Service Description: SP Mobile Internet Optimization Support Services

This document describes Cisco's SP Mobile Internet Optimization Support Services.

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) or equivalent services agreement executed between you and Cisco. In the event of a conflict between this Service Description and your MSA or equivalent services agreement, this Service Description shall govern.

This SP Mobile Internet Optimization Support 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 by Cisco's Foundation Technology Service Provider Optimization Service. Cisco shall provide the SP Mobile Internet Optimization Support Services 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.

SP Mobile Internet Optimization Support

Service Summary

SP Mobile Internet Optimization Support Services provides Mobile Wireless-specific help for your Network support staff in the form of Network Design Support, Software Strategy, Network Health Checks, Network Performance Management, Change and Release Management and Continuous Learning service modules.

Services performed under this Service Description that are comparable to those services performed under Cisco's Foundation Technology Service Provider Optimization Service will build upon the original service support therein and will be focused on the specific technology described in this Service Description.

Cisco Responsibilities

Cisco's SP Mobile Internet Optimization Support Service consists of the provision of, at a minimum, Design Support, from the Services described below, which Cisco shall provide for the Customer's Network during Standard Business Hours (unless stated otherwise). Cisco shall provide the following General Support provisions for all Services selected by Customer under the SP Mobile Internet Optimization Support Service:

General Support

- Designate an engineer ("SP Mobile Internet Network Consulting Engineer") to act as the primary interface with the Cisco project manager appointed for the Customer.

- Participate in regular visits to the Customer as required by the project manager either via phone or in-person 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.

- Designate engineer(s) to work with the Cisco project management and the primary SP Mobile Internet Network Consulting Engineer.

- Participate in periodic conference calls (usually weekly) to review Customer's Network status, planning and the Services being provided.

- Monitor a Customer-specific Cisco email alias to facilitate communication with primary SP Mobile Internet Network Consulting Engineer as well as the engineers on the Cisco's SP Mobile Internet team.

- SP Mobile Internet Network Consulting Engineer may utilize Customer provided data, scripts or internal tools to assist in collecting data from the Network.

The quantity of any reporting and efforts for ongoing activities described herein will vary depending on Customer requirements and what Customer and Cisco mutually agree upon when Services are purchased as identified in the Quote provided by Cisco.

Network Design Support

- **Detailed Design Report**

  - Consult with Customer networking staff in a series of meetings to develop a thorough understanding of Customer's Network design requirements, with a focus on concerns such as resiliency, self-recovery, scalability, disaster recovery, business continuance, virtualization, application traffic requirements, and ability to handle increased traffic demands and prioritization via quality-of-service ("QoS").

  - Provide a detailed design report with recommendations that takes into consideration, among other things, the following:

    - Customer's design requirements, priorities, and goals.
    - Analysis of impact of new requirements on existing Network.
    - Architecture and topology for the Network.
    - Protocol selection and configuration.
    - Feature selection and configuration.
    - Security considerations.

- **Design Collaboration**

  - Provide ongoing design consultation 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.
    - Integration and aggregation points for the SP Mobile Internet deployment including protocols, security and Network Management Software ("NMS") considerations.
    - SP Mobile Internet application environment, bandwidth requirements, quality-of-service ("QoS") and class of service discussions, guidelines for testing the configuration recommendations.

- **Implementation Plan Review**

  - Review Customer's Implementation Plan and validate that the plan contains the elements needed for deployment based on Customer's communicated requirements. As part of this, Cisco will help Customer review the Method of Procedure (MOP), which will help provide Customer step-by-step procedure needed to implement a network change.

- **On-Site Support**

  - Where available, Cisco will provide Cisco networking professionals to remain on the Customer site for technical support and information
  - Onsite Support is available for day-to-day operations or on the basis of specific agreed-upon Customer activities and projects.

- **Incident Analysis and Recommendations**

  - Cisco will provide a detailed root cause analysis for a particular bug event.

