OPENET

GW Controller

Centralized Management

ADVANCED VISIBILITY AND CENTRALIZED MANAGEMENT OF ALL NETWORK TRAFFIC

As a network operator you need to understand how your bandwidth resources are being consumed by applications and users. This will help you define traffic management policies that control application performance according to your business priorities, and make sure your network services are meeting user expectations.

GW Controller, the scalable management system for Openet multiservice platforms and value added services, provides a central vantage point for network-wide monitoring and reporting. Its intuitive Graphical User Interface (GUI) paints a consolidated picture of application, user, device, and network topology traffic and enables easy drill-down to the most granular traffic data.

With a full complement of real-time and long-term reporting capabilities, GW Controller provides unsurpassed visibility for proactive troubleshooting and traffic trend analysis to assist you with capacity and service planning.

BENEFITS

- Superior traffic visibility
- Centralized NMS with powerful tools for policy creation, traffic management, and platform and software configuration and maintenance.
- Single policy front-end for managing Openet's distributed, scalable solution
- Real-time and long-term analytical capabilities with customizable data views

ENHANCED BROADBAND TRAFFIC VISIBILITY

GW Controller's reporting and analytics capabilities span a broad range of dimensions:

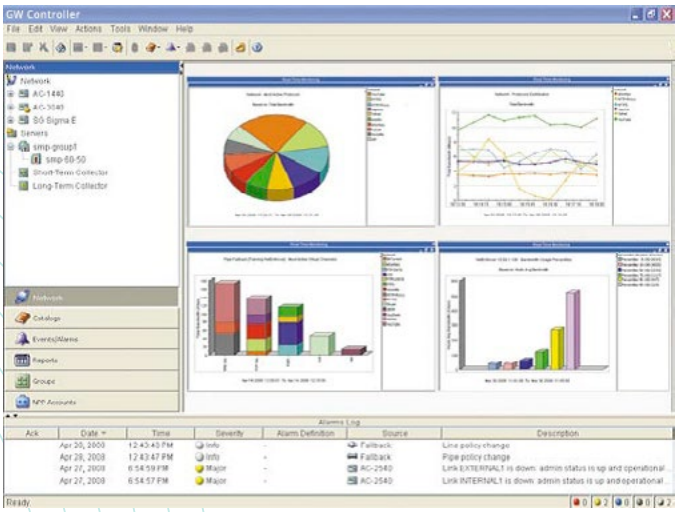
Application-based reports provide granular statistics and analysis of Internet applications such as BitTorrent, Skype, WhatsApp, and Netflix.

HTTP reports analyze Internet usage and Over-The-Top (OTT) applications such as browsing, HTTP streaming, and downloads – showing which websites are generating the most traffic.

Subscriber reports* provide individual and aggregate subscriber behavior data. Reports showing subscriber usage of popular content such as Netflix and Facebook enable operators to personalize their service plans, while service plan utilization and popularity reports help operators to fine-tune service plan quotas and percentile reports show the average usage for the top X% of users.

VoIP Minutes of Use report tracks usage volume and identifies usage trends of OTT VoIP applications.

Mobile Analytics reports* provide operators with performance metrics around mobile data usage and the impact different types of mobile devices have on the network. Reports include cell congestion and bandwidth usage, roaming activity, top protocols, session bitrates, session duration, session signaling, and service plan metrics – all stacked by the mobile device make and model used.
*May require additional license



