



NET
MAKERS

stats.garr.net

L'osservabilità per gli utenti GARR-T

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GARR

<https://stats.garr.net>



Statistiche pubbliche dei servizi di rete ad accesso diretto su rete GARR-T

The screenshot shows a dark-themed dashboard with three main sections:

- Summaries**:
 - Traffic load summaries
 - Peerings, caches and national services
- Institutions**:
 - All institutions
 - AFAM - Institutes of Higher Musical Artistic Training
 - ASI - Italian Space Agency
 - CNR - National Research Council
 - ENEA - Agency for New Technologies, Energy and the Environment
 - INAF - National Institute of Astrophysics
 - INFN - National Institute of Nuclear Physics
 - INGV - National Institute of Geophysics and Volcanology
 - Medical, Health and Hospital Research Institutes
 - National, Central and State Libraries
 - Research and Training Institutions
 - Schools with direct access
 - Schools access aggregation
 - Universities
- Services: direct IP access**: 659
- Services: VPN packet access**: 133
- Services: OPN e2e access**: 2

Dashboard template

Summary

IP services count

IP services total capacity

VPN services count

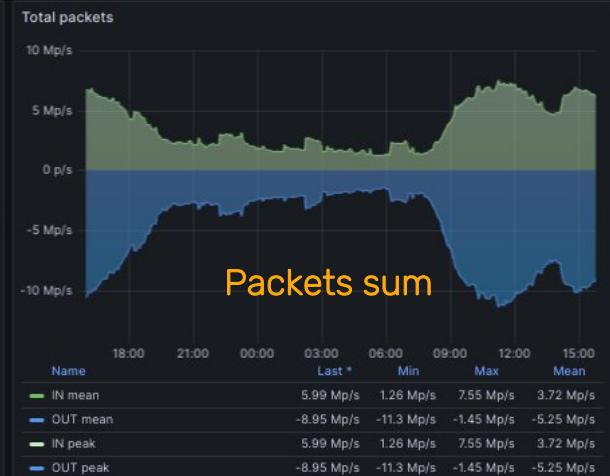
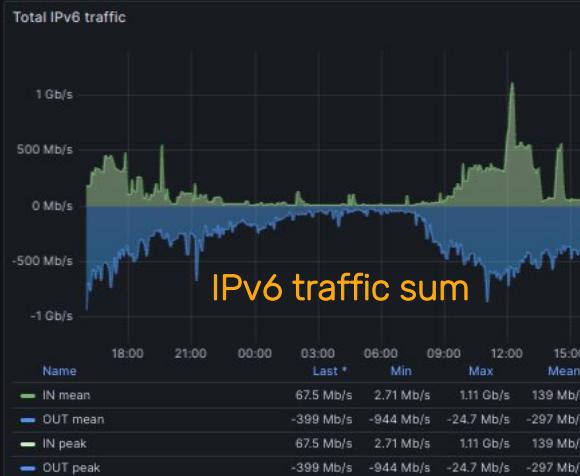
VPN services total capacity

IP services	
Service name	Bandwidth
UNI-Aosta	100 Mb/s
UNI-Bari	10 Gb/s
UNI-Benevento	1 Gb/s
UNI-Bergamo	1 Gb/s
UNI-Bologna	10 Gb/s
UNI-Bolzano	1 Gb/s
UNI-Brescia	10 Gb/s
UNI-Cagliari	10 Gb/s
UNI-Camerino	10 Gb/s
Total	685 Gb/s

