DDoS attacks from IXPs. Customer perspective

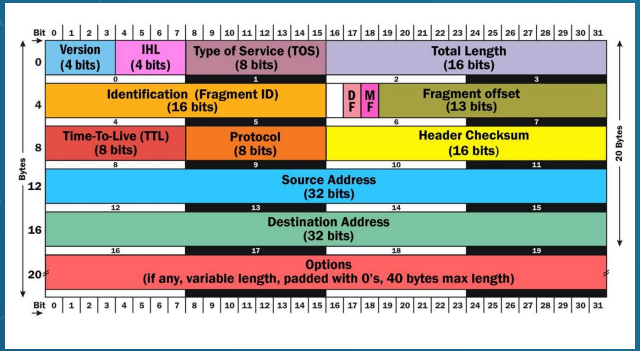
Hello

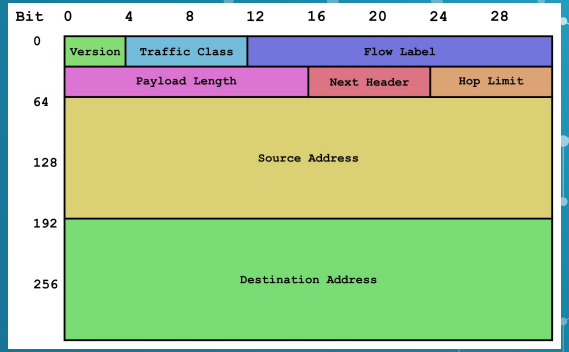
I'm Pavel Odintsov, the author of open source DDoS detection tool, FastNetMon Community: https://github.com/pavel-odintsov/fastnetmon

Ways to contact me:

- linkedin.com/in/podintsov
- github.com/pavel-odintsov
- twitter.com/odintsov_pavel
- IRC, Libera Chat, pavel_odintsov
- pavel@fastnetmon.com

What kind of DDoS? IPv4, IPv6: L3, L4





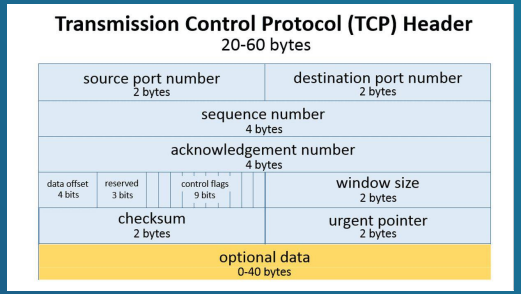
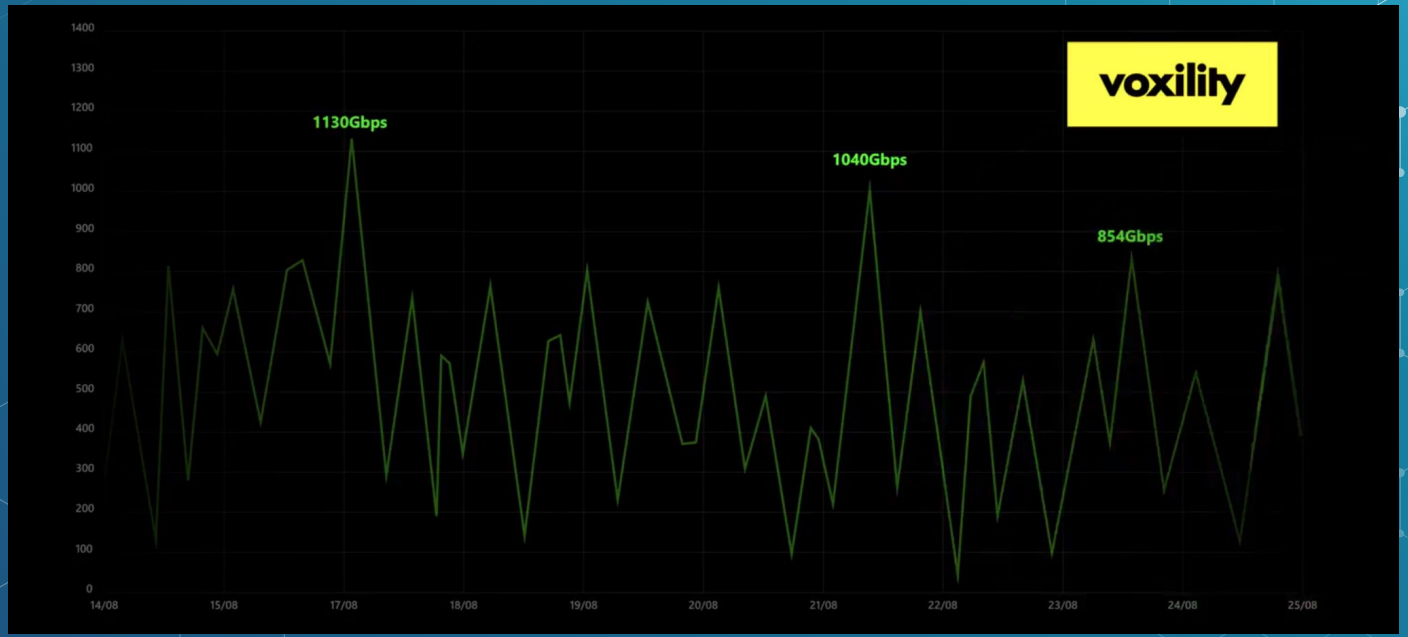


