ACOnet Arbor Peakflow/TMS experience

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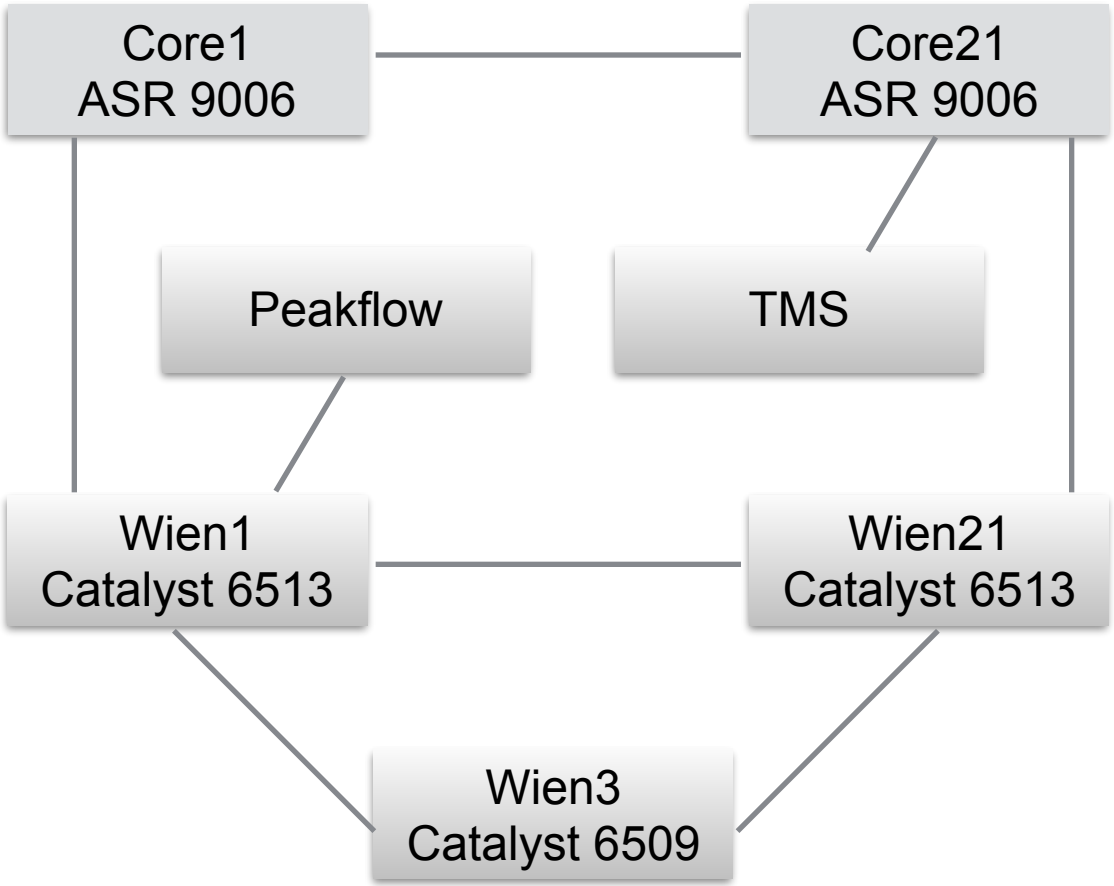
November 10th, 2015

