Agile Networks
Automation, Security & Flexibility with ACI

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Data Center Transitions – Road to ACI/Nexus 9K

- "Bare Metal"
  75% physical servers

- VM Density & Server I/O
  10G LAN on motherboard

- Multi-Cloud
  ~45% of data center Multi-hypervisor

- Big Data
  IP traffic 25% CAGR

Lower TCO - ●- Workload Flexibility - ●- Agility - ●- Compliance/Security

Business Demand: Transition to Modern Cloud Operations

Fast IT = Efficient Business Processes

- Model Driven
- Software Ecosystem
- Open Choice
- Simplification
- Transformation

OpEx and CapEx
Rapid Adoption
Multi-vendor Innovation
Automation and Operations
Cloud Models
We want to know from you...
We Give You Freedom of Choice With a Broad & Deep Ecosystem

Common Portfolio

Programmable Network
Modernize operating system /
Merchant / Open APIs

Network Virtualization
Embedded overlay / VXLAN/BGP /
Third-party controllers

Cisco ACI
Physical, virtual & containers / Open /
Embedded security
Enabling Automation and DevOps:
Open NX-OS and NXAPI

POAP
ONIE
PXE
BootStrap and Provisioning

Package and Application Management

Standard Open Interfaces

Acceptable NXOS

Automation and Visibility

Server Management Tools

Ease of Operations
Modular
Open
3rd Party Apps
Programmable
Ready for DevOps
Multi-Tenancy and Seamless Host Mobility at Cloud Scale

Next Gen VXLAN Fabric with BGP-EVPN Control Plane

Interoperable
Increased Scale
Optimized Mobility
Operational Flexibility

Expanding VXLAN Fabric Choices
ACI is at the Center
The Most Comprehensive SDN Solution

- Automation: Application-Centric Policy Model
- Physical, Virtual, and Containers
- Open, Standards, and Embedded Security
We want to know from you...
ACI + OpenStack - VXLAN-GBP has been accepted into the Linux Kernel and Open vSwitch project
Cisco Data Center and Cloud Management

Prime Service Catalog - Portal

UCS DIRECTOR  Orchestration for Compute, Storage & Network

UCS CENTRAL

UCS MANAGER

APIC

Converged Infrastructure
Cisco InterCloud and ACI: Just Decide Where to Put Your App

InterCloud: 40+ Partners
We want to know from you...
Security: What You Care About

• Is our data secure?
• Do our policies really work, and are they measurable?
• Do our policies meet compliance?
• How are our applications structured in our data center?
• How can I minimize downtime of our network?
ACI Offers Open Security Framework with a Broad Security Ecosystem

Security Applications
(Compliance, SIEM, Security Analytics etc.)

Open REST APIs

Open Standard
OPFLEX

APIC

Open Device Interface

End-to-End Layered Security Enforcement

ACI Fabric  Firewall  IDS / IPS  DDoS  Host
Qatar University is a rapidly growing university in Qatar with over 16,000 students from fifty-two nationalities.

ACI Key benefits

- Speed of Services Deployment
- Open architecture providing integration with F5 & ASA
- Embedded Security

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Cisco as a Partner: Services & Solutions
Delivering Cisco Services for ACI Deployment Success
## SDN Solutions: Partner Innovation & Differentiation

**Chris Paggen**

<table>
<thead>
<tr>
<th>Consulting</th>
<th>Connectivity and Visibility</th>
<th>Security and Services</th>
<th>Application Network Profiles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Traditional to Policy-based</td>
<td>Traditional ACL’s to Policy</td>
<td>Evolve Basic VLAN to Application</td>
</tr>
<tr>
<td>Architect and Design</td>
<td>Automate Connectivity</td>
<td>Policy and Device Packages</td>
<td>Construct Application Profiles</td>
</tr>
<tr>
<td>Integration w/ Existing</td>
<td>Extend into Existing Use-case</td>
<td>L4 – L7 Service Stitching</td>
<td>Map Existing Network Policy to Application Model</td>
</tr>
<tr>
<td>Day 1</td>
<td>API to Orchestration</td>
<td>Align Profiles to Services</td>
<td>Enable Service Catalog Based on Profiles</td>
</tr>
<tr>
<td>Day 2</td>
<td>Counters, Logging, Export</td>
<td>Centralized Security, Visibility, Compliance, and Logging</td>
<td>Audit and Monitor Applications, Tenants, and Services</td>
</tr>
</tbody>
</table>
Solutions & The Road Ahead
Key Initiatives & Roadmap

ASICS: High Density 100G – Merchant and Merchant Plus

NXOS: Object Model, API’s, Automation, and 3rd Party Tools

ACI: IPv6, Multi-Site, ISV Integration, AVS/OVS & Scale

OPEN Initiatives: VXLAN / IETF, OpenStack, Linux

EcoSystem: VMware / MSFT integration, L4-L7 – Palo Alto
Microsoft System Center / Azure Pack

- **Policy Management:** APIC / Azure Pack
- **VM Discovery:** OpFlex
- **Encapsulation:** VLAN, NVGRE
- **Zero Touch Provisioning**
- **Service Insertion** (Physical / Virtual)
Immediate Security Benefits with ACI & Tetration Analytics

- Proactive Maintenance
- Lower TCO
- Risk Mitigation
- “Facebook” for machines
- Compute Visibility
- Publish policies
- Time Series Queries
- Analyze traffic
- Fast IT
- No network downtime
We want to know from you...
Thank you