

# Openet and Cisco



## ➔ Executive Summary:

As mobile operators around the world face up to the challenge of creating and delivering services that will enable them to profit from the explosive growth in IP-based content, data and video services, they will need the capability to flexibly charge for these new services to maximize revenue per-service.

To profit from the new wave of services, mobile operators require the ability to:

- Deliver value-added services regardless of a subscriber's billing plan
- Identify subscribers and applications
- Manage and control access to the network
- Authorize and charge for service without affecting the user experience
- Accurately account for third-party content providers e.g. target subscribers with advertising placement and accurately share revenue with an advertising agency.

Cisco Service Exchange Framework (SEF) delivers high performance application and subscriber aware traffic classification providing mobile operators with unrivalled visibility into network activity. Cisco Content Services Gateway (CSG) and Cisco Service Control Engine (SCE), components of Cisco's SEF, perform deep packet inspection to enable mobile operators to isolate and identify individual services, delivered over the bearer channel.

When Cisco SEF is combined with Openet FusionWorks Platform, Operators have the capability to authorize, charge and manage a session, for any service, subscriber, and network.

## Online and offline charging

The Cisco CSG and Cisco SCE have the role of a policy enforcement point and service control engine, watching for defined service policy matches and triggering service policy requests before services are delivered to subscribers. These service policy requests can be triggered and intercepted per service, to allow mobile operators to control the delivery of IP-based services to their subscribers.

Openet Convergent Charging provides the service control layer for these services, being able to verify subscriber identity, type of service, authorization to use the service, advice of charge, session management and ultimately charge for the service. It can do this at the bearer level, application level and is IMS standards compliant.

Openet FusionWorks delivers the ability for mobile operators to perform online and offline charging. Online charging using Openet Convergent Charging provides the permission to use network resources, determine service cost and debit the amount used from a subscriber's account in real time as resources are consumed or before permission to use the network is granted. Offline charging, using Openet Convergent Mediation, doesn't affect the service delivery in real time. Instead it collects chargeable events from network elements, processes them and generates CDR files, for the primary purpose of subscriber billing.

## Openet FusionWorks Platform enables:

- accurate and real-time billing
- creation and pricing of complex service and promotional bundles
- mediation of next generation network elements
- charging for third-party content and more..

## Service Charging Requirements

Openet FusionWorks in combination with Cisco SEF can enable mobile operators to offer any service, to any type of subscriber, over packet data networks, charged for by any payment method in real-time in order to generate new revenue streams and increase ARPU.

**Advice of Charge:** for many services, subscribers need price quote and advice of charge information before a decision is made to use a service. Using high performance rating engines and advice of charge notification and dialog servers allowing services to be requested authorized according to configured service policy rules and delivered in real-time.

**Authentication:** subscribers can be prepaid, post-paid, transient or roaming. Once identified, other important information such as IP address and corresponding wireless identifiers, prepaid balance, post-paid credit threshold, subscribed service portfolio, and usage history can be linked and used to deliver personalized value-added services.

**Authorization:** enables mobile operators to check the entitlement of a subscriber to access and use a service, before the service is actually delivered. This entitlement or service policy check, configurable per subscriber, can for example, be based on balance or credit thresholds, subscriber service portfolio or any other available information.

**Charging and Session management:** services that are charged for by duration need to be monitored on a continual basis. While delivering these types of services, Openet Convergent Charging manages quotas by interfacing with the Cisco CSG and Cisco SCE which monitors the delivery of the service. Cisco interfaces with Openet Convergent Charging to authorize a quota for a subscriber using a service. If the quota is authorized, Cisco keeps the service available and returns to the charging solution just before the quota is about to expire for a new one. This process happens continually until either a quota is denied or the service ends.

**Peer-to-peer:** tap into new revenue streams by delivering over-the-top and peer-to-peer applications as “premium” services with optimized performance based on the subscriber or application.

**Quality of Service:** identify services that have quality of service guarantees. To enable customers to self-provision higher bandwidth on-demand. Customers can get instant higher bandwidth to serve their download-heavy transactions. Once they complete their download-heavy transaction, customers can go back to their flat-rate service.

**Tethering:** identify wireless data usage in violation of its service agreement and deny service.

## Charging policies enabled by Openet and Cisco

- ➔ Free of charge services
- ➔ Blockades
- ➔ Bundles
- ➔ Tariff for heavy data users
- ➔ Premium rate
- ➔ Advice of charge
- ➔ Streaming
- ➔ Adult only
- ➔ Content
- ➔ Flat fee

## Interaction with OSS and BSS systems

IP-based services typically involve many elements in their delivery such as network elements, applications, servers and databases, containing enrichment databases. Each service may require a different combination of elements, making the task of delivery complex.

