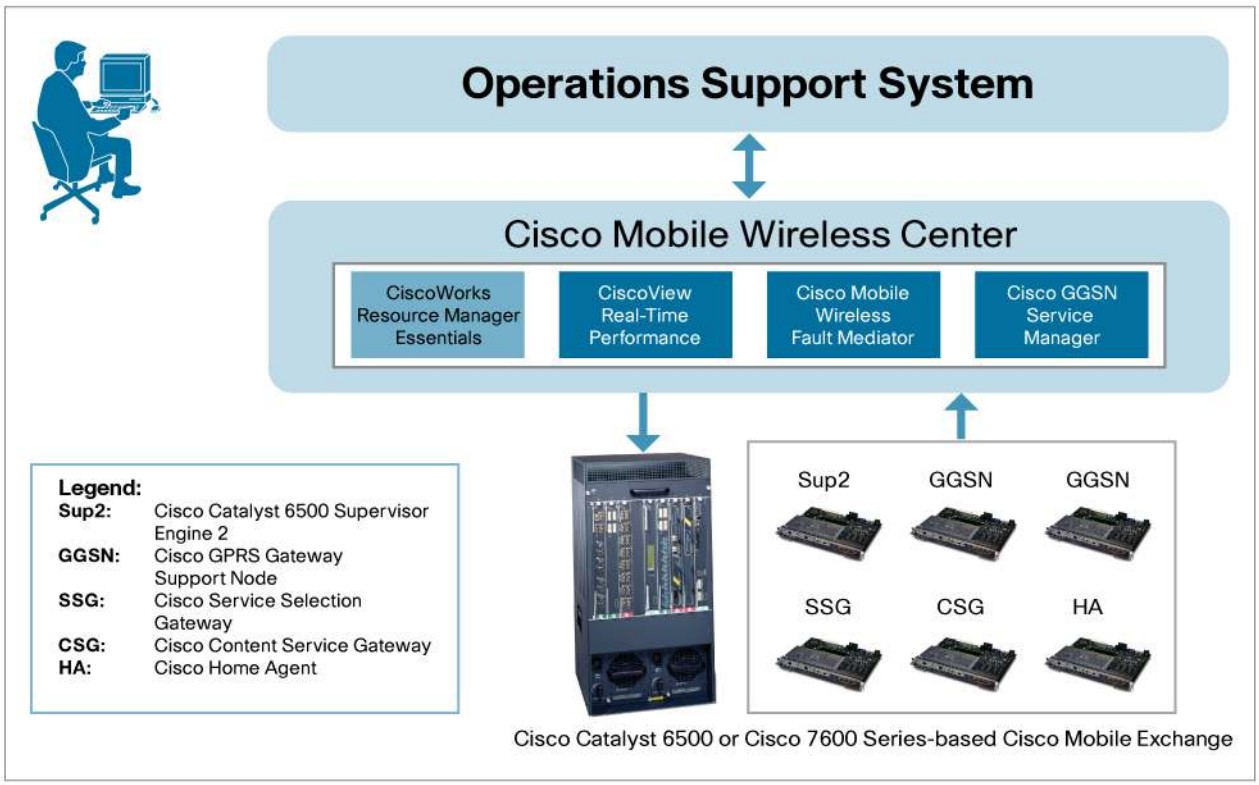
Cisco GPRS Gateway Support Node Service Manager 4.1

PRODUCT OVERVIEW

Cisco Systems® announces the availability of Cisco® GPRS Gateway Support Node (GGSN) Service Manager 4.1, part of the Mobile Wireless Center for Cisco Mobile Exchange suite of applications that complements the CiscoWorks LAN Management Solution (LMS) to provide end-to-end management of Cisco Mobile Exchange (Figure 1). The Mobile Wireless Center addresses the element-management requirements of mobile operators and provides fault, configuration, and troubleshooting capability as mobile operators transition their networks from second-generation (2G) circuit-based traffic to 2.5G and third-generation (3G) IP-based services.

