Data sheet
Cisco public

Cisco Crosswork Hierarchical Controller

© 2026 Cisco and/or its affiliates. All rights reserved.

Contents

Product overview 3

Powerful, intuitive network discovery and visualization 3

Proactive network assurance 4

Advanced analytics and provisioning for smarter network operations 4

Features and benefits 5

Product specifications 6

Deployment 6

Prominent features 7

Ordering information 7

SDN controllers and network management systems supported 7

Warranty information 7

Cisco environmental sustainability 8

Solution Support 8

Cisco Capital 9

Learn more 9

© 2026 Cisco and/or its affiliates. All rights reserved.

Cisco Crosswork® Hierarchical Controller is a multidomain, multivendor software controller designed to provide end-to-end automation, visibility, and control across complex IP and optical transport networks.

Product overview

Cisco Crosswork Hierarchical Controller intelligently gathers network data from various domain controllers, unifying and normalizing this information into a centralized internal database. Beyond just data collection, it builds a comprehensive model of the network by mapping and storing usage relationships across all physical and logical network objects, delivering deep, actionable insights for more effective visibility, automation, planning, and control. Crosswork Hierarchical Controller covers a variety of use cases throughout the network and services lifecycle.

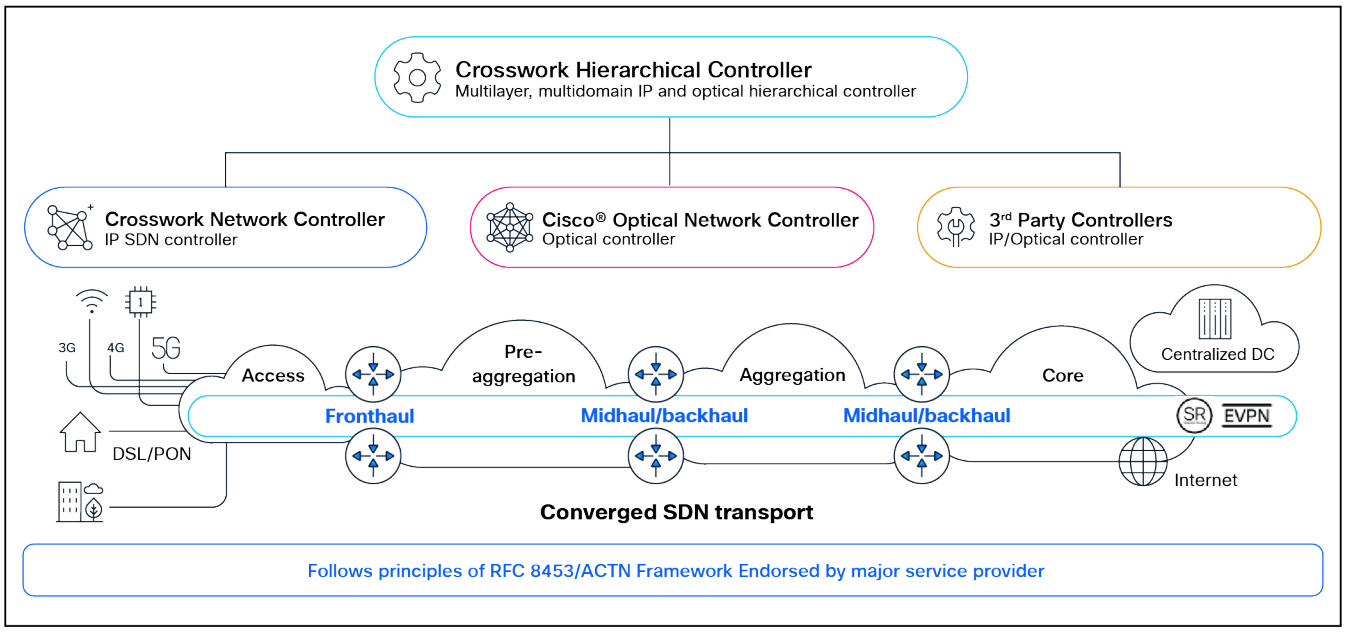


Figure 1.
Converged SDN transport with Crosswork Hierarchical Controller

Powerful, intuitive network discovery and visualization

Crosswork Hierarchical Controller delivers rich, real-time visualizations of multidomain, multilayer networks through an intuitive web-based interface. Operators can instantly view the topology of physical and logical elements, including routers, switches, optical links, and services, all from a unified and contextualized map.

