



Service Description of Advanced Services: Focused Technical Support and Network Optimization Support

This document describes Focused Technical Support (**FTS**) and Network Optimization Support (**NOS**) Cisco Services which End-User the "End-User" have purchased (and Cisco will be providing) either directly from Cisco or through a Cisco Authorized Channel. It should be read in conjunction with the documents posted at www.cisco.com/go/servicedescriptions: (i) the Glossary of Terms, (ii) the Priority and Escalation Guideline and (iii) the list of Services not covered. This document is for description purposes only. It is not a contract and does not create any rights or obligation for End-User or for Cisco. The contract, if any, governing the provision of Cisco Services shall be either: (a) the one signed by End-User and Cisco if End-User is purchasing the services directly from Cisco or (b) the one between End-User and the Cisco Authorized Channel.

FTS and NOS supplement Cisco's core Technical Support Services (such as SMARTnet, SMARTnet On-Site or Software Application Support Services). In order to purchase these options, all Products in End-User's Network must be supported by core Technical Support Services.

FOCUSED TECHNICAL SUPPORT

High-Touch Engineering Option

Prerequisite: End-User's purchase of the High-Touch Operations Management and High-Touch Technical Support Options.

Cisco Responsibilities:

- Designate Advanced Services Engineer on an 8x5 basis to act as the primary technical support for case management of critical cases at the Network level.
- Provide problem resolution of critical cases at the Network level.
- Provide technical representation in regularly scheduled conference calls.
- Visit End-User's nominated site location to gather information and details of any changes to End-User's Network. We will review critical cases and review problem root cause analysis with End-User. A maximum of four (4) visits per twelve (12) months period may be conducted.
- Perform root cause analysis, not to exceed eight (8) per twelve (12) months period, on technical issues relating to End-User's Network Infrastructure. Performance of root cause analysis is dependent upon us having all necessary available information with which to perform a root cause analysis.

- Provide Software recommendations to address End-User's documented and communicated Network functionality requirements. Our recommendations (focused on recommending appropriate Updates) shall apply to critical cases in respect of an affected area of End-User's Network.
- Provide certain Data Collection Tools during the term of the Services. Data Collection Tools may or may not include Hardware or Software. We retain full right, title and interest to the Data Collection Tools.

End User Responsibilities:

- Designate an individual within End-User's technical support organization to serve as a liaison to our Advanced Services Engineer.
- Ensure End-User's personnel know how to initiate cases (including being familiar with the Severity and Escalation Guideline) and access Focused Engineering Support.
- Provide all necessary information so we can perform root cause analysis.
- Provide Cisco with reasonable electronic access to End-User's Network.
- Provide us with a Network topology map, configuration information, and information of new features being implemented.
- Notify our Advanced Services Engineer of any major technology additions or changes to End-User's Network.
- Provide all necessary device, platform, feature, and release train requirements that exist in End-User's environment.
- Ensure that Data Collection Tools are located in a secure area at End-User's site, within a Network environment protected within a firewall and on a secure LAN, with access restricted to those of End-User's employee(s) or contractor(s) who have a need to access the Data Collection Tools and/or a need to know the output of the Data Collection Tools. Where our Data Collection Tools represent Software, End-User will make appropriate computers available and download Software, as needed. End-User will need to immediately return our Data Collection Tool(s) to us upon the earlier of: (i) expiration or termination of the Services or (ii) upon our request to return the Tools.

High-Touch Operation Management Option

Cisco Responsibilities:

- Facilitate Hardware and Software problem resolution case management on a reactive basis for technical issues End-User report to us, in addition to helping End-User determine if appropriate resources are being applied to the technical issues reported.
- Perform operational analysis, not to exceed sixteen (16) per twelve (12) months period on critical issues by identifying End-User's knowledge gaps and operational abnormalities/gaps. We will provide recommendations and identify possible solutions that End-User may elect to implement to help close those knowledge and system quality gaps.
- Conduct regularly scheduled conference calls with End-User to discuss operational TAC issues, track open cases and report progress on resolution of open cases.
- Conduct onsite visits, not to exceed four (4) per twelve (12) month's period to help End-User review quarterly operational data analysis reports prepared by us and that address End-User's cases submitted to TAC. The reports will cover, among other things, reactive support contract usage, case statistics, quality issues, overall case analysis (by Product type, case severity, etc.), Network analysis and RMA trending. Provide informal instructional sessions on troubleshooting tools, and processes during our onsite visits.
- Upon End-User's request, notify TAC and the Advanced Services Engineer if such Service has been ordered, of any planned Event by pre-opening a case and alerting TAC of relevant information related to the scheduled Event, not to exceed two (2) Events per month.

End User Responsibilities:

- Designate a representative to act as our primary interface.
- Coordinate our onsite visits and provide us with not less than thirty (30) days' notice of any visit End-User reschedule. Rescheduled visits will be subject to additional Services fees.
- Attend regularly scheduled conference calls for open case reviews.

