



Service Description: Cisco Foundation Technology Service Provider Optimization Service

This document describes Cisco's Foundation Technology Service Provider Optimization Service.

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; and (3) Severity and Escalation Guidelines. All capitalized terms in this description have the meaning ascribed 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 Foundation Technology Service Provider Optimization Service 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.

This Foundation Technology Service Provider Optimization Service is intended to supplement a current support agreement for Cisco products and is only available where all Product(s) in Customer's Network is supported through a minimum of core services such as Cisco's SP Base, Software Application Services, or the Partner Support Service offering from within the Cisco Services Partner Program.. Cisco shall provide the Foundation Technology Service Provider 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. Availability of Services described herein and service delivery may vary by geographical region.

Service Summary

Foundation Technology Service Provider Optimization Service provides Network Health Checks, Network Support Services, Continuous Learning and Annual Assessment service modules, with an available option to purchase Cisco

EnergyWise Optimizaiton. Foundation Technology Service Provider Optimization Service supports those Products operating on Customer's core transport and aggregation Network technology (i.e., Metro Optical, ATM/FR, IP Core and Cisco security devices including but not limited to Firewall, IDS and VPN3000).

Foundation Technology Service Provider Optimization Service

Cisco Responsibilities

Cisco's Foundation Technology Service Provider Optimization Service consists of the provision of, at a minimum, Network Support service, selected by Customer from the Services described below, which Cisco shall provide for the Customer's network during Standard Business Hours (unless stated otherwise). The number of audits, assessment and/or reports provided by Cisco under this Service will be specified in the Quote and will be reviewed by the parties at each quarterly business review. Cisco shall provide the following General Support provisions for all Services selected by Customer:

General Support

- Designate an engineer ("Advanced Services Engineer") to act as the primary interface with Customer for its Network.
- Schedule with Customer up to four (4) quarterly visits per year (not to exceed eight (8) days in aggregate) to Customer's site to review proactive deliverables and activities and to plan for next quarter. Additional visits will be mutually agreed at Cisco's then-current travel and labor rates.
- Schedule periodic conference calls (usually weekly) to review Customer's Network status, planning and the Services being provided.
- Make collaboration tools available for hosting meetings, managing documentation, instant messaging, desktop sharing, and collaborative spaces.
- Establish a Customer-specific Cisco email alias to facilitate communication with Advanced Services Engineer.

- Provide certain Data Collection Tools that Cisco identifies as appropriate for Network data collection during the Term of the Services, provided that all fees due and owing to Cisco under this Appendix have been paid. Data Collection Tools may or may not include Hardware or Software. Customer acknowledges and agrees that Cisco shall retain full right, title and interest to the Data Collection Tools. In addition to Cisco provided tools, the Advanced Services Engineer may utilize Customer provided data, scripts or internal tools to assist in collecting data from the Customer Network.

Network Health Checks.

In order for Cisco to provide the Network Health Audits and Network Health Reports specified below a Data Collection Tool must be installed on Customer Network in order to capture relevant Network data. The data will be analyzed through a combination of best practices via back end tools and Cisco network consulting engineering guidance. The analysis is profiled and reported back to Customer along relevant recommendations.

• Network Health Audits

- Provide a predetermined set of technology or protocol audit reports or other performance analysis reports. Such audit or performance analysis typically includes amongst other information, the following:
 - Collection of key performance data
 - Identification of exception reports
 - Analysis of key device configurations
 - Analysis of resource utilization
 - Assist Customer to define Network-specific performance criteria
 - Report on performance optimization recommendations such as system tuning and protocol optimization changes

The typical size an audit will cover is up to 500 devices. For a large network, several audits will need to be completed over time for consistency.

