



Product overview

Apstra Cloud Services, a suite of cloud-hosted, AI-Native capabilities, are designed to address a full range of data center network operations challenges for private cloud operators, including cross-domain visibility, application assurance, predictive and proactive maintenance, root cause analysis, trouble resolution, workflow acceleration and more. Apstra Cloud Services (ACS) work together with Apstra's industry-leading multivendor [intent-based networking](#) (IBN) to create a truly unique [AIOps](#) experience. They combine application visibility with broad-spectrum network data creating a comprehensive network operations solution.

APSTRA CLOUD SERVICES DATASHEET

Product description

[Juniper Apstra](#) is a multi-vendor, intent-based networking solution that automates and validates the design, deployment, and operation of data center networks from Day 0 through Day 2+. ACS complements Apstra by adding cloud-based, AI-Native applications that deliver probabilistic inferences, insights, and actionable intelligence based on rich data from Apstra and other sources.

Together, ACS and Apstra provide a holistic solution to complex problems across various domains and network operations by integrating application visibility with existing network data.

ACS consists of the following cloud services:

- **Marvis Virtual Network Assistant (VNA) for Data Center** is the digital network expert that supports your data center network operations team, providing proactive and prescriptive data center actions, simplifying operations tasks via the AI-powered Marvis conversational interface. By combining the power of AI and intent-based networking, [Marvis VNA](#) and Apstra enable data center network operations teams to save time and money and increase network uptime by accelerating problem resolution
- **App/Service Awareness** shows which applications are hosted in your data center along with details such as how they're communicating and what resources they're consuming. It provides topology maps to visualize the relationships between endpoints and applications along with connections through the fabric and the resources used by those endpoints and the applications running on them. App/Service Awareness gives you complete visibility and understanding of how everything fits together
- **Impact Analysis** builds upon service awareness to reduce alert fatigue and eliminate guesswork from your network and application troubleshooting process. The Apstra graph database, now enriched with additional network monitoring and flow data, maps data center fabric conditions to application and service issues (and vice versa), allowing you to quickly understand how anomalies in the network or connections are impacting other parts of the business

Features and benefits

Marvis Actions

Marvis Actions drives operational simplicity and transforms IT from reactive troubleshooting to proactive remediation. It offers a "morning cup of coffee" view that delivers visibility into high-impact network issues at an organizational level so that administrators know exactly what they need to prioritize and focus on.

[Marvis VNA for Data Center](#) adds a data center component to the top-level Marvis Actions view, allowing end-to-end visibility of anomalies across the entire enterprise network, from users in campus and branch networks to applications in the data center.

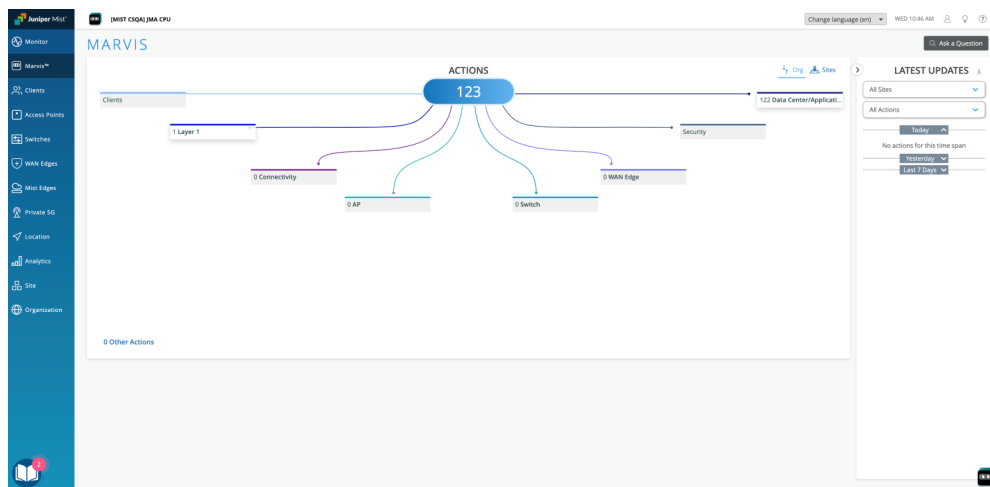


Figure 1: Marvis Actions dashboard, including data center

Marvis VNA for Data Center leverages Apstra’s rich telemetry data to provide a high-level view of data center network health on the Marvis Actions dashboard. Marvis highlights anomalies and recommended actions in data center switching devices, virtual infrastructure, physical and logical connectivity, and security. [AI-Native](#) insights lead to faster root cause identification and issue resolution. If more detailed information is required, a single click opens the relevant screen in the Apstra user interface where you can continue troubleshooting.

