

*EdgeXOS Platform Notes*

# **XRoads** Networks

Edge Network Appliance Platform Notes

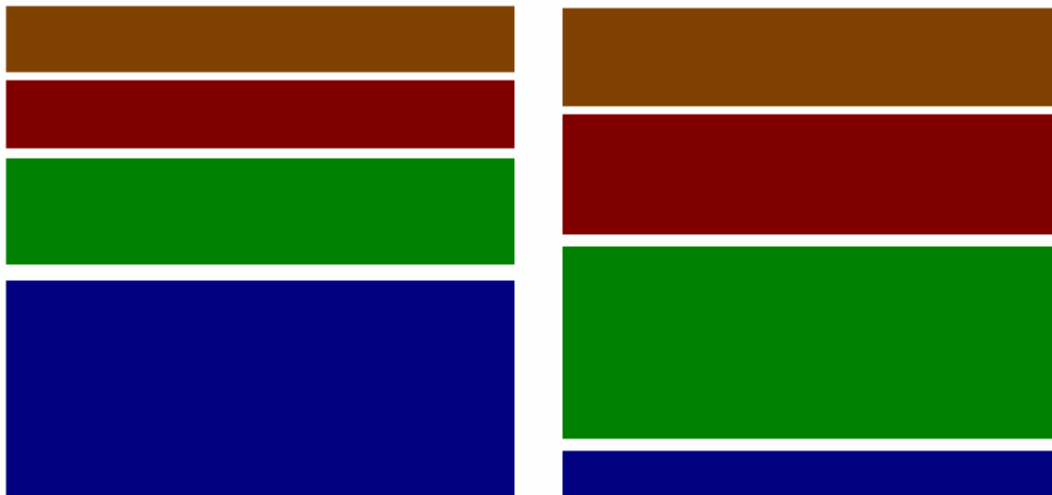
EdgeXOS Policy-Based Shaping Example

## Policy-Based Shaping: Example

This document provides an example as to how to control bandwidth resources using policy-based shaping. Policy-based shaping is a process by which the network administrator determines which application are most important and then divides bandwidth in a way which guarantees that end-users are able to access 'x' amount of the bandwidth during periods of high usage.

**Understanding How Shaping Works:** Typically we have a scenario like the one below, where P2P and other applications are taking most of the bandwidth (blue), while web usage (green), VPN (red), and VoIP (orange) use the rest of the bandwidth.

The goal is to minimize other application usage and specifically allow applications like web, VPN, and VoIP to use most of the bandwidth, but still provide for fair queuing for all of the allowed traffic as bandwidth is available.



This is where creating policy-based shaping policies can provide some assistance.

**Steps To Setup:** The following steps outline the process for creating a default throttle rule and then specific rules which provide bandwidth guarantees for different applications.

Step 1) Go to the Policy-Based Shaping menu under the Shaping tab.

Step 2) Create a default Bandwidth group called DEFAULT and set the minimum and maximum throughput to 100Kbps with priority 12.

DEFAULT (Enter a name for this traffic shaping group)

100 (Enter the maximum amount of bandwidth [in Kbps] allowed per interface for this group)

100 (Enter the minimum amount of bandwidth [in Kbps] allowed per interface for this group)

Priority 12 (Enter the priority level in relation to other groups)

Single (How is this bandwidth to be allocated to policies)

Step 3) Next create a Policy that states all traffic on the LAN (example: 10.10.10.0/24) should be shaped to the DEFAULT group.

DEFAULT  (Select an existing, or create a new bandwidth group)

A\_Default (Policy Name)

--- None Selected --- (Select a user from Tools->EndUser Management)

OR

http:// (Enter a web site or URL address)

OR

10 . 10 . 10 . 0 . (Enter an address or a range of addresses)

OR select 'ANY' from Network Mask to specify any host address

255.255.255.0 (Network Mask)

Destination (Define a Source or Destination for the address/network)

ANY

Source (Define the Source or Destination for the port)

(When checked both an inbound and outbound rule will be created for non-range entries)

No Change (DiffServ DSCP/ToS 802.1p packet marking for this shaping policy)

Now the question is, won't this slow down all traffic to 100Kbps. The answer is yes, however we will next create additional policies which will allow for greater speeds. Policies are applied in a last to match order.

Step 4) Create another Bandwidth Group called WEB and set the minimum and maximum to 500Kbps with a priority 3.

WEB (Enter a name for this traffic shaping group)

1000 (Enter the maximum amount of bandwidth [in Kbps] allowed per interface for this group)

1000 (Enter the minimum amount of bandwidth [in Kbps] allowed per interface for this group)

Priority 3 (Enter the priority level in relation to other groups)

Shared (How is this bandwidth to be allocated to policies)

Step 5) Next create a Policy that states all traffic on the LAN (example: 10.10.10.0/24) with a destination port of 80, should be assigned to the WEB group.

(Select an existing, or create a new bandwidth group)

(Policy Name)

(Select a user from Tools->EndUser Management)

OR

http://  (Enter a web site or URL address)

OR

.  .  .  .  (Enter an address or a range of addresses)

OR select 'ANY' from Network Mask to specify any host address

(Network Mask)

(Define a Source or Destination for the address/network)

(Define the Source or Destination for the port)

(When checked both an inbound and outbound rule will be created for non-range entries)

(DiffServ DSCP/ToS 802.1p packet marking for this shaping policy)

Step 6) Then create matching Policies as with the WEB group.

Step 7) Once done Apply the shaping rules and test.

Note: During testing you should find that all other traffic is now slowed and web, VPN, and VoIP traffic have much more bandwidth. Since each group has the same priority, they will all share bandwidth when the other groups are not using it.