



Service Description: Advanced Services – Fixed Price

Cisco ACI Advise and Implement Service - Small (ASF-DCV1-ACI-PDV-S)

This document describes Advanced Services Fixed Price: Cisco ACI Advise and Implement Service - Small.

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

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Cisco Data Center Plan and Build Service for ACI-Small

Service Summary

The Cisco Data Center Plan and Build Service for ACI-Small covers the following areas of Application Centric Infrastructure ("ACI"):

- Project Management
- Data Center Assessment Services for ACI
 - ACI Adoption Assessment
- Data Center Design Services for ACI
 - Infrastructure Design
 - Application Policy Template Design
 - Application Policy Creation
- Data Center ACI Deployment Service
- Data Center Ecosystem Integration Services
 - Virtualized Integration: Customer Environment Review
 - Layer 4-7 Integration
- Data Center Migration Services for ACI

- Infrastructure Migration
- Data Center Operations Enablement Services for ACI
 - ACI Operations Support Service

The scope of this service is limited to:

- AS Validated Fixed Design only (2 Choices)
- Network Centric Approach only
- Up to two (2) user Tenants within the ACI fabric with each Tenant limited to:
 - Up to six (6) bridge domains (BD's)
 - Up to Two (2) contexts/VRFs
 - Up to six (6) End Point Groups (EPG's)
 - Up to Twenty (20) contracts
- Eco-System Integration:
 - L4-7 Integration for up to two (2) pairs of Service Appliances (no device package integration, not controlled by the APIC)
- Hypervisor Integration limited to VMware or HyperV. Not to exceed one VMM Domain with one (1) vCenter with one (1) Datacenter or HyperV Cloud
- External connectivity with 2 x L3Out
- ACI Deployment Service:
 - Up to eight (8) Leaf Switches or up to seven hundred and sixty eight (768) Leaf Switch ports
- Infrastructure Migration:
 - Migration of up to Four (4) VLANs, no more than /24 in nature, to the ACI Fabric in Network Centric Mode.
- Change management for changes that do not affect the above scope or project assumptions

Deliverables

- **Project Management Plan (“PMP”)**
 - Integration Pre-Requisite Checklist
- **Data Center Assessment Services for Application Centric Infrastructure**
 - ACI Adoption Requirements Document (“ARD”)
 - ACI Adoption Strategy
- **Design Services for Application Centric Infrastructure**
 - ACI Design Document (“ADD”)
 - AS-Validated Fixed Design
 - ACI Deployment As-Built Document
 - ACI Fabric Test Plan
- **Migration Plan Development**
 - Method of Procedures (MOP)
- **ACI Operations run book (Standard run book for one (1) of the following Operations Process)**
 - a. Availability Management
 - b. Change Management
 - c. Incident Management
 - d. Configuration Management
 - e. Release Management
 - f. Event Management

Location of Services

Services shall be performed as a combination of remote from Cisco Site(s) and onsite at Customer premises. This is limited to a single Customer site or stretched fabric deployment.

Project Management

Project management will be provided in conjunction with and is limited to the management of the Services and Deliverables as described herein.

Cisco Responsibilities

- Provide the Customer with a list of designated Cisco personnel roles and responsibilities under this Service.
- Provide a Project Management Plan (“PMP”). PMP is a baseline document from which the Cisco PM can manage deliverables, assess progress, and manage change management issues and any on-going questions.
- Work with Customer to identify and document dependencies, risks and issues associated with the successful completion of the project.
- Provide Customer with the Integration Pre-Requisite Checklist. The Integration Pre-Requisite Checklist is a Cisco provided document that provides a detailed specification of the physical, electrical and environmental requirements that have to be met at the installation site(s) to enable the Cisco Products to be installed.
- Participate in scheduled project review meetings or conference calls, if required.
- Provide Customer with the identity of personnel requiring access to Customer premises, at least five (5) Business Days prior to the scheduled date such personnel requires access.
- Deliver a weekly project status report to the Customer.
- Identify and manage project team members.
- Define the communication flow with the project sponsor and key stakeholders and document it in the PMP.
- Work with Customer to identify and document dependencies, risks and issues associated with the successful completion of the project.
- Provide the following:
 - Kick-off Meeting
 - Scheduling of Cisco Resources
 - Project Plan
 - Change Management
 - Manage the project to the agreed upon PMP.
- Ensure completion of the deliverable documentation set out in the Deliverables section of this Statement of Work.