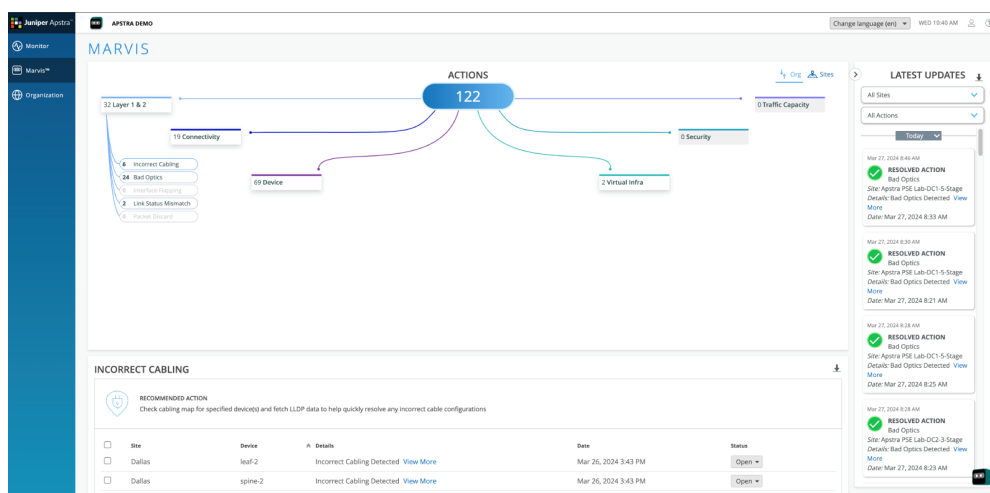


Figure 2: Marvis VNA for Data Center actions dashboard

From the data center dashboard, you can select a category to see more detail about a specific metric, such as incorrect cabling or MTU issues. Table 1 shows the full list of data center action categories and metrics.

Table 1: Marvis VNA for Data Center action categories and metrics

Layer 1 & 2	LAG imbalance
Incorrect cabling	MLAG imbalance
Bad optics	BGP flapping
Interface flapping	EVPN host flapping
Link status mismatch	Type-3 missing routes
Packet discard	Type-5 missing routes
Connectivity	VXLAN flow lists mismatch
Missing routes	Device
BGP mismatch	Config deviation
	Deployment status mismatch

Resource health issues
Environment health issues
Virtual infrastructure
Configuration mismatch
Missing VLANs
MTU issues
Non-redundant hosts
Security
802.1x issues
Traffic capacity
Spine faults
Critical services alerts
Hot/cold interface warning

Marvis VNA for Data Center Conversational Assistant

Marvis' Conversational Assistant uses advanced natural language processing (NLP) and Generative AI (GenAI) to understand user intent and goals and contextualize natural language inquiries to provide specific answers, whether you're troubleshooting operations or searching for data center documentation.

