

## Sandvine Usage Management for Mobile Service Providers

### Are you managing the mobile Internet explosion profitably?

Demand for mobile broadband data is skyrocketing as new devices and applications are readily adopted. Operators' capital infrastructure costs continue to grow, yet basic Internet connectivity is commoditized and price pressures drive average revenue per user (ARPU) down. Subscribers are demanding personalized plans that reflect their network usage and ensure optimized access to the applications they value most.

Amidst this rapidly-changing landscape, service providers seek a sustainable source of competitive advantage and a cost-effective means to capitalize on this trend. Sandvine's Service Creation solutions enable the delivery of subscriber-oriented service plans to facilitate a seamless and accelerated entry into service differentiation.

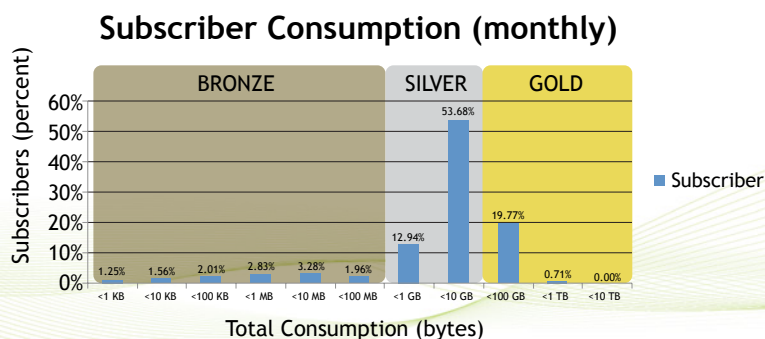
### Introducing Sandvine Usage Management

Sandvine's network-agnostic usage management product is tailored for service providers deploying Policy and Charging Control (PCC) standards-based networks. Usage Management enables PCC-based mobile and fixed-mobile convergence operators to better meet the unique needs of their subscribers by measuring usage to differentiate rating groups, managing usage through standards-based interaction with an Online Charging Systems, managing subscriber experience with effective network policy control and transparent subscriber communications, and maximizing subscribers' quality of experience with 3GPP/3GPP2-compliant policy enforcement interfaces. As part of the Sandvine Service Creation solution suite, Usage Management is the foundation upon which to establish and extend the value of the Internet connection.

Deploying Usage Management enables you to:

- Align service plans with subscriber consumption
- Deploy innovative pre-paid and post-paid billing plans
  - Charge based on data volume (aggregate, download, or upload)
  - Charge based on time (aggregate, or per application)
  - Configure flexible rating groups (on-net, zero-rating)
- Manage subscriber data usage in real-time, and enforce action on quota thresholds to prevent revenue leakage
  - Notify subscribers with advice of usage
  - Reduce bandwidth speed
  - Divert traffic or block access
- Allow subscribers to adjust their plans or top-up their quota
- Configure plan-specific billing periods
- Leverage Layer 7/application awareness with name-based policies

An example tiered service plan definition, based on monitored subscriber consumption, is illustrated below:



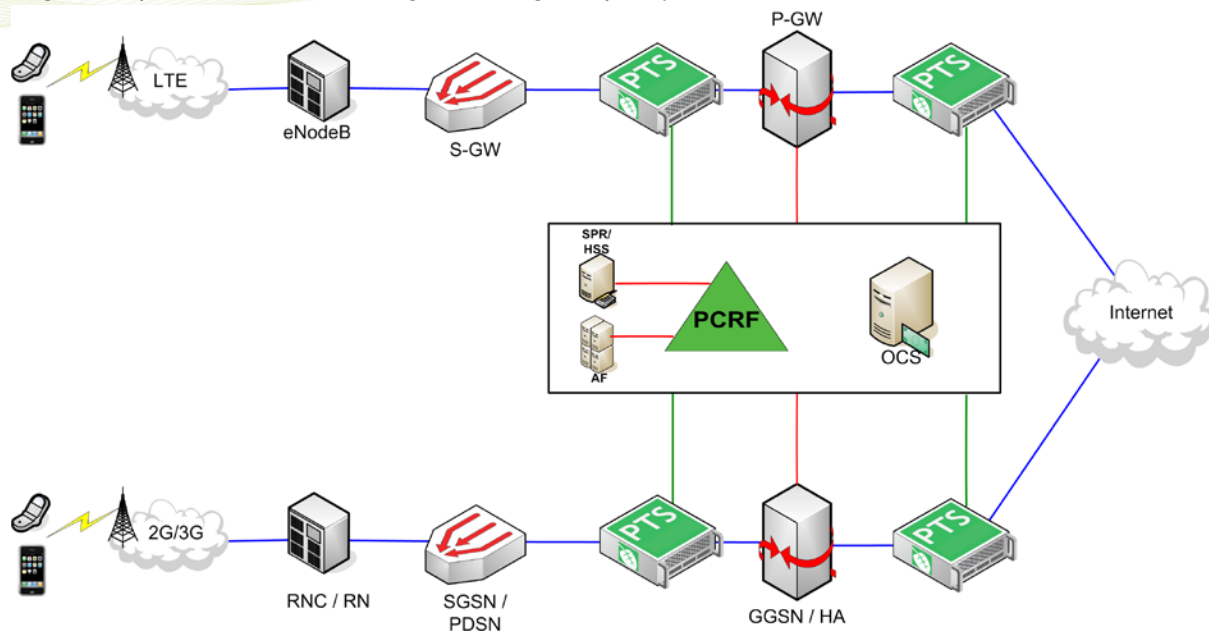
### Sandvine Advantages

- Performance, reliability and scaling for tier-one networks
- Pre-integration with industry-leading policy decision and charging elements
- Access network agnostic support for legacy mobile networks, and seamless migration to future 4G and converged networks
- Subscriber-aware, application-aware, or application-agnostic policy enforcement based on PCC-standard interfaces
- Advanced policy decisions based on subscriber usage thresholds, and enhanced performance
- Advanced policy decisions based on subscriber usage thresholds, and enhanced performance and flexibility through name-based policies
- Superior session and application tracking under asymmetric networking conditions

## Solution Overview

Sandvine's Usage Management offers a number of advantages over integrated gateway policy control solutions, including superior performance, detailed reporting and vendor-agnostic interoperability. Sandvine works with legacy 2G systems, while simultaneously operating in 3G architectures, providing support for gradual convergence strategies, as well as being future proof for 4G network rollout.

Usage Management provides real-time usage counting and policy enforcement within PCC standards-based topologies:



With industry-standard interfaces, Sandvine can be integrated with a subscriber repository for subscriber entitlement information and portal for subscriber notification. The solution includes a policy package to enable default policies and reports. Sandvine provides professional services to help integrate network elements and to customize policies and reports for your specific deployment configuration.

## Solution Highlights

- Define and deploy pre-paid and post-paid charging plans by measuring and enforcing per-subscriber time-based and volume-based quotas, in conjunction with an Online Charging System
- Enforce policy based on dynamic subscriber entitlements, using standards-based diameter interfaces to report usage against different service charging rating groups and obtain subscriber policy directives
- Deploy dynamic subscriber tiers, with real-time usage cap enforcement and subscriber notification by HTTP portal, Flash video message, or SMS, for advice of usage or top up or plan selection
- Support roaming through network-based policies
- Apply consistent policies across different access and vendor technologies
- Generate bandwidth histograms to help identify and fine tune quotas to align with service plans, using persistent historical usage data
- Multiple event thresholds - for each defined threshold per quota, a specific action can be triggered, such as shape, block or divert
- Allow zero rating of selected traffic to differentiate content and exclude it from being counted against quota
- Provide periodic usage records for auditing - usage data records can be generated at configurable intervals for auditing purposes
- Future-proof roadmap to align with emerging technologies and standards