Figure 1. Mobile Wireless Center for Cisco Mobile Exchange

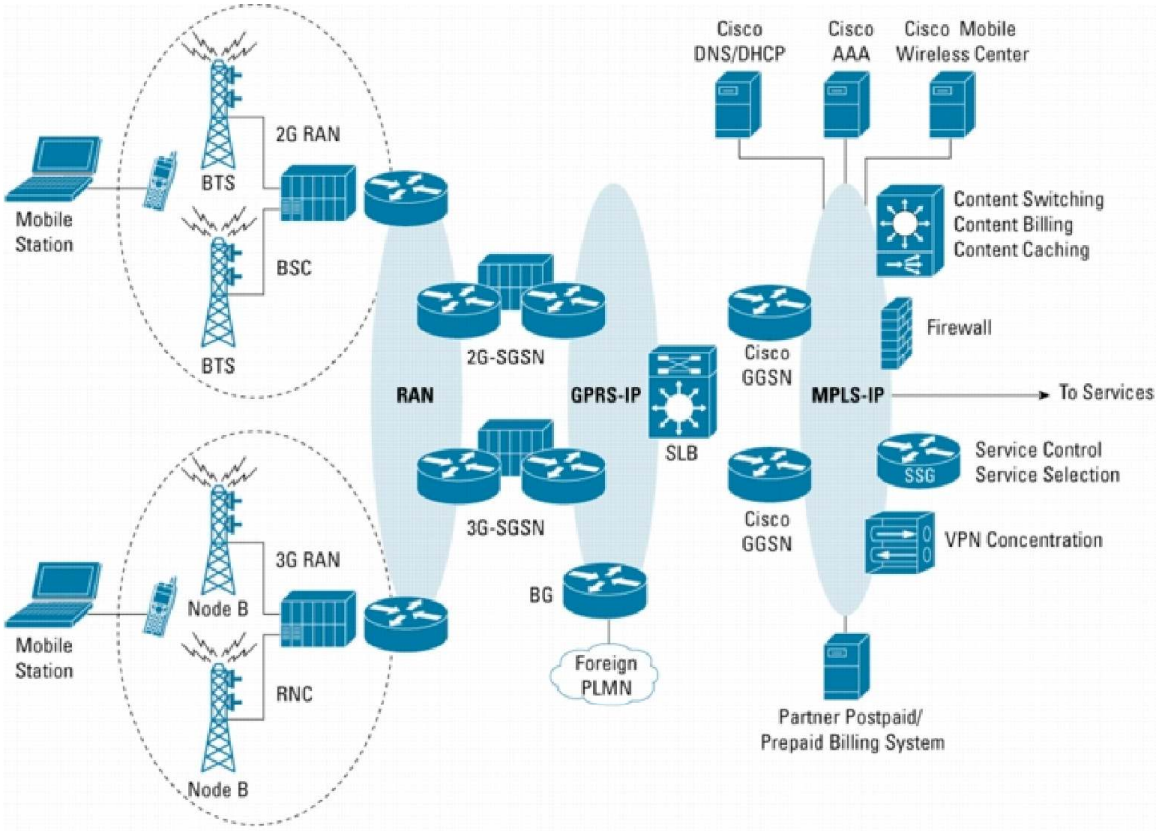


Cisco GGSN forms part of the Cisco Mobile Exchange architecture, which offers mobile operators a complete solution for connectivity, control, and charging. Cisco Mobile Exchange delivers flexible billing methods ranging from flat-rate, volume-based billing to content-aware, per-download or per-click billing. Cisco Mobile Exchange uses the proven Cisco 7600 Series Router platform to deliver all of the connectivity needs required, including support for General Packet Radio Service (GPRS), Universal Mobile Telecommunications Service (UMTS), wireless LAN (WLAN), packet data serving node (PDSN), and tunneling protocols such as generic routing encapsulation (GRE), IP Security (IPSec), and Layer 2 Tunneling Protocol (L2TP).

A typical IP-based mobile wireless network built around Cisco Mobile Exchange is represented in Figure 2, where the Cisco GPRS/UMTS solution helps enable mobile operators to provide packet data service to their wireless subscribers.

In this context, Cisco GGSN Service Manager has functions for provisioning and troubleshooting access point names (APNs) and charging profiles to efficiently activate services and improve network reliability. Integrated with CiscoWorks LMS, Cisco GGSN Service Manager provides a GUI like that of other CiscoWorks applications and interacts with the CiscoWorks Common Services Job Browser, making it a powerful tool for bidirectional device interaction and status. Furthermore, the Cisco GGSN Service Manager console allows easy navigation through configuration and troubleshooting tasks in a familiar environment.