Customer Responsibilities

- Provide Cisco with completed responses to the Pre-Installation Checklist within ten (10) Business Days of receipt
- Identify Customer’s project sponsor and key stakeholders and define their role in supporting this project.
- Work with the Cisco Project Manager to ensure the Customer’s project sponsor, key stakeholders and all project team members receive project communications and are included in regularly scheduled communications sessions.
- Work with Cisco to schedule the kick off meeting, and communicate the meeting schedule to the Customer-identified stakeholders.
- Review the project schedule, objectives, Services, Deliverables and roles and responsibilities with Cisco.
- Schedule the necessary facilities for On Site meetings (such as: conference rooms, projectors and conference bridges).
- Participate in regularly scheduled project review meetings or conference calls.
- On site meetings. When Cisco consultants travel on site, all required Customer responsible parties will attend in person, as necessary whenever possible.
- Work with Cisco to identify specific objectives and critical success factors for the project.
- Coordinate any third party activities (such as in country carrier/telco activities), deliverables or schedules as required for Cisco’s completion of the services.
- Notify Cisco of any scheduling changes related to this project at least five (5) Business Days ahead of the scheduled activity.

ACI Adoption Assessment**Cisco Responsibilities:**

- Conduct one (1) on site workshop for a maximum of ten (10) Customer stakeholders to review business and technical requirements. The workshop will be provided over a period of a maximum of three (3) Business Days to gather Customer's existing Data Center Infrastructure design information, such as:
 - Existing DC Network and wide area network (WAN) topology diagrams;
 - Functional requirements
 - Feature recommendations
 - Scalability design considerations
- Conduct interviews with key Customer stakeholders to discover supplemental information to that provided in the workshop and Pre-Requisite Checklist
- Assess Customer requirements gathered from the workshop and interviews and conduct further discussions if necessary.
- Migration assessment will be limited to 4 VLAN's within the Customer network. Each VLAN will be a /24 subnet or smaller to be considered as qualified.
- Create and document the four (4) VLAN information collected during this assessment for inclusion within the ACI Requirements Document ("ARD").

Customer Responsibilities:

- Identify a single point of contact for requirements coordination with the Cisco team.
- Identify key Customer stakeholders from the following operation units:
 - Network team
 - Application team
 - Server team
- Ensure availability of key Customer stakeholders during the Services in order to provide Cisco with a holistic view of the network and applications.
 - Provide Cisco with relevant documentation as input into the ARD. Documentation includes, but is not limited to:
 - Network logical and physical topology
 - Documented IP addressing and VLAN scheme;
 - Other configurations
 - L2/L3 configurations, WAN/DCI integration
- Customer to provide facilities for needed interviews

ACI Adoption Strategy Development**Cisco Responsibilities:**

- Adoption Strategy will be developed using the "Network Centric" approach
- Work with Customer to define an adoption strategy that meets the Customer's needs and expectations as documented in the ARD. The adoption strategy will consist of, but is not be limited to:
 - L2 or L3 connectivity per validated design
 - Management network connectivity per validated design
- Work with Customer to identify VLAN's to be migrated to the ACI fabric
- Evaluate the benefit and risks associated with integrating current infrastructure with the new ACI infrastructure that will be implemented.

- Analyse the information gathered during the ACI Adoption Assessment service and identify available options as well as how options to adopt ACI policy model(s) to meet Customer needs.
- Analyse risks that would impede in executing adoption strategy (e.g. ability to meet deadline, ability to migrate within available downtime, timely readiness of target ACI, feature gaps, etc.).

Customer Responsibilities:

- Provide Cisco with information necessary to create the adoption strategy such as:
 - Network physical and logical topology
 - Documented IP addressing and VLAN scheme;
 - Other configurations
 - L2/L3 configurations, WAN/DCI integration
- Review the proposed ACI adoption strategy and provide feedback.
- Work with Cisco to identify VLAN's to be migrated to the ACI fabric, within the bounds set forth by Cisco in the ARD.
- Ensure key Customer stakeholders including data center operations manager, application architects, and Customer L4 SME's, to participate to provide all information necessary for Cisco to create the adoption strategy within the ARD.
- Provide a single point of contact for requirements coordination with the Cisco team.
- Participate in the ACI Adoption Strategy Workshop, providing business and technical requirements for the Network.