IP service
IP service capacity

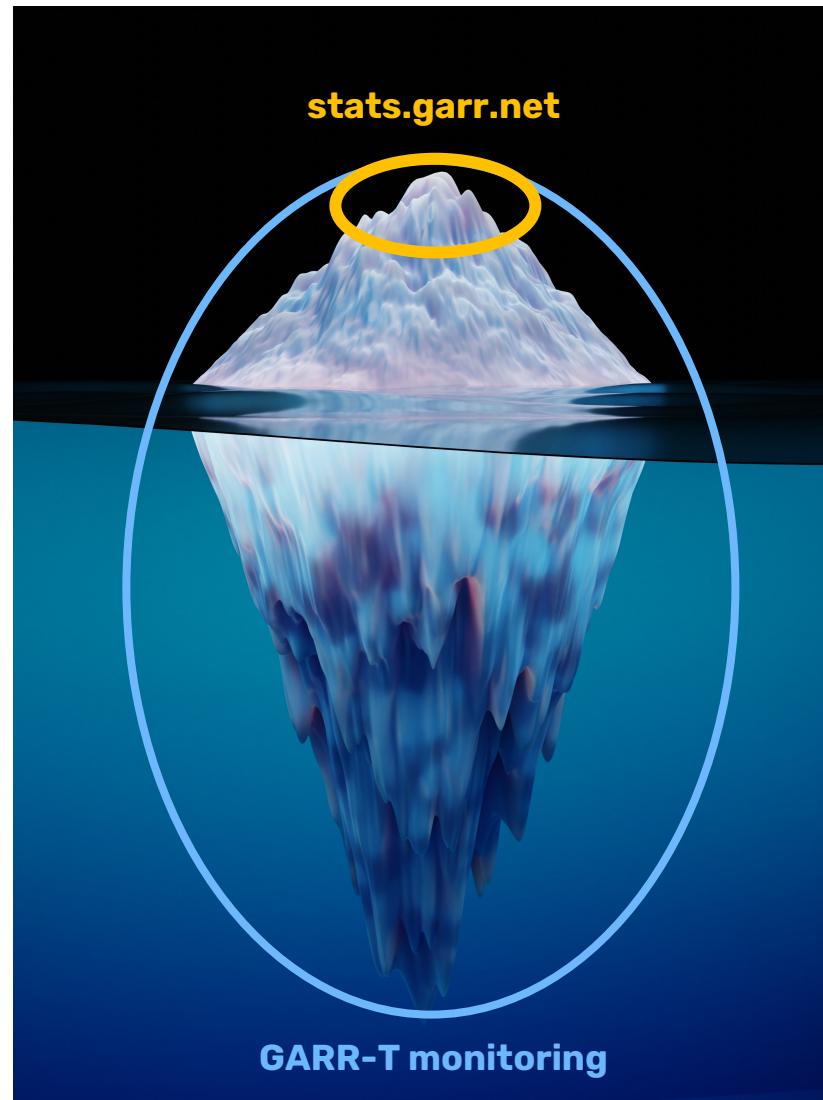
VPN services	
Service name	Bandwidth
UNI-Messina - Policlinico	1 Gb/s
UNI-Insubria Varese-Como - Iato Como	1 Gb/s
UNI-Bari - sede di Valenzano	1 Gb/s
UNI-Bari - sede di Taranto - Scienze	1 Gb/s
UNI-Bari - sede di Taranto - Polo Jonico	1 Gb/s
UNI-Bari - sede di Taranto - Economia	1 Gb/s
UNI-Bari - sede di Brindisi - Fisioterapia e Infermieristica	1 Gb/s
UNI-Bari - Scienze Motorie e Sportive	1 Gb/s
POLI-Milano sede di Piacenza - Iato Piacenza	1 Gb/s
Total	143 Gb/s

