GRENA

GEORGIAN RESEARCH AND EDUCATIONAL NETWORKING ASSOCIATION

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GRENA Background

The main activities of the Georgian Research and Educational Networking Association GRENA:

- Providing IT services to Georgian universities and research institutions
- IT education
- Preparation and implementation of international and local research and technology projects

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GRENA Main Services

- Internet connectivity (Level 3, Cogent, Caucasus Online backup) - 44 organizations, number of users approx. 79000
- European research and education GÉANT connectivity
- eduroam education roaming
- eduGAIN authentication and authorization
- Hosting and Cloud Services (104 organizations)
- Computer Emergency Response Team – CERT-GE
- Education – Trainings (Network, Systems, Database, Programming,)
- ge. and .ეს country top-level domain registration

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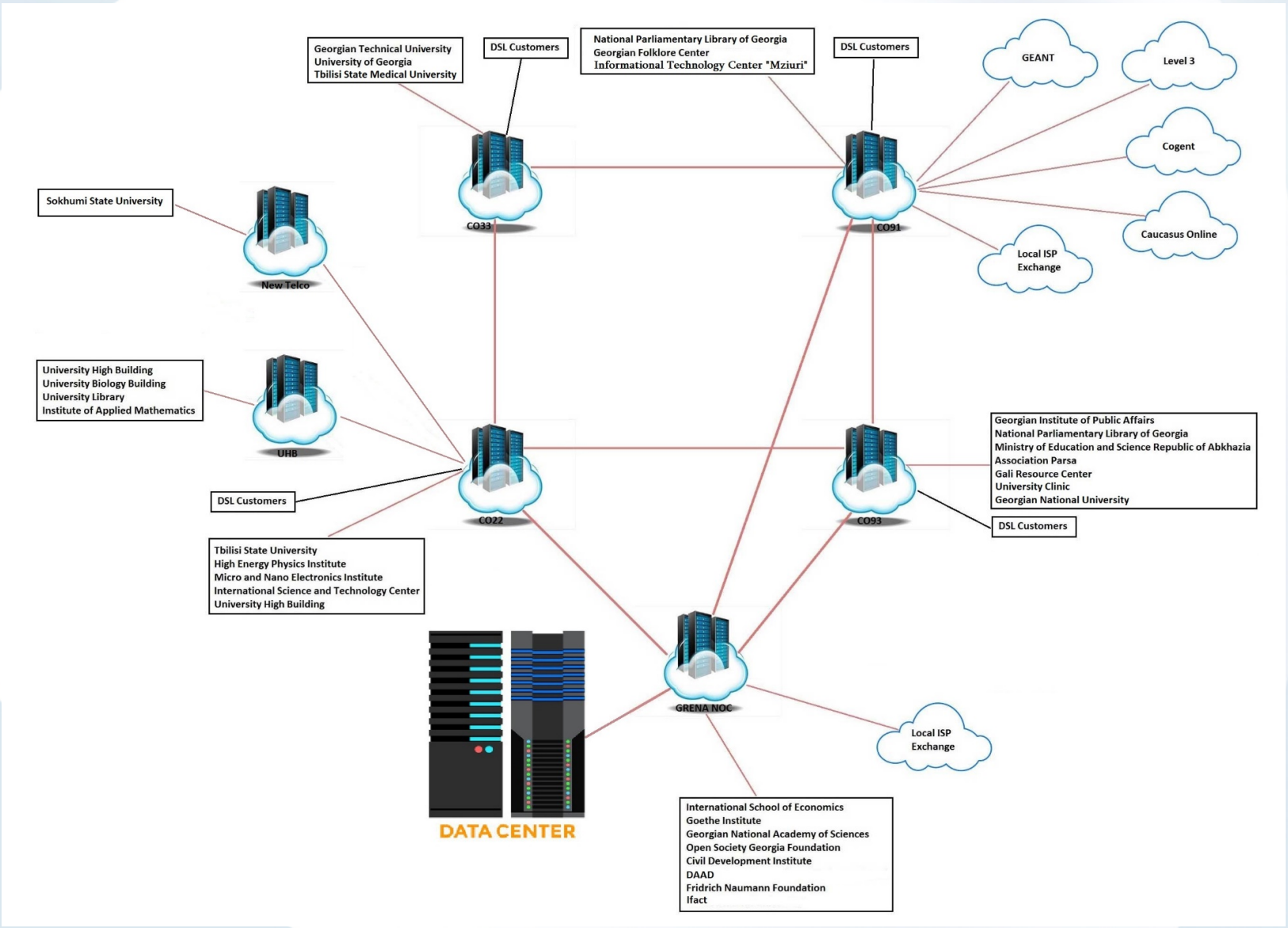
GRENA Network Topology in Tbilisi