Ecosystem Level 4 – 7 Integration

Cisco Responsibilities:

- Work with the Customer to identify a Device Deployment Strategy around deploying Level 4 – Level 7 (“L4-L7”) devices in the network per validated design
 - Non-Managed Mode w/APIC
 - Devices will not be managed by the APIC (no device package)
- L4-7 Devices can be deployed in “non-managed” mode or “black-box” mode. (No Service Graphs will be deployed) per validated design
- Work with Customer to identify scale requirements for the strategy identified in the ARD.
- Work on an adoption strategy for no more than two (2) pairs of devices, limited to following device types:
 - Load balancers
 - Firewalls
- Document a device deployment strategy within the ACI Adoption Strategy for inclusion as part of the ARD

Customer Responsibilities:

- Ensure appropriate key Customer stakeholders participate in required L4-7 adoption strategy discussions to provide all information necessary for Cisco to create the adoption strategy within the ARD

Ecosystem VMM Integration

Cisco Responsibilities:

- Work with the Customer to determine the Virtual Machine Manager (“VMM”) Strategy to be included in the ARD, which includes, but is not limited to:
 - Hypervisor and server infrastructure
 - Distributed switch technology including, but not limited to:
 - VMware virtual distributed switch (vDS)
 - Develop a strategy for providing reachability from the APIC to the VMM domain, either through in-band management or out of band management
- Virtualization integration is limited to:
 - up to one (1) VMM domain with one (1) vCenter and one (1) Data Center
 - up to one (1) VMM domain related to one (1) HyperV container
- Document the Eco-System VMM strategy for inclusion within the ARD
- Provide the complete ACI Adoption Strategy, which shall form part of the ARD, to Customer for review and approval in accordance with the document approval process below

Customer Responsibilities:

- Ensure appropriate key Customer stakeholders participate in required VMM adoption strategy discussions to provide all information necessary for Cisco to create the adoption strategy within the ARD.
- Review and approve the ACI Adoption Strategy which shall form part of the ARD in accordance with the document approval process below.

Infrastructure Design

Cisco Responsibilities:

- Design Services will be limited to:
 - AS Validated Fixed Design only
 - Customer will be provided with a choice of two (2) AS Validated Designs to choose from
 - Network Centric Design only
 - Site-to-Site Connectivity Options
 - Dark Fiber
 - Dense Wavelength Division Multiplexing
 - Ethernet Over MPLS Pseudowire
 - Up to two (2) Tenants, with each Tenant limited to up to
 - Six (6) BDs
 - Two (2) Contexts
 - Six (6) EPGs
 - Twenty (20) Contracts
 - Two (2) L3Out and/or Two (2) L2Out
- Work with Customer to define a list of the following design considerations that are part of the validated design, these shall include, but not be limited to:
 - In-Band or Out of Band Management
 - Virtualization
 - VMware
 - vDS

- HyperV
- All of the validated design considerations will be documented in the ADD
- Create the high level design based on AS-Validated fixed design which may include the following:
 - Design recommendations based on Cisco best practices;
 - Naming conventions for policy constructs
 - Technical details relating to the design based on above design considerations
 - Network logical and physical topology
 - Documented IP addressing and VLAN scheme;
 - Other ACI configurations L2/L3 configurations, WAN/DCI integration;
 - Design recommendations and details such as Services, L2 and L3 connectivity to rest of the data center infrastructure;
 - High Availability
 - Hardware and software recommendation, if any, for the design
 - Operational recommendations based on Cisco best practices for ACI monitoring strategy
- Determine any risks in the design and provide options for and against making changes to the detailed design to mitigate risks.

Customer Responsibilities:

- Work with Cisco to select an AS-Validated fixed design from the choices provide by Cisco
- Provide rack level diagrams. Diagrams to include, but not limited to:
 - Switch locations (based on leaf categorization)
 - Storage placement
 - Compute
 - L4-7 devices
 - L2 Transparent Devices
- Provide IP addressing subnets, VLAN's
- Provide leaf names and serial numbers for incorporation into the ACI design.
- Provide tool names and access for ACI monitoring strategy.
- Provide specifics related to routing protocols and any deviations from standard values.
- Provide specifics on L2 protocols and deviations from standard values.