Image from https://thirdinternet.com/ip-packet-syntax/

What kind of DDoS? Attack names

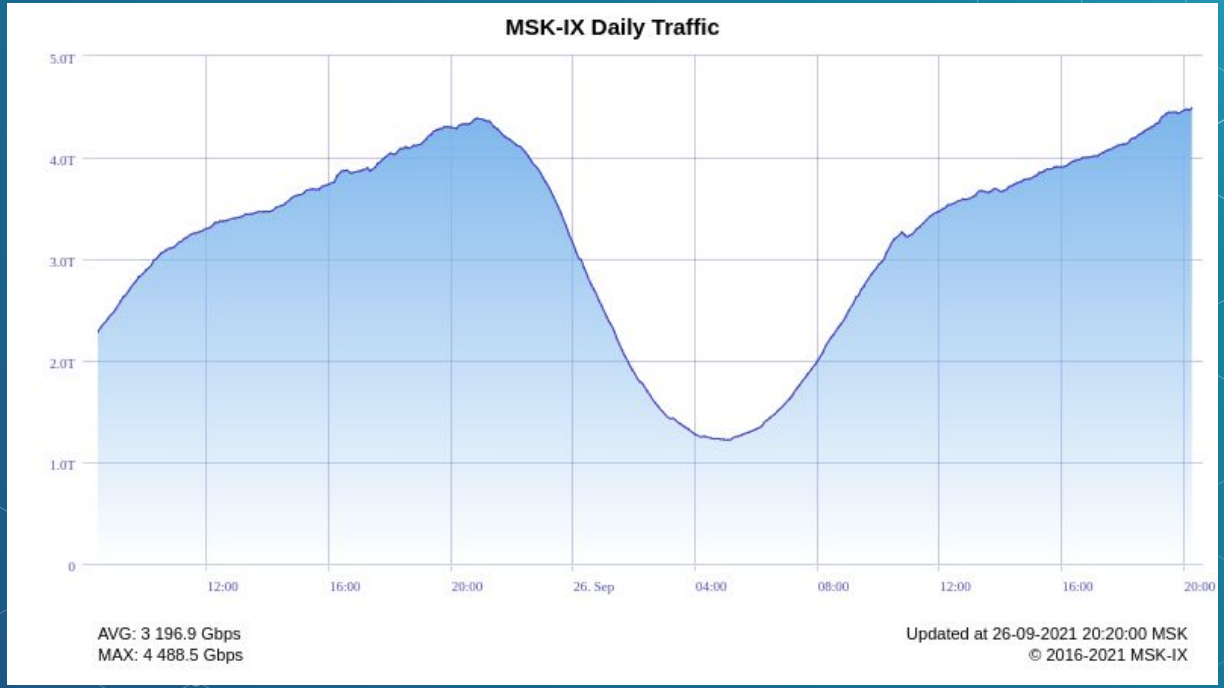
- TCP flag flood (i.e. SYN, ACK flood)
- UDP flood
- GRE flood
- UDP amplification (DNS, NTP, SSDP, SNMP)
- Fragmentation attack
- Spoofed source attacks

What is the DDoS weather this summer?