Ein Service der universität wien

Arbor Setup

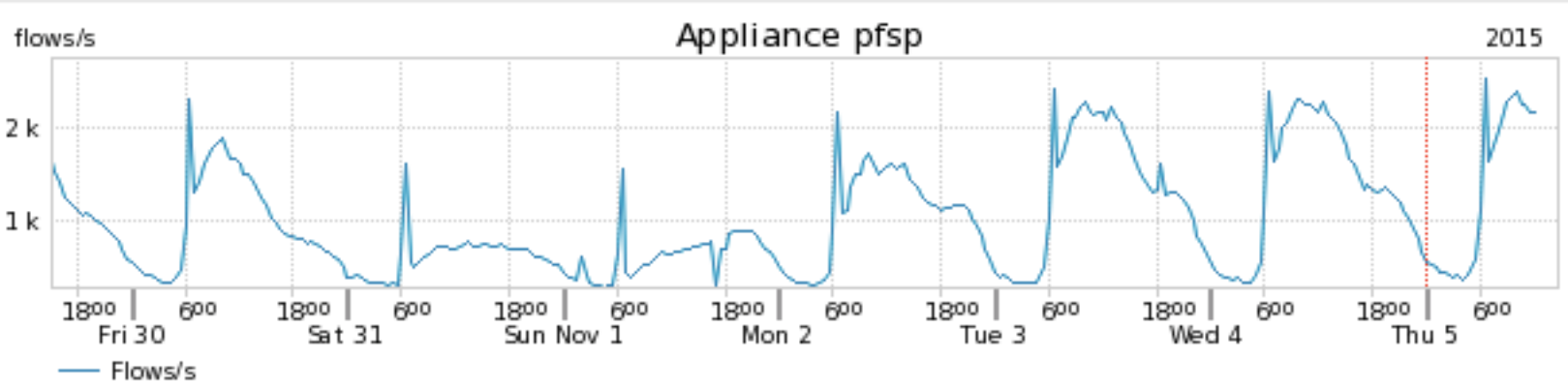

Core1
ASR 9006
Core21
ASR 9006
Peakflow
TMS
Wien1
Catalyst 6513
Wien21
Catalyst 6513
Wien3
Catalyst 6509

Key Values

Deployment Status

	Current	Capacity	% Total
Managed Objects	418	1000	41.8%
Interfaces	389	20000	1.9%
Data Storage	103	285.9 GB	35.9%
Routers	3	5	60.0%
Current Users	1	10	10.0%
Total Routes	0.6	2 M	32.0%
TMS Bandwidth	0.00	10.0 Gbps	0.0%
Mitigations	0	50	0.0%

Key Values


flows/s
Appliance pfsp
2015
2 k
1 k
18:00
6:00
Fri 30
Sat 31
Sun Nov 1
Mon 2
Tue 3
Wed 4
Thu 5
Flows/s

Configuration

- ACOnet Participant Database
  - IP address assignments
  - Ports
  - Arbor Peakflow Attributes
- Perlscripts
  - config-export
  - config-build
  - pfsp-peer

