Cisco Nexus Dashboard

Contents

Cisco Nexus® Dashboard transforms data-center network operations with simplicity, automation, and analytics.

Product overview

In this era of digital transformation and business resiliency, continuous innovation is critical for organizations to succeed, and experiencing downtime along the way is not an option. Users increasingly demand more features, better usability, reliability, and environmental sustainability from the applications they use.

The network plays a huge role in meeting such demands and provisioning reliable data-center networking services as fast as possible, when and where organizations need it, is a must. However, network infrastructure management is becoming more complex, diverse, and distributed, with multiple configuration points, monitoring tools, and vast amounts of data generated every second (Figure 1).

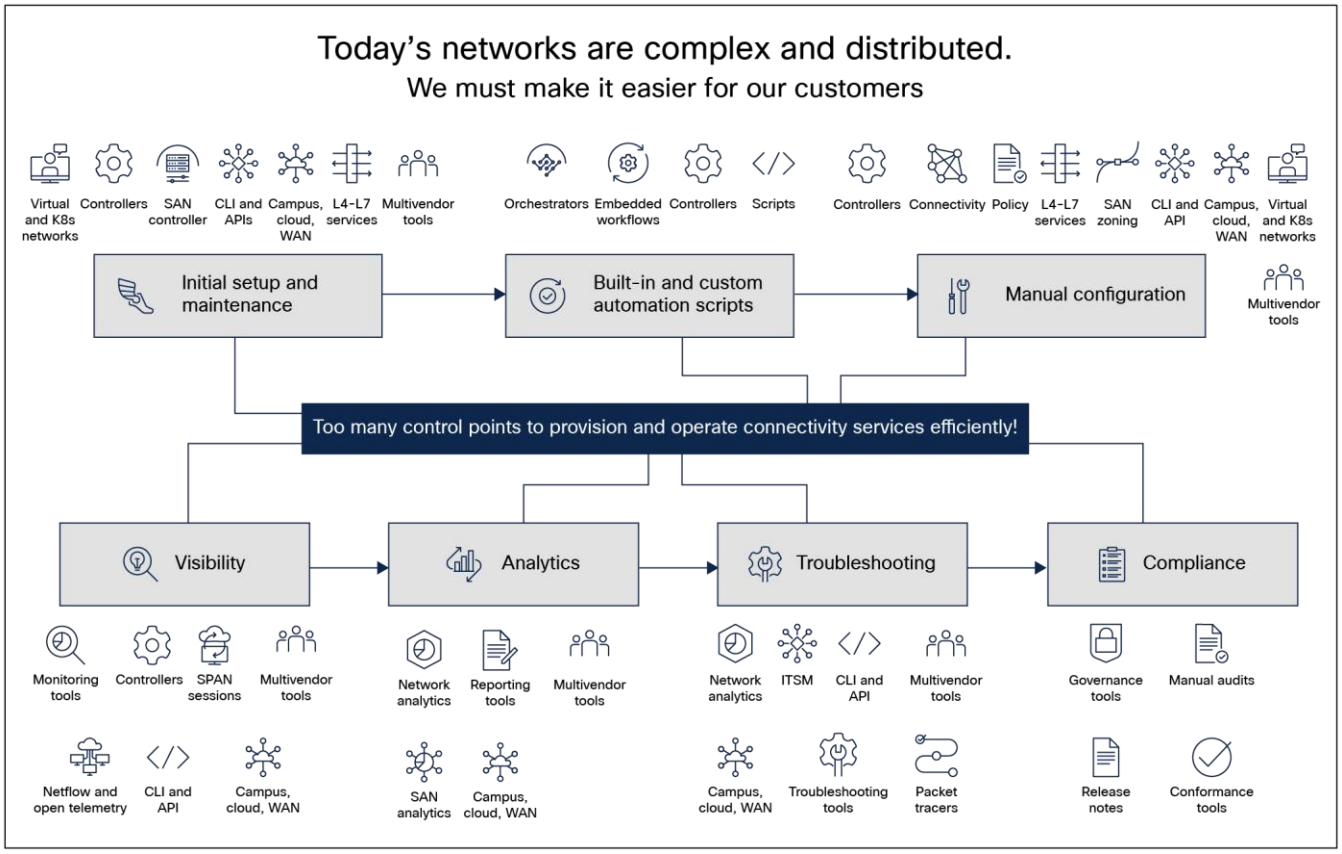

Figure 1.
Network complexity in a hyper-diverse and hyper-distributed world

Having an inconsistent way of configuring, provisioning, and operating the network often leads to human errors, potential security holes, and a reactive break-then-fix model that commonly increases downtime due to manual correlation, and endless finger-pointing between teams.

Included with every Cisco Nexus 9000 Series switch–tiered licensing purchase, Cisco Nexus Dashboard provides a single focal point to unite the disparate network configurations and views of multiple switches and data centers (Figure 2).

Cisco Nexus Dashboard helps to do the following:

- **Configure:** Leverage a centralized interface to define and manage network policies across ACI and NX-OS fabrics. Minimize errors and simply processes by using consistent, template-driven deployments and automate multi-site configurations.
- **Manage:** See a unified view of ACI and NX-OS environments, enabling centralized monitoring, troubleshooting, and policy control. Streamline operations across multiple sites with tools for network health management, event correlation, and proactive insights to ensure network reliability and performance.
- **Analyze:** minimize downtime by turning hardware and software telemetry into insights (including anomalies and advisories) to identify potential issues and recommendations to fix them. Cisco Nexus Dashboard gathers years of experience under a single network-operations platform to take advantage of its analytics to learn more about sustainability, compliance, changes, and traffic behavior (including flow records, drops, congestion, latency, AI/ML RoCEv2, and more) and, from a network perspective, pinpoint exactly where and when an application issue originated.