Data provided by Voxility.com

Can IXPs handle such large DDoS?



Data provided by MSK-IX

What about spare capacity at IXP?

Peering VLAN

Peering with MSK-IX participants directly or via Route Server

Private VLANs

Virtual circuits and private networks between MSK-IX PoPs

8 Tbps

Ethernet interconnection platform

Network redundancy built upon the **'Dual Core' topology**

Monitoring, security audits and customer support 24x7

- 1G, 10G, 100G Interfaces
- Etherchannel (LACP). Aggregating multiple physical interfaces in a single logical port.
- Trunk ports. Setting up multiple VLANs on one physical interface.
- Q-in-Q tunneling. Transparent forwarding of participants' own VLANs.

Data provided by MSK-IX

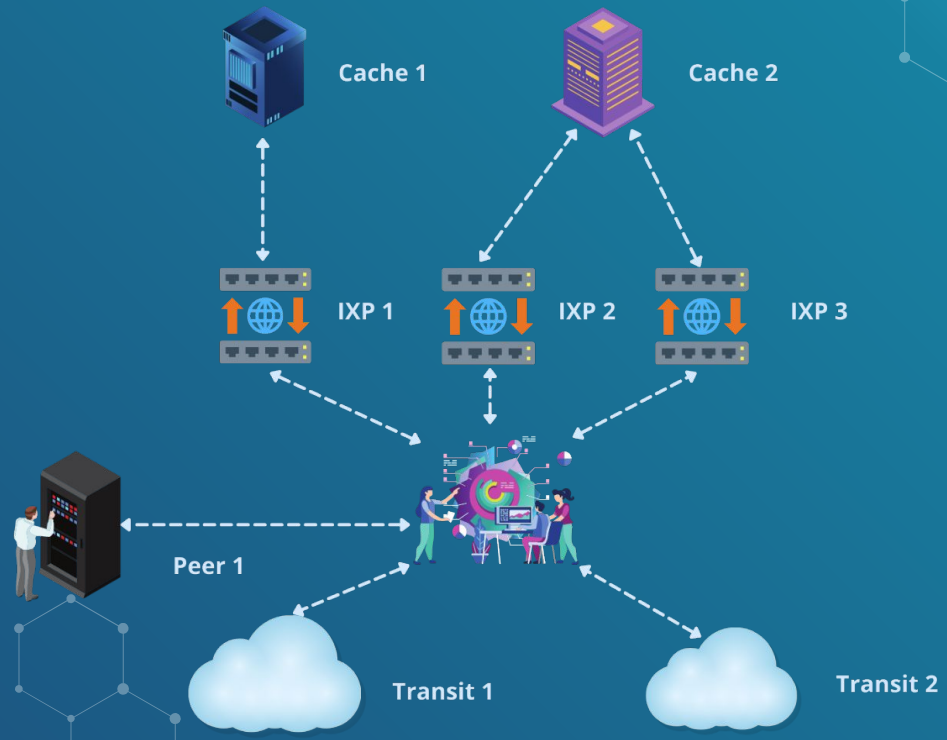
What about current capacity of MSK-IX?