Intuitive user interface with dashboard view

RICH SET OF REPORTING FUNCTIONS

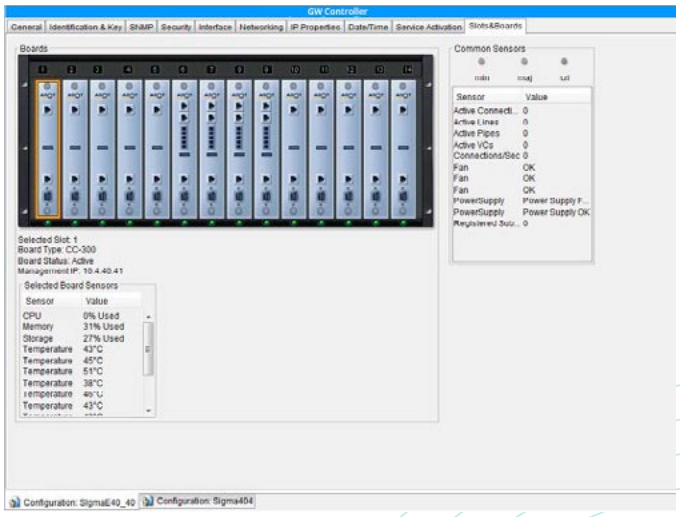
- Real-time reports provide precise traffic statistics for quick diagnosis of network problems
- Historical traffic statistics facilitate network capacity planning and trend analysis
- Easy navigation (including zoom or scroll) to view all report data in graph or tabular format, desired time-frame, and drill-down to view more granular data
- Dashboard arranges up to 10 frequently used reports on a single screen for efficient viewing
- Variety of report export formats, including textual file, JPEG, PNG, HTML, XML, and CSV
- Scheduled reports for automatic generation and email distribution
- Multiple chart styles including color-coded, pie, line, and stack-area charts

ONE NETWORK – ONE MANAGEMENT FRONT END

GW Controller provides centralized visibility that is accessible to multiple clients and designed to manage a globally dispersed network infrastructure.

- One GUI provides centralized control of key Openet solution elements, including in-line platforms, Openet-GW SubscriberMgr, and collection and export servers
- Scales up and out to manage a multi-site, distributed deployment, and to handle Terabytes (TB) of network data generated by the Openet solution elements
- Policies, alarms, and subscriber updates are automatically propagated to the relevant solution elements (user audit log provided on demand)
- GW Controller server is accessible from multiple clients concurrently – facilitating user identity management and authentication

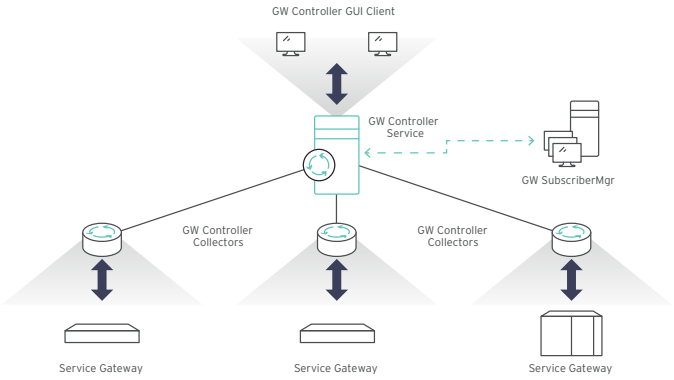
User authorization provided via standard RADIUS element for smoother and tighter integration in operator networks



The graphical Device View simplifies maintenance and operation

SCALABLE SYSTEM ARCHITECTURE

The fully distributed design of GW Controller allows the system to scale upward by adding functional elements at the appropriate architectural layers, while maintaining overall management from a central server.



Interface Layer: Provides multiple levels of access/operation, and open interfaces for integration with external systems.

Application Layer: Centralizes reporting, policy provisioning, and management of network traffic, configuration of all managed devices/ platforms, and notification/ mitigation of network attacks.

Collection Layer (optional): Supports growing and large-scale deployments through distributed data collection.

Real-time Service Layer: In-line platforms monitor network traffic in real time and dynamically enforce policy control per application and per user. This layer is always up and fully functional, even if other layers are temporarily unavailable.

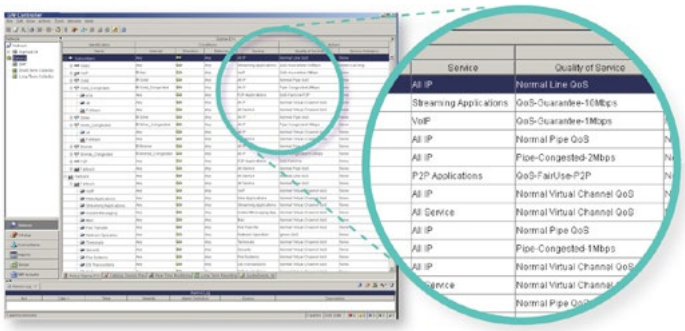
POWERFUL POLICY CONTROL

GW Controller's full set of reusable service catalogs and provisioning tools make it easy to build dynamic Quality of Service (QoS) enforcement and charging policies.