Figure 2. Mobile Wireless Center in a Cisco Mobile Exchange–Based GPRS/UMTS Network



AAA = Authentication, Authorization, and Accounting
BTS = Binary Synchronous Communications Protocol
GPRS = General Packet Radio Service
GGSN = GPRS Gateway Support Node
RAN = Radio Access Network
SLB = Server Load Balancing

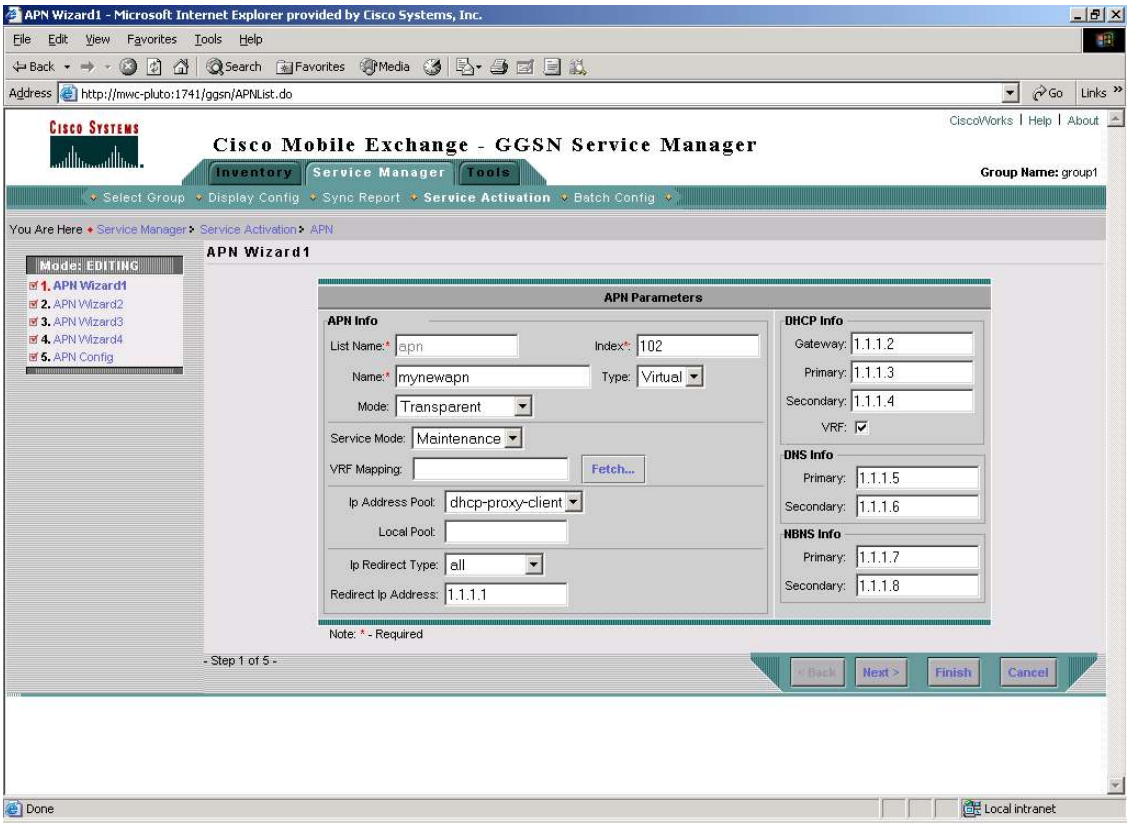
APN CONFIGURATION

An APN identifies a packet data network (PDN) that is configured on and accessible from Cisco GGSN. An APN has several attributes that mobile service providers can use to define how users can access the network at that entry point. The attributes include parameters to define whether authentication is required for access to the PDN and to identify IP addresses for Dynamic Host Configuration Protocol (DHCP), RADIUS, and charging gateway servers.

