The RouteViews Project: Update

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Background

RouteViews was first started in 1995

Now a growing network of 40+ collectors positioned strategically at Internet Exchange Points around the world

RouteViews collaborates with the Center for Applied Internet Data Analysis (CAIDA) working with NSF grants that support Designing a Global Measurement Infrastructure to Improve Internet Security, GMI3S (OAC-2131987), and an Integrated Library for Advancing Network Data Science, ILANDS (CNS-2120399).

RouteViews is supported with financial and in-kind donations by multiple organizations

RouteViews is based at the University of Oregon and operated by NSRC

NSRC supports the growth of global Internet infrastructure by providing engineering assistance, collaborative technical workshops, training, and other resources to university, research & education networks worldwide.

NSRC is partially funded by the IRNC program of the NSF (OAC-2029309) and Google with other contributions from public and private organizations.

The University of Oregon is a public research institution in Eugene, Oregon, USA founded in 1876.

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ROUTE VIEWS 6447

NSRC Network Startup Resource Center

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What is RouteViews

A tool that allows Internet network operators to look at the BGP table from different backbones and locations around the world to troubleshoot and to assess:

- Reachability, hijacks, bugs, peer visibility, mass withdrawals, RPKI status,…

Operators who find it a valuable tool also peer to contribute to the value

RouteViews operates collectors strategically positioned at IXPs around the world.

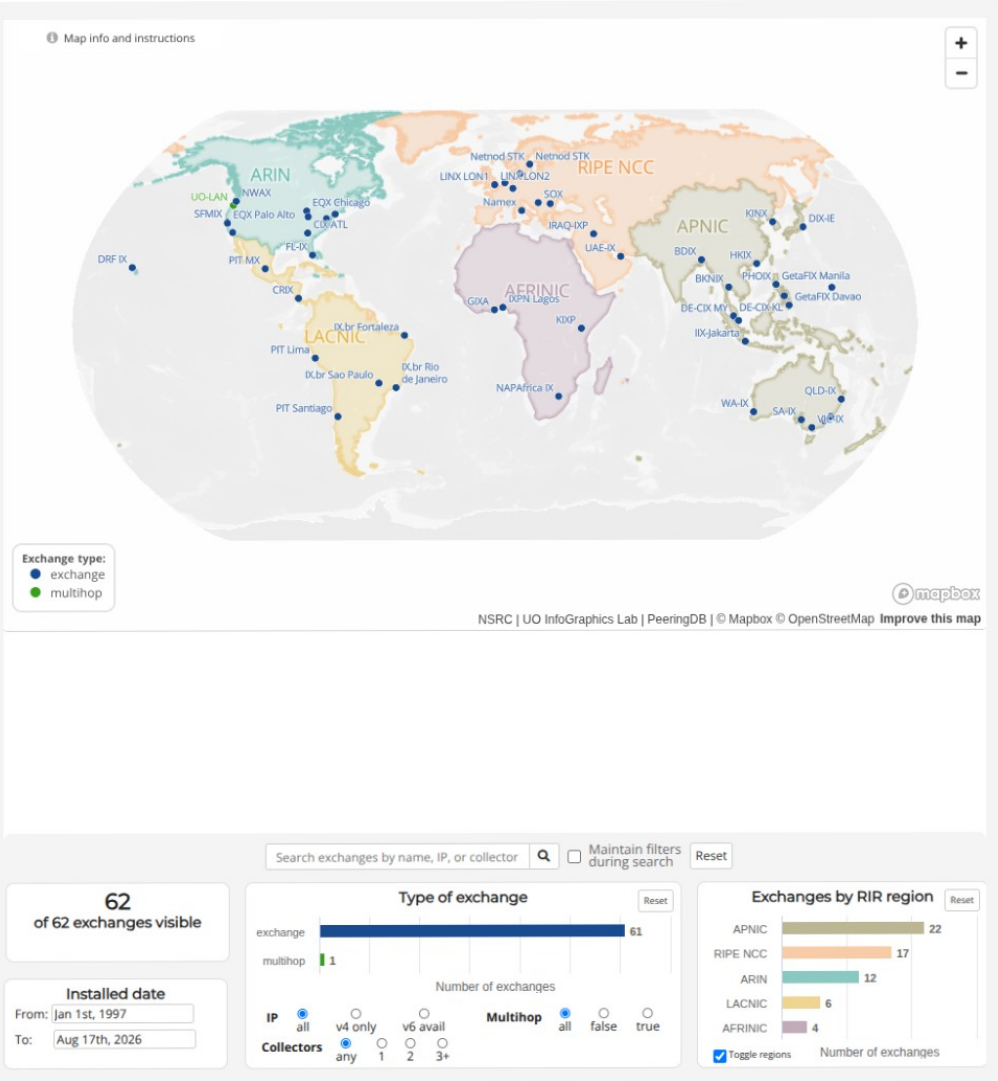
- It also hosts a few multi-hop collectors at UO for those operators who are not present at IXPs.