  - The analysis tracks the details and updates related to the incident as well as provide an impact report on how it affects the Customer Network

- **Validation and Test Cycle Review - Standard**

  - Cisco will consult with Customer via a series of meetings to develop a thorough understanding of Customer's Mobile Internet solution-oriented testing goals and requirements, and generate a proposed Test Plan. Once agreed, Cisco will execute the networking tests documented in the Test Plan and report findings to Customer. Validation and Testing Support may include, among other information, the following:

    - Review of Customer's testing goals and business objectives for Mobile Internet solution;
    - Analysis of requirements such as software strategy, platforms, topology, protocols, and configurations
    - Test Plan development or review/refine existing test plan;
    - Schedule facilities, equipment and resources;
    - Test Set Up – Perform the Physical Lab Setup;
    - Test Execution – Execute the Test Plan; and,
    - Test Results Analysis – Document the results in a Test Report.
    - Validation-Test Cycle and Review Standard Support is estimated to last between 8 to 12 weeks.
    - Validation and Testing Support is only available to certain geographic locations and will be specified in the Quote for Services.

Software Strategy

- **Software Recommendation Report**

  - Provides a detailed list of unresolved issues and caveats in a particular software release in the context of the customer's network context. The list of caveats is directly relevant to the production environment in order to provide complete understanding of potential risks. These reports typically examine Customer's production configurations (per device) and compare them to Cisco's best practice recommendations. On the basis of identified risks, recommendations are provided. Topics in this report include:

    - Software Summary

    - Technology and Software features

    - Routing and routed protocols

    - Bug Summary

    - Impact Analysis and Recommendations

- **Major Software Upgrade**

  - Cisco will provide support for new major software release upgrades within a lab environment where no new features and no additional customizations are required.

  - If applicable, Cisco may include software feature testing, regression testing at the Customer lab, assist in upgrading affected nodes and monitoring the network status related to the major software upgrade.

- **Minor Software Upgrade**

  - Cisco will provide support for new minor software release upgrades within a lab environment where no new features and no additional customizations are required.

  - If applicable, Cisco may include software feature testing, regression testing at the Customer lab, assist in upgrading affected nodes and monitoring the network status related to the major software upgrade.

- **Security Alert**

  - Provide Security Alert Report for Cisco Mobile Internet Solution. These reports provide information about Cisco's Security Advisories and typically include:

    - Analysis of how a Cisco Security Advisory may or may not affect Customer's Network
    - Recommendations to mitigate risk
    - List of affected or potentially affected Networking devices

Network Health Checks

- **Configuration Best Practices Report**

  - Cisco will help the Customer in identifying Cisco Mobile Packet Core Solution configuration issues by checking the existing configuration against best practice guidelines formulated by Cisco field engineers
  - Cisco will tune configuration to remove unnecessary configurations, identify potential erroneous configuration, and optimize configuration as required.
  - Cisco will help Customer improve the security of a Cisco Mobile Packet Core Solution, decrease resource utilization, improve manageability, and reduce complexity by optimizing Mobile Packet Core internal traffic cycles
  - The Configuration Best Practices Report typically includes:

    - Hardware platform Configurations / Misconfigurations
    - Software Configurations / Misconfigurations
    - Potential issues and shortcomings in Customer's future design plans
    - Configuration Optimization recommendation changes

- **Syslog Analysis Report**

  - Provide a predetermined set of periodic syslog analysis reports on Cisco SP Mobility Packet Core to proactively identify Network optimization opportunities based on the following:

    - Syslog event correlation
    - Mobility Packet Core health information
    - Baseline metrics

- **Mobility Performance Audit and Recommendation**

  - Cisco will consult with the Customer through a series of meetings to audit the Customer infrastructure across various network elements and vendor domains.
  - The audit will be delivered based on a proven four-step methodology – business alignment, discovery, analysis, and assessment readout.
  - The coverage typically includes the following areas:
    - Network Architecture Design

- Network Functionality
- Best Practices
- Optimization Recommendations
- Scalability and Resiliency
- Capacity Assessment
- Security, QoS and Traffic Engineering
- Evolution and Technology Roadmap
- Process and Operations Review

- **Technology and Protocol Audit for SP Mobile Internet**

  o Provide the scoped number 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, response times optimization and changes.

