


























Comparing SD-WAN & AI-Driven Access Solutions

SD-WAN solutions for today's enterprise are not equal. Many assessments narrowly focus on a few traits but miss the bigger picture of delivering better user experiences, simplifying operations and safeguarding all your sites, from client to cloud. You must choose an SD-WAN that supports your business beyond just the WAN with a design that ties the enterprise together. Let's compare solutions in their breadth and depth of features.




























Artificial Intelligence for Network Operations (AIOps)

The networking industry is undergoing a paradigm shift, from the traditional, outdated way of operating networks through CLI to an automated, AIOps approach. It's simply humanly impossible to rely on log files to troubleshoot and gain insights into network issues given the proliferation of devices, users, applications, bandwidth, IoT, etc. With AIOps, you rely on artificial intelligence and machine learning to resolve needle in a haystack issues and to keep pace with the scale of today's digitization.

Value Proposition					
Functionalities with AIOps	 <ul style="list-style-type: none"> - WAN Assurance Visibility into end-user experiences, and shorter mean time to repair - Marvis Virtual Network Assistant providing automated troubleshooting 	 <p>Nyansa product aspires to deliver assurance</p>	 <p>No AI/AIOps</p>	 <p>WAN AIOps added in 2022 Works on log files instead of direct telemetry (slower, less accurate responses) Limited Actions No Natural Language Processing (NLP)</p>	 <p>Limited integration of ESP with EdgeConnect WAN product</p>
WAN Service Level Experiences (SLEs)	 <ul style="list-style-type: none"> - SLE framework that measures the user experience for every session, every minute. - SLEs for WAN link health, application experience and gateway health. 	 <p>Nyansa product aspires to SLEs</p>	 <p>No AI/AIOps</p>	 <p>Limited SLAs for wired and WAN</p>	 <p>Limited integration of ESP with EdgeConnect WAN product</p>
AI-driven insights and assisted actions	 <p>Deep insights on every aspect of the WAN, from device to WAN links to applications.</p>	 <p>Early stages with Nyansa</p>	 <p>No AI/AIOps</p>	 <p>Actions are only recommended, not proactively taken</p>	 <p>Limited integration of ESP with EdgeConnect WAN product</p>
AIOps Virtual Network Assistant (VNA)	 <p>Integration with Marvis & Mist AI for wired, wireless and WAN Assurance</p>	 <p>Nyansa has yet to deliver on it.</p>	 <p>No AI/AIOps</p>	 <p>No NLP or VNA</p>	 <p>Limited integration of ESP with EdgeConnect WAN product</p>
















WAN Edge Capabilities & Performance

SD-WANs must evolve. Most offerings today rely on cumbersome, expensive tunnels that lack security, add costs, and consume your bandwidth. Instead, Juniper's Session Smart technology is tunnel free and instead relies on sessions that provide rich, granular data to ensure user experience. When combined with Mist AI, you get a third generation SD-WAN that delivers user experience.

Value Proposition					
User-centric design, optimized for user experience	 Session-based technology results in better user experience. Deep session-based visibility, insights and fine grain app aware routing. Reduced latency by up to 60%.	 Traditional approach focuses on the network, not the user's session	 Traditional approach focuses on the network, not the user's session	 Limited focus on user sessions Customer experience rated average	 Traditional approach focuses on the network, not the user's session
SD-WAN economics/bandwidth savings	 Tunnel-less architecture with SVR eliminates overhead resulting in 30-50% bandwidth savings and enables up to 75% reduction in infrastructure costs	 Bandwidth hungry tunnel-based approach	 Bandwidth hungry tunnel-based approach	 Bandwidth hungry tunnel-based approach	 Bandwidth hungry tunnel-based approach
Intelligent Encryption	 Session Smart Adaptive Encryption conserves bandwidth, so if application traffic is already encrypted no need to encrypt twice.	 Unintelligent encryption	 Unintelligent encryption	 Unintelligent encryption	 Unintelligent encryption
Breadth of deployment options for hardware and software and universal CPE	 Session Smart Routers are available in dedicated SSR Series appliance, but can also be deployed on whitebox, x86, or as a VNF on NFX. Juniper NFX Series delivers full breadth of connectivity and scale and is widely recognized and deployed.	 Dell EMC Edge appliance	 Cisco 5000 ENCS	 No universal CPE portfolio	 No universal CPE portfolio






WAN Edge Capabilities & Performance (cont.)

