

NetFusion Discovery

Datasheet

Sedona Systems™ NetFusion™ Discovery is the first control platform that converges the layers, automatically discovering multivendor topology and traffic for both Optical and IP/MPLS layers, as well as the cross-layer connections between them. Information is stored as a network model in an internal database and made available through both its NetFusion Explorer UI and an API.

This read-only, multilayer solution generates unique network intelligence, enabling you to understand optically-aware IP/MPLS routing and IP/MPLS-informed optical switching across domains in both core and metro networks. NetFusion Discovery also supports multilayer apps that transform network management. The end result doubles effective WAN capacity, enhances operational agility, and improves network resiliency.

Demystify the Network

By understanding the cross-layer connections between the Optical and IP/MPLS layers, NetFusion Discovery exposes all paths, not just those at one layer. For instance, the optical paths taken by links within an L3 link bundle often differ. Operators frequently assume these bundled links take the same paths, while NetFusion Discovery deployments have clearly demonstrated this is not always the case. Such information can be highly useful in understanding contributions to high link latency. Conversely, cross-layer connectivity provides insights into which L3 links traverse L0/L1 links. This information is critical for understanding service impact when optical links fail. Moreover, cross-domain links are key to provisioning, coordinating, and troubleshooting services end-to-end across the core and into the metro.

With NetFusion Discovery's cross-layer and cross-domain mapping, multilayer, multivendor affiliations are always visible. If an L3 link has too much reserved TE-LSP bandwidth, you immediately know it. If underutilized links exist, you are instantly aware of them. If L3 link bundles are not taking optimal optical paths or if LSPs hops are not optimized, you can easily recognize it. No more guesswork in planning and maintaining the network. No more mystery.

Features

- Read-only multilayer network discovery
- Multivendor, multidomain
- Adaptable, scalable architecture
- Hitless app integration
- Easily extractable data

Benefits

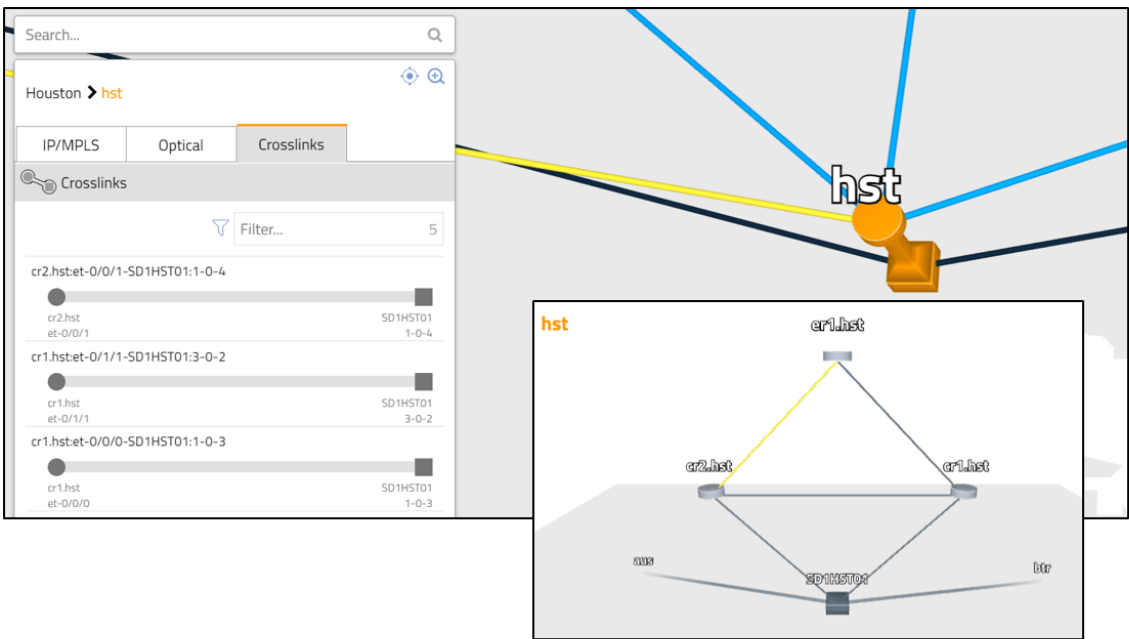
- Explore and analyze cross-layer relationships
- Identify cross-domain links
- Coordinate across functions for improved network operation
- Grow future solutions without service disruption
- Maximize cost efficiency with real data

Multilayer, Multivendor, Multidomain Exploration

The NetFusion Explorer UI visually displays the multivendor, multilayer network, including LSP and optical connection paths, L3 and L0/L1 relationships, and cross-domain links. With this information, network planners, operators, and architects across the layers can better communicate for increased operational productivity. This network intelligence enables you to answer critical questions about the network.

- Where are the optical vendors connected in the network?
- How are the L3 interfaces connected to the L0/L1 ports?
- What router hops are LSP paths taking? Are they routed for minimal latency and are they optimally using optical resources?
- How will a failure or temporary maintenance activity at the Optical layer impact service delivery at the IP/MPLS layer?
- What is the per-port connectivity in L3 link bundles?

