

GW SubscriberMgr

ENABLING SERVICE INNOVATION: PERSONALIZE THE USE. MONETIZE THE EXPERIENCE.

The challenge for fixed, mobile, and converged service providers is to deploy differentiated and profitable network services that consistently deliver the Quality of Experience (QoE) that each subscriber expects, while retaining control over network utilization and costs. GW SubscriberMgr (GW-SM) helps service providers achieve this goal. The flexible service tiering, powerful policy control, and real-time charging provided by GW SubscriberMgr is the key to implementing competitive and profitable business models to personalize service offerings and maximize service revenues. GW SubscriberMgr also extends per-user management to large enterprises which provide critical connectivity services to employees.

BENEFITS

○ Visibility

GW SubscriberMgr maps dynamically allocated IP addresses to assigned subscribers, allowing service providers and large enterprises to accurately monitor, analyze, and meter subscriber data services over multiple concurrent access types. It supports both IPv4, IPv6, and hybrid networks and can correlate multiple IP addresses per subscriber as needed.

○ Policy Control and Charging

GW SubscriberMgr employs standard 3GPP interfaces that empower Openet inline platforms to operate seamlessly in mobile and converged broadband networks as an intelligent Policy Control and Enforcement Function (PCEF) and/or Traffic Detection Function (TDF) nodes with integration to operator Policy and Charging Rule Function (PCRF), and Online and Offline Charging Systems (OCS/OFCS).

○ Service Tiering and Quota Management

GW SubscriberMgr can be configured to provide a standalone Policy Control and Enforcement solution with a rich service creation framework that facilitates the rapid deployment of tiered service plans based on personal Quality of Service (QoS) parameters, usage quotas, and overage policies that enforce how each subscriber's traffic is treated. In this configuration, Openet also supports other interfaces for integrating to existing non-3GPP based OSS/BSS functions.

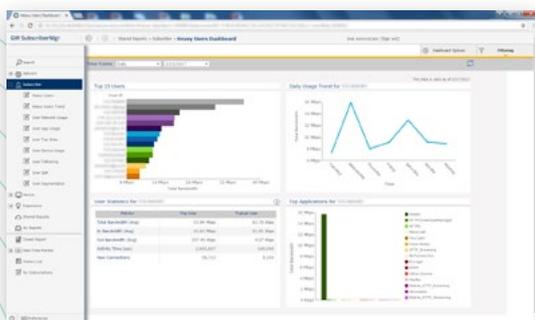
GET A CLEAR PICTURE OF SUBSCRIBER USAGE

Understanding subscriber behavior is the first step to identifying ARPU opportunities and creating profitable service plans. GW SubscriberMgr provides real-time and long-term analytical reports detailing the usage patterns of individual subscribers, including the applications and devices they use and the volume of traffic they generate. A full set of analytics dashboards show service providers how often data users access the service, how long they stay connected, their session signaling and average bit rate, the VoIP minutes they consume, and much more. These vital statistics can be exported to other systems in the form of subscriber-, application-, and session-based Charging Data Records (CDR), enabling operators to analyze subscriber behavior and to direct broadband resources toward more profitable revenue plans.

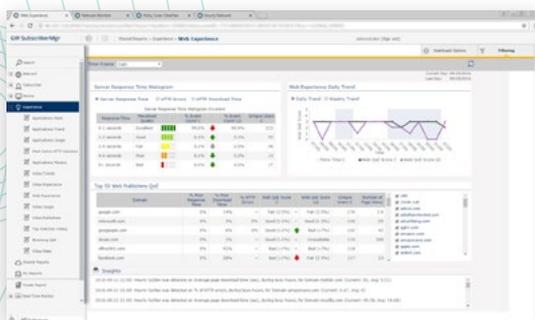
INSIGHTFUL REPORTING

Subscriber usage and online behavior can be viewed with Openet-GW Controller management system, or with the interactive dashboards of Openet-GW DataReporter, which help you:

- Identify top applications and top users
- Analyze application usage per subscriber
- Create subscriber profiles based on usage patterns
- Deploy personalized service plans for individuals and groups
- Evaluate the performance of tiered and quota service plans
- Monitor congestion and manage subscriber Quality of Experience in oversubscribed cell, BRAS or CMTS elements
- Troubleshoot customer problems faster



Heavy Users Dashboard



User Quality of Experience Dashboard

MONETIZE WITH VALUE-BASED POLICY CONTROL AND CHARGING

Monetizing the customer experience is the key to broadband service profitability. OG-SmartCharge (a licensed component of GW SubscriberMgr) helps broadband operators implement innovative charging models that reflect the true value of their service to subscribers and content providers.