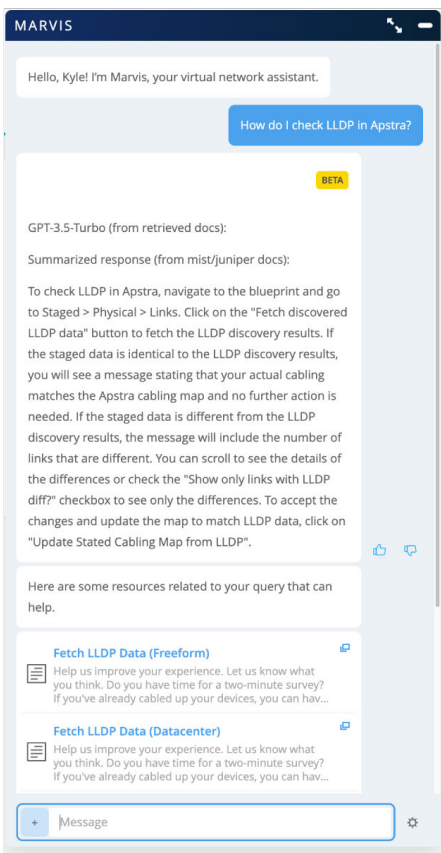


Figure 3: Marvis VNA for Data Center conversational interface

App/Service Awareness

Modern business applications are typically composed of collections of loosely coupled [microservices](#) where each service can be developed, deployed, and scaled independently. Understanding exactly how each application/service maps across the fabric and how the services are communicating can be a tedious task. App/Service Awareness, in conjunction with Apstra, provides a visual representation of application and service data, simplifies the tasks of implementing and managing services, and puts the information you need right at your fingertips.

Combining and enriching existing network monitoring protocols, such as sFlow, NetFlow, IPFIX, and [IFA](#) with Apstra's rich graph data knowledge, gives you a comprehensive view of the network. You can directly query the relationships between network and service data and gain insights that would be tough to find or infer from traditional databases or from jumping between tables. App/Service Awareness gives you a deeper understanding of the business-critical systems with logical and physical topology awareness.

App/Service Awareness adds data to the Apstra network knowledge graph to provide:

- Visibility where services attach and access the network
- Visual understanding of "service to resource" mapping
- Knowledge of how services communicate
- Resource usage consumed by each service

The information allows you to understand exactly which services would be impacted by a port or link going down or experiencing performance degradation. This is critical in planning to ensure appropriate service performance and resiliency. Combined with the Impact Analysis feature, it also helps to quickly determine the root cause of service issues, eliminating noise and reducing mean time to resolution.

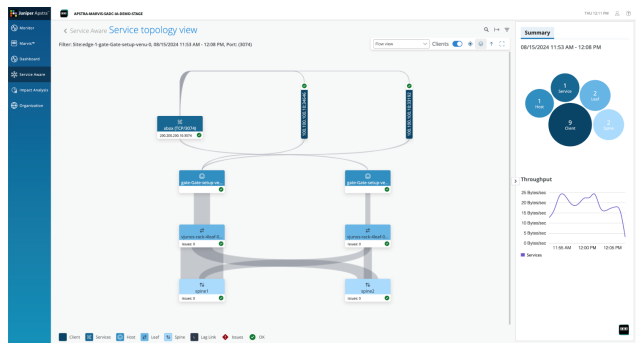


Figure 4: App/Service Awareness interface

Impact Analysis

When problems occur in the data center fabric, it often results in a flood of alerts. Sorting through them and running additional queries manually to understand impact, prioritize, troubleshoot, and

pinpoint the problem is time consuming at the worst possible time: when your services are down and your business productivity is in jeopardy. With Impact Analysis, you no longer have to worry about this. It queries the graph database, monitors flow data, and maps network conditions to application/service issues across relationships, allowing you to quickly understand how anomalies are impacting other parts of the business.

Impact Analysis takes advantage of AI and ML models to revolutionize the troubleshooting experience with:

- **Reduced alert fatigue:** By mapping conditions and impacts, Impact Analysis coalesces information and helps you distinguish which anomalies are related to the problem and which are side effects or unrelated. This allows you to focus on the critical issues without being overwhelmed by irrelevant alerts
- **Clear picture of issues and impacts:** Impact Analysis provides a comprehensive view of the problems affecting your applications. You'll have a better understanding of the issues and their impacts so you can prioritize and resolve them more efficiently
- **ML for anomaly analysis:** Using ML algorithms, Impact Analysis analyzes data from the graph database, raw telemetry, and network sources to map conditions and their impacts. This process further minimizes speculation in the troubleshooting process
- **Compare states between different times:** Impact Analysis allows you to compare the state of your resources at different times. This feature helps you identify trends, patterns, and potential bottlenecks that might be affecting your applications' performance
- **Quicker recovery:** With a clearer understanding of the issues and their impacts, you can quickly address problems and get your applications up and running in no time

