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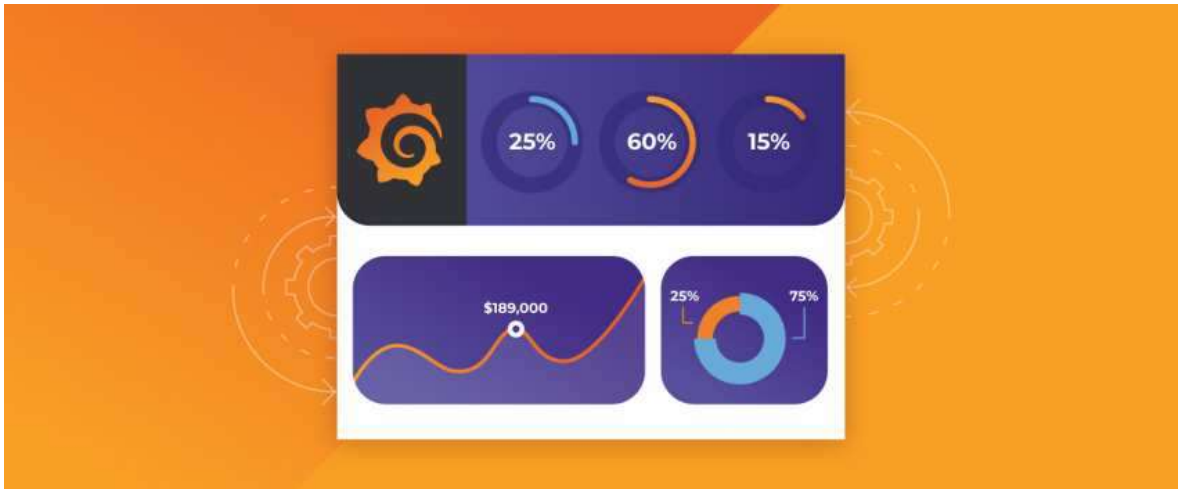
Position – IT Intern

Date – 30 January 2024

Assignment Title – How to install and configure Grafana

Intro to Grafana: Installation, Configuration, and Building the First Dashboard



Grafana Overview:

- Grafana is an open-source dashboarding, analytics, and monitoring platform.
- Compatible with various data sources like Elasticsearch, InfluxDB, Graphite, Prometheus, AWS CloudWatch, and more.
- Allows integration of multiple data sources into one dashboard with customizable panels.

Pros:

- Sleek design and user-friendly interface.
- Easy integration with multiple data sources.
- Flexible and customizable dashboard creation. Cons:
- Learning curve for filter placement and certain visual compositions.
- Some features are abstracted, limiting direct query access to data sources.
- Plugin installation can be challenging, with potential debugging issues.

Installing Grafana on centos Linux and its sisters:

First, add rpm repo:

sudo cat > /etc/yum.repos.d/grafana.repo <<- repoconf

[grafana]

name=grafana

baseurl=https://packagecloud.io/grafana/stable/el/6/$basearch

repo_gpgcheck=1

enabled=1

gpgcheck=1

gpgkey=https://packagecloud.io/gpg.key

https://grafanarel.s3.amazonaws.com/RPM-GPG-KEY-grafana

sslverify=1

sslcacert=/etc/pki/tls/certs/ca-bundle.crt

repoconf

Then, install using yum:

sudo yum install grafana

Installing via repo adds system unit for running in daemon mode:

To run as daemon, do the following:

systemctl daemon-reload

systemctl start grafana-server

systemctl status grafana-server

If you want to enable auto-startup on the boot, run:

sudo systemctl enable grafana-server.service

Configuration:

All defaults for running are configured in environment variables in /etc/sysconfig/grafana-server:

```
GRAFANA_USER=grafana
GRAFANA_GROUP=grafana
GRAFANA_HOME=/usr/share/grafana
LOG_DIR=/var/log/grafana
DATA_DIR=/var/lib/grafana
MAX_OPEN_FILES=10000
CONF_DIR=/etc/grafana
CONF_FILE=/etc/grafana/grafana.ini
RESTART_ON_UPGRADE=true
PLUGINS_DIR=/var/lib/grafana/plugins
```

As to Grafana configurations, everything is listed (including defaults) in /etc/grafana/grafana.ini.

If you want to access Grafana from outside (not localhost only) set http_addr config to bind to all interfaces explicitly or leave it blank to do the same thing implicitly.

If Grafana is still inaccessible, make sure that the firewall does not block traffic on Grafana's port.

To add a port to allowed, use:

GRAFANA_USER=grafanafirewall-cmd --zone=public --add-port=3000/tcp –permanent

firewall-cmd --reload

Then, check it in:

iptables-save | grep 3000

Installing plugins:

Installation of plugins may cause several troubles due to incompatibilities of Grafana versions. The most common problem is that the plugin is installed but not detected and thus not usable. To avoid such situation, it is better to follow the next steps to install a plugin.

First, make sure that `/var/lib/grafana/` folder is owned by Grafana user and has all permissions. If not, then run:

sudo chown -R grafana /var/lib/grafana/

sudo chmod -R 700 /var/lib/grafana/

Stop Grafana:

systemctl stop grafana-server

Make sure to clear cache in the browser, from which you access Grafana.

Then, install a plugin using the cli utility:

grafana-cli plugins install

Check that your plugin installed successfully:

grafana-cli plugins ls

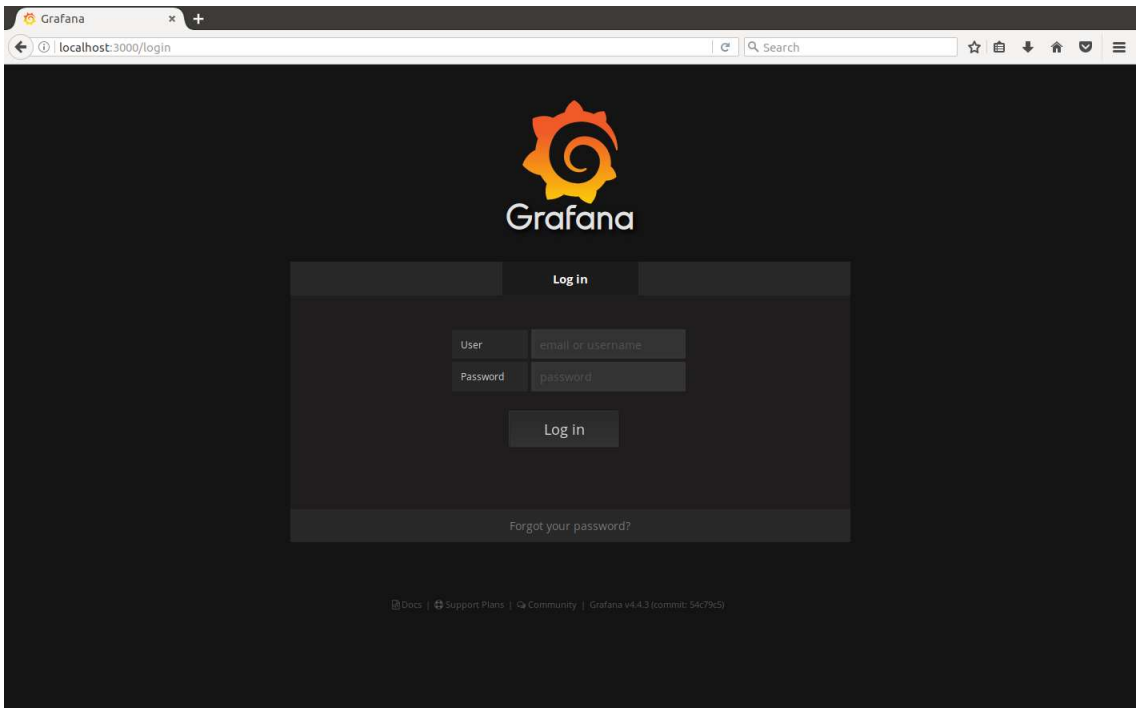
After that, start Grafana up again:

systemctl stop grafana-server

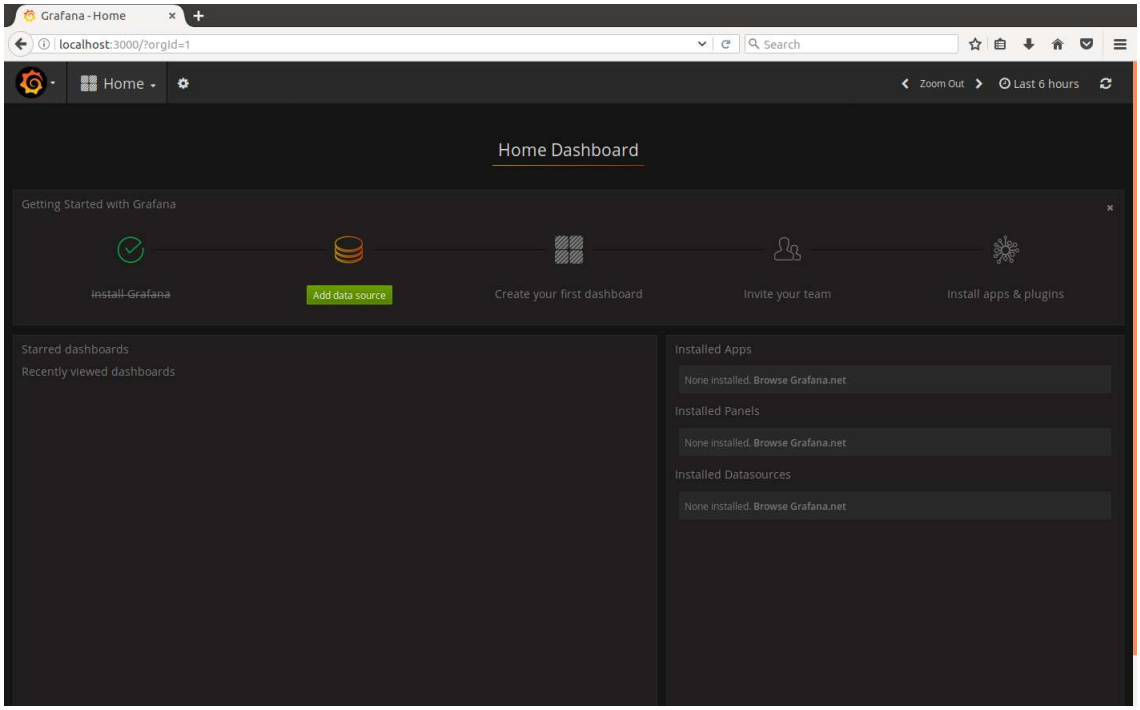
Check your installation in a browser.

Beginning to work:

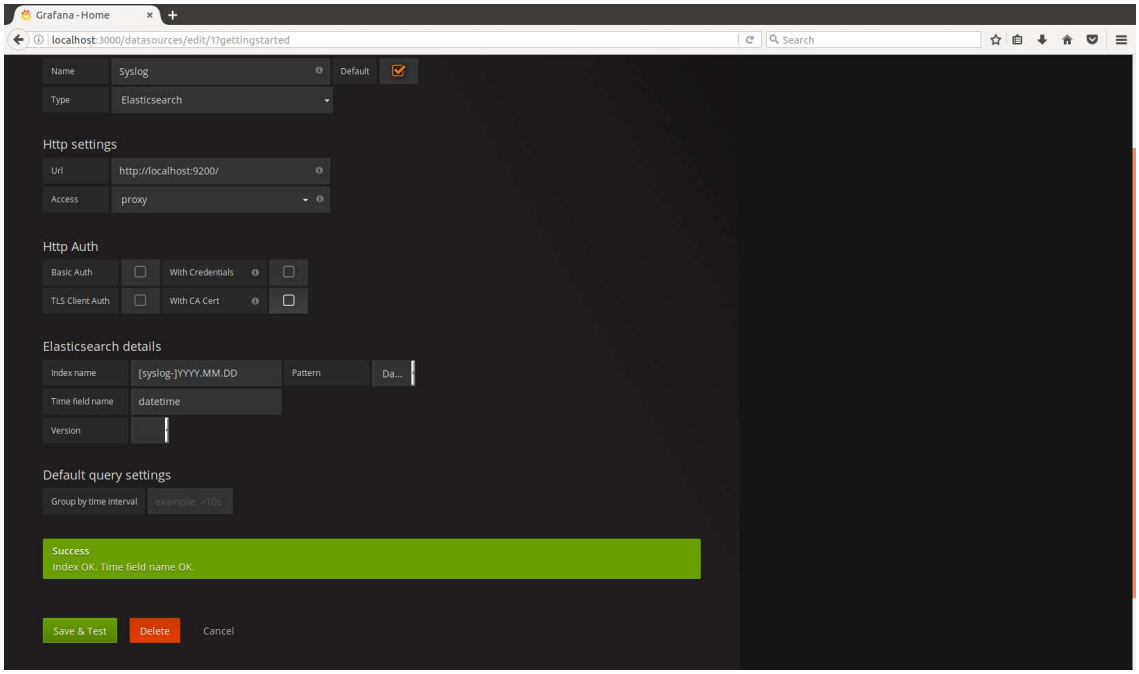
First, you will need to log in. By default, Grafana creates an admin user with admin password on startup (maybe changed in /etc/grafana/grafana.ini).



As you log in, you will be prompted to connect to your first data source.

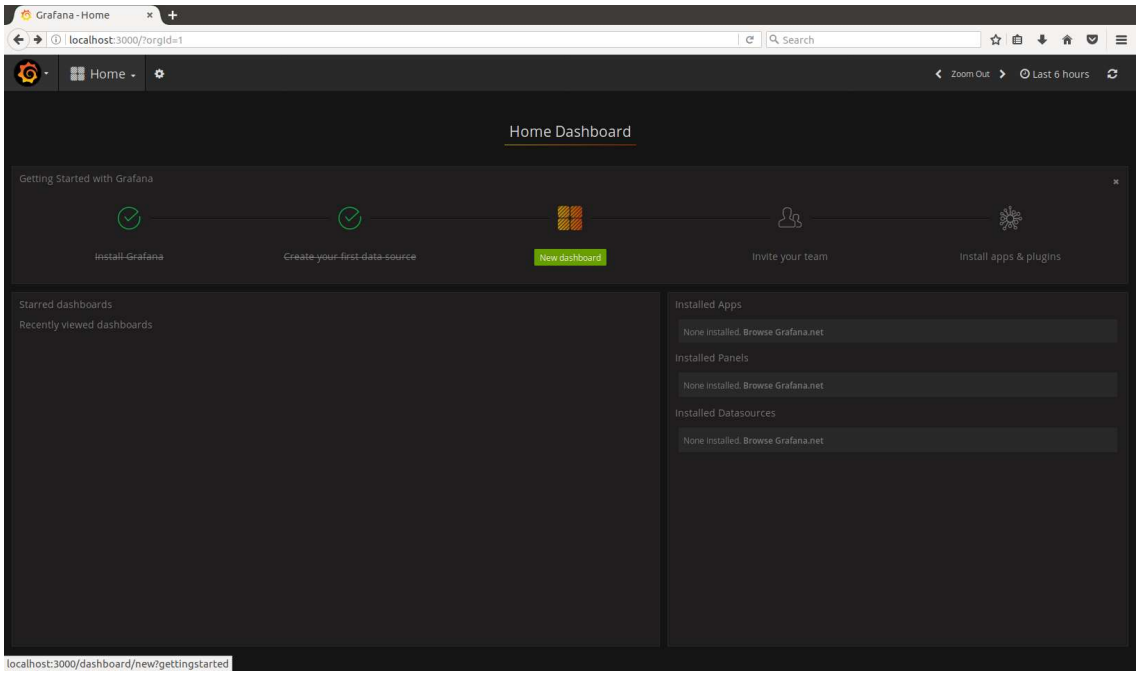


We will connect to an instance of the elasticsearch cluster:

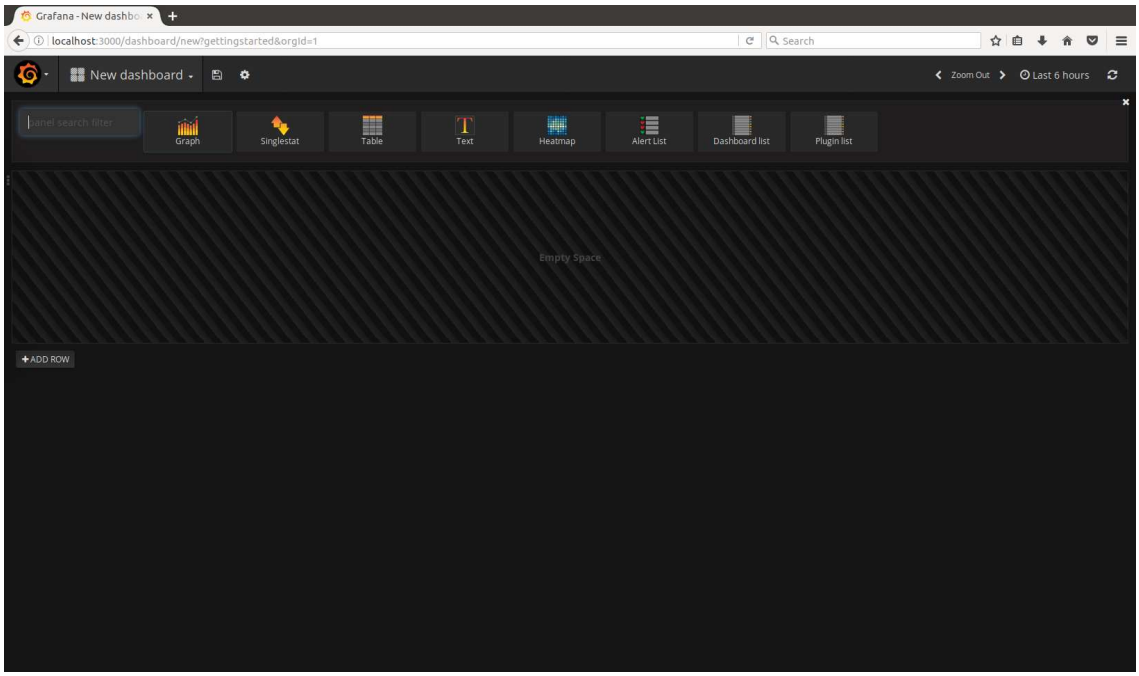


Just fill all the fields to connect to the cluster. Note that in place of the index name you may specify the pattern for lookup.

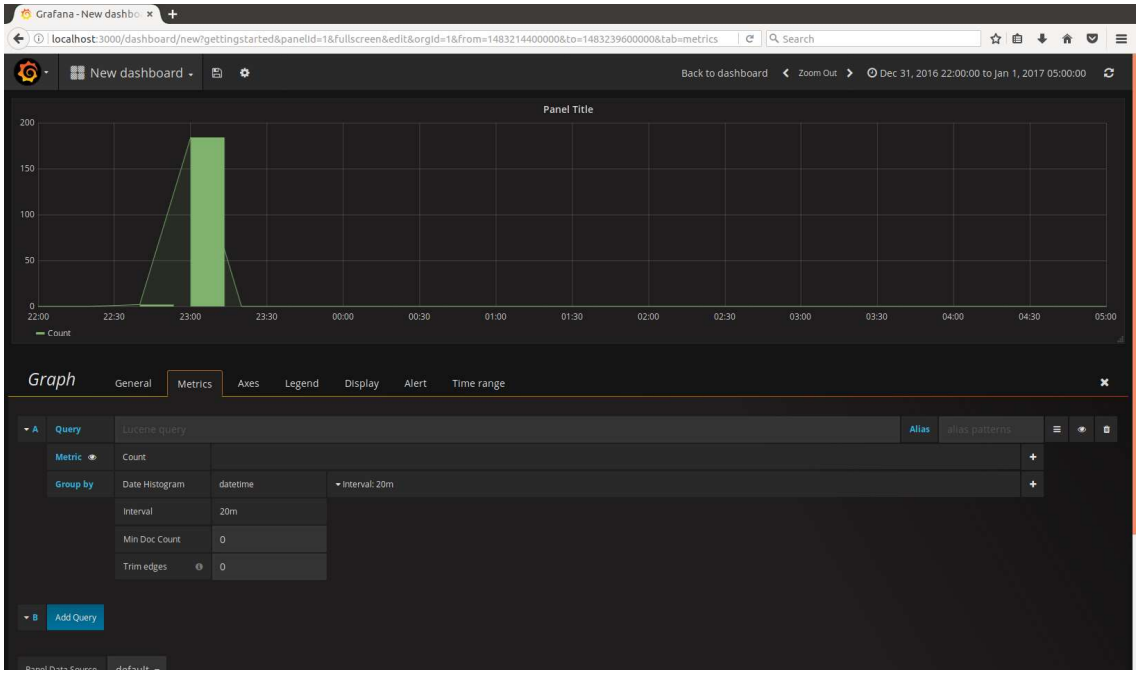
Then you may proceed to create the dashboard.



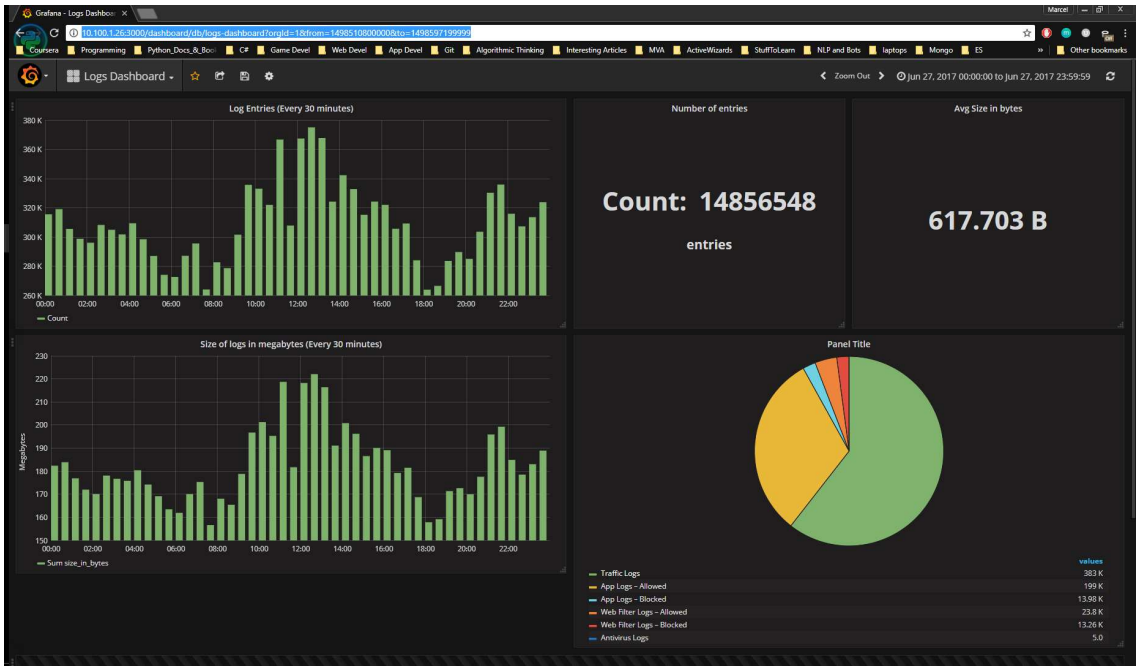
You will end up with an empty dashboard with one row. In that row you can put any panels you want - each panel is responsible for one visual.



Choose the type of panel and explore the ways to interact with it. Important note: in the upper left corner you must choose the time interval for which the data will be used and displayed (in our case we set up the time field to be the one from data itself; you may use logstash @timestamp or anything you wish).



The tabs of the Graph are grouping the settings logically so they are easy to discover. The way data is queried for building visual is all mirrored in Metrics tab. The way the visual looks is set in Display tab. Save the dashboard by clicking diskette sign on the top and giving it concise name. That is it. Build cool dashboards fast.



Conclusion:

In this article we highlighted key pros and cons of Grafana. We have also given a brief and simple instruction on Grafana installation and starting operation. Follow these simple steps and get the benefits of Grafana application. Build engagement and appealing dashboards to make your data easy for comprehension in a few clicks.