• Network Health Reports

- Provide a predetermined set of configuration best practice reports on Cisco IOS and CatOS devices. Such reports typically focus on the following areas:
 - Technology-for example, LAN, IP routing
 - Protocol-for example, Enhanced Interior Gateway Routing Protocol (EIGRP), Border Gateway Protocol (BGP)
 - Security settings
 - Network management settings

- Provide a predetermined set of periodic syslog analysis reports on Products to proactively identify Network optimization opportunities based on the following:

- Syslog event correlation
- Device health information
- Baseline metrics

- Provide a predetermined set of proactive advisory reports, which will contain recommendations that the Customer may elect to implement. Reports are typically generated after the AS Engineer has assessed the following and determined applicability to Customer's Network:

- Hardware end-of-life reports
- Cisco.com field notices
- Performance-tuning opportunities

- Provide proactive performance-related advisories (for example, updates to compensate for new viruses or worms) as related to installed Product.

Network Support Service

• Network Design Support

- Consult with Customer networking staff in a series of meetings to develop a thorough understanding of Customer Network design requirements, with a focus on concerns such as resiliency, self-recovery, scalability, and ability to handle increased traffic demands and QoS.
- Provide detailed design report(s) that may include, amongst other information, the following:
 - Review of Customer's design requirements, priorities, and goals.
 - Analysis of impact of new requirements on existing Network.
 - Review of Network architecture and topology.
 - Review of protocol selection and configuration.
 - Review of feature selection and configuration.
 - Review of security considerations (i.e. authentication, VLANs, subnet isolations, etc.).

- Report describing the design with recommendations.

The number of detailed design reports will vary depending on the technology mix and Network expansion or change plans.

- Provide ongoing, incremental Network design and architecture consultation.
- Provide ongoing information on design related Cisco security alerts that may impact key Network Products.

• **Software Support**

- Provide a Software management strategy review report containing an overall strategy recommendation, which may include:
 - Review of Customer future feature requirements.
 - Identification of appropriate Software Track(s).
 - Review of Software Feature Set Upgrade triggers and lifecycle considerations.
 - Overall recommendation on Software Track priority.
- Provide proactive Software recommendation reports (each report covers single Software Track), which may include:
 - Review of new Software feature releases (Cisco IOS Software and Cisco CatOS Software)
 - Inclusion of a Software referral version and risk analysis.
 - Overall Software recommendation to proceed with testing and Feature Set Upgrade deployment or wait for future Maintenance Release.
 - Contingency plan for transitioning Software in Customer networking environment.

The number of Software recommendation reports will vary depending on number of Hardware platforms and Software versions Customer expects to change or review during the annual service term.

- Provide periodic Software analysis report to help assess ongoing status of recommended or standard Software in Customer Network, which typically includes:
 - High-level analysis of major issues such as end of life or end of sale Software releases, Software advisories, Software deferrals per identified Software Track.

- Overall assessment of conformance to identified recommended Software version per identified Software Track.

- Provide ongoing security alerts that provide impact information on Software related security alerts that may impact key Network components.
- Provide periodic proactive critical bug analysis report for identified Software Track(s) or key Network Software feature categories.

• **Network Change Support.**

- Provide Customer with remote resource to support critical scheduled changes, which may include:
 - One (1) eight (8) hour window per twenty-four (24) hour period.
 - Collaboration with customer to evaluate the potential impact of the proposed scheduled change, review implementation procedures, and be available to assist customer to resolve problems with Network Hardware and configuration during a major deployment into a live Network.
 - Cisco will make available, upon receipt of not less than twenty-one (21) days prior written request by Customer to Cisco, a designated support contact that can consult with customer on a 24-hour 7-day standby basis to remotely assist Customer in major Network service changes (for example, major Hardware upgrade(s), major site installation(s) and major configuration changes). Customer agrees to submit a detailed request and schedule to Cisco prior to any such activity. The number of Events will vary depending on the size of Customer Network Install Base and Network activity.
- Provide a remote resource to provide support for any unscheduled changes to Network to Customer to minimize the impact of individual device failures on the overall Network. Customer must open a service request with the Cisco's TAC prior to contacting the Advanced Services Engineer for any unscheduled change support. To support any unscheduled changes to Network, Cisco will:
 - Designate an engineer ("Cisco Advanced Services Engineer") to act as the primary technical contact to with Customer and Cisco Technical Assistance Center (TAC).
 - Provide technical evaluation of initial TAC problem diagnosis based on knowledge of Customer's Network.

