

Grafana membaca RRD LibreNMS <http://139.162.9.194/>

1. Install Grafana
2. Run Grafana <http://139.162.9.194:3000>
3. Tambahkan jenis datasource JSON API:

```
grafana-cli plugins install marcusolsson-json-datasource
```

4. Restart grafana

```
Service grafana restart
```

5. Pindah direktori ke /opt
cd /opt

6. Download RRDRest

```
git clone https://github.com/tbotnz/RRDRest && cd RRDRest
```

7. Install requirement

```
pip3 install -r requirements.txt
```

8. Buat service script dan simpan di /etc/systemd/system/grafana-rrd.service

```
[Unit]
Description=Grafana RRD (librenms RRDs)
After=network.service

[Service]
User=librenms
Group=librenms
Restart=on-failure
WorkingDirectory=/opt/RRDRest/
#Environment="/opt/RRDRest/"
ExecStart=/usr/local/bin/uvicorn rrdrest:rrd_rest --host "0.0.0.0" --port
9200
RestartSec=10s

[Install]
WantedBy=multi-user.target
```

9. Reload Daemond

```
Systemctl daemon-reload
```

10. Enable sebagai service

```
Systemctl enable grafana-rrd
```

11. Jalankan sebagai service

```
Service grafana-rrd start
```

12. cek servicenya


service grafana-rrd status

```
Jul 24 19:30:09 localhost uvicorn[1363219]: INFO: 139.162.9.194:40796 - "GET /?rrd_path=/opt/librenms/rrd/10.147.17.1/port-id7.rrd&epoch_start_time=1658644206&epoch_end
root@localhost:/opt/RRDRest# service grafana-rrd-server stop
root@localhost:/opt/RRDRest# service grafana-rrd status
● grafana-rrd.service - Grafana RRD (librenms RRDs)
   Loaded: loaded (/etc/systemd/system/grafana-rrd.service; enabled; vendor preset: enabled)
   Active: active (running) since Sun 2022-07-24 19:29:11 WIB; 1min 28s ago
     Main PID: 1363219 (uvicorn)
        Tasks: 5 (limit: 1066)
       Memory: 22.2M
      CGroup: /system.slice/grafana-rrd.service
              └─1363219 /usr/bin/python3 /usr/local/bin/uvicorn rrdrest:rrd_rest --host 0.0.0.0 --port 9200

Jul 24 19:29:11 localhost systemd[1]: Started Grafana RRD (librenms RRDs).
Jul 24 19:29:12 localhost uvicorn[1363219]: INFO: Started server process [1363219]
Jul 24 19:29:12 localhost uvicorn[1363219]: INFO: Waiting for application startup.
Jul 24 19:29:12 localhost uvicorn[1363219]: INFO: Application startup complete.
Jul 24 19:29:12 localhost uvicorn[1363219]: INFO: Uvicorn running on http://0.0.0.0:9200 (Press CTRL+C to quit)
Jul 24 19:29:22 localhost uvicorn[1363219]: INFO: 139.162.9.194:40788 - "GET /?rrd_path=/opt/librenms/rrd/10.147.17.1/port-id7.rrd&epoch_start_time=1658644159&epoch_end
Jul 24 19:29:38 localhost uvicorn[1363219]: INFO: 139.162.9.194:40790 - "GET /?rrd_path=/opt/librenms/rrd/10.147.17.1/port-id7.rrd&epoch_start_time=1658644176&epoch_end
Jul 24 19:30:09 localhost uvicorn[1363219]: INFO: 139.162.9.194:40796 - "GET /?rrd_path=/opt/librenms/rrd/10.147.17.1/port-id7.rrd&epoch_start_time=1658644206&epoch_end
Jul 24 19:30:38 localhost uvicorn[1363219]: INFO: 139.162.9.194:40798 - "GET /?rrd_path=/opt/librenms/rrd/10.147.17.1/port-id7.rrd&epoch_start_time=1658644236&epoch_end
```

13. Buat user baru di UI LibreNMS bernama grafana dan tambahkan API aksesnya, copy Token API nya

14. Tambahkan 2 buah datasource dengan JSON API datasource
- a. JSON API dari librenms



Data Sources / LibreNMS API

Type: JSON API

Settings

Name

LibreNMS API

Default

☐

HTTP

URL

https://127.0.0.1/api/v0

Allowed cookies

New tag (enter key to add)