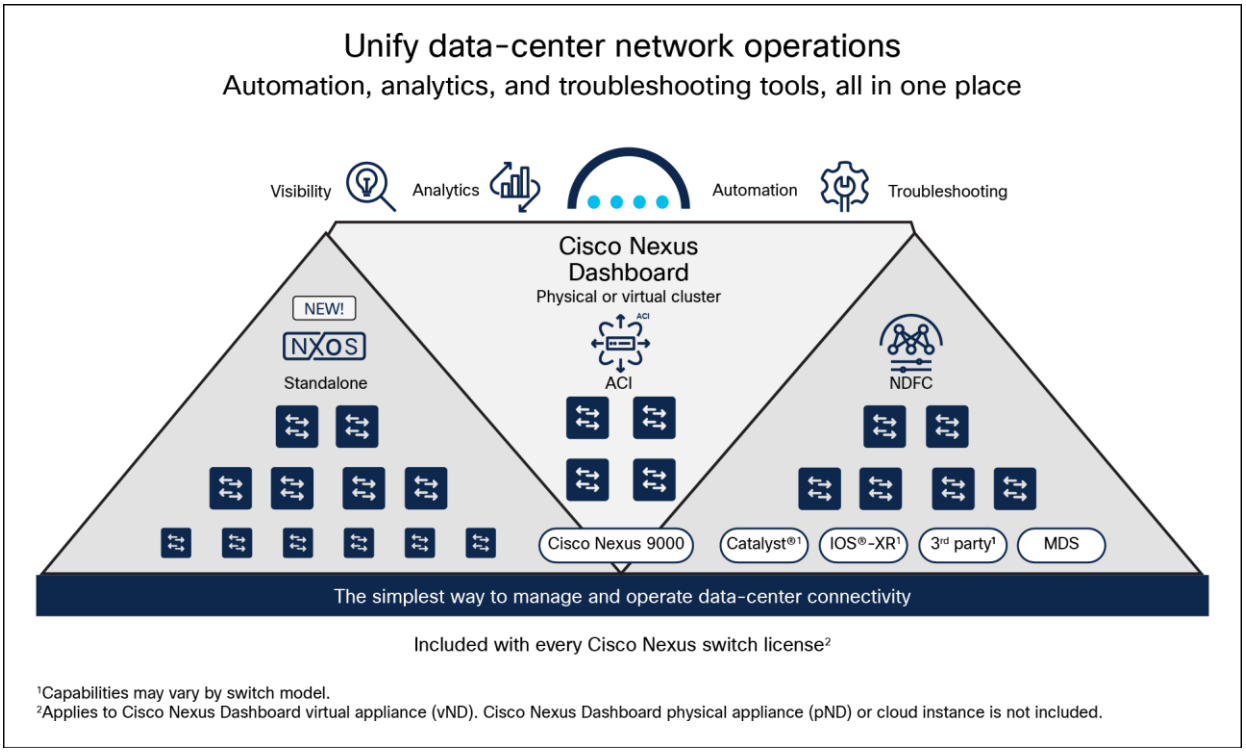

Figure 2.
Cisco Nexus Dashboard: powering automation and analytics with a unified, agile, and sustainable networking platform

Operational infrastructure standardization and toolchain unification directly lead to operational excellence and savings and free up resources for business innovation. By providing a single point of management that empowers users to provision and operate their networks across different switches, fabrics, and locations, Cisco Nexus Dashboard is evolving to become one of the simplest ways to provision, monitor, and manage data-center networks.

Platform features

Table 1. Cisco Nexus Dashboard platform features and benefits

Feature	Benefit
Unified services	Cisco Nexus Dashboard offers a unified platform that integrates key services—Insights (visibility and telemetry), Orchestrator (orchestration), and Fabric Controller (automation)—to deliver comprehensive network visibility, automation, and operational simplicity. By combining these services under a single pane of glass, Nexus Dashboard eliminates the complexity of juggling multiple tools and interfaces, streamlining how network operations teams manage infrastructure. Telemetry and analytics provide proactive monitoring and AI-driven anomaly detection, enabling teams to identify and resolve issues before they impact performance. Orchestration capabilities simplify the deployment and management of multisite and multidomain policies, ensuring consistent configurations across complex environments. Automation functions offer centralized provisioning, automation, and lifecycle management of data-center fabrics. Together, these integrated services empower IT teams to accelerate operations, reduce downtime, and maintain network compliance—ultimately delivering higher agility and reliability for the modern data center.
Platform support	Cisco Nexus Dashboard offers flexible platform deployment options to meet the diverse needs of modern data-center operations, including support for Cisco UCS® M6 and M8 **based appliances** for physical Nexus Dashboard (pND) deployments. These high-performance platforms provide the compute power and scalability required for large-scale, high-throughput environments. For organizations seeking virtualization flexibility, Nexus Dashboard is also available as a virtual appliance (vND), enabling deployment on existing virtual infrastructure without the need for dedicated hardware. Additionally, a cloud-hosted Nexus Dashboard option allows customers to consume the cloud-hosted customer owned deployment, eliminating infrastructure management overhead while delivering the same powerful capabilities across LAN, SAN, and IPFM environments.
User experience	Cisco Nexus Dashboard features a modern, intuitive user interface combined with a modular, microservices-based architecture that delivers a scalable and resilient platform for managing LAN, SAN, and IP Fabric for Media (IPFM) deployments. The sleek, user-friendly UI provides a unified, consistent experience across all integrated services, making it easy for teams to navigate complex environments and take action quickly. Under the hood, the microservices design enables each function to run independently, allowing for faster updates, better fault isolation, and seamless horizontal scaling as infrastructure demands grow. With built-in high availability through clustered deployments and active/active redundancy, Nexus Dashboard ensures continuous operation and minimal downtime.
Multi-cluster support	With Cisco Nexus Dashboard, operators seamlessly consume services they have access through a single portal, even if they are running on different Nexus Dashboard clusters.
Backup and restore	The Backup and restore feature in Cisco Nexus Dashboard provides a critical safeguard for maintaining network resilience and operational continuity. This capability enables administrators to create full, scheduled, or on-demand backups from the Nexus Dashboard interface. In the event of a failure, misconfiguration, or disaster-recovery scenario, teams can quickly restore the network to a known good state with minimal downtime or manual intervention. The process is fully integrated into the platform's automation framework, ensuring consistency and reducing the risk of human error. With centralized control and simplified workflows, the Backup and restore feature not only protects your infrastructure but also enhances confidence in making changes, scaling operations, or recovering from unexpected events.