Application Policy Template Design

Cisco Responsibilities:

- Work with Customer to define a list of the following design considerations in accordance with the AS Validated Design chosen by the Customer
 - Tenant constructs
 - Private Networks
 - Application Network Profiles
 - End Point Groups (EPGs)
 - Contracts
 - Subjects
 - Filters
 - Fabric Access Policies
 - VLAN Pools (Static and dynamic)
 - Physical/External Routed/External Bridged Domains
 - Attachable Access Entity Profiles (AAEPs)
 - Interface Profiles
 - Interface Policies
 - Interface Policy groups
 - Switch Profiles
 - Switch Policy Groups (FEXs, VPC explicit domains)
 - L4-7 services pertaining to tenant level application policy design

- Virtualization pertaining to tenant level application policy design
- Define above policy constructs based on the nominated applications, and their flows, as documented within the ARD.
- Document in the ADD the ACI Application Policy Proposal

Customer Responsibilities:

- Provide key stakeholders to work with Cisco to define design considerations for the ACI infrastructure
- Provide input from vendors of third party products to ensure that L4-7 design will be in accordance with their best practices.
- Participate in ADD reviews and provide feedback

Application Policy Creation

Cisco Responsibilities:

- Review the IT Infrastructure Components and all other Customer supplied documentation (if available) in order to map the servers included within the Customer's network to which the servers are connected, server mapping to be limited to the servers that are to migrated to the new ACI Fabric.
- Create and document the application profiles for applicable VLAN's for the ACI Application Policy Proposal. This proposal will be documented in the ADD.
- Network Centric Policies will be created for the VLAN's that will reside on the ACI Fabric
- Document the Network Centric Profiles which shall form part of the ADD to Customer for review and approval in accordance with the document approval process below.

Customer Responsibilities:

- Provide Cisco with all Customer owned documentation as it applies to the infrastructure, servers, storage, and application environment associated with the four (4) VLAN's to be migrated to the ACI Fabric.
- Make the necessary key personnel available to Cisco as needed to provide background information on components within the network.

Data Center Deployment Services for ACI

Cisco Responsibilities:

- Provide Customer with the Integration Pre-Requisite Checklist. The Integration Pre-Requisite Checklist refers to a Cisco provided document that provides a detailed specification of the physical, electrical and environmental requirements that have to be met at the installation Site(s) to enable the Cisco Products to be installed.
- The scope for this deployment will be limited to up to 8 Leaf Switches or up to 768 Leaf ports maximum (Max is applicable even if a Stretched Fabric is involved)
- Deployment will be in accordance with the Customer-chosen Validated design.
- Bring up ACI Fabric in accordance with the AS Validated design
- Configure out-of-band mgmt. / in-band mgmt. – per ARD / ADD requirements
- Foundational service configuration, including:
 - NTP
 - Data and time format
- Utilize Role Based Access Control to define any additional roles required, per ARD / ADD
- Configure Monitoring policies across the fabric in accordance with the ADD.
- Configure access policies as defined within the ADD
 - Configure VMM
 - Create a VMM domain
 - Create a VMM instance for Hypervisor Data Center
 - Associate VMM domain with the appropriate credentials for access to the above environment

- Cisco to provide privileges for these user credentials
- Configure Tenants, and tenant constructs within the APIC, as described within the ADD.
 - Tenant build will be enabled to support Network Centric mode only.
- Configure layer 2 and/or layer 3 connection from the ACI fabric to the Customer's existing infrastructure in accordance with the ADD.
 - Cisco will configure up to a maximum of one (1) layer 3 out and/or one (1) L2 out connection from the ACI fabric to the Customers' existing infrastructure.
 - 3rd party or non-Cisco platforms integration with the APIC is excluded from this engagement
 - Routing protocols are limited to OSPF, BGP and EIGRP.
 - Border leaf switches are limited to quantity two (2), with up to two physical/Port channel/Virtual Port channel interfaces to be configured for the Layer 3 connections from ACI Fabric to Customers' existing network.
- Verify application network policy deployment on the APIC, and ensure that they will be deployed onto the fabric infrastructure.
- Update the ADD to include an As-Built Document and associated content. The As-Built Diagram defines and records the specific set of procedures and/or tests developed by Cisco and agreed to by the Customer that are necessary to test the ACI fabric connectivity and to declare that the Product is ready for use. Successful test execution will signify completion of the implementation of the solution
- Test connectivity in accordance with the As-Built Diagram.
- Test all fabric devices are up and functional in accordance with the ADD.
- Provide the updated ADD to Customer for review and approval in accordance with the document approval process below