- Provide technical evaluation of proposed unscheduled change to Network.
- Provide technical representation in regularly scheduled conference calls.

- **Network Improvement Planning.**

- Cisco will provide a Network improvement plan as often as quarterly, which integrates recommendations from the Annual Assessment, Network Health Checks, Network Support, and Continuous Learning Services, as applicable, into a single living document. The Network improvement plan represents the Customer-approved Network wide implementation sequence of agreed-upon recommendations as prioritized by a joint steering committee comprised of Cisco and Customer and may be used by Customer to track future projects.

Continuous Learning Service

- **Knowledge Transfer and Mentoring.**

- Provide informal technical update training on a topic that is mutually agreed upon and relevant to the Products and Cisco technologies. The quantity of training sessions will be pre-determined in the Quote based on Customer requirements and future plans.

- **Technical Knowledge Library.**

- Provide Technical Knowledge Library. The Technical Knowledge Library is made available by Cisco either through a secure web-based portal ("Portal") or a Cisco-owned Content Engine which is placed on the Customer Network. The Technical Knowledge Library is only available to certain geographic locations and will be specified in the Quote if provided. Where available, the following is provided:
 - Installation, configuration, and testing assistance for the Content Engine; or, user account creation for the Portal
 - Initial assistance in getting the Technical Knowledge Library operational with appropriate authentication and authorizations for user community
 - Content available to the specified number of authorized viewers
 - Multimedia clips in the form of video on demand or audio on demand content
 - Customer-specific deliverables archive when delivered as part of an Advanced Services subscription engagement
 - Sidebar content such as white papers, case studies, design guides, configuration guides, troubleshooting guides, training documents,

deployment guides, online textbooks and/or manuals, or bumper clips

- Listed web based trainings provided via Technical Knowledge Library to authorized viewers
- Preventative maintenance in accordance with Cisco's normal maintenance schedules and procedures
- Troubleshooting assistance for issues submitted to Cisco
- Updated content as Cisco may revise, update, and/or remove previously-released multimedia clips and/or sidebar content ("updated content") and whereby Customer should discontinue any use of superseded content

- **Formal Training.**

- Cisco to provide Formal Training sessions. The quantity of formal training sessions is pre-determined based on the Quote provided. Formal training sessions can be delivered on customer premises. Sessions are selected from any course listed on 'www.cisco.com/go/ase. Each course will have maximum of twelve (12) students and is only open to Customer.

- **Virtual Training.**

- Provide Virtual Training Sessions. The quantity of the sessions will be predetermined in the Quote provided. Cisco will consult with Customer to identify requirements and topics on Advanced Technologies for virtual training sessions. Virtual Training Sessions are:
 - Delivered in English.
 - Delivered to a maximum of 12 students.
 - Delivered remotely and up to twelve (12) hours in length (covered in two contiguous, 6 hour day maximum). Lab exercises and session materials can be included.
 - Relevant to the Cisco products and technologies as agreed to between Customer and Cisco.
 - For a list of current supported topics go to www.cisco.com/go/ase and select 'Virtual Training Services.

Annual Assessment Service

- **Operational Assessment.** Cisco will make available to optional assessments as shown below:

- Option 1: Coordinate, perform and deliver one operational assessment report annually. Operational assessment report can include evaluation of up to two hundred-fifty (250) Cisco devices and typically consists of the following:

- Provide Customer with a report that details Cisco's findings, best practice non-conformances and recommendations arising out of the respective assessment. Such recommendations resulting from the assessments may identify common industry gaps, identify areas that require more detailed analysis via further assessments, and gap resolution recommendations with a view towards improving the operational state of the Network environment.