Feature	Benefit
Role-Based Access Control	Role-Based Access Control (RBAC) in Cisco Nexus Dashboard ensures secure, segmented, and efficient management of network operations by allowing administrators to assign permissions based on user roles and responsibilities. Through a centralized and intuitive interface, RBAC enables access control across all integrated services ensuring that users only see and interact with the resources relevant to their role. Whether it's limiting access to critical configuration settings or granting read-only visibility to auditors and operations teams, RBAC helps organizations enforce compliance, reduce risk, and streamline collaboration.
Journey	Cisco Nexus Dashboard Journey provides customers with a guided, intuitive experience to help them unlock the full value of the platform. Designed to simplify onboarding and accelerate time-to-value, the Journey feature walks users through key capabilities, setup workflows, and best practices across all of the product's capabilities. Whether deploying Nexus Dashboard for the first time or expanding its use across multiple sites, the Journey offers contextual tips, in-product guidance, and visual progress tracking to ensure users understand not just how to use the product—but how to maximize its impact on their operations.
Air-gap support	Customers who can't connect to the internet can utilize Insights' advisory features to better identify risks to their infrastructure (including PSIRTs, defects, EoS/EoL notices, and field notices).
Multi-Cluster Connectivity	Connect multiple Nexus Dashboard and/or APIC clusters together to provide a seamless single pane of glass user experience.

Automation and management features

Table 2. Cisco Nexus Dashboard automation and management features

Feature	Benefit
Fabric creation and switch discovery	Cisco Nexus Dashboard provides a variety of fabric types, such as VXLAN EVPN, classic Layer 2-3, AI/ML, and enhanced classic LAN. Users are guided through a simple workflow to newly create or import existing fabric configurations, define standards-based basic and advanced fabric settings, and deploy the fabric. During switch discovery, Nexus Dashboard automatically identifies and onboards switches, leveraging a seed IP, and applies initial configurations to onboard them onto the fabric.
Switch roles	Cisco Nexus Dashboard supports various switch roles, such as spine, leaf, border, and access. Users can define a switch's role after onboarding. Nexus Dashboard ensures that the proper configuration and policy application is applied based on the switch's position and responsibilities in the network topology.
Inventory	Cisco Nexus Dashboard's inventory view provides a centralized, real-time display of all discovered network devices, detailing their sync status, roles, and health for streamlined management and monitoring.
Power On Auto Provisioning (POAP)	POAP automates the process of onboarding new switches into the fabric. When a switch is powered on and connected to the network, Cisco Nexus Dashboard detects it, pushes a predefined configuration, and integrates it into the fabric without manual intervention. This significantly reduces provisioning time and minimizes human error during deployment.
Configuration drift visibility	Automatically detects changes across device settings, policies, and fabric elements. This feature provides visibility into unintended or unauthorized modifications that could impact performance, security, or compliance. Cisco Nexus Dashboard not only highlights the differences through a side-by-side comparison but also pinpoints the exact lines and values that have changed, enabling rapid troubleshooting and remediation.

Feature	Benefit
Unified topology views and control	• Presents topology views showing physical and overlay networks on the same page, helping IT administrators quickly identify the extent of virtual overlay networks on a programmable fabric • Provides general visibility into Layer-2 network connectivity mapped on the physical topology view • In topology view, shows VXLAN details, VXLAN tunnel endpoint (VTEP) status, and VXLAN network identifier (VNI) status on a per-switch basis. Additionally, link-layer and overlay status details alongside switch details aid troubleshooting and visibility. • Presents smart topology views showing virtual port channels (vPCs) and virtual device contexts for Cisco Nexus networks. (Topology views include VXLAN search.) • Zoom in and out and allow for search of switches, endpoints, etc. in a site • Provides topology, configuration, and information for virtual machines, port groups, DVS/vSwitches, vNICs, and VMNICs correlated with the physical network topology
Fabric control and overlay visibility and management	• Provides fabric management for multiple types of LAN solutions, including VXLAN-EVPN, AI/ML networks, and traditional three-tier LAN deployments with workflows for provisioning LAN services such as VPCs • Includes intuitive overlay management with built-in best practices and maximum visibility for robust Cisco NX-OS configuration profiles • Autodetects unprovisioned switches for use in fabric builder with day-0 POAP for policy-based bootstrapping of the fabric infrastructure • Compliance management ensures that network is in sync with intended deployment and notifies users when out of compliance, allowing users to deploy any corrections • Supports easy provisioning using interface groups. Attaches overlay networks to groups in one go, allowing new interfaces added to the group to automatically inherit the configuration. • Support for overlay network and VRF provisioning
Automation with Nexus Dashboard	Cisco Nexus Dashboard offers powerful automation capabilities through integrations with Ansible and Terraform, empowering NetOps teams to streamline operations and reduce manual configuration errors. Cisco provides official Ansible modules and Terraform providers to support full lifecycle management and declarative provisioning to allow seamless integration into CI/CD pipelines for network infrastructure changes with Nexus Dashboard. This accelerates provisioning across large-scale networks to achieve consistency, scalability, and reliability.
LAN Fabric One Manage	The LAN Fabric One Manage feature in Cisco Nexus Dashboard (ND) enables centralized management of fabric and multisite groups across multiple Nexus Dashboard clusters. It allows you to: • Create or import a multisite domain (MSD) from any ND instance • Designate a parent instance, add child fabrics, and enable full VXLAN EVPN multisite functionality • Use one-click deployment to automatically configure the multisite underlay • Eliminate the need for separate orchestration tools The LAN Fabric One Manage dashboard provides a unified view of all ND-managed clusters, showing cluster count, fabrics, switches, health, versions, and models. Remote access through Nexus Dashboard allows comprehensive monitoring and management from a single interface, with detailed drill-down into any fabric.

