

# Apstra Data Center Director vs Cisco ACI

Explore Juniper's AI-native data center solutions, powered by Apstra Data Center Director's fabric management and full lifecycle automation, in a side-by-side comparison with Cisco ACI. Discover the key features to consider when designing, building, deploying, and operating data center networks.

**Let's compare solutions in their breadth and depth of features.**



Operational Experience		
<p><b>Day-to-Day Operational Experience</b></p>	<p>● ● ● ● ●</p> <p>- Apstra Data Center Director provides intuitive workflows with extensive built-in templates and tools that streamline the network operator's experience from Day 0 design and Day 1 deployment through Day 2 operations.</p>	<p>● ● ●</p> <p>- ACI is overly complex and time consuming for even simple, routine tasks. Network teams can't keep up with new business requirements and the pace of change demanded by DevOps teams.</p>
<p><b>Design and Deployment</b></p>	<p>● ● ● ● ●</p> <p>- Data Center Director enables rapid importation and implementation of pre-tested Juniper Validated Designs (JVDs) for any size data center network, including 3-stage, 5-stage, collapsed fabric and freeform (customized) designs for both EVPN-VXLAN and IP fabrics.</p>	<p>● ●</p> <p>- Cisco ACI has incomplete network design capabilities, requiring initial design and deployment to be done outside of ACI. APIC controllers must be initially configured manually via command line interface (CLI).</p>
<p><b>Built-In Visibility</b></p>	<p>● ● ● ● ●</p> <p>- Data Center Director includes comprehensive built-in telemetry and flow data collection with rich analytics and visualization capabilities across multivendor networks.</p>	<p>● ● ●</p> <p>- ACI requires multiple add-on licenses to get full visibility and analytics.</p>
<p><b>Customizable Monitoring and Analytics</b></p>	<p>● ● ● ● ●</p> <p>- With Data Center Director's advanced analytics, telemetry, and flow data users can define custom probes and dashboards to monitor any available data metrics without restriction.</p>	<p>● ● ●</p> <p>- Telemetry and analytics data is stored in an ACI object database with a proprietary query interface that makes continuous monitoring challenging. Some users report that they must build customized scripting tools to continuously query the data they want to monitor.</p>
<p><b>Device-Level Troubleshooting</b></p>	<p>● ● ● ● ●</p> <p>- Data Center Director's custom intent-based analytics (IBA) probes can be used to monitor any available data with full CLI equivalence.</p> <p>- When CLI access directly to switching devices is required for in-depth troubleshooting, Data Center Director supports full access.</p>	<p>● ●</p> <p>- The ACI GUI does not offer full CLI equivalence, requiring users to resort to logging in to individual switches for some operations. Some users report that they needed to implement a separate, unsupported tool to fulfill their device tracking requirements.</p> <p>- ACI locks access to switching devices, preventing some common CLI-based troubleshooting techniques and increasing the cost of support.</p>