VPN service
VPN service capacity



+ grafici per ogni servizio

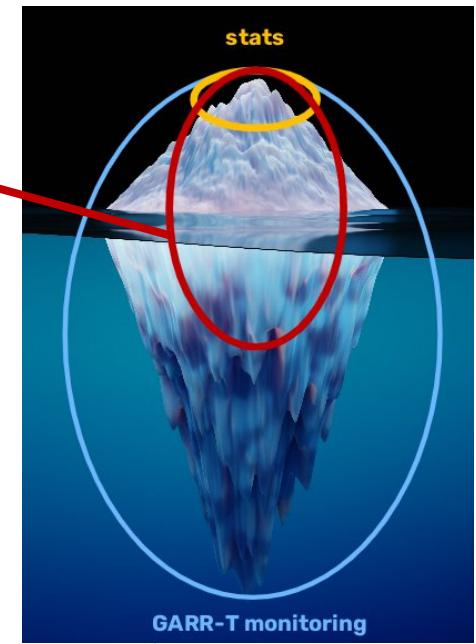
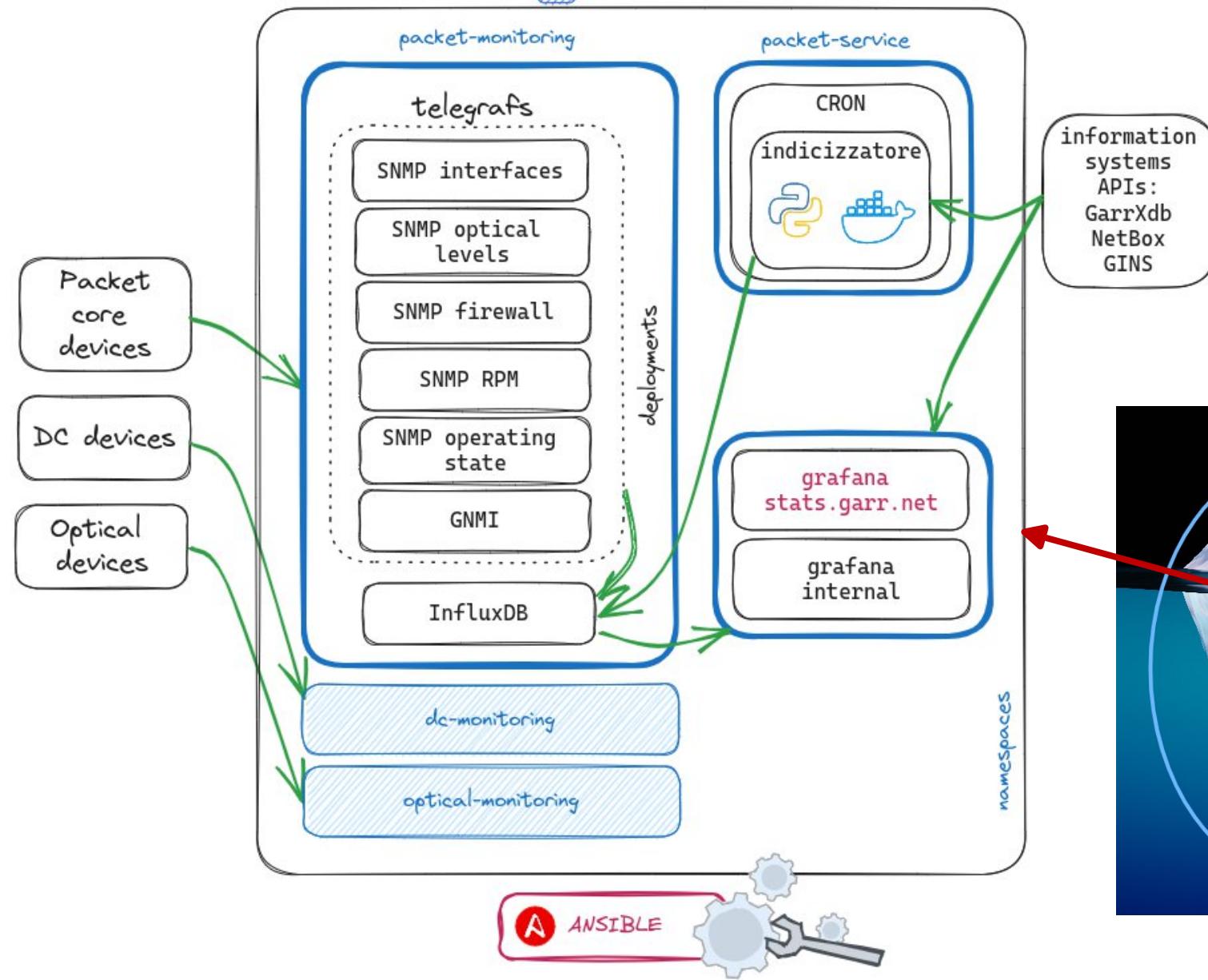
GARR-T monitoring



