



## Service Description: Application Centric Infrastructure (ACI) Optimization Service

This document describes the ACI Optimization Services.

**Related Documents:** This document should be read in conjunction with the following documents also posted at [www.cisco.com/go/servicedescriptions/](http://www.cisco.com/go/servicedescriptions/): (1) Glossary of Terms; (2) List of Services Not Covered; and (3) Severity and Escalation Guidelines. All capitalized terms in this description have the meaning described to them in the Glossary of Terms.

**Direct Sale from Cisco.** If you have purchased these Services directly from Cisco, this document is incorporated into your Master Services Agreement (MSA), Advanced Services Agreement (ASA), or equivalent services agreement executed between you and Cisco. All capitalized terms not defined in the Supplemental Glossary of Terms for ACI Optimization Services at the end of this document have the meaning ascribed in the MSA or equivalent services agreement executed between you and Cisco. If not already covered in your MSA or equivalent services agreement, this document should be read in conjunction with the Related Documents identified above. In the event of a conflict between this Service Description and your MSA or equivalent services agreement, this Service Description shall govern.

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Cisco shall provide the ACI Optimization Service described below as selected and detailed on the Purchase Order for which Cisco has been paid the appropriate fee. Cisco shall provide a Quote for Services ("Quote"), setting out the extent of the Services and duration that Cisco shall provide such Services. Cisco shall receive a Purchase Order that references the Quote agreed between the parties and that, additionally, acknowledges and agrees to the terms contained therein.

### ACI Optimization Services

#### Services Summary

ACI Optimization Service includes Application Centric Infrastructure services in the areas of Architecture and Design,

Optimization, Performance and Consumption Analysis, Ongoing Planning, Operational Support, Scripting Support and Training. These services provide annual, ongoing support for Customer's Application Centric Infrastructure addressing the following:

One Datacenter comprised of:

- Datacenter Layer 4 – 7: all L4-7 services integrated via published and supported device packages
- Datacenter Networking: DC Nexus Family of ACI Switches (9000 Series)
- APIC Cluster

These Service areas include Core Services and optional services focused on the following key deliverables. The overall quantity of any efforts for ongoing activities described herein will vary depending on Customer requirements and what Customer and Cisco mutually agree upon when Services are purchased as identified in the Quote provided by Cisco.

#### Core Services:

##### **ACI Architecture Optimization**

On-going ACI design Strategy  
ACI leading Practices Audit  
ACI Hardware and Software Strategy  
ACI Change Management Strategy

##### **ACI Application Policy Optimization**

EPG Analysis  
Policy Analysis  
Service Chaining Analysis and Optimization

##### **ACI Operational Support**

Initial baseline (Operations health check)  
Ongoing Operational support

##### **ACI Training**

ACI training and Technology Update

##### **ACI Script Library**

Cisco AS developed script library

#### Optional Services:

##### **ACI Strategy Architecture assessment**

Architecture and Design strategy

**ACI Readiness Planning**

Planning for Scaling, Migration

New Workloads and Applications readiness review

**Ongoing ACI Performance and Consumption****Analytics**

Tenant Performance Optimization

Fabric Performance Optimization

Resource consumption analysis

Health score analysis

**Ongoing API Integration Optimization**

Standard published Northbound and Southbound API support

**Scripting Support**

Support Cisco AS developed scripts

**ACI Fundamentals Training**

ACI intensive hands-on lab training

**Cisco Responsibilities**

Cisco shall provide services for the Customer's ACI Solution during Standard Business Hours (unless stated otherwise).

**Core Services:****ACI Architecture Optimization****On-going ACI design strategy**

- The ACI design Strategy service provides support for changes to the ACI solution design to support scale requirements, additional integration requirements, and/or optimize the current architectures.
- Cisco will review designs, configurations, and network parameters to support the requirements of the changes suggested.
- Align the designs with applicable ACI leading practice designs and configurations
- A report of findings and recommendations based on Cisco leading practices and discussions will be documented. Recommendations may include but not limited to:
  - Low-level design changes in the Layer 2 or Layer 3 ACI fabric to support the changes
  - Summary of all design aspects – routing, security, high availability, L4-7 Services integration for standard, published, and supported device packages. This does not include hardware or software / configurations support of 3<sup>rd</sup> party L4-7 service devices