OG-SMARTCHARGE

OG-SmartCharge enables real-time, pay-for-use charging based on the consumption of data and applications per volume and time. It integrates seamlessly in 3G and 4G mobile networks, where it orchestrates the value-based charging process using standard 3GPP interfaces:

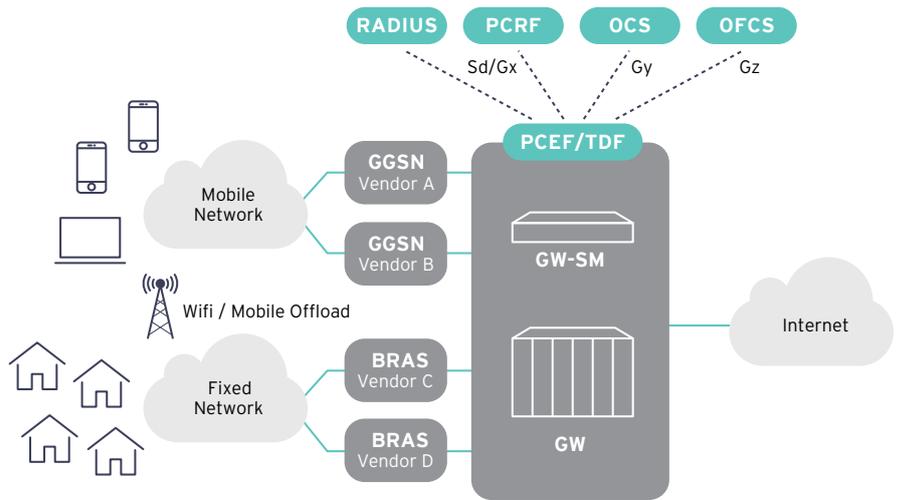
- **Via Diameter Gx**, OG-SmartCharge communicates with PCRF systems in real time, managing and enforcing QoS policy and metering usage for mobile sessions and applications based on the subscriber service plan. Granular policies such as online portal redirection, application detection, and cell congestion management can also be managed by this interface.
- **Via Diameter Sd**, OG-SmartCharge communicates with PCRF systems in LTE and 3G networks to support advanced service detection and notification capabilities, and performs enforcement with TDF.
- **Via Diameter Gy**, OG-SmartCharge meters and conveys real-time usage data to OCS and manages the rating of applications and sessions. The Gy interface supports the most appealing use cases for usage-based charging, including out-of-credit session handling, top-up for prepaid, and dual metering such as metering time and volume for Video Streaming applications.
- **Via Gz**, OG-SmartCharge exports summary records to OFCS for data reconciliation and accounting needs. Operators also leverage this interface to support revenue sharing models involving Over-The-Top (OTT) content, and to facilitate efficient session-level monitoring offline.

Openet works actively within the 3GPP forum to introduce and standardize effective methods for dealing with Diameter signaling storms between network elements, which occur frequently and pose a serious challenge when activating complex use cases.

REAL-TIME METERING PER SESSION, PER APPLICATION

Real-time volume and time metering may be implemented per session with the option to exclude or “zero-rate” individual or groups of applications so they are tracked but not charged.

Operators may also assign specific rates to specific applications and provision one or more of these individually rated applications in a subscriber’s service plan. Individual rates can also be assigned to a category of applications such as P2P or streaming video. Per-application charging provides a wealth of opportunities for operators to create value-based service plans and pricing.



Managing subscriber services across mobile, fixed and converged networks

PERSONALIZE SERVICES AND MANAGE QUALITY OF SERVICE

OG-ServiceTiers and OG-Policies (licensed components of GW SubscriberMgr) provide a complete, standalone service creation and policy management framework for the rapid deployment of tiered and quota services that allow consumers to choose the Internet experience that best suits their life-style and budget, while operators maintain control over network use.