Cisco GGSN Service Manager provides a Web-based GUI to create, modify, and delete APNs within the Cisco GGSN–Cisco Mobile Exchange complex to support centralized private or public access to the network. When a mobile subscriber requests a connection, the

APN is included in the Create Protocol Data Packet request message. Routing of these packets is based on the setting provided by Cisco GGSN Service Manager. Figure 3 shows one of the APN provisioning consoles.

Figure 3. Cisco GGSN Service Manager Console for APN Provisioning Service Activation

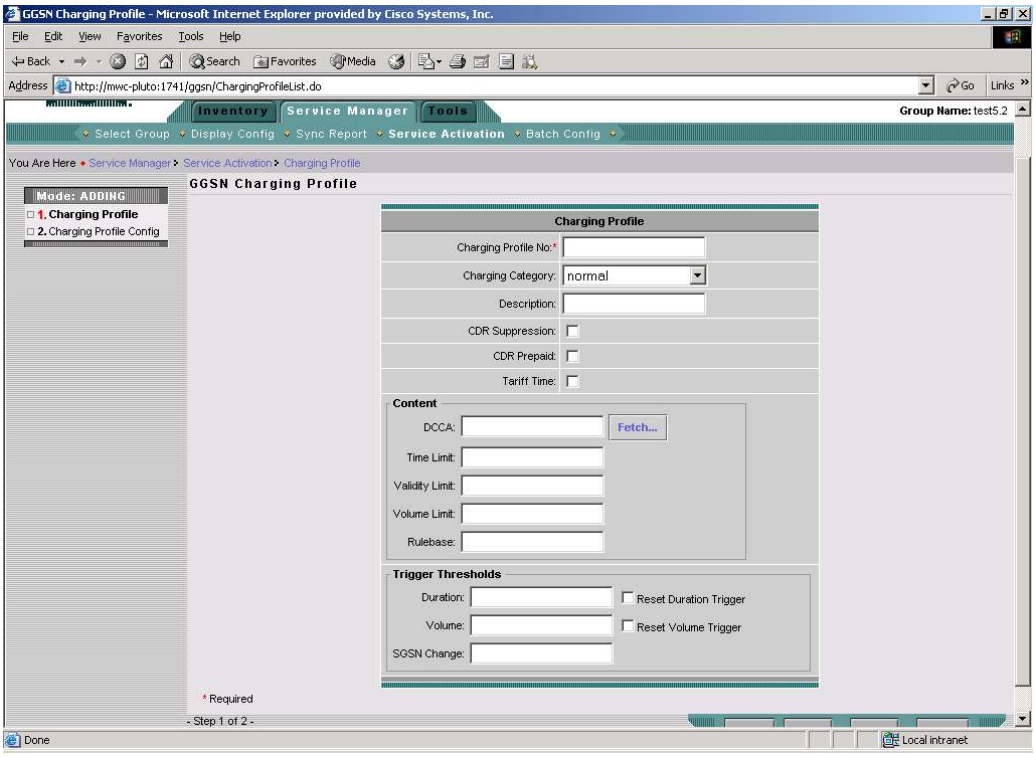


CHARGING PROFILE CONFIGURATION

Cisco GGSN features different charging profiles that define the charging method for specific types of users (home, roamer, visitor), enabling providers to apply the appropriate charging method. In this context, Cisco GGSN Service Manager automates the charging profile definition based on the Cisco GGSN version and provides a powerful GUI (Figure 4) to define attributes such as:

- Real and Virtual Access Point Name
- Charging profile
- GPRS charging container time-trigger
- Limit duration and volume
- Tariff-time
- Call detail record suppression prepaid
- Content billing configuration

