient mobile network that delivers the finest customer experience possible. Start to improve network efficiency, not just build the bigger network. For additional information, visit Crosswork Assurance User Experience.

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Document history

New or Revised Topic	Described In	Date
Crosswork Assurance updates		May 18, 2026

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Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
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