What is RouteViews

Many free and commercial tools used by network engineers every day include data from RouteViews

- CAIDA ASRANK
- CAIDA BGP Reader
- HE BGP Tools
- Kentik Market Intelligence
- Kentik BGP monitoring
- Catchpoint
- BGPMon
- And many more

RouteViews Collector Map



https://www.routeviews.org/routeviews/map/

Note: Outdated map – modernised version will be released soon

Currently 55 collectors

Map doesn't show locix.fra, crix.sjo, decix.fra, getafix.mnl, netnod.mmx, interlan.otp, hkix.hkg, iix.cgk, ixpn.los

What’s happening at RouteViews

ROUTEVIEWS NEWS







RouteViews News

Collectors:

- All software collectors use FRR[1] (version 10.5.1 where possible)
- One Cisco ASR1004 (as a tribute to the original!)
- Moving collectors from metal to VMs (easier deployment & management)

Location update:

- Most recent additions include Jakarta (IIX), San Jose (CRIX), Lagos (IXPN), Hong Kong (HKIX) and Frankfurt (DE-CIX & LOCIX)

[1]FRRouting Project: https://frrouting.org/

RouteViews Development Projects: API

API allows programmatic access to live RouteViews data

- (our collectors currently allow telnet access, which 1000s of automated scripts hammer daily)

Two access levels:

- Unauthenticated for casual (infrequent queries)
- Authenticated access (using verified PeeringDB users) for more serious research

API currently supports ten collectors

- More will be added as resources become available

Please consult the docs on how to use the API

- https://api.routeviews.org/docs/

Exchange	collector
AMS-IX Amsterdam, Netherlands	route-views.amsix.routeviews.org
LINX, London, United Kingdom	route-views.linx.routeviews.org
NAPAfrica, Johannesburg, South Africa	route-views.napafrica.routeviews.org
Equinix SG1, Singapore, Singapore	route-views.sg.routeviews.org
Equinix SYD1, Sydney, Australia	route-views.sydney.routeviews.org
SAOPAULO (PTT Metro, NIC.br), Sao Paulo, Brazil	route-views2.saopaulo.routeviews.org
Multi-hop at U of Oregon	route-views3.routeviews.org
Multi-hop at U of Oregon	route-views4.routeviews.org
Multi-hop at U of Oregon	route-views5.routeviews.org
Multi-hop at U of Oregon	route-views6.routeviews.org

RouteViews Development Projects: LG

telnet access is unsustainable

- Gives open access to the collector command line interface to run “show” commands

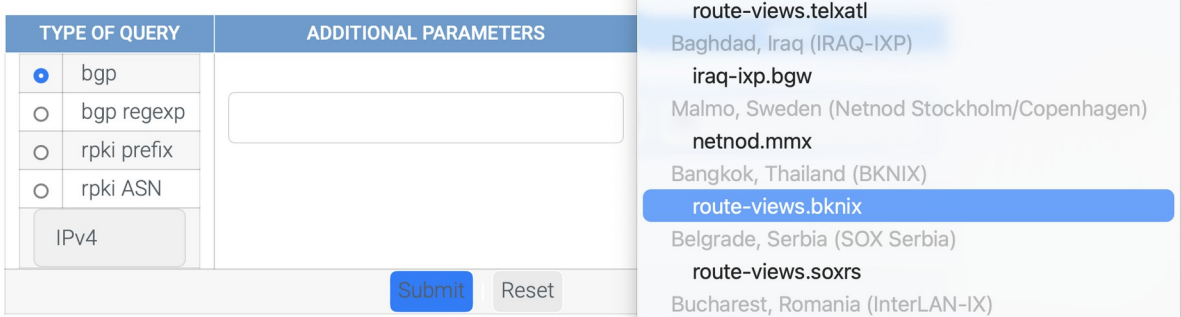
Looking Glass will soon become the default access for each collector

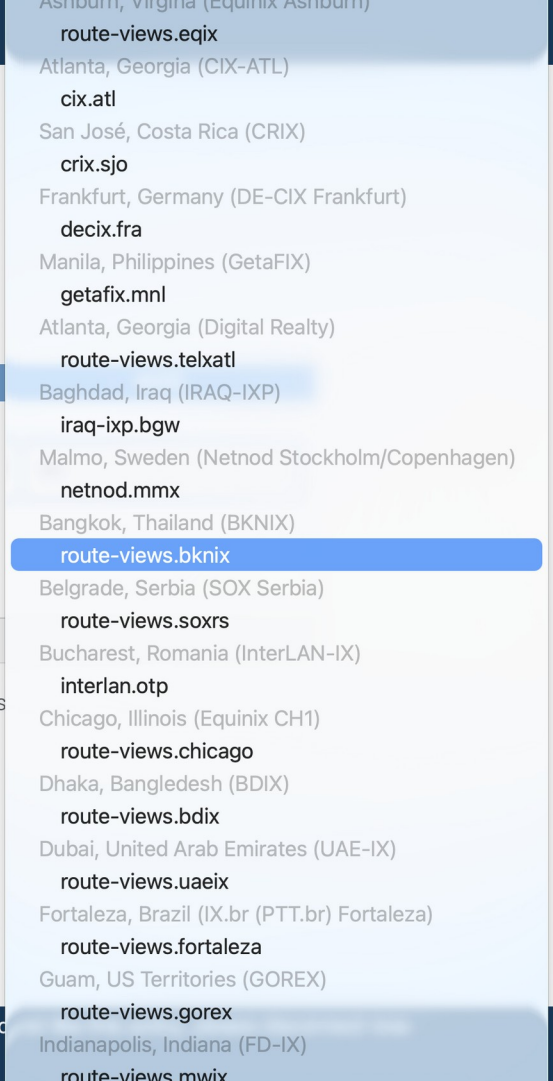
- Permits the most commonly used BGP diagnostic commands
- telnet remains available on route-views.routeviews.org (the Cisco ASR1004) for legacy access

