

Juniper's AI-Native Data Center Solutions

Gain the insight, speed, and reliability your network demands

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The challenge

75%

of enterprises plan to keep most workloads on-prem

The private cloud imperative

For years, many IT organizations have looked to public cloud to solve their infrastructure challenges. But cost, performance, and security realities with public cloud are a real hurdle—running business-critical workloads on-premises often makes more sense. As a result, more and more organizations are repatriating workloads from the public cloud to their private data centers.

To make this new strategy successful, IT organizations are once again investing in private data centers—both on-premises and in colocation facilities—with the goal of creating an agile, highly-available, distributed private cloud.

The capabilities you need

A network built to manage complexity

Today's data center networks are highly complex, including thousands of physical and logical elements. Designing, configuring, and operating these complicated networks using manual processes is prone to human error and is a major drain on resources. Traditional fabric management and automation approaches suffer from three primary types of limitations:

- **Limited insight**
A lack of insight into applications makes troubleshooting application problems highly complex and labor-intensive.
- **Insufficient speed**
Cumbersome change management processes make it hard to meet urgent new business demands.
- **Lack of reliability**
Manual configuration errors, automation mistakes, and burdensome root cause analysis lead to unplanned outages, inefficiencies, and downtime.

Because of these limitations, data center network operators too often find themselves in a reactive mode, trying to deal with emergencies instead of focusing on proactive, strategic initiatives.

**The answer: Automated,
secure, and cloud-ready**

Juniper's AI-native data center solutions

Juniper AI-native data center solutions cut through data center complexity with Apstra Data Center Director, Data Center Assurance, Marvis® AI Assistant for Data Center, and Mist™, Juniper's AI-native networking platform. They empower enterprises to build private cloud infrastructure with the insight, speed, and reliability that they need to meet business demands and deliver great customer experiences.

Solution component

Apstra Data Center Director

Get comprehensive data center fabric management and full lifecycle automation of data center networks from design and deployment to ongoing operations.



A foundation for actionable insights

Collect and analyze every relevant data point with Data Center Director's comprehensive telemetry. Advanced analytics combine out-of-the-box network visibility with intuitive tools for customization. And Flow Insights adds application layer visibility and analytics.



Automation built for speed

Reduce time to service from weeks to just hours by building a complete data center in software that's ready for service as soon as switching hardware is deployed. Data Center Director also handles laborious Day 2 configuration tasks for you, improving service provisioning time by as much as 20x.



Better network reliability

Automatically generate correct vendor-specific configurations based on your intent, pre-validate every change, and continuously validate network state. Data Center Director effectively eliminates mistyped CLI commands, outdated automation scripts, and undocumented configuration changes, resulting in higher network and application availability.

Core capabilities

up to 90%

lower OpEx

up to 85%

faster deployment

Automation from Day 0 through Day 2	AIOps with intent-based networking simplifies and streamlines deployment and management
Assured reliability	Automated configuration, Time Voyager rollback, and continuous validation
Multivendor support	100% open APIs compatible with hardware from Juniper, Cisco, Arista, SONiC®, and more
Precision root cause analysis	A contextual graph database for every relevant datapoint
Complete visibility	With advanced analytics, telemetry, and flow data



FIGURE 1
Juniper data center solution portfolio

Solution component

Juniper Data Center Assurance

Juniper® Data Center Assurance is a suite of cloud-based AIOps applications powered by the Marvis AI engine, the heart of Mist, Juniper’s AI-native networking platform. Data Center Assurance works with Apstra Data Center Director to deliver superior insights, speed, and reliability for data center network operations.