Key visualization capabilities include:

- **End-to-end topology views** across IP, optical, and microwave-ready layers.
- **Dynamic drill-down** from global to granular views, down to individual nodes, circuits, and service paths.
- **Color-coded overlays** for link utilization, health status, or alarms.
- **Service and path trace** to analyze how traffic flows across domains.
- **Topology filtering** by technology, domain, vendor, or custom parameters.
- **Timeline-based views** to visualize changes and track historical events.

© 2026 Cisco and/or its affiliates. All rights reserved.

Business benefit

Enables faster operational decisions with a holistic view of IP, optical, and service layers—improving troubleshooting speed and network awareness.

Proactive network assurance

Crosswork Hierarchical Controller delivers end-to-end network assurance by continuously validating service performance, topology integrity, and policy compliance across multilayer, multidomain environments. It empowers operators to move from reactive troubleshooting to proactive, predictive operations.

Key assurance features include:

- **Service health monitoring:** Tracks the performance and availability of services across IP and optical layers, helping ensure adherence to service-level agreements (SLAs).
- **Topology integrity checks:** Continuously verifies that the actual network matches the intended design and topology, detecting anomalies or mismatches in real time.
- **Automated impact assessment:** Identifies the ripple effects of failures, degradations, or planned changes across services and domains.
- **Policy-driven validation:** Helps ensure that configurations and services align with predefined business and operational policies.
- **Closed-loop assurance:** Integrates with telemetry and analytics to trigger automated corrective actions based on real-time conditions.
- **Alarm correlation and root cause identification:** Reduces noise and accelerates problem resolution by linking related events across different network layers and domains.

Business benefit

Minimizes downtime and SLA violations with early detection of service-impacting issues, improving customer satisfaction and operational reliability.

Advanced analytics and provisioning for smarter network operations

Crosswork Hierarchical Controller integrates powerful analytics capabilities that transform raw network data into actionable intelligence. By continuously collecting, normalizing, and correlating data across multiple domains and layers, Crosswork Hierarchical Controller delivers deep insights that enhance decision making, automation, and service assurance.

Key analytics features include:

- **Topology analytics:** Understand complex interdependencies between physical and logical network elements.
- **Path and resource utilization analysis:** Identify underused or congested links to optimize performance and capacity planning.
- **Anomaly detection:** Detect unusual patterns and performance deviations across layers and domains.
- **Impact analysis:** Simulate potential service disruptions or configuration changes to understand their effects before implementation.
- **Historical trend analysis:** Monitor long-term usage patterns, failure trends, and capacity shifts for strategic planning.

© 2026 Cisco and/or its affiliates. All rights reserved.

- **Proactive detection of performance issues:** Reduce capacity waste and avoid outages while identifying optimization opportunities and driving smarter network planning.

Business impact

Turns end-to-end service activation into a push-button experience, eliminating hundreds of manual steps and weeks of coordination work:

- **90% faster service turn-up:** Activate complex IP plus optical offerings in hours instead of weeks.
- **Consistent, compliant configurations:** Every service follows the same gold-standard template.

Features and benefits

Table 1. Crosswork Hierarchical Controller features and applications

Discovery and visualization	Benefit
3D Explorer	Visualizes IP and optical links/tunnels/services between geo sites on a satellite or schematic map, with correlation between layers.
Layer Relations	Shows relationships between links in different layers (for example, shows all Segment Routing [SR] policies over all or specific physical links).
Network Inventory	Shows a full tabular view of devices, cards, ports, links, SR policies, and services.
Time Machine	Goes back to a date in the past and analyzes the network as it was at that point in time.
Dashboard	Displays visual widgets containing inventory, topology, and services information. Users can define rule-based widgets with SHQL queries.
SHQL	Simple yet sophisticated multilayer query language to get inventory, topology, tunnels, and services. All based on multilayer correlation.

Assurance	Benefit
Performance	Lets user correlate key traffic metrics from different layers (Layer 2 to Layer 0) into the same graph to simplify identification of anomalies and trends by time.
Service Assurance	Enables view of E-Line, L3VPN, and L2VPN service configuration and status, as well as service underlay topology, mapped to optical topology over a 3D map.
Root Cause Analysis	Finds the failed lower-layer links that are the root cause of a link or a service failure.
Link Assurance	Enables analysis of multilayer topologies of IP links, over ZR/ZR+ pluggables or optical transport network (OTN) to wavelength division multiplexing (WDM) network, and viewing of link hop-by-hop path and performance graphs per selected port and link.

© 2026 Cisco and/or its affiliates. All rights reserved.

