infobip

reRouter

Homemade SDN - BGP, Python, PRTG, recipe for network admins peaceful sleep

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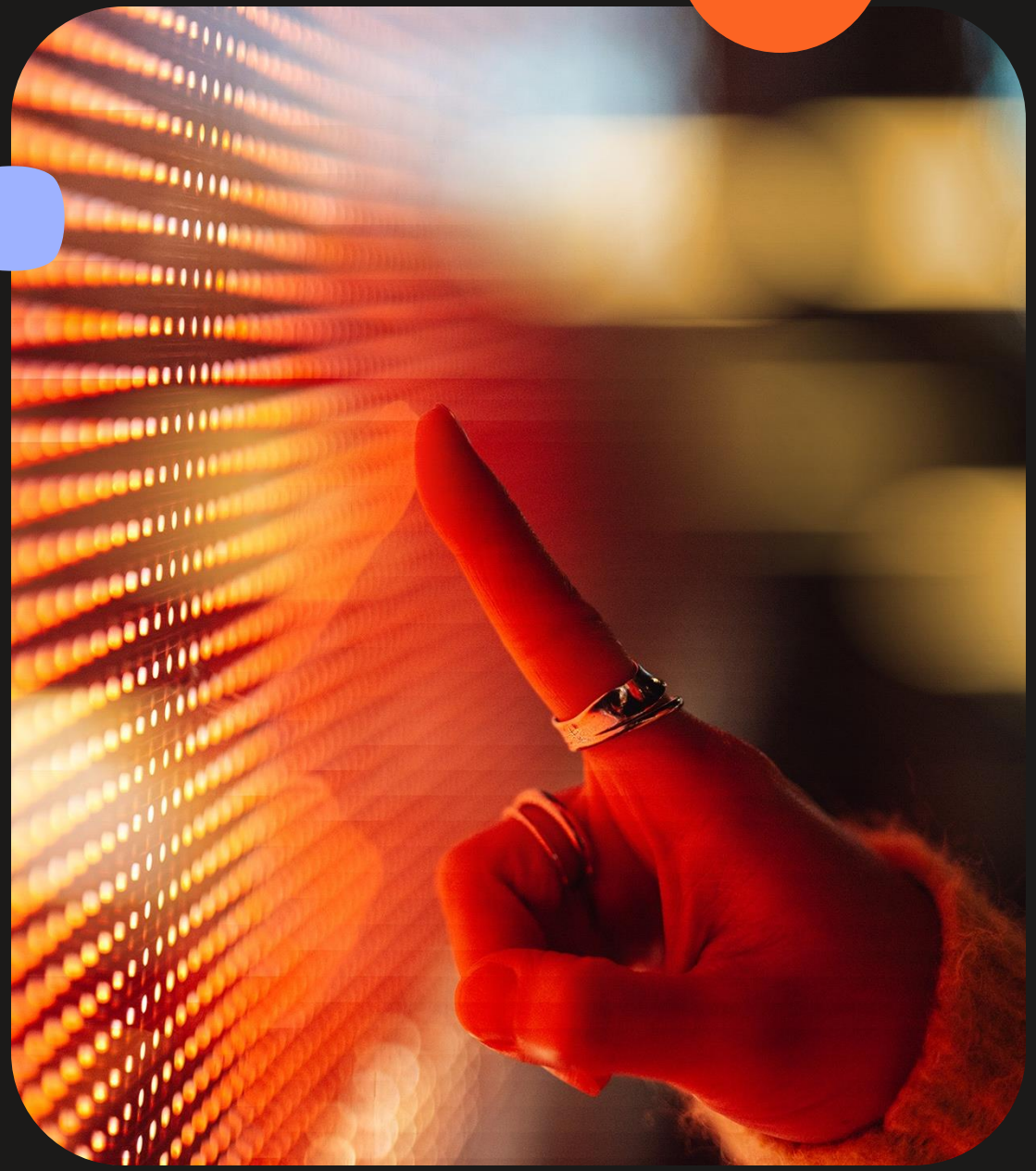
Network operators group Croatia 18.9.2025.