Customer Responsibilities:

- Provide completed responses to the Pre-Integration Checklist ten (10) Business Days prior to Cisco arriving onsite.
- Validate that all facilities, racking, cabling requirements are complete before Cisco come on-site to start deployment activities
- Ensure that Cisco has either direct access to the Customer Datacenter, or that fabric devices have console access configured
- Provide access to the OOB network via SSH, HTTPs, etc.
- Provide Cisco with network connectivity to the fabric devices
- Provide laptops with privileges for Cisco engineers to install browsers and associated plug-ins / tools
- Provide access to SCP/TFTP server for storage of troubleshooting logs/image
- Provide information for foundational services such as NTP, BGP AS#, AAA, LDAP, etc.
- Provide credentials for monitoring access such as SNMP community strings, user passwords, admin access for APIC, etc.
- Configure L2/3 devices that will be connected to the ACI fabric
- Configure all L4-L7 service appliances connected to the fabric.
- Participate in all testing performed by Cisco for solution verification
- Ensure key Customer stakeholders including data center operations manager, and application architects are available to participate to provide all information necessary, as required.
- Review and approve the updated ADD in accordance with the document approval process below.

Infrastructure Migration: Migration Plan Development

Cisco Responsibilities:

- Conduct a remote session to revisit with Customer the high-level network migration strategy as documented in the ARD provided in the ACI Adoption Assessment Service to address any changes
- Verify with Customer that all assumptions identified in the ARD are still valid, and there have been no other changes made to the environment that Cisco are unaware of.
- Verify the VLANs to be migrated, L2, L3, or both, are as documented in the ARD.
- Document any Spanning Tree Protocol (STP), disjointed L2, or any other considerations that potentially can lead

- to L2 loops and network instability in the Implementation Plan as part the ACI Deployment As-Built Document.
- Create an Implementation Plan. The Implementation Plan will include the following:
 - Migration strategy around switching default gateways between legacy Data Center to ACI
 - Validation pauses and checkpoints that may include the following, but is not limited to:
 - Physical layer validation
 - Application Functionality
 - L4-L7 service devices
 - VMM integration
 - Final end to end validation
 - Graceful shutdown of older devices in case of complete migration
- Provide a backup plan as part of the Method Of Procedure which may involve the following, as determined by Cisco:
 - Atomic migration (all or nothing)
 - Partial migration (backup at various checkpoints)
- Migration is limited to devices moving to the ACI fabric. Outside functions such as WAN Routing, Edge FW, and Remote Access are not in the scope of Services.
- Provide a test plan as part of the MOP for end to end validation in accordance with the MOP activities performed. Document in MOP if the migration strategy results in a situation where application tiers concurrently reside in legacy and ACI environments.
- Provide up to a maximum of eight (8) hours of contiguous onsite support services (“Onsite Testing Support Services”). The Onsite Testing Support Services will be provided by a Cisco resource as consultative support, to resolve testing issues and provide troubleshooting assistance, which shall be limited to supporting test activities defined in the test plan included in the MOP, in the Customer’s environment. The Testing Support Services will only cover the standard product features as set out in the test plan included in the MOP.
- Provide up to a maximum of eight (8) hours of remote support services (“Remote Testing Support Services”) during three (3) consecutive Business Days. The Testing Support Services will commence on the next Business Day following completion of the migration. The Remote Testing Support Services will be provided by a Cisco resource as consultative support, to resolve testing issues and provide troubleshooting assistance, which shall be limited to supporting test activities defined in the Test Plan included in the MOP, in the Customer’s environment. The Testing Support Services will only cover the standard product features as set out in the test plan included in the MoP.

Customer Responsibilities:

- Participate in the high level migration strategy session.
- Perform a pre-migration round of testing to establish a results baseline to compare the post-migration results
- Make available key stakeholders during the migration, as requested by Cisco.
- Inform Cisco of any changes that have been made to the network that Cisco may be unaware of.
- Provide a change-window date with no less than five (5) Business Days’ notice to Cisco.
- Ensure proper function of cables, any intermediate switches, etc. before the migration.
- Schedule access to the server and related equipment for Cisco.
- Provide relevant passwords and authentication credentials to Cisco for provision of Services.
- Ensure key stakeholders are available for testing and validation as described in the MOP.
- Ensure key stakeholders are available for configuration changes to any devices outside the ACI fabric not considered in the scope of Services.
- Ensure key stakeholders are available for implementing any changes as required by the backup plan included in the MOP.
- Execute all Hardware moves, including, but not limited to moving switches, cables, etc. in the data center during the change window.
- Open support requests for any third party devices that exhibit problems during the migration.
- Work with Cisco to ensure an appropriate and timely testing window is available for provision of Testing Support Services.
- Work with Cisco to perform final validation and sign off of the migration, plan and procedures.
- Perform all execution tasks as detailed in the MOP, in the Customer’s environment.
- Complete all testing activities as defined in the test plan included in the MOP, in the Customer’s environment.