<b>Automation</b>		
<p><b>Built-In Automation</b></p>	<p>● ● ● ●</p> <ul style="list-style-type: none"> <li>- Data Center Director includes built-in automation for the entire network lifecycle from Day 0 to Day 2+, including upgrade, rollback, and migration. Data Center Director reduces manual operations by automating generation, validation, and deployment of network configurations and automatically validating the network state to ensure it matches the operator's intent.</li> </ul>	<p>● ●</p> <ul style="list-style-type: none"> <li>- ACI's built-in automation capabilities are limited, without support for Day 0 design.</li> <li>- External automation tools may need to be built or bought.</li> </ul>
<p><b>Third-Party Integrations</b></p>	<p>● ● ● ●</p> <ul style="list-style-type: none"> <li>- Data Center Director integrates with VMware, Ansible, and Terraform. Ansible playbooks and the Apstra Terraform provider simplify integrations with some of the most popular automation tools. Data Center Director's open API supports integration with virtually any other automation system and scales consistently across any size deployment.</li> </ul>	<p>● ● ●</p> <ul style="list-style-type: none"> <li>- ACI's APIs and data models vary for different size ACI implementations, meaning that automation tools must be rewritten when moving from a single pod to multi-pod to multi-site.</li> </ul>
<b>Vendor Independence</b>		
<p><b>Multivendor Compatibility</b></p>	<p>● ● ● ●</p> <ul style="list-style-type: none"> <li>- Data Center Director intent-based networking is inherently multivendor, decoupling vendor-independent descriptions of network intent from vendor-specific configurations.</li> <li>- Data Center Director is certified with a wide range of switches, including Juniper, Arista, Dell SONiC, and Cisco. Many ACI customers can migrate seamlessly to Data Center Director while extending the useful life of their existing Cisco hardware investment.</li> </ul>	<p>●</p> <ul style="list-style-type: none"> <li>- ACI is proprietary to Cisco and only works with specific Cisco switching products.</li> </ul>
<p><b>Training and Certification</b></p>	<p>● ● ● ●</p> <ul style="list-style-type: none"> <li>- Data Center Director's vendor-independent operational model reduces the overall need for advanced vendor certifications. Data Center Director generates and validates vendor-specific configurations, dramatically reducing reliance on vendor training.</li> </ul>	<p>● ●</p> <ul style="list-style-type: none"> <li>- ACI operations require specialized training and skills. Many network operators find that ACI is hard to master because of the complexity, leading to challenges in hiring and retaining ACI-trained staff.</li> </ul>

Upgrades and Migrations

<p><b>Upgrades</b></p>	<p>● ● ● ● ●</p> <ul style="list-style-type: none"> <li>- Data Center Director includes full lifecycle management from Day 0 through Day 2, including automated upgrades and simplified migration.</li> <li>- Data Center Director's Time Voyager capability reduces risk even further with a one-click, automated, fabric-wide rollback in the event of a problem encountered during an upgrade or any other configuration change.</li> </ul>	<p>●</p> <ul style="list-style-type: none"> <li>- Many Cisco ACI users report issues with the upgrade process. Operators who try to manage upgrades on their own often run into service-impacting outages, so many resort to high-cost professional services from Cisco or another firm. And older versions are no longer supported, so delaying costly upgrades too long may put operations at risk. Migrating AWAY from ACI may actually be less risky and costly.</li> </ul>
<p><b>Migrations</b></p>	<p>● ● ● ●</p> <ul style="list-style-type: none"> <li>- Juniper fully supports migration from Cisco ACI to Data Center Director with tools and support services. Our ACI to Data Center Director migration tool can import the Cisco ACI configuration, understand its objects and how they relate to each other, and push a matching configuration to Data Center Director within minutes. That Data Center Director configuration can be applied to the same Cisco Nexus switches previously managed by ACI or to a new network built on Juniper or other vendors' switches.</li> <li>- Data Center Director professional services teams with Cisco ACI experience are also available to help with migrations.</li> </ul>	<p>● ●</p> <ul style="list-style-type: none"> <li>- ACI's APIs and data models vary for different size ACI implementations, meaning that automation tools must be rewritten when moving from a single pod to multi-pod to multi-site.</li> </ul>

AI/ML Leadership

<p><b>AI-Enabled Operations</b></p>	<p>● ● ● ●</p> <ul style="list-style-type: none"> <li>- Data Center Director's powerful graph database, built-in telemetry and flow monitoring, and open API, provides a foundation for AI-enabled applications.</li> <li>- Data Center Director works with the Marvis AI Assistant for Data Center to provide end-to-end network visibility and natural language query assistance and will enable a range of emerging AI operations applications, such as application-aware, predictive, and proactive troubleshooting.</li> </ul>	<p>●</p> <ul style="list-style-type: none"> <li>- ACI's lack of a strong open telemetry foundation means AIOps tools won't have the framework necessary to provide insights.</li> </ul>
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