Feature	Benefit
Microsegmentation using VXLAN Group Policy objects	Microsegmentation with the VXLAN Group Policy Option (GPO) in Cisco Nexus Dashboard simplifies traffic control by using security group policies based on IP, VLAN, and VM attributes. Key features include: • Dynamic endpoint classification into security groups • Centralized policy management via the "Segmentation and. Security" tab in Nexus Dashboard • Policy enforcement across multiple sites in VXLAN fabrics • East-west traffic segmentation, reduced attack surface, and improved security isolation This approach offers flexible, scalable segmentation aligned with your network architecture
L4-L7 service insertion, service chaining, and load balancing	The L4-L7 service insertion, chaining, and load balancing feature in Cisco Nexus Dashboard enables seamless traffic redirection to service devices within a VXLAN EVPN fabric—no external fabric required. Key capabilities include: • Service clusters and chaining for redirecting traffic through L4-L7 devices • Simplified management of switches and interfaces through Nexus Dashboard • Easy enablement through fabric settings • Enhanced Policy-Based Redirect (ePBR) for load balancing and application-aware traffic steering • Automated onboarding of service nodes with built-in security and compliance This feature streamlines service integration and improves traffic control and security across the data-center fabric.
Change control	The change control management feature enables tracking and approval of network intent changes. It associates unique tickets with specific actions, allowing deployment operations to occur only through these change control tickets, ensuring a controlled and auditable process. Additionally, these changes can be rolled back as necessary. This feature streamlines network configuration changes by enforcing a structured approval workflow, enhancing operational control and compliance.
Fabric software management	Cisco Nexus Dashboard makes upgrades easy and less time-consuming with a simplified image management workflow. This workflow is for device upgrades and downgrades, patching, Electronic Programmable Logic Device Upgrades (EPLDs), Software Maintenance Updates (SMUs), and more. Nexus Dashboard can recommend or create groups for switch upgrades, allowing users to track the upgrading of switches in a fabric in a more controlled way than previously. Prior to upgrading switches, Nexus Dashboard produces a pre-upgrade analysis to warn users of any potential conflicts with upgrades and to check the health of their switches. Nexus Dashboard will continue to support maintenance-mode and RMA actions on the actual topology display – network administrators can put a switch into maintenance mode and swap serial numbers with a replacement unit with a few clicks. Additionally, Nexus Dashboard supports disruptive or nondisruptive upgrade types. After completing an upgrade, users can view a post-upgrade report to understand any changes that occurred within their fabric and confirm the upgrade successfully went through.
Git repository integration	Users can seamlessly integrate their Git repository with Cisco Nexus Dashboard, enabling synchronization for nondefault templates. This feature facilitates external nondefault template modifications, ensuring a streamlined process as changes are pulled into Nexus Dashboard and deployed across fabrics. Users can also push any template updates back to the Git repository, as needed.

Feature	Benefit
Quantum key distribution for MACsec through SKIP protocol	Cisco Secure Key Integration Protocol (SKIP) is supported in your Nexus switches and empowers establishing communication with QKD devices and utilizing these devices in the exchange of MACsec encryption keys used for inter-fabric connectivity. Nexus Dashboard automates the configuration of quantum keys that are used to connect two fabrics using inter-fabric links for data-center VXLAN EVPN, enhanced classic LAN, and external connectivity networks.
Non-Nexus Platform Support: IOS-XE and IOS-XR	For Cisco IOS XE platform Cisco® Catalyst 9000 Series switches, Cisco Nexus Dashboard supports VXLAN EVPN automation. Nexus Dashboard will also provide additional support for Cisco IOS XR devices, Cisco ASR 9000 Series Aggregation Service Routers, and Cisco Network Convergence System (NCS) 5500 modular platforms, to be managed in external fabrics in managed mode. Nexus Dashboard will be able to generate and push configurations to these switches, and configuration compliance will also be enabled for these platforms.
REST and JavaScript Object Notation (JSON) API	• All northbound APIs are REST. Cisco Nexus Dashboard's GUI uses these REST APIs for all GUI functions. • Includes self-documented "swagger"-style built-in documentation, with examples • Enables integration with third-party or custom orchestration and automation tools such as Ansible and Terraform.
Provisioning and automation for IPFM fabrics	Streamlines the approach to day-0 provisioning for IP Fabric for Media (IPFM) deployments. By leveraging preconfigured policy templates that encapsulate industry "best practices," Cisco Nexus Dashboard enables rapid and consistent building of underlay networks, significantly reducing the time and complexity associated with initial fabric setup. These templates facilitate the creation of a robust IPFM underlay network, ensuring optimal performance and scalability. Furthermore, Nexus Dashboard supports the deployment of Non-Blocking Multicast (NBM) within the fabric, enhancing multicast traffic handling by preventing oversubscription and ensuring efficient bandwidth utilization across the network.
Flow and host policy control for IPFM fabrics	Cisco Nexus Dashboard plays a central role in defining and managing host and flow policies within the IPFM architecture. Host policies specify which endpoints are allowed to send traffic into the fabric. Flow policies are essential for end-to-end stitching of multicast flows with Non-Blocking Multicast (NBM). These policies allow the specific parameters to be defined for multicast flows, such as bandwidth allocation, quality-of-service (QoS) settings, and policing actions. By assuming full ownership of these configurations, Nexus Dashboard ensures a consistent policy framework across the fabric.
End-to-end flow visualization for multicast flows for IPFM fabrics	Cisco Nexus Dashboard enables detailed tracking of multicast flows across the network. This end-to-end visibility assists in ensuring optimal performance and aids in the rapid identification and resolution of issues.
SMPTE 2022-7 fabric redundancy visualization for IPFM fabrics	For networks employing SMPTE 2022-7 redundancy, Cisco Nexus Dashboard offers side-by-side visualization of the red and blue fabrics. This feature allows operators to monitor both network paths simultaneously, ensuring seamless content delivery and facilitating quick detection of discrepancies between redundant paths.
RTP flow monitoring for IPFM fabrics	Network health monitoring. RTP flow monitoring to pinpoint packet loss.
Multicast NAT for IPFM fabrics	Cisco Nexus Dashboard allows step-by-step multicast network address translation (NAT) configuration. It can support configuration templates for ingress- and egress-multicast NAT and unicast-to-multicast and multicast-to-unicast translations. In addition to configurations, Nexus Dashboard provides complete visibility of pre- and post-NAT flows, in both tabular and topology views.