Network Centric Migration

Cisco Responsibilities:

- Update the MOP to indicate if the migration of VLANs results in a situation where applications / application tiers concurrently reside in legacy and ACI environments.
- Only migration of the L3 SVI over to the ACI fabric will be performed

Customer Responsibilities:

- Verify the selection of VLAN in the ARD that is to be used for migration, as VLANs omitted from the migration may potentially cause an application or its components to reside concurrently on legacy and ACI environments.
- Customer is responsible for all configuration changes not included in the Implementation Plan
- Perform all physical moves and cabling of server / VM's that are considered part of this migration effort.
- Perform baseline application testing, and confirmation of application functionality after migration, in accordance with MOP
- Fine tuning ACI contracts and security rules post migration of the grouped applications being migrated to the Fabric.
- Upon completion of the Implementation Plan Development, Execution and Testing Support service, acknowledge completion of Network Centric Migration services.

Integration Activities

Cisco Responsibilities:

- Cisco will integrate one (1) VMM Domain into the ACI Fabric
- Ensure that all required End Point Groups "EPG's" are configured for the required Virtual Machine Manager (VMM) domain in order to be assigned appropriately
- Configure APIC VMM environment to be able to communicate with the VMware ESX vServer in the desired manner, and associate vCenter with the APIC in order to receive the appropriate configurations from regarding the virtual environment set up.
- Work with the Customer Server Administrators to request an appropriate change window in order to make necessary changes to the VMware ESX host environments (such as adding ESX hosts to the created Distributed Virtual Switch / Application Virtual Switch)

Customer Responsibilities:

- Provide Cisco with all required passwords and administrator level access to hypervisor platforms to allow for integration to the APIC

Layer 4–7 Integration

Integration Activities

Cisco Responsibilities:

- Responsible for Cisco supported and validated ecosystem connectivity based solutions only with Cisco-approved eco-system vendors. (no device package.)
- Cisco will only use classical design option that entails connecting non-managed L4-7 devices (no device package/ service graph integration) to the fabric and is limited to 2 pairs of devices for load-balancing and /or Security.

- Cisco will not be responsible for any programmability & scripting requirements (no SW development & customization effort)
- Provide requirements for the device/solution integration
- Based on gathered requirements, provide required configuration to deploy services in a fashion consistent with the gathered requirements and application needs
- Configuration specifications for related features
- Verify that traffic flows between application tiers flows according to defined requirements / application needs
- Testing scope will be only applicable to the direct integration components – Example: Cisco will only test the scope of integration.
- ACI Design Document will include the following:
 - Requirements for the device integration
 - Configuration specification for related features

Customer Responsibilities:

- Define any application specific configuration required on the third party device.
- Ensure that appropriate licensing on the third party device is acquired and the third party device is capable of receiving configuration from APIC. This will include the following information
 - Third party device reachability information
 - Necessary credentials for configuring the third party device
- Configure the third party L4-7 devices according to the requirements defined within the validated design
- Customer ACI solution is in a functioning state to support ecosystem solution
- All associated facilities requirements for 3rd party solution integration are completed
- Customer will be responsible for any dependencies outside of the solution in scope – example: staging compute, patching, etc.

Data Center Operations Enablement Services for ACI

Cisco Responsibilities:

- Identify and schedule Cisco personnel responsible for conducting the workshop for the chosen process
- Conduct up to eight (8) hours remote workshop with Customer in order to demonstrate use cases and conduct a review of the process runbook with the appropriate operations and technical Customer staff.
- Deliver the runbook to Customer
- Cisco will deliver one (1) standard run-book for one (1) of the Operational Process.

