# Intent-Based Congestion Management

## KEY BENEFITS

- Reduce CAPEX
- Improve QoE for video and other high-priority services
- Reduce customer support calls and churn
- Gain service differentiation through unique offerings

**Network Planners and Optimization groups often have the challenge to minimize the amount of congestion on the network.  This is easier said than done because congestion can occur, at any time or any moment.**

Network congestion can make things like video streaming and gaming slow and frustrating, leading to poor a quality of experience (QoE) for your customers, and eventually customer churn.

Traditional congestion management solutions are often static and require manual configuration. This can be time-consuming and error-prone. Also, allocation of bandwidth resources isn't an effective approach as many applications require other metrics such as latency, jitter and packet loss to deal with the dynamic nature of traffic demands and the applications, and can in fact unnecessarily degrade the QoE of a network, causing more problems than it solves.
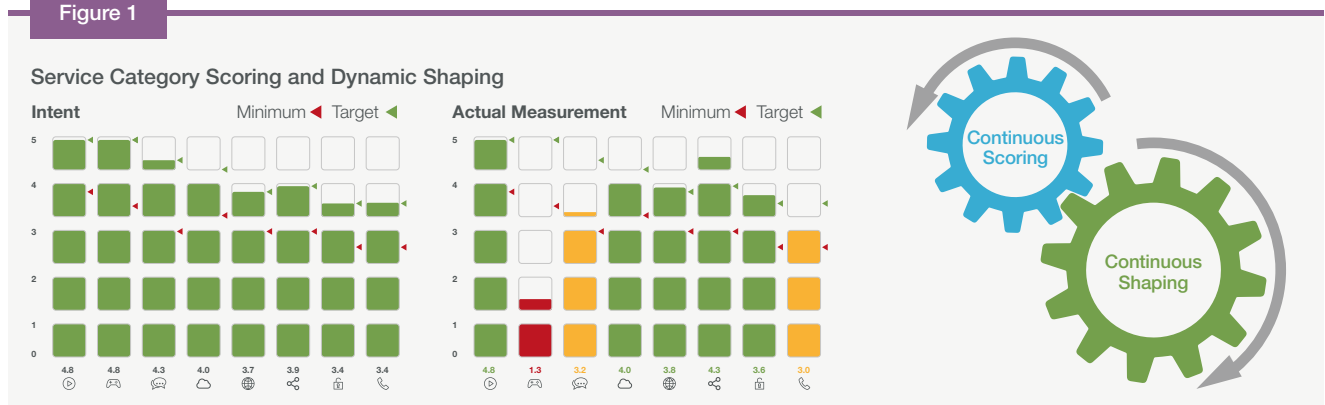
Service providers need a solution that is **not only dynamic but automatic in nature** and reduces the burden on manual intervention to adjust to rapidly evolving network conditions, effectively taking focused actions when and where is needed with the right subscriber & application traffic to achieved the desired business intent. A new approach is required.

Intent-based congestion management is a new, more proactive way to manage congestion. It uses machine learning to identify and respond to congestion in real time, ensuring that users always have the best possible QoE, even when there's a lot of traffic on the network.

### SOLUTION OVERVIEW

Sandvine's Closed-Loop Automation Use Case arms fixed and fixed wireless operators with an intelligent approach to managing network congestion based on intended application performance. Intent-Based Congestion Management sets a minimum and target QoE for each application or service category, preventing poor performance while also ensuring better allocation of bandwidth during congestion. It relies on constant network monitoring to detect network congestion and leverages dynamic shaping to deliver a self-adjusting, automated solution (**Figure 1**).



**Figure 1**

Service Category Scoring and Dynamic Shaping

There are a few steps in IBCM:
1. **Set your Intended thresholds:** Working with Sandvine to define what is the minimum threshold of QoE that you'll allow to for each Application Content Type
2. **Then set the Target (or ideal) threshold score.** For scores that are higher they can represent areas where capacity allocation can be borrowed
3. **Now let Sandvine's IBCM solution do the rest.** It will automatically allocate bandwidth to areas of high priority while maintaining App QoE scores to keep customer's experience, and ultimately satisfaction, high.