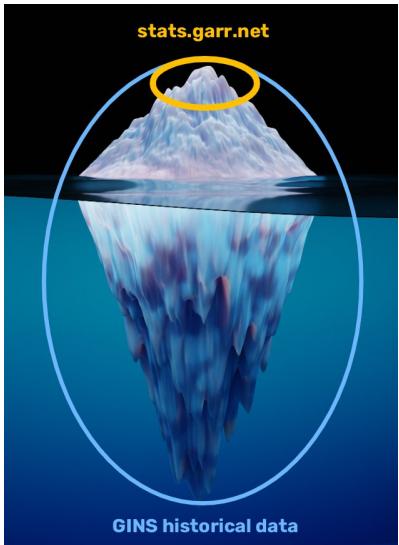
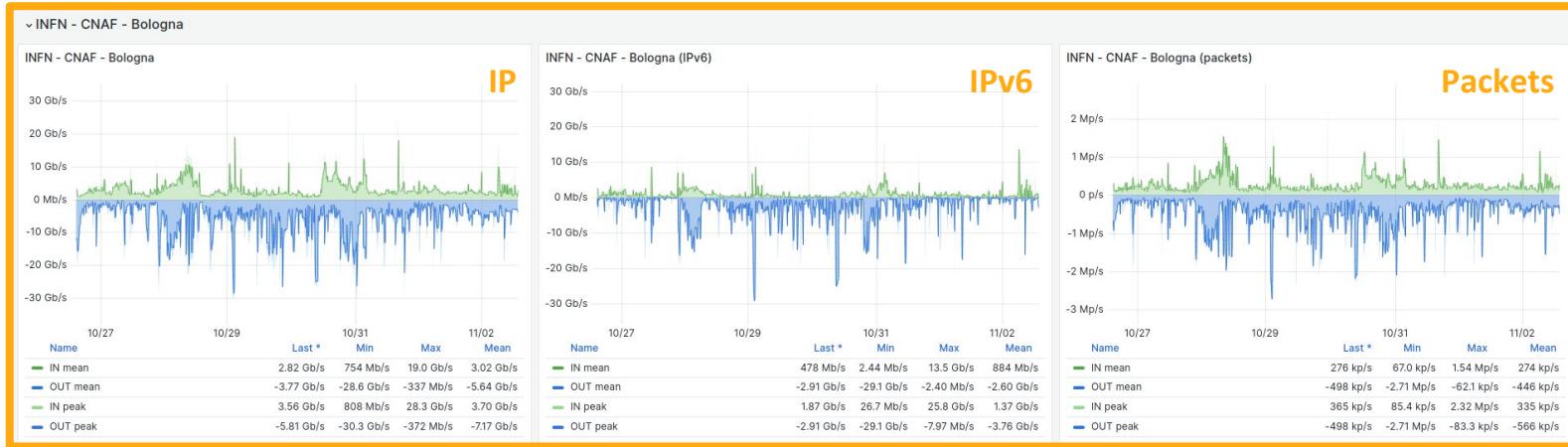