*Frequency: Once each year***ACI Leading Practices Audit**

Provide a review of leading practices for ACI environment. An evolving ACI architecture can help support growth, improve productivity, improve business processes, and accelerate change in every aspect of your business

- Review current ACI implementation against a list of lab and project based leading practice configurations.
- Align applicable leading practice architecture, deployment configuration options and settings for specific Customer usage
- Discuss areas for increasing architectural resiliency, availability, flexibility and agility
- Report on findings

*Frequency: Once each year***ACI Hardware and Software Strategy**

- Provide on-going Hardware and Software recommendations, DDTs reports.
- Support incremental changes in Hardware and Software configuration due to architectural changes

*Frequency: Once each year***ACI Change Management Strategy**

- Provide support for critical, or major scheduled changes
- Collaborate with Customer for risk assessment, and impact analysis of the proposed changes based on deployed ACI architecture, designs and application policies
- Review the implementation procedures

*Frequency: up to two each year***ACI Application Policy Optimization**

ACI Application Policy Optimization addresses Customer policy definitions, workload classifications, endpoint groups (EPG) and ACI policy contracts.

**EPG Analysis**

- Review current EPG and workload classifications. Cisco will examine this information to provide recommendations based on leading practice for Application Centric designs as appropriate.

**Policy Analysis**

- Review current application policies. Cisco will examine this information to provide recommendations based on leading practice policy optimization as appropriate. Activities may include but are not limited to:

- Review application policy profiles as part of a periodic examination of the deployed environment
- Develop report with policy recommendations based on best practices for inter EPG interaction and to external networks

### **Service Chaining Analysis and Optimization**

- Analyze current L4-7 service graphs, device profiles, service chaining (where applicable) and policies. Cisco will provide recommendations based on leading practice optimization as appropriate. Activities may include but are not limited to:
  - Analysis of L4-7 Service profiles, device clusters, logs, traffic flow, application and policy profiles, as part of a periodic examination of the deployed environment. This does not include support for hardware or software / configurations of 3<sup>rd</sup> party L4-7 service devices
  - Report describing opportunities and steps needed for optimizing L4-7 Service Chaining

*Frequency: Policy optimization once each year*

### **ACI Operational Support**

#### **Initial Baseline (Operations health check)**

The initial baseline health check assess:

- Current state of assessed processes, policies and procedures relative to impact on the ACI solution
- Outline gaps in ACI changes to process mapping
- Provide recommendations for changes and timeline to minimize impact and maximize deployment
- Detailed configuration information for all changes

#### **Ongoing Operational Support**

Ongoing operational support measures ongoing conformance with existing governing policies via:

- Operations design review (new ACI features / functionality)
- Configuration compliance review
- Configuration implementation support
- Major and minor change support
- Standard and custom reporting mapping of operational metrics to business outcomes
- Ongoing / incremental process development (Process definition, run book creation, ACI configuration)

### **ACI Training**

#### **ACI Training and Technology Update**

- Cisco will deliver up to two days of customized ACI training that can include but not limited to ACI technology/ solution updates, and relevant deployment use cases.

*Frequency: Once each year, and up to 16 participants*

#### **ACI Script Library**

Access to Cisco Advanced Services-developed Script Library

- The ACI Script Library is a repository of Cisco developed scripts for common Customer use cases. These scripts can be downloaded and reused, significantly reducing the time to deploy these functionalities.

#### **Optional Services:**

#### **ACI Architecture Strategy Assessment**

ACI Architecture Strategy Assessment (AASA) evaluates the Customer's network infrastructure and its ability to support the ACI Solution. The service determines the network's readiness to deploy an ACI architecture that enables a policy based network services model.

- Provide ACI Architecture Assessment. Cisco will consult with Customer via a series of meetings to identify the future architecture requirements and evaluates the network infrastructure and its ability and readiness to support the ACI Solution that enables a policy based network services model. An ACI Architecture Assessment may include, among other tasks:
  - Review of the current data center infrastructure and future Network requirements for deploying ACI architecture that enables a policy based network services model using application centric approach or Network centric approach
  - Review of the technology architecture layers such as facilities, Network, server, L4-7 service devices and application platforms
  - Analysis of technology feasibility
  - Analysis of server inventory, performance data, and operating system data
  - Analysis of potential server consolidation and/or virtualization costs and savings related to server hardware and infrastructure licenses
  - Report describing network infrastructure and its ability and readiness to support the ACI Solution

- Report describing opportunities for northbound and southbound API integration, optimization, consolidation with recommendations

*Frequency: Once each year*

### **ACI Readiness Planning**

This assessment provides insight into the current ACI deployment to support additional scaling and application workload requirements.