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Value Proposition					
SD-WAN Edge for any deployment (supporting small-medium-large deployments)	 Juniper has a breadth of portfolio ranging from desktop form factors to large campus/enterprise	 WAN edge device with limited routing capabilities	 Large product range, but split product lines with different management solutions	 Difficulty meeting complex networking requirements	 Limited routing capabilities
Resilient WAN edge design	 Redundancy at every level (Active/Active, Active/Backup, Datacenter hub, control plane & data plane redundancy)				





















Architecture

Many of the solutions today are based on outdated architectures, riddled with technical debt. A modern solution built for today's cloud era must also be built on a modern day microservices cloud architecture. This ensures agility for your business and allows your network to keep pace with your business operations.

Value Proposition					
<p>Design architected for Cloud Era</p>	<p>● ● ● ● ● ●</p> <p>Modern microservices based cloud architecture:</p> <ul style="list-style-type: none"> - Service containerization - Quick and low-risk feature updates - Near real-time bug fixing without network disruption 	<p>● ● ○ ○ ○ ○</p> <p>First generation cloud</p>	<p>● ● ○ ○ ○ ○</p> <p>Meraki:</p> <ul style="list-style-type: none"> - 1st generation cloud - Legacy sharded database in hosted database 'cloud' - Virtual controller-based <p>Cisco:</p> <ul style="list-style-type: none"> - Controller-based legacy monolithic software architecture - Lack of strong cloud solution- limited to SMB - Lots of hardware & boxes all needing proper versions - Multiple non-integrated products and OS (10+) 	<p>● ○ ○ ○ ○ ○</p> <p>Fragmented cloud offering an on-premise solution CLI based</p>	<p>● ● ○ ○ ○ ○</p> <ul style="list-style-type: none"> - Aruba ESP is the redesign of Aruba Central with Management - The controller-based architecture has Four different clouds - Users must upgrade, maintain and integrate all of the software - Monolithic code bases are expensive to scale and difficult to manage - Limited API support
<p>Scalability</p>	<p>● ● ● ● ● ●</p> <ul style="list-style-type: none"> - Cloud scale with microservices architecture - Templates enable fast deployments while accounting for site to site differences - Best goodput performance allows more cost effective cloud connections - No expensive hardware required 	<p>● ● ● ○ ○ ○</p> <p>Multitenant and multi-site scale requires adding many orchestrators and gateways.</p>	<p>● ● ● ● ○ ○</p> <p>Scaling is complex and requires managing vManage, vBond and vSmart components in the management and control plane. Cisco recommends Meraki for Lean IT, meaning there is a forklift software and hardware upgrade to its full featured SD-WAN.</p>	<p>● ● ● ○ ○ ○</p> <p>Can't do complex networking at scale: no real switching or routing features. Failover is seconds, not milliseconds</p>	<p>● ● ● ○ ○ ○</p> <p>Scaling based on cloud VPC performance</p>











Architecture (cont.)