kubernetes

Architettura GARR-T monitoring

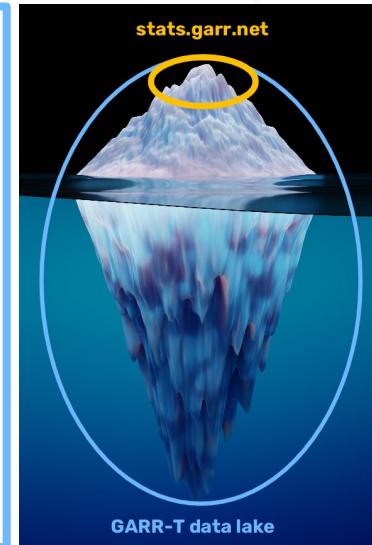


stats.garr.net current metrics

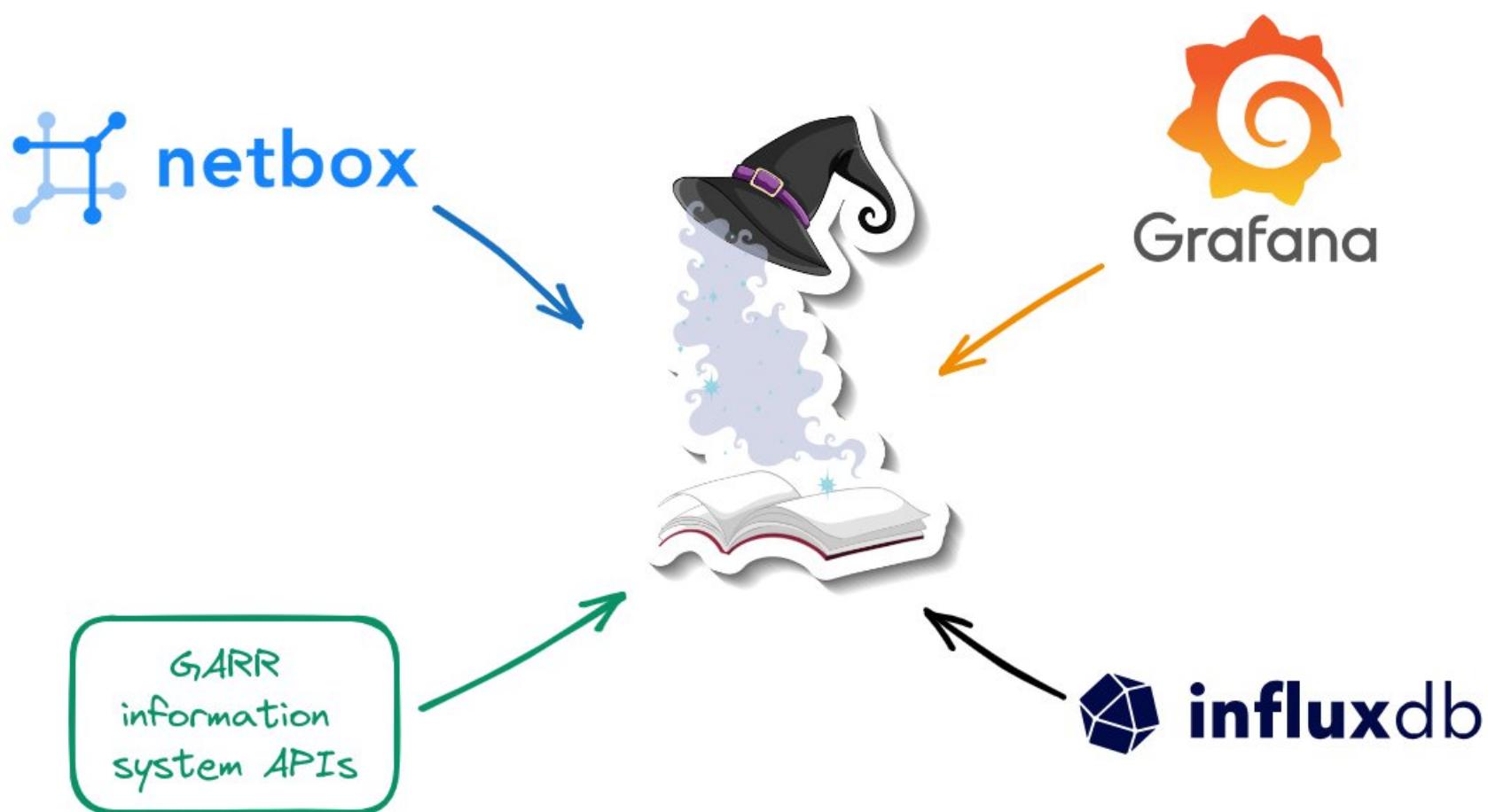


- 20 years of data retention
- monthly traffic reports volumes, 95th percentile

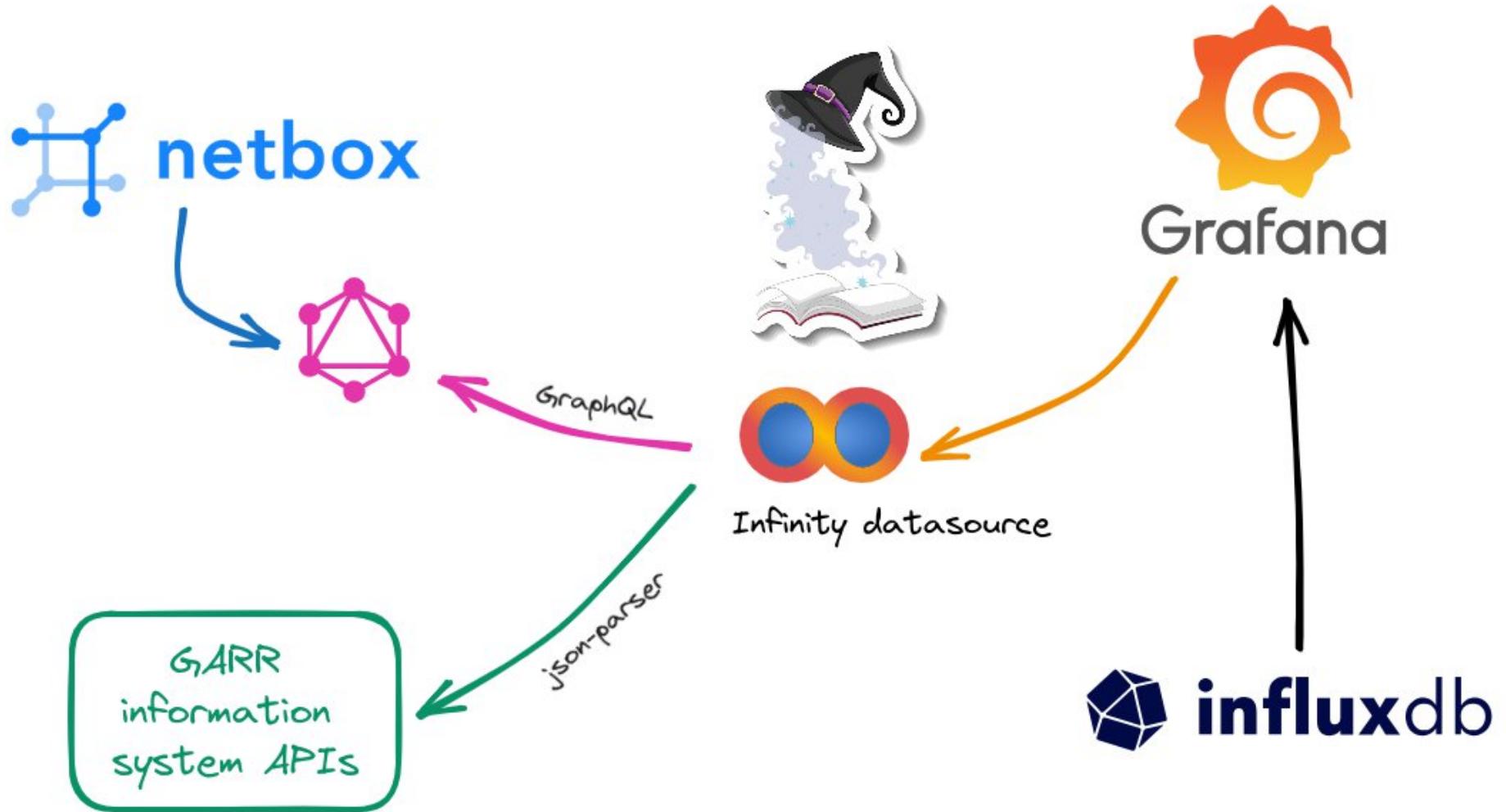
- IP, IPv6, packets
- Errors, drops
- power consumption
- temperature
- latency
- optical levels
- routing protocols
- fast rates 30'' (GNMI)



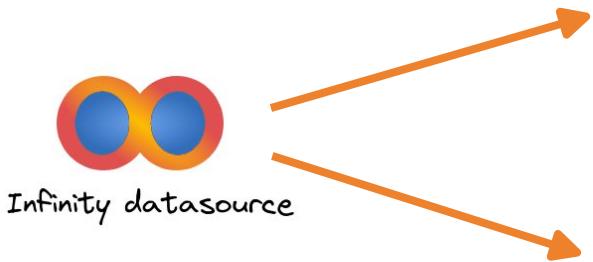
Low code: integration problem



Low code: integration solution



Use cases



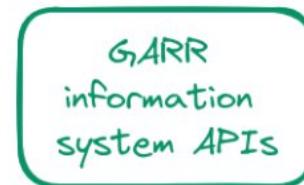
to define
dashboard
variables



to run queries
and merge
results with
telemetry data



stats.garr.net
services lists



power
consumption
summary

stats.garr.net dashboard variables

Query options

Data source: Infinity-GINS

Query Type: Infinity

Type: UQL

Source: URL

Method: POST

URL: GARR information system API URL

parse.json
| where '<conditions here>'
| extend "<_text>=<name>, <_value>=<id>"
| project "<_text>,<_value>"