#### **Planning for Scaling, Migration**

- Cisco will analyze the current ACI deployment against scaling requirements to support growth and workload requirements and report on readiness of the solution to implement these changes. This assessment will analyze the ACI fabric hardware and software infrastructure, Tenant/Context/BD/EPG mappings, application workload requirements, traffic flows, L4-7 Services requirements, application profiles and policies and report on readiness to implement the change.

#### **New Workloads and Application Readiness Review**

- As new workloads and applications are planned for deployment or migration into the deployed ACI fabric, this analysis provides a readiness report to implement the changes.

*Frequency: Once each year*

### **Ongoing ACI Performance and Consumption Analytics**

ACI Performance and Consumption Analytics leverages data collected via APIC to help improve compliance with policies and best practices. This helps to prioritize resource utilization proactively and support future growth requirements.

#### **Tenant Performance Optimization**

- Review and analyze resource usage and configurations for tenants, contexts, BDs, EPGs, policies and related structures. Analyze system data, logs, exceptions, hardware and software resources, collected via APIC.
- Decipher fault codes, relationship to managed objects, triggers, and impact on performance.
- Develop report on the tenant environment as evaluated against best practices and expected performance and utilization.

#### **Fabric Performance Optimization**

- Review exceptions by analyzing system data, logs, hardware and software resources collected via APIC.
- Decipher fault codes, relationship to Managed Objects, triggers, and impact on performance.
- With a holistic view of the fabric, develop report on the environment as evaluated against best practices and expected performance and utilization

#### **Resource Consumption Analysis**

- Periodically record fabric, tenant, and system resource usage by analyzing system data, logs, hardware and software resources, collected via APIC
- Develop reports to determine current and estimate future fabric, tenant and system resource consumption. This will help determine current health of the fabric and plan for future scale requirements better by prioritizing resource utilization

#### **Health Score Analysis**

- Periodically analyze health scores generated by APIC
- Troubleshoot issues impacting health scores, decipher fault codes, relationship to managed objects, triggers, and impact on performance.
- Recommend changes to behavior of managed objects to improve overall system health

### **Ongoing API Integration Optimization**

- Support standard published Northbound API integration. The Northbound APIs integrate with such devices as Management and Orchestration tools. Assist in deployment and provide support
- Support standard published Southbound API integration (L4-7 device packages). Assist in deployment and provide support

### **Scripting Support**

Scripting Support provides on-going support for scripts developed by Cisco

- Support provided for deployment and ongoing fixes
- Any issues resulting from customization done by Customer to the original script will not be eligible to receive service delivery under this offer.
- ⇒ When ACI Scripts to be supported are integrated with 3rd Party Vendor devices, software, and/ or services, the ability of Cisco to interact with Product Support teams from these Third Party Vendor(s) will depend on Customer's entitlement to support from these Third Party Vendor(s).

#### **Script Support Services**

The Application Centric Infrastructure (ACI) Script Support Service provides Customer with support for scripts developed by Cisco Advanced Services. ACI Day 2 script Support Service includes support for the duration of the service contract. Services include:

- Cisco will respond within twenty four (24) hours after Cisco TAC identifies that problem is related to script developed and put in production by Cisco.
- Provide support via telephone, or electronic mail, as appropriate, during Standard Business Hours.
- Designate a single point of contact for all Cisco communication during the problem resolution period. This person would have access to engineers familiar with the ACI script, who will provide support and basic problem resolution services to Customer and respond to Customer's requests. This person has the authority to act on all aspects of the work being performed.
- Upon request from Customer, Cisco will access Customer's system via remote network connection to analyze problems. This is done with Customer's permission only, and Cisco personnel will access only those systems authorized by Customer. Cisco may provide Customer with Cisco software to assist with problem diagnosis and/or resolution. Such Cisco software is the property of Cisco and will be returned to Cisco promptly upon request, no later than the termination of the above service.
- Under this service, Cisco will investigate issues in either production or staging environment – however, this service is aimed at supporting tested and deployed solutions. If the environment where the issue occurs is a development/test environment, and the issue is deemed by Cisco to be related to newly developed functionality – this will be excluded from the scope of the service support.
- Cisco will work with the Customer to capture data about the current environment and problem at hand. Upon identification of a problem related to script and receipt of an error report from Customer containing a detailed description of the nature of the defect or error in the script, the conditions under which it occurs and other relevant information sufficient to enable Cisco to reproduce the error in order to verify its existence and diagnose its cause, Cisco will guide the Customer to a fix in terms of an avoidance procedure, bypass, work-around or patch to correct or alleviate the condition reported. Cisco will identify if problem can be fixed by Cisco or provide guidance to Customer that it requires third party to resolve the issue related to their third party solution or provide guidance to Customer that problem resolution requires feature enhancements (may not be part of the scope of this service contract) to resolve the issue.
- Once the ACI script related problem is fixed by Cisco, Cisco would, perform testing against the Customer provided Verification Test Plan to show full functionality in accordance with the Verification Test Plan. Extent of testing within the Verification Test Plan is decided by