Looking Glass can be found on https://lg.routeviews.org/lg/

- telnet access will be removed after due notice to the community

DEMO


TYPE OF QUERY
ADDITIONAL PARAMETERS
bgp
bgp regexp
rpki prefix
rpki ASN
IPv4
Submit
Reset
Questions? See our blog post for some Looking Glass use examples


Ashburn, Virginia (Equinix Ashburn)
route-views.eqix
Atlanta, Georgia (CIX-ATL)
cix.atl
San José, Costa Rica (CRIX)
crix.sjo
Frankfurt, Germany (DE-CIX Frankfurt)
decix.fra
Manila, Philippines (GetaFIX)
getafix.mnl
Atlanta, Georgia (Digital Realty)
route-views.telxatl
Baghdad, Iraq (IRAQ-IXP)
iraq-ixp.bgw
Malmo, Sweden (Netnod Stockholm/Copenhagen)
netnod.mmx
Bangkok, Thailand (BKNIX)
route-views.bknix
Belgrade, Serbia (SOX Serbia)
route-views.soxrs
Bucharest, Romania (InterLAN-IX)
interlan.otp
Chicago, Illinois (Equinix CH1)
route-views.chicago
Dhaka, Bangledesh (BDIX)
route-views.bdix
Dubai, United Arab Emirates (UAE-IX)
route-views.uaeix
Fortaleza, Brazil (IX.br (PTT.br) Fortaleza)
route-views.fortaleza
Guam, US Territories (GOREX)
route-views.gorex
Indianapolis, Indiana (FD-IX)

API - demo

```
~
[ 04:54:15 UTC ] ❯ curl -L -s "https://api.routeviews.org/prefix/196.223.25.0/24?strict-match=yes" | jq .
[]

~
[ 04:54:20 UTC ] ❯ curl -L -s "https://api.routeviews.org/prefix/196.49.15.0/24?strict-match=yes" | jq .
[
  {
    "prefix": "196.49.15.0/24",
    "origin_asn": 328998,
    "rpki_state": "not-found",
    "rpki_roas": null,
    "reporting_peers": [
      {
        "peer_asn": 37497,
        "peer_addr": "80.249.213.88",
        "collector": "amsix.ams",
        "as_path": "37497 16637 20294 37063 328998",
        "communities": "37497:4101",
        "timestamp": "2026-08-16T11:34:57Z"
      },
      {
        "peer_asn": 56987,
        "peer_addr": "80.249.211.234",
        "collector": "amsix.ams",
        "as_path": "56987 16637 20294 37063 328998",
        "communities": "",
        "timestamp": "2026-08-16T11:48:33Z"
      },
```

For potential hosts of collectors

HOSTING ROUTEVIEWS







Hosting RouteViews

- RouteViews is interested in new locations
  - Especially in regions or economies we have no collector
  - Where there are IXPs with large numbers of peers (>100)
- Hosting a RouteViews collector
  - Hosts can be IXPs themselves
  - Hosts can be members of IXPs
  - Hosts sponsor the IXP port and the (~10Mbps) transit required
  - Hosts sponsor the VM needed for the collector
    - Physical hardware is less preferred due to being harder to manage
    - VMs sometimes may not be possible due to operational requirements

Collector Specifications

- Virtual Machine:
  - 16GB RAM min (prefer 32GB)
  - 50GB disk for OS, 100GB disk for storage
  - 4 vCPUs
  - 1 transit interface (management and public CLI access, low traffic)
  - 1 peering interface on the IX
- Physical Hardware:
  - 32GB – 64GB RAM
  - 400GB – 1TB SSD
  - 4+ CPUs
  - Ethernet port for transit interface (1Gbps is enough)
  - Ethernet port for IX peering (10Gbps is the standard now)

Collector Software

- Ubuntu 24.04 is RouteViews standard OS
  - We require a minimal Ubuntu Server install
  - Our deployment scripts do the rest

- Routing daemon we install is FRR
  - MRT[1] used for BGP RIBs (archived every 2 hours) and BGP updates (archived every 15 minutes)

[1] Multi-Threaded Routing Toolkit: https://datatracker.ietf.org/doc/html/rfc6396

Collector Host

- Acknowledged on RouteViews website as a sponsor
- Contact details kept up to date with RouteViews team
  - An up-to-date PeeringDB entry helps

Thank you!