- Identify cross-layer links per port
- Explore core and metro connectivity
- Determine root causes of network failures



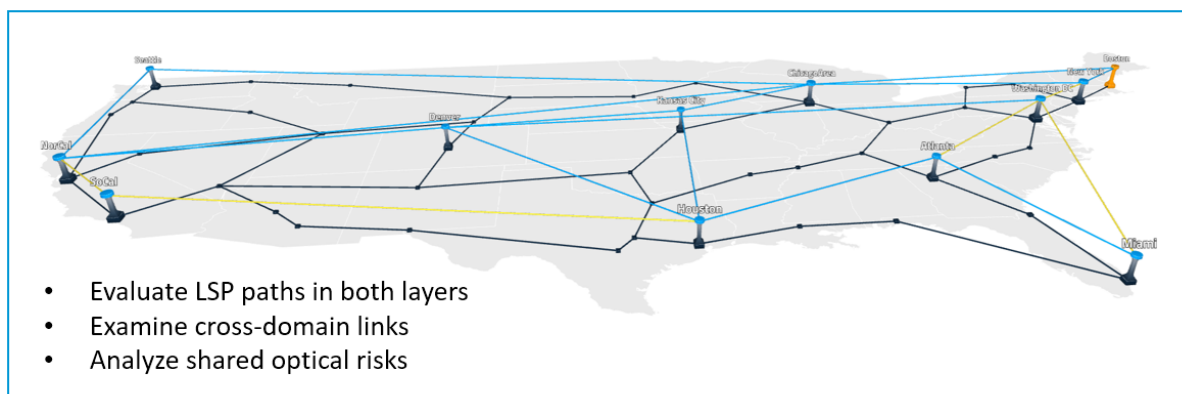
Multilayer Knowledge is Power

Multilayer data enables you to verify whether protection mechanism, such as Fast Reroute, are suitably deployed. How? Multilayer knowledge of traffic paths, latency, and utilization.

When network architecture is rigidly split between layers, each is designed according to different rules managed by independent teams. These operational islands lead to poor utilization, routing inefficiencies, and suboptimal resiliency. Without multilayer knowledge, protection mechanisms rely on spare L3 capacity to handle network failures. Since such failures are infrequent, this design leads to underutilized IP links that often operate at less than 20% of capacity. NetFusion Discovery spotlights these costly issues. Understanding both layers and their correlations helps you determine the need to improve provisioning and which links you should avoid to make the network more economical.

Similarly, single-layer architectures often use diverse L3 paths in an attempt to increase service reliability. However, many such designs are flawed because paths at the L0/L1 layer frequently share risk by going through the same optical links. Again, multilayer knowledge is power. Such awareness enables you to determine how best to reroute L3 paths across diverse optical paths.

Moreover, the platform comes with an Admin Dashboard that automatically monitors the health of your NetFusion deployment so any discovery issues are flagged before they cause serious problems.



Flexible NetFusion Analytics

The NetFusion Analytics app, which is included with the platform, enables you to make immediate, fact-based decisions. The end result is fewer network failures, lower maintenance costs, and efficient, cross-organization, multilayer communication, while delivering uninterrupted services.

- **Reports**—This highly flexible reporting solution supports customized reports based on customer requirements, resulting in giving you exactly the data you need: no more, no less.
- **Network Dashboard**—This dashboard shows key network summaries in one consolidated location so that you can quickly identify areas of concern in the network. Like reporting, this dashboard is highly customizable to fit your needs.

Dynamic, Scalable Solutions

NetFusion Discovery uses a read-only process to automatically learn and continuously update the topology, traffic, and traffic routes for both layers. To discover this information, NetFusion Discovery communicates with the network through NetFusion network adapters that abstract the discovered information into the network model. These network adapters work across vendors and with existing equipment so no changes are required to currently deployed network elements. Additionally,

NetFusion Discovery supports network apps and isolates them from changes to the APIs, which facilitates early deployment of apps using existing equipment. As SDN controllers are installed, more apps can be enabled and existing ones can evolve to operate in realtime, allowing for a smooth transition to a fully automated SDN solution.



Vendor Support

While most vendors are using EMS and NMS today, the industry is shifting to using SDN controllers. We support most SDN controllers as they become available. Note that NetFusion Discovery also supports the T-API (Transport API) defined by the ONF standards organization. While many of the adapters are built into the product, others are flexibly added to the configuration by Sedona’s Professional Services team on an as-needed basis.

Vendor	Optical Access			IP/MPLS Access		
	SDN Controller	EMS/NMS	ONE	SDN Controller	EMS/NMS	Router
Ciena	MCP	OneControl PNC	TL1			
Cisco		EPN Manager	TL1 (using GMPLS)	WAE		NETCONF, SNMP, and CLI
Coriant	Transcend	7194				
Fujitsu		NETSMART 1500		Agile		
Huawei	T-SDN					
Infinera	OTSv	DNA				
Juniper				NorthStar		NETCONF, SNMP, and CLI
Nokia	NRC-T			NRC-P	SAM	NETCONF, SNMP, and CLI

Learn More

Our team of highly-skilled engineers and support personnel are fast, flexible, and ready to address your multilayer, multivendor needs. Contact us at info@sedonasys.com for further details. You can also visit <http://www.sedonasys.com>.

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