OG-SERVICETIERS

OG-ServiceTiers allows providers to define competitive, application-aware service plans with different QoS policies and Service-Level Agreements (SLA), and then assign individual subscribers to the plans. In mobile networks, cell-aware service plans can also be defined, enabling temporary QoS measures to be enforced within a cell when it is congested.

OG-POLICIES

OG-Policies allows providers to further differentiate their service offering by including usage allowances and overage policies in the service plan. Usage caps based on volume and time may be managed per subscriber and per application. Openet controls the metering and enforcement process for each subscriber and produces standard CDRs for mediation and/or billing systems. A full complement of reports give operators the tools to analyze overall quota usage as well as individual subscriber status and quota consumption.

When quota limits are reached, subscribers may be redirected to the operator service portal where they can view usage history, extend allowances, or upgrade their service plan. OG-Policies also supports “turbo button” options that allow subscribers to accelerate upload/download speeds and boost an application’s performance for a designated period of time.

QOE CONGESTION MANAGEMENT

The QualityProtector module within GW SubscriberMgr gives you real-time control over network congestion and its impact on Quality of Experience, so you can extract more value from deployed infrastructure and postpone or even obviate the need for expensive network expansion. QoE is personal. That’s why Openet monitors the quality of individual connections (QoE indicators) together with specific locations in the network, such as within a mobile cell, a BRAS interface, or a CMTS channel/bonding group. Depending on the real-time quality level detected, Openet automatically adjusts and re-allocates bandwidth to applications and users connected to the affected network location in order to maximize the Quality of Experience your network is able to deliver at any given moment.

Plan Details	Basic	Plus	Premium
Monthly Rate	\$25	\$35	\$45
Data Volume Up To	1.5 GB	2 GB	5 GB
Overage	Throttle	10¢/MB	5¢/MB
Social Networking		Unlimited Facebook®	Unlimited Facebook® Twitter® MySpace® LinkedIn®
My Happy Hour	Select One: <input type="checkbox"/> Rise and Shine, 8-9am <input type="checkbox"/> Lunch Break, 12-1pm		
Add More...			
Optimize my Video (\$10/month)	Select One: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Prioritize (\$5/month)	Select One: <input type="checkbox"/> Yes <input type="checkbox"/> No		

GW SubscriberMgr facilitates the deployment of value-based service plans

GW SUBSCRIBERMGR

GW SubscriberMgr operates in conjunction with Openet-GW in-line platforms to provide scalable, carrier-class solutions for optimizing and monetizing the user experience in mobile, fixed, converged, and large enterprise networks.

GW SubscriberMgr may be purchased in a standard server or a high-availability configuration. The High-Availability Platform (HAP) comprises a cluster of two GW-SM server appliances running in active/passive redundancy mode together with an external storage unit.

Up to 15 standard GW-SM appliances or high-availability configurations can be deployed in the network.

VIRTUALIZED SUBSCRIBER MANAGEMENT

GW SubscriberMgr is available as a virtual appliance running on Openstack and VMware environment. For optimal performance, the virtualized environment should be able to provide adequate compute, storage, and network resources according to GW SubscriberMgr requirements.

	Standard GW-SM Server	High-Availability GW-SM Server
Capacity* (May vary depending on specific use case and/or network configuration.)		
Max RADIUS messages/second	5000 per GW-SM node	
Max DHCP messages/second	1000 per GW-SM node	
Max RADIUS messages/second with Diameter Gx interface with session-based volume reporting to PCRF	5000 per GW-SM node	
Max active subscribers/ GW-SM node	5 Million	
Health Monitoring		
Provides real-time status on demand for:	Utilization: CPU, memory RADIUS/DHCP message updates per second Number of registered subscribers Number of active IP sessions Subscriber status (service plan, quota balance, active/inactive)	
Interfaces		
3GPP	Diameter Sd, Gx and Gy, and File-based Gz	
AAA	RADIUS, DHCP, Active Directory	
OSS/BSS	CSV	
Management	SNMP, CLI	
Mechanical and Environmental		
Size	Standard 1U in 19" rack	Standard 4U in 19" rack
Power Supply	AC	AC

*Actual throughput and performance metrics depend on enabled features, policy configuration, traffic mix, and other deployment characteristics.