High Touch Technical Support ("HTTS") Option

Prerequisite: End-User's purchase of High-Touch Operations Management options.

Cisco Responsibilities (where available, on a twenty-four (24) hours per day, seven (7) days per week basis):

- Direct access to the HTTS team via a Cisco provided phone number.
- Response to End-User within fifteen (15) minutes on Severity 1 or Severity 2 calls. For Severity 3 and Severity 4 calls, our response shall be within sixty (60) minutes.
- Provide quarterly operational case trending analysis, not to exceed four (4) per twelve (12) month's period.

End User Responsibilities:

- Report Severity 1 & 2 problems by telephone. We will provide End-User with valid telephone numbers. Response times do not include problems reported via Cisco.com or other electronic means.
- Advise Cisco of End-User's standard operating procedures related to End-User's business practices, internal operational nomenclature and Network to allow Cisco to effectively communicate and discuss cases with End-User in the context of End-User's business environment.

NETWORK OPTIMIZATION SUPPORT (NOS BASELINE)

Prerequisite: End-User's purchase of Network Infrastructure Focused Engineering from the components that comprise Network Optimization Support ("NOS").

General Responsibilities for all Services Under NOS Baseline Services:

Cisco Responsibilities:

- Designate an Advanced Services Engineer to act as the primary interface with End-User for End-User's Network Infrastructure.
- Schedule four (4) quarterly visits per year (not to exceed eight (8) days in aggregate) with End-User to visit End-User's site and review proactive deliverables and activities and help End-User plan for the next quarter. Any additional visits will be charged at our then-current travel and labor rates.
- Schedule periodic conference calls (usually weekly) to review End-User's Network Infrastructure status, planning and the Services being provided.
- Establish an End User-specific Cisco email alias to facilitate communication with our Advanced Services Engineers.

- Provide certain Data Collection Tools during the term of the Services. We retain full right, title and interest to the Data Collection Tools. In addition to Cisco provided tools, the Advanced Services Engineer may utilize the data that End-User have provided to us, scripts or internal tools to assist us in collecting data from End-User's Network.
- Provision of Services for Technology Applications (for example, CDN, Public Voice, IP Packet Telephony, Broadband). Technology Applications are not covered under the Network Optimization Support, but can be purchased separately for an additional fee.

End User Responsibilities:

- Designate at least two (2) but not more than six (6) technical representatives (who are employees) in End-User's centralized Network support center ("technical assistance center"), to act as the primary technical contacts for our Advanced Services Engineer. These contacts must be senior engineers with the authority to make any necessary changes to End-User's Network configuration. One individual, who must be a senior member of End-User's management or technical staff, will be designated as End-User's primary point of contact to manage the implementation of the Services End-User have purchased (for example, chair the weekly conference calls, assist with prioritization of projects and activities).
- Within one (1) year from the commencement of this service option, End-User must have at least one (1) Cisco Certified Internetworking Expert ("CCIE") trained employee or one (1) employee that has achieved, in our sole determination, an equal standard through training and experience as designated contacts.
- End-User's technical assistance center shall maintain centralized Network management for End-User's Network capable of providing Level 1 and Level 2 support.
- Provide our Advanced Services Engineer with reasonable electronic access to End-User's Network.
- Ensure that Data Collection Tools are located in a secure area at End-User's site, within a Network environment protected within a firewall and on a secure LAN, under lock and key and with access restricted to those of End-User's employee(s) or contractor(s) who have a need to access the Data Collection Tools and/or a need to know the output of the Data Collection Tools. When we provide Data Collection Tools (as Software), End-User will need to make appropriate computers available and download the Software, as needed. End-User shall remain responsible for any damage to or loss or theft of the Data Collection Tools in End-User's custody. End-User will immediately return Data Collection Tool(s) to us upon the earlier of: (i) expiration or termination of the Services or (ii) upon our request.

- Provide a Network topology map, configuration information, and information of new features being implemented as needed.
- Notify our Advanced Services Engineer of any major Network changes (for example topology, configuration, new IOS releases).
- Notify us in writing within ten (10) days of any change to the composition of End-User's Network. We may require modifications to the Service fee payable if the Network composition has increased beyond our original pricing quote for Services.
- Create and manage an internal email alias for communication with our Advanced Services Engineer.
- Retain overall responsibility for any business process impact and any process change implementations

Network Infrastructure Focused Engineer Option

Cisco Responsibilities:

- Designate Advanced Services Engineer to act as the primary technical support for critical cases at the Network level.
- Provide problem resolution of critical cases at the Network level.
- Provide technical representation in regularly scheduled conference calls.
- Visit End-User's nominated site location to gather information and details of any changes to End-User's Network. We will review critical cases and review problem root cause analysis with End-User. A maximum of two (2) visits per twelve (12) month's period may be conducted.
- Perform root cause analysis, not to exceed four (4) per twelve (12) month's period, on technical issues relating to End-User's Network Infrastructure. Performance of root cause analysis is dependent upon us having all necessary available information with which to perform a root cause analysis.
- Provide Software recommendations to address End-User's documented and communicated Network functionality requirements. Our recommendations (focused on recommending appropriate Updates) shall apply to critical cases in respect of an affected area of End-User's Network.