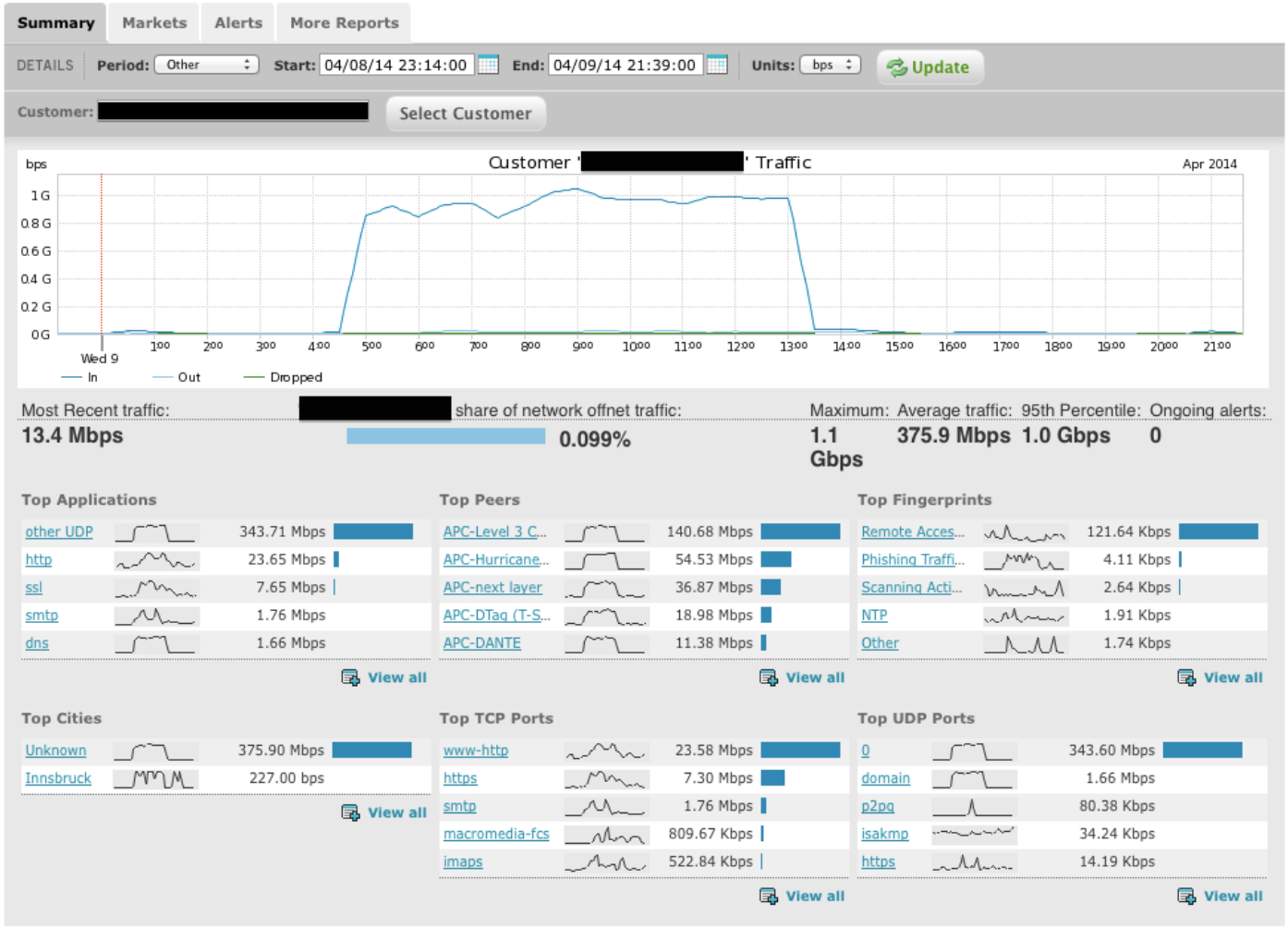
Configuration

- Netflow v9
  - Sampling Rate 1 of 512
  - export via separate Vlan
- Cisco ASR 9006
  - standard record ipv4 & ipv6
- Cisco Catalyst 6500
  - own build flow records