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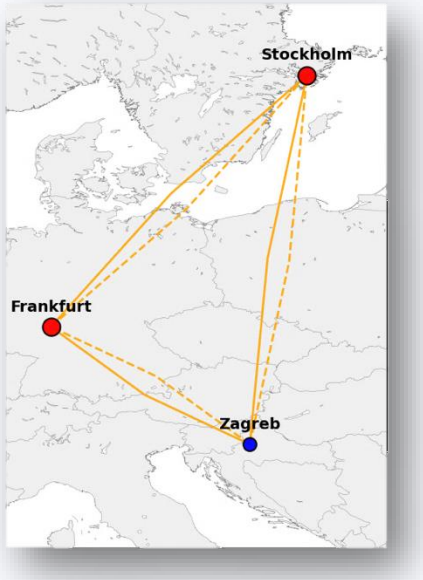
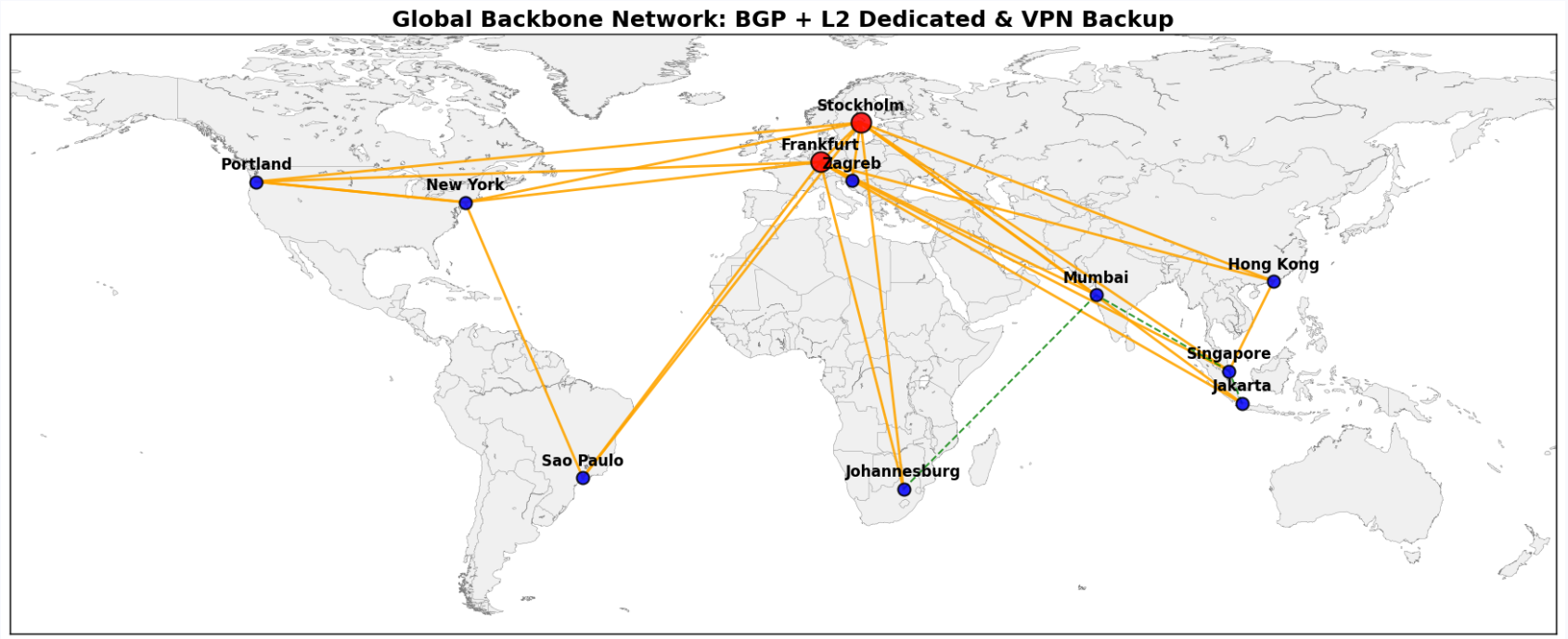
Backbone network