End User Responsibilities:

- Designate an individual within End-User's technical support organization to serve as a liaison to our Advanced Services Engineer.
- Ensure End-User's personnel know how to initiate cases (including being familiar with the Severity and

Escalation Guideline) and access High-Touch Engineering.

- Advise us of End-User's standard operating procedures related to End-User's business practices, internal operational nomenclature and Network, so we can communicate and discuss cases with End-User and End-User's staff in the context of End-User's business environment.
- Provide all necessary information so we can perform root cause analysis.
- Provide Cisco with reasonable electronic access to End-User's Network.
- Provide us with a Network topology map, configuration information, and information of new features being implemented.
- Notify our Advanced Services Engineer of any major technology additions or changes to End-User's Network.
- Provide all necessary device, platform, feature, and release train requirements that exist in End-User's environment.

Network Infrastructure Design Assistance Option

Cisco Responsibilities:

- Consult with End-User's networking staff in a series of face-to-face and remotely conducted meetings to develop a thorough understanding of End-User's Network Infrastructure design requirements. The focus here will be on concerns around resiliency, self-recovery, scalability, the ability to handle increased traffic demands and Quality of Service ("QoS").
- Provide a Network Infrastructure design review that may include, among other information, the following:
 - Review of End-User's design requirements, priorities, and goals
 - Analysis of impact of new requirements to End-User's existing Network Infrastructure
 - Review of End-User's Network Infrastructure architecture and topology
 - Review of End-User's protocol selection and configuration
 - Review of feature selection and configuration
 - Report describing design review, together with our recommendations
- The number of design reviews that we provide will vary depending on the size of End-User's Network Infrastructure and Network expansion plans and shall be limited to the amount shown below:

Network Infrastructure Size	Design Reviews
<\$40M	2

\$40M-\$80M	3
>\$80M	4

- Provide ongoing, informal Network Infrastructure design and architecture consultation.
- Provide ongoing information on design related Cisco Security Alerts that may impact key Network Infrastructure Products.

End User Responsibilities:

- End-User's Network Infrastructure design.
- The business and technical requirements for End-User's new design.
- Any constraints faced by End-User.
- Current and planned traffic characteristics.

Network Infrastructure Implementation Plan Assistance Option

Cisco Responsibilities:

- Evaluate and understand End-User's implementation and deployment plan through a series of remotely conducted meetings and interviews with End-User's staff. We will review End-User's deployment plan, identify possible Network disruptions and provide sample configurations that End-User can leverage to determine if devices in End-User's Network Infrastructure are properly configured to support the services End-User intend to offer.
- Provide a Network Infrastructure implementation plan review that may include, amongst other information, the following:
 - Review and analysis of End-User's Network Infrastructure deployment and integration plan
 - Review of proposed configuration templates
 - Review of turn-up test plan
 - Analysis of any changes that Network operations staff should be alerted to
 - Report on recommendations.
- The number of implementation plan reviews will vary depending on the size of End-User's Network Infrastructure and Network expansion plans and shall be limited to the amount shown below:

Network Infrastructure Size	Implementation Plan Reviews
<\$40M	2
\$40M-\$80M	3
>\$80M	4

- Provide ongoing, informal Hardware and configuration change impact analyses, reviews, and recommendations. The number of monthly change impact reviews will vary depending on the size of End-

User's Network Infrastructure and Network expansion plans and shall be limited to the amount shown below:

Network Infrastructure Size	Change Impact Review (Monthly)
<\$40M	2
\$40-\$80M	3
>\$80M	4

End User Responsibilities:

- End-User's Network Infrastructure architecture (which may include remote sites and size of remote sites).
- Identify low risk and high risk areas of End-User's Network based on the Network Infrastructure traffic.
- End-User's Implementation plan and deployment schedule.
- Maintenance window information and any other constraints.
- End-User's change control process.

Network Infrastructure Remote Deployment Support Option

Cisco Responsibilities:

- Remote resource to help address problems with End-User's Network Infrastructure Hardware and configuration issues during a major deployment into a live Network.
- We will make available a designated support contact that can accept trouble calls on a 24-hour 7-day standby basis to remotely assist End-User in major Network service changes (for example, major Hardware upgrade(s), major site installation(s) and major configuration changes), provided that we have received not less than twenty-one (21) days prior written notice of a request by End-User for this support. End-User will need to submit a detailed request and schedule to us before we can provide this support to End-User. The number of Events and total aggregate standby time will vary depending on the size of End-User's Network Infrastructure and Network activity and will be limited in any one-month period for all Hardware, configuration, and Software Events combined as shown below. (Note: Software Events are covered under Network Infrastructure Remote Software Upgrade Support).

