Architecting for Digital Business with Application Centric Infrastructure

Joel Conover

Sr. Director, Marketing, Cisco

Digital business transformation is driven by applications. Businesses are moving fast, but IT struggles to keep pace. Partly, this is due to rigid, complex infrastructure. Software Defined Networking (SDN) offers the promise of addressing this issue with a more agile and programmable network. But Application Centric Infrastructure (ACI) delivers on this promise.

ACI is different from the point of view of a network administrator whose fundamental task was to ensure that a bunch of computing devices could share data using gateways, routers, switches and software. The focus was on driving optimal performance from network hardware. ACI uses the application – the single most important business component in a network or a data center -- as the fundamental building block for IT policy and automation, eliminating hardware complexity.

ACI decouples the physical infrastructure (switch ports) from logical identity (VLANs and IP subnets) with application-based policy. This approach is unique and can accelerate application deployment times from weeks to minutes, while reducing operational overhead by 40-70%.

Simply stated, ACI frees the application (and the business) so it is no longer bound by network complexity. It accomplishes this with application policies. The policies define the requirements of any application in terms of network resources. High level application connectivity needs are decoupled from the complicated details of network configuration. Automated provisioning replaces manual and often error-prone IT network configuration tasks.

ACI is among the most comprehensive SDN solutions because it makes the application the focal point of infrastructure. ACI presents unmatched capabilities on an Agile, Open, and Secure architecture that reduce operational complexity and dramatically accelerates IT service delivery.

• **Agile:** CIOs today need to deliver business agility by ensuring that IT can respond to pressure from markets and competition with accurate and quick applications change. ACI uses multiple approaches ranging from automation to physical/virtual integration to network programmability to achieve this, without compromising on the critical scale, performance, and visibility needed in today's data center environment.
• **Open:** The challenge for CIOs is to ensure that their IT/ application landscape is portable across current and future technologies without creating lock-ins. ACI achieves this through a bedrock of open standards and a growing partner ecosystem.
• **Secure:** Data center security for dynamic physical and virtual environments can be complex and expensive. With ACI, CIOs

don't have to depend on traditional manual, device-centric security approaches that are expensive and prone to misconfiguration. Instead, they can leverage a common, transparent and automated policy-based model that brings down cost of security, ensures compliance, governance and reduces risk.
• **Partner Ecosystem:** A Partner Ecosystem around ACI helps customers maximize their existing IT investments in orchestration, automation, management, monitoring and diagnostics, storage and virtualization, security, and compliance.

Some benefits that ACI has delivered to customers include:
• Automated provisioning and troubleshooting of network end points, reducing operational staff effort and time.
• Accelerated data center application deployments
• Flexibility to integrate with existing and future platforms driven by open APIs and the open architecture
• One-click configuration of firewalls, taking away hours of effort to configure firewalls for each app
• Greater scalability through a distributed enforcement system
• Greater network visibility through the integration of physical and virtual environments across networks, servers, storage, security and services
• Reduced TCO while improving IT alignment with business objectives and policy requirements

ACI can help administrators navigate the transition to new technologies such as Cloud and Big Data that now dominate network/storage/application conversations. It answers to the need of next generation data centers and networks that place applications at the center of user experience.