Enforcement Policy
Openet's Enforcement policy editor provides a powerful framework for defining specific traffic conditions and QoS enforcement actions according to high-level, easy-to-understand concepts. Enforcement policies may include any combination of access, priority, bandwidth allocation, traffic shaping, traffic steering, and quota actions to be taken on application and subscriber traffic. Additionally, rich Command Line Interface (CLI) and Simple Object Access Protocol (SOAP) interfaces allow external systems to provision policies and distribute them to all managed elements.

Charging Policy
GW Controller provides flexible charging policy editors that make it easy to define online and offline charging rules for both pre-paid and post-paid subscribers. The Online Charging Policy Editor defines real-time metering and rating rules for subscriber sessions and applications, while the Offline Charging Policy Editor defines the Charging Data Records (CDR) for data reconciliation and accounting systems. (See Openet-GW SubscriberMgr datasheet for further information on 3GPP-based policy control and charging capabilities.)

Intuitive Assistance with Service Plan Creation
Also in conjunction with GW SubscriberMgr (GW-SM), GW Controller provides the GUI for the creation of tiered service plans, including the introduction of various quota allowances to prevent network overloading, and time-based policies to address peak hour usage.



Enforcement Policy Editor

VALUABLE ADD-ONS

A number of advanced capabilities are available as licensable add-ons to the standard GW Controller software.

Policy Provisioner - Value added self-management policy provisioning tool adds distinctive value to provider-carrier service offerings by allowing them to offer self-monitoring and self-provisioning capabilities to their VPN, ISP, and managed services customers. The NPP web-based GUI is accessible from any browser window and provides direct access to a predefined set of GW Controller real-time monitoring reports with full display options and drill-down capabilities. If desired, the provider may also permit customers to provision and adjust QoS policies within predefined limits.

Accounting - Facilitating data reconciliation NetAccounting Processes real-time usage statistics into granular accounting records and delivers this valuable data to OSS and BSS elements to support charging and usage-based billing for both fixed and mobile broadband subscribers.

GW CONTROLLER

GW Controller software and hardware servers may be purchased in non-redundant and high-availability configurations.

	GW Controller Non-Redundant Server	GW Controller High Availability Server
Capacity		
Max Number of Concurrent Clients	15 per GW Controller server	
Max Number of Concurrent Graphs	20 per GW Controller client	
Max Number of Registered Administrator Accounts	1000 per GW Controller server (30 active administrators)	
Operating System	CentOS Linux 64 bit x 86	
High Availability Scheme		RAID 10
Health Monitoring		
Provides Real-time Status on Demand for:	Utilization: CPU, memory Number of registered subscribers Enabled alarms, KPIs on AOS and GW-SM	
Interfaces		
OSS/BSS	SOAP, CSV	
Management	SNMP, CLI	
File-based Accounting Records	Supports NetAccounting CDRs (requires a separate license)	
Dimensions and Power		
Size	Standard 1U in 19" rack	4U in 19" rack
Power Supply	AC	AC

HARDWARE SPECIFICATIONS

When using non-redundant management platforms, GW Controller software may be purchased and installed on operator equipment that meets Openet's minimum capacity and configuration requirements. The minimum configuration supports a limited number of Service Gateway and Data Collector platforms. Individual sizing requirements should be obtained from your Openet representative.

VIRTUALIZED GW CONTROLLER MANAGEMENT

GW Controller is available as a virtual appliance, running on VMWare in an ESXi environment. Openet virtual appliances are compatible with VMware vCenter 5.5 and higher. For optimal performance, the virtualized environment should be able to provide adequate compute, storage, and network resources according to GW Controller requirements.

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