Network Infrastructure Size	Total Number of H/W, S/W and Configuration Events Combined (Monthly)	Total Aggregate Standby Time (Hourly)
<\$40M	2	16
\$40M-\$80M	3	20
>\$80M	4	24

End User Responsibilities:

- End-User's Network Infrastructure architecture (which may include remote sites and size of remote sites).
- Identify low risk and high risk areas of the Network based on the Network Infrastructure traffic.
- End-User's Implementation plan and deployment schedule.
- Maintenance window information and any other constraints.
- End-User's change control process.
- Contact information and details of End-User's escalation process.
- Review details of planned Network changes with our Advanced Services Engineer.

Cisco Network Infrastructure Software Strategy Option

Cisco Responsibilities:

- Provide Software strategy assessment(s), based on End-User's ongoing functional and technical Network Infrastructure requirements. Each assessment typically includes, among other information, the following:
 - Review of End-User's feature requirements and performance/availability objectives
 - Review of new Software feature releases (for example, Cisco IOS, other Cisco OS Software and Cisco micro-code) with respect to End-User's business goals
 - IOS software inventory and profile report
 - Software strategy report that includes an analysis report outlining the recommended releases of Software for End-User's Network Infrastructure environment and the potential impact that running such releases may have on End-User's Network
 - Review of End-User's Software verification test plan and report on recommended changes
 - Assist in the preparation and review of End-User's Software migration plan
- Provide ongoing, informal Software impact analysis, review, and recommendations.
- Provide ongoing information on Software related Cisco Security Alerts that may impact key Network Infrastructure components.
- Provide proactive critical bug notification for the recommended Software on key Network Infrastructure components.
- The number of Software impact analysis reviews, assessments and frequency of proactive bug notifications will vary depending on the size of End-

User's Network Infrastructure and Network activity and shall be limited to the amount shown below:

Network Infrastructure Size	Assessments (yearly)	Software Impact Analysis	Proactive Bug Reports
<\$10M	1	6/yr.	Monthly
\$10M-\$40M	2	1/mo.	Weekly
\$40M-\$80M	2	2/mo.	Weekly
\$80M-\$160M	2	3/mo.	Weekly
>\$160M	2	4/mo.	Weekly

End User Responsibilities:

- Current releases running in End-User's Network Infrastructure and current configuration templates.
- End-User's business and technical requirements for new Software releases.
- Planned changes – new Technology Applications or major design changes (short term and long term).
- End-User's certification process and lab testing process.
- End-User's change control process.

Network Infrastructure Remote Software Upgrade Support Option

Cisco Responsibilities:

- Provide remote resource to help address problems with End-User's Network Infrastructure Software during major upgrades on a live Network.
- Make available a designated support contact that can accept trouble calls on a 24-hour 7-day a week standby basis to remotely assist End-User in major Software upgrades, provided that we receive at least twenty-one (21) days prior written notice from End-User. *End-User will need to submit a detailed request and schedule to us prior to any such activity.* The number of Events and total aggregate standby time will vary depending on the size of End-User's Network Infrastructure and Network activity and will be limited in any one-month period for all Hardware, configuration, and Software Events combined as shown below. Hardware and configuration Events are covered under Network Infrastructure Remote Deployment Support.

Network Infrastructure Size	Total Number of H/W, S/W and Config. Events Combined	Total Aggregate Standby Time (Hourly)
<\$10M	6/yr.	8
\$10M-\$40M	2/mo.	16
\$40M-\$80M	3/mo.	20
>\$80M	4/mo.	24

End User Responsibilities:

- Current releases running in End-User's Network Infrastructure and current configuration templates.

- End-User's business and technical requirements for new Software releases.
- Planned changes – new Technology Applications or major design changes (short term and long term).
- End-User's certification process and lab testing process.
- End-User's change control process.
- Contact information and details of End-User's escalation process.
- Review details of planned Network changes with our Advanced Services Engineer.

Network Infrastructure Performance Engineering and Optimization

Cisco Responsibilities:

- Provide a performance analysis of End-User's Network Infrastructure to identify potential performance and optimization issues and review the validity of key device configurations in the context of new traffic patterns or changes in Network size that are planned or have been implemented by End-User. Such performance analysis typically includes the following:
 - Collection of key performance data
 - Identification of exception reports
 - Analysis of key device configurations
 - Analysis of resource utilization
 - Assistance to define Network-specific performance criteria
 - Report on performance optimization recommendations such as system tuning and protocol optimization changes
- The number of performance analyses will vary depending on the size of End-User's Network Infrastructure and Network expansion plans and shall be limited to the amount shown below:

Network Infrastructure Size	Performance Analyses
<\$40M	4
\$40M-\$80M	5
>\$80M	6

- Perform ongoing, informal performance tuning checks for End-User's Network Infrastructure.
- Provide ongoing information on performance related Cisco Security Alerts that may impact key Network Infrastructure Products.