- Option 2: Coordinate, perform and deliver one Operational Risk Management Assessment (ORMA) report annually. The ORMA, described in greater detail under a separate service description, typically covers some of all of the following areas of interest:

- Strategy and Commit
 - New Service Introduction
 - Staffing and Expertise
- Infrastructure and Product Lifecycle Management
 - Software Lifecycle Management
 - Change Management
 - Network Resiliency
- Security Management
- Service Fulfillment
 - Order Management
 - Inventory Management
 - Configuration Mgmt
- Service Assurance
 - Incident Management
 - Problem Management
 - Fault Management
 - Service Level Mgmt
 - Performance Management
 - Backup and Recovery Mgmt

• **Security Architecture Review**

- Conduct a Detailed Design Workshop, gathering information on:
 - Network security strategy, technology and policy requirements (including network segmentation, network and device access, server protection).
 - Network architecture design, device topology, firewall design, and service descriptions.

- Core, distribution, access and edge device configuration files
- Prioritize the discovered vulnerabilities and identify the most critical findings.

- Analyze findings and customer requirements..
- Provide recommended actions to improve the security state of the Network security architecture to meet the organization's security goals and compliance requirements.
- Provide Network Security Architecture report that documents findings and recommendations.
- Conduct a final Workshop to present findings, analysis, and recommendations and run a question & answer (Q&A) session.

• **Curriculum Planning Review**

- Coordinate, perform and deliver a training needs assessment through a data gathering and reconciliation process for up to two job roles and one technology. During such assessment, Cisco may:
 - Assign a designated curriculum planner ("Planner") to project manage the completion of Services.
 - Engage additional Cisco resources as necessary to complete Services specified herein.
 - Identify, coordinate, and interview selected Customer network staff.
 - Work with the Customer coordinator to schedule and execute information gathering sessions.
 - Participate in regularly scheduled meetings with Customer coordinator to discuss project scope, schedule and status of the project.
 - Conduct a presentation with Customer that reviews a draft of recommendations, findings and gaps.
 - Create and provide to Customer with a curriculum training plan ("Curriculum Training Plan").
- Curriculum Assessment and Planning Report.

- Provide Customer with a curriculum roadmap for each functional group interviewed that contains recommended courseware that may help close any identified gaps between Customer need and skill set.
- Assessment Analysis Readout.
 - Provide a presentation summarizing the results arising out of the assessment. The presentation may include, but is not limited to, the following: Cisco's findings, identified gaps, and gap recommendations arising out of the assessment.
- Post-Assessment Consultation. There is no post-assessment consultation provided by Cisco
- Assumptions.
 - Network Devices: With regard to non-Cisco equipment, Planner will not represent the operational characteristics or box internals of network equipment not manufactured or sold by Cisco. The assessment is limited to Cisco manufactured equipment.
 - Network Topology: Any assessment performed by Cisco will be based on information provided by Customer in a high level Network topology map.

EnergyWise Optimization Service (Optional).

Customer Requirements Document ("CRD") Development.

- Collaborate with the Customer to remotely collect and document Customer's communicated business requirements to be used by the high-level network design. The Customer requirements may include:
 - Energy Management features and functionality are required to meet business objective.
 - Review and analyze the existing Network, Compute and Storage architectures for performance, IT and building load analysis, Hardware and Software, energy reporting and management.
- Provide and maintain a Customer Requirements Document ("CRD") that contains Customer requirements, collected data, information, observations, and the results of the high level analysis during the duration of the EnergyWise Optimization service offering.

Discovery and Information Gathering

The remote energy discovery process is a low cost way for a Cisco and Customer uncover a high level ROI for implementing a new energy management system. This financial analysis can be presented remotely or on day 1 of on-site workshop. This is a high-level energy discovery typically for a subset of the larger IT architecture.

- Discovery and Information Gathering / Remote Access Required
- Requirements Gathering and Discovery / Remote
- Asset Inventory Transfer / Remote
- Qualification and Evaluation / Remote
- Mechanical, Electrical, Floor Plans Transfer / Remote
- Presales Coordination / Remote
- Discovery and Information Gathering / Remote Access Required
- Provide a site survey report detailing the results of the energy discovery tool.