- 152 Terabits
- 400G testing and waiting for customers
- Current 400G platform: 8*400G

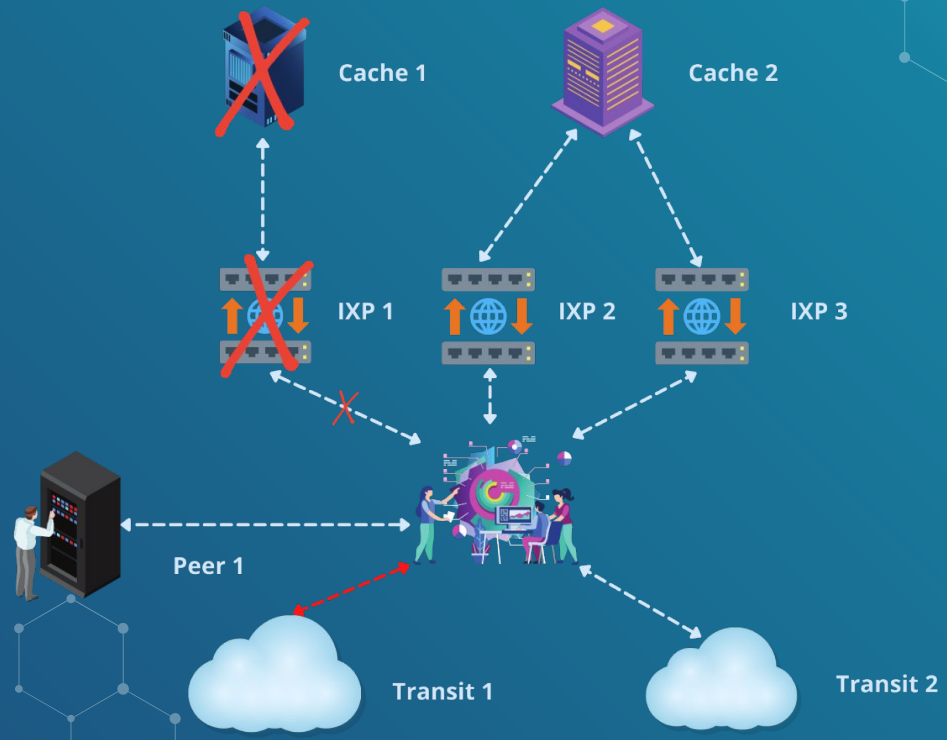
Data provided by MSK-IX

What is the problem?

What is the common ISP setup?



What can be done to stop an attack from IXP?



