Cisco Application-Centric Infrastructure (ACI) from ePlus

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Executive Overview

IT organizations are juggling ever-increasing complexity and demand. Today's applications behave differently: They are highly virtualized, run on multiple hypervisors, and are more distributed than ever. They require rapid and continuous delivery, shifting the communication needs within the data center. This is creating a transformation in data center design and scale, IT infrastructure management, provisioning, and consumption.

The result? Ease of provisioning and speed are now critical performance metrics for data center network infrastructures that support physical, virtual, and cloud environments—without compromising scalability or security.

However, today's solutions lack an application-centric approach. The use of virtual overlays on top of physical layers has increased complexity by adding policies, services, and devices. Traditional software-defined networking (SDN) solutions are network centric and based on constructs that replicate networking functions that already exist.

The Application-Centric Approach

To manage this complexity and demand means that IT organizations need a new approach—one that is application-centric, simple and agile, along with expertise to get them on the right track. Cisco ACI from ePlus is an innovative, highly-secure architecture that delivers centralized application-based policy automation, management, and visibility for physical and virtual networks.

The Benefits of Cisco ACI from ePlus

ePlus has the expertise to help customers on their SDN journey to standalone management to API-driven ACI, working closely with Cisco sales and customer service engineering teams to deliver the optimal solution.

ePlus has also developed ACI object naming and configuration standards based on its experience with Cisco best practices and custom scripts to help automate deployments and provide consistency during implementation.

The Right Technology from Cisco	The Right Expertise from ePlus
Cisco ACI delivers significant value through: + Increased agility + Automation + Security + Workload mobility + Lower total cost of ownership (TCO) In addition, Cisco ACI: + Supports flexible operating models within an IT department + Enables customers to gain immediate value from ACI deployments without requiring changes to organizational structure, processes, or skill sets to operationalize ACI in their environment.	ePlus has orchestrated 11 production deployments, including: + Standalone ACI fabrics (with unicast, multicast, ACI as layer 3 transit, ACI as a stub network, etc.) + Stretched ACI fabrics + ACI stretched fabric over EoMPLS using ASR 9000 series routers, multi-site ACI pods with OTV and pervasive (Anycast) gateways + ACI multi-pod

Top Reasons Companies Move to ACI

+ Security, especially in healthcare
+ Centralized, controller-based networking to simplify operations
+ Enable Software Defined Networking (SDN) capabilities across-the-board, with programmable infrastructure for efficiency, orchestration, and even DevOps
+ Merge the management of physical and virtual network and security policy into one consistent API-driven model
+ Monitoring and built-in ACI tools (troubleshooting wizards, endpoint search-ability)
+ Enhance application performance
+ Improve environmentals
+ Simplify the data center architecture and introduce tenants to help reduce the data center switching footprint

ePlus Solutions

ACI is a totally new approach to network management, so it's important for businesses to have an experienced solution provider to guide them through the entire process. ePlus has the end-to-end expertise and knowledge of best practices to help customers avoid pitfalls and get the best results from their solution, starting with pre-sales and continuing through project management, implementation, and ongoing operational support.

Pre-Sales
+ Design workshops, 2-day customer trainings, programmability workshops, lunch and learns, etc.

Project Management
+ Discovery, design, and planning, such as:
  o Complete all discovery and data collection for the network
  o Provide recommendations for the data center network migration process
+ Complete design workshop and document ACI Policy Design and Configuration—deliverables such as:
  o Standard Infrastructure and Administrative Policies
  o Standards for Global Fabric Access Policies
  o Tenants and Tenant Policy Configuration
+ VMM integration
+ Lab integration testing and migration plan development

Customer Spotlights

Customer: A Midwest healthcare provider with 15+ hospitals and 65+ clinics

Challenge: The customer needed to tighten data center security and create different zones for three key areas of security concern (community health, PCI, and patient health information) as well as establish a test zone for proof of concepts

Business Outcome: Cisco ACI from ePlus enabled the healthcare provider to leverage a white list model and segment those key tenants into ACI. The customer was able to enhance and maintain its data center in an auditable fashion.

Customer: A Northeastern medical system

Challenge: The hospital was migrating its data center to another locations and wanted flexibility and scalability. The customer sought programmability and automation to help increase the amount of applications it could deploy.

Business Outcome: By deploying Cisco ACI, ePlus helped the university medical center achieve visibility into its fabric infrastructure for troubleshooting and leverage an extensible API for programming future deployments.

Implementation, Testing, and Migration
+ Build and initialize ACI Fabric alongside legacy production (no interconnects to legacy yet) in conjunction with customer
+ Complete L2 and L3 connectivity from ACI to legacy network to prepare for migration steps
+ Complete initial fabric testing
+ Configure ACI fabric and all required policies per the documented design
+ Migrate test hosts and create repeatable process for customer to complete migration

Operational Support
+ On-going, on-site engineering assistance for customers that still need help as they ramp up on ACI—this includes services like:
  o Assist with any ongoing configuration issues or questions, review ACI concepts where needed
  o Streamline day-to-day tasks using a basic REST client (e.g., Postman) and templated JSON
  o Review config backup policy and snapshot/rollback benefits
  o Integrate ACI into network management systems (NMS)
    ▪ Explore the data that can be pulled out of ACI using RESTful calls
    ▪ Where possible, use existing NMS to pull data (i.e., health status, throughput, faults, etc.) out of ACI using RESTful calls
    ▪ If REST capabilities don't exist in NMS, work to integrate ACI using conventional methods such as SNMP
  o ACI version feature review and bug check, general upgrade planning
  o Review current faults and health score on fabric; troubleshoot, acknowledge, or re-weight as needed
  o Capacity planning (TCAM utilization, throughput, etc.)
  o Review troubleshooting tools
    ▪ Tracking endpoints
    ▪ Using the "visibility and troubleshooting" tool
    ▪ Review CLI troubleshooting tools
    ▪ Review SPAN config and setup
  o Review user roles and access, refine where possible

About ePlus

ePlus is a Cisco Gold Certified Partner with Cisco Master Specializations in Security, Collaboration, Cloud Builder, and Cloud and Managed Services. In addition, ePlus holds Cisco Advanced Specializations in Data Center Architecture, Collaboration Architecture, Enterprise Networks Architecture, IoT – Connected Safety and Security, Security Architecture, and Unified Computing Technology. ePlus also holds Cisco Authorized Technology Provider designations in Application Centric Infrastructure, TelePresence Video Master, Energy Management Suite Integrator, Telehealth Reseller, and Unified Contact Center Enterprise.

ePlus is an engineering-centric technology solutions provider that helps organizations imagine, implement, and achieve more from their technology. With the highest certifications from top technology partners and expertise in key technologies from data center to security, cloud, and collaboration, ePlus transforms IT from a cost center to a business enabler. Founded in 1990, ePlus has more than 1,000 associates serving a diverse set of customers nationally, and in Europe.

About Cisco ACI

The Cisco ACI architectural approach provides a continuous and pervasive way to weave security into the fabric of today's dynamic, application-oriented data centers. The Cisco ACI Security delivers visibility across the entire application and services oriented environment and along the entire attack continuum. The Cisco ACI Security enables organizations to deploy security measures more quickly and effectively where and when they are needed. The solution protects the company before, during, and after an attack without compromising network performance, agility, or functions.

Contact ePlus today to learn more about deploying Cisco ACI for an agile, open, and secure architecture.

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