The on-site energy discovery process provides for a detailed ROI for implementing a new energy management system. This financial analysis is presented remotely during the assessment period. This is a low-level energy discovery typically for the larger IT architecture.

- Discovery and Information Gathering / On-site
- Site Inventory Discovery / On-site
- Requirements gathering & analysis / On-site
- Detailed IT and Facilities Components Assessments / On-site
- Collaborate with Customer to determine Future State Design / On-site
- Assist the Customer in the creation of its high level Energy Management System design and as part of the collaboration:
 1. Review and assist customer the high-level Network architecture and topology design.
 2. Identify integration and aggregation points for energy domains across Building Management Systems, Network, Compute and Storage.
 3. Review customer designs for IT System application environment, access requirements, efficiency metrics, reporting capabilities, hardware tiering, hardware compliance and configuration provide recommendations.
 4. Financial modeling and analysis across facilities and IT operations showing ROI and projected savings by business unit. / onsite

Energy Management Assessment

The Energy Management tools and processes involve the installation and integration of a new energy management application. This application provides Customer with an active tool to manage the energy usage of IT assets. Furthermore, the reporting and tracking of energy use is supported. The final deliverable document includes the cost justification for the system, initial findings and user guide for the energy management system.

- Data Aggregation, Domain Building, Reporting Templates
- Planning (Requirements, Assessment, Architecture)
- Design & Build (Solution Design, Integration, Implementation)
- Expense Assessment (Operational & Architectural Assessment)
- Run & Optimize (Deployment Planning, Operational Assessment, Optimization)
- IT assets utilization mapping
- Efficiency Metrics Calculations
- Energy Management Strategy
- Energy Management Report Compilation
- Provide Customer Report - Executive Presentation

Energy Management Support and Knowledge Transfer

Once the energy assessment is complete, Cisco will work with Customer to develop a new energy management program. This program focuses on providing Energy as a Service (EaaS) for energy managers and IT operators. This program and training that is provided by Cisco have the following attributes:

- User training workshops
- Recommendations of organizational structure
- Recommendations on programmatic structure
- Reporting templates for compute, network and storage assets
- Data feed for data center digital signage
- Report showing projections on energy savings over 3 year period for single data center

Customer Responsibilities

General Responsibilities

- Designate at least two (2) but not more than six (6) technical representatives, 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. Customer will designate as contacts senior engineers with the authority to make any necessary changes to the Network 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

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 the Services in this Service Description, 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 to Customer's Network to allow the Advanced Services Engineer to provide support.
- 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 by Customer and the following must be performed:
 - Complete the Data Collection Tools installation questionnaire and return it together with the Data Collection Tools system configuration (IP address, netmask, hostname, etc) to the Advanced Services Engineer.
 - Install the Data Collection Tool hardware in a secure area with limited physical access.
 - Connect the Data Collection Tool hardware to the Network. Secure it behind Customer's corporate firewall.
 - Provide remote access to Data Collection Tools (Virtual private Network (VPN) access to the Graphical User Interface (GUI) is preferred) for use by Cisco to install, troubleshoot, and maintain the Data Collection Tools. SSH, Telnet, or dial are other options but VPN is recommended.

- Provide Data Collection Tools with HTTPS (SSL) access back to Cisco CCO/CCX servers located at nettools-upload.cisco.com for daily data uploads. HTTP/FTP/PFTP may be used but Cisco strongly recommends HTTPS (SSL).
- Provide Data Collection Tools with SSH to the nettools-upload.cisco.com server to support the transfer of Data Collection Tools patches, Solaris security patches, and Rule Based Markup Language (RBML) update packages. FTP may be used but Cisco strongly recommends use of SSH.
- Provide Data Collection Tools with SNMP and Command Line Interface (CLI) access to all Product(s) in the Network. This is needed 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 uid/pwd) for access to all Product(s) in the Network. This is needed to create the Data Collection Tools Seedfile.
- Provide Syslog server and upload information.
- Data Collection Tool Management (Ongoing). In the event Data Collection Tools are installed on Network by either Cisco or Customer, the following items must be performed on a regular or as needed basis by Customer 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) that may periodically occur between Data Collection Tools and the Product(s) in the Network.
 - Fix data communication problems that prevent Data Collection Tools from uploading data to Cisco or prevent the remote maintenance of the Data Collection Tools.
 - When performing Network audits, Cisco recommends the number of changes made to the Product(s) that are being audited is minimized while the Network audit data is being collected (1-day or 7-day period). If feasible no configuration changes should be made in order to avoid erroneous Network audit results.
- Notify the Advanced Services Engineer when changes are made to Syslog, DNS, proxy and gateway servers IP address.
- 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 IOS releases.).
- In the event the Network composition is altered, after the selected Services in this Service Description are in effect, 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 Advances Services Engineer.
- Retain overall responsibility for any business process impact and any process change implementations.

