

ULG

Universal Looking Glass

Tomáš Hlaváček • tomas.hlavacek@nic.cz •

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What is Looking Glass?

Software (web app) for:

- Analysis of BGP announcement visibility from remote perspective
- Insight into BGP table in remote network
- Troubleshooting utilities (ping, traceroute)



Looking Glass concept

Known problems:

- Security threats. Suspicion towards clients
- Support for multiple vendors / BGP implementations
- Visual variability, templates
- Screen scraping reliability
- Configuration complexity



ULG approach

- Security: Parameter checking, verbose logging, rate-limiting
- Support for multiple vendors: BIRD, Cisco IOS, JunOS so far. (IOS XR WIP.)
- Templates: Python Genshi engine
- Screen scraping: Pexpect library + testing
- Configuration: Auto-sensing when possible



ULG features

- OSS (GNU GPLv3)
- Simple CGI, “low-profile”, few dependencies
- BGP table visualization (using Graphviz)
- Output decoration using HTML tables
- Whois client and bindings for RIPE DB



BGP table visualization

Select router to perform operation on, then select a command to perform and add (optional) argument if needed.

1. Router selection:

rs1 (91.210.16.1) - IPv4

2. Command selection:

Graph show route table <RT> for <IP subnet>

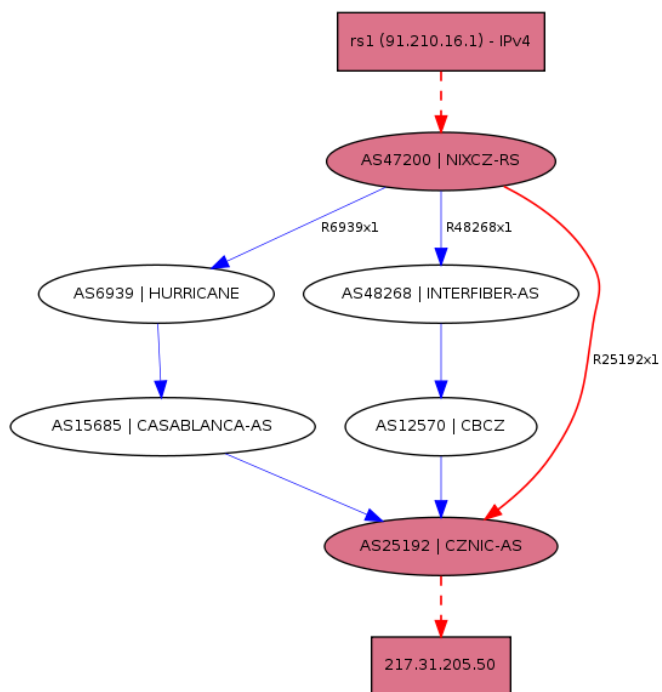
3. Routing Table:

T8928

4. IP subnet:

217.31.205.50

Submit



Decorated BGP table

Select router to perform operation on, then select a command to perform and add (optional) argument if needed.

1. Router selection:

rs2 (2001:7F8:14::12) - IPv6 ▾

2. Command selection:

show route table <Routing Table> protocol <Peer ID> ▾

3. Routing Table: 4. Peer ID:

master ▾

R25192x1 ▾

Submit

Prefix	Next-hop	Interface	Since	Status	Metric	Info
2001::/32	2001:7f8:14::e:2	eth1	[R25192x1 Dec19]		(100)	[AS25192i]
2002::/16	2001:7f8:14::e:2	eth1	[R25192x1 Dec19]		(100)	[AS25192i]
2001:678:1::/48	2001:7f8:14::e:2	eth1	[R25192x1 Sep06]	*	(100)	[AS25192i]
2001:678:f::/48	2001:7f8:14::e:2	eth1	[R25192x1 Sep06]	*	(100)	[AS25192i]
2001:1488::/32	2001:7f8:14::e:2	eth1	[R25192x1 Sep06]	*	(100)	[AS25192i]
2001:1398:274::/48	2001:7f8:14::e:2	eth1	[R25192x1 Dec28]	*	(100)	[AS52234i]



Whois client

Select router to perform operation on, then select a command to perform and add (optional) argument if needed

1. Router selection: router-nix4 (91.210.16.245) 2. Command: show bgp

BGP routing table entry for 2001:148:
Paths: (16 available, best #15, tabl
Advertised to update-groups:
14
39912 29208 15685 25192, (aggrega
2001:7F8:14::71:1 (FE80::218:BAF
Origin IGP, metric 0, localpre
8928 39912 29208 15685 25192, (ag
2001:7F8:14::8:1 (FE80::21D:B5FF
Origin IGP, metric 10, localpr
Community: 8928:10900 8928:110
8928 39912 29208 15685 25192, (ag
2001:7F8:14::8:2 (FE80::21D:B5FF
Origin IGP, metric 10, localpr
Community: 8928:10900 8928:110
3257 39912 29208 15685 25192, (ag
2001:7F8:14::3:1 (FE80::219:E200
Origin IGP, metric 55, localpref 100, valid, external, atomic-aggregate
Community: 3257:4000 3257:8047 3257:50001 3257:50110 3257:54300 3257:54301 65000:174 65000:3356 65000:3549 65000:6762
15685 25192, (aggregated by 25192 217.31.205.211), (received & used)
2001:7F8:14::6:1 (FE80::21C:FFF:FE5D:68C0) from 2001:7F8:14::6:1 (81.0.192.197)

Details of 2001:7F8:14::71:1

inet6num:	2001:7f8:14::/48
netname:	NIX-CZ-NET-IPv6-20030203
descr:	NIX.CZ z.s.p.o.
org:	ORG-Nz2-RIPE
country:	CZ
admin-c:	JCH111-RIPE
admin-c:	PJ2362-RIPE
tech-c:	JCH111-RIPE
tech-c:	PJ2362-RIPE
status:	ASSIGNED
mnt-by:	RIPE-NCC-END-MNT
mnt-lower:	RIPE-NCC-END-MNT
mnt-by:	AS6881-MNT
source:	RIPE # Filtered
organisation:	ORG-Nz2-RIPE
org-name:	NIX.CZ z.s.p.o.
org-type:	LIR
address:	NIX.CZ z.s.p.o.
address:	Vinohradska 184
address:	130 52 Praha 3
address:	CZECH REPUBLIC
phone:	+420272660627
fax-no:	+420272660629
abuse-mailbox:	abuse@nix.cz
mnt-ref:	RIPE-NCC-HM-MNT
mnt-ref:	AS6881-MNT



Download and deployments

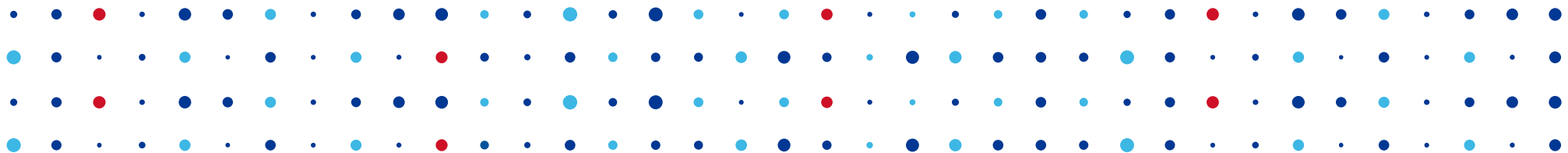
Deployments



Downloads

- Github: <https://github.com/tmshlvck/ulg>
- Releases:
<https://labs.nic.cz/page/1304/ulg---universal-looking-glass/>





Thank You

Tomáš Hlaváček • tomas.hlavacek@nic.cz