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Network Monitoring Systems Used in GRENA

- Scrutinizer
- PerfSonar
- Check MK Open Monitoring Distribution
- Cacti
- Suricata IDS

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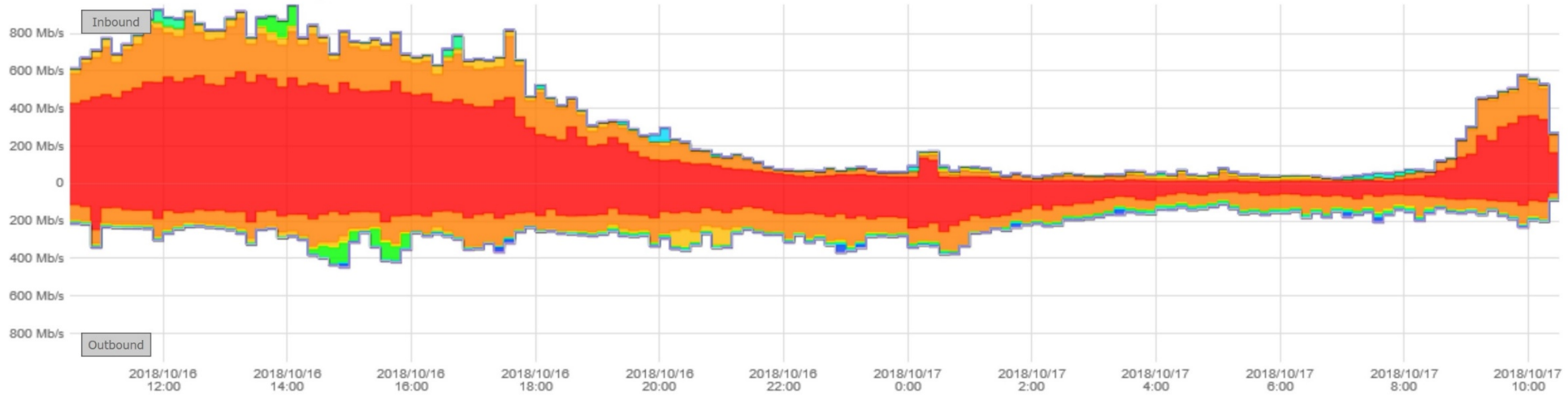
Scrutinizer

10m Resolution - 5m Data Source - Summary



Inbound Results

	Application	Packets	Traffic %	Bits
1	HTTPS (443 - TCP)	22.860 kp/s	57.96 %	211.002 Mb/s
2	HTTP (80 - TCP)	11.238 kp/s	29.38 %	106.973 Mb/s
3	HTTPS (443 - UDP)	1.753 kp/s	4.57 %	16.621 Mb/s
4	mysql (3306 - TCP)	290.622 p/s	0.96 %	3.482 Mb/s
5	radsec (2083 - TCP)	196.252 p/s	0.65 %	2.355 Mb/s
6	undefined (8333 TCP)	154.646 p/s	0.51 %	1.842 Mb/s
7	rsync (873 - TCP)	142.729 p/s	0.47 %	1.704 Mb/s
8	netplay-port2 (3641 - UD...	77.881 p/s	0.23 %	842.950 kb/s
9	domain (dns) (53 - UDP)	452.402 p/s	0.22 %	815.656 kb/s
10	SSH (22 - TCP)	59.419 p/s	0.17 %	625.254 kb/s

Outbound Results

	Application	Packets	Traffic %	Bits
1	HTTPS (443 - TCP)	22.012 kp/s	49.89 %	133.922 Mb/s
2	HTTP (80 - TCP)	10.744 kp/s	32.00 %	85.905 Mb/s
3	HTTPS (443 - UDP)	921.512 p/s	2.54 %	6.824 Mb/s
4	undefined (0 UDP)	616.956 p/s	2.24 %	6.015 Mb/s
5	eli (2087 - TCP)	392.081 p/s	1.75 %	4.698 Mb/s
6	undefined (26629 UDP)	374.143 p/s	1.66 %	4.469 Mb/s
7	domain (dns) (53 - UDP)	400.365 p/s	0.97 %	2.609 Mb/s
8	LDAP (389 - UDP)	198.664 p/s	0.89 %	2.384 Mb/s
9	targus-getdata1 (5201 - ...	127.629 p/s	0.56 %	1.494 Mb/s
10	BitTorrent (6881 - UDP)	137.866 p/s	0.24 %	640.248 kb/s