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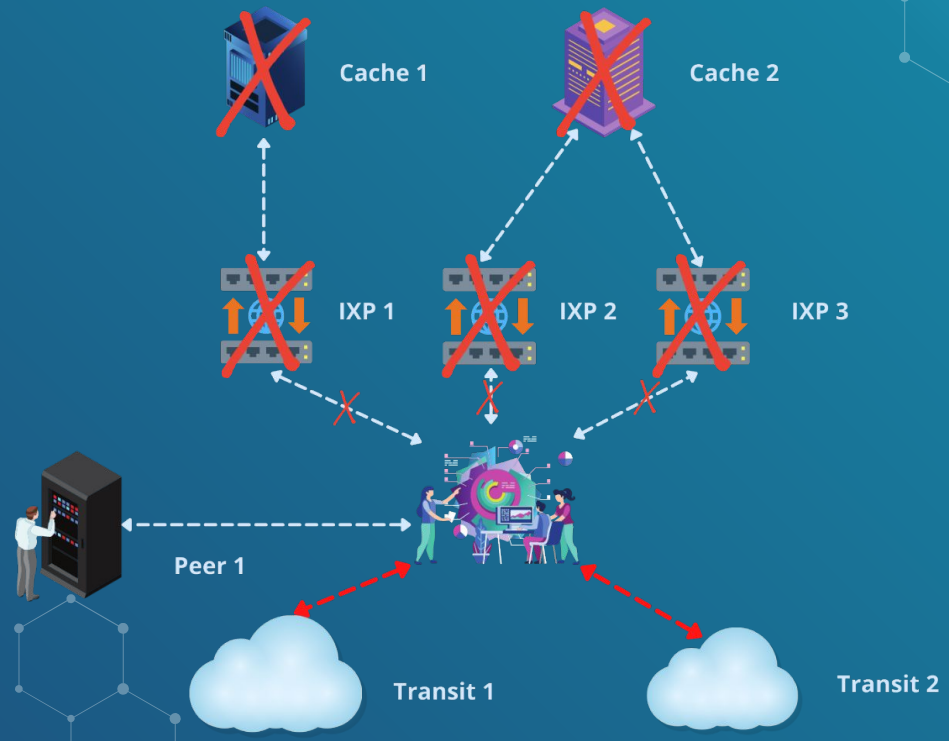
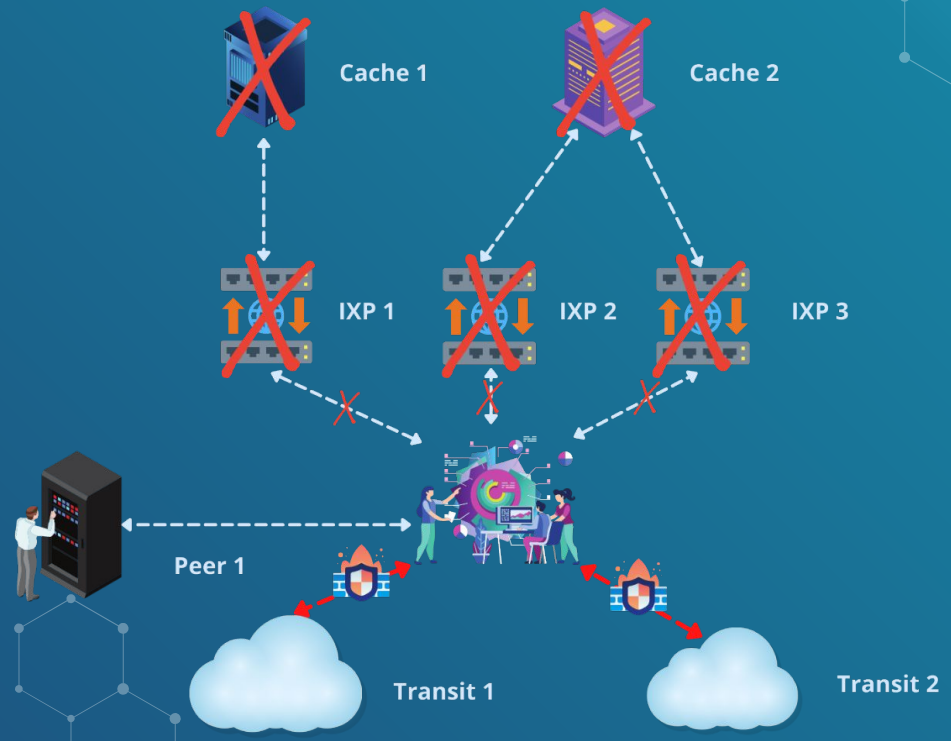
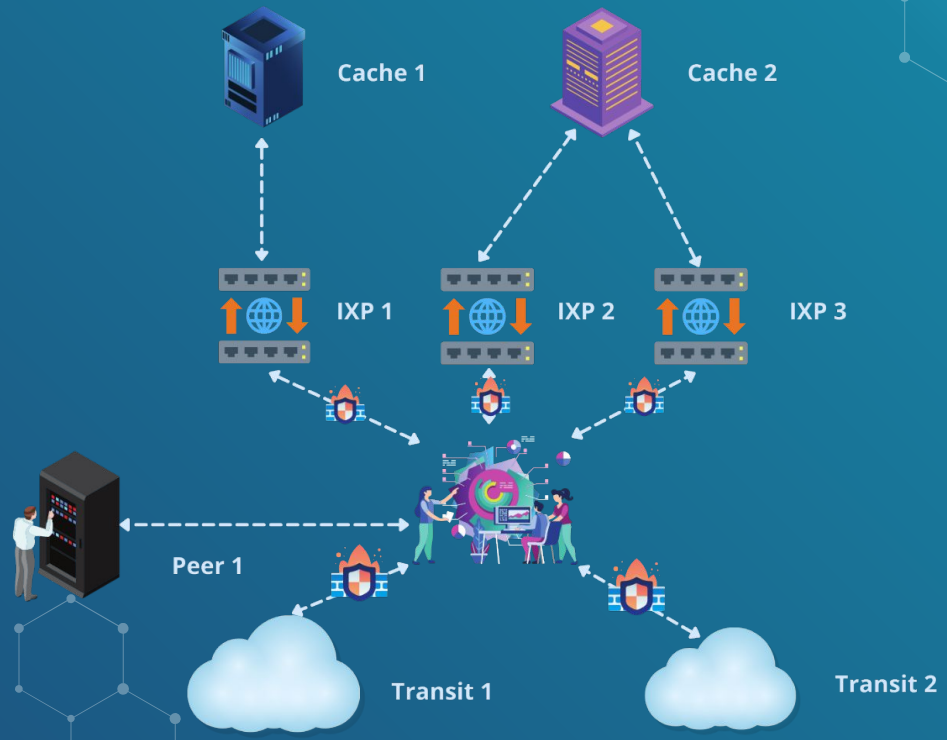