Analytics	Benefit
Failure Impact	Supports planning of a maintenance event by finding which connections will be impacted by taking resources down and determining if there is an alternative path. When found, compares existing and alternative path latency, cost, and hops. Supported for OTN, ETH, and Resource Reservation Protocol – Traffic Engineering (RSVP-TE) tunnels.
Shared Risk Analysis	Finds out if there are commonly shared resources (node, site, link, and card) between a selected group of links in any layer. Group can be selected explicitly or as an SHQL rule.
Network Vulnerability	Checks for router segmentation in the event of any combination of Layer 1 through 3 device/link failures.

Provisioning	Benefit
Service Manager	Creates, reads, updates, and deletes (CRUD) services; shows and provisions all these service types: • L2VPNs, L3VPNs, RSVP-TE, and SR policies. • ETH/OTN connections, optical channels (OCH), and ZR links.

Product specifications

Cisco Crosswork Hierarchical Controller can be deployed on both VMware ESXi and KVM virtualization platforms. See the hardware requirements and scale limits in the installation guide.

Deployment

Cisco Crosswork Hierarchical Controller supports **standalone or supercluster** deployment models.

For geo-redundancy, a supercluster may be deployed in a **1+1+1 scenario**.

Supported virtualization environments:

- **ESXi:** OVA file on vCenter/ESXi
- **KVM:** QCOW2 file on RHEL/KVM

Contact your Cisco sales representative to learn more about these deployment choices and to determine the best option based on the target use cases.

© 2026 Cisco and/or its affiliates. All rights reserved.

Prominent features

Crosswork Hierarchical Controller is unique in providing full support of the lifecycle operations of IP and optical transport networks, with proven integration (pre-Software-Defined Networking [SDN] and SDN) to all lead vendors.

- Preintegrated with all vendors: Both pre-SDN and SDN APIs.
- Helps meet tight SLAs: Provisioning and assurance for both service overlay and underlay.
- Unique discovery solution for all network layers, all services, and cross-layer and cross-domain links.
- Sophisticated path computation, allowing optimization of paths for multilayer constraints using powerful path computation algorithms.
- Network analytics engine: Helps teams understand network anomalies and track changes and degradations over time using powerful query language.
- Scalability: Hierarchical control scales to over 10,000 elements in real time.
- Supports evolution from pre-SDN to SDN and from legacy networks to new ones.
- Provides demonstrable leadership for advanced use cases: Multilayer restoration, optimization, and predictive failure avoidance.

Ordering information

Crosswork Hierarchical Controller offers modular packaging to effectively meet your deployment use cases. The packages include functions classified as Essentials and Advantage along with optional add-on components. Contact your Cisco account representative for details on how to order Crosswork Hierarchical Controller.

SDN controllers and network management systems supported

Crosswork Hierarchical Controller has the industry's broadest IP and optical multivendor support across Nokia, Ciena, Huawei, Infinera, and others. See the adapters documentation for complete information.

Warranty information

Crosswork Hierarchical Controller is covered by the following warranty: https://www.cisco.com/c/en/us/products/warranties/warranty-doc-c99-740613.html.

© 2026 Cisco and/or its affiliates. All rights reserved.

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 "Environment Sustainability" section of the CSR Report) are provided in the following table:

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.

Solution Support

Experience streamlined support across the products and providers in your Cisco network environment with Cisco Solution Support. If an issue arises, skip the triage and just contact us. Cisco primary point of contact engineers are available 24x7 to deliver expert, centralized support across your software and hardware from Cisco and third-party technology vendors. We'll resolve your issue or, when needed, lead issue coordination with additional support teams inside and outside of Cisco to get the job done.

Maximize performance, reliability, and ROI of your Crosswork Hierarchical Controller with Cisco Solution Support. You get access to a team of Cisco solution experts who are your primary point of contact, delivering centralized support across your deployment 24x7x365. Whether you have an issue with a Cisco product or one from another vendor—or are just looking for guidance and assurance on your new solution—simply contact us. We'll take it from there and remain accountable for your case, from first call to resolution.

Note: If issues are identified as being due to third-party vendor devices, we expect you to engage the third-party vendor.
Cisco will work with you to provide triage information to the third party.

© 2026 Cisco and/or its affiliates. All rights reserved.

Cisco Capital

Flexible payment solutions to help you achieve your objectives

Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. Learn more.

Learn more

For more information on Cisco's network automation portfolio for service providers, please visit https://www.cisco.com/go/crosswork.

To learn more about Crosswork Hierarchical Controller or to schedule a demonstration, contact your Cisco sales representative.

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

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

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at **https://www.cisco.com/go/offices**.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: https://www.cisco.com/go/trademarks. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

Printed in USA C78-3578316-04 01/26

© 2026 Cisco and/or its affiliates. All rights reserved.