End User Responsibilities:

- Any service level agreements or Network Infrastructure performance requirements.

- Details of critical applications supported by End-User's Network Infrastructure.
- Expected Network growth, application mix changes.
- Data collection activities as needed to facilitate a specific Cisco analysis.

Network Infrastructure Knowledge Transfer and Mentoring Option

Cisco Responsibilities:

- Provide annually up to four (4) technical update meetings each with duration of up to four (4) hours. These meetings shall be conducted at End-User's site by an Advanced Services Engineer or another senior Cisco engineer to provide technical update training on a mutually agreed upon topic relevant to the Products and Cisco technologies in End-User's Network Infrastructure. These meetings to be usually held with the four quarterly review meetings per year.

End User Responsibilities:

- Provide us with a set of requirements on the topics End-User want to cover and background information on the skill sets of End-User's proposed audience; and
- Ensure that facilities and equipment are available to host the Transfer of Information ("TOI") sessions.

NETWORK OPTIMIZATION SUPPORT SERVICE OPTIONS

The following Service options are available only in conjunction with the Services set out under "Network Optimization Support" unless otherwise stated. We will use commercially reasonable efforts to provide the Service Option(s) that End-User has purchased.

Network Infrastructure Performance Audit Option

This option is available under NOS or as a stand alone Service offering.

Cisco Responsibilities:

- Provide one (1) Network Infrastructure performance audit as selected by End-User out of those currently available and identified by us from time to time. The audit typically includes the following:
 - Performance report at node and interface level
 - Configuration report: protocol, node and interface
 - Software report including conflicts and inconsistencies
 - Hardware report including conflicts and inconsistencies: HW versions, firmware versions, micro-code versions, board revisions

- Provide detailed recommendations, with a view towards helping End-User to optimize End-User's Network Infrastructure stability.

End User Responsibilities:

- Ensure availability of End-User's key Networking and operational personnel to participate in interview sessions in support of the selected audit.
- Provide assessments and audit data collection support, help install the Data Collection Tools into End-User's production, and, if applicable, test Network environment.
- Ensure that we have all relevant device information needed for the audits, including the required device lists.
- Provide all information/ data that End-User has gathered from tools used by End-User for Network data analysis and monitoring.

Network Infrastructure Design Review Option

Prerequisite: End-User's purchase of Network Infrastructure Design Assistance across End-User's Network Infrastructure.

Cisco Responsibilities:

- Perform one (1) Network Infrastructure Design Review *in addition to* those purchased under "Network Infrastructure Design Assistance."

End User Responsibilities:

- End-User's Network Infrastructure design.
- The business and technical requirements for End-User's new design.
- Any constraints faced by End-User.
- Current and planned traffic characteristics.

Network Infrastructure Implementation Plan Review Option

Prerequisite: End-User's purchase of Network Infrastructure Implementation Plan Assistance across End-User's Network Infrastructure

Cisco Responsibilities:

- Perform one (1) implementation plan review that typically includes the following:
 - Review and analysis of End-User's Network Infrastructure deployment and integration plan
 - Review of proposed sample configurations
 - Review of turn-up test plan

- Analysis of any changes that End-User's Network operations staff should be alerted to
- Report on recommendations
- Provide remote deployment support for up to three (3) months from completion of report provided under this option. We will make available, upon receipt of not less than twenty-one (21) days prior written request by End-User, a designated support contact who can accept trouble calls on a 24-hour 7-day standby basis to remotely assist End-User in major Network service changes (for example, major Hardware upgrade(s), major site installation(s) and major configuration changes). End-User agrees to submit a detailed request and schedule to us prior to any such activity. Such request for assistance shall be limited to one (1) Event with a total standby time of eight (8) hours in any one-month period.

End User Responsibilities:

- End-User's Network Infrastructure architecture (which may include remote sites and size of remote sites).
- Identify low risk and high risk areas of End-User's Network based on the Network Infrastructure traffic.
- End-User's Implementation plan and deployment schedule.
- Maintenance window information and any other constraints.
- End-User's change control process.

Network Infrastructure Software Strategy Review Option

Prerequisite: End-User's purchase of Network Infrastructure Software Strategy across End-User's Network Infrastructure.

Cisco Responsibilities:

- Provide one (1) Software strategy assessment, based on End-User's ongoing functional and technical Network Infrastructure requirements. Such assessment typically includes the following:
 - Review of feature requirements and performance/availability objectives
 - Review of new Software feature releases (for example, Cisco IOS, other Cisco OS Software, and Cisco micro-code) with respect to End-User's business goals
 - IOS software inventory and profile report
 - Software strategy report that includes an analysis report outlining the recommended releases of Software for End-User's Network Infrastructure environment and the potential impact that running such releases may have on End-User's Network
 - Review of End-User's Software verification test plan and report on recommended changes

- Assist in the preparation and review of Software migration plan.
- Provide remote deployment support for up to three (3) months from completion of the report provided under this option.
- Make available a designated support contact that can accept trouble calls on a 24-hour 7-days a week standby basis to remotely assist End-User in major Software upgrades provided End-User give us not less than twenty-one (21) days prior written notice. End-User agrees to submit a detailed request and schedule to us prior to any such activity. Such request for assistance shall be limited to one (1) Event with a total standby time of eight (8) hours in any one-month period.

