



Cisco DNA Software SD-WAN and Routing Matrix

	Network Essentials	Network Advantage	Cisco DNA Essentials	Cisco DNA Advantage	Cisco DNA Premier
License type	Perpetual software with typical routing capabilities, bundled with Cisco DNA Essentials subscription license	Perpetual software with full routing capabilities, bundled with Cisco DNA Advantage or Premier license	3- or 5-year term subscription	Includes Cisco DNA Essentials, 3-, 5-, or 7-year term subscription	Includes Cisco DNA Advantage, 3- or 5-year term subscription
Management options	CLI, Web UI	CLI, Web UI	CLI, Web UI, Cisco DNA Center, vManage	CLI, Web UI, Cisco DNA Center, vManage	CLI, Web UI, Cisco DNA Center, vManage

Features					
	Network Essentials	Network Advantage	Cisco DNA Essentials	Cisco DNA Advantage	Cisco DNA Premier
Layer 3 routing High availability achieved by routing packets to a specific next-hop IP address based on the destination IP address.	✓	✓	✓	✓	✓
Programmability Model-driven programmability lets you automate configuration and control of your network devices, managed by Cisco vManage.	✓	✓	✓	✓	✓
MACsec encryption Configure MACsec for authenticating and encrypting packets between MACsec-capable devices, managed by the Cisco DNA Center appliance.	✓	✓	✓	✓	✓
Telemetry and visibility Model-driven telemetry lets you monitor your network by streaming data from network devices, continuously providing near-real-time access to operational statistics.	✓	✓	✓	✓	✓
Essential routing capabilities VRF-lite, NAT, OSPF, EIGRP, DNS, DHCP, BGP, IS-IS.	✓	✓	✓	✓	✓
Essential security capabilities MACsec-128, VPNs, ZBFW, PKI, ACLs, Cisco Umbrella Connector, Short IPS.	✓	✓	✓	✓	✓
Essential application experience Basic Quality of Service (QoS) (classification, policing, re-marking, scheduling), PBR, AVC, NBAR, IPSLA, DPI visibility (full Flexible NetFlow).	✓	✓	✓	✓	✓
Router management TACACS+, NETCONF, AAA, RESTCONF, gRPC, YANG.	✓	✓	✓	✓	✓
Cisco trustworthy solutions Help ensure hardware and software authenticity for supply chain trust and strong mitigation against man-in-the-middle attacks that compromise software and firmware.	✓	✓	✓	✓	✓
High availability and resiliency (patching) Support operational continuity, and maintain availability during routine maintenance and disaster recovery (VRRP/HSRP).	✓	✓	✓	✓	✓
DevOps integration Make it easy for your development and operations teams to continuously deliver applications.	✓	✓	✓ ¹	✓ ¹	✓
Essential unified communications Cisco Unified Border Element (CUBE) Connector.	✓	✓	✓ ¹	✓ ¹	✓
Optimize bandwidth utilization (multicast) Multicast is used between routers so they can track which multicast packets to forward to each other and to their directly connected LANs.		✓		✓	✓
Flexible network segmentation VRF, Cisco TrustSec (SGT, SGACL).		✓		✓	✓
Advanced routing functionality BGP, HSRP, IS-IS, MPLS, VPLS, GLBP.		✓		✓	✓
Advanced security functionality MACsec-256, ALG for ZBFW, VASI, URL filtering, AMP and Threat Grid Connector, Cisco Umbrella Cloud application discovery (visibility only), SSL Proxy.		✓		✓	✓
Cisco innovations SMU patching, SGTs, ETA, ISSU, mDNS Bonjour, EPC, web caching.		✓		✓	✓
Advanced unified communications SRST, support for voice modules.		✓		✓	✓
Limited segmentation and 50-device limit SD-WAN implementations are restricted to fifty (50) devices or fewer, and VPNs are limited to two (2).			✓		
SD-WAN functionality Basic WAN optimization, basic security, and flexible topology (hub and spoke, full mesh/partial mesh), dynamic routing, VNF lifecycle management.			✓	✓	✓
Automation and ease of management Single, centralized management console deployed in the cloud or on-premises to manage inventory, discovery, topology, site automation, network settings, device credential update, integrity verification, template programming, reports, and Plug and Play (PnP) applications. Supports simplified workflows for physical and virtual branch automation, day-0, day-2, day-N. NFV provisioning on ENCS and Cisco UCS E-Series, Cisco VNF orchestration (ISRV, vEdge, vASA, NGFW, and vWAAS).			✓	✓	✓
Essential security Enterprise firewall with application awareness, Snort IPS with signature updates, automated Cisco Umbrella DNS monitoring.			✓	✓	✓
Voice optimization Forward error correction and packet duplication.			✓	✓	✓
Full Flexible NetFlow This next-generation flow technology optimizes the network infrastructure, reducing operating costs and improving capacity planning and security incident detection.			✓	✓	✓