Feature	Benefit
Multitenancy VRF for IPFM fabrics	With this feature, we are bringing in VRF support for Non-Blocking Multicast (NBM) deployments where we can logically isolate multiple customers so that they can coexist on the same fabric. Multiple VRFs can be enabled in either an IPFM NBM-active or NBM-passive mode.
Broadcast controller integration for IPFM fabrics	API gateway for broadcast controller

Orchestration features

Table 3. Cisco Nexus Dashboard orchestration features and benefits

Feature	Benefit
Orchestrator capabilities	The platform extends orchestration across various environments, including data centers, 5G telco data centers, and cloud setups. It centralizes management, supports multidomain orchestration, and offers benefits such as templated orchestration to minimize errors, secure automated connectivity, and consistent network policies.
Application template deployment modes	Cisco Nexus Dashboard provides flexible deployment modes, including multi-site (stretch) for unified environments across sites and autonomous mode for independent site operations. The Cisco ACI® autonomous application template facilitates centralized configuration management, preventing shadow objects and supporting consistent orchestration.
Versioning and rollback capabilities	The platform offers a streamlined one-click upgrade workflow and supports configuration templates with versioning and rollback. Multi-site support extends network segments across up to 14 fabrics for unified orchestration.
Provisioning policy templates	Provisioning policies include various templates for application, tenant, fabric, L3Out, and L4-L7 service graphs, simplifying management with a unified view. Cisco ACI transit routing enables seamless inter-site L3Out connectivity, integrating components such as SR-MPLS L3Out and WAN mainframes.
Service chaining and orchestration	Advanced L4-L7 service chaining and policy-based routing (PBR) enhance flexibility and efficiency, simplifying security and network service deployments across on-premises and cloud data centers.
Endpoint Security Group (ESG) for distributed ACI fabrics	Endpoint Security Group (ESG) for distributed ACI fabrics enables granular security-policy orchestration and flexible segmentation across sites. Usability improvements include patch API enhancements, unified installation, and improved change control. Planning and architecture tools provide new multi-site topology views and flexible template management, supporting ESG in multisite deployments and autonomous remote leaf groups.
ND API gateway for ACI fabrics	Cisco Nexus Dashboard will route APIC API calls to the ACI fabrics managed by Nexus Dashboard.

Visibility features

Table 4. Cisco Nexus Dashboard visibility and telemetry features and benefits

Feature	Benefit
Global view	View and monitor the health of multiple fabrics distributed across multiple Cisco Nexus Dashboard clusters from a single point of control.
Mixed fabric ISN/IPN support	Onboard standalone NX-OS switches (ISN/IPN) with ACI fabrics.
Time-series database	Gather evidence from past data. Peer back in time to look at a specific sequence of events and gather intelligent insights.
Anomalies	Proactively monitor network health over time by using time-synced data across multiple parameters to derive deeper understanding of issues and behaviors. Discover the endpoints, applications, and flows impacted by network anomalies. Customize anomaly thresholds to your network needs.
Anomaly correlation	Reduce manual troubleshooting by allowing Cisco Nexus Dashboard to auto-correlate network anomalies to determine single root causes for faster remediation.
Anomaly advanced search	Accelerate root-cause diagnosis by searching specific endpoints or objects, and see all associated anomalies in the network.
Assurance	Provides comprehensive analysis and validation of network operations. It is designed to ensure network reliability and performance by monitoring network assurance, policy intent, change management, and performance metrics. Assurance provides a high level of network integrity and performance, reducing downtime and improving overall network health.
Traffic analytics	Traffic analytics allow users to monitor network performance metrics such as latency, congestion, and packet drops. This feature automatically discovers services running in the network by matching well-known Layer-4 ports to their corresponding service endpoint categories for TCP and UDP traffic. The system assesses service performance based on defined thresholds for these metrics, raising anomalies when deviations occur.
Flow telemetry	Use flow telemetry (FT) and flow-telemetry events (FTEs) to minimize troubleshooting time through automated root-cause analysis of dataplane anomalies, such as packet drops, latency, workload movements, routing issues, ACL drops, and more. Monitor flow-rate usage to optimize FT performance.
L4-L7 traffic visibility	Track end-to-end flows across externally connected devices such as firewalls, to help locate dataplane issues across device silos and deduce the locations of packet drops.
AI/ML and storage traffic congestion detection	Gain visibility into RoCEv2 traffic congestion and performance over time with ECN and PFC counters.
Remote storage	Collect evidence of network innocence for audits by exporting and storing flow-telemetry JSONs in external servers.
NetFlow collector	Maintain business continuity by having backward compatibility with legacy protocols.
Search and explore	Quickly locate objects across sites when troubleshooting issues. Explore policy-to-network associations and connectivity across multiple sites to understand the state of network deployment using powerful natural-language queries.
Connectivity analysis	Verify software and hardware programming consistency across all available traffic paths between source and destination endpoints. Track per-hop information and behavior.

Feature	Benefit
Compliance	Automatically enforce your IT governance and security policies in the network by establishing golden configuration and communication rules.
Pre-change analysis	Avoid network disruption when changing configurations by predicting the impact of the intended changes before deploying.
Delta analysis	Narrow down what network changes occurred between two points in time and quickly identify network health, configuration, and resource changes.
Upgrade assist	Perform 40+ checks prior to upgrades, and detect changes in configuration or operational state before and after switch upgrades.
Microburst detection	Expose and locate invisible microbursts. Find out congestion hot spots and protect application performance.
Multicast control plane	Use detailed statistics and state information of PIM, IGMP, and IGMP-snooping protocols to monitor multicast control plane health.
Multicast traffic visibility	Gain visibility into multicast sources, groups, receivers, switches, and traffic rates to monitor state and accelerate troubleshooting.
Sustainability	Optimize energy consumption and costs per site on a device level and measure carbon footprints across energy sources.
Real-time telemetry	Reflect new events, changes and/or anomalies for interfaces, telemetry collection status, and hardware statistics in near real-time.
Routing table	View routing table changes at the fabric and switch level, including next-hop and historical details.
Resource utilization	Provide efficient capacity planning to maintain top network performance. Get fabric-wide visibility of resource utilization and historical trends. Detect components exceeding capacity thresholds ahead of time; for example, TCAM, routes, ACL entries, ports, tenants, VRFs, and EPGs.
TCAM utilization	Manage TCAM capacity resources and security policy with advanced utilization analysis.
Hardware resources	Proactively monitor and report hardware-related anomalies by leveraging telemetry data from sensors such as CPU, memory, disk, power supply, fan speed, and temperature.
Statistics	Use detailed dataplane statistics to diagnose, locate, and remediate issues. Monitor and use protocol anomalies and state information to remediate BGP, vPC, LACP, CDP, and LLDP problems.
Endpoints	Locate virtual machines, bare-metal hosts, and other endpoints in the data-center fabric. Use historical data to track their movements.
Topology view and topology snapshot	Users can utilize their natural visuo-spatial ability to explore, navigate, discover, and zoom into issues, perform rapid troubleshooting using filters to focus on problematic nodes, and extend their historical view of their environments by comparing topology snapshots from different points in time to see which devices have been added or removed within their managed fabrics.
Customizable dashboards	Build custom dashboards for NOC-style monitoring by aggregating data from multiple sources into a single view. Monitor and manage key concerns—such as which issues should be visible to other users—using prebuilt, use case-specific dashboards or by creating your own with a flexible set of data-source widgets.