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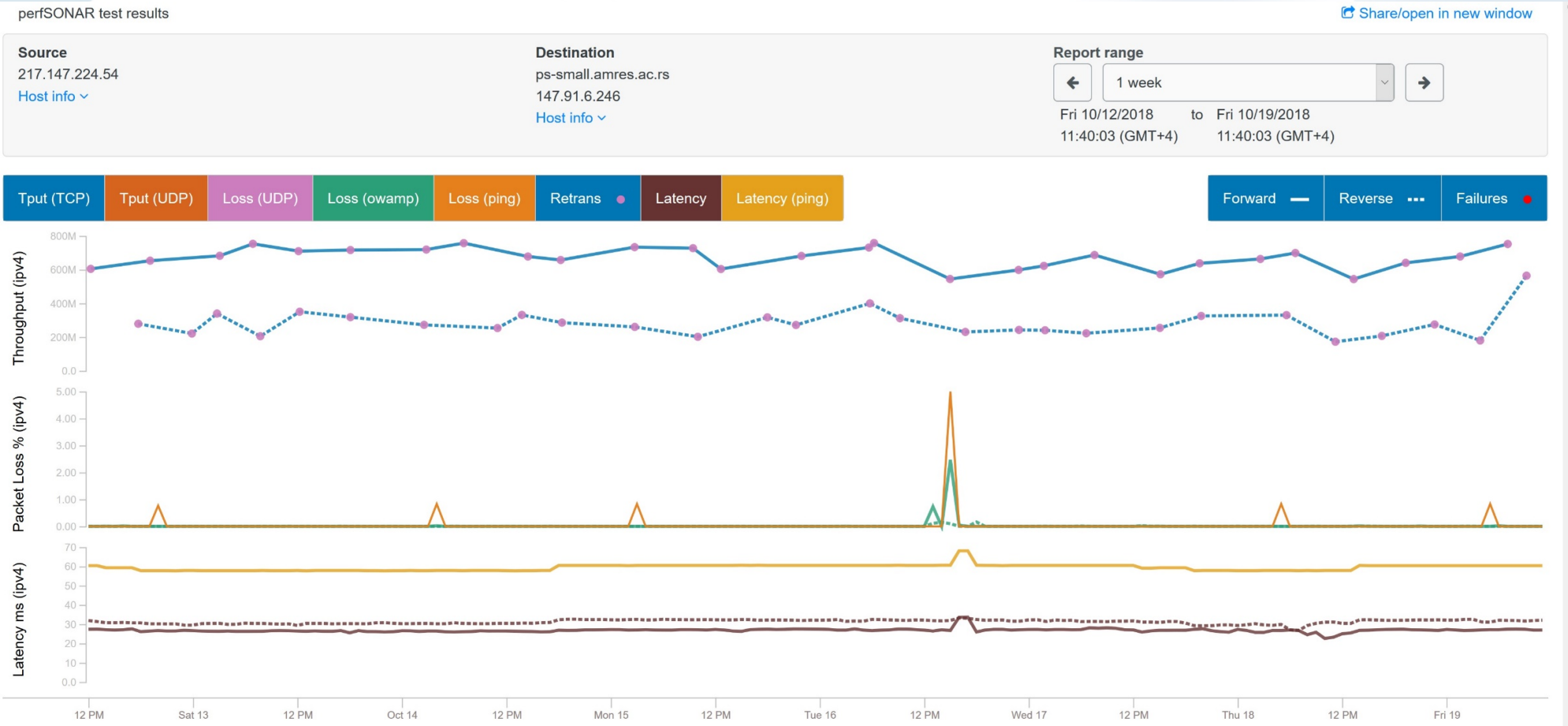
PerfSonar