Network Support

- **Design Support** In addition to the General Responsibilities, Customer shall provide the following:
 - Provide a document describing a specific set of technical requirements and design goals. The level of details must be sufficient to be used as input to a design and 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 Information on current and planned traffic characteristics or constraints
- **Software Support.** In addition to the General Responsibilities, Customer shall provide the following:
 - 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). Contact information and Customer escalation process.
- Information on Customer certification process and lab testing process.
- Information on Customer change control process.
- **Network Health Checks.** In addition to the General Responsibilities, Customer shall provide the following:
 - Information on any service level agreements or Network performance requirements.
 - Information on critical applications supported by the Network.
 - Information on expected Network growth and application mix changes.
 - Data collection activities as needed to facilitate a specific Cisco analyses.
 - Allow a Data Collection Tool to be installed on Customer Network in order to capture relevant Network data.
- **Network Change Support.** In addition to the General Responsibilities, Customer shall provide the following:
 - 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.
 - Information on architecture (which may include remote sites and size of remote sites).
 - Identify low risk and high risk areas of the Network based on their Network traffic.
 - Information on Customer Implementation plan and deployment schedule.
 - Maintenance window information and any other constraints.
 - Information on Customer change control process.
 - Contact information and customer escalation process.
- 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 perform root cause analysis.
- Provide reasonable electronic access to Customer's Network to assist Cisco in providing support.

Continuous Learning

- **Knowledge Transfer and Mentoring.** In addition to the General Responsibilities, Customer shall provide:
 - Details on desired topics Customer wants to see covered through knowledge transfer and mentoring, with background information on the skill sets of the audience or mentoring program participants.
 - Ensure that facilities and equipment are available to host the informal technical update sessions.
- **Technical Knowledge Library.** In addition to the General Responsibilities, Customer shall provide:
 - Customer is responsible for installation of the Content Engine or testing of the Portal interface, depending on which method for delivery is selected by Cisco. If the Content Engine delivery method is selected by Cisco, the Customer is also responsible for power and surge protection, security, Network connection, IP address assignment, and any required firewall or Access Control List changes required on Customer's Network in order for the Services to be provided by Cisco and to provide Cisco with the necessary remote access to Cisco equipment.
 - Provide shipment contact information such as: contact name, title, address, telephone number, e-mail address, and fax number.
 - For the Content Engine delivery method, provide Cisco physical and remote access to the Content Engines(s) and all related hardware, as reasonably requested by Cisco, to provide, support, and maintain the Content Engine. The following TCP/IP ports are required for outbound remote access initiated from Content Engine on Customer premises:

- HTTPS/SSL (TCP 443)
 - SSH (TCP 22)
 - HTTP (TCP 80); possibly required
 - DNS (UDP 53); possibly required
- Install and remove the Content Engine.
- Notify Cisco of any technical support requests or troubleshooting issues related to the Services.
- **Formal Training and Virtual Training Sessions.** The formal training offering, also known as "Private Courses" and virtual training sessions are defined as closed enrollment courses delivered to Customer. Each type of session is provided only to Customer students
 - General.
 - Each event can support up to a maximum of 12 students.
 - Customer will ensure that all students will have computers provided by Customer for use in class as needed to support labs. Customer provided computers must meet the minimum requirements for lab access for the course.
 - Customer may cancel a Private Course or virtual training session at any time for any reason upon written notice to the Cisco point of contact. Cancellations made within thirty (30) business days of the first day of class will, at Cisco's sole discretion, result in rescheduling, if possible by Cisco, or Cisco shall deem the class as having been completed with no further obligation with respect to such cancelled class. If Cisco must cancel a course offering, then Cisco's shall either attempt to reschedule the class, subject to resource availability, or issue a credit in the amount of the course fee to be applied towards future purchases by Customer.
 - For each student, provide remote access to instructional lab facilities as required, to enable access to the Internet, including static IP addresses when required.
 - For virtual course delivery, agree to temporary use of Cisco's VPN AnyConnect client software to enable secured VPN access to lab facilities for course duration. Customer acknowledges that its personnel will be required to accept licensing terms as part of client software download and such terms can be reviewed at www.cisco.com/go/ase.
 - Agree that all instructional content is the sole property of Cisco and/or Cisco subcontractors and are exclusively for the benefit of the course attendee only and for his/her internal use and shall not be reproduced in any way and shall always be subject to both confidentiality and IPR provisions in the Cisco Advanced Services Network Optimization Service Master Services Agreement appendix/addendum.
 - Completion. Formal Training and virtual training sessions shall be deemed complete upon the completion of the course as evidenced by the completed course roster provided to Customer.
 - Facilities for Formal Training Sessions.
 - Customer will provide classroom facilities for all Private Courses delivered by Cisco.
 - The room must be dedicated to the class, with plenty of table space for each student.
 - Each student requires a clear view of the projection system and whiteboards. Customer is responsible for receiving the Cisco provided equipment, tracking and maintaining it until the delivery of Formal Training, and will assist with equipment setup.
 - Customer will provide Cisco access to the facility at least one day prior to the first day of course delivery.
 - Customer will provide Cisco with access to telephone and network connectivity when engagement is held at a Customer facility. If remote access and/or internet connectivity is required, Customer will provide that connectivity and static IP addresses as required.
 - Customer will provide access to the World Wide Web via telnet services. Cisco will provide the IP address to Customer to sample the ability to gain access past any corporate firewalls.
 - Customer will provide an extra Ethernet connection at the front of the room for the instructor. It is a standard part of the instructor's presentation to present the slide portion of the lecture and then demonstrate actions to the students prior to the students performing labs.
 - VGA or SVGA projection system (either a Projection Panel combined with an overhead projector, or LCD projector) to be connected to the external monitor port of the Instructor's IBM-compatible computer.
 - Minimum of 2 whiteboards, each approximately 4 foot by 6 foot (three whiteboards are preferred).

These whiteboards should be usable even when the projection system is simultaneously active.

- Classroom Checklist. For each course, Customer will provide, the following administrative items, some of which may be provided by the students.
 - Notepads for students, writing tools for students and instructor (highlighters and pens),
 - Whiteboard markers and eraser available in classroom
 - Extra overhead projector bulb (if used) in the classroom
 - Name tents for students

Annual Assessments

• Operational Assessment

- 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 Network experience. Such person shall act as Customer's host for onsite 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

• Security Architecture Review

- Provide a list of all of the existing security architecture components including but not limited to Hardware, Software and solution configurations; architecture descriptions.
- Provide a high-level architectural drawing showing the type of Hardware, Software, and application solutions configurations and where they are physically located (for example, geographical location or location within the Network).
- Provide detailed definitions of the type of application (for example mobile traveler, corporate workforce) and features; detailed definition of Customer's implementation strategy.
- Provide copies of product configuration templates.
- Provide security network expansion roadmap.
- Provide a network topology map, configuration information, and information of new features being implemented as needed.
- Retain overall responsibility for any business process impact and any process change implementations.
- Ensure key Customer networking and operational personnel are available to participate in interview sessions as required.
- Unless otherwise agreed to by the parties, Customer shall respond within two (2) business days of Cisco's request for documentation or information needed for the Service.
- Customer acknowledges that Cisco's obligation is to only provide assistance to Customer with respect to the tasks detailed and that such assistance may not result in some or all of the tasks being completed.