Cisco to focus on problem at hand and based on Customer's environment.

- Provide the results of the testing to the Customer.
- If such fix requires any software upgrade/updates then Cisco will provide instructions on how to retrieve such software.
- Assist the Customer in communicating the problem to the third party vendor and facilitating any required follow-up with the third party when problem involves third party software as part of Cisco delivered solution.
- Recreate the problem in Cisco's own lab environment to isolate the problem and provide required fixes to the Customer for problem resolution when necessary.
- Provide regular update to the Customer once a week as agreed with the Customer for ACI Script problems encountered by Customer using the preferred communication method as agreed with the customer based on severity of the cases to be discussed and finalized
- Designate a backup contact when Cisco contact is unavailable. This person has the authority to act on all aspects of the work being performed in absence of the primary contact.

#### **ACI Fundamentals Training**

- ACI Fundamental Training will provide Customer with a formal training session with intensive hands on lab exercises.
- The sessions impart knowledge on ACI concepts, programmability, and configuration of most common use cases incorporating the ACI policy model, external connectivity, VMM domain integration, Layer-4-7 Services, basic troubleshooting tools, and migration best practices via lectures and hands-on lab sessions.

*Frequency: One training of 5 days duration for up to 16 participants at a Cisco office premises*

#### **General Support**

- Establish a Customer-specific Cisco email alias to facilitate communication with Cisco engineers such as Advanced Services Engineers, Solution Engineers and Architects.
- Provide certain updates to Software Tools that Cisco identifies as appropriate during the performance of the Service, provided that all fees due and owing to Cisco under this Service Description have been paid. Software Tools may or may not include Hardware or Software. Customer acknowledges and agrees that Cisco shall retain full right, title and interest to the Software Tools. In addition to Cisco provided tools, the Advanced Services Consultant may utilize Customer provided data, scripts, internal or third party tools to assist in support.

- Setup a joint collaboration file-sharing location with Customer to facilitate collaboration and knowledge exchange related to Service herein.
- Cisco may use an email alias, surveys or interviews to obtain Feedback on the Service.