Timeout

Timeout in seconds

Auth

Basic auth

☐

With Credentials

☐

☐

TLS Client Auth

☐

With CA Cert

☐

☐

Skip TLS Verify

☐

Forward OAuth Identity

☐

☐

Custom HTTP Headers


Header

X-Auth-Token

Value

configured

Reset



+ Add header

Misc

Query string

page=1&limit=100


Back

Explore

Delete

Save & test

- b. JSON API dari service grafana-rrd tadi



Data Sources / RRD_Read

Type: JSON API

Settings

Name

RRD_Read

Default

☐

HTTP

URL

http://139.162.9.194:9200

Allowed cookies

New tag (enter key to add)

Timeout

Timeout in seconds

Auth

Basic auth

☐

With Credentials

☐

☐

TLS Client Auth

☐

With CA Cert

☐

☐

Skip TLS Verify

☐

Forward OAuth Identity

☐

☐

Custom HTTP Headers

+ Add header

Misc

Query string

page=1&limit=100

Back

Explore

Delete

Save & test

15. Buat file dashboard_rrd.json dan simpan di PC anda meremot

```
{
  "__inputs": [
    {
      "name": "DS_RRDREST_API",
      "label": "RRDRest API",
      "description": "",
      "type": "datasource",
      "pluginId": "marcusolsson-json-datasource",
      "pluginName": "JSON API"
    },
    {
      "name": "DS_LIBRENMS_API",
      "label": "LibreNMS API",
      "description": "",
      "type": "datasource",
      "pluginId": "marcusolsson-json-datasource",
      "pluginName": "JSON API"
    }
  ],
  "__requires": [
    {
      "type": "grafana",
      "id": "grafana",
      "name": "Grafana"
    },
    {
      "type": "panel",
      "id": "graph",
      "name": "Graph",
      "version": ""
    },
    {
      "type": "datasource",
      "id": "marcusolsson-json-datasource",
      "name": "JSON API",
      "version": "1.2.1"
    }
  ],
  "annotations": {
    "list": [
      {
        "builtIn": 1,
        "datasource": "-- Grafana --",
        "enable": true,
        "hide": true,
        "iconColor": "rgba(0, 211, 255, 1)",
        "name": "Annotations & Alerts",
        "type": "dashboard"
      }
    ]
  },
  "editable": true,
  "gnetId": null,
  "graphTooltip": 0,
  "id": null,
  "iteration": 1626152089476,
  "links": [],
  "panels": [
    {
      "aliasColors": {},
      "bars": false,
      "dashLength": 10,
      "dashes": false,
      "datasource": "${DS_RRDREST_API}",
      "fieldConfig": {
        "defaults": {
          "custom": {},
          "unit": "bps"
        },
        "overrides": []
      },
    },
  ],
}
```

```

    "fill": 1,
    "fillGradient": 0,
    "gridPos": {
      "h": 15,
      "w": 24,
      "x": 0,
      "y": 0
    },
    "hiddenSeries": false,
    "id": 2,
    "legend": {
      "avg": false,
      "current": false,
      "max": false,
      "min": false,
      "show": true,
      "total": false,
      "values": false
    },
    "lines": true,
    "linewidth": 1,
    "nullPointMode": "null",
    "options": {
      "alertThreshold": true
    },
    "percentage": false,
    "pluginVersion": "7.3.5",
    "pointradius": 2,
    "points": false,
    "renderer": "flot",
    "seriesOverrides": [],
    "spaceLength": 10,
    "stack": false,
    "steppedLine": false,
    "targets": [
      {
        "body": "",
        "cacheDurationSeconds": 0,
        "fields": [
          {
            "jsonPath": "$.data[*].time",
            "name": "time",
            "type": "time"
          },
          {
            "jsonPath": "$.data[*].inoctets",
            "name": "inoctets",
            "type": "number"
          },
          {
            "jsonPath": "$.data[*].outoctets",
            "name": "outoctets",
            "type": "number"
          }
        ],
        "hide": false,
        "method": "GET",
        "params": [
          [
            "",
            ""
          ]
        ],
        "queryParams": "",
        "refId": "A",
        "urlPath": "?rrd_path=/opt/librenms/rrd/$device/port-
id$portid.rrd&epoch_start_time=${__from:date:seconds}&epoch_end_time=${__to:d
ate:seconds}"
      }
    ],
    "thresholds": [],
    "timeFrom": null,

```

```

"timeRegions": [],
"timeShift": null,
"title": "Bandwidth In/Out",
"tooltip": {
  "shared": true,
  "sort": 0,
  "value_type": "individual"
},
"transformations": [
  {
    "id": "calculateField",
    "options": {
      "alias": "inMbps",
      "binary": {
        "left": "inoctets",
        "operator": "*",
        "reducer": "sum",
        "right": "8"
      },
      "mode": "binary",
      "reduce": {
        "include": [
          "inoctets"
        ],
        "reducer": "lastNotNull"
      },
      "replaceFields": false
    }
  },
  {
    "id": "calculateField",
    "options": {
      "alias": "outMbps",
      "binary": {
        "left": "outoctets",
        "operator": "*",
        "reducer": "sum",
        "right": "8"
      },
      "mode": "binary",
      "reduce": {
        "reducer": "sum"
      },
      "replaceFields": false
    }
  },
  {
    "id": "filterFieldsByName",
    "options": {
      "include": {
        "names": [
          "time",
          "inMbps",
          "outMbps"
        ]
      }
    }
  }
],
"type": "graph",
"xaxis": {
  "buckets": null,
  "mode": "time",
  "name": null,
  "show": true,
  "values": []
},
"yaxes": [
  {
    "$$hashKey": "object:1546",
    "format": "bps",
    "label": null,

```

```

        "logBase": 1,
        "max": null,
        "min": null,
        "show": true
    },
    {
        "$$hashKey": "object:1547",
        "format": "short",
        "label": null,
        "logBase": 1,
        "max": null,
        "min": null,
        "show": true
    }
],
"yaxis": {
    "align": false,
    "alignLevel": null
}
},
{
    "aliasColors": {},
    "bars": false,
    "dashLength": 10,
    "dashes": false,
    "datasource": "${DS_RRDREST_API}",
    "fieldConfig": {
        "defaults": {
            "custom": {},
            "unit": "bps"
        },
        "overrides": []
    },
    "fill": 1,
    "fillGradient": 0,
    "gridPos": {
        "h": 15,
        "w": 24,
        "x": 0,
        "y": 15
    },
    "hiddenSeries": false,
    "id": 3,
    "legend": {
        "avg": false,
        "current": false,
        "max": false,
        "min": false,
        "show": true,
        "total": false,
        "values": false
    },
    "lines": true,
    "linewidth": 1,
    "nullPointMode": "null",
    "options": {
        "alertThreshold": true
    },
    "percentage": false,
    "pluginVersion": "7.3.5",
    "pointRadius": 2,
    "points": false,
    "renderer": "flot",
    "seriesOverrides": [],
    "spaceLength": 10,
    "stack": false,
    "steppedLine": false,
    "targets": [
        {
            "body": "",
            "cacheDurationSeconds": 0,
            "fields": [

```

```

        {
            "jsonPath": "$.data[*].time",
            "name": "time",
            "type": "time"
        },
        {
            "jsonPath": "$.data[*].inerrors",
            "name": "inerrors",
            "type": "number"
        },
        {
            "jsonPath": "$.data[*].outerrors",
            "name": "outerrors",
            "type": "number"
        }
    ],
    "hide": false,
    "method": "GET",
    "params": [
        [
            "",
            ""
        ]
    ],
    "queryParams": "",
    "refId": "A",
    "urlPath": "?rrd_path=/opt/librenms/rrd/$device/port-
id$portid.rrd&epoch_start_time=${__from:date:seconds}&epoch_end_time=${__to:d
ate:seconds}"
    }
],
"thresholds": [],
"timeFrom": null,
"timeRegions": [],
"timeShift": null,
"title": "Errors In/Out",
"tooltip": {
    "shared": true,
    "sort": 0,
    "value_type": "individual"
},
"transformations": [],
"type": "graph",
"xaxis": {
    "buckets": null,
    "mode": "time",
    "name": null,
    "show": true,
    "values": []
},
"yaxes": [
    {
        "$$hashKey": "object:1546",
        "format": "bps",
        "label": null,
        "logBase": 1,
        "max": null,
        "min": null,
        "show": true
    },
    {
        "$$hashKey": "object:1547",
        "format": "short",
        "label": null,
        "logBase": 1,
        "max": null,
        "min": null,
        "show": true
    }
],
"yaxis": {
    "align": false,

```

```

        "alignLevel": null
    }
}
],
"refresh": "30s",
"schemaVersion": 26,
"style": "dark",
"tags": [],
"templating": {
    "list": [
        {
            "allValue": null,
            "current": {},
            "datasource": "${DS_LIBRENMS_API}",
            "definition": "$.devices[*].hostname",
            "error": null,
            "hide": 0,
            "includeAll": false,
            "label": null,
            "multi": false,
            "name": "device",
            "options": [],
            "query": {
                "cacheDurationSeconds": 300,
                "fields": [
                    {
                        "jsonPath": "$.devices[*].hostname"
                    }
                ],
                "method": "GET",
                "queryParams": "",
                "urlPath": "/devices"
            },
            "refresh": 1,
            "regex": "",
            "skipUrlSync": false,
            "sort": 0,
            "tagValuesQuery": "",
            "tags": [],
            "tagsQuery": "",
            "type": "query",
            "useTags": false
        },
        {
            "allValue": null,
            "current": {},
            "datasource": "${DS_LIBRENMS_API}",
            "definition": "$.ports[*].port_id",
            "error": null,
            "hide": 0,
            "includeAll": false,
            "label": "Interface",
            "multi": false,
            "name": "portid",
            "options": [],
            "query": {
                "cacheDurationSeconds": 300,
                "experimentalVariableTextField": "ifName",
                "experimentalVariableValueField": "id",
                "fields": [
                    {
                        "jsonPath": "$.ports[*].port_id",
                        "name": "id"
                    },
                    {
                        "jsonPath": "$.ports[*].ifName",
                        "name": ""
                    }
                ],
                "method": "GET",
                "queryParams": "",
                "urlPath": "/devices/$device/ports?columns=ifName%2Cport_id"
            }
        }
    ]
}

```

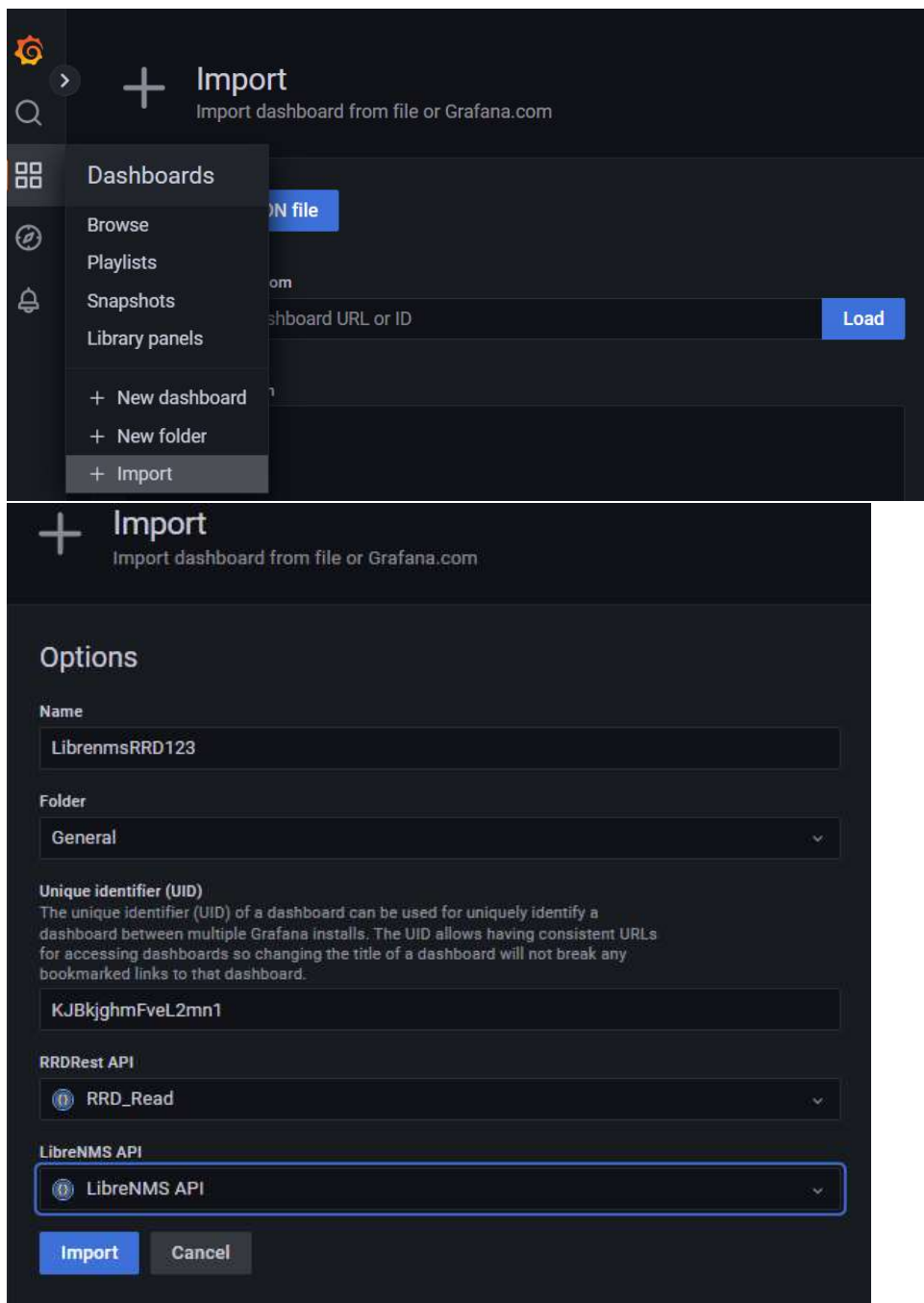


```

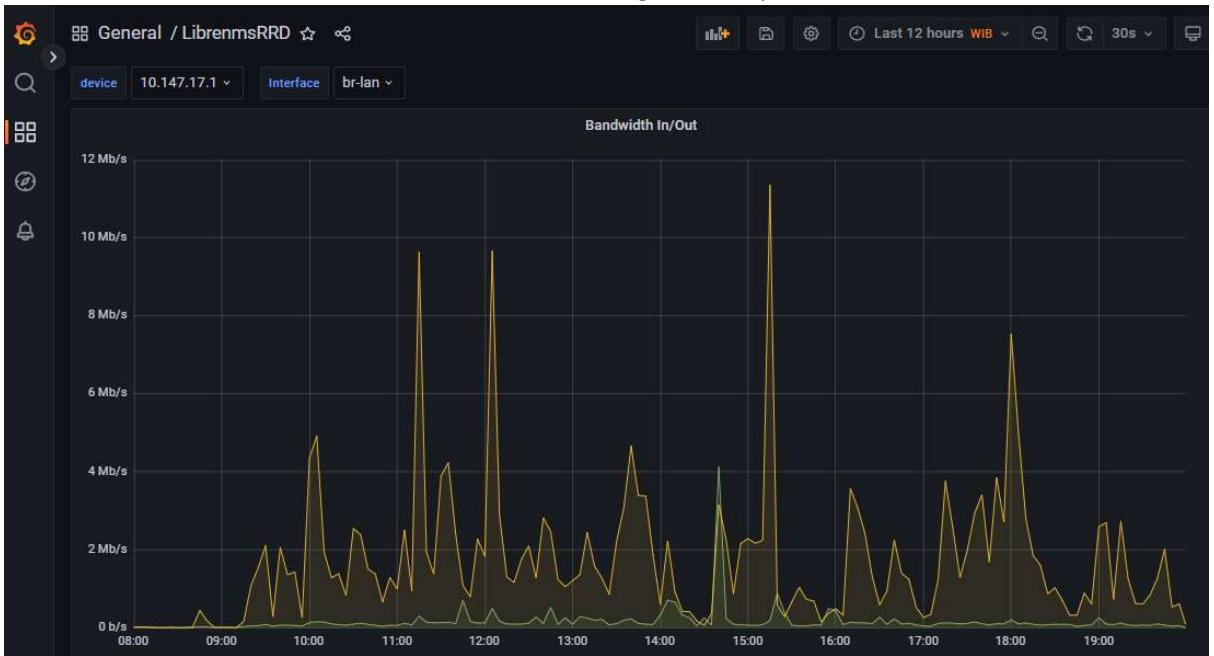
    },
    "refresh": 1,
    "regex": "",
    "skipUrlSync": false,
    "sort": 0,
    "tagValuesQuery": "",
    "tags": [],
    "tagsQuery": "",
    "type": "query",
    "useTags": false
  }
],
},
"time": {
  "from": "now-12h",
  "to": "now"
},
"timepicker": {},
"timezone": "",
"title": "LibrenmsRRD",
"uid": "mFveL2mn1",
"version": 27
}

```

16. Import dashboard_rrd.json tadi ke grafana -> dashboard->import



17. Setelah sukses, maka bisa dilihat di menu dashboard grafana seperti berikut



18. ganti “change time setting” sesuai keinginan dan rentang waktu yang diinginkan



19. Selesai