



Application Brief: Enhancing Application Performance and Reducing Pseudowire Services Costs with Anagran

Premise: Adding Anagran Fast Flow Technology™ increases application performance and quality while containing Pseudowire services costs.

Challenge: How to run more applications that maintain desired quality, AND contain costs, to a growing user base over Pseudowire services.

Solution: Add Anagran to dynamically manage all traffic by application, while reducing costs.

Enterprises subscribing to a layer 2 service such as VPLS, or Layer 2 VPN may be offered a “Pseudowire” service - a service that runs over a packet switched network – often an MPLS network. Pseudowire (PW) service charges are usually based on bandwidth and an associated Service Level Agreement in the form of Committed Information Rate (CIR) with one class of service. Given a PW “pipe”, the challenge companies face is to fully leverage their given Pseudowire capacity without incurring extra network costs.

By instantly increasing the efficiency of the subscribed PW service, Anagran’s products allow much more cost-effective and scaleable use of the existing PW service.

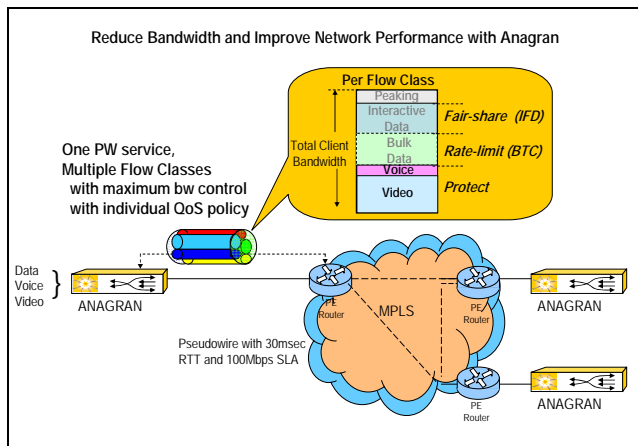


Figure 1: Reducing bandwidth needs and improving network performance

As shown in Figure 1, the Anagran flow manager is easily installed at the customer premise between the PW service network and enterprise router. Anagran’s Fast Flow Technology™ optimally grooms and controls every flow by application via its full view of all traffic to and from the Pseudowire service network. Multiple classes of service can be defined and tightly managed to a maximum bandwidth rate per flow class, while the aggregate traffic is managed to and from the PW service. Thus, delay-sensitive traffic such as VoIP and video is protected from non-interactive traffic (e.g., WAN backups, FTP, P2P) to ensure highest quality. The non-time-sensitive traffic is reduced in peak periods but is expanded in slack periods, thereby reducing the peak

demand and maximizing PW transmission capacity. Since all similar TCP flows can be paced to nearly equal rates, web transactions can complete up to 3 times faster. For even greater efficiency, Anagran can set rate-limits for bulk traffic.

ANAGRAN FEATURE SPOTLIGHT
To Leverage High Speed Pseudowire Services

Rate Control

- Keeps aggregate traffic load from contending applications from over-running any particular PW CIR
- Manages maximum bandwidth per flow class and for multiple flow classes; Adheres to the CIR

Classes of Service

- Allows multiple classes of service to be created within one class of service for fine-tuned application control

Intelligent Flow Discard

- Paces TCP and other competing traffic to keep it from impacting real-time traffic like video, voice, and interactive

Behavioral Traffic Control

- Further protects real-time traffic by throttling down bulk and P2P traffic rate when necessary

Enabling more traffic to run with greater quality allows for much more efficient use of PW services. Anagran **reduces** the PW bandwidth needed by optimizing the overall traffic mix. As Figure 2 shows, significant savings can be realized when the overall bandwidth requirement is reduced.

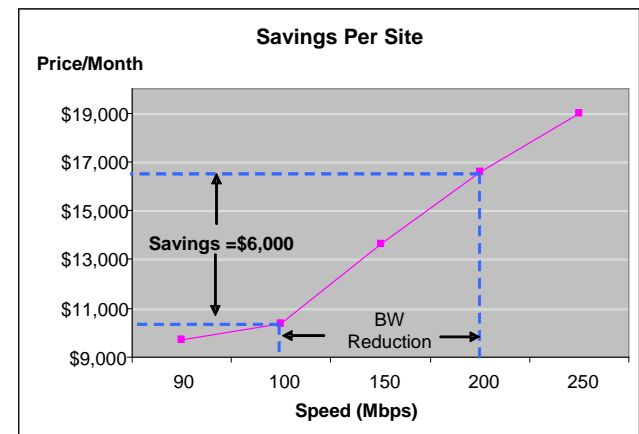


Figure 2: Reducing bandwidth results in big savings per month per site.

With typical WAN pricing, reducing the needed PW service bandwidth from 200Mbps to 100Mbps, for example, for a given site can allow over \$6,000 savings per month for that site. Keeping the traffic from going over defined peak rates can yield additional savings. Operational hours normally applied to frequently tuning QoS variables can be greatly reduced, resulting in even more savings each month.

Conclusion:

When using Pseudowire services, adding Anagran instantly optimizes existing network capacity and significantly reduces monthly transmission and operational costs.

Get the most out of your Pseudowire service!