Customer Responsibilities:

- Ensure all resources necessary for information gathering thru interviews are available according to scheduling agreed upon by Customer and Cisco project management.
- Identify to Cisco which Operational Process to be address in the standard run-book from the following:
 - Availability Management
 - Change Management
 - Incident Management
 - Configuration Management
 - Release Management
 - Event Management
- Provide all information and documentation on Customer's existing technical and operational capabilities specific to integrating ACI into Data Center Operations.
- Review documentation and provide comments within three (3) Business Days of immediately reviewing it with Cisco personnel.
- Designate the appropriate Customer operational and technical stakeholders (Dev/Ops, Architecture, Engineering, Operations) to participate in sessions and other information gathering activities.
- Ensure participation of key stakeholders in meeting(s) to discuss process architecture and related items.

- Provide any necessary technical or operational documentation to help Cisco understand and assess Customer environment

Document Deliverable Review and Approval Process

For Document Deliverables that are subject to review and approval from Customer, the parties will adhere to the following review and approval process:

- Cisco will present the draft Document Deliverable to Customer when the document is ready for review and approval.
- Customer shall review the draft Document Deliverable with Cisco, providing written comment or approval of the Document Deliverable within two (2) business days immediately after completion of such review.
- If no comment or approval is received by Cisco within said time period, the Document Deliverable as provided by Cisco is deemed to be accepted by the Customer.
- If Customer provides comments, then Cisco shall address such comments in a timely manner and this process for review and approval will be repeated.
- No further Services will be performed until the Customer's acceptance of Document Deliverables is received by Cisco.
- If Customer nevertheless insists on Cisco performing any further Services, the relevant Document Deliverable as presented by Cisco will be deemed accepted.

General Customer Responsibilities

- All information (such as but not limited to: designs, topologies, requirements) provided by Customer is assumed to be up-to-date and valid for the Customer's current environment. Cisco Services are based upon information provided to Cisco by Customer at the time of the Services.
- Customer acknowledges that the completion of Services is dependent upon Customer meeting its responsibilities as indicated herein.
- Identify Customer's personnel and define their roles in the participation of the Services. Such personnel may include but is not limited to: architecture design and planning engineers, and network engineers.
- Ensure Customer's personnel are available to participate during the course of the Services to provide information and to participate in scheduled information gathering sessions, interviews, meetings and conference calls.
- Customer shall review the draft Document Deliverable with Cisco, providing written comment or approval of the Document Deliverable within two (2) business days immediately after completion of such review.
- Support services provided by Cisco comprise technical advice, assistance and guidance only.
- Customer expressly understands and agrees that the Services shall take place and complete within ninety (90) calendar days from issuing a Purchase Order to Cisco for the Services herein.
- Customer understands and acknowledges that use of Cisco's pre-packaged software scripts provided under this Service is governed by the software license terms in the Master Agreement between the parties.
- Customer understands and acknowledges that support of Cisco's pre-packaged software scripts is out of scope of this effort. Customer will need to purchase such support separately, either directly from the third party or resold by Cisco.

Project Assumptions and Exclusions

Services and service pricing are based upon the following assumptions and exclusions ("Assumptions") together with those outlined in the Cisco responsibilities and Customer responsibilities throughout this document.

- a. Cisco will make commercially reasonable efforts to create a design capable of being automated by a third party or Cisco orchestration systems. However Cisco cannot be responsible for any current or future third party software or implementations.

- b. Cisco will make every effort to align to Customer's third party hardware product vendors however Cisco Services will not be responsible for schedule impacts due to third party deliverables or dependencies.
- c. Customer is responsible for determination and implementation of Customer design requirements and implementation of any recommendations provided by Cisco. Cisco recommendations are based upon information provided to Cisco at the time of the services. In no event shall Cisco be liable for the accuracy or completeness of the information contained in the Cisco recommendations
- d. Customer is responsible for system level and application end to end solution testing, acceptance and certification. Cisco to collaborate and provide architectural design and sub-system level testing for components in the data center.
- e. Customer will be responsible for migrating and testing all server based applications.
- f. Implementation/Migration plan execution support does not include physical installation, racking and stacking of equipment, or physical cable installation.
- g. Customer shall supply the workplace policies, conditions and environment in effect at Customer Site(s).
- h. All data (designs, topologies, and requirements) provided by Customer are assumed to be current and valid.
- i. Customer shall integrate and validate any network monitoring solutions.
- j. IPv6 is excluded
- k. Multicast configuration is excluded from this scope of work
- l. All Method of Procedures (MoP) / detail migration plans regarding servers and applications are excluded from this service. The MoP mentioned above is related to network elements only.
- m. This service does not include any tool-based discovery and recording of network communication.
- n. Developing server, network devices and application inventories are not part of this service.