GARR
information
system APIs

dashboard {k:v} variable

NetBox + Grafana Infinity datasource + InfluxDB



Grafana

Infinity datasource

The screenshot shows the Grafana interface with the "Infinity-netbox" datasource selected. The GraphQL query is:

```
query { device_list(status: "active", manufacturer: "juniper", tag: "paragoninventory", site: "iPoP") { name serial device_type { slug } site { slug } } }
```

The results pane displays the following JSON data:

```
[{"name": "rel.mi01", "serial": "A1234567890", "device_type": {"slug": "mx10003"}, "site": {"slug": "mi01"}]
```

A pink arrow points from the "QUERY 1" label to the GraphQL query editor.

The screenshot shows the Grafana interface with the "influxdb" datasource selected. The query is:

```
SELECT name, serial, device_type.slug, site.slug FROM device_list WHERE status = 'active' AND manufacturer = 'juniper' AND tag = 'paragoninventory' AND site = 'iPoP'
```

The results pane displays the following JSON data:

```
[{"name": "rel.mi01", "serial": "A1234567890", "device_type": {"slug": "mx10003"}, "site": {"slug": "mi01"}]
```

A pink arrow points from the "QUERY 2" label to the InfluxDB query editor.



netbox



The screenshot shows the GraphiQL interface with the following GraphQL query:

```
query { device_list(status: "active", manufacturer: "juniper", tag: "paragoninventory", site: "iPoP") { name serial device_type { slug } site { slug } } }
```

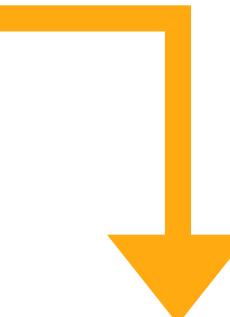
The results pane displays the merged JSON data:

```
{ "data": { "device_list": [ { "name": "rel.mi01", "serial": "A1234567890", "device_type": { "slug": "mx10003" }, "site": { "slug": "mi01" } } ] } }
```



Grafana

merge



Power consumption summary



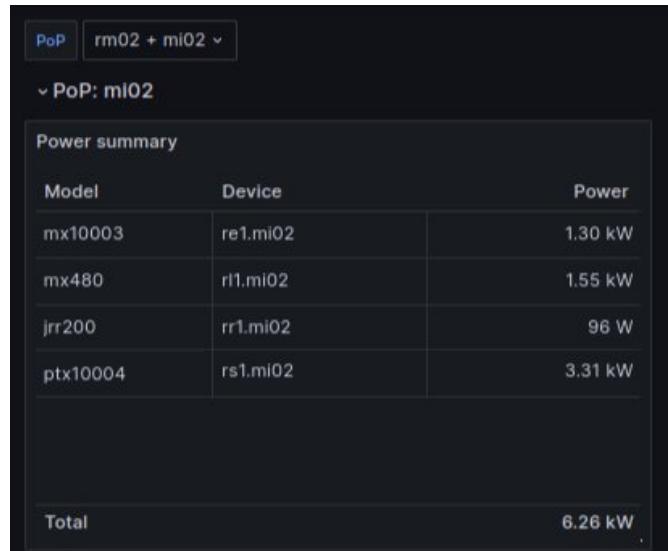
Infinity datasource



Grafana



inventory data



The screenshot shows a Grafana dashboard with a title bar "PoP" and a dropdown "rm02 + mi02". Below it, a section titled "PoP: mi02" contains a table titled "Power summary". The table lists five devices with their model names, device identifiers, and power consumption values:

Model	Device	Power
mx10003	re1.mi02	1.30 kW
mx480	rl1.mi02	1.55 kW
jrr200	rr1.mi02	96 W
ptx10004	rs1.mi02	3.31 kW
Total		6.26 kW



influxdb +

telemetry data

from: GARR-T monitoring internal Grafana
soon on stats.garr.net



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References:

<https://sriramajeyam.com/grafana-infinity-datasource/>

Images from:

<https://unsplash.com/>