

FAST FLOW TECHNOLOGY

THE PACKET-BY-PACKET CHALLENGE

While traditional packet-based networks have advanced in networking performance, one of their fundamental strengths is also a limitation—routers and switches process individual packets one at a time independent of context. Given the exponential growth in quality sensitive real-time TCP/IP traffic such as video and voice, coupled with the general nature of IP communications susceptible to delay, jitter, and retransmissions, today’s Internet is suffering from significant network congestion and under-utilization.

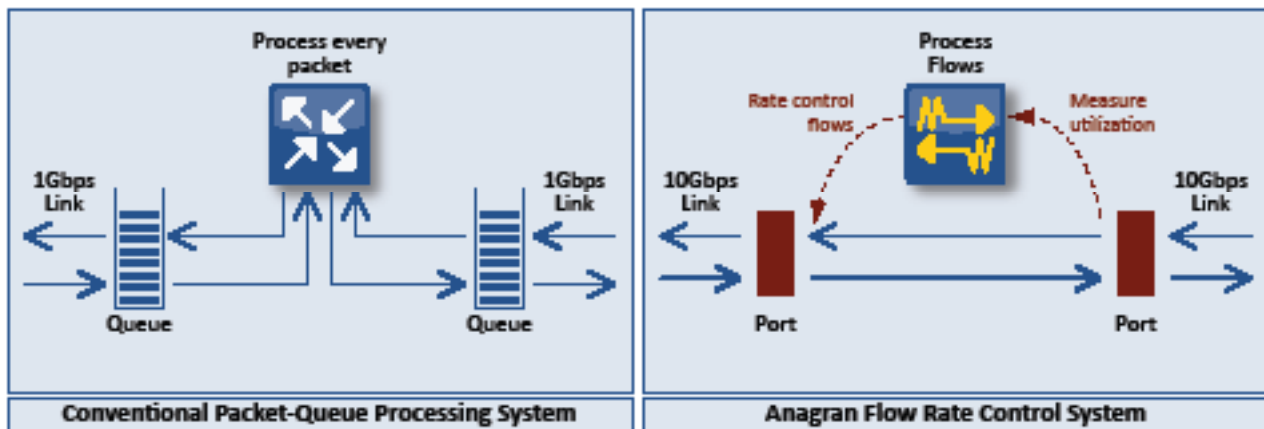
The quantum step forward to realizing the potential of IP networking requires shifting the focus from processing individual packets to managing individual flows.

A FLOW-BASED APPROACH

Application developers are turning more and more to use of multiple flows in order to maximize the bandwidth for their quality sensitive, bandwidth intensive broadband applications such as video conferencing, OTT video, interactive on-line gaming, and VoIP. Anagran eliminates traffic congestion in the world’s busiest IP networks using Fast Flow Technology™, developed specifically to mitigate IP peak traffic conditions..

The Anagran FR-1000 can be transparently deployed into any IP network as a transparent “bump in the wire” device. Anagran’s Internet traffic managers (ITMs) deliver instant network congestion relief, while ensuring fair user bandwidth allocation, increasing available bandwidth for users/applications, and enabling networks to economically reach their maximum revenue potential.

Anagran’s Fast Flow Technology recognizes individual flows, processing the first packet of the flow and dynamically associating a state with the flow. All remaining packets in the flow are switched using this state information. In addition, for each flow Anagran captures and maintains forwarding, QoS, and real-time behavioral data. Anagran’s Fast Flow Technology achieves granular control over each individual flow, which provides network operators the capabilities for creating and delivering network services with assured fair bandwidth allocation.



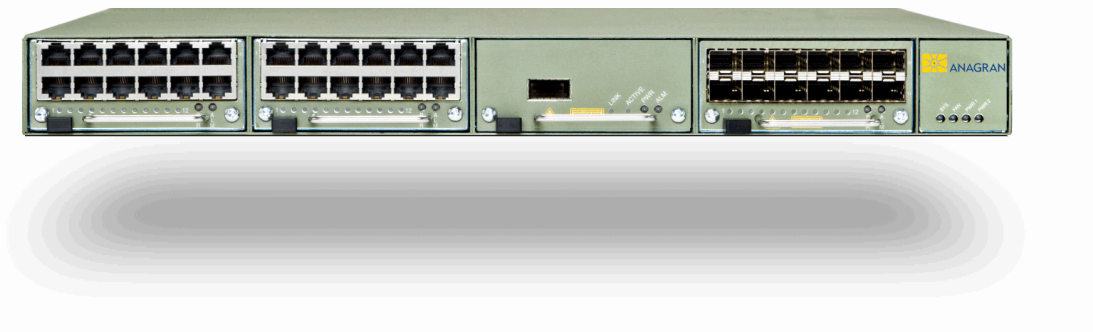
BENEFITS

Three critical benefits are realized when deploying Anagran ITMs: 1) significant improvement in the users' quality of their Internet experience, 2) material improvement in network capacity utilization, lowering both Service Provider's CAPEX and OPEX, and 3) increased revenue generation opportunities through the delivery of tiered services.

Anagran products:

- Manage individual TCP flows so as to eliminate inherent inefficiencies. In practical terms, this means applying greater intelligence to inevitable packet discards in order to ensure that all flows of a similar class are treated fairly and the TCP slow starts and stalls are completely eliminated. This yields a fairer and more deterministic network experience for all users.
- Reduce the ability of certain applications (e.g., peer-to-peer) to "game the system" by employing multiple flows per session. This reduces aggregate bandwidth requirements and also contributes to fairness between users.
- Allocate bandwidth in such a way the "bulk" applications such as file transfers yield bandwidth to quality sensitive applications such as VOIP and streaming video and "fill the valleys" when these applications are relatively idle. This also reduces overall bandwidth requirements while radically improving performance for quality sensitive applications.

Anagran's Internet traffic manager, the FR-1000, represents a new class of equipment deployable in wireline, cable, and wireless broadband networks without modifying the underlying topology of these networks. Designed to snap into current architectures, the FR-1000 produces significant OPEX savings through a reduction in backhaul bandwidth requirements and improvement in the Internet experience for all users.



www.anagran.com

Anagran, Inc., 580 North Pastoria Ave., Sunnyvale, CA 94085, USA, +1.408.701.0880.

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