Adoption Assessment Assumptions

- a. Customer has provided most current documentation available.
- b. Interview process will be guided based on provided information as a baseline
- c. Cisco's recommendation will be based on per validated design
- d. All highlighted, documented risks by Cisco need to be acknowledged by Customer before project will continue.
- e. Cisco maintains the right to identify a risk that may require rescheduling of activities as part of the PMP
- f. All applications to be migrated to ACI fabric must meet classification criteria as defined within the project scope and per validated design requirements
- g. Network Centric is assumed to be "1 VLAN equal to 1 End Point Group (EPG) equal to 1 Bridge Domain (BD)"
- h. All automation tools being considered for integration into the ACI fabric are the responsibility of the Customer. Cisco will only provide integration capabilities from the ACI fabric outbound.
- i. All Designs, deployments and other activities under the terms of this Service Description refer to a Network Centric approach only
- j. Device package integration (Service Graphs) for L4-L7 devices is excluded.
- k. Fabric extenders (FEXs) are excluded
- l. Openstack Integration is excluded from this design and requirements.
- m. Unless otherwise mentioned, any other existing Customer devices are out of scope and excluded

Design Service Assumptions

- a. Cisco to provide documented limitations of stretched ACI fabrics.
- b. Customer has procured the appropriate license(s) for the features in the third party L4-L7 devices, virtualization platforms, etc.
- c. Design is based on current approved requirements. Any changes to these requirements may result in changes to the design
- d. Endpoint discovery and application grouping analysis on the subnets/vlans is not in scope for this service
- e. Multi-site DC technologies will not be part of this design
- f. In a HyperV deployment, Azure Pack will be excluded from this engagement
- g. Vrealize is excluded from this engagement.

ACI Deployment Assumptions

- a. Checklist is complete
- b. OOB Management is Configured
- c. vTEP ip address pool is identified
- d. Internet access is provided for software downloads
- e. If the Customer provides their own laptops for access, privileges to install software on the laptops will be provided.
- f. Tenant Constructs, for the basis of this Service Description, will include:
 - i. EPG's
 - ii. Contracts
 - iii. VRF's
 - iv. Bridge Domains
 - v. Service Graphs
- g. Naming conventions as decided in the ADD will be adhered to for all policies
- h. No custom scripting or development for the deployment
- i. Customer will provide any application validation/verification procedures required for their apps and the resources to perform the testing.
- j. Cisco is not responsible for delays imposed by Customer or Customer vendors to the timeline.
- k. Customer will provide all information, in a timely manner, required for the migration. (i.e. connectivity requirements, current state, etc.)
- l. Customer is responsible for all migration, unless otherwise stated
- m. Customer is responsible for exhaustive failure testing scenarios, Cisco to perform connectivity testing to ensure all devices are up and running and properly configured only.
- n. ACI policy configuration documented in the As-Built included in the ADD developed as part of the ACI Deployment service have been performed by Cisco or Customer.
- o. Migration is limited to devices moving to the ACI fabric outside functions. WAN Routing, Edge FW, and Remote Access are not in the scope of Services, unless otherwise noted within this Service Description.
- p. Implementation Plan will not be executed until signed off by the Customer.
- q. Cisco is not responsible for any unexpected results/events that occur as a result of deviating from the documented Implementation Plan or migration strategy
- r. Customer will provide any application validation/verification procedures required for their apps and the resources to perform the testing.
- s. Cisco is not responsible to help remediate issues that were present before the migration or which are ambiguous as a result of not having a pre-migration testing baseline
- t. Cisco is not responsible for delays caused by Customer or Customer's vendors.
- u. Openstack Integration is excluded.
- v. Servers connected to the leaf switches should be rack mount servers that are directly connected to the ports on the leaf switches

Invoicing and Completion

Invoicing

Services will be invoiced upon completion of the Services.

Completion of Services

Cisco will provide written notification upon completion of the Services to Customer. The Customer shall within five (5) Business Days of receipt of such notification provide written acknowledgement of Cisco's completion of the Services. Customer's failure to acknowledge completion of the Services or to provide reasons for rejection of the Services

within the five (5) Business Day period signifies Customer's acceptance of completion of the Services in accordance with this Service Description.