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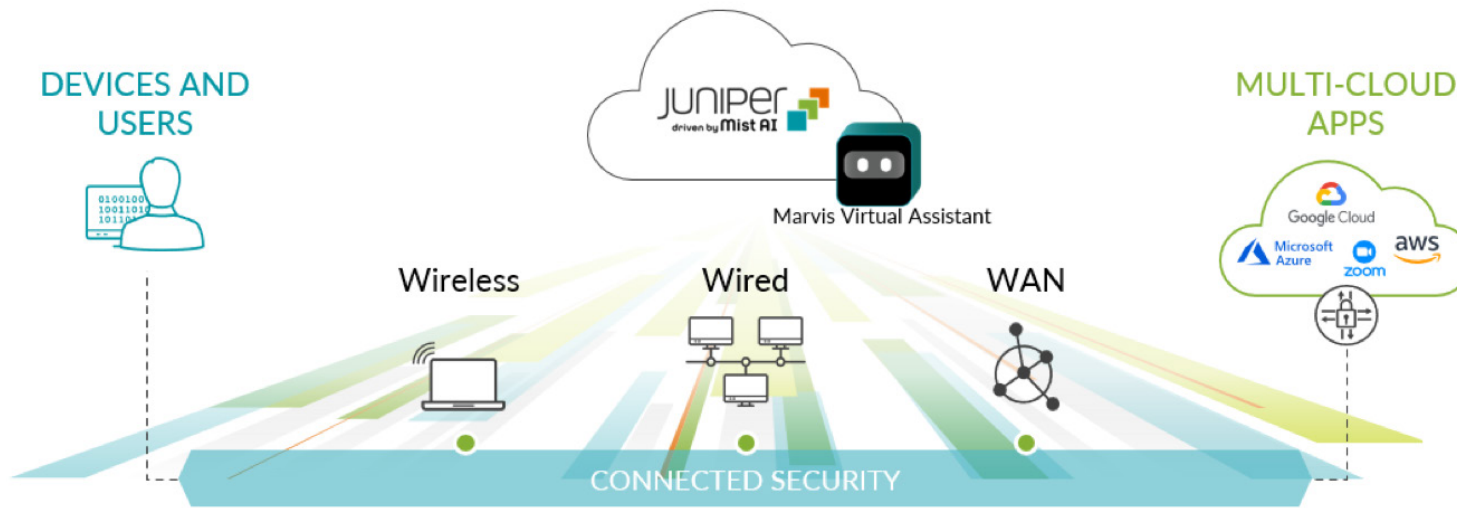
Value Proposition					
Automation versatility (APIs, Plugins for extension)	 <ul style="list-style-type: none"> - Simple 100% API driven. API and Config templates. Customers can create their own plugins for extensibility. - Integration with Splunk & ServiceNow 	 <p>Basic APIs to Velocloud Orchestrator</p>	 <p>Rest APIs available with Devnet support</p>	 <p>Complexity due to dependence on multiple Python modules.</p>	 <p>RESTful APIs available.</p>
Agility	 <ul style="list-style-type: none"> - Modern, microservices-based cloud, instead of monolithic code base - Rapid updates without network disruption 	 <p>First generation cloud. Lacks a microservices based cloud architecture.</p>	 <p>Meraki:</p> <ul style="list-style-type: none"> - 1st generation cloud with VMs and hypervisors - Slow updates due to the lack of a modern microservices architecture <p>Cisco:</p> <ul style="list-style-type: none"> - Monolithic (brittle) software with poor ability to update for new devices/apps/fixes - Elevated risk to update 	 <p>Fragmented cloud offering</p>	 <ul style="list-style-type: none"> - Monolithic (brittle) software with poor ability to update for new devices/apps/fixes - Elevated risk to update
Deployment Flexibility	 <ul style="list-style-type: none"> - Scale from the largest to the smallest enterprise businesses for rapid updates - Single click activation for streamline rollouts - Wired, Wi-Fi, & WAN Assurance for full lifecycle management 		 <p>Virtual controllers hosted in co-located data centers</p>		 <ul style="list-style-type: none"> - Controller/Gateway for large customers, Aruba Central for small-midsize customers; monolithic architecture - Offers on-premises and cloud solutions - Offered across different applications

Architecture (cont.)

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Value Proposition					
Multi-tenancy	 <p>Hierarchical multi-tenancy for multiple providers, enterprises, and departments, all from one Juniper Mist AI account for Wi-Fi, wired and SD-WAN networks with configurable RBAC, all from a single login. Enables easy management of large organizations and MSPs.</p>	 <p>Multitenant cloud gateways and orchestrators. See "Scale" rating, where accommodating many tenants requires many on-premises software instances. LAN n/a.</p>	 <p>One vSmart per customer and limited number of customers per vBond per vManage. With alternative option, Meraki, multitenancy is not possible.</p>	 <p>Switching between tenant views requires separate logins.</p>	 <p>Limited RBAC and no multilayer tenant management.</p>

Client to Cloud























Your SD-WAN solution should help provide a complete picture of your users' experience, from client to cloud. Hence a complete solution should provide insights and troubleshooting from the moment your users connect to the Wi-Fi, which passes traffic to your wired network and then out to the WAN. It should correlate across all these connections in the network and resolve issues like, "Why is my Zoom call breaking up?."

