

Base Traffic Management: Details

Traffic Optimization - An Alternative to Unbounded Capacity Investment

Across the industry, service providers are embracing traffic optimization strategies that complement their capacity investments and extend the lifetime of existing infrastructure. These strategies are a response to three converging trends:

- Rapid per-subscriber data growth, driven by powerful consumer devices and popular online services
- Uneven subscriber usage, particularly during peak traffic periods
- Increasing frequency and duration of congestion

For many network operators, these trends are converging against a backdrop of limited new subscriber addition, so there are few new sources of revenue to pay for additional capacity.

The traditional answer has been to continually deploy additional capacity to try to outpace the growth of data demands, but there's a better and more cost-effective solution: traffic optimization.

Save Money and Extend Resource Lifetime

For many network operators, the primary component of this traffic optimization strategy is Sandvine's Traffic Management product. Traffic Management saves operators money by extending the lifetime of existing resources, resulting in deferred capacity investments. In effect, Traffic Management helps operators realize a larger return on their infrastructure investments, while still protecting the subscriber quality of experience.

Sandvine's Traffic Management product offers two licenses:

- **Base Traffic Management**, for network-wide objectives
- **Fairshare Traffic Management**, for precision congestion management

Like all products deployed on Sandvine's Network Policy Control platforms, Traffic Management leverages the industry's broadest, most powerful set of platform capabilities and includes an extensive library of reports.

Linking Network Conditions to Policy Enforcement

Base Traffic Management gives communications service providers the tools necessary to accomplish their high-level traffic composition objectives. The powerful Sandvine Policy Engine acts on each traffic flow, identifying relevant characteristics, evaluating detailed rules, and enforcing desired actions. In general, the approach can be understood as leveraging many "if conditions X and Y, then take action Z", where the list of conditions is virtually limitless (including such aspects as subscriber, service plan, device, location, application, and network context), and the actions are a combination of:

- **Strict Priority Shaping**
- **Weighted Fair Queuing**
- **Minimum Rate Shaping**
- **Policing**
- **Blocking**
- **Session-Limiting**
- **Marking**

Key Benefits

- Deferred capital investments
- Reduced infrastructure requirements and extended infrastructure lifetime
- Traffic optimization is achieved without sacrificing subscriber quality of experience
- Access-technology agnostic platform means Traffic Management investment is future-proof
- Sandvine Policy Engine enables implementation of exceptionally powerful traffic management policies

Base Traffic Management Use Cases

The following examples highlight some of the use cases being implemented with Base Traffic Management:

Video Pacing - reduces wasted network resources from “bail-outs” by optimizing buffer size for streaming video

Adaptive Video Optimization - control bandwidth per adaptive video stream to protect subscriber Quality of Experience and prevent adaptive video algorithms from dominating available bandwidth

Time-of-Day Heavy User Shaping - shapes the network’s consumption kings during specific times of day to ensure a more equitable distribution of bandwidth during typical congestion periods

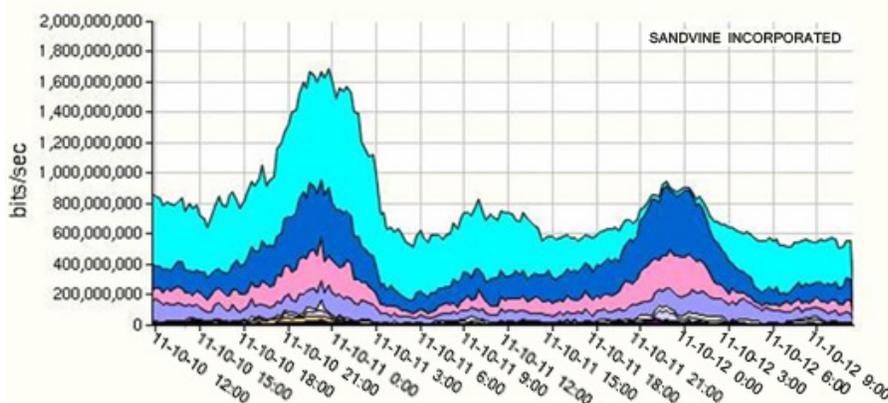
Speed Tier Management - a simple, immediate method to segment subscribers when transitioning from all-you-can-eat bandwidth access plans

Multi-Level Application Prioritization - protects sensitive applications (for instance, interactive applications like gaming and voice-over-IP) without starving more tolerant categories

Enterprise and Wholesale ISP Traffic Management - removes undesirable bandwidth for subscribing enterprises and wholesale ISPs

P2P Session Management, Online or Offline - manages unsolicited P2P with the confidence of zero false positives using natural mechanisms that avoid the “shark tooth” pattern associated with TCP slow start

Network Class Shaping, Policing and Blocking (translates into many general use cases for core congestion and network traffic management) - the following example shows the onset of a policy to control network peaks while reserving sufficient bandwidth for critical applications:



A Superior Policy Control Foundation for Evolving Networks

Sandvine’s Base Traffic Management allows communications service providers to:

- Obtain general cost-savings on the network with a never-ending potential for traffic management use cases
- Safeguard the subscriber quality of experience in relation to the most sensitive applications
- Prioritize applications to reflect the relative importance of each application type to the general user
- Deploy a future-proof solution that will easily transition to LTE
- Immediately enjoy the financial rewards of Traffic Optimization, before exploring increasingly powerful approaches like Fairshare Traffic Management