

























Routing Product Comparison









	Cisco	HPE	Huawei	SD-WAN Vendors
User Experience				
Application-aware WAN	 <p>Monitor more than 1400 applications and network performance. Troubleshoot issues quickly. Deploy business-intent policies across the entire network with no probes or additional hardware.</p>	 <p>Limited Limited router and network performance monitoring, primarily with sFlow tools.</p>	 <p>Limited Application monitoring through NetStream supports the NetFlow v9 export format. NetStream is sampled Layer 4 (flow-based) and not true deep-packet-inspection technology.</p>	 <p>Limited Support varies between basic and advanced application visibility and performance monitoring.</p>
Application high availability	 <p>Monitor path performance and apply what is learned to select the best network path for a given application. Effectively load balance across paths while delivering ideal application-level SLAs.</p>	 <p>Limited Supports basic routing metrics and load balancing.</p>	 <p>Limited Offers basic policy-based routing, which is static routing policy per application. The technology is not based on an application-level SLA.</p>	 <p>Limited Support varies from basic link monitoring to more advanced, per-application class-level monitoring.</p>
Enhanced application experience	 <p>The Cisco software- and hardware-integrated solution offers bandwidth optimization, application acceleration, and intelligent caching.</p>	 <p>Limited Supports TCP fast Open and Data Redundancy Elimination and LZ compression for general TCP optimization only. Lacks granular application.</p>	 <p>Limited Requires extra hardware. Does not support intelligent caching or WAN acceleration.</p>	 <p>Limited Requires third-party integration for most SD-WAN vendors.</p>

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User Experience				
Seamless cloud extension	<p>Extend the WAN to any private and public cloud. Get broad hypervisor and cloud support, seamless network extension and mobility, and advanced cloud security features.</p>			<p>Supported by most vendors but not all.</p>
Last-mile network resiliency	<p>Provide primary connectivity or backup communications. Cisco Advanced LTE Category 6 support offers network resiliency for business continuity up to 150 times faster and with far lower latency than 3G links offer.</p>			
Agility				
SDN controller and apps	<p>Get software-defined networking (SDN) for the enterprise branch, campus, and WAN. A simple user interface and plug-and-play protocols automate policy-based application profiles.</p>		<p>Limited</p>	
<p>Single enterprise network SDN controller for policy-based automation for access; WAN; and campus switching, routing, and wireless.</p>				

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Agility				
Open and programmable	 <p>Cisco offers NETCONF and YANG support across branch, WAN, and cloud platforms.</p>		 <p>Limited Certain router models do not support NETCONF/YANG.</p>	
Pay-as-you-grow services	 <p>Performance license upgrades add dedicated compute and storage resources for additional services.</p>		 <p>Limited Basic VM capability in high-end routers, but no advanced network services. Huawei offers basic VoIP modules and content caching. Huawei routers support modular software upgrades, but do not offer systemwide in-service upgrades.</p>	 <p>Limited Most vendors require third-party integrations.</p>
Software licensing packages	 <p>Cisco ONE Software suites make software buying simple. Instead of choosing from hundreds of separately priced software features, customers purchase one software product, for predictable OpEx.</p>	 <p>Ties software licensing to the chassis. HPE offers no portability or investment protection with access to ongoing innovation.</p>	 <p>Offers perpetual software licenses for basic and advanced feature sets, and on a per-device basis. Huawei does not offer license portability.</p>	 <p>Most SD-WAN vendors offer subscription-based services with high recurring costs.</p>

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Advanced Security				
Advanced branch threat defense	<p>The Cisco converged branch platform integrates real-time contextual awareness, security automation, and industry-leading threat prevention, malware protection, EAL4-certified perimeter defense, and web security.</p>	<p>Limited Offers access-control lists, stateful firewall, and Network Address Translation only.</p>	<p>Only supports basic access-control lists for filtering and encryption capability. AR routers lack sophisticated security protection such as web security, threat prevention, or malware protection.</p>	<p>Limited Usually require third-party integration.</p>
End-to-end secure architecture	<p>Site-to-site and remote-access VPN technologies, DMVPN, GET VPN, Cisco IOS FlexVPN, and Cisco IOS SSL VPN help protect sensitive enterprise communications.</p> <p>NIST-approved, line-rate encryption secures data in motion.</p>	<p>Limited</p>	<p>Limited When an AR series router uses encryption, it incurs a massive performance impact. Huawei does not publish its secure development lifecycle and trustworthy system.</p>	<p>Limited All offer IPsec VPN, but are not U.S. government FIPS140-2 certified.</p>
Real-time threat intelligence	<p>Cloud-delivered, integrated security service for Cisco branch routers, providing protection against malware, botnets, phishing, and targeted online attacks at the DNS layer.</p>	<p>Limited</p>		

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Advanced Security				
Network as sensor and enforcer	<p>Comprehensive network visibility with behavioral-based analytics enables faster anomalies detection and deeper forensics of internal and external threats.</p>	<p>Offers sample-based network application visibility through sFlow, which is not sufficient as a security network sensor.</p>	<p>Offers sample-based network application visibility, which is not sufficient as a security network sensor. Does not offer a security enforcer tool based on the NetStream flow information.</p>	
Trustworthy systems	<p>Secure development lifecycle is published and verifiable. Products have trust anchors, secure boot, and runtime prevention. Software is digitally signed.</p>			
Virtualization				
Enterprise Network Functions Virtualization	<p>Simplify operations and deployment of virtual routing, security, and application services.</p>		<p>Limited Offers up to 8 VMs or VNFs but uses basic supervisor hardware. Its capability is limited to the chassis.</p>	<p>Most vendors support VNF only. Some also support NFVIS or VNF hosting.</p>

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Virtualization				
Native application-hosting	 <p>Automate work flows, configuration, and operation of lightweight network functions or third-party tools natively on our Cisco IOS XE operating system.</p>	 <p>Open application platform.</p>	 <p>Limited The router OS, called VRP, does not offer native integration with a third-party tool or application unless it uses another VM.</p>	 <p>Limited Some vendors support integrated, third-party VNF support.</p>
Integrated compute and storage	 <p>Includes local compute and storage resources for applications, network functions or services, data backup, and analytics.</p>		 <p>Limited Local compute and storage resources are offered in a main supervisor module, which is not replaceable or upgradable.</p>	

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