#### **Customer Responsibilities**

- Ensure that the Cisco Solution Support for ACI is purchased with the applicable Cisco ACI products
- Designate at least two (2) but not more than six (6) technical representatives in each area covered under ACI including UCS, Nexus, SAN, L4/7, caching, server, Operations and automation (tools) who must be Customer's employees in a centralized Network support center (Customer's technical assistance center), to act as the primary technical interface to the Advanced Services Engineer(s) covering Data Center technologies. Customer will designate as contacts senior engineers with the authority to make any necessary changes to the data center device configuration. One individual, who is a senior member of management or technical staff, will be designated as Customer's primary point of contact to manage the implementation of services selected under this Service Description (e.g., chair the weekly conference calls, assist with prioritization of projects and activities).
- Within one (1) year from the commencement of this Services, Customer will have at least one (1) Cisco Certified Internetworking Expert ("CCIE") trained employee or one (1) employee that have achieved, in Cisco's sole determination, an equal standard through training and experience as designated contacts.
- Customer's technical assistance center shall maintain centralized network management for its Network supported under this Service Description, capable of providing Level 1 and Level 2 support.
- Provide reasonable electronic access (onsite and remote) to Customer's Network to allow the Advanced Services Engineer to provide support.
- Utilize communication and collaboration tool(s) provided by Cisco. If Customer uses non-Cisco provided collaboration tools for hosting meetings, managing documentation, instant messaging, desktop sharing, and collaborative spaces, provide Cisco with access.
  - Customer will provide names of users who will have authorization to access these tools.
  - Customer will support the implementation of software required to use tools in their environment.
- Data Collection Tools. Customer shall ensure that such Data Collection Tools or scripts are under lock and key and with access restricted to those Customer employee(s) or contractor(s) who have a need to access the Data Collection Tools and/or a need to know the contents of the output of Data Collection Tools. In the event Data Collection Tool provided by Cisco is Software, Customer agrees to make appropriate computers available and download Software as needed. Customer shall remain responsible for any damage to or loss or theft of the Data Collection Tools while in Customer's custody.
- Initial Set-up (One Time). If Cisco provides Data Collection Tools or scripts located at Customer's site, an initial set-up is required and the following must be performed:
  - Complete the Data Collection Tools installation and system configuration questionnaire(s) (i.e. IP address, netmask, hostname, etc.) and return to the Advanced Services Engineer
  - Install the Data Collection Tools hardware in a secure area with controlled physical access
  - Connect the Data Collection Tools hardware to the Network
  - Secure the Data Collection Tools behind Customer's corporate firewall
  - Provide access to Data Collection Tools for use by Cisco to install, troubleshoot, and maintain; for remote access, SSH, Telnet, and/or dial are options, but virtual private network (VPN) access to the Graphical User Interface (GUI) is preferred and recommended
  - When applicable, provide Data Collection Tools with HTTPS (SSL) access back to Cisco CCO/CCX servers located at [nettools-upload.cisco.com](https://nettools-upload.cisco.com); HTTP/FTP/PFTP may be used but Cisco strongly recommends HTTPS (SSL)
  - When applicable, provide Data Collection Tools with SSH to the [nettools-upload.cisco.com](https://nettools-upload.cisco.com) server to support the transfer of Data Collection Tools patches, security patches, and Rules Based Markup Language (RBML) update packages; FTP may be used but Cisco strongly recommends SSH
  - Provide Data Collection Tools with SNMP and Command Line Interface (CLI) access to all Product(s) in the Network (necessary to facilitate collection of inventory and configuration information)
  - Provide Data Collection Tools with the Network Product list in seedfile format containing SNMP Read Only (RO) community string and CLI (vty/enable or TACACS user-id / password) for access to all Product(s) in the Network (necessary to create the Data Collection Tools seedfile)
  - Provide Syslog server and upload information
- Data Collection Tools Management (Ongoing). In the event Data Collection Tools are installed on Customer's Network, the following items must be performed on a

regular or as needed basis to support the operation of Data Collection Tools in the Network:

- Notify Cisco about changes made to the Network such as Product(s) added/deleted and changes made to Product credentials
  - Fix access problems (Access Control List's, firewall, etc.) which may periodically occur between Data Collection Tools and the Product(s) in the Network
  - When applicable, fix data communication problems that prevent Data Collection Tools from uploading data to Cisco or prevent the remote maintenance of the Data Collection Tools
  - Notify the Advanced Services Engineer when changes are made to Syslog, DNS, proxy and gateway servers IP address(es)
- Provide a Network topology map, configuration information, and information of new features being implemented as needed.
  - Notify Advanced Services Engineer of any major Network changes (e.g., topology, configuration, new Software releases.).
  - In the event the Network composition is altered, after the Services selected under this Service Description have commenced, Customer is responsible to notify Cisco in writing within ten days (10) of the change. Cisco may require modifications to the fee if the Network composition has increased beyond the original pricing quote for Services.
  - Create and manage an internal email alias for communication with Advanced Services Engineer.
  - Retain overall responsibility for any business process impact and any process change implementations.
  - Designate a program manager to act as the single point of contact to which all Cisco communications may be addressed, having an appropriate level of applications and Network experience. Such person shall act as Customer's host for assessment activity to coordinate facility access, conference rooms, phone access and staff scheduling.
  - Ensure key engineering, networking and operational personnel are available to participate in interview sessions as required by Cisco in support of an assessment. Review assessment report and suggestions provided by Cisco.
  - Assessment data collection support.
  - Customer agrees to make its production, and if applicable, test Network environment available for installation of Data Collection Tools. Customer shall ensure that Cisco has all relevant Product information needed for an assessment.
  - Customer shall advise Cisco immediately of all adds, moves and changes of the Product within Customer's Network.
  - Assemble all necessary Network availability data to enable Cisco to calculate quarterly Network availability. The type of data required to perform the calculations includes the following:
    - Outage Start Time (date/time)
    - Service Restore Time (date/time)
    - Problem Description
    - Root Cause
    - Resolution
    - Number of end users impacted
    - Equipment Model
    - Component/Part
    - Planned maintenance activity/unplanned activity
    - Total end user/ports on Network
  - Provide the low-level design document describing how Customer's Network is or is planned to be built and engineered to meet Customer's specific set of technical requirements and design goals. The low level design must provide a sufficient level of detail to be used as input to an implementation plan.
  - Ensure key detailed design stakeholders and decision-makers are available to participate during the course of the service.
  - Provide or extract additional information required in the design effort (e.g., current and planned traffic characteristics):
    - Any documentation of business requirements and technical requirements for the new design.
    - Any information on current and planned traffic characteristics or constraints. Documented information on all non-Cisco applications integrated with ACI including interface specifications as required
    - Information on current releases running in the Network and current configuration templates.
    - Information on Customer business and technical requirements for new Software releases.
    - Information on planned changes, new technology applications or major design changes (short term and long term), and contact information and Customer escalation process.
    - Information on Customer certification process and lab testing process.
    - Information on Customer change control process.
    - Information on any service level agreements or Network performance requirements.
    - Information on critical applications supported by the Network.
    - Information on which applications are mission-critical and their priority schemes.