License portability Software services-enabled license portability lets your software licenses stay current through hardware upgrades and replacements at no additional cost.			✓	✓	✓
IPv6 tunnel capabilities Overlay tunneling encapsulates IPv6 packets in IPv4 packets for delivery across an IPv4 infrastructure (a core network or the Internet).			✓	✓	✓
EasyQoS dynamic monitoring Create and assign network-specific or device-specific policies to applications based on business intent that can be adjusted dynamically to guarantee services (Adaptive QoS).			✓	✓	✓
Software Image Management (SWIM) Automatically manage software upgrades with version control and the ability to deploy configurations across your network.			✓	✓	✓
Enterprise Network Functions Virtualization (ENFV) Facilitates branch virtualization on any hardware device - Cisco or third party. Supports existing branch migration without hardware upgrade.			✓	✓	✓
Management dashboards Dashboards include views into the overall view of the health of every network device or client, the operational status of every network device with suggested remediation for any communication issues, and the overall health of all applications on the network, with dedicated sections for business-relevant application issues and suggested remediation.			✓	✓	✓
Streaming telemetry Enables network devices to send near-real-time telemetry information. Full Flexible NetFlow, EEM, router monitoring (basic), VNF monitoring (ISRV, vWAAS), ENFV (ENCS, UCSE), topology, defined reports, and custom thresholds.			✓ ¹	✓ ¹	✓
Unlimited segmentation and devices SD-WAN implementations unrestricted, VLAN implementations unrestricted.				✓	✓
Optimized SaaS and IaaS cloud connectivity Cloud onRamp for IaaS and SaaS.				✓	✓
vAnalytics Provide real-time information for failure correlation, cross-customer benchmarking, and application performance scores. Enable future planning based on intelligent data (application/bandwidth forecasting, branch expansion analysis, policy change what-if scenarios). Provide a quality of experience score for applications running on your network to help quantify performance based on recent changes made on your network.				✓	✓
Optimized multicloud colocation connectivity Cloud onRamp for Colocation.				✓	✓
Advanced security Cisco AMP, basic URL filtering, Cisco Umbrella application discovery.				✓	✓
Cisco Umbrella SIG Essentials, including					✓
Web Content Filtering Provides detailed reporting with full URL addresses, user and network identity, allow or block actions, plus the external IP address. Also permits content filtering by category or specific URLs to block destinations.					✓
Cloud App Discovery and Granular App Control Provides app discovery, details and risk information, plus the ability to block the use of offensive or inappropriate cloud applications in the work environment. Apply granular controls to block specific user activities (e.g., file uploads to Box and Dropbox, attachments to Gmail, post/shares on Facebook, Twitter, etc.).					✓
File-type Controls Prevent the download of specific file types via policy. Block risky files (executables which may cause instability, risk data leaks) or block media/video files (bandwidth hogs, possible copyright issues).					✓
Cisco Advanced Malware Protection (AMP) for Web Security Advanced anti-virus and anti-malware protection powered by Cisco Talos threat intelligence. Cisco's Advanced Malware Protection engine searches billions of events per day and blocks over 20 billion threats each day.					✓
Cisco Threat Grid Sandbox Advanced file sandboxing using static and dynamic threat intelligence to detect and report on malicious files that make it through Cisco's AMP inspection.					✓
L3 - L4 Cloud Firewall Provides visibility and control for Internet traffic across all ports and protocols, IPsec tunnel support for secure traffic routing to cloud infrastructure, automated reporting logs, and customizable IP, port, and protocol policies displayed in a secure dashboard.					✓
Roaming User Protection Protects your employees even when they are off the VPN using Cisco AnyConnect. Enjoy seamless protection against malware, phishing, and command-and-control callbacks wherever your users go.					✓

Support					
SWSS Software support services that also offer license portability and ongoing innovation in the subscription software stack, including 24-hour TAC support.				✓	✓
SNTC Smart Net Total Care, 24-hour hardware and network software stack support provided by TAC.	optional	optional			

✓¹ = Functionality available in a routing-only implementation.