Figure 4. Cisco GGSN Service Manager Console for Charging Profiles



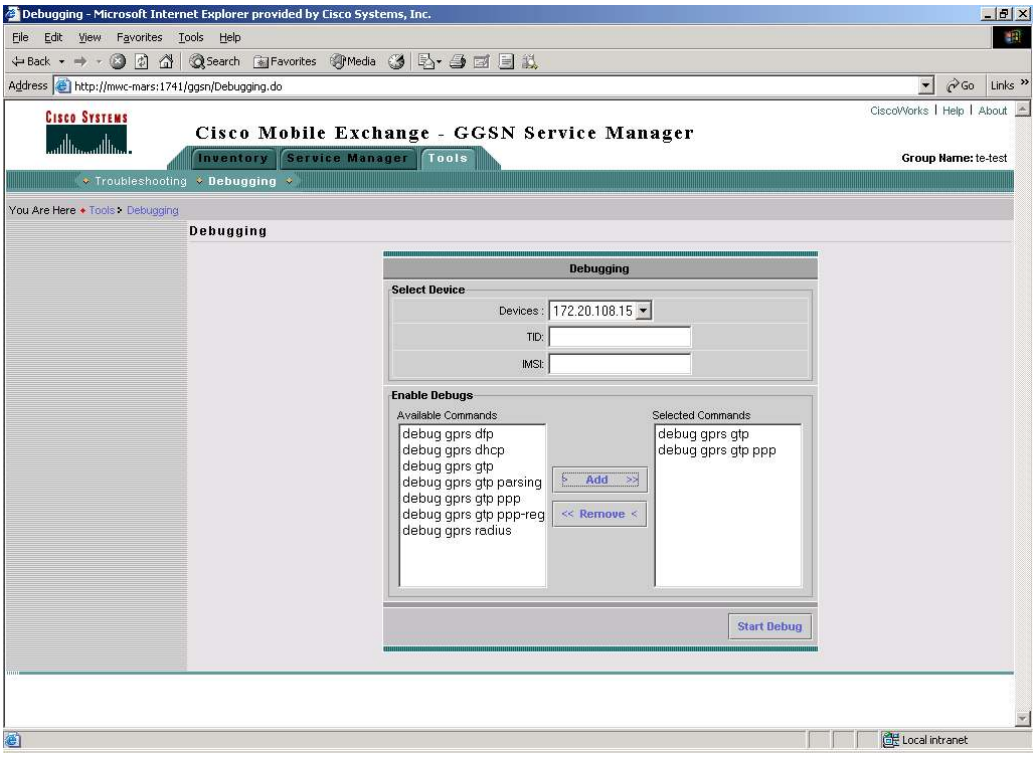
TROUBLESHOOTING DASHBOARD

Cisco GGSN Service Manager features a troubleshooting dashboard that provides predefined key information on:

- GGSN show commands outputs
- GGSN debug results
- GGSN syslog messages

Figure 5 illustrates a sample troubleshooting console.

Figure 5. Cisco GGSN Service Manager Troubleshooting Dashboard



KEY FEATURES AND BENEFITS

Table 1 describes the benefits of Cisco GGSN Service Manager when deployed as part of an element manager system (EMS) infrastructure.

Table 1. Features and Benefits of Cisco GGSN Service Manager

Feature	Description	Benefits
Centralized management of APN configuration	• Automates APN provisioning in all Cisco GGSN installations defined in a server farm.	• Reduces complexity of APN provisioning process by simultaneous interfacing with all installations of Cisco GGSN. • Reduces time to add new mobile subscribers.
Automated charging profile provisioning	• Provides a GUI to configure Cisco GGSN charging profiles.	• Reduces error and increases network uptime as operators bypass command-line interface (CLI) and define charging profiles in a template-based screen.
Troubleshooting dashboard	• Allows operators to execute maintenance tasks on Cisco GGSN. • Allows easy selection of tools to view syslogs, show commands output, and debug.	• Improves network serviceability by allowing operators to proactively assess Cisco GGSN status. • Enables easier problem identification and troubleshooting.
Multiple-device management	• Allows management of multiple installations of Cisco GGSN in a user-defined grouping. • Automatically downloads configurations in all Cisco GGSN installations in the server farm.	• Provides a unique APN and charging profile provisioning scheme that spans all installations of Cisco GGSN in the complex. • Prevents out-of-sync configurations.

