INSIGHTS | TECH BRIEF

Defining And Retaining Intent For Your Data Center

How often have you started a project, only to find that the final outcome failed to match your original intent? Given the complexity involved in designing and implementing a new, modernized data center, such discrepancies between initial intent and final outcomes are highly probable. Traditionally, data centers have been comprised of a patchwork of diverse, disparate collections of systems and programs that were not originally intended to function cohesively from the outset. Despite compromising reliability, agility, and costs, this approach was once a standard practice in data center design.

The Purposeful Data Center

In today's digitally transformed, data-driven landscape, the modern data center transcends its traditional role of merely housing server infrastructure. It now forms the cornerstone of business operations, underpinning cloud computing, big data analytics, critical web applications, hybrid work models, and the Internet of Things (IoT). This evolution enables businesses to harness technology effectively, transforming the data center into a pivotal asset. The data center's success is gauged by more than just your standard technological metrics, as its tangible contributions toward business objectives extend the measuring stick.

The Recipe For Successful Network Design

The success of your business heavily depends on the efficiency of your data center, making it crucial to opt for a design that efficiently serves your business throughout its entire lifecycle. Selecting a solution for designing and managing your data center requires several must-have features:

- A singular management platform that simplifies operations for your support team
- Extensive automation of daily tasks to minimize manual labor
- Continuous validation of network performance against the design objectives through analytics

43%

of IT leaders reported that AI-enabled technology is the top new investment area for the next two years.[1]

JUNIPER NETWORKS

- Robust security measures with immediate notifications for any security discrepancies
- Integration of all data center components towards a unified goal

These objectives may appear to be a tall order, and it is without a trusted IT solutions provider in your corner. That is why WEI and Juniper Apstra are available to help. Juniper Apstra's intent-based networking platform is a single software solution that streamlines and automates the design, deployment, and ongoing management of data center networks. Apstra features a user-friendly, point-and-click interface and offers a programmable interface option for automating and orchestrating services and networks on a large scale.

State Your Intent And Stick To It

You have an intention behind your data center, and that intention is stated during the design and planning stage, otherwise known as Day 0. Intent refers to the high-level business and operational outcomes that the network must support. This intent comes in different forms:

- Scalability to easily accommodate growth in traffic, applications, and services without requiring a complete redesign
- High availability to ensure continuous operation with minimal downtime
- Optimized performance for the network to handle anticipated load with efficient traffic management
- Energy efficiency to reduce data center operating costs and meet long-term sustainability objectives
- Automated operations reduce manual intervention and human errors

These objectives represent the foundational goals for any data center. However, despite the best of intentions, achieving these goals become increasingly difficult during the Day 2 operational state due to configuration drift, policy overlaps, and hardware refresh cycles. The challenge lies in ensuring that your data center consistently aligns with its original intentions throughout the entire lifecycle.

Apstra Blueprints

Juniper Apstra uses blueprints to collect all applicable information needed to operate your network according to your intent. These blueprints help maintain focus on your data center's goals by offering a comprehensive framework that covers the design, configuration, and operational policies – each aligning with your business aims. Utilizing Apstra's blueprints enables you to:

- Specify desired outcomes for your data center
- Continuously verify that the network's performance aligns with the intended blueprint specifications
- Automate processes to minimize manual errors and maintain consistent network behavior
- Centralize design, deployment, and management around a unified source of truth

Apstra blueprints are designed for repeatability and can undergo continuous validation to guarantee that configurations are accurately implemented from the outset and consistently maintained thereafter. Apstra also includes built-in templates that allow you to create multiple blueprint designs with identical specifications. This allows your team to set up new services quickly and reliably in a consistent, secure, and resilient manner.

Multivendor Support And Adaptability

Some vendors promote a "set it and forget it" benefit to their solutions. This approach, however, is not possible in the modernized data center due to the rapid pace of innovation and technological advancement. Your data center needs the capability to adapt and grow in tandem with your business, ensuring the agility and efficiency vital for supporting business expansion.

To retain flexibility, it is essential to avoid proprietary lock-in at all costs. That is why Juniper Apstra supports the industry's widest range of hardware and software vendors, including open standards-based offerings. This flexibility gives you the ability to choose the hardware and software that best works for your lifecycle now and in the future. Apstra also facilitates seamless integration with various cloud management tools and services, such as Terraform and Ansible, enabling data center operations teams to utilize the technologies they prefer.

Embedded Zero-trust Security

Flexibility is of little value if your solution doesn't enforce robust security. Zero-trust security is an embedded component to Juniper Apstra as it enables automated network segmentation to divide the data center into secure zones, thus limiting the lateral movement of threat actors and malicious traffic.

Apstra automates the implementation of network-wide security policies, ensuring enforcement of least privilege access. Mirroring its approach to maintaining design intent, Apstra continuously oversees the network to confirm the actual operational state aligns with your enterprise's predefined IT security policies. It promptly detects any deviations, enabling swift action to address potential security disruptions or breaches.

Turn Back Time

With Apstra, reverting time within your network is a reality. In today's high-stakes network environments, minor misconfigurations can lead to significant issues that result in costly disruptions. Juniper Apstra includes a feature called Time Voyager that allows network administrators to quickly roll back changes to any previous revision to return your network to its former operational state. This capability provides your team with the assurance to make proactive improvements to the data center, knowing any unintended consequences can be swiftly corrected.

The Power Of Analytics

No doubt, the story outlining intention-based networking's potential is intriguing. But it is more than just a good story – Juniper customers are realizing the empowerment of Apstra in realized numbers:[2]

- A 70% reduction in Mean Time to Response (MTTR)

- An 80% increase in operational efficiency

- A 90% decrease in time to delivery

- A 320% return on investment (ROI)

- A payback period of under six months

Talk to WEI today

If you're looking to harness the power of intent for your data center and maintain it across its lifecycle, we encourage you to contact WEI and consult with our IBN experts. As a partner of Juniper, we've directly observed the transformative impact Juniper Apstra has on our clients. Allow WEI to assist you in identifying and realizing the necessary outcomes for your data center and the business it supports.

Sources:

1. IDG research commissioned by WEI 2021

2. Juniper Networks, Juniper Apstra At A Glance, https://www.juniper.net/content/dam/www/assets/flyers/us/en/apstra-solution-at-a-glance.pdf

About WEI

WEI is an innovative, full service, customer centric IT solutions provider.

Why WEI? Because we care. We go further.

WEI is an expert in business technology improvement, helping clients optimize their technology environments and work efficiently. WEI works with clients to understand goals, integrate strategy with technology solutions, and leverage their current IT environment into one company-wide model to increase utilization and efficiencies around their unique business processes.