Содержание

2 Configuration

An individual configuration file is used to define each bandwidth control policy. This file specifies bandwidth limits for protocol classes (groups). The method is similar to overall bandwidth control).

fdpi_ctrl utility applies the configured policies to subscribers.

The format of the instruction:

```
fdpi_ctrl command --policing policing_description_file [IP_list]
```

Instructions' syntax and IP addresses specification methods are described in details here: Control instructions.

Note the use of named policing profiles
The tariff plan can be set in JSON format as well.

Example 1: torrent limiting

We intend to offer our subscribers the plan for 10 Mb/s with torrent bandwidth limit of 3 Mb/s.

To accomplish the goal we create a class for torrents as described in Configuring priorities.

```
bittorrent   cs1
default      cs0
```

We split the traffic into 2 classes for this example:

- cs0 - corresponds to DSCP=0 QOS(IPP)=0 Best Effort
- cs1 - corresponds to DSCP=8 QOS(IPP)=1 Priority

We create the configuration file rateplan_1.cfg. It specifies bandwidth limits for each of 8 protocol classes (groups). We use HTB (the method of borrowing available bandwidth) and specify the bandwidth limit for torrents 3 Mb, but not smaller than 1 Mb. Unlike torrents, other traffic may take the whole available bandwidth.

```
htb_inbound_root=rate 10mbit
htb_inbound_class0=rate 8bit ceil 10mbit
htb_inbound_class1=rate 1mbit ceil 3mbit
htb_inbound_class2=rate 8bit ceil 10mbit
htb_inbound_class3=rate 8bit ceil 10mbit
htb_inbound_class4=rate 8bit ceil 10mbit
htb_inbound_class5=rate 8bit ceil 10mbit
htb_inbound_class6=rate 8bit ceil 10mbit
htb_inbound_class7=rate 8bit ceil 10mbit
htb_root=rate 10mbit
```

```
htb_class0=rate 8bit ceil 10mbit
htb_class1=rate 1mbit ceil 3mbit
htb_class2=rate 8bit ceil 10mbit
htb_class3=rate 8bit ceil 10mbit
htb_class4=rate 8bit ceil 10mbit
htb_class5=rate 8bit ceil 10mbit
htb_class6=rate 8bit ceil 10mbit
htb_class7=rate 8bit ceil 10mbit
```

- htp_inbound_root, htb_root are the root classes that define the overall bandwidth for inbound and outbound traffic. The bandwidth is distributed within these classes.
- rate - is the minimal bandwidth
- ceil - is the maximum bandwidth that can be borrowed from the root class if available
- class2-7 would not be used as we configure two classes only: 0 and 1.

The class-speed sum must be less than the root rate.

Here we assign the configured policy to subscribers that use this plan:

```
fdpi_ctrl load --policing rateplan_1.cfg --file
subscribers_with_rateplan_1.txt
```

Example 2: maximum speed for peering

Bandwidth allocation for several classes (for example containing peer-to-peer traffic) can be deduced from the HTB (Hierarchical Token Bucket) hierarchy. It can be done by specifying the keyword `static` in the description. In this case, the restriction for this class will be applied independently regardless to htb_root. For example under the conditions noted above, we separately limit the class 6 to 100 Mbps.

```
htb_inbound_root=rate 10mbit
htb_inbound_class0=rate 8bit ceil 10mbit
htb_inbound_class1=rate 1mbit ceil 3mbit
htb_inbound_class2=rate 8bit ceil 10mbit
htb_inbound_class3=rate 8bit ceil 10mbit
htb_inbound_class4=rate 8bit ceil 10mbit
htb_inbound_class5=rate 8bit ceil 10mbit
htb_inbound_class6=rate 100mbit static
htb_inbound_class7=rate 8bit ceil 10mbit
htb_root=rate 10mbit
htb_class0=rate 8bit ceil 10mbit
htb_class1=rate 1mbit ceil 3mbit
htb_class2=rate 8bit ceil 10mbit
htb_class3=rate 8bit ceil 10mbit
htb_class4=rate 8bit ceil 10mbit
htb_class5=rate 8bit ceil 10mbit
htb_class6=rate 100mbit static
```

```
htb_class7=rate 8bit ceil 10mbit
```

Example 3: assigning policing for multisubscribers

Let us assign the plan from the previous example to a subscriber with several IPs.

Check that database support is enabled in dpi **/etc/dpi/fastdpi.conf:**

```
udr=1
```

If it is not enabled: we enable it and restart DPI: service fastdpi restart

Reserve for corporative subscriber all his IPs:

```
fdpi_ctrl load --bind_multi --user
OOO_PizzaJohnes:192.168.0.1-192.168.0.5,192.168.1.10-192.168.1.25
```

The subscriber's IP list can be modified dynamically (i.e. add new IPs and delete it).

Assign the bandwidth limits according to the plan:

```
fdpi_ctrl load --policing rateplan_1.cfg --login PizzaJohnes_LLC
```

For advanced users: We advise to learn how to control outbound traffic via feedback loop.

Setting the schedule for tariff plans: video tutorial