Feature	Benefit
Advisories	Get notified on PSIRTs, bugs, field notices, and EoS/EoL announcements. Take necessary action to stay secure and compliant and prevent unscheduled outages.
Software and hardware conformance	Minimize risk of running End-of-Sale (EoS) or end-of-life (EoL) devices. View the current and project the future status of network software and hardware inventory against known EoS/EoL notices to plan for upgrades.
Scale conformance	Automatically ensure that deployments are within recommended scale limits to minimize potential outages.
Cisco Technical Assistance Center (Cisco TAC) support	Automate the mundane, repetitive tasks of log collection and attach them to Cisco TAC Service Requests (SRs). Delegate additional log collection to the Cisco TAC team and free yourself from dull work.
Messaging support	Share Cisco Nexus Dashboard's enriched, value-added output with the application ecosystem through Kafka, syslogs, and email notifications. Build synergetic workflows with third-party IT applications.
Email notification	Get offline alerts about network health using the email-notification facility. Pick and choose which issues you need to be alerted about.
Air-gap support	Utilize Cisco Nexus Dashboard anomaly and advisory features to better identify network health and infrastructure risks for air-gapped sites.
Reporting	Export anomaly and advisory summaries through email and PDFs. Download content as PDF through brower Print and Save.
Product-usage telemetry	Enabled by Cisco to significantly improve product lifecycle management for IT teams that have deployed Cisco data-center fabrics. These data and related insights proactively identify product issues, improve services and support, and activate discussions to glean additional value from new and existing features.

SAN deployment features

Cisco Nexus Dashboard is designed with broad compatibility in mind, offering seamless support for multiple generations of Cisco Nexus and MDS switching platforms, ensuring operational continuity and investment protection across evolving data-center infrastructures. Whether managing legacy 16G and 18G Fibre Channel environments or modern 32G and 64G high-performance fabrics, Nexus Dashboard provides consistent visibility, analytics, and control through a unified interface. As the industry moves toward even higher-speed technologies, Nexus Dashboard is built to support next-generation speed increases, allowing organizations to adopt cutting-edge hardware without sacrificing centralized management or operational simplicity.

Cisco Nexus Dashboard brings exceptional power and intelligence to the management of high-performance storage networks, offering a unified platform that simplifies operations and enhances visibility across complex SAN environments. With robust performance management capabilities, it delivers real-time and historical telemetry that enables deep insights into traffic patterns, resource utilization, and potential bottlenecks. SAN Insights (SAN Analytics) takes this further by streaming rich, flow-level telemetry directly from MDS switches, allowing precise visibility into IOPS, latency, throughput, and congestion hotspots. Integrated SAN Zoning tools simplify and secure access control between initiators and targets, while operational dashboards provide customizable, at-a-glance views of fabric health and key performance indicators. Coupled with congestion management features that help detect, isolate, and resolve traffic contention before it impacts workloads, Nexus Dashboard empowers IT teams to proactively

optimize storage performance, ensure data availability, and scale confidently in mission-critical environments.

Table 5. Cisco Nexus Dashboard SAN deployment features and benefits

Feature	Description and benefit
SAN Zoning support	Cisco Nexus Dashboard significantly streamlines and safeguards SAN Zoning operations, turning what was once a complex, error-prone process into an intuitive and secure workflow. Through its visual, intuitive interface, administrators can easily create, modify, and deploy zoning configurations with greater confidence and fewer manual steps. The platform automatically validates changes in real time and provides visual indicators and warnings that highlight potential misconfigurations. This proactive approach reduces the risk of service disruptions, enhances compliance, and accelerates the zoning lifecycle.
SAN Insights / SAN Analytics	The SAN Insights feature in Cisco Nexus Dashboard delivers powerful visualization and analytics capabilities by leveraging real-time telemetry data streamed directly from Cisco MDS switches. This feature transforms raw SAN Analytics data into actionable insights, offering deep visibility into fabric performance, host-to-target flows, IOPS, throughput, latency, and congestion points. With intuitive dashboards and interactive charts, SAN Insights helps storage and network teams quickly identify bottlenecks, optimize resource allocation, and troubleshoot issues with precision.
Configuration drift	Automatically detect changes across device settings, policies, and fabric elements. This feature provides visibility into unintended or unauthorized modifications that could impact performance, security, or compliance. Cisco Nexus Dashboard not only highlights the differences through a side-by-side comparison but also pinpoints the exact lines and values that have changed, enabling rapid troubleshooting and remediation.
Default performance utilization policies	In Cisco Nexus Dashboard, the Performance Utilization Policy is enabled out of the box to provide immediate visibility into the health and performance of your data-center fabrics. This built-in policy automatically collects key telemetry metrics, such as interface utilization across network devices, offering baseline monitoring without requiring manual configuration. By proactively tracking these critical indicators, the default Performance Utilization Policy enables the platform's telemetry engine to detect performance degradation and potential bottlenecks early in the lifecycle.
SAN Fabric limits	Cisco Nexus Dashboard enhances operational clarity by visualizing fabric limits—or maximum supported values—across various infrastructure elements within its intuitive interface. This includes key metrics such as the maximum number of module- and switch-level FLOGIs, zones, zone sets, and other policies supported per switch. By presenting these limits in a clear, graphical format, Nexus Dashboard helps network operators quickly understand how close their environment is to capacity, enabling smarter planning and proactive scaling decisions.
Multi-Interface Charting comparison	The Multi-Interface Charting feature in Cisco Nexus Dashboard for SAN fabrics provides powerful comparative analytics by allowing users to visualize performance metrics across multiple interfaces simultaneously. This capability enables operators to track and compare key indicators—such as throughput (Rx and Tx)—across different ports, line cards, or switches within the same timeframe. By consolidating this data into a single, customizable chart, teams can easily spot anomalies, identify underperforming interfaces, and validate performance consistency across the fabric.