Network Performance Management

- **Network Intelligence Reports**

  - Cisco will provide report that will include a comprehensive list of key network indicators based on the subscribed domain specified in the Quote. The report will provide consolidated views and thresholds, and may include the following
    - Holistic view of network performance
    - Identification of top offending KPIs and trends
    - Identify and provide recommended remediation steps based on detected offending indicators.
    - Pre-emptive indication of problematic indicators
    - Correlation of other data sources such as syslogs / Configurations/SNMP trap errors.
    - Synchronize detected errors based on known issues found within the Cisco knowledgebase

- **Mobile Packet Core Capacity Assessment and Planning Support**

  - Cisco will perform capacity assessment and determine the capacity utilization figures at network level, nodal level, interface level and service level and identify problematic areas

- Cisco will evaluate the traffic profile and the network design and configuration to determine if the network can be further optimized for efficient network resource utilization
- Cisco will provide a capacity forecast based on the existing call model and traffic projections from Customer

- **Mobile Packet Core Benchmarking Analytics**

  - Cisco will provide a comparative network benchmarking report based on other similar peer networks anonymously to help bring focus and attention on areas of improvement from a network performance perspective..
  - Based on the domain coverage, the report may include the following:

    - Control Plane KPIs
    - User Plane KPIs
    - Review of observations and findings
    - Recommend actionable items to improve network quality

Change and Release Management

- **Software Deployment**
  - Cisco will provide a software analysis and monitor the software deployment procedures that include necessary checks based on the Software Recommendation Report that outlines the recommended software needed for the upgrade.

- **Configuration Policy Remediation**
  - Cisco will analyze the recommendations based on the deviations from the Configuration Best Practices Report, and compare against the current running configuration of the devices that allows the option to view the violations along with severity, providing options to prioritize for the purpose of remediating based on the report.

Continuous Learning

- **Knowledge Transfer and Mentoring.**

  o Provide informal technical update training such as a "chalk talk" on a topic that is mutually agreed upon and relevant to the Products and Cisco technologies. Such training would be provided by the SP Mobile Internet Network Consulting Engineer or another senior Cisco engineer.

- **Formal Training**
  - Cisco will provide formal workshop to deliver knowledge transfer and education on SP Mobile Internet technology topics on a Customer selected topic/s.

- **Technical Knowledge Library**
  The Technical Knowledge Library is made available by Cisco through a secure web-based portal ("Portal").

  Make the content at the Portal available to the specified number of Authorized Viewers as specified in the Quote. For purposes of this Service, "Authorized Viewer" means those Customer personnel authorized to access the Technical Knowledge Library. Type of content accessed will include the following:
  - Multimedia Clips:
    - VoD/AoD technical talks
    - Service deliverables archive -–customer-specific/account-specific content
    - eLearning courses
  - Sidebar Content:
    - White Papers
    - Case Studies
    - Design Guides
    - Configuration Guides
    - Training Documents
    - Deployment Guides
    - Online textbooks and/or manuals
    - Video and audio clips (different from the Multimedia Clips)
- Assist in account creation/entitlement for Authorized Viewers for the Portal, prior to use during the duration of the Service. Customer is responsible for security, network connection, IP address assignment and any required firewall or access control list changes required on their network in order for the end-users to access the Portal.
- Assign a delivery Point of Contact ("PoC") who will assist in on-boarding the Customer to the Portal. Cisco delivery PoC will obtain the necessary information to entitle Cisco CCO logins of Authorized Viewers to login to the Portal.
- Hold a "Kick-off meeting" to train and demonstrate the tool for Authorized Viewers. During this kick-off meeting a detailed demo of the Portal and the content contained within it will be conducted for the Customer.
- Make available a Customer-specific deliverables archive resulting from subscription-based Cisco Advanced Services provided separately to Customer.
- Host new technical content and provide preventative maintenance in accordance with Cisco's normal maintenance schedules and procedures. At the same time, old content may be refreshed or removed depending on its relevance.