- 60+ Data centers
- 390+ Devices
- 3670+ L3 interfaces
- 620+ IPSLA probes





- Dedicated L2 links
- MPLS L2 links
- IPSEC VPNs over INTERNET

Challenge – Packet loss

- „Pingalica” – in-house built probing tool
- Real time monitoring
- 840 source/destination combinations
- Grafana web UI
- Alerting
- 24/7 support team
- **0-24h Escalation to CORE NETWORK Team !!!**
  - **Reaction time from 10 to 45 minutes**

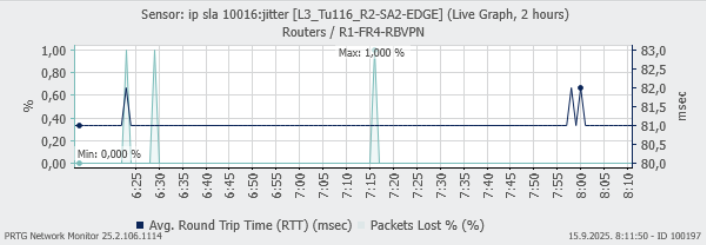
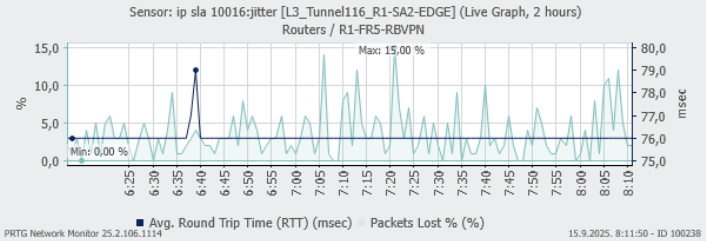
Solution – Web tool

- Needs to be simple
- Will be used by network admins
- Needs to display all relevant data
  - Available links, current packet loss, routing table, current active link, PRTG graphs
- Needs to incorporate IPSLA data from PRTG
- Network admin need to have full control.
  - Display all commands before sending to router