- Information on Customer's plans for business continuance, consolidation, and virtualization.
  - Information on expected Network growth and application mix changes.
  - Information on any future advanced technology implementations.
  - Information on architecture (which may include remote sites and size of remote sites).
  - Information on Customer implementation plans and/or deployment schedules.
  - Maintenance window information and any other constraints.
- Support data collection activities as needed to facilitate a specific Cisco analysis.
  - Make remote console access available for Cisco staff members
  - Provide an environment for installation and operation of collection, monitoring and conversion tools if required
  - Provide up to four (4) weeks' notice of start of workshop for data gathering
  - Have available one Operating System, either: VMware ESX, RedHat Linux, Microsoft Server, SUSE Linux
  - Designate person(s) from within its technical support organization to serve as a liaison to the Advanced Services Engineer.
  - Provide its designated person(s) with instructions on process and procedure to engage the Advanced Services Engineer.
  - Identify low risk and high-risk areas of the Network based on their Network traffic.
  - Review details of planned changes with Advanced Services Engineer.
  - Advise Cisco of its standard operating procedures related to its business practices, its internal operational nomenclature and Network to allow Cisco to effectively communicate and discuss changes with Customer in the context of Customer's business environment.
  - Provide all necessary information to enable Cisco to summarize the root causes of issues identified.
  - Provide reasonable electronic access (remote and local) to Customer's Network to assist Cisco in providing support.
  - Collaborate with Cisco to determine appropriate and relevant topics
  - Provide a single point of contact to be used for all required communication and coordination of requested sessions
- Ensure participation by Customer resources
  - Provide details in advance about the background and skill sets of each Remote Knowledge Transfer session audience
  - Provide facilities (such as: a room with projector, whiteboard and guest internet access) for Knowledge Transfer sessions.
  - Customer is solely responsible for the determination and successful implementation of its Network, design, business or other requirements.
  - This service shall be comprised of general technical assistance and shall be performed under Customer's direction and management and such assistance may not result in some or all of the tasks being completed. Services are provided to the Customer in support of initiatives and activities described herein and Cisco shall not assume any cost or schedule liabilities.
  - Provide Customer on-boarding information as follows: contact name, title, address, telephone number, e-mail address of primary and secondary team leads.
  - For Script Support:
    - Customer acknowledges that Cisco Advanced service engineer would engage as part of this service only in the situation where it is clearly identified by Cisco TAC engineer that problem is related to script developed by Cisco Advanced Services.
    - It is understood that once Cisco TAC identifies issue related to custom work, Cisco Advanced Service engineer would be engaged within appropriate response time to start assessing and understanding the problem to resolve it. As ACI Script Support service is to resolve script issues, it requires investigation before assessing any resolution time.
    - Provide information about current ACI environment to Cisco Advanced Service Engineer engaged to resolve the problem. Ensure key Customer staff is available for scheduled information gathering sessions such as interviews or data capture of the production environment. Designate a backup contact when Customer contact is unavailable. This person has the authority to act on all aspects of the work being performed in absence of the primary contact.
    - Coordinate with customers' internal departments as appropriate to resolve the problem. If deployed solution includes any third party solution then Cisco may need access to such third party solution for troubleshooting and/or testing. If customer cannot



provide access to such third party solution then troubleshooting and/or testing of such solution would be responsibilities of customer. This is a critical step to resolve the problem.