Feature	Description and benefit
Optics visualization	Cisco Nexus Dashboard delivers proactive optics health monitoring by continuously analyzing telemetry data from SFPs (small form-factor pluggables) to detect signs of degradation before failures occur. It monitors critical parameters such as transmit/receive power, temperature, and voltage and uses historical data to establish performance baselines and identify trending anomalies over time. This trend-based analysis allows the system to recognize gradual deterioration in optics—such as slowly declining signal strength or temperature fluctuations—well before thresholds are breached. Nexus Dashboard correlates these patterns and highlights at-risk optics with visual indicators and contextual alerts, enabling teams to replace or remediate components proactively.

Managing Cisco Nexus smart switches on Cisco Nexus Dashboard

Table 6. Managing Cisco Nexus Smart Switches – features and benefits

Feature	Benefit
Lifecycle management, automation, and integrated security for Smart Switches	Cisco Nexus Dashboard delivers comprehensive lifecycle management and networking automation workflows specifically tailored for Cisco Nexus smart switches. It achieves seamless integration with Cisco Security Cloud Control/Hypershield, providing enhanced insights, assurance, and advanced troubleshooting capabilities for these intelligent network devices. This integration is crucial for modern data centers requiring both agility and robust security.
NetOps and SecOps: isolated workflows, seamless delivery	On Cisco Smart Switches, Cisco Nexus Dashboard facilitates a clear separation of duties through isolated yet seamlessly delivered NetOps (network operations) and SecOps (security operations) workflows. NetOps teams leverage Nexus Dashboard for traditional network management tasks, whereas SecOps teams utilize Cisco Security Cloud Control/Hypershield to manage security policies. This separation enables teams to maintain their established persona-based operational models, practices, and procedures, fostering efficiency and reducing conflicts.
Deployment with Hypershield	NetOps teams utilize Cisco Nexus Dashboard to deploy a single, standardized NX-OS image across all Cisco Nexus smart switches within a fabric. This includes deploying the necessary Cisco Hypershield firmware within the DPUs (Data Processing Units) of the Cisco Nexus smart switches, enabling L3/L4 stateful segmentation capabilities.Nexus Dashboard integrates directly with Cisco Security Cloud Control/Hypershield to provision Hypershield tokens and proxies. This ensures that the Cisco Nexus smart switches are securely authenticated and onboarded, allowing for seamless policy provisioning and compliance monitoring.
Network automation	Cisco Nexus Dashboard automates a wide range of networking tasks, including network fabric policy provisioning, VLAN management, and VRF configuration. It also gathers valuable network traffic insights and telemetry data to inform network optimization strategies.
Traffic redirection	Cisco Nexus Dashboard manages VRF/VLAN traffic redirection policies, directing traffic to the DPU for L3/L4 stateful segmentation and inspection.
High availability	Cisco Nexus Dashboard facilitates the creation of high-availability, active/active firewall pairs between Cisco Nexus smart switches and their integrated DPUs. This ensures continuous operation and synchronizes state tables for seamless failover.
Security policy automation	Cisco Hypershield, through Cisco Security Cloud Control, automates security policy provisioning and lifecycle management directly within the Cisco Nexus smart switch DPU. It also gathers security policy hit counts and compliance insights, providing a comprehensive view of the security posture.

Feature	Benefit
Network insights	Cisco Nexus Dashboard provides existing network insights capabilities specifically adapted for Cisco Nexus smart switches, offering detailed performance metrics, anomaly detection, and root cause analysis tools.
Security insights	Cisco Nexus Dashboard offers security-focused insights, including policy visibility, compliance information, and security event correlation. It shares critical network health and traffic analytics with the security team through Cisco Security Cloud Control/Hypershield, fostering collaboration.
Troubleshooting workflows	Cisco Nexus Dashboard offers a suite of troubleshooting workflows, including packet tracing between the NPU and DPU firewalls, packet-capture capabilities, and traffic spanning for detailed analysis. The topology view automatically highlights potential hotspots, accelerating root-cause analysis and reducing Mean Time To Resolution (MTTR).

Integrations

Table 7. Cisco Nexus Dashboard integrations

Integration	Benefit
VMM integrations	Cisco Nexus Dashboard seamlessly integrates with virtualization and container platforms such as vCenter, Kubernetes, and OpenShift, bridging the gap between physical infrastructure and virtual environments. These integrations extend end-to-end visibility by providing rich insights into VMs, containers, and pods—including details such as IP and MAC addresses, connectivity status, associated networks/vSwitches, and their relationships to leaf switches or top-of-rack (ToR) devices in the data center. This holistic view enables more effective troubleshooting, optimized resource management, and stronger operational alignment between network and application teams.
DNS	Integrate Cisco Nexus Dashboard with your DNS provider to enrich endpoint details with hostname information, thereby making it easier to identify and track your endpoints.
AppDynamics	Analyze the impact of your network on application performance – all from a single console.
Infoblox IPAM	Enhance Cisco Nexus Dashboard's visibility by enabling it to monitor remote IP resource pool usage and allocations for comprehensive host visibility.
Panduit PDU	Monitor energy usage and unlock sustainability insights for fabrics and individual devices connected to a Panduit PDU.
Cisco Intersight®	Integrate to Cisco's cloud-operation platform to have access to features such as Connected Cisco Technical Assistance Center (Connected TAC), sustainability energy sources, advisory updates, and many others.
The integration is Hypershield	Embed security directly into your network with AI-powered management and automation tools

Platform support

For detailed platform and compatibility support, refer to:
https://www.cisco.com/c/dam/en/us/td/docs/Website/datacenter/day2ops/index.html.

Licensing

Cisco Nexus Dashboard software does not require an additional license, and it is included with all Cisco Nexus 9000 Series switch tiered-license purchases. Service and feature access is based on the purchased licensing tier. Automation features are offered as part of Cisco Data Center Networking (DCN) Essentials. Orchestration features are offered as part of DCN Advantage. Selected visibility and telemetry features are available in DCN Essentials and DCN Advantage licensing tiers. Previously, only DCN Premier customers could access visibility and telemetry features. This change allows all Cisco Nexus customers to access select visibility and telemetry features and realize additional use cases and value for each tier.

For a guide to Cisco Nexus Dashboard ordering, please refer to the ordering guide.

Licensing: There are no additional licensing requirements for Cisco Nexus Dashboard. For a guide to ordering, please refer to the ordering guide.