reRouter

Solution – Web tool

FR45 -> SA2 Refresh Location

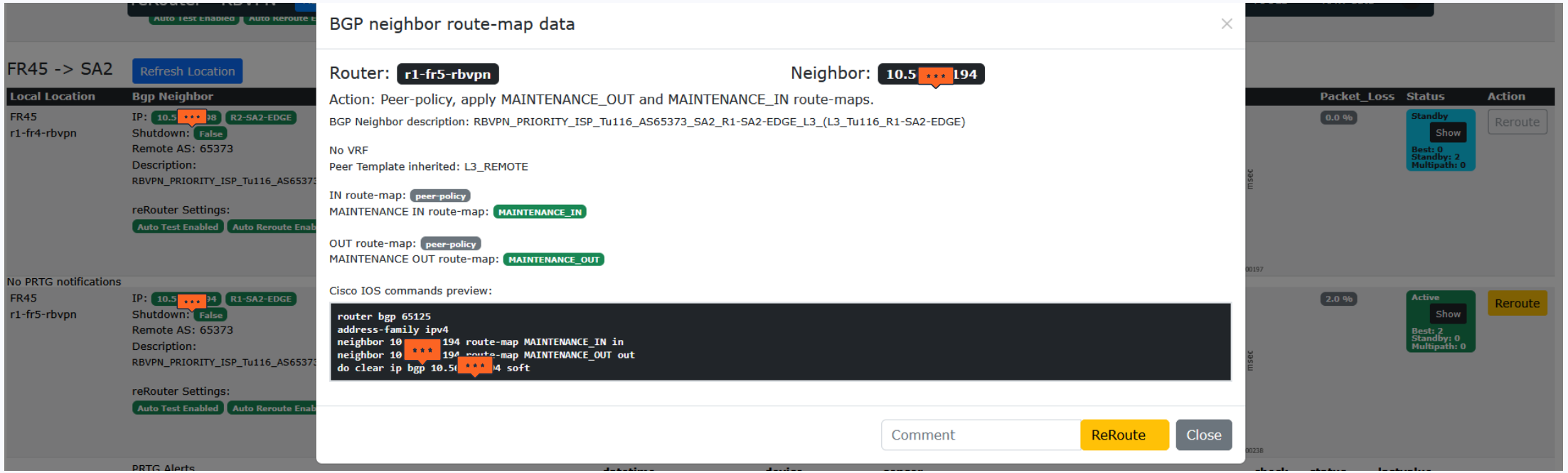
Local Location	Bgp Neighbor	IP SLA	PRTG Graph	Packet_Loss	Status	Action
FR45 r1-fr4-rbvpn	IP: 10.56.10.198 R2-SA2-EDGE Shutdown: False Remote AS: 65373 Description: RBVPN_PRIORITY_ISP_Tu116_AS65373_SA2_R2-SA2-EDGE_L3_(L3_Tu116_R2-SA2-EDGE) reRouter Settings: Auto Test Enabled Auto Reroute Enabled	Id: 10016 Type: udp-jitter Owner: R1-FR4-RBVPN Tag: L3_Tu116_R2-SA2-EDGE		0.0 %	Standby Show Best: 0 Standby: 2 Multipath: 0	Reroute
No PRTG notifications						
FR45 r1-fr5-rbvpn	IP: 10.56.10.194 R1-SA2-EDGE Shutdown: False Remote AS: 65373 Description: RBVPN_PRIORITY_ISP_Tu116_AS65373_SA2_R1-SA2-EDGE_L3_(L3_Tu116_R1-SA2-EDGE) reRouter Settings: Auto Test Enabled Auto Reroute Enabled	Id: 10016 Type: udp-jitter Owner: R1-FR5-RBVPN Tag: L3_Tunnel116_R1-SA2-EDGE		2.0 %	Active Show Best: 2 Standby: 0 Multipath: 0	Reroute

PRTG Alerts

datetime	device	sensor	check	status	lastvalue
14.9.2025. 13:41:52	R1-FR5-RBVPN	ip sla 10016:jitter [L3_Tunnel116_R1-SA2-EDGE]	PRTG	Warning	11 % (Packets Lost %)
14.9.2025. 10:13:52	R1-FR5-RBVPN	ip sla 10016:jitter [L3_Tunnel116_R1-SA2-EDGE]	PRTG	Warning	17 % (Packets Lost %)
14.9.2025. 10:02:52	R1-FR5-RBVPN	ip sla 10016:jitter [L3_Tunnel116_R1-SA2-EDGE]	PRTG	Warning	38 % (Packets Lost %)
11.9.2025. 11:45:52	R1-FR5-RBVPN	ip sla 10016:jitter [L3_Tunnel116_R1-SA2-EDGE]	PRTG	Warning	42 % (Packets Lost %)
9.9.2025. 7:39:52	R1-FR5-RBVPN	ip sla 10016:jitter [L3_Tunnel116_R1-SA2-EDGE]	PRTG	Warning	37 % (Packets Lost %)

Solution – Web tool

- **Automated router config verification**
- **All command displayed before executing any action**



Better solution - automation

- **How to get down to 5 min packet loss fix time?**

- **We have IPSLA probes**
- **We have PRTG monitoring sending alerts when IPSLA probe detects packet loss**
- **We have tool which can execute commands on router**

...