Cisco provides information on service policy matches, but does not know what the events mean or what needs to be done to process the events once they have happened. Openet interacts with the other systems involved in making the required policy enforcement and charging decisions.

The ability of Openet FusionWorks to interact in real-time with the Cisco SEF and other external systems in order to make these decisions is vital.

Support systems such as rating and IN cannot bear the traffic load that Cisco elements are capable of generating; in contrast Cisco SEF real-time nature cannot bear the latency of response from the support systems when it needs to enforce a policy enforcement decision. Openet Convergent Charging abstracts and simplifies the complexity of all these interfaces away from the Cisco elements, by caching credit from IN-purses and reducing the round-trip latency inherent in requests to OSS/BSS.

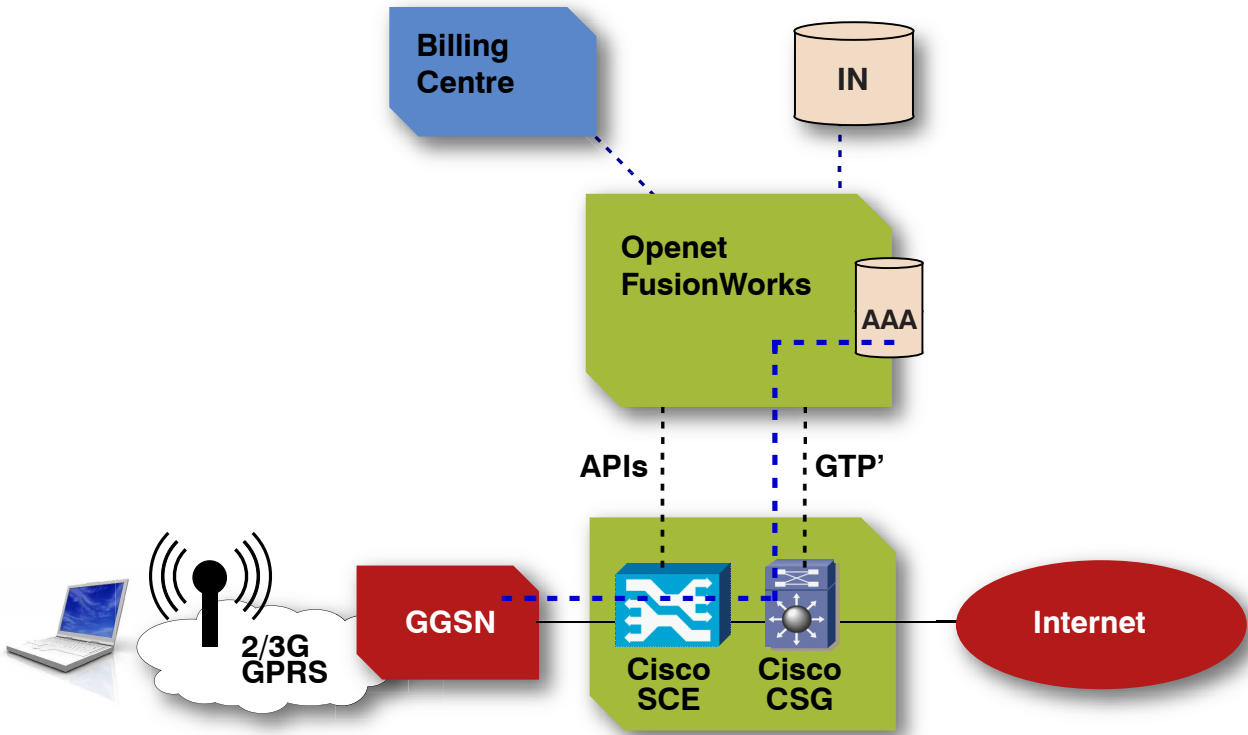


Diagram: Post-paid and Pre-paid charging for traditional data and P2P services Interfaces

## Interfaces

The Cisco elements have two interfaces over which it interacts with its policy environment, the Billing Mediation Agent (BMA) interface and the Quota Server (QS) interface. Both interfaces use a Cisco specialized protocol to exchange data.

The BMA interface is used for offline charging feeding Openet Convergent Mediation with lots of data that can be used for post-paid billing and delivering files to other downstream support systems such as rating and fraud.

The Quota Server interface, used for online charging, is bi-directional and sends Openet Convergent Charging service policy requests in real-time when it needs to know more about a subscriber or make decisions about delivering services.

## Conclusion

Openet FusionWorks Platform provides a real-time, scalable, flexible, network-driven, bidirectional, online and offline charging mediation platform. A truly convergent charging environment spanning all types of service, payment methods and network agnostic when combined with the Cisco Service Exchange Framework enables mobile operators to offer data services to all subscribers regardless of payment method or access technology.

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