Scale

Cisco Nexus Dashboard delivers increased scale to meet the growing demands of modern, distributed data-center environments. Designed for large-scale operations, Nexus Dashboard can support thousands of network devices and endpoints across multiple fabrics and sites, providing centralized visibility and control without sacrificing performance. Its scalable architecture allows organizations to expand their infrastructure—whether it's adding more switches, sites, or services—while maintaining consistent policy enforcement and operational efficiency.

Please check the latest scale information for capacity planning here: https://www.cisco.com/c/dam/en/us/td/docs/dcn/tools/nd-sizing/index.html.

Product specifications

Please refer to the sizing guide for physical and virtual cluster size guidelines.

Table 8. ND-CLUSTER-G5S (based on Cisco UCS M8 server) – Cisco Nexus Dashboard platform cluster hardware specifications

Hardware specifications	Cisco Nexus Dashboard platform cluster node specifications
Memory	256 GB
Processor	AMD 9454
Hard disk	6 * 2.4 TB each = 14.4 TB total
SSD	960 GB
NVMe	1.6 TB
Power supply	1200 Watts

Table 9. ND-CLUSTER-L4 (based on Cisco UCS M6 servers) – Cisco Nexus Dashboard platform cluster hardware specifications

Hardware specifications	Cisco Nexus Dashboard platform cluster node specifications
Memory	256 GB
Processors	AMD 2.8GHz 7443P
Hard disk	4* 2.4 TB each = 9.6 TB total
SSD	960 GB
NVMe	1.6 TB
Power supply	1050 Watts 1600 Watts

Table 10. Virtual Nexus Dashboard – Data profile form factor (vND-Data)

Hardware Specifications	Cisco Nexus Dashboard Virtual node specifications
Processors	32 vCPU
Memory	128GB
Storage	3TB SSD/NVMe & 50GB HDD/SSD/NVMe
Supported Hypervisors	VMware ESXi 7.0, 7.0.1, 7.0.2, 7.0.3, 8.0, 8.0.2 Linux KVM with RHEL 8.6, 8.8

Table 11. Virtual Nexus Dashboard – App profile form factor (vND-App)

Hardware Specifications	Cisco Nexus Dashboard Virtual node specifications
Processors	16 vCPU
Memory	64GB
Storage	550GB HDD/SSD/NVMe
Supported Hypervisors	VMware ESXi 7.0, 7.0.1, 7.0.2, 7.0.3, 8.0, 8.0.2 Linux KVM with RHEL 8.6, 8.8

Table 12. Amazon AWS cloud form factor requirements per node of Cisco Nexus Dashboard

Specifications	Cisco Nexus Dashboard cloud node specifications
Amazon EC2 instance type	m5.4xlarge (recommended), m4.4xlarge
Amazon Elastic Block Store (EBS)	100G gp2 SSD, 300G gp2 SSD
Amazon Simple Storage Service (S3)	Standard S3 storage

Table 13. Ordering information

Part number	Product description
ND-CLUSTER-L4	Cisco Nexus Dashboard platform cluster based on Cisco UCS M6 server
ND-NODE-L4=	Cisco Nexus Dashboard platform node based on Cisco UCS M6 server
ND-CLUSTER-G5S	Cisco Nexus Dashboard platform cluster based on Cisco UCS M8 server
ND-NODE-G5S	Cisco Nexus Dashboard platform node based on Cisco UCS M8 server
ND-VIRTUAL	Cisco Nexus Dashboard virtual platform (OVA, KVM)

Table 14. Cisco Nexus Dashboard third-party ecosystem

Partner	Integration capability	Applications link
ServiceNow	ServiceNow incident visibility and management on Cisco Nexus Dashboard	ServiceNow App for Cisco Nexus Dashboard*
Splunk®	Real-time and historical monitoring (organization-specific KPIs and dashboards), troubleshooting, cross-tier correlation, and alerting automation for Cisco Nexus Dashboard Insights	Cisco Nexus Dashboard Insights App for Splunk Cisco Nexus Dashboard Insights Add-on for Splunk
HashiCorp Terraform	Terraform provider to support Cisco Nexus Dashboard Orchestrator Automation	Terraform Provider for Nexus Dashboard Orchestrator Automation
Red Hat Ansible	Ansible module to support Cisco Nexus Dashboard Fabric Controller and Cisco Nexus Dashboard Orchestrator Automation	Ansible Collection for Nexus Dashboard Fabric Controller and Nexus Dashboard Orchestrator Automation

Warranty information

Cisco Nexus Dashboard platform clusters have a 90-day limited liability warranty.

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 "Environment 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:

Table 15. Cisco Nexus Dashboard environmental sustainability

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

Reference links to **product-specific environmental sustainability information** that is mentioned in relevant sections of this data sheet are provided in Table 16.

* Not available for all Cisco Nexus Dashboard / Cisco Nexus Dashboard Insights versions

Table 16. Cisco Nexus Dashboard environmental sustainability

Sustainability topic	Reference
General	
Eco-design compliance (EU ErP Lot, etc.) **Environmental certifications (EPEAT, Energy Star, etc.)**	Table AA. Product compliance Table BB. Product compliance or Platform features/benefits
Power	
Idle, typical, or max product power **Hardware-enabled energy features**	Table CC. Product specifications Table DD. Platform features/benefits
Software-enabled energy features **Power supply information** **Power calculator**	Table EE. Platform features/benefits Table FF. Product specifications Table GG. Product specifications
Material	
Unit weight **System weight (product + packaging)** **Recycled content**	Table HH. Product specifications Table II. Product specifications Table JJ. Product specifications

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Learn more

Power your digital operations transformation with Cisco Nexus Dashboard

Are your operations teams tasked with delivering security, uptime, and business continuity on a complex data-center infrastructure? Do they have the right tools that provide proactive change management and precise troubleshooting information tied together in a unified, easy-to-consume user experience? Start powering the transformation of the networking operations teams by standardizing on the Cisco Nexus Dashboard experience. Meet and exceed critical business mandates of agility and availability as you operate your secure, intent-based data center from Cisco Nexus Dashboard.

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Support

As applicable, Cisco will provide support for the product as described here: https://www.cisco.com/c/dam/en_us/about/doing_business/docs/cisco-software-support-service.pdf.

Document history

Table 17. Document history

New or revised topic	Described in	Date
First draft		May 1, 2021
Second draft		May 12, 2021
Third draft		December 15, 2021
Fourth draft		March 14, 2022
Fifth draft		May 23, 2023
Major updates made throughout the data sheet	Entire data sheet	June 2025

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