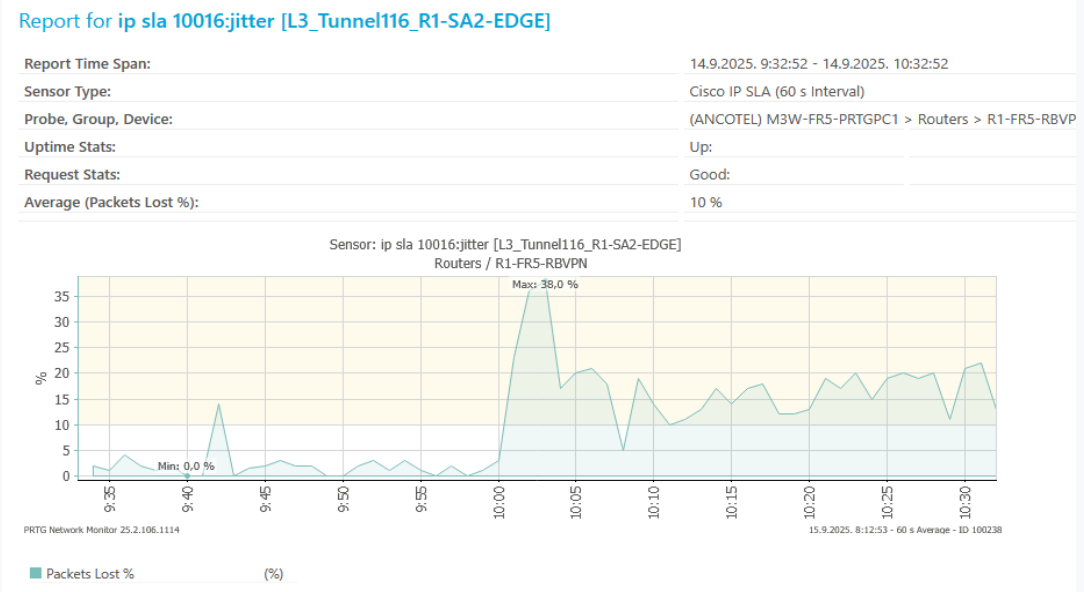
SOLUTION:
- PRTG webhook triggers reRouter API on IPSLA packet loss

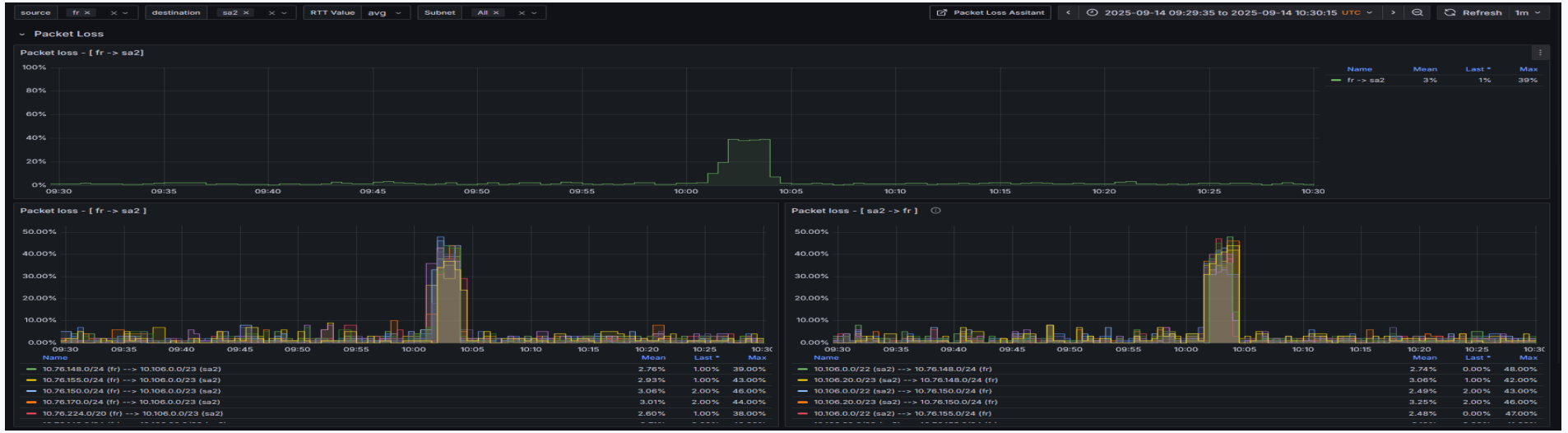
- reRouter execute commands on router, and sends Slack notification to CoreNet team