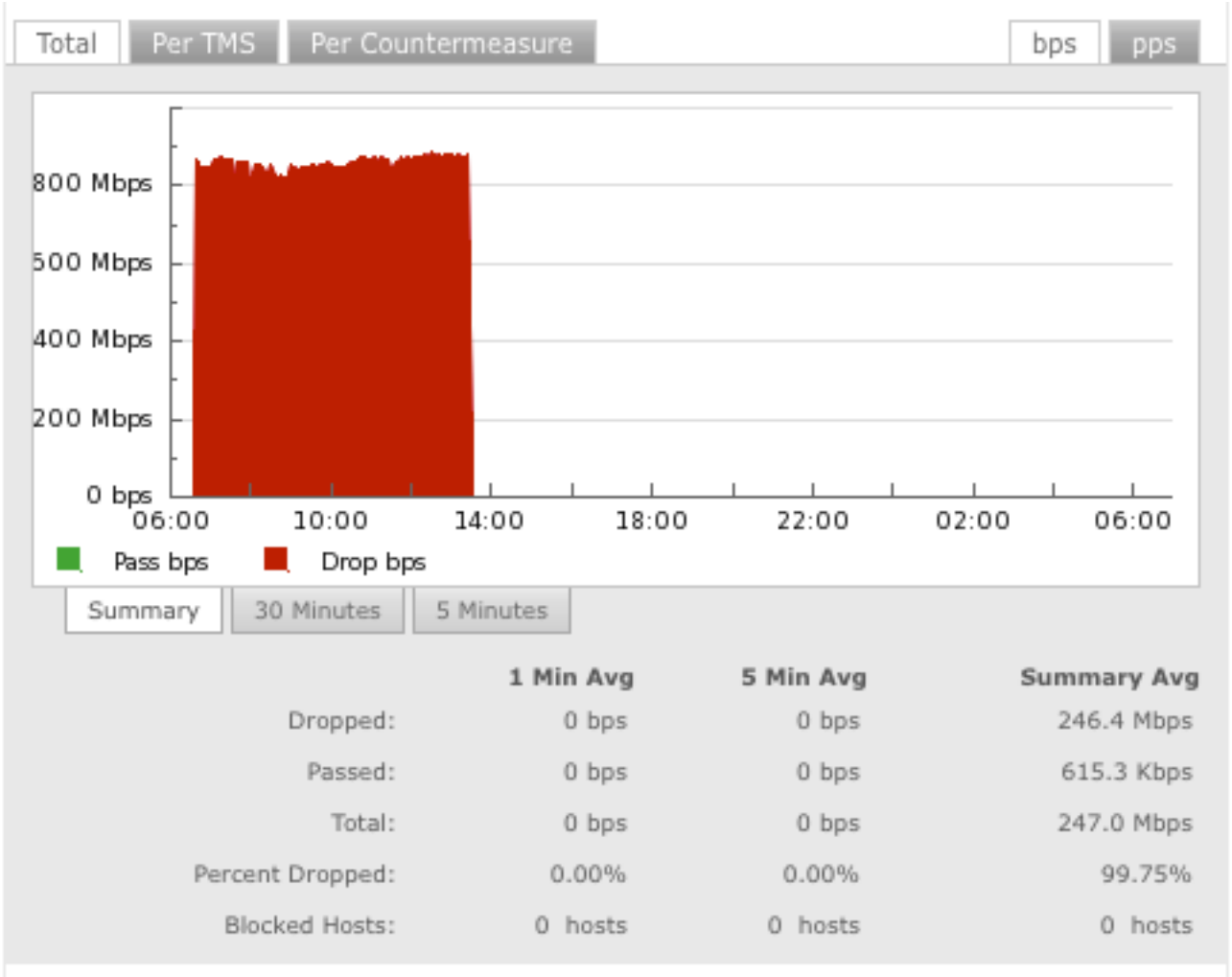
Configuration

- Mitigation is started manually for every case
  - NO AUTOMATIC MITIGATION!
  - automatic detection via Arbor profile
  - manually inserted Prefix connected to a profile
- Mitigation is started via more-specific announcement via BGP
- Divided participants address space in Managed Objects