Value Proposition	JUNIPER NETWORKS	vmware	CISCO	FORTINET	Hewlett Packard Enterprise
AIOps	<p>● ● ● ● ●</p> <p>Driven by Mist AI, get insights and automated troubleshooting that correlates across all points in the network</p> <p>What is AIOps?</p> <p>AI & ML</p>	<p>● ○ ○ ○ ○</p> <p>Nyansa product aspires to deliver assurance</p>	<p>○ ○ ○ ○ ○</p> <p>No AI/AIOps</p>	<p>● ○ ○ ○ ○</p> <p>New, limited AIOps No microservices</p>	<p>● ○ ○ ○ ○</p> <p>Basic capabilities including remediations with multiple dashboards for the user to solve network issues on their own. No VNA, and lack of time for effective machine learning.</p>
User Experience	<p>● ● ● ● ●</p> <p>Wi-Fi, Wired and WAN Assurance driven by Mist AI ensures the best experience for every user, every minute.</p> <p>Juniper-Mist Cloud Services</p> <p>Juniper-Mist WAN Assurance</p>	<p>● ○ ○ ○ ○</p> <p>Nyansa product aspires to deliver assurance</p>	<p>● ○ ○ ○ ○</p> <p>Severely limited insight into user experience.</p>	<p>● ○ ○ ○ ○</p> <p>Rated average</p>	<p>● ○ ○ ○ ○</p> <p>Severely limited insight into user experience. Many features demand CLI templates.</p>

Client to Cloud (cont.)

Your SD-WAN solution should help provide a complete picture of your users' experience, from client to cloud. Hence a complete solution should provide insights and troubleshooting from the moment your users connect to the Wi-Fi, which passes traffic to your wired network and then out to the WAN. It should correlate across all these connections in the network and resolve issues like, "Why is my Zoom call breaking up?"

Value Proposition					
Security	 <p>Juniper Connected Security and Zero Trust capabilities ensures that all applications, users, devices, data is secured and safeguarded against all threats.</p>	 <p>Not an established security vendor and must rely on 3rd party technology for complete advanced security.</p>	 <p>ISE and Stealthwatch. Integration with Open DNS</p>	 <p>Limited integration with SSE</p>	 <p>Not an established security vendor and must rely on 3rd party technology for complete advanced security.</p>
Integrated Wired Access Switching	 <p>Mist AI configures and operates all aspects of the EX Series wired access network with support for any campus architecture including Virtual Chassis, ESI- LAG, MC-LAG, or EVPN-VXLAN</p>	 <p>No LAN management</p>	 <p>Customers must still choose between two solution types: Software Defined Access for vs Cloud-based</p>	 <p>Limited switching platforms with inferior stacking solution</p>	 <ul style="list-style-type: none"> - Limited insight into wired experience - Many features require CLI templates - Separate product for wired and wireless. - Dynamic port config requires Clearpass and Mobility Controller with lock-in architectures - Port profiles require lots of manual config
Integrated Wi-Fi	 <p>World class AI- driven wireless and BLE location technology operation and configuration driven by Mist AI, with AI-driven insights, monitoring and remediation</p>	 <p>No LAN or wireless management</p>	 <p>Split between Meraki and DNA Lacks a true AIOps solution for insights, monitoring, and remediation.</p>	 <p>Not strong in wireless networking Lacks full AIOps for insights, monitoring, and remediation.</p>	 <ul style="list-style-type: none"> - Lacks a true AIOps solution for insights, monitoring, and remediation. - Separate product for wired and wireless



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