Competitive Brief

Packeteer
PacketShaper 4500 and 6500

General Overview

Packeteer is the market leader for traffic management based on their PacketShaper product, which is targeted for the Enterprise market. Packeteer's strategy is to migrate from Enterprise to the Service Provider space with a re-packaging of their appliance with the PacketShaper 4500 and PacketShaper 6500 products.

Packeteer's Position

Will focus customers on a Packeteer system solution (including PacketShaper, AppVantage, AppCelera products) emphasizing bandwidth, traffic, content, service-level and policy management.

Key Dyband Messages

1. Dyband is the preferred solution for traffic management because Dyband ***classifies and manages traffic based upon who is using it***.

Dyband	Packeteer
• IP Address Management Points (MP) are used to manage traffic for individual users. • IP Address MP enforces strict rate limits.	• Both Classes and Partitions can used to manage traffic for individual users. • Classes manage traffic on a per-flow basis and therefore cannot enforce a strict rate limit for the user. • Partitions (1000 limit per PacketShaper) can enforce a strict rate limit for the user.

ASSESSMENT: Dyband supports strict enforcement of user bandwidth limits up to 50,000 users while Packeteer is limited to 1000.

2. Dyband allows ISPs, Enterprise Organizations, Universities, and Government Organizations to manage traffic by IP address as well as ***aggregate consumption*** by group.

Dyband	Packeteer
• MPs are defined hierarchically. • Inherent to the MP hierarchy are rules that prevent the aggregate consumption of a set of MP to exceed the rate limit of their parent MP.	• Classes and Partitions are organized in a hierarchical fashion for informational purposes only. • The hierarchy of Classes and Partitions does not affect the way in which traffic is managed. It is not possible to define a Class or Partition that can control the aggregate traffic for a set of other Classes or Partitions.

ASSESSMENT: Dyband can be deployed with greater flexibility than can Packeteer. Dyband can be used to control aggregate traffic for groups of users as well as other physical links further down in the network topology.

3. Dyband provides a consistent, reliable level of service because it ***adjusts rates immediately*** in response to current bandwidth utilization.

Dyband	Packeteer
• Dyband manages traffic with a queuing mechanism. • Dyband relies on actual measurements of current traffic (done every 10 ms) to control traffic. • Dyband offers usage-based shaping controls.	• Packeteer manages traffic by adjusting the TCP window size of the packets flowing through it. • Packeteer relies on predicting Internet latency to control traffic. • Internet latency can vary even within short period of time and is therefore very difficult to accurately predict.

ASSESSMENT: Dyband's rate controls take effect immediately in response to current traffic conditions while Packeteer's rate controls do not take effect for the period of time necessary for a round trip of the traffic through the Internet. Dyband also ensures maximum bandwidth utilization because its adjustments are based on actual and frequent traffic measurements. Because Packeteer's adjustments are based on latency predictions, its adjustments will likely result in either under- or over-utilization of bandwidth.

4. Dyband reduces operational expenses in the assignment (and modification) of service levels of users.

Dyband	Packeteer
• Separates the definition of the entity being managed (MP) from the definition of how the bandwidth is to be managed (Profile/Policy) • Dyband utilizes inheritance, the automatic assignment of policies for autodiscovered management points • By modifying a default policy, Dyband will automatically change that given policy for all users assigned to it.	• Combines the definition of the entity being managed and the definition of how the bandwidth is to be managed into each Class and Partition • Packeteer has no mechanism to automatically assign policies to partitions • Modifications to policies need to be made individually at each Class and Partition

ASSESSMENT: Dyband provides an efficient mechanism to manage user service levels. By using Dyband, operators can make a single policy change and affect all users with that policy (for example, a marketing promotion). Packeteer has a manually intensive methodology to establish and modify partitions, thus incurring operational expenses.

Dyband's Advantages over Packeteer

- Dyband manages bandwidth by user while Packeteer manages by protocol type
- Dyband manages up to 50,000 users while Packeteer manages 1000 via partitions
- Dyband manages both host and aggregation points while Packeteer has a "flat" structure limiting their ability to manage by aggregation points
- Dyband reacts real-time to congestion while Packeteer estimates latency time of non-predictable demands
- Dyband reduces operational expenses by having tools that automatically assign/change policies while Packeteer requires manual intervention per each partition

Technically speaking…

Dyband and Packeteer differ fundamentally on their shaping methods. Dyband works directly on the traffic flow in the "network" pipe, while Packeteer shapes traffic by *manipulating* TCP mechanisms. In essence, Packeteer manages bandwidth by controlling the end points of the network pipe. (Dyband operates at "Level 3" of the OSI model while Packeteer operates at "Level 4").

Key Points to remember when discussing congestion!

- Dyband is predictable and reacts to congestion within 10 ms.
- Packeteer cannot initially react quicker than current round trip latency (avg. 90-120ms)

PRODUCT COMPARISON

Feature	*Dyband IPTM*	*Packeteer (4500 & 6500 ISP)*
Overview		
Solution type	Software	Hardware
Shaping Method	**Queueing**	TCP Rate Control
Layer 3/Layer 4 controls	Layer 3	Both
Billing Interface	Yes	Yes- 3rd Party
Bandwidth Mgmt		
Max. b/w managed	155 Mb/s	200 Mb/s
Minimum managed	**1 kb/s**	64 Kb/s
Bi-directional	Yes	Yes
Half-duplex	**Yes**	No
Multi-homed	**Yes**	No
Traffic Classifications	IP Address CIDR Subnet Groups Interface	IP Address MAC Address CIDR Subnet Host Lists IP precedence URL Protocol Application
Arbitrary groups of managed objects	Yes	Restricted to IP Rules
Maximum queue depth	2000	n/a
Max # users	**50,000**	1000 partitions
Aggressive user controls	**Yes**	No
Latency range	**12-15 ms**	> 18 ms.
User Management		
Dynamic RADIUS IP Address leases	**Yes**	No
Dynamic DHCP IP Address leases	Yes	No
Name resolution methods	DNS, **LDAP, RADIUS**	DNS
Configuration Mgmt/Admn.		
Configuration Interface	GUI Application	Browser via Java Applet
IP Discovery	Yes	No
Application/Protocol Discovery	No	**Yes**
Topology Discovery	**Yes**	No
Inheritance of policies	**Yes**	No
Centralized control of multiple units	**Yes**	No
Rule changes immediately	**Yes**	No
Time of Day	**Yes**	No
Redundancy		
"Shunt" mode if all power fails	No	**Yes**
Backup device redundancy	Yes	No
Recovery time	<30 sec	n/a
Load balancing	No	No
Real-Time Monitoring and Reporting		
Intervals	sec, min hour	1 min, 5 min, 4 hour
Period	min, hour, day	hour, day, week, month
Objects monitored	IP Address, CIDR Sub., Groups, Int.	Traffic class, protocol, IP host
Navigable topology display	**Yes**	No
Parameters monitored	Per IP host/min: rate/host, peak & avg.	B/w min: by Traffic Class, Protocol
Top user report	**Yes**	No
Top application report	No	**Yes**
Historical reporting		
Statistics archived	Yes	Yes
Detail record intervals	Minutes (1,2,5,10,15,20,30,60)	**??**
Graphs	No	
Archive platform	SQL	SQL
Application consumption report	No	**Yes**
Congestion report	**Yes**	No