End User Responsibilities:

- Current releases running in End-User's Network Infrastructure and current configuration templates.
- End-User's business and technical requirements for new Software releases.
- Planned changes – new Technology Applications or major design changes (short term and long term).
- End-User's certification process and lab testing process.
- End-User's change control process.

Network Infrastructure Onsite Support Option

Prerequisite: End-User's purchase of Network Infrastructure Focused Engineer, Network Infrastructure Design Assistance, Network Infrastructure Implementation Plan Assistance, Network Infrastructure Remote Deployment Support, Cisco Network Infrastructure Software Strategy, Network Infrastructure Remote Software Upgrade Support, Network Infrastructure Performance Engineering and Optimization and Network Infrastructure Knowledge Transfer and Mentoring provided across End-User's Network.

Cisco Responsibilities:

- The locally based Cisco Advanced Services Engineer will provide the Services detailed in this subsection for two (2) days or five (5) days per week at one of End-User's locations depending upon the amount of time ordered by End-User. The locally based Cisco Advance Services engineer will not be available to provide the Services detailed in this subsection for a period of one (1) week each Cisco quarter.
- Provide a locally-based Cisco Advanced Services engineer to help End-User with End-User's responsibilities so that we can provide the NOS deliverables. This may include:

- Directing the collection of information for design or implementation reviews
- Driving data collection activities for performance analyses
- Provide ongoing, hands-on technical leadership from a locally-based Cisco Advanced Services engineer to help End-User plan and execute the NOS design, implementation, performance engineering, and Network optimization recommendations.

End User Responsibilities:

- Reasonable access to computer equipment, workstation, facilities, workspace and telephone for our locally-based Cisco Advanced Services Engineer's use.
- Contractor badge for locally based Cisco Advanced Services Engineer to enable unescorted access into End-User's buildings.
- Involve our locally based Cisco Advanced Services Engineer in End-User's Network Infrastructure planning and operations meetings (including, but not limited to meetings involving the execution of NOS design, implementation, and Software or performance engineering recommendations).

Network Infrastructure Software Upgrade Assistance Option

Prerequisite: End-User's purchase of Network Infrastructure Software Strategy and Network Infrastructure Remote Software Upgrade Support across End-User's Network Infrastructure.

Cisco Responsibilities (from 1-12 months in increments of one month):

- Team with End-User's engineers to create a Software Test Plan utilizing our test templates and best practices as detailed in Software Strategy Assessment report for up to two (2) Device Types and six (6) Feature Categories for a single Software upgrade project. The actual number of Device Types and Feature Categories will vary depending upon what End-User actually orders.
- Provide remote support for End-User's engineers during Software test plan execution, provide interface to our team to resolve any issues identified during testing, and review the test results.
- Team with End-User's engineers to create a Software Migration Project Plan for the Software upgrade in End-User's Network for up to two (2) Device Types and six (6) Feature Categories for a single Software upgrade project. The actual number of Device Types and Feature Categories will vary depending upon what End-User actually orders.

- Team with End-User's engineers to create Methods & Procedures for each Device Type utilizing our templates and knowledge bases.
- Provide consultative, onsite Software upgrade support at End-User's central NOC or NIS location during one maintenance window, which may be outside of Standard Business Hours. This includes teaming with End-User's engineers to perform post-upgrade verification testing and one day of onsite "day 2" support (i.e. support provided in a production and operational environment during Standard Business Hours following the upgrade and verification testing). The actual number of maintenance windows may vary depending upon what End-User actually orders.

End User Responsibilities:

- Designate a single point of contact to whom all of our communications may be addressed and who has authority to act on all aspects of the Services for this engagement.
- Designate a project manager who has overall responsibility for the success of End-User's Network deployment.
- Details of current releases running in the Network Infrastructure and current configuration templates.
- End-User's business and technical requirements for the Software upgrade.
- Details of planned Network changes, for example, new Technology Applications or major design changes (both short term and long term).
- End-User's Software verification process and lab testing process.
- End-User's Software change control process.
- Contact information and details of End-User's escalation process.

Network Infrastructure Deployment Project Management Support Option

This option does *not* require the purchase of other NOS Service component or Option. This option provides Network project management assistance during the planning, design, and implementation phases of a major Network Infrastructure deployment project. This support option is for a predetermined period, as set forth on the Purchase Order and agreed by us. If there are delays outside of our control, we shall not be held responsible for activities that are not completed. End-User can purchase an additional Network Infrastructure Deployment Project Management Support option to extend the Service.