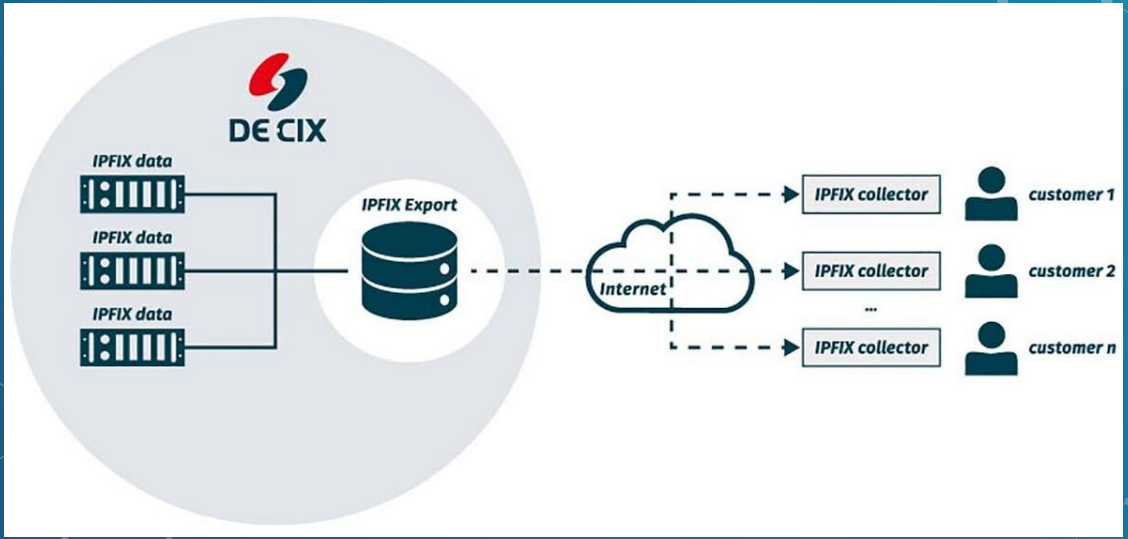
What is the most secure configuration now?



What is the best configuration?



Traffic telemetry: sharing is caring



FastNetMon Community: features

- Supports all types of volumetric attacks
- Does not require changes in your network
- Works on any Linux platform
- Complete automation
- Lightning fast detection: 5-30 seconds detection
- Great scalability (1T+ on single server)
- Software only solution
- BGP integration
- Support almost all possible traffic capture engines (sFlow, Netflow, IPFIX)

FastNetMon: attack actions

- BGP announces (ExaBGP, GoBGP)
- Slack notification
- Script call

FastNetMon Community Installation

- wget https://install.fastnetmon.com/installer -Oinstaller
- sudo chmod +x installer
- sudo ./installer -install_community_edition

FastNetMon: detection logic

Detection type:

- Threshold based (based on host's average traffic)

Threshold types:

- Using total traffic
- Using total pps rate
- Per protocol

FastNetMon: attack reports

IP: 10.10.10.221Attack type: syn_flood
Initial attack power: 546475 packets per second
Peak attack power: 546475 packets per second
Attack direction: incoming
Attack protocol: tcp
Total incoming traffic: 245 mbps
Total outgoing traffic: 0 mbps
Total incoming pps: 99059 packets per second
Total outgoing pps: 0 packets per second
Total incoming flows: 98926 flows per second
Total outgoing flows: 0 flows per second
Average incoming traffic: 45 mbps
Average outgoing traffic: 0 mbps
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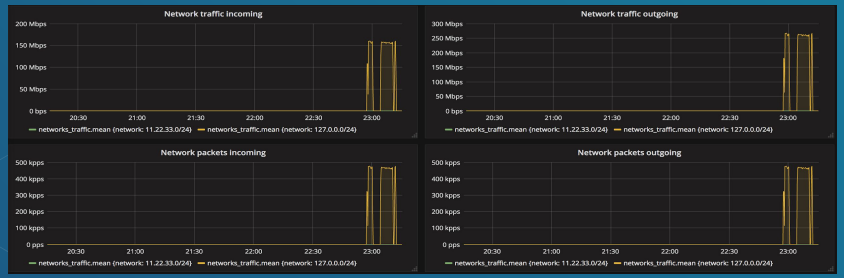
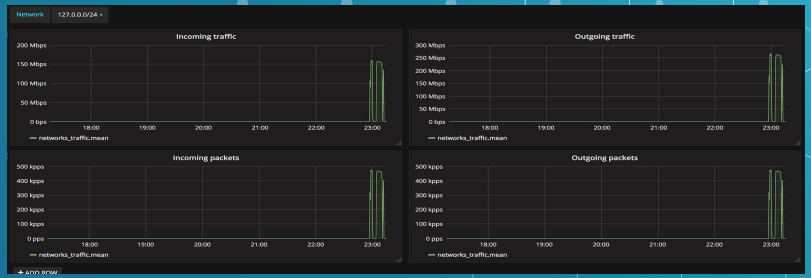
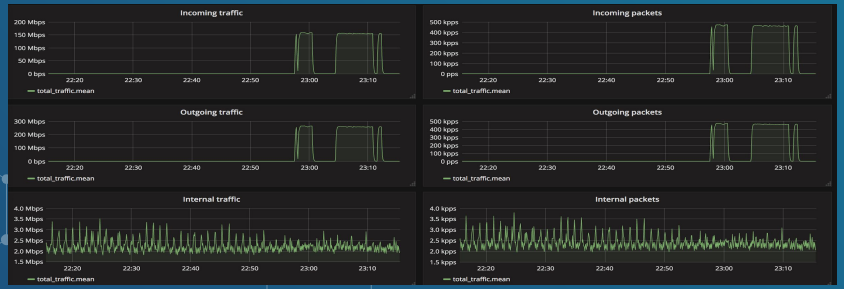
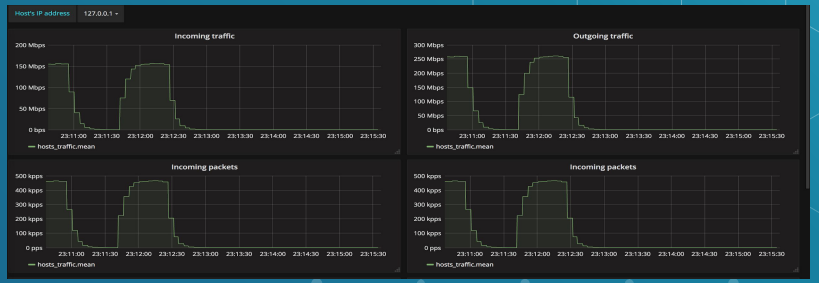
FastNetMon: traffic reports in Grafana









FastNetMon: our community

- Site: https://fastnetmon.com/guides/
- GitHub: https://github.com/pavel-odintsov/fastnetmon
- IRC: #fastnetmon at Libra Chat
- Telegram: https://t.me/fastnetmon
- Slack: http://bit.ly/2o5Idx8
- LinkedIN: https://www.linkedin.com/company/fastnetmon/
- Facebook: https://www.facebook.com/fastnetmon/
- WhatsApp: https://chat.whatsapp.com/JjwF855pwZvIIasTUsZ7EO

THANKS!

ANY QUESTIONS?

You can find me at:

- @odintsov_pavel
- pavel@fastnetmon.com
- linkedin.com/in/podintsov