- Acquire and maintain technical support for all Cisco and ACI Third Party Vendors products, including application of upgrades. Customer will be responsible for arranging required support for Cisco team from third party vendor; which may be in form of knowledge transfer for system functionality, API/Commands/Scripts for requested support.
- Provide, at Customer's expense, reasonable access to Solution elements through the Internet or via modem to establish a data communication link between Customer and the Cisco engineer and/or ACI Third Party Vendor support personnel as applicable and systems passwords so that problems may be diagnosed and, where possible, corrected remotely. Provide any hardware and/or software required to perform fault isolation.
- All services will be provided in the English language unless otherwise agreed to by Customer and Cisco. Customer will provide an internal escalation process to facilitate communication between management levels in Cisco and Customer as appropriate, including personnel contact list.
- Problem determination and resolution is a joint effort, combining Cisco expertise and expertise of the customer. Customer is responsible for any Hardware and Software required performing fault isolation or to recreate the problem in the Cisco's lab environment.
- It is expected that Customer has not made any changes to the ACI script that was designed and developed by Cisco Advanced Services and successfully put in production environment when they call for Day 2 script support. Otherwise, Customer shall be responsible for extra costs relating to time for Cisco personnel to assess and understand the changes in the ACI script in customer environment. Cisco shall not have any liability for any costs, which may occur due to project delays due to such assessment.
- Notify Cisco AS day-2 team about changes to environment than the environment the issue was originally detected in based on instructions provided by Cisco, as approved by change control and enabled by the development schedule managed by Customer.
- Customer will provide internal governance and escalation processes and relevant contact information to facilitate communication between

management levels in Cisco and Customer as appropriate, including personnel contact list.

- It is understood that if Cisco identifies that problem involves third party software as part of AS delivered solution then Cisco AS can assist you in communicating the problem to the third party vendor and facilitating any required follow-up with the third party but it would be customer's responsibility to coordinate such activities between Cisco and 3rd party and Customer shall have appropriate relationship with the 3rd party to get the required support. Cisco shall not have any liability for any costs, which may occur due to 3rd party delays to work on resolving such issue.
- Customer acknowledges that it will be necessary for Cisco to disclose Customer information to ACI Third Party Vendor(s) for the purposes of case response, product specific support, script troubleshooting and product issue resolution and Customer authorizes such disclosure.
- Update to the latest Cisco, and/or latest the applicable ACI Third Party Vendor software release, if advised by Cisco or the applicable ACI Third Party Vendor as applicable, to correct a reported problem.
- Pay to Cisco and/or the applicable ACI Third Party Vendor all engineering time, travel, and out-of-pocket expenses if Customer request performance of Services outside the scope of this document.
- Approve the Verification Test Plan. Work with Cisco to test the resolution against Verification Test Plan. It is understood that such Validation Test Plan may not cover full scale testing for all feature, functionality and performance of the entire solution and it would be customer's responsibility to test it for appropriate production usage.
- Assign and schedule resources to attend the transfer of knowledge session.

#### **Supplemental Glossary of Terms for Cisco Solution Support for ACI**

- **Application Centric Infrastructure (ACI)** consists of, but not limited to, the Nexus 9000 Leaf and Spine Switches, ACI Application Policy Infrastructure Controller (APIC), ACI Software Licenses and interfaces with third-party products which address Layer 4-7 services using Cisco ACI APIC related southbound APIs
- **ACI Third Party Vendor** means an independent technology supplier whose products are used in the Customer's ACI for Layer L4-L7 services, leveraging Cisco ACI APIC related southbound and / or Northbound APIs.

- **Solution** means Cisco ACI Fabric products and ACI Third Party Vendor products.
- **Third Party Software** means software developed by ACI Third Party Vendor. This software may include both initial software releases and upgrades/updates developed after initial release by the ACI Third Party Vendor.