Cisco Responsibilities (from 1-12 months in increments of one month):

- Team with End-User to develop plan for rolling out new Hardware, Software or configurations that may include:
 - Detailed set of tasks (Work Breakdown Structure)
 - Schedules including critical dependencies (Project schedule)
 - Identification of significant risk factors (Risk Mitigation Plan)
 - Procedures for managing project Documentation, assets, and issues
 - Processes for project reporting
 - Contact lists, escalation lists
- Provide project management expertise to help facilitate End-User's project management team's execution of its deployment plan and may include assistance in the following areas:
 - Kick-off meeting(s)
 - Managing site survey schedule
 - Managing pilot
 - Project meetings to review status and address project deployment related issues
 - General communications
 - Coordinating resources around the project deployment
 - Track, manage, update the project deployment schedule
 - Team with End-User to build staging plan and manage the project deployment schedule
 - Project Documentation
 - Implementation of Risk Mitigation Plans and ongoing risk identification
 - Ongoing mentoring of End-User's project management team on project management methodology

End User Responsibilities:

- Designate an overall single point of contact to whom all Cisco communications may be addressed and who has authority to act on all aspects of the Services for this engagement.
- Designate a project manager who has overall responsibility for the success of End-User's Network deployment.
- Provide our project manager with a list of End-User's contacts and their designated roles and responsibilities for End-User's Network deployment.
- Identify primary and backup authorized site contacts who shall be accountable for providing us with necessary information, obtaining access clearances and who can interface as required with other organizations.

- Participate in regularly scheduled project review meetings or conference calls.
- Coordinate End-User's and any external third party activities, deliverables and schedules.
- Provide our project manager with confirmation of any scheduled deployment activity within three (3) Business Days of a scheduled roll-out.
- Notify our project manager of any scheduled deployment changes within three (3) Business Days of any scheduled activity. We will use reasonable efforts to accommodate schedule changes and/or cancellations made after this time.

Network Infrastructure Detailed Design Development Option
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This option does not require the purchase of any other NOS Service component or Option. If it is purchased with Network Infrastructure Design Assistance, then it replaces one of the Design Reviews provided under that Service.

Cisco Responsibilities (from 1-12 months in increments of one month):

The following activities are for a single detailed design project with up to two (2) Device Types. Actual number of Device Types will vary depending upon what End-User actually orders.

- Summarize and help End-User to validate End-User's Network design requirements using the following inputs:
 - Interviews with End-User's personnel to gather business and technical requirements
 - Documentation that End-User have supplied to us, detailing business and technical requirements, for example, marketing services description, technical services description
 - High level network design that covers End-User's proposed Network
 - End-User's existing Network design
- Team with End-User to create a Low-level Network Design Document, which typically includes:
 - Data Flow Specification
 - Services of the Network
 - Physical Network Topology
 - Logical Network Design
 - Routing strategy (for example, OSPF, BGP and ERGIP)
 - Definition of the outbound interfaces to End-User's Network management system
 - Addressing Strategy (e.g., IP, IPX, Subnetting, VLSM, Summarization)
- Provide up to three (3) Network design feedback / review sessions. End-User's design engineers will need to handle any changes beyond the final review session.

End User Responsibilities:

- Ensure that End-User's key Networking and operational personnel are available to participate in interview sessions as required to enable us to understand the business and technical requirements for End-User's Network.
- Provide us with details of End-User's Network design objectives (for example, Network strategy and requirements, desired Network performance (throughput/data rate, coverage and number of users), security requirements, data usage (for example email and internet access), types of applications (for example AutoCAD), future growth requirements and Network build out time frames).
- Provide us with details of End-User's current Network topology, including access, distribution, and core layers, types of switches and routers in each layer, IP addressing and subnetting for each layer, and features/services that have been enabled on End-User's Network.
- Provide us with physical and logical Network schematics for End-User's existing Network where applicable.
- Designate key Networking contacts that shall be available for ongoing information gathering and feedback during design development.
- Ensure that End-User's key Networking and operational personnel are available to participate in scheduled Network design feedback sessions or conference calls.

Network Infrastructure Implementation Engineering Option

This option does not require the purchase of another NOS Service Option. If purchased with Network Infrastructure Implementation Plan Assistance, this option replaces one of the Implementation Plan Reviews provided under that service.