reRouter

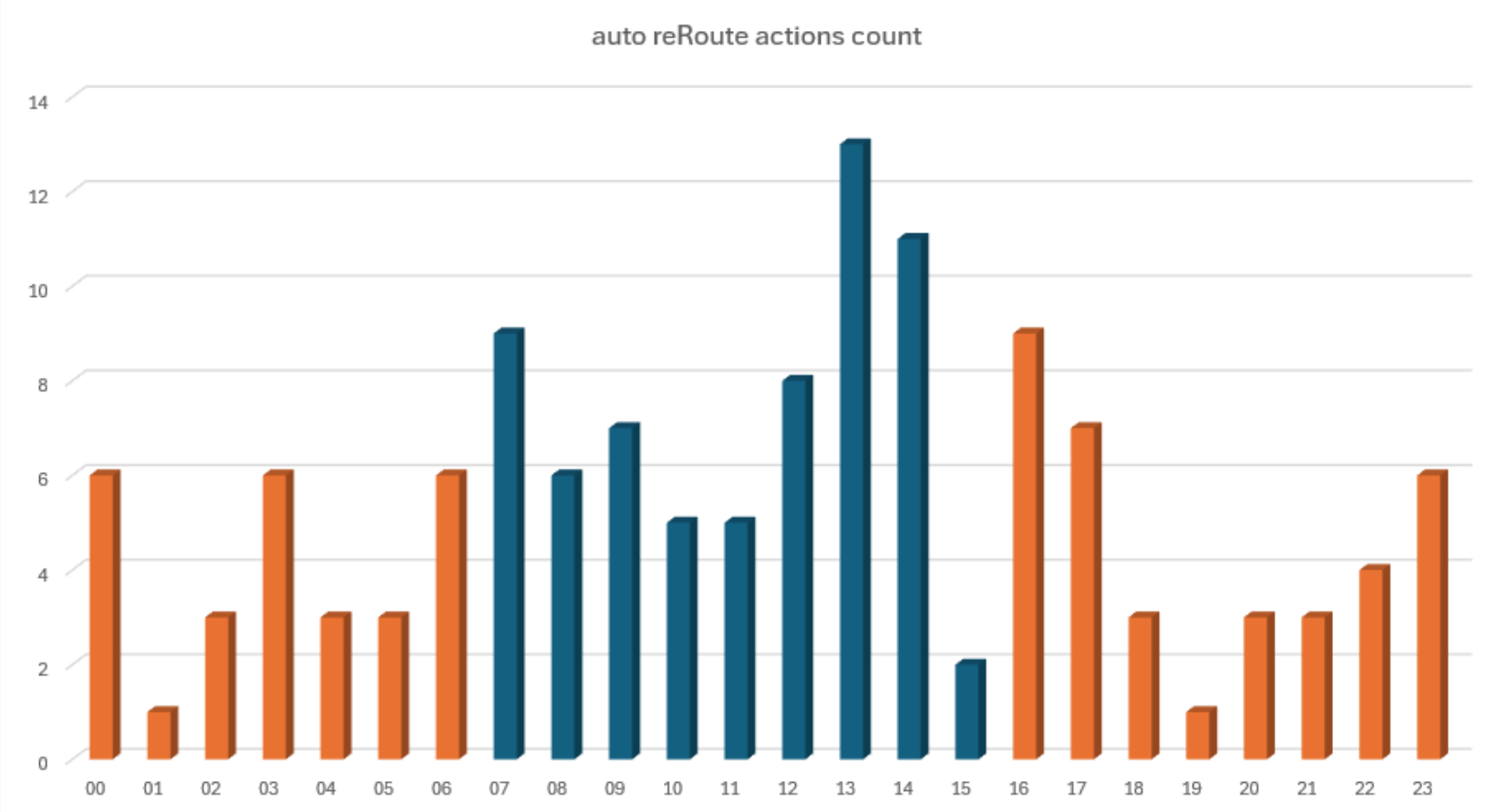
How good is it ?

- **130 sucessfull reRoute actions in last 90 days**
- **Reaction time < 5min**





Do we sleep better??



- 62 automated actions in last 3 months outside working hours

Thank you

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