Use-Case 1: automatic detection

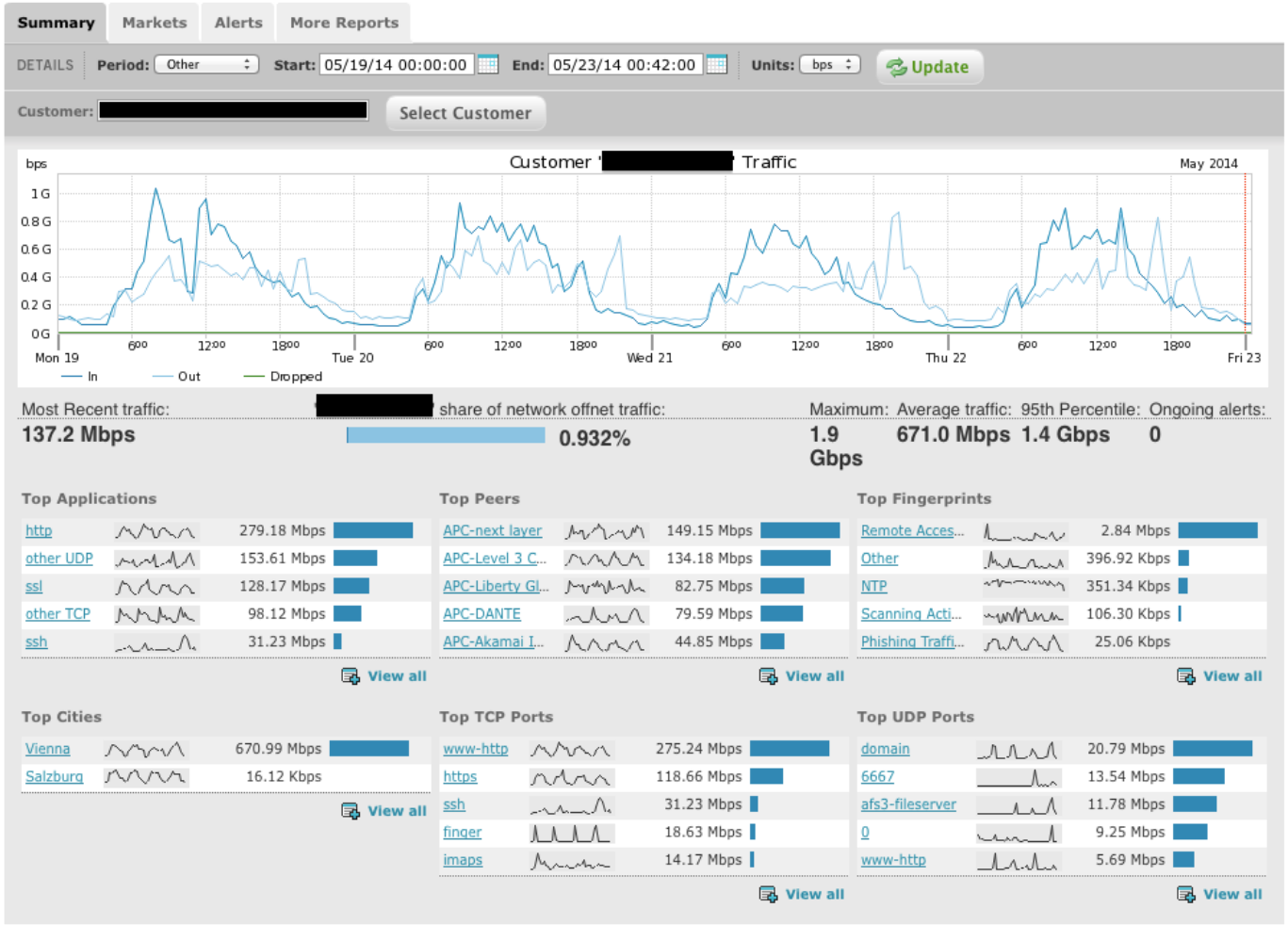


Use-Case 1: automatic detection

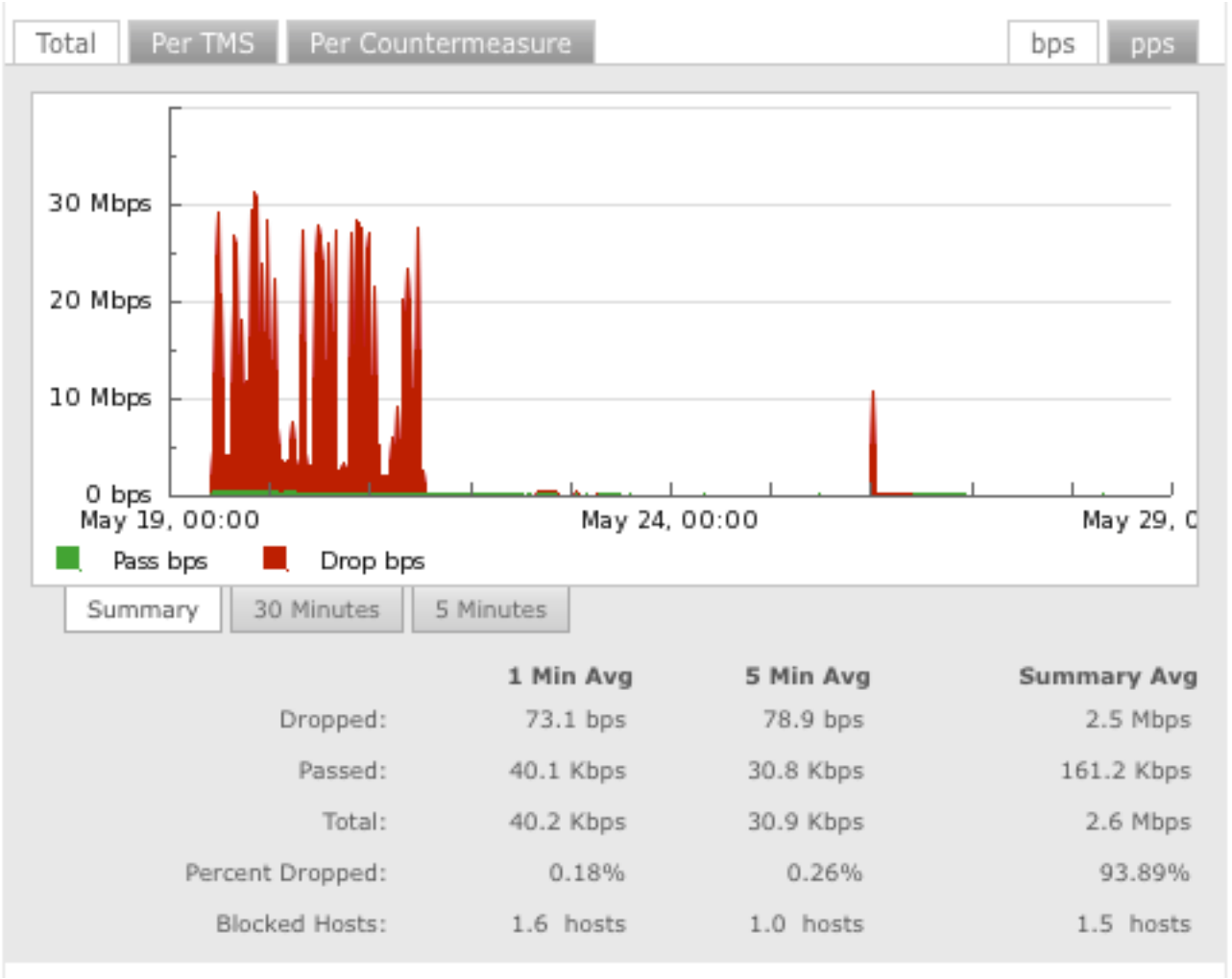


	1 Min Avg	5 Min Avg	Summary Avg
Dropped:	0 bps	0 bps	246.4 Mbps
Passed:	0 bps	0 bps	615.3 Kbps
Total:	0 bps	0 bps	247.0 Mbps
Percent Dropped:	0.00%	0.00%	99.75%
Blocked Hosts:	0 hosts	0 hosts	0 hosts

