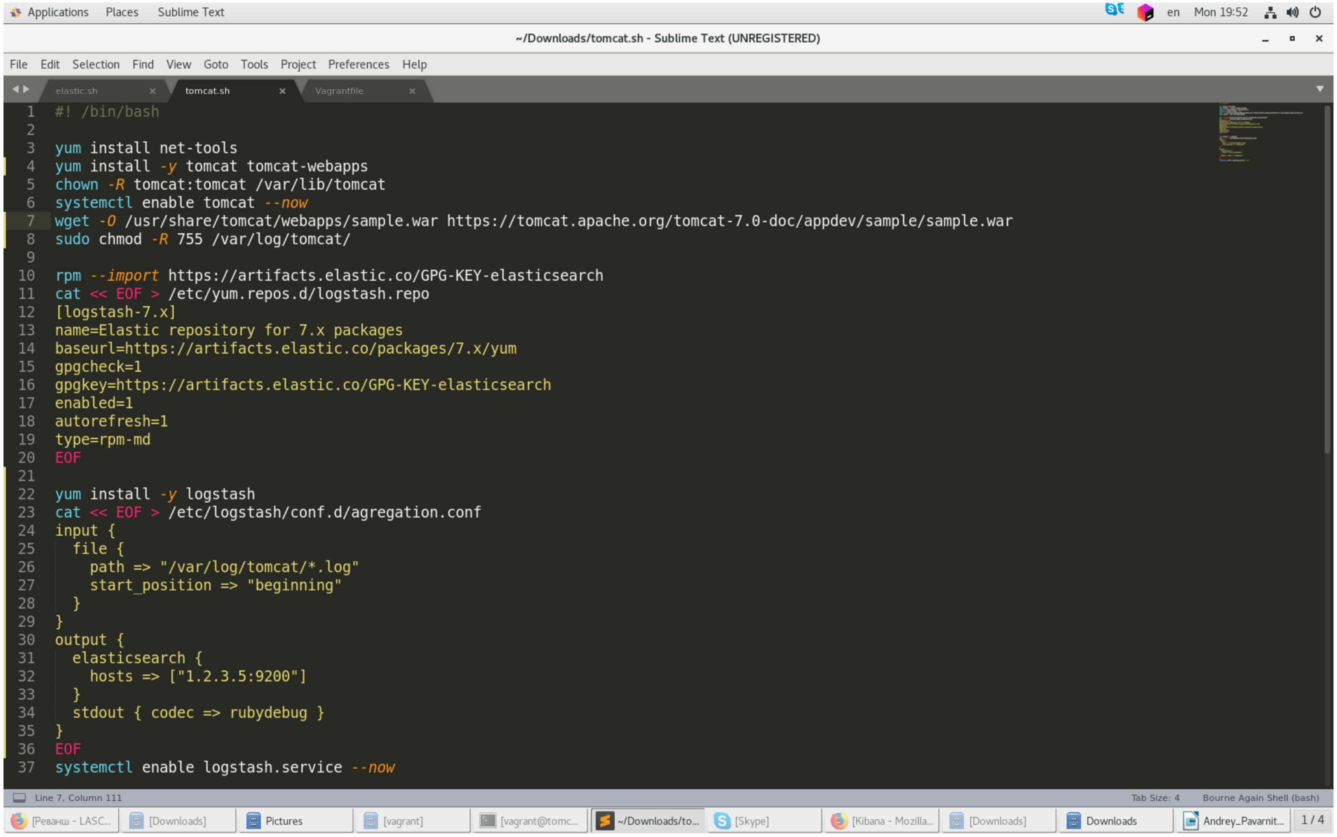
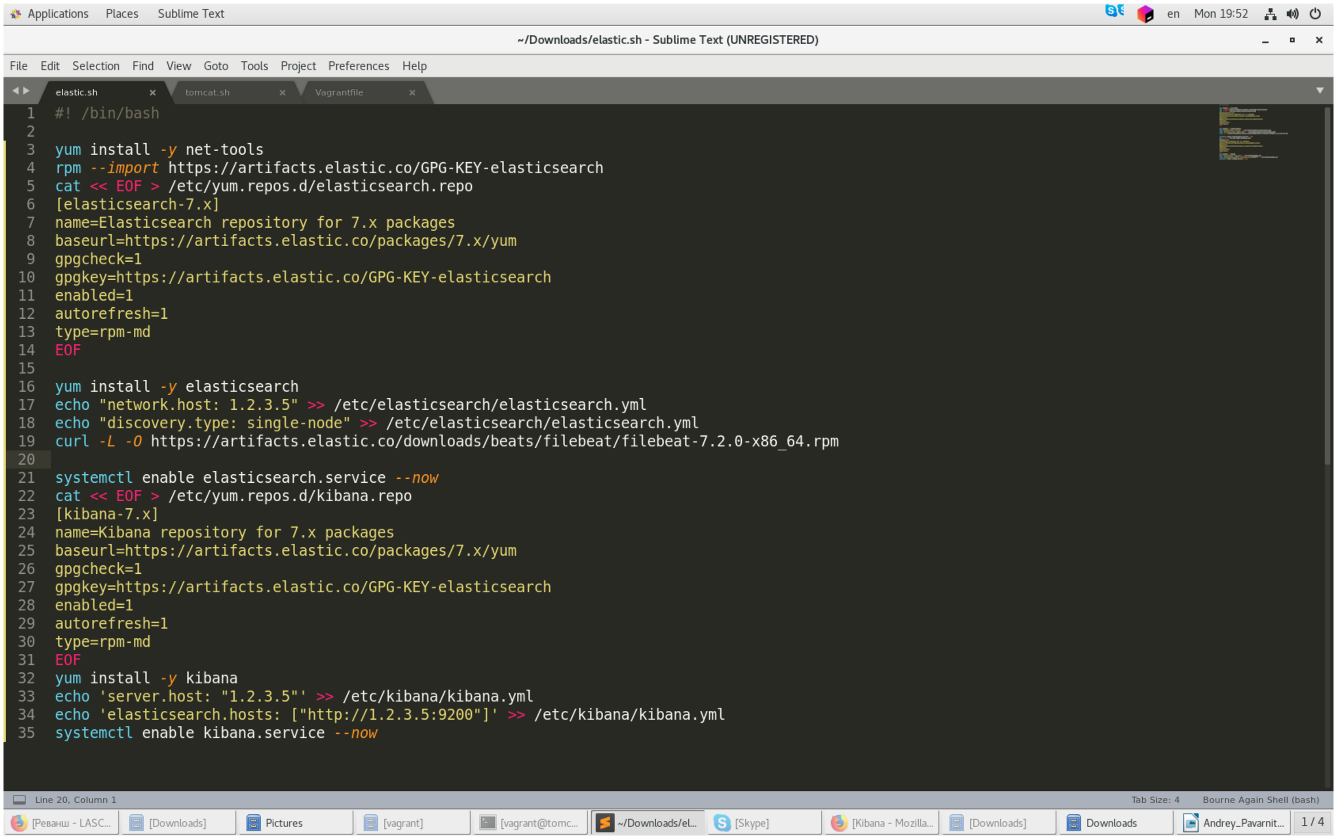
# 1. Provision scripts

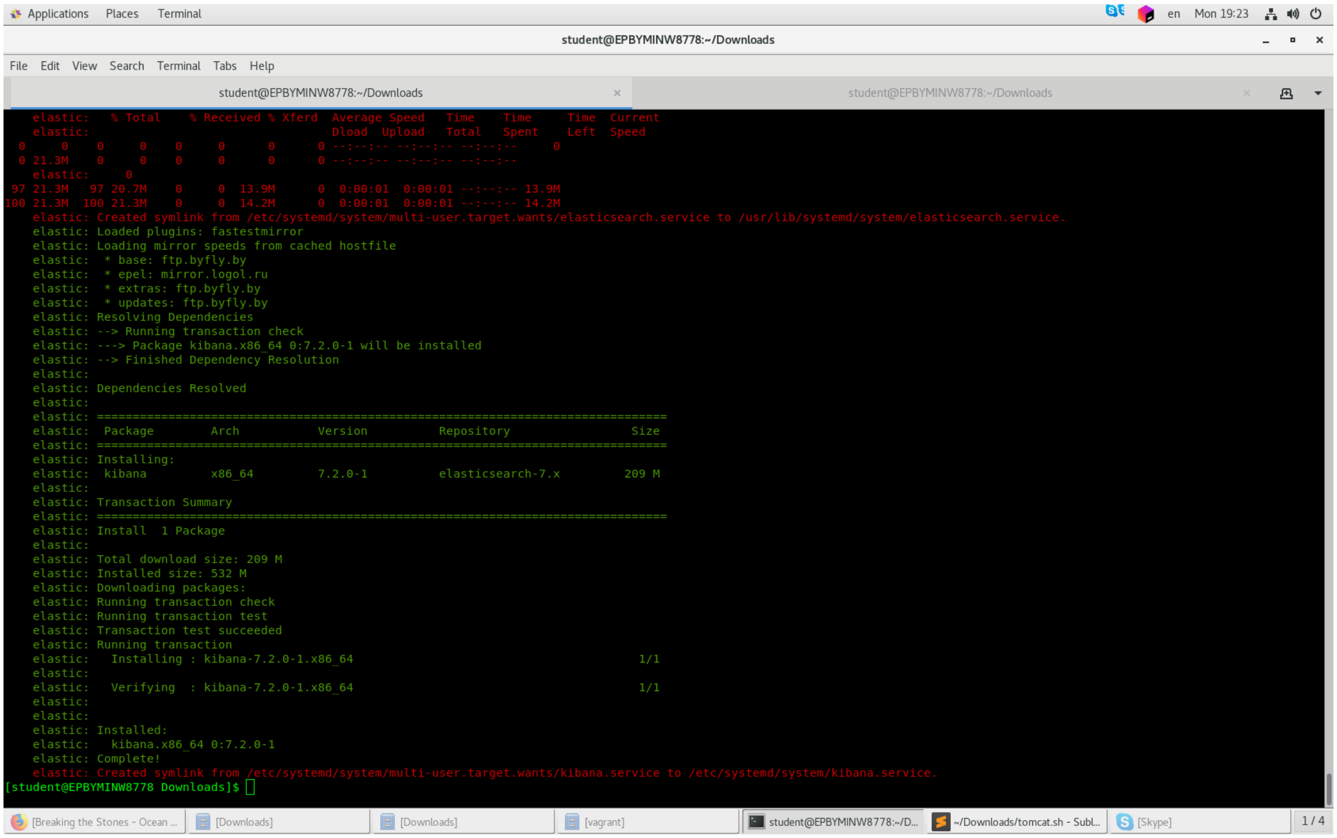


```bash
#! /bin/bash

yum install net-tools
yum install -y tomcat tomcat-webapps
chown -R tomcat:tomcat /var/lib/tomcat
systemctl enable tomcat --now
wget -O /usr/share/tomcat/webapps/sample.war https://tomcat.apache.org/tomcat-7.0-doc/appdev/sample/sample.war
sudo chmod -R 755 /var/log/tomcat/

rpm --import https://artifacts.elastic.co/GPG-KEY-elasticsearch
cat << EOF > /etc/yum.repos.d/logstash.repo
[logstash-7.x]
name=Elastic repository for 7.x packages
baseurl=https://artifacts.elastic.co/packages/7.x/yum
gpgcheck=1
gpgkey=https://artifacts.elastic.co/GPG-KEY-elasticsearch
enabled=1
autorefresh=1
type=rpm-md
EOF

yum install -y logstash
cat << EOF > /etc/logstash/conf.d/agregation.conf
input {
  file {
    path => "/var/log/tomcat/*.log"
    start_position => "beginning"
  }
}
output {
  elasticsearch {
    hosts => ["1.2.3.5:9200"]
  }
  stdout { codec => rubydebug }
}
EOF
systemctl enable logstash.service --now
```