**Figure 2**

Intent-Based Congestion Management Overview Dashboard. Sandvine's scoring methodology is used to set, adjust, and manage QoE targets
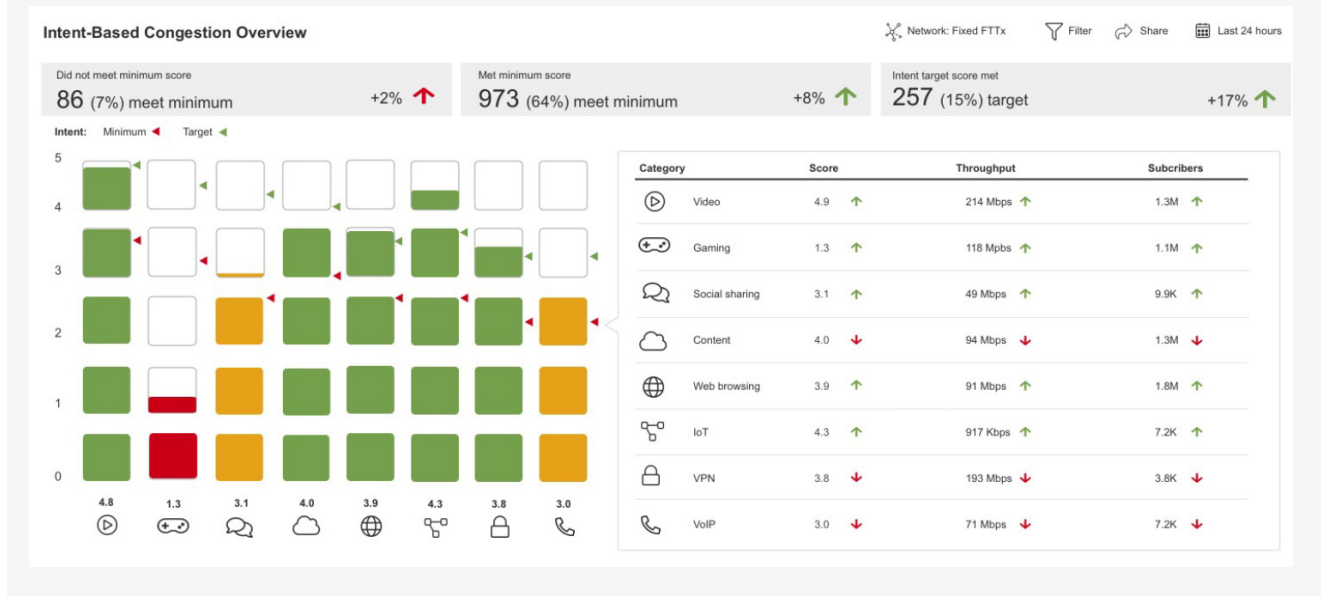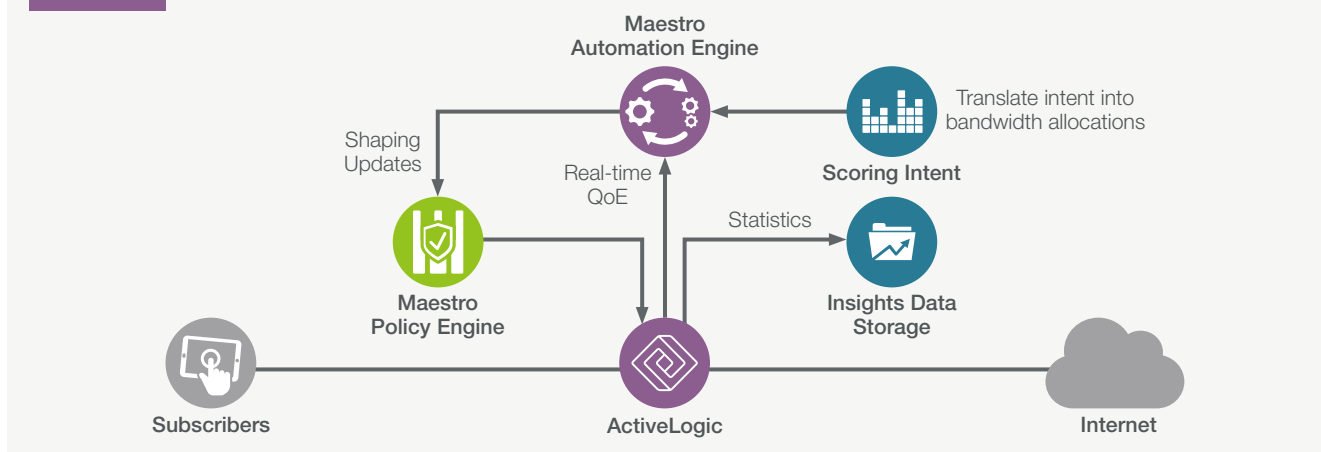


**Figure 3**



**REQUIRED SOLUTION COMPONENTS**

- ActiveLogic
- Maestro Policy Engine
- Insights Data Storage
- Deep Insights
- Elements

**ABOUT SANDVINE**

Sandvine's cloud-based Application and Network Intelligence portfolio helps customers deliver high quality, optimized experiences to consumers and enterprises. Customers use our solutions to analyze, optimize, and monetize application experiences using contextual machine learning-based insights and real-time actions. Market-leading classification of more than 95% of traffic across mobile and fixed networks by user, application, device, and location creates uniquely rich, real-time data that significantly enhances interactions between users and applications and drives revenues.  For more information visit **http://www.sandvine.com** or follow Sandvine on Twitter **@Sandvine**.

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