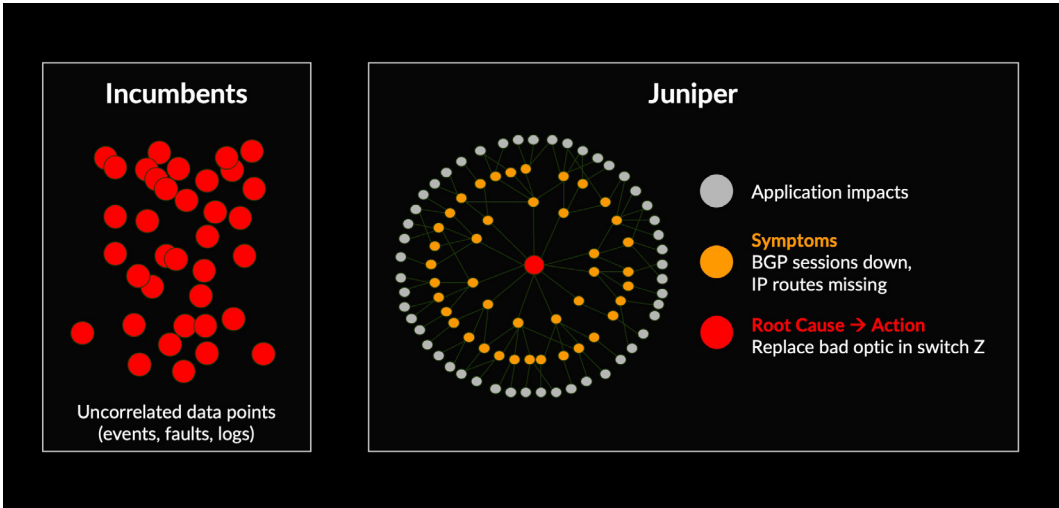


FIGURE 2
AIOps works with the Apstra contextual graph to cut through complexity and provide insights into the root cause

Core capabilities

Marvis AI Assistant for Data Center	Offers proactive and prescriptive data center actions via a natural language interface
Application Awareness	Add application and service data to the Data Center Director contextual graph
Impact Analysis	Understand which issues are responsible for application impacts and which are unrelated
Predictive Assurance	Predict issues so you can take proactive steps to address vulnerabilities
Service Level Expectations dashboards	Track performance and availability against expectations and identify areas for improvement

Solution component**Juniper data center switching platforms**

Juniper data center switching leads the industry across multiple dimensions. Our comprehensive portfolio fits any data center size and requirements and includes the industry's first and currently market-leading 800 gigabit platforms.

**Silicon diversity**

With platforms based on both custom and merchant silicon, we give you unparalleled architectural flexibility and supply chain resiliency.

**Comprehensive data center feature set**

Our Junos operating system includes a rich feature set for every use case, including L2/L3, EVPN VXLAN, DCI tunnel stitching, low-latency multicast, QoS, HA, and many more. Juniper is an industry leader in EVPN standards contributions.

**Complete visibility**

We support comprehensive telemetry and analytics across standard APIs so you can get the visibility you need no matter what your management and automation strategy is.

Solution component**Zero Trust security**

Juniper's Zero Trust data center extends access control, authentication, and advanced threat prevention across every point of connection on the network. With unified management, contextual networkwide visibility and analytics, and a single policy framework, Juniper safeguards applications, data, and infrastructure across your hybrid environment.

**Automate Zero Trust**

Juniper Security Director Cloud's centralized policy enforcer extends Zero Trust security across hybrid environments, enforcing authorized access and microsegmentation.

**Scale securely**

Broad range of firewalls, from virtual to 400GbE physical, securing east-west and north-south traffic for AI and traditional data centers.

**Get the industry's most effective security**

All physical, virtual, and containerized Juniper firewalls have been proven by third-party tests to be the most effective in the industry against threats to your data and infrastructure.

**Secure your hybrid cloud**

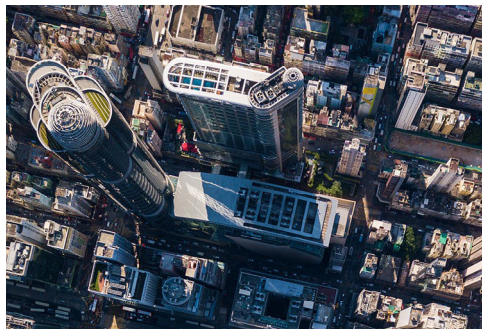
Security across and within public and private cloud, CoLo, and edge data centers—intra-DC, multitenancy, inter-DC (data center interconnect), DC edge, and cloud connect.

**Get real-time threat protection**

AI/ML-assisted threat protection and prevention based on file and network behaviors

99.94%

security efficacy in
2023 CyberRatings
NGFW test



Virtual-Q uses Data Center Director to seamlessly manage and automate their data center



Vodafone uses Data Center Director to ensure reliable multivendor operations

Our advantage

Data center networking with Juniper

Simplify network operations, design with maximum flexibility, and deploy with confidence. Apstra Data Center Director and Mist, Juniper's AI-native networking platform, give your data center network the insight, speed, and reliability you need.

Why Juniper

Juniper Networks: driven by experience

Juniper Networks believes that connectivity is not the same as experiencing a great connection. Mist™, 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](#).

More information

Take a deep dive into data center networking

To learn more about Data center overview, visit our website at <https://www.juniper.net/us/en/data-center.html>

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