Use-Case 2: manual detection and mitigation entry

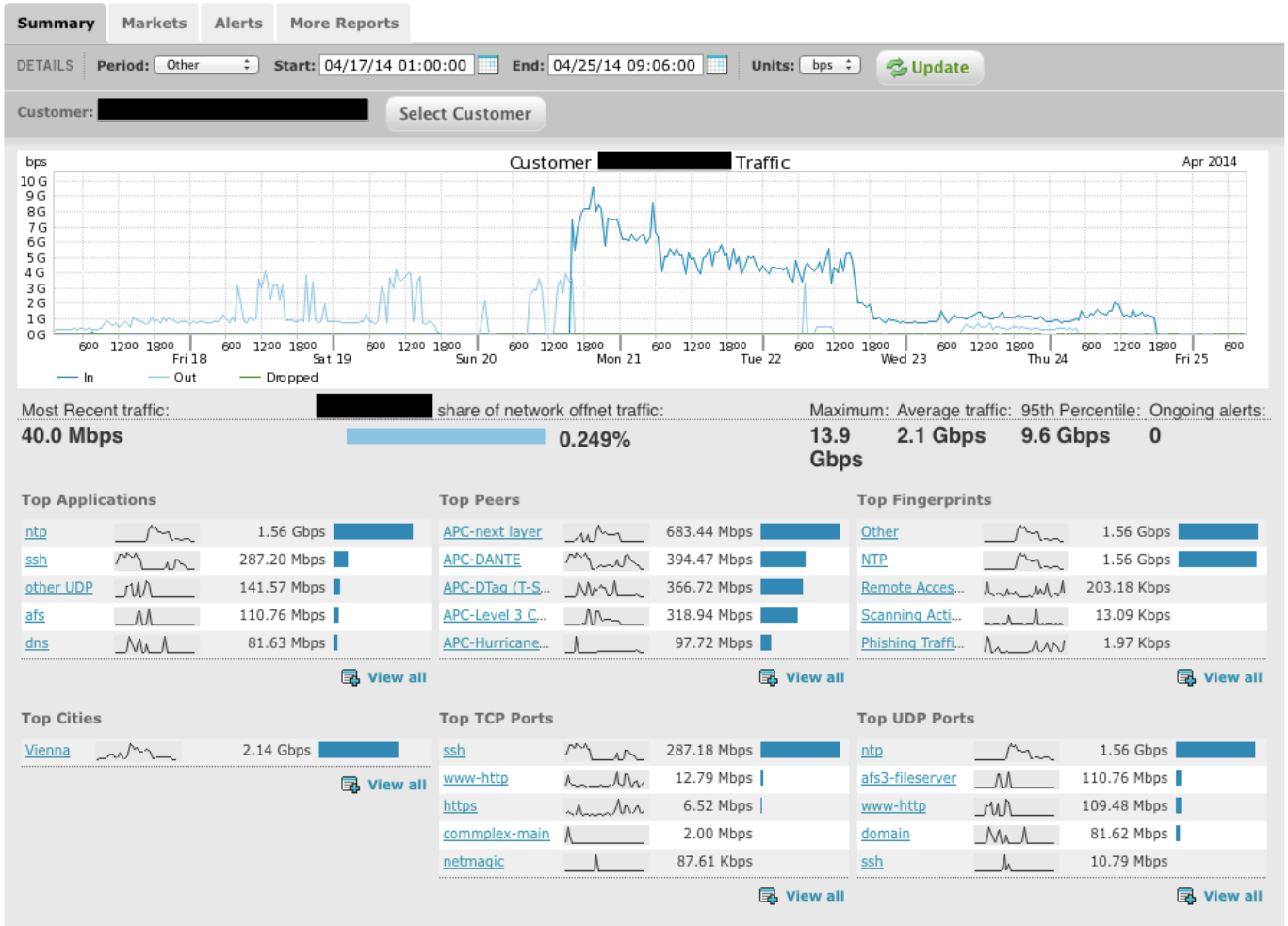


Use-Case 2: manual detection and mitigation entry

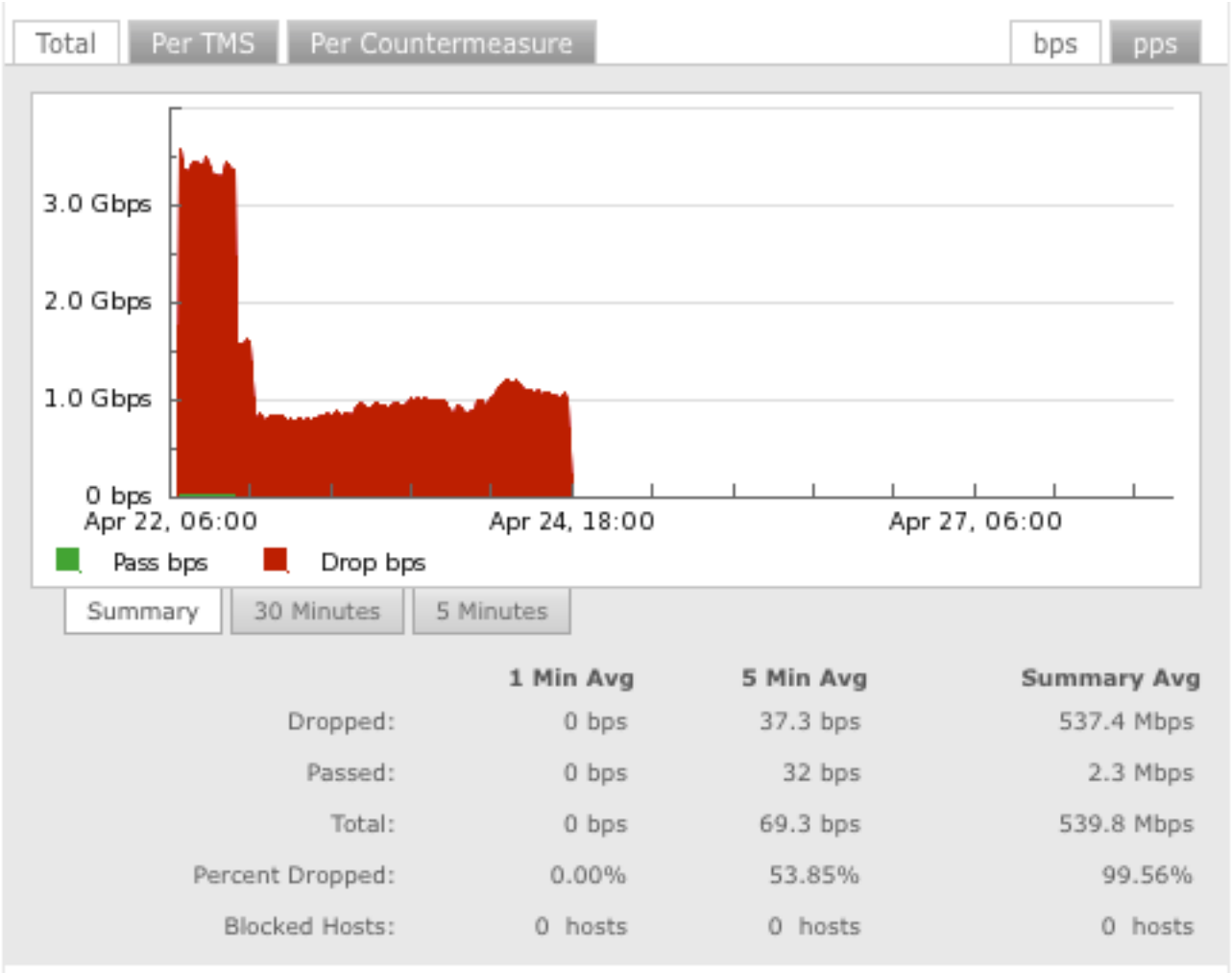


	1 Min Avg	5 Min Avg	Summary Avg
Dropped:	73.1 bps	78.9 bps	2.5 Mbps
Passed:	40.1 Kbps	30.8 Kbps	161.2 Kbps
Total:	40.2 Kbps	30.9 Kbps	2.6 Mbps
Percent Dropped:	0.18%	0.26%	93.89%
Blocked Hosts:	1.6 hosts	1.0 hosts	1.5 hosts

Use-case 3: no more chance …



Use-case 3: no more chance …



	1 Min Avg	5 Min Avg	Summary Avg
Dropped:	0 bps	37.3 bps	537.4 Mbps
Passed:	0 bps	32 bps	2.3 Mbps
Total:	0 bps	69.3 bps	539.8 Mbps
Percent Dropped:	0.00%	53.85%	99.56%
Blocked Hosts:	0 hosts	0 hosts	0 hosts

… except Blackholing

- seperate BGP-Sessions with our Upstream
  - Traffic from announced Prefix is dropped
  - automatic bird-config generation out of DB-entry
  - Problem: NAT
- Access List for the other external connections

aconet

Questions ?