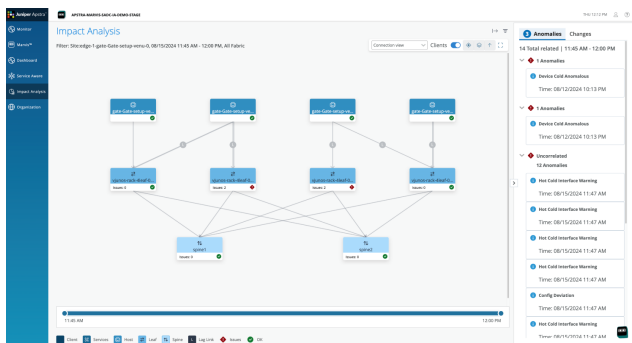


Figure 5: Impact Analysis interface

Dashboards

Apstra Cloud Services includes support for user-defined dashboards that provide insights into metrics of interest, including inventory

and resource usage. Operators who have multiple data centers managed by Apstra (for example, across different geographies or organizations) can see a global view of all networks or filter the view to specific sites.

Users can select from among a range of dashboard widgets to display:

- Top talkers
- Cluster health and versions
- Top devices by port count
- Top anomalies
- Inventory: devices and virtual networks
- Port activity
- Summary overview: total numbers of sites, devices, services and anomalies
- Apstra geographic locations
- Apstra versions
- Site summary details
- Site comparisons

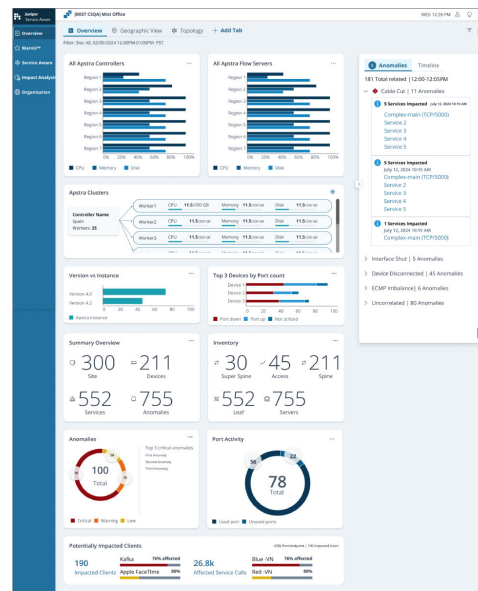


Figure 6: Dashboard interface

Multi-vendor compatibility

Since Apstra is inherently multivendor, working with both Juniper and many third-party switching devices, Apstra Cloud Services inherit those multivendor properties, enabling the same visibility of services, data center network health, anomaly detection, impact analysis, and recommended actions, regardless of which switching vendors are deployed.

Integration with Apstra

ACS is cloud-based while Apstra is premises-based. Connectivity between the two applications is enabled over a secure WebSocket connection that supports REST API requests, responses, and the streaming of telemetry data and alerts.

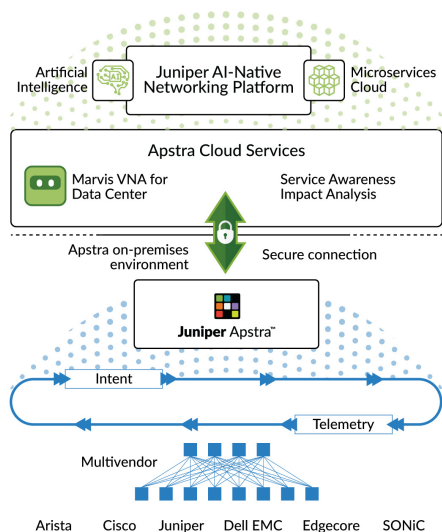


Figure 7: ACS – Apstra Integration

Ordering information

Apstra Cloud Services are included with Apstra depending on the licensing tier.

Apstra Cloud Service	License Tier
Marvis VNA for Data Center	Standard and above
App/Service Awareness	Premium
Impact Analysis	Premium

About Juniper Networks

Juniper Networks believes that connectivity is not the same as experiencing a great connection. Juniper's [AI-Native Networking Platform](#) is built from the ground up to leverage AI to deliver exceptional, highly secure, and sustainable user experiences from the edge to the data center and cloud. Additional information can be found at juniper.net or connect with Juniper on [X](#) (formerly Twitter), [LinkedIn](#), and [Facebook](#).

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