Cisco Responsibilities (from 1-12 months in increments of one month):

These activities apply to a *single* implementation project with up to two (2) Device Types. Actual number of Device Types will vary, depending upon what End-User actually orders:

- Team with End-User to undertake site surveys for up to three (3) representative sites. The actual number of sites will vary depending upon what End-User actually orders.
- Team with End-User to develop a Network staging plan that typically includes:
 - Physical and logical topologies
 - Configurations
 - Testing scripts
 - Acceptance criteria

- Team with End-User to develop Network implementation plans (NIP) for up to three (3) representative sites. The actual number will vary depending upon what End-User actually orders. A NIP may include:
 - Site-specific installation tasks and checklists
 - Documentation of node and site specific information
 - Guidelines for the Implementation Engineer(s)
 - Installation and site commissioning tests
- Team with End-User to develop a Network Ready for Use Plan.
- Team with End-User to execute the NIP for up to three (3) representative sites. The actual number will vary depending upon what End-User actually orders. The assistance may include assisting End-User's engineers with:
 - loading device configurations
 - executing test plans and documenting results
 - resolving implementation issues
- Provide remote support for End-User's engineers during the execution of the Network Ready For Use Plan.
- Provide consultative, onsite support at End-User's central location during integration of the new Network implementation with End-User's existing Network during one (1) maintenance window. Team with End-User's engineers to perform post-implementation verification testing and one (1) day of onsite "day 2" support. The actual number of maintenance windows will vary depending upon what End-User order.
- Network Infrastructure Implementation Engineering is provided for a predetermined period of time as set forth on the Purchase Order and agreed by us. If there are delays outside of our control, we shall not be responsible for activities that are not completed. End-User can purchase an additional Network Infrastructure Implementation Engineering options to extend the Service.

End User Responsibilities:

- Provide us with: (i) a detailed Network design that provides physical and logical schematics (Visio preferred) for the Network implementation prior to Service commencement; and (ii) where requested, physical and logical schematics for other Network elements not included in the scope of this project.
- Provide us with an inventory of Product to be implemented.
- Unless otherwise agreed by the parties, respond within two (2) Business Days of our request for Documentation or information needed for the project.

- Perform site surveys with our assistance using templates provided by us. Provide us with completed site survey forms to review.
- Complete site preparation taking into account site survey results and any recommendations we make. This includes, but is not limited to, ensuring suitable environmental conditions and the availability and testing of adequate power and that all Network services and circuit IDs are clearly identified.
- Build, configure and test our Products in accordance with the Network staging plan documentation we provide to End-User.
- Provide full details of End-User's building layout, including the floor plan, cabling and power location for applicable sites prior to finalization of the NIP.
- Install, configure and test our Products per the NIP Documentation we provide End-User.
- Notify us of any implementation scheduling change at least seventy-two (72) hours prior to the agreed implementation date.
- Manage delivery, installation, and configuration of Product not provided by us that is required to work with, or form part of the Network that is being implemented.
- Provide full access to End-User's sites and facilities, including where applicable, computer equipment, Network equipment, and data centers as well as workspace and phones for our use during the engagement.



Description of Advanced Services: Focused Technical Support and Network Optimization Support Limitations to Services Offered

The following are limitations to Cisco's Advanced Services Options in areas other than the U.S. and Canada:

Focused Engineering Services Option

Cisco Responsibilities:

Includes a maximum of four (4) visits per twelve (12) months period to nominated site locations in Japan, Australia, Asia Pacific and EMEA.

Operations Management Option

Cisco Responsibilities:

No Bi-Annual onsite visit included in Japan, Australia and Asia Pacific.

Network Infrastructure Design Assistance

Cisco Responsibilities:

Limited to two (2) design review per year in Japan, Australia and Asia Pacific.

Network Infrastructure Implementation Plan Assistance

Cisco Responsibilities:

Limited to two (2) plan reviews per year in Japan, Australia and Asia Pacific.

Network Infrastructure Remote Deployment Support Option

Cisco Responsibilities:

Limited to two (2) Events per month in Japan, Australia, Asia Pacific and EMEA.

Cisco Network Infrastructure Software Strategy

Cisco Responsibilities:

The number of Software strategy assessments is limited to two (2) per month in Japan, Australia and Asia Pacific.

In EMEA, we will provide weekly proactive critical bug notification. These notifications will be for three (3) Software releases specified by End-User and installed on key Network Infrastructure components.

Network Infrastructure Remote Software Upgrade Support

Cisco Responsibilities:

The number of Events shall not exceed two (2) per month and the total aggregate standby time will be limited to sixteen (16) hours per month in Japan, Australia, Asia Pacific and EMEA.

Network Infrastructure Performance Engineering and Optimization

Cisco Responsibilities:

The number of performance analyses is limited to two (2) per year in Japan, Australia and Asia Pacific and one (1) per year in EMEA.

Other Exceptions

In EMEA, for case handling of TAC calls, Standard Business Hours will mean 9:00 AM to 5:00 PM, Central European Time, during Business Days, excluding local Cisco-observed holidays.



Description of Advanced Services: Focused Technical Support and Network Optimization Support Services Not Offered

The following Services are not available in Japan, Australia, Asia Pacific, EMEA or Canada:

High Touch Technical Support Option

The following Services are not available in Japan, Australia, Asia Pacific or EMEA:

Network Infrastructure Onsite Support Option

Network Infrastructure Software Upgrade Assistance Option

Network Infrastructure Deployment Project Management Support Option

Network Infrastructure Detailed Design Development Option

Network Infrastructure Implementation Engineering Option