CiscoWorks-based GUI	• Cisco Allows easy viewing, creation, modification, and deletion of APNs and charging profiles in a GUI. • Provides automatic entry validation to help minimize configuration error while conforming to CiscoWorks look and feel.	• Improves time to service as operators don't need specialized skills in Cisco IOS® Software to configure APNs or charging profiles. • Provides all the tools of the CiscoWorks LMS product suite.
Automatic device inventory	• Uses CiscoWorks Common Services Device and Credentials Repository data to automatically discover Cisco GGSN devices and gather management information from them.	• Accelerates time to service as operator avoids manual entry. • Reduces complexity.
GGSN discrepancy analysis	• Detects configuration discrepancies in installations of Cisco GGSN in the server farm. • Provides a report of discrepancies; shows any diverging Cisco IOS Software CLIs between Cisco GGSN installations.	• Helps eliminate misconfigurations. • Increases productivity by highlighting discrepancies. • Increases network serviceability.
CiscoWorks LMS interface	• Interacts with CiscoWorks Resource Manager Essentials (RME) to download/upload device configurations to Cisco GGSN. • CiscoWorks RME automatically uploads latest Cisco GGSN running configuration and synchronizes with Cisco GGSN Service Manager.	• Helps ensure that Cisco GGSN device configurations are synchronized with Cisco GGSN Service Manager. • Increases network reliability by using CiscoWorks RME Job Browser for orderly tasks such as device auditing.
Device configuration display	• Provides hierarchical Cisco GGSN configuration view. • Filters out Cisco IOS Software configurations unrelated to Cisco GGSN. • Shows configuration of any installation of Cisco GGSN in user-defined server farm.	• Allows operator to focus on mission-critical tasks without being overwhelmed by the whole device's configuration. • Reduces errors by showing only Cisco GGSN–related configurations. • Reduces configuration complexity.
System security and user account management	• Uses CiscoWorks user security levels to assign Cisco GGSN Service Manager predefined user roles. ◦ User security levels include Help Desk Approver, Network Operator, Network Administrator, and System Administrator.	• Increases system security to restrict potential disruptions to the network or to the application itself. • Helps maintain system integrity by preventing accidental or malicious operations by unauthorized users.

PRODUCT SPECIFICATIONS

Cisco GGSN Service Manager supports the Cisco Mobile Exchange devices listed in Table 2.

Table 2. Cisco GGSN Service Manager Device Support

Supported Device	Cisco IOS Software Release	Cisco Hardware
Cisco GGSN 5.0	12.3(8)XU1 or later	Cisco 6500/7600 Series Multiprocessor WAN Application Module (MWAM)
Cisco GGSN 5.1	12.3(11)YJ or later	Cisco 6500/7600 Series MWAM
Cisco GGSN 5.2	12.3(14)YQ or later	Cisco 6500/7600 Series MWAM
Cisco GGSN 6.0	12.4(2)XB or later	Cisco 6500/7600 Series MWAM

SYSTEM REQUIREMENTS

Tables 3 and 4 list the system and client requirements for Cisco GGSN Service Manager.

Table 3. Sun Server System Requirements

Requirement Type	Minimum Requirement
System hardware	Dual processor UltraSPARC IIIi at minimum, clock speed 1 GHz, RAM 4 GB
Swap space	8 GB
Disk drives	Dual 80+ GB SCSI or FC-AL drives
Network adapter	Suggested 100 MB or more
Operating system	Solaris 2.9
CiscoWorks LMS for coexistence	2.5.1

Table 4. Client Requirements

Requirement Type	Minimum Requirement
System hardware	• At least a 1 GHz single CPU running Windows 2000 Professional or Windows XP • Sun UltraSPARC IIIi, single CPU 1 GHz or equivalent
Software	• Windows: Internet Explorer 6.0 SP1, Mozilla 1.7 • Solaris: Mozilla 1.7
Memory (RAM)	512 MB
Available disk space	80 GB
Operating environment	• Sun Solaris 2.9 • Windows XP, Windows 2000 Professional, Windows Server 2003
Swap space	Space equal to twice the amount of memory (RAM)
Java Runtime Environment (JRE)	Java Plug-in version 1.4.2_04

ORDERING INFORMATION

Cisco GGSN Service Manager and the related upgrade for CiscoWorks for Mobile Wireless and Mobile Wireless Center for Cisco Mobile Exchange 2.0 customers are available for purchase through regular Cisco sales and distribution channels worldwide. To place an order, visit the Cisco Ordering Home Page.

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FOR MORE INFORMATION

For more information about Cisco GGSN Service Manager, visit www.cisco.com/go/mwc-cmx, contact your local account representative, or send e-mail to info-mwc@cisco.com.

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