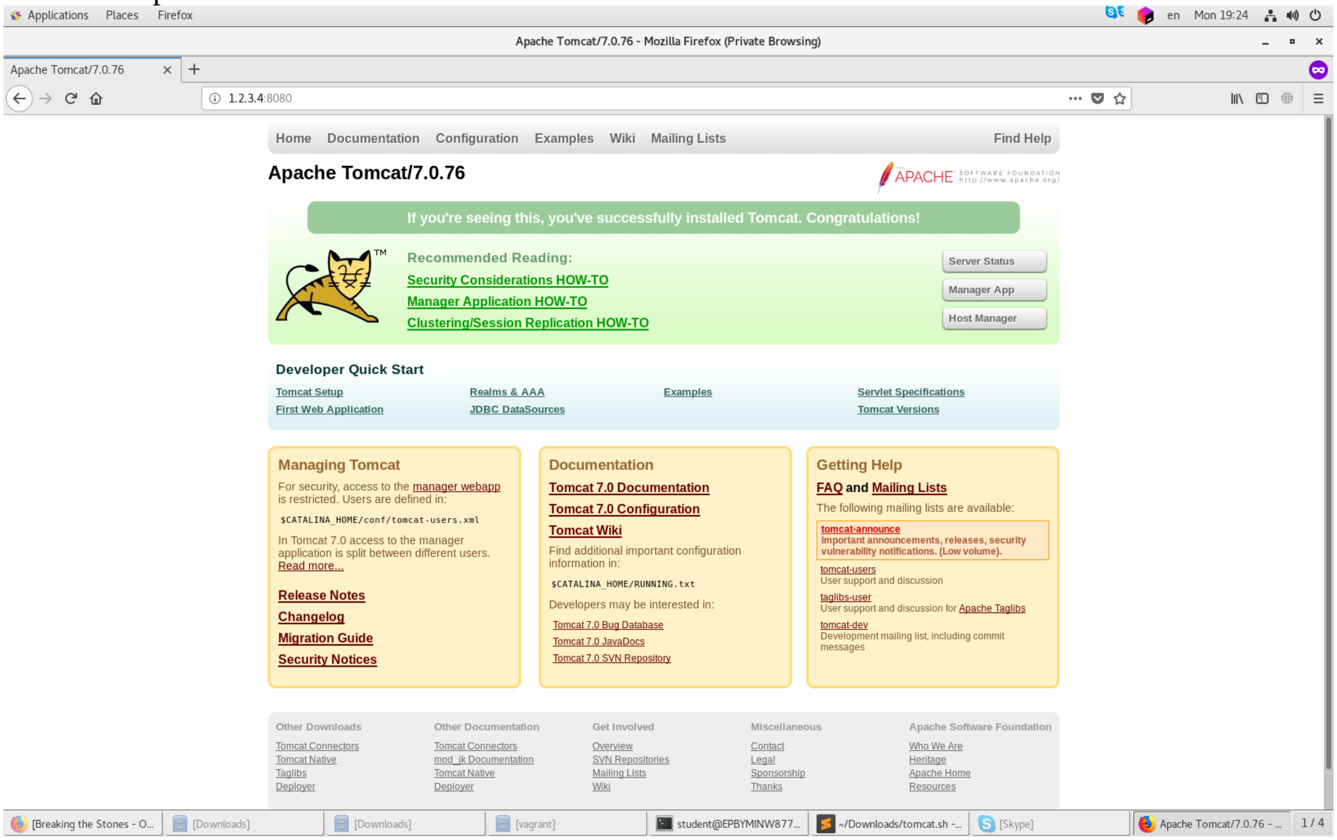
```bash
#! /bin/bash

yum install -y net-tools
rpm --import https://artifacts.elastic.co/GPG-KEY-elasticsearch
cat << EOF > /etc/yum.repos.d/elasticsearch.repo
[elasticsearch-7.x]
name=Elasticsearch repository for 7.x packages
baseurl=https://artifacts.elastic.co/packages/7.x/yum
gpgcheck=1
gpgkey=https://artifacts.elastic.co/GPG-KEY-elasticsearch
enabled=1
autorefresh=1
type=rpm-md
EOF

yum install -y elasticsearch
echo "network.host: 1.2.3.5" >> /etc/elasticsearch/elasticsearch.yml
echo "discovery.type: single-node" >> /etc/elasticsearch/elasticsearch.yml
curl -L -O https://artifacts.elastic.co/downloads/beats/filebeat/filebeat-7.2.0-x86_64.rpm

systemctl enable elasticsearch.service --now
cat << EOF > /etc/yum.repos.d/kibana.repo
[kibana-7.x]
name=Kibana repository for 7.x packages
baseurl=https://artifacts.elastic.co/packages/7.x/yum
gpgcheck=1
gpgkey=https://artifacts.elastic.co/GPG-KEY-elasticsearch
enabled=1
autorefresh=1
type=rpm-md
EOF
yum install -y kibana
echo 'server.host: "1.2.3.5"' >> /etc/kibana/kibana.yml
echo 'elasticsearch.hosts: ["http://1.2.3.5:9200"]' >> /etc/kibana/kibana.yml
systemctl enable kibana.service --now
```

## 2. Vagrant up result


Applications
Places
Terminal
en
Mon 19:23
student@EPBYMINW8778:~/Downloads
File
Edit
View
Search
Terminal
Tabs
Help
student@EPBYMINW8778:~/Downloads
student@EPBYMINW8778:~/Downloads
[Breaking the Stones - Ocean ...
[Downloads]
[Downloads]
[vagrant]
student@EPBYMINW8778:~/D...
~/Downloads/tomcat.sh - Subl...
[Skype]
1 / 4

```
    elastic:   % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
    elastic:                                  Dload  Upload   Total   Spent    Left  Speed
  0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:--     0
  0 21.3M    0     0    0     0      0      0 --:--:-- --:--:-- --:--:--
    elastic:     0
 97 21.3M   97 20.7M    0     0  13.9M      0  0:00:01  0:00:01 --:--:-- 13.9M
100 21.3M  100 21.3M    0     0  14.2M      0  0:00:01  0:00:01 --:--:-- 14.2M
    elastic: Created symlink from /etc/systemd/system/multi-user.target.wants/elasticsearch.service to /usr/lib/systemd/system/elasticsearch.service.
    elastic: Loaded plugins: fastestmirror
    elastic: Loading mirror speeds from cached hostfile
    elastic:  * base: ftp.byfly.by
    elastic:  * epel: mirror.logol.ru
    elastic:  * extras: ftp.byfly.by
    elastic:  * updates: ftp.byfly.by
    elastic: Resolving Dependencies
    elastic: --> Running transaction check
    elastic: ---> Package kibana.x86_64 0:7.2.0-1 will be installed
    elastic: --> Finished Dependency Resolution
    elastic:
    elastic: Dependencies Resolved
    elastic:
    elastic: ================================================================================
    elastic:  Package        Arch           Version          Repository                 Size
    elastic: ================================================================================
    elastic: Installing:
    elastic:  kibana         x86_64         7.2.0-1          elasticsearch-7.x         209 M
    elastic:
    elastic: Transaction Summary
    elastic: ================================================================================
    elastic: Install  1 Package
    elastic:
    elastic: Total download size: 209 M
    elastic: Installed size: 532 M
    elastic: Downloading packages:
    elastic: Running transaction check
    elastic: Running transaction test
    elastic: Transaction test succeeded
    elastic: Running transaction
    elastic:   Installing : kibana-7.2.0-1.x86_64                                       1/1
    elastic:
    elastic:   Verifying  : kibana-7.2.0-1.x86_64                                       1/1
    elastic:
    elastic:
    elastic: Installed:
    elastic:   kibana.x86_64 0:7.2.0-1
    elastic: Complete!
    elastic: Created symlink from /etc/systemd/system/multi-user.target.wants/kibana.service to /etc/systemd/system/kibana.service.
[student@EPBYMINW8778 Downloads]$ 
```

## Tomcat is up



**Apache Tomcat/7.0.76**

If you're seeing this, you've successfully installed Tomcat. Congratulations!

Recommended Reading:

Security Considerations HOW-TO
Manager Application HOW-TO
Clustering/Session Replication HOW-TO

**Developer Quick Start**

Tomcat Setup
First Web Application
Realms & AAA
JDBC DataSources
Examples
Servlet Specifications
Tomcat Versions

**Managing Tomcat**

For security, access to the manager webapp is restricted. Users are defined in:

```
$CATALINA_HOME/conf/tomcat-users.xml
```

In Tomcat 7.0 access to the manager application is split between different users. Read more...

Release Notes
Changelog
Migration Guide
Security Notices

**Documentation**

Tomcat 7.0 Documentation
Tomcat 7.0 Configuration
Tomcat Wiki

Find additional important configuration information in:

```
$CATALINA_HOME/RUNNING.txt
```

Developers may be interested in:

Tomcat 7.0 Bug Database
Tomcat 7.0 JavaDocs
Tomcat 7.0 SVN Repository

**Getting Help**

FAQ and Mailing Lists

The following mailing lists are available:

tomcat-announce
Important announcements, releases, security vulnerability notifications. (Low volume).

tomcat-users
User support and discussion

taglibs-user
User support and discussion for Apache Taglibs

tomcat-dev
Development mailing list, including commit messages

Other Downloads
Tomcat Connectors
Tomcat Native
Taglibs
Deployer

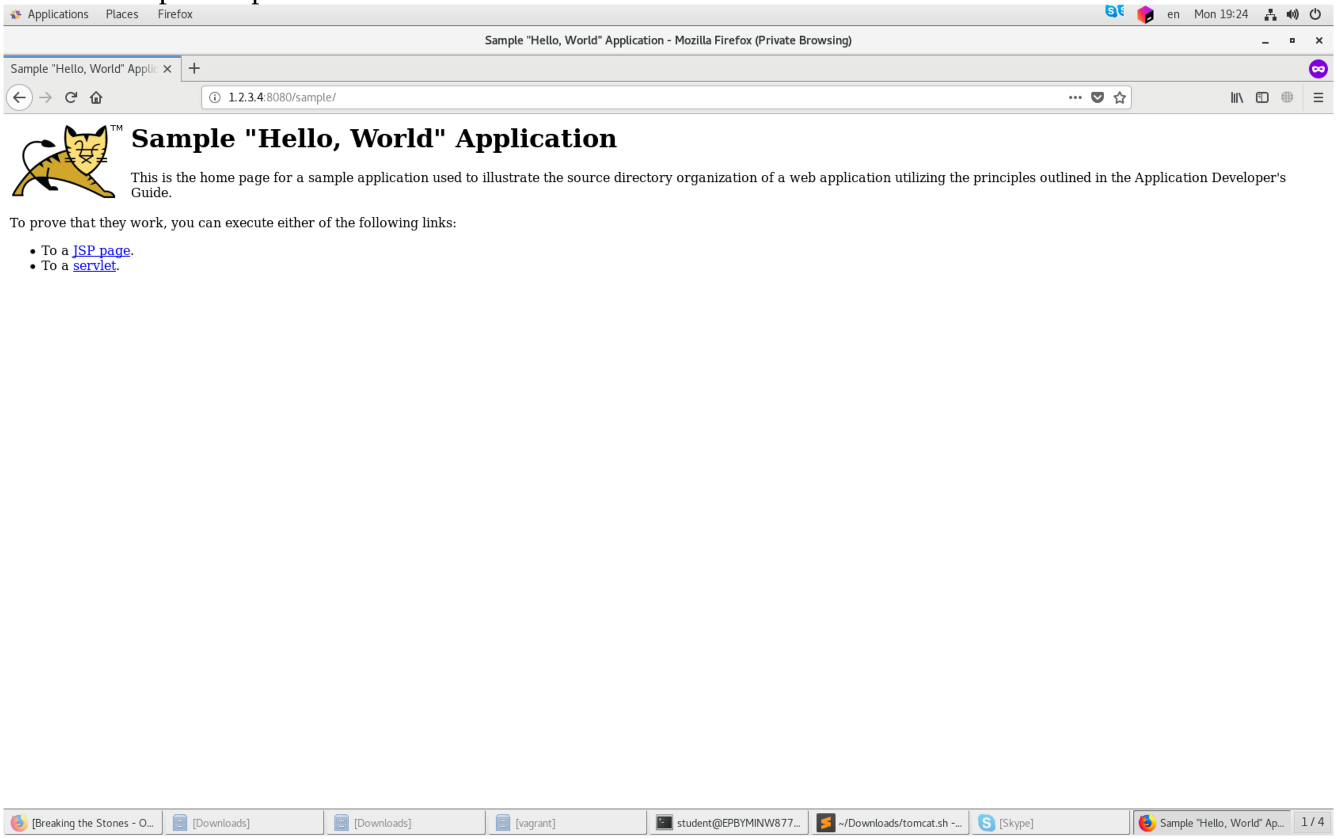
Other Documentation
Tomcat Connectors
mod_jk Documentation
Tomcat Native
Deployer

Get Involved
Overview
SVN Repositories
Mailing Lists
Wiki

Miscellaneous
Contact
Legal
Sponsorship
Thanks

Apache Software Foundation
Who We Are
Heritage
Apache Home
Resources

# Tomcat sample is up



Applications
Places
Firefox
en
Mon 19:24
Sample "Hello, World" Application - Mozilla Firefox (Private Browsing)
Sample "Hello, World" Applic
1.2.3.4:8080/sample/
[Breaking the Stones - O...
[Downloads]
[Downloads]
[vagrant]
student@EPBYMINW877...
~/Downloads/tomcat.sh -...
[Skype]
Sample "Hello, World" Ap...
1 / 4

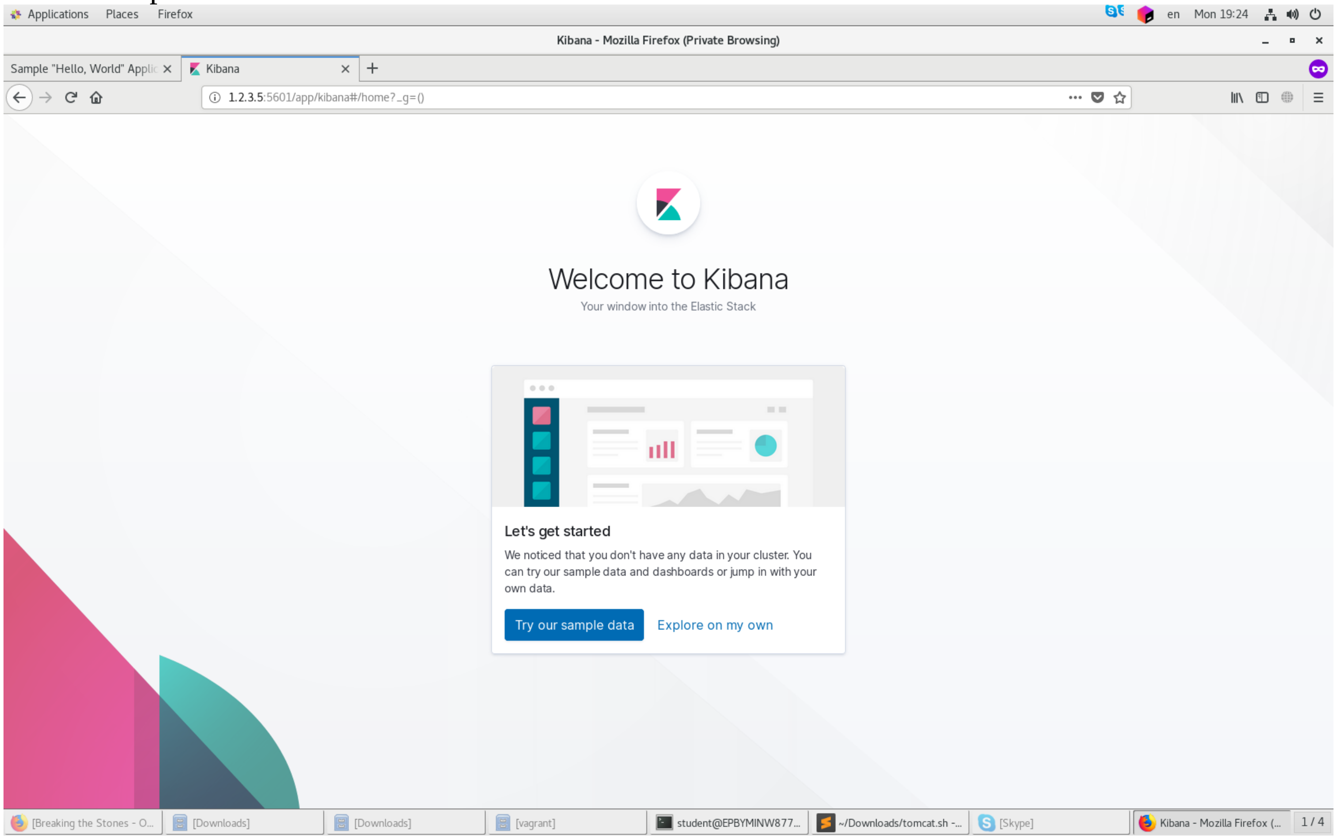
## Sample "Hello, World" Application

This is the home page for a sample application used to illustrate the source directory organization of a web application utilizing the principles outlined in the Application Developer's Guide.

To prove that they work, you can execute either of the following links:

- To a JSP page.
- To a servlet.

# Kibana is up



Applications
Places
Firefox
en
Mon 19:24
Kibana - Mozilla Firefox (Private Browsing)
Sample "Hello, World" Applic
Kibana
1.2.3.5:5601/app/kibana#/home?_g=()
[Breaking the Stones - O...
[Downloads]
[Downloads]
[vagrant]
student@EPBYMINW877...
~/Downloads/tomcat.sh -...
[Skype]
Kibana - Mozilla Firefox (...
1 / 4

Welcome to Kibana

Your window into the Elastic Stack

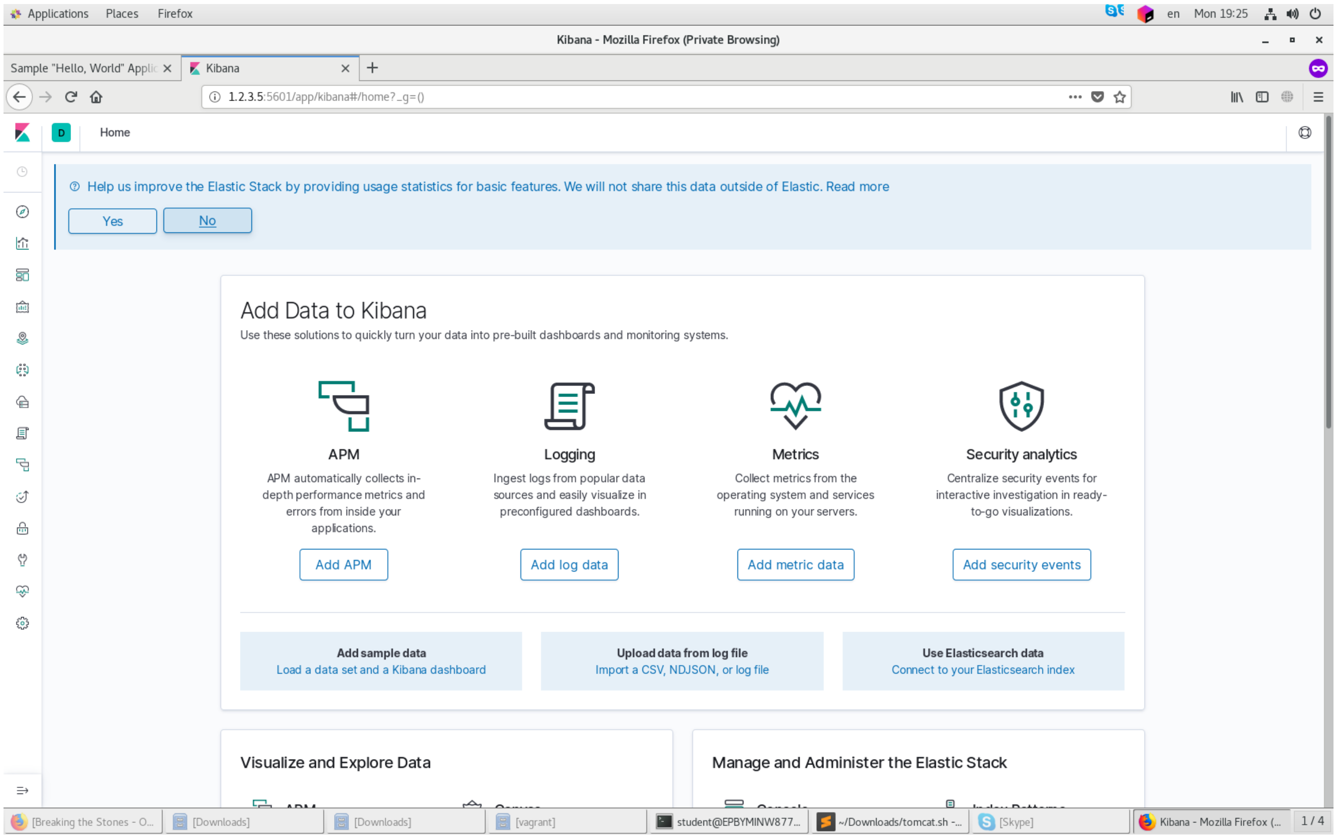
Let's get started

We noticed that you don't have any data in your cluster. You can try our sample data and dashboards or jump in with your own data.

Try our sample data
Explore on my own

## 3. Editing visualization

Main screen



Help us improve the Elastic Stack by providing usage statistics for basic features. We will not share this data outside of Elastic. Read more

Add Data to Kibana

Use these solutions to quickly turn your data into pre-built dashboards and monitoring systems.

APM automatically collects in-depth performance metrics and errors from inside your applications.

Ingest logs from popular data sources and easily visualize in preconfigured dashboards.

Collect metrics from the operating system and services running on your servers.

Centralize security events for interactive investigation in ready-to-go visualizations.

Add sample data
Load a data set and a Kibana dashboard

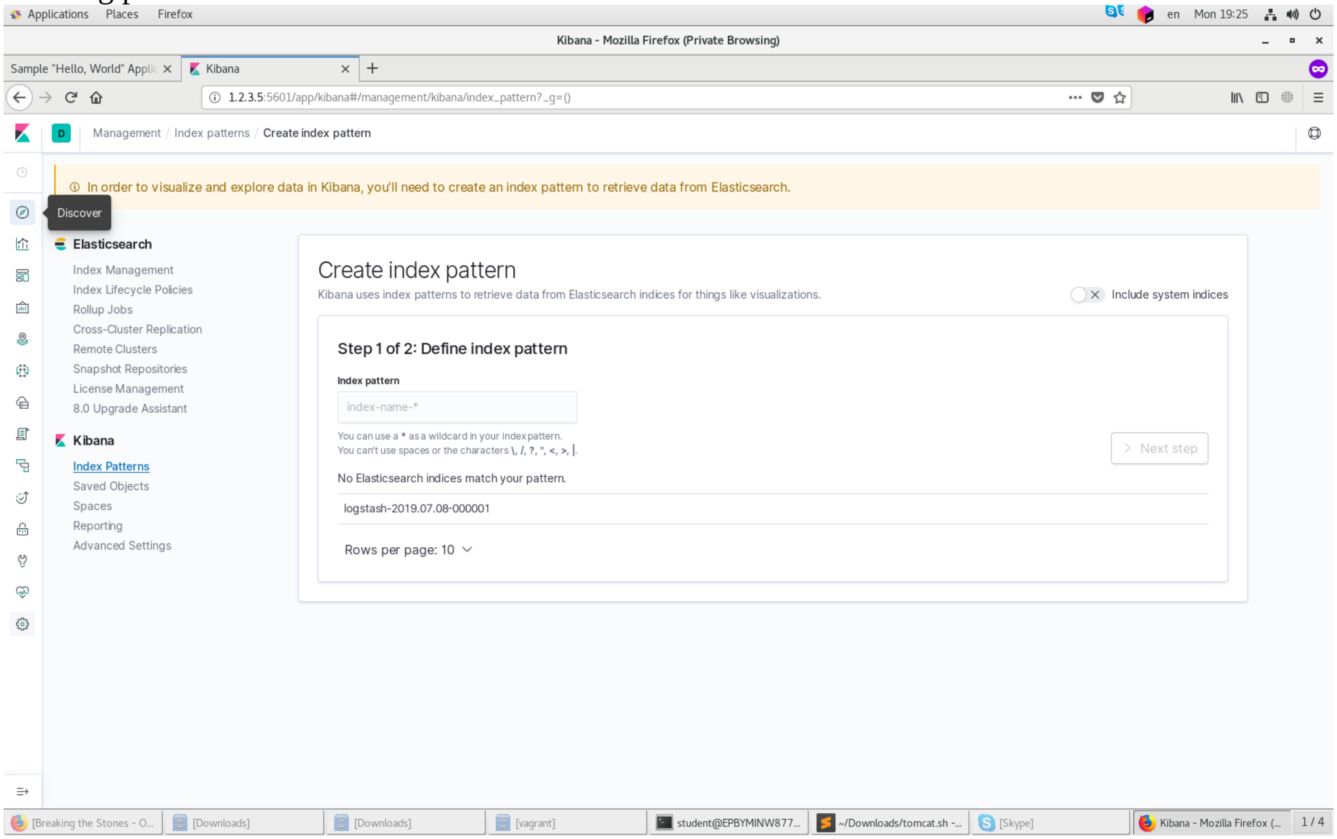
Upload data from log file
Import a CSV, NDJSON, or log file

Use Elasticsearch data
Connect to your Elasticsearch index

Visualize and Explore Data

Manage and Administer the Elastic Stack

Creating pattern



In order to visualize and explore data in Kibana, you'll need to create an index pattern to retrieve data from Elasticsearch.

Create index pattern

Kibana uses index patterns to retrieve data from Elasticsearch indices for things like visualizations.

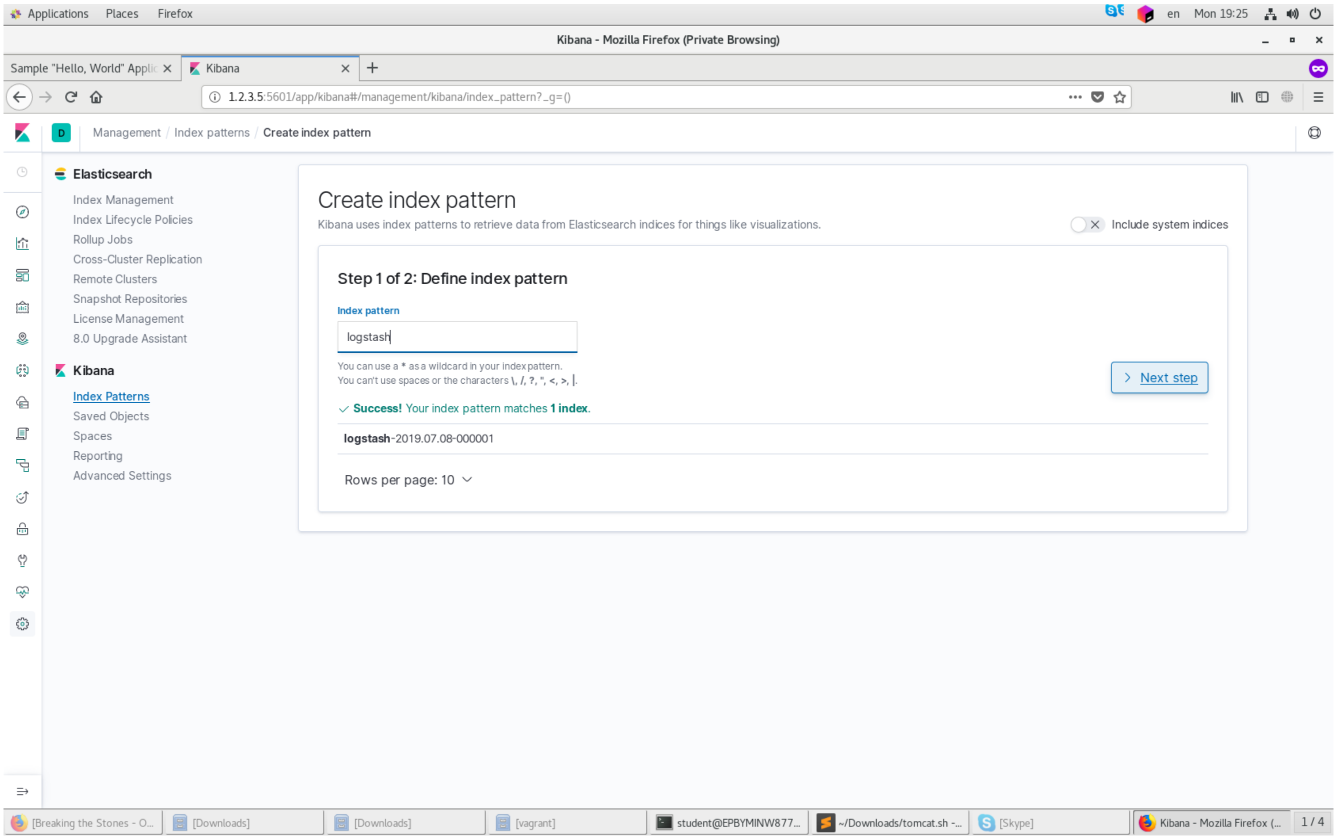
Step 1 of 2: Define index pattern

Index pattern: index-name-*

You can use a * as a wildcard in your index pattern.
You can't use spaces or the characters \, /, ?, ", <, >, |.

No Elasticsearch indices match your pattern.

logstash-2019.07.08-000001



Create index pattern

Kibana uses index patterns to retrieve data from Elasticsearch indices for things like visualizations.

Step 1 of 2: Define index pattern

Index pattern: logstash

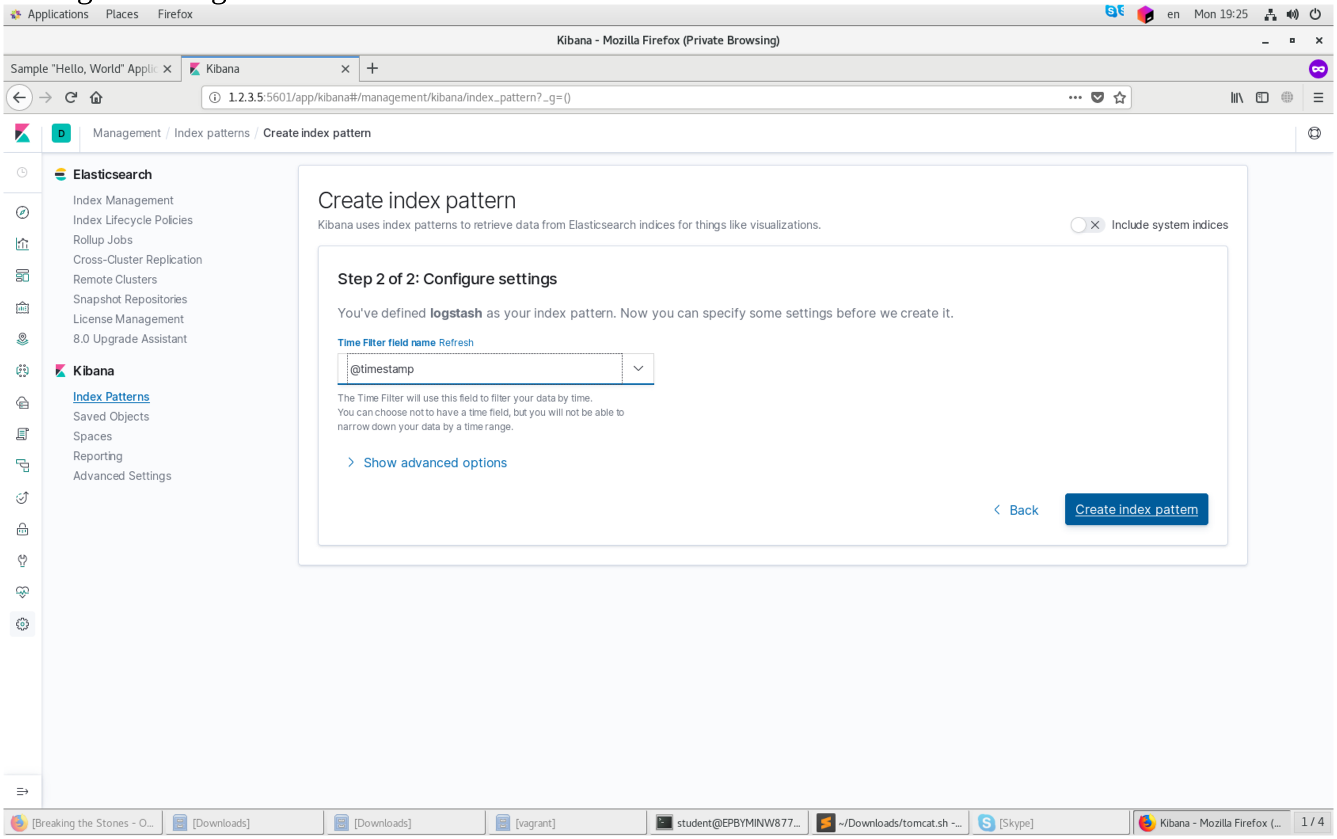
You can use a * as a wildcard in your index pattern.
You can't use spaces or the characters \, /, ?, ", <, >, |.

✓ **Success!** Your index pattern matches **1 index**.

**logstash**-2019.07.08-000001

Rows per page: 10

# Configure settings



Create index pattern

Kibana uses index patterns to retrieve data from Elasticsearch indices for things like visualizations.

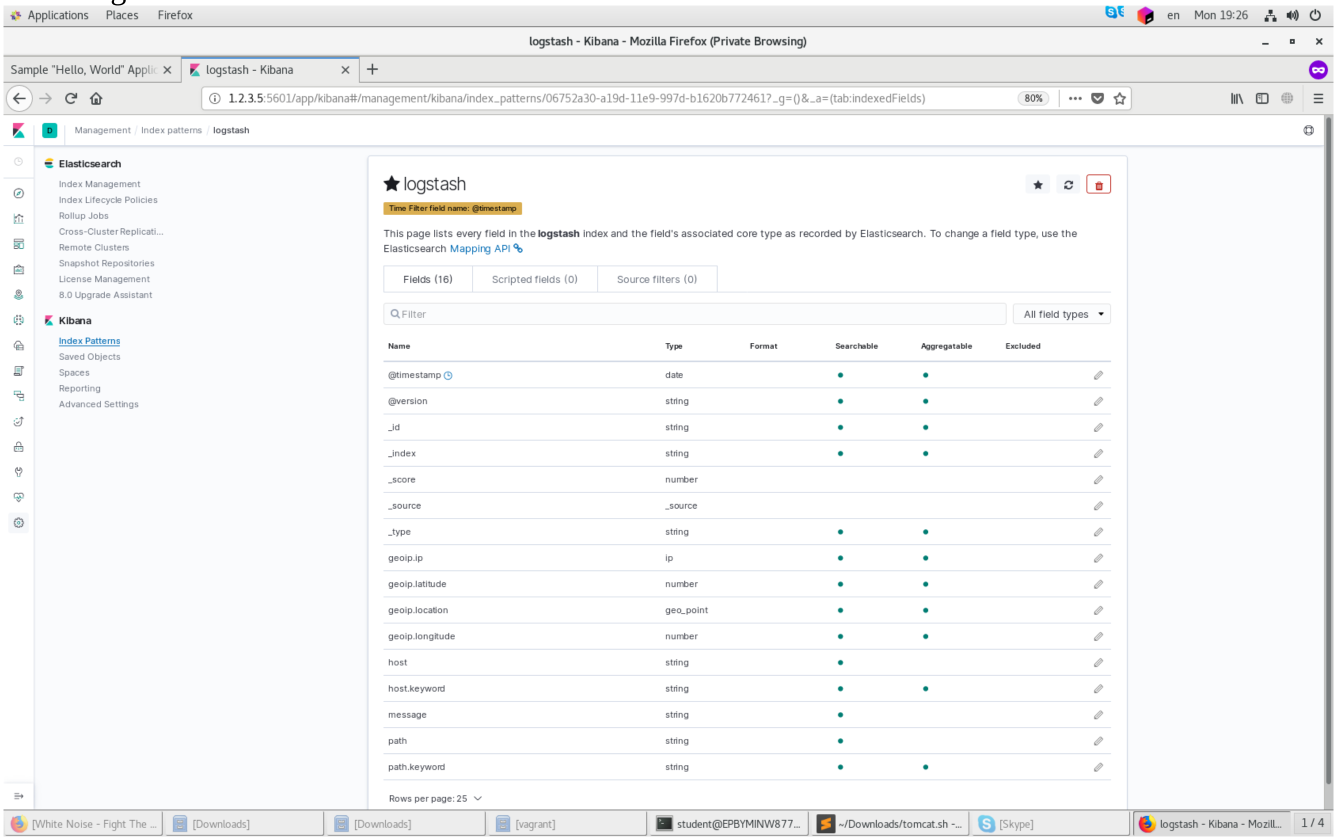
Step 2 of 2: Configure settings

You've defined **logstash** as your index pattern. Now you can specify some settings before we create it.

Time Filter field name Refresh: @timestamp

The Time Filter will use this field to filter your data by time.
You can choose not to have a time field, but you will not be able to narrow down your data by a time range.

# Checking fields



Applications Places Firefox
en Mon 19:26
logstash - Kibana - Mozilla Firefox (Private Browsing)
Sample "Hello, World" Applic
logstash - Kibana
1.2.3.5:5601/app/kibana#/management/kibana/index_patterns/06752a30-a19d-11e9-997d-b1620b772461?_g=()&_a=(tab:indexedFields)
80%
Management / Index patterns / logstash
Elasticsearch
Index Management
Index Lifecycle Policies
Rollup Jobs
Cross-Cluster Replicati...
Remote Clusters
Snapshot Repositories
License Management
8.0 Upgrade Assistant
Kibana
Index Patterns
Saved Objects
Spaces
Reporting
Advanced Settings
[White Noise - Fight The ...
[Downloads]
[Downloads]
[vagrant]
student@EPBYMINW877...
~/Downloads/tomcat.sh -...
[Skype]
logstash - Kibana - Mozill...
1 / 4

logstash

Time Filter field name: @timestamp

This page lists every field in the **logstash** index and the field's associated core type as recorded by Elasticsearch. To change a field type, use the Elasticsearch Mapping API

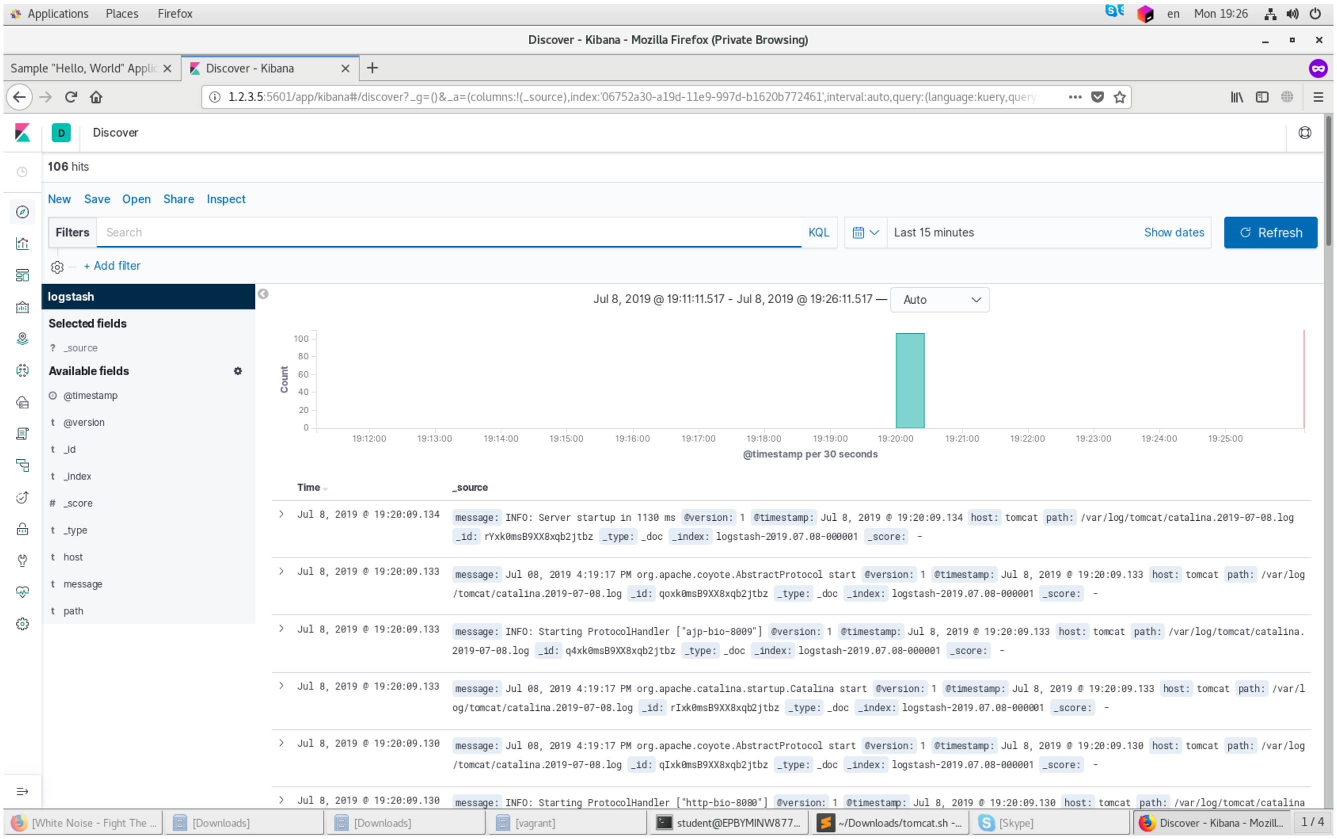
Fields (16) | Scripted fields (0) | Source filters (0)

Filter | All field types

| Name | Type | Format | Searchable | Aggregatable | Excluded |
|---|---|---|---|---|---|
| @timestamp | date | | ● | ● | |
| @version | string | | ● | ● | |
| _id | string | | ● | ● | |
| _index | string | | ● | ● | |
| _score | number | | | | |
| _source | _source | | | | |
| _type | string | | ● | ● | |
| geoip.ip | ip | | ● | ● | |
| geoip.latitude | number | | ● | ● | |
| geoip.location | geo_point | | ● | ● | |
| geoip.longitude | number | | ● | ● | |
| host | string | | ● | | |
| host.keyword | string | | ● | ● | |
| message | string | | ● | | |
| path | string | | ● | | |
| path.keyword | string | | ● | ● | |

Rows per page: 25

# Discover results



Applications Places Firefox
en Mon 19:26
Discover - Kibana - Mozilla Firefox (Private Browsing)
Sample "Hello, World" Applic
Discover - Kibana
1.2.3.5:5601/app/kibana#/discover?_g=()&_a=(columns:!(_source),index:'06752a30-a19d-11e9-997d-b1620b772461',interval:auto,query:(language:kuery,query
Discover
New Save Open Share Inspect
Filters Search KQL
Last 15 minutes Show dates Refresh
+ Add filter
100
80
60
40
20
0
Count
19:12:00
19:13:00
19:14:00
19:15:00
19:16:00
19:17:00
19:18:00
19:19:00
19:20:00
19:21:00
19:22:00
19:23:00
19:24:00
19:25:00
@timestamp per 30 seconds
[White Noise - Fight The ...
[Downloads]
[Downloads]
[vagrant]
student@EPBYMINW877...
~/Downloads/tomcat.sh -...
[Skype]
Discover - Kibana - Mozill...
1 / 4

106 hits

logstash

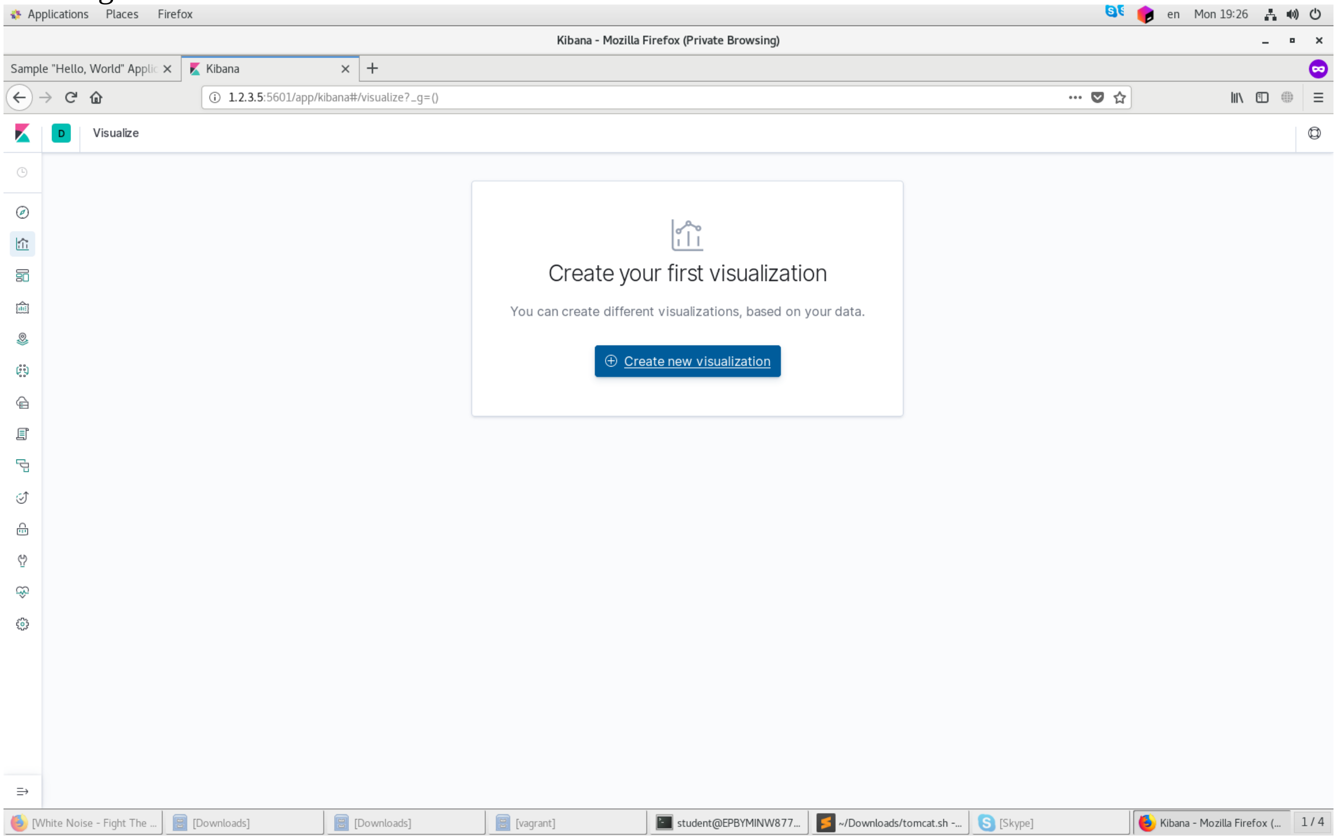
Selected fields
- ? _source

Available fields
- @timestamp
- t @version
- t _id
- t _index
- # _score
- t _type
- t host
- t message
- t path

Jul 8, 2019 @ 19:11:11.517 - Jul 8, 2019 @ 19:26:11.517 — Auto

```
Time                        _source
Jul 8, 2019 @ 19:20:09.134  message: INFO: Server startup in 1130 ms @version: 1 @timestamp: Jul 8, 2019 @ 19:20:09.134 host: tomcat path: /var/log/tomcat/catalina.2019-07-08.log
                            _id: rYxk0msB9XX8xqb2jtbz _type: _doc _index: logstash-2019.07.08-000001 _score: -
Jul 8, 2019 @ 19:20:09.133  message: Jul 08, 2019 4:19:17 PM org.apache.coyote.AbstractProtocol start @version: 1 @timestamp: Jul 8, 2019 @ 19:20:09.133 host: tomcat path: /var/log
                            /tomcat/catalina.2019-07-08.log _id: qoxk0msB9XX8xqb2jtbz _type: _doc _index: logstash-2019.07.08-000001 _score: -
Jul 8, 2019 @ 19:20:09.133  message: INFO: Starting ProtocolHandler ["ajp-bio-8009"] @version: 1 @timestamp: Jul 8, 2019 @ 19:20:09.133 host: tomcat path: /var/log/tomcat/catalina.
                            2019-07-08.log _id: q4xk0msB9XX8xqb2jtbz _type: _doc _index: logstash-2019.07.08-000001 _score: -
Jul 8, 2019 @ 19:20:09.133  message: Jul 08, 2019 4:19:17 PM org.apache.catalina.startup.Catalina start @version: 1 @timestamp: Jul 8, 2019 @ 19:20:09.133 host: tomcat path: /var/l
                            og/tomcat/catalina.2019-07-08.log _id: rIxk0msB9XX8xqb2jtbz _type: _doc _index: logstash-2019.07.08-000001 _score: -
Jul 8, 2019 @ 19:20:09.130  message: Jul 08, 2019 4:19:17 PM org.apache.coyote.AbstractProtocol start @version: 1 @timestamp: Jul 8, 2019 @ 19:20:09.130 host: tomcat path: /var/log
                            /tomcat/catalina.2019-07-08.log _id: qIxk0msB9XX8xqb2jtbz _type: _doc _index: logstash-2019.07.08-000001 _score: -
Jul 8, 2019 @ 19:20:09.130  message: INFO: Starting ProtocolHandler ["http-bio-8080"] @version: 1 @timestamp: Jul 8, 2019 @ 19:20:09.130 host: tomcat path: /var/log/tomcat/catalina
```

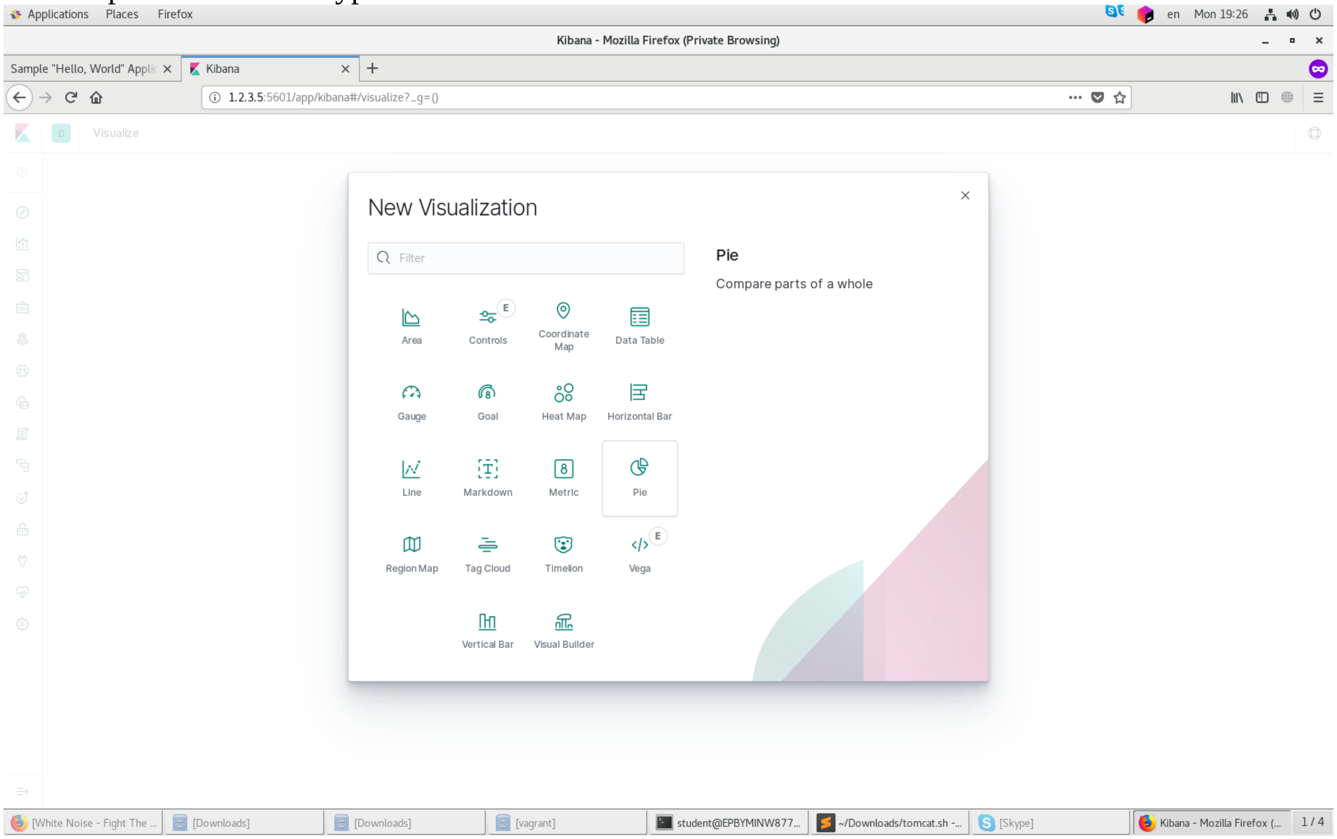
## Creating new visualization


Applications
Places
Firefox
en
Mon 19:26
Kibana - Mozilla Firefox (Private Browsing)
Sample "Hello, World" Applic
Kibana
1.2.3.5:5601/app/kibana#/visualize?_g=()
D
Visualize
[White Noise - Fight The ...
[Downloads]
[Downloads]
[vagrant]
student@EPBYMINW877...
~/Downloads/tomcat.sh -...
[Skype]
Kibana - Mozilla Firefox (...
1 / 4

Create your first visualization

You can create different visualizations, based on your data.

## Choose pie visualization type

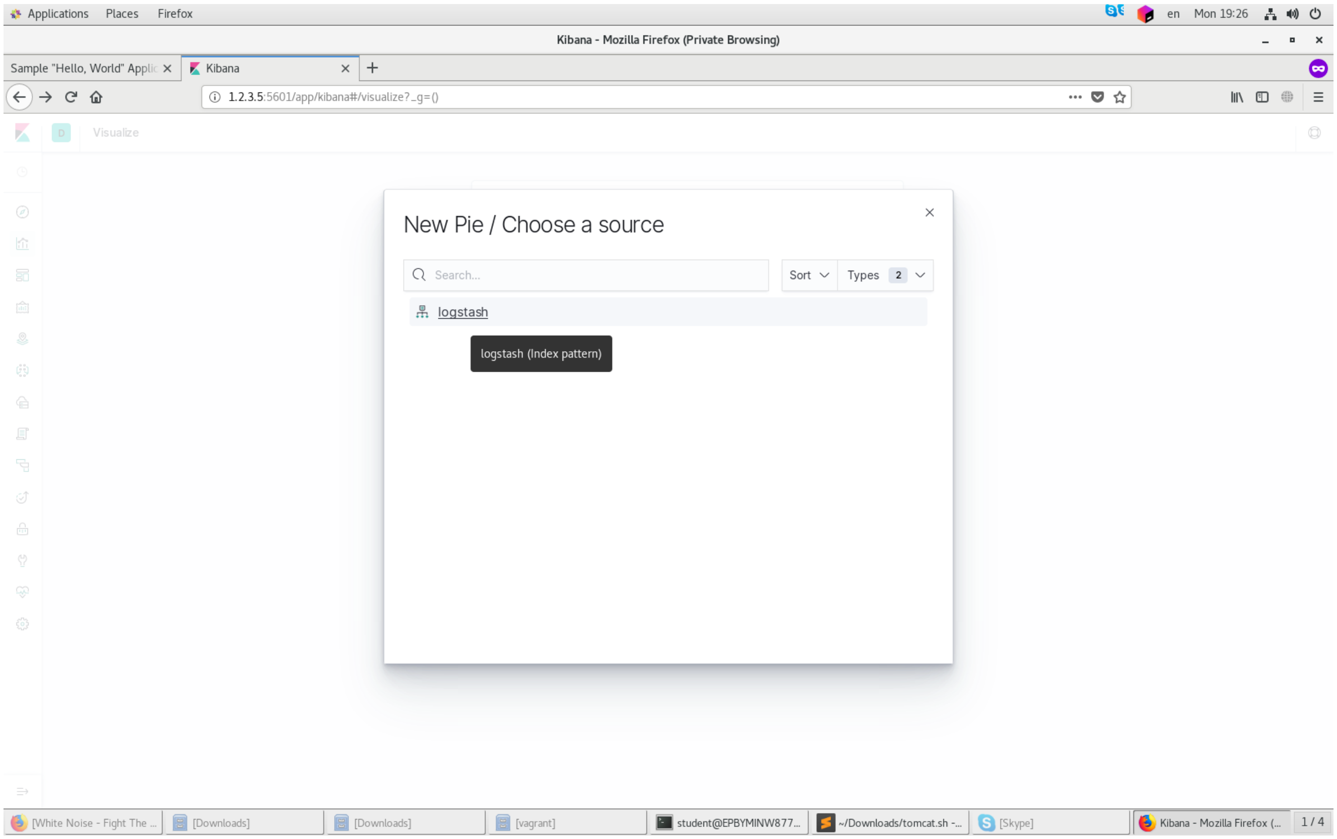


New Visualization

Pie

Compare parts of a whole

# Choose a source


Applications
Places
Firefox
en
Mon 19:26
Kibana - Mozilla Firefox (Private Browsing)
Sample "Hello, World" Applic
Kibana
Visualize
Search...
Sort
Types 2
White Noise - Fight The ...
[Downloads]
[Downloads]
[vagrant]
student@EPBYMINW877...
~/Downloads/tomcat.sh -...
[Skype]
Kibana - Mozilla Firefox (...
1 / 4

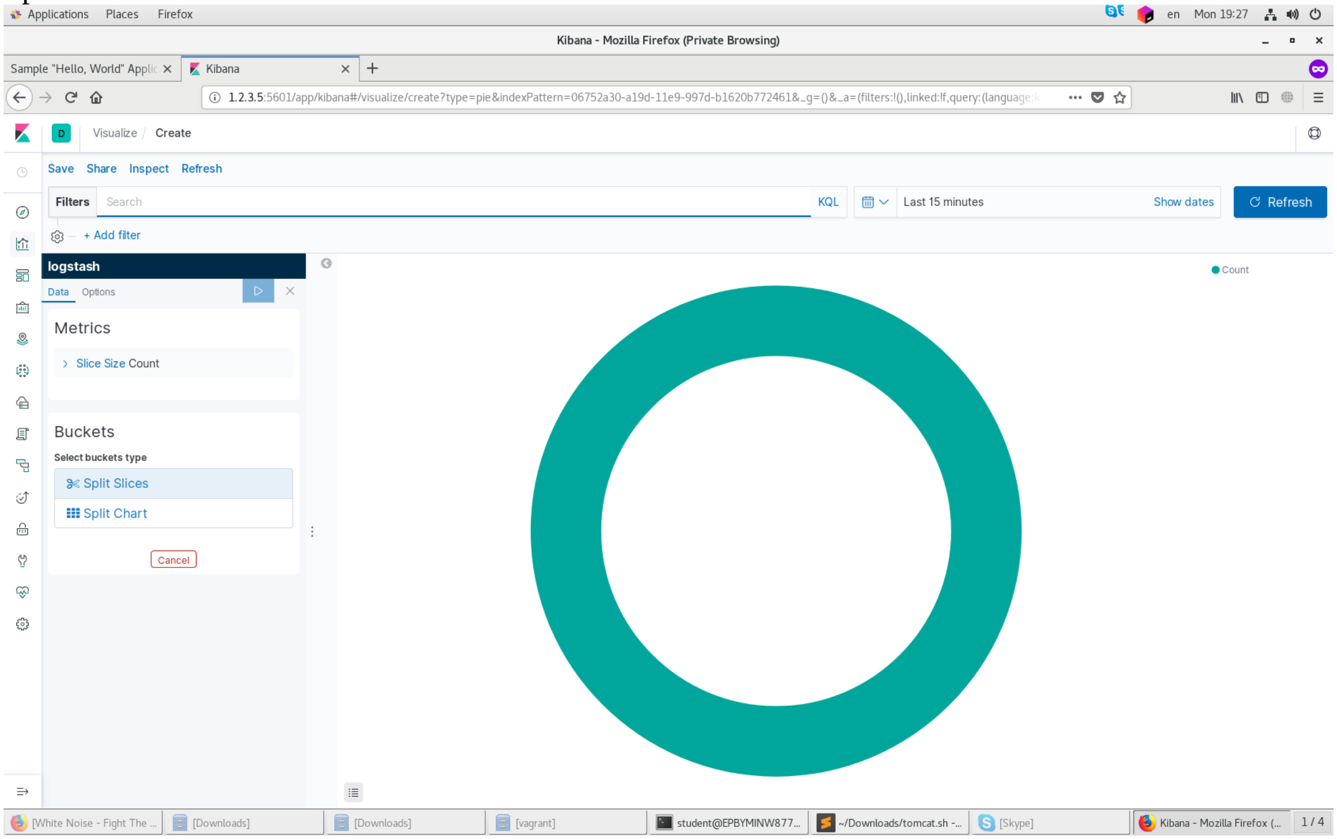
1.2.3.5:5601/app/kibana#/visualize?_g=()

New Pie / Choose a source

logstash

logstash (Index pattern)

# Split Slices



1.2.3.5:5601/app/kibana#/visualize/create?type=pie&indexPattern=06752a30-a19d-11e9-997d-b1620b772461&_g=()&_a=(filters:!(),linked:!f,query:(language:k

Last 15 minutes

logstash

Metrics

Slice Size Count

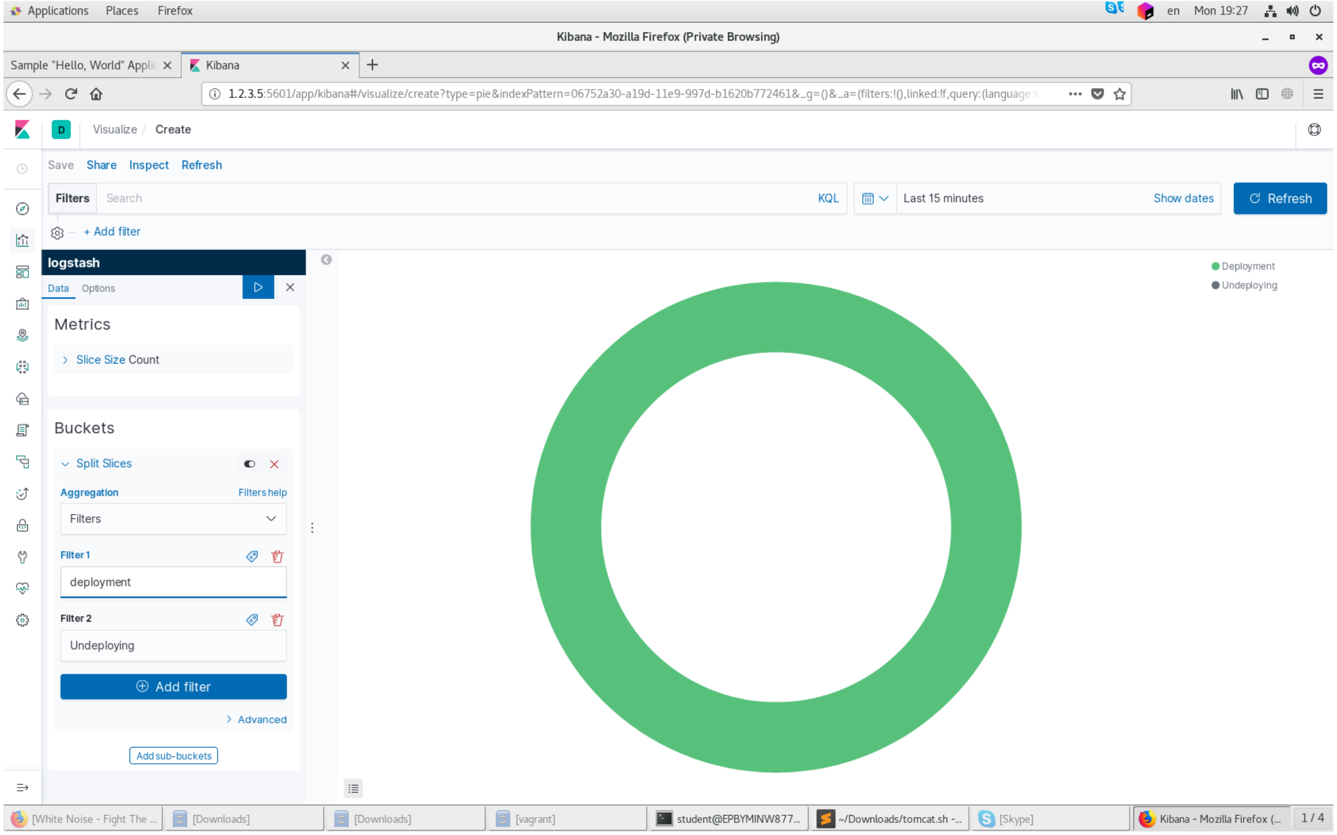
Buckets

Select buckets type

Split Slices

Split Chart

## Editing filters



1.2.3.5:5601/app/kibana#/visualize/create?type=pie&indexPattern=06752a30-a19d-11e9-997d-b1620b772461&_g=()&_a=(filters:!(),linked:!f,query:(language:

logstash

Metrics

Slice Size Count

Buckets

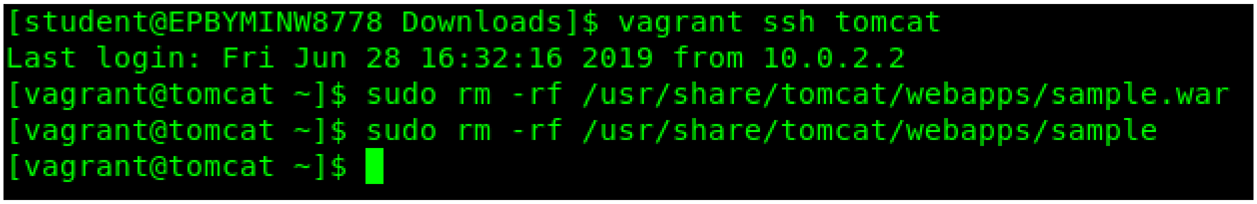
Split Slices

Aggregation: Filters

Filter 1: deployment

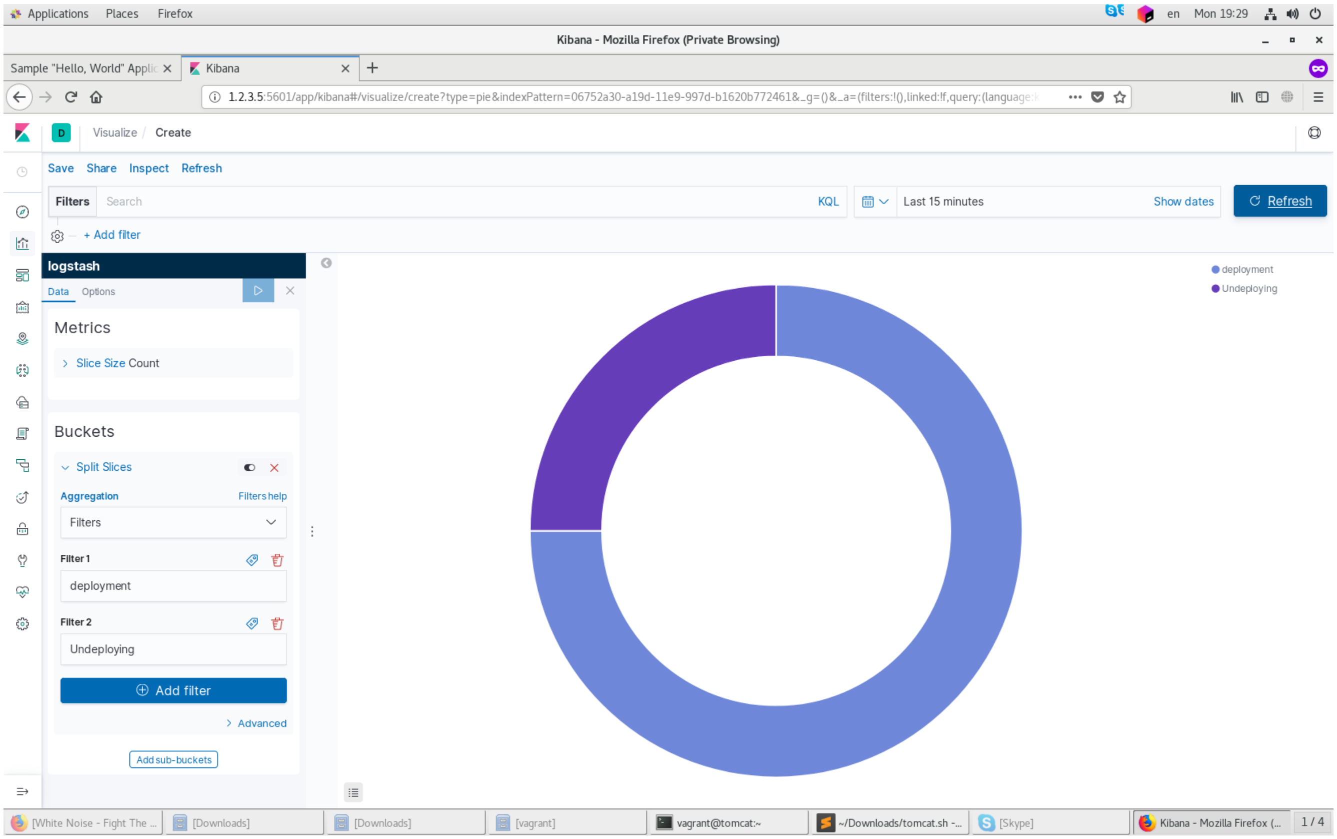
Filter 2: Undeploying

## Undeploying simple.war



```
[student@EPBYMINW8778 Downloads]$ vagrant ssh tomcat
Last login: Fri Jun 28 16:32:16 2019 from 10.0.2.2
[vagrant@tomcat ~]$ sudo rm -rf /usr/share/tomcat/webapps/sample.war
[vagrant@tomcat ~]$ sudo rm -rf /usr/share/tomcat/webapps/sample
[vagrant@tomcat ~]$ 
```

# Updating results



1.2.3.5:5601/app/kibana#/visualize/create?type=pie&indexPattern=06752a30-a19d-11e9-997d-b1620b772461&_g=()&_a=(filters:!(),linked:!f,query:(language:

Last 15 minutes

Slice Size Count

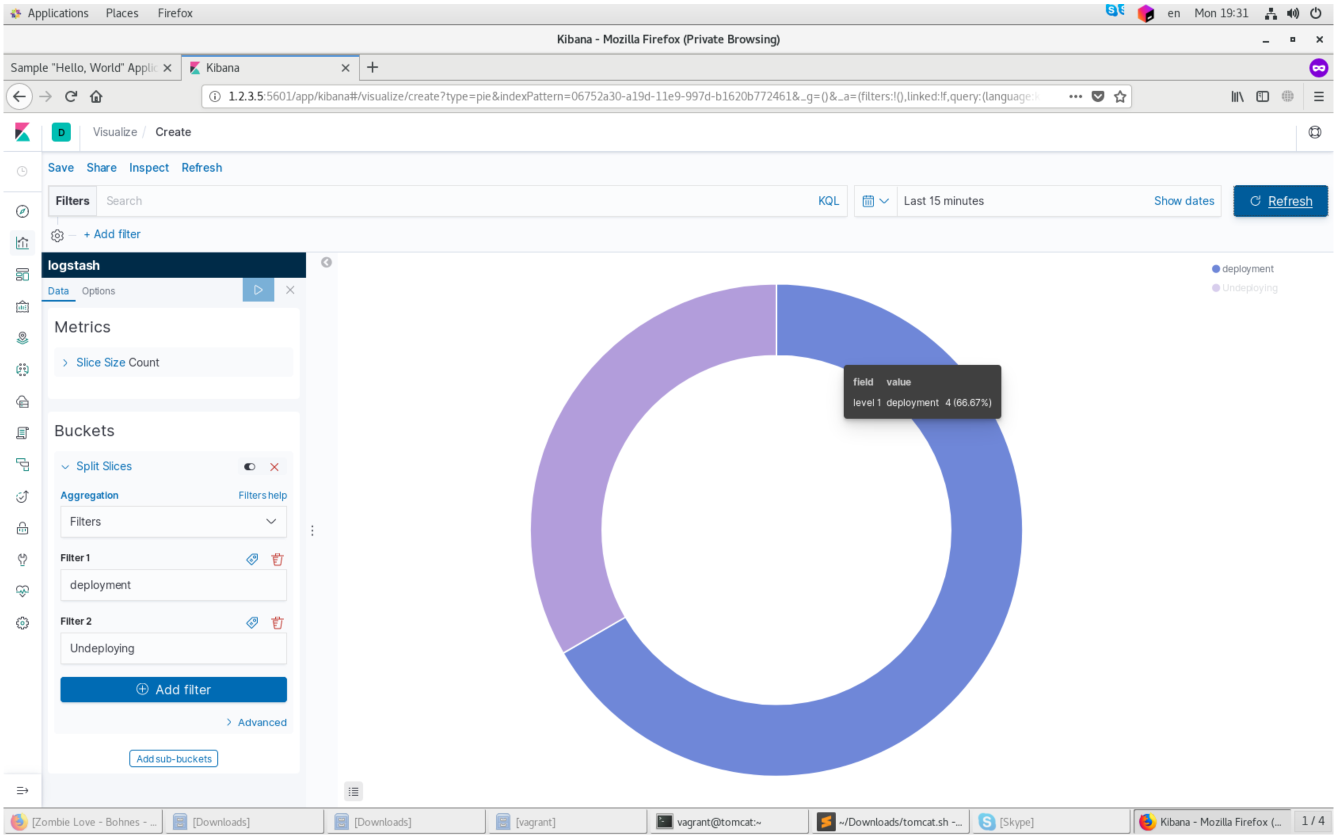
Split Slices

Aggregation: Filters

Filter 1: deployment

Filter 2: Undeploying

# Checking a few times again



1.2.3.5:5601/app/kibana#/visualize/create?type=pie&indexPattern=06752a30-a19d-11e9-997d-b1620b772461&_g=()&_a=(filters:!(),linked:!f,query:(language:

Last 15 minutes

Slice Size Count

Split Slices

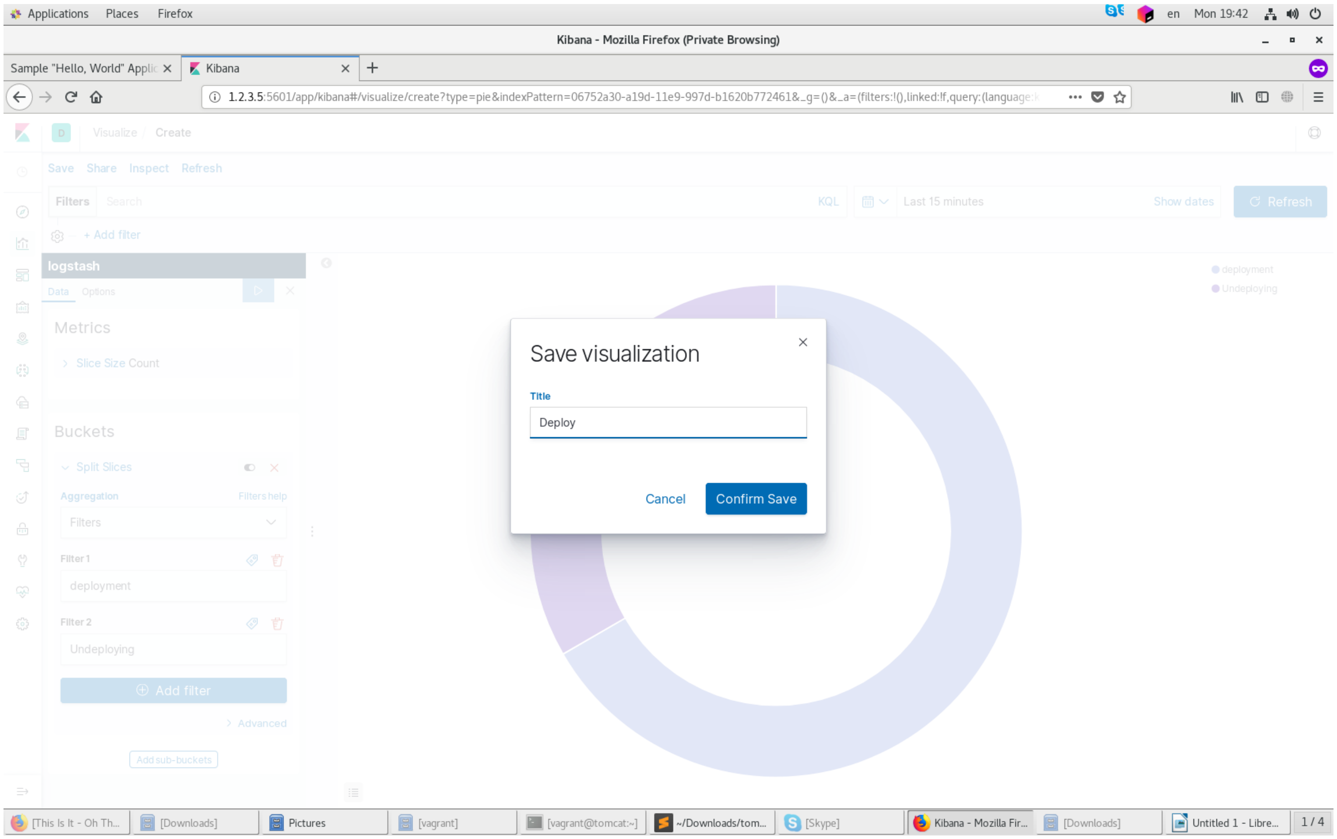
Aggregation: Filters

Filter 1: deployment

Filter 2: Undeploying

```
field    value
level 1  deployment  4 (66.67%)
```

# Saving visualization

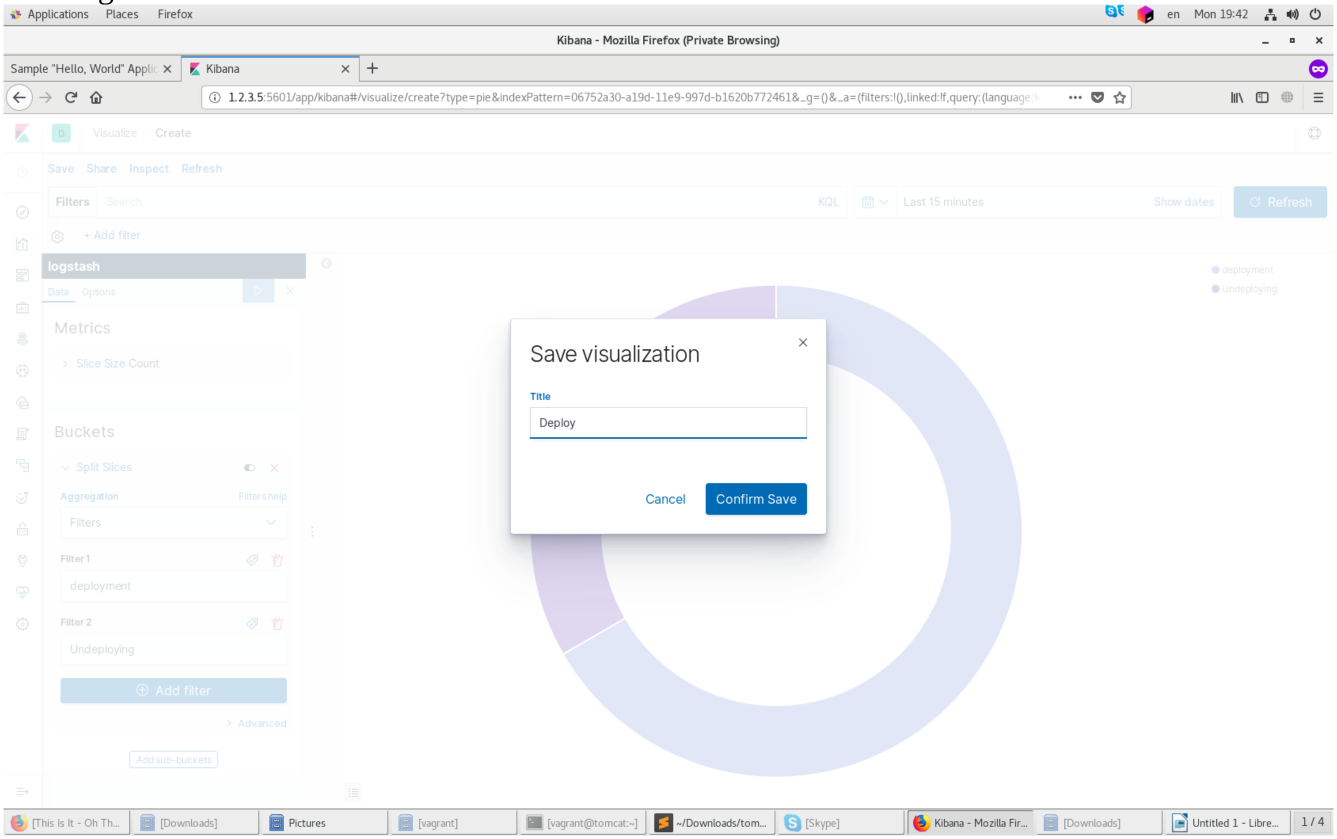

Applications Places Firefox
en Mon 19:42
Kibana - Mozilla Firefox (Private Browsing)
Sample "Hello, World" Applic
Kibana
1.2.3.5:5601/app/kibana#/visualize/create?type=pie&indexPattern=06752a30-a19d-11e9-997d-b1620b772461&_g=()&_a=(filters:!(),linked:!f,query:(language:k
Visualize / Create
Save Share Inspect Refresh
Filters Search KQL Last 15 minutes Show dates Refresh
+ Add filter
logstash
Data Options
Metrics
Slice Size Count
Buckets
Split Slices
Aggregation Filters help
Filters
Filter 1
deployment
Filter 2
Undeploying
Add filter
Advanced
Add sub-buckets
deployment
Undeploying
Cancel
Confirm Save
[This Is It - Oh Th... [Downloads] Pictures [vagrant] [vagrant@tomcat:~] ~/Downloads/tom... [Skype] Kibana - Mozilla Fir... [Downloads] Untitled 1 - Libre... 1 / 4

Save visualization

Title

Deploy

# Creating dashboard

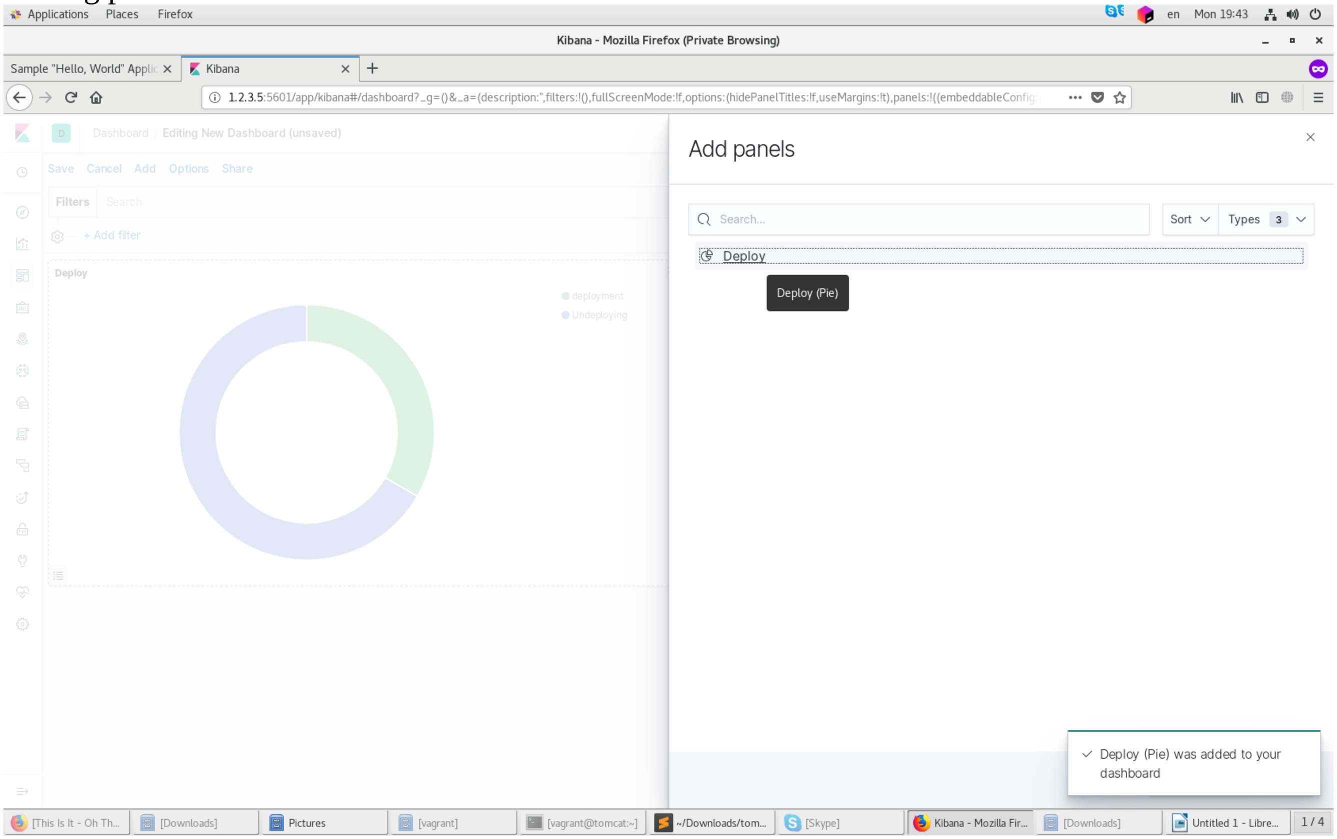

Applications Places Firefox
en Mon 19:42
Kibana - Mozilla Firefox (Private Browsing)
Sample "Hello, World" Applic
Kibana
1.2.3.5:5601/app/kibana#/visualize/create?type=pie&indexPattern=06752a30-a19d-11e9-997d-b1620b772461&_g=()&_a=(filters:!(),linked:!f,query:(language:k
Visualize / Create
Save Share Inspect Refresh
Filters Search KQL Last 15 minutes Show dates Refresh
+ Add filter
logstash
Data Options
Metrics
Slice Size Count
Buckets
Split Slices
Aggregation Filters help
Filters
Filter 1
deployment
Filter 2
Undeploying
Add filter
Advanced
Add sub-buckets
deployment
Undeploying
Cancel
Confirm Save
[This Is It - Oh Th... [Downloads] Pictures [vagrant] [vagrant@tomcat:~] ~/Downloads/tom... [Skype] Kibana - Mozilla Fir... [Downloads] Untitled 1 - Libre... 1 / 4

Save visualization

Title

Deploy

# Adding panels



Kibana - Mozilla Firefox (Private Browsing)

1.2.3.5:5601/app/kibana#/dashboard?_g=()&_a=(description:'',filters:!(),fullScreenMode:!f,options:(hidePanelTitles:!f,useMargins:!t),panels:!((embeddableConfig

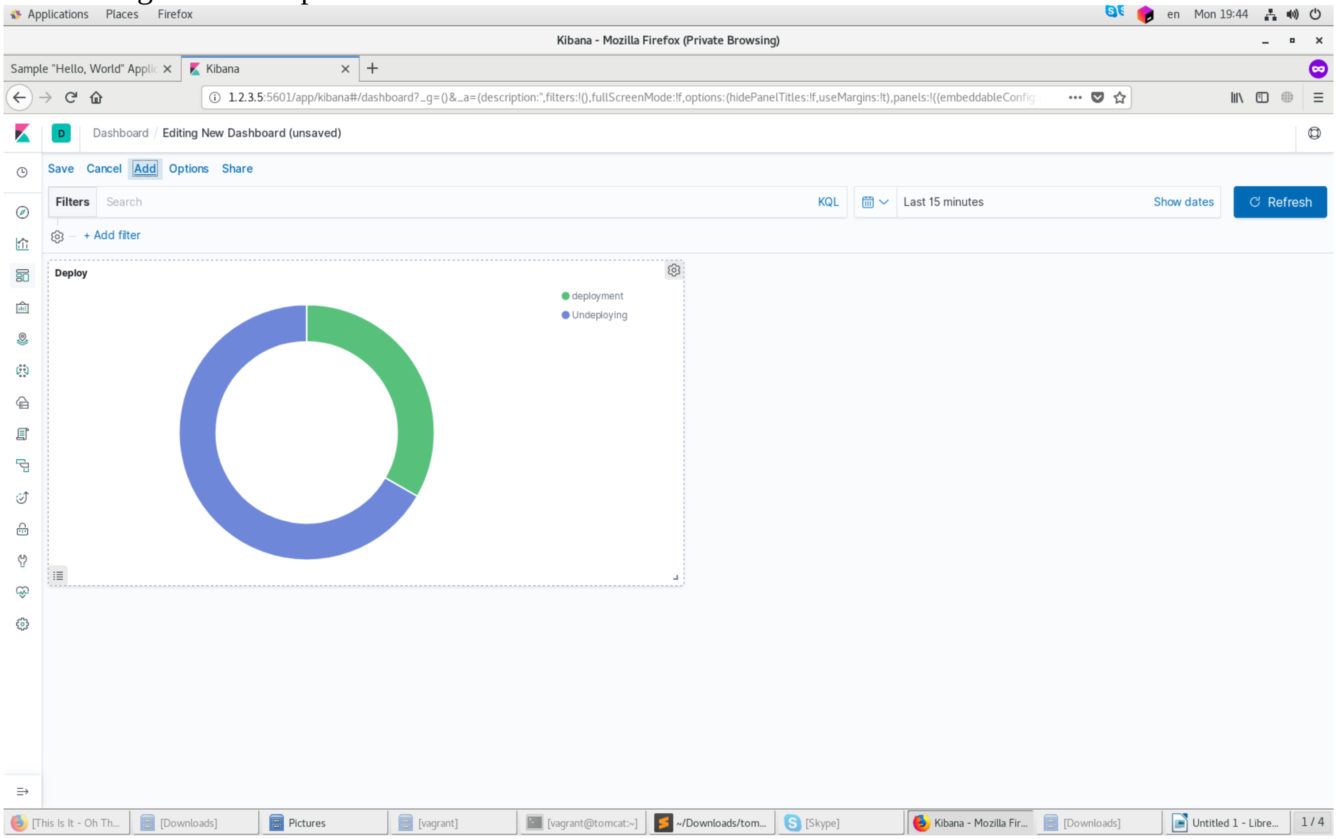
Dashboard / Editing New Dashboard (unsaved)

Add panels

Deploy (Pie)

✓ Deploy (Pie) was added to your dashboard

# Confirming dashboard panels