• Curriculum Planning Review

- Designate a single point of contact to whom all

Cisco communications may be addressed and who has the authority to act on all aspects of the Services and shall be available during Standard Business Hours.

- Designate a back up when the Customer contact is not available who has the authority to act on all aspects of the Services in the absence of the primary contact.
- Act as single point of contact for any questions or inquiries that the Planner may have.
- Unless otherwise agreed to by parties, provide information and documentation required by Cisco within five (5) business days of Cisco's request.
- Ensure key Customer staff is available for scheduled information gathering sessions such as interviews.
- Initiate the project by conducting kickoff meetings, define project scope, project schedule and work breakdown structure. Provide all necessary technical documentation including, but not limited to network designs and implementation plans and job descriptions for the target audiences being assessed.

Glossary of Terms for Foundation Technology Service Provider Optimization Service
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The following terms, as defined below, apply solely to this **Technical Knowledge Library** Services described in Service Description:

- **Authorized Viewer** means either (i) an employee of Customer or (ii) an independent contractor of Customer performing services for Customer's benefit who is authorized by Customer to use the Services.
- **"Bumper Clip"** means a short multimedia video and/or audio segment containing an 'onBusiness Network' logo or other branding sequence, which is intended to be viewed immediately before and/or after a Multimedia Clip.
- **"Content"** means the content hosted on Content Engines as part of the Services for which Customer shall gain access as part of the Services, including Sidebar Content (defined below). All Content shall be considered Cisco Confidential Information.
- **"Content Engine"** means the Cisco-owned Hardware and embedded Cisco Software provided to Customer as part of the Services.
- **"Intellectual Property Rights"** means all past,

present, and future rights of the following types, which may exist or be created under the laws of any jurisdiction in the world: (a) rights associated with works of authorship, including exclusive exploitation rights, copyrights, moral rights, and mask work rights; (b) trade secret rights; (c) patent and industrial property rights; (d) trademark and trade name rights and similar rights; (e) other proprietary rights in intellectual property of every kind and nature; and (f) rights in or relating to registrations, renewals, extensions, combinations, divisions, and reissues of, and applications for, any of the rights referred to in clauses (a) through (e) of this sentence.

- **"Internal Use Purposes"** means use of the Services for the sole purpose of permitting Authorized Viewers to view the Content, provided that all such viewing is solely intended to further Customer's internal communications, training, education, or administrative objectives. Notwithstanding anything to the contrary in this Service Description, "Internal Use Purposes" expressly excludes (i) the licensing, copying, transferring, or distributing of any element of the Services; (ii) displaying of any element of the Content to any persons other than Authorized Viewers, and Customer will not permit or enable any other persons to view any element of the Content; (iii) modifying, altering, abbreviating, or editing of any element of the Services unless expressly permitted by Cisco or its suppliers or licensors; (iv) the incorporation of any element of the Services into any product or service of Customer or creating a derivative work based upon the Services; and (v) using any element of the Services in any manner other than as expressly authorized under this Service Description.
- **"Multimedia Clip"** means a discrete multimedia video or audio segment, in digital format, that is intended to be viewed from start to finish without interruption.
- **"onBusiness Content"** means Content which is associated with the 'onBusiness Network' brand.
- **"Sidebar Content"** means supplemental meta-content or meta-data associated with each Multimedia Clip, setting forth indexing information about the pertinent Multimedia Clip, such as its title, running time, a descriptive summary of its content, and its category or classification. Sidebar Content also means any viewable, downloadable or streamed content that may be accessed in connection with a Multimedia Clip or any Cisco-provided standalone content, including but not limited to transcripts, text files, pictures, directories, guides, video and/or audio files, and any other data, provided by Cisco pursuant to this Service Description, but excluding Multimedia Clips and Bumper Clips.