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Check MK Open Monitoring Distribution

state	Host	Icons	OK	Wa	Un	Cr	Pd
UP	backbone-switch		27	0	0	0	0
UP	co22-router3		36	0	0	0	0
UP	co33-switch1		48	0	0	0	0
UP	co91-switch1		34	0	0	0	0
UP	co93-switch1		31	0	0	0	0
UP	GRENA1_UPS		15	0	0	0	0
UP	GRENA_GENERATOR		43	0	0	0	0
UP	juniper_ex-4600_switch		50	0	0	0	0
UP	nplg-split		14	0	0	0	0
UP	switch1-new		24	0	0	0	0
UP	switch-stack		138	0	0	0	0

state	Host	Icons	OK	Wa	Un	Cr	Pd
UP	Backbone-Switch-Juniper		31	0	0	0	0
UP	co22-switch1		39	0	0	0	0
UP	co91-border-Juniper		68	0	0	0	0
UP	CO91_UPS		11	0	0	0	0
UP	dlf-split		15	0	0	0	0
UP	grena-asa		29	0	0	0	0
UP	hepi-router1		14	0	0	0	0
UP	new-telco-sw		20	0	0	0	0
UP	qfx-5100		26	0	0	0	0
UP	switch9-new		24	0	0	0	0
UP	tempsensor.grena.ge		5	0	0	0	0

state	Host	Icons	OK	Wa	Un	Cr	Pd
UP	co22-dslam1		1	0	0	0	0
UP	co33-dslam1		1	0	0	0	0
UP	co91-dslam1		1	0	0	0	0
UP	co93-dslam1		1	0	0	0	0
UP	GIPA-Router		26	0	0	0	0
UP	grena-router1		33	0	0	0	0
UP	istc-split		12	0	0	0	0
UP	nplg-saburtalo		1	0	0	0	0
UP	Server-room-power-sensor		1	0	0	0	0
UP	switch11-new		29	0	0	0	0
UP	tsmu_router_noc		25	0	0	0	0

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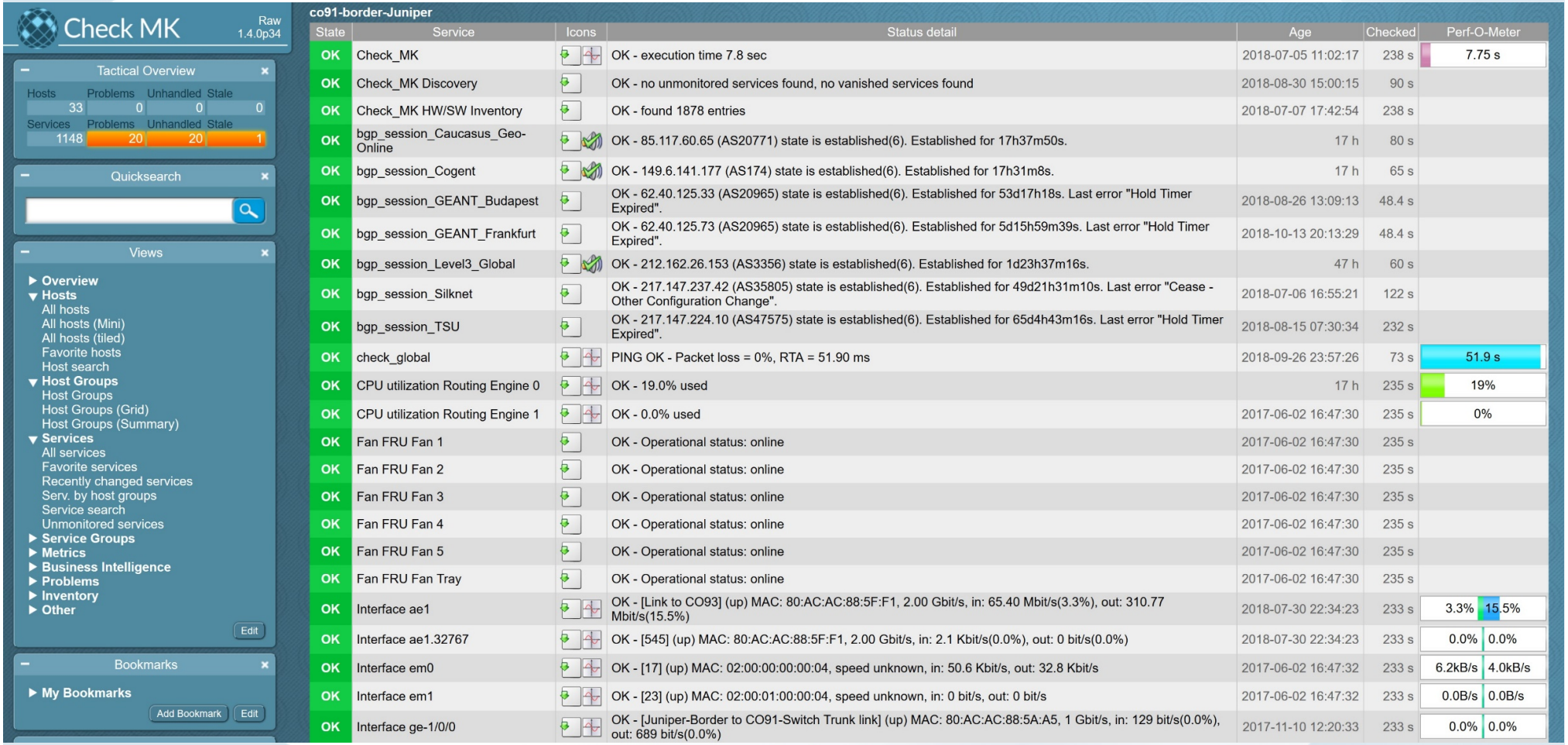
Check MK Open Monitoring Distribution



State	Service	Icons	Status detail	Age	Checked	Perf-O-Meter
OK	Check_MK		OK - execution time 7.8 sec	2018-07-05 11:02:17	238 s	7.75 s
OK	Check_MK Discovery		OK - no unmonitored services found, no vanished services found	2018-08-30 15:00:15	90 s	
OK	Check_MK HW/SW Inventory		OK - found 1878 entries	2018-07-07 17:42:54	238 s	
OK	bgp_session_Caucasus_Geo-Online		OK - 85.117.60.65 (AS20771) state is established(6). Established for 17h37m50s.	17 h	80 s	
OK	bgp_session_Cogent		OK - 149.6.141.177 (AS174) state is established(6). Established for 17h31m8s.	17 h	65 s	
OK	bgp_session_GEANT_Budapest		OK - 62.40.125.33 (AS20965) state is established(6). Established for 53d17h18s. Last error "Hold Timer Expired".	2018-08-26 13:09:13	48.4 s	
OK	bgp_session_GEANT_Frankfurt		OK - 62.40.125.73 (AS20965) state is established(6). Established for 5d15h59m39s. Last error "Hold Timer Expired".	2018-10-13 20:13:29	48.4 s	
OK	bgp_session_Level3_Global		OK - 212.162.26.153 (AS3356) state is established(6). Established for 1d23h37m16s.	47 h	60 s	
OK	bgp_session_Silknet		OK - 217.147.237.42 (AS35805) state is established(6). Established for 49d21h31m10s. Last error "Cease - Other Configuration Change".	2018-07-06 16:55:21	122 s	
OK	bgp_session_TSU		OK - 217.147.224.10 (AS47575) state is established(6). Established for 65d4h43m16s. Last error "Hold Timer Expired".	2018-08-15 07:30:34	232 s	
OK	check_global		PING OK - Packet loss = 0%, RTA = 51.90 ms	2018-09-26 23:57:26	73 s	51.9 s
OK	CPU utilization Routing Engine 0		OK - 19.0% used	17 h	235 s	19%
OK	CPU utilization Routing Engine 1		OK - 0.0% used	2017-06-02 16:47:30	235 s	0%
OK	Fan FRU Fan 1		OK - Operational status: online	2017-06-02 16:47:30	235 s	
OK	Fan FRU Fan 2		OK - Operational status: online	2017-06-02 16:47:30	235 s	
OK	Fan FRU Fan 3		OK - Operational status: online	2017-06-02 16:47:30	235 s	
OK	Fan FRU Fan 4		OK - Operational status: online	2017-06-02 16:47:30	235 s	
OK	Fan FRU Fan 5		OK - Operational status: online	2017-06-02 16:47:30	235 s	
OK	Fan FRU Fan Tray		OK - Operational status: online	2017-06-02 16:47:30	235 s	
OK	Interface ae1		OK - [Link to CO93] (up) MAC: 80:AC:AC:88:5F:F1, 2.00 Gbit/s, in: 65.40 Mbit/s(3.3%), out: 310.77 Mbit/s(15.5%)	2018-07-30 22:34:23	233 s	3.3% 15.5%
OK	Interface ae1.32767		OK - [545] (up) MAC: 80:AC:AC:88:5F:F1, 2.00 Gbit/s, in: 2.1 Kbit/s(0.0%), out: 0 bit/s(0.0%)	2018-07-30 22:34:23	233 s	0.0% 0.0%
OK	Interface em0		OK - [17] (up) MAC: 02:00:00:00:00:04, speed unknown, in: 50.6 Kbit/s, out: 32.8 Kbit/s	2017-06-02 16:47:32	233 s	6.2kB/s 4.0kB/s
OK	Interface em1		OK - [23] (up) MAC: 02:00:01:00:00:04, speed unknown, in: 0 bit/s, out: 0 bit/s	2017-06-02 16:47:32	233 s	0.0B/s 0.0B/s
OK	Interface ge-1/0/0		OK - [Juniper-Border to CO91-Switch Trunk link] (up) MAC: 80:AC:AC:88:5A:A5, 1 Gbit/s, in: 129 bit/s(0.0%), out: 689 bit/s(0.0%)	2017-11-10 12:20:33	233 s	0.0% 0.0%

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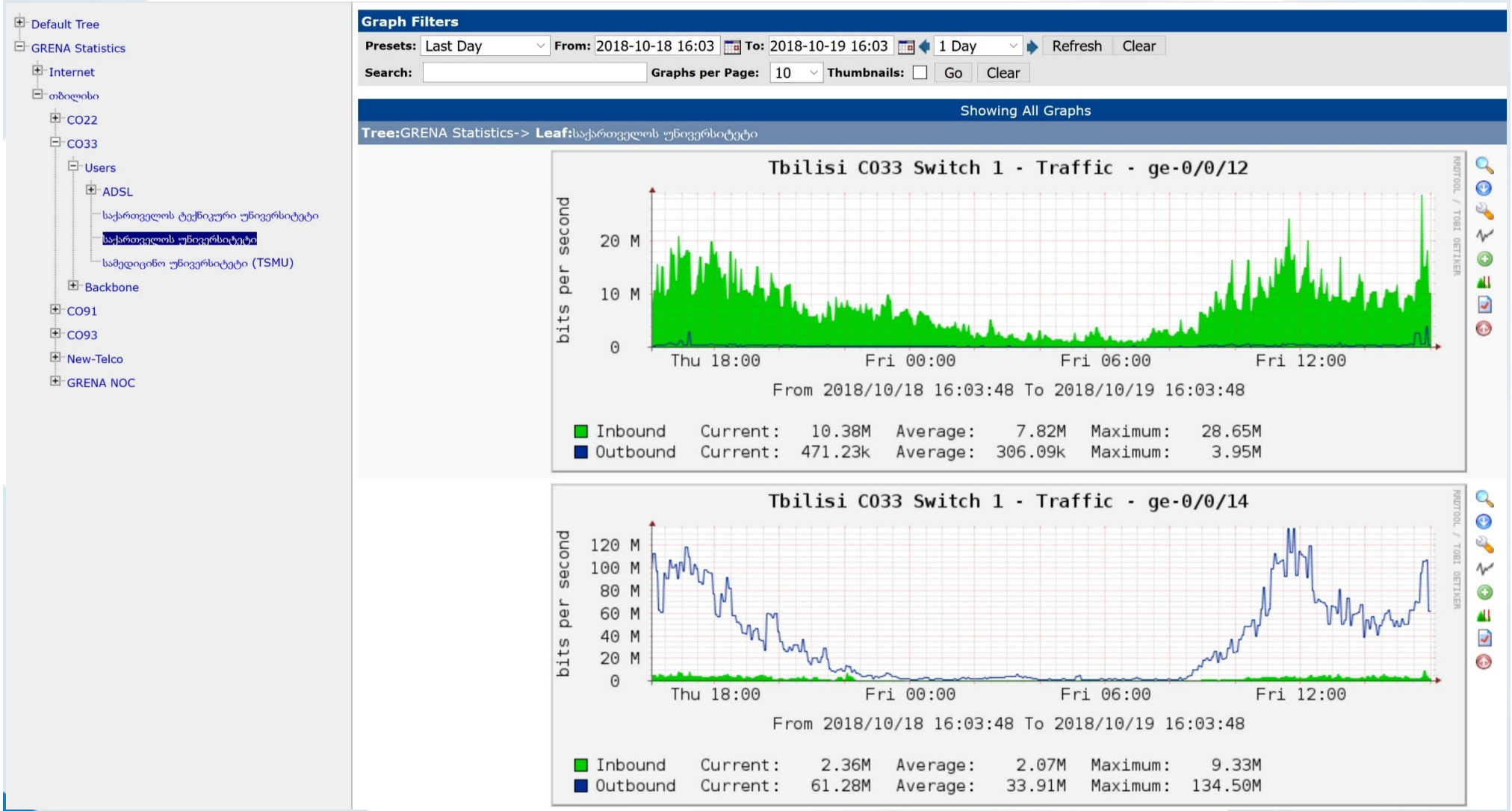

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Thank you for your kind attention!

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