- Provide technical assistance and troubleshoot issues submitted to Cisco through provided e-mail alias tkl-support@cisco.com.
- Updated Content. Cisco may revise, update and/or remove previously-released Multimedia Clips and/or Sidebar Content ("Updated Content"). Cisco will make any Updated Content available to Customer as a part of the Services. The Updated Content will exclude the previously-released Multimedia Clips and Sidebar Content (where applicable) that the Updated Content was intended to supersede. Customer should discontinue any use of the superseded Multimedia Clips and/or Sidebar Content

Customer Responsibilities

- **General Responsibilities**

  o Designate at least two (2) but not more than six (6) technical representatives in each area covered under SP Mobile Internet, 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 SP Mobile Internet Network Consulting Engineer(s). 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 selected under this Service Description (e.g., chair the weekly conference calls, assist with prioritization of projects and activities). .

  o 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.

  o Provide reasonable electronic access to Customer's Network to allow the SP Mobile Internet Network Consulting Engineer to provide support.

  o If Cisco provides Data Collection Tools or scripts located at Customer's site, Customer shall ensure that such Data Collection Tools or scripts are located in a secure area, within a Network environment protected within a firewall and on a secure LAN, 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.

o Provide a Network topology map, configuration information, and information of new features being implemented as needed.

o Notify SP Mobile Internet Network Consulting Engineer of any major Network changes (e.g., topology, configuration, new IOS releases.).

o In the event the Network composition is altered, after the Services selected under this Service Description have become effective, 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.

o Create and manage an internal email alias for communication with SP Mobile Internet Engineer.

o Retain overall responsibility for any business process impact and any process change implementations.

Design Support

• In addition to the General Responsibilities, Customer shall provide the following:

o Provide the low level design document describing how Customer Network needs to be built and engineered to meet a specific set of technical requirements and design goals. The level of details must be sufficient to be used as input to an implementation plan.

o Ensure key detailed design stakeholders and decision-makers are available to participate during the course of the service.

o Provide or extract additional information required in the design effort (e.g., current and planned traffic characteristics).

Software Strategy

• In addition to the General Responsibilities, Customer shall provide the following:

o Information on current releases running in the Network and current configuration templates.

o Information on Customer business and technical requirements for new Software releases.

o Review details of planned changes with SP Mobile Internet Network Consulting Engineer.

o Information on Customer certification process and lab testing process.

o Information on Customer change control process.

Network Health Checks

• In addition to the General Responsibilities, Customer shall provide the following:

o Information on any service level agreements or Network performance requirements.

o Information on critical applications supported by the Network.

o Information on which applications are mission-critical and their priority schemes.

o Information on Customer's plans for business continuance, consolidation, and virtualization.

o Information on expected Network growth and application mix changes.

o Data collection activities as needed to facilitate a specific Cisco analyses.

o Information on any future advanced technology implementations.

Continuous Learning

In addition to the General Responsibilities, Customer shall provide:

• **Knowledge Transfer and Mentoring**

o Details of Customer requirements on the topics it wants to see covered through transfer and mentoring together with background information on the skill sets of the audience.

o Ensure that facilities and equipment are available to host the informal technical update sessions.

• **Technical Knowledge Library**

o Customer is responsible for testing of the Portal interface.
o Provide on-boarding information as follows: contact name, title, address, telephone number,

- e-mail address of primary and secondary team lead, Email ids and name of the Authorized Viewers who will need access to the Portal.
- o Install the Digital Rights Management ("DRM") software on as needed basis that allows viewing the DRM-protected content on the Portal.
- o Participate in training and/or feedback sessions with Cisco team to enable Cisco to understand the needs of the Authorized Viewers for the Portal.
- o Notify Cisco of any technical support requests or troubleshooting issues related to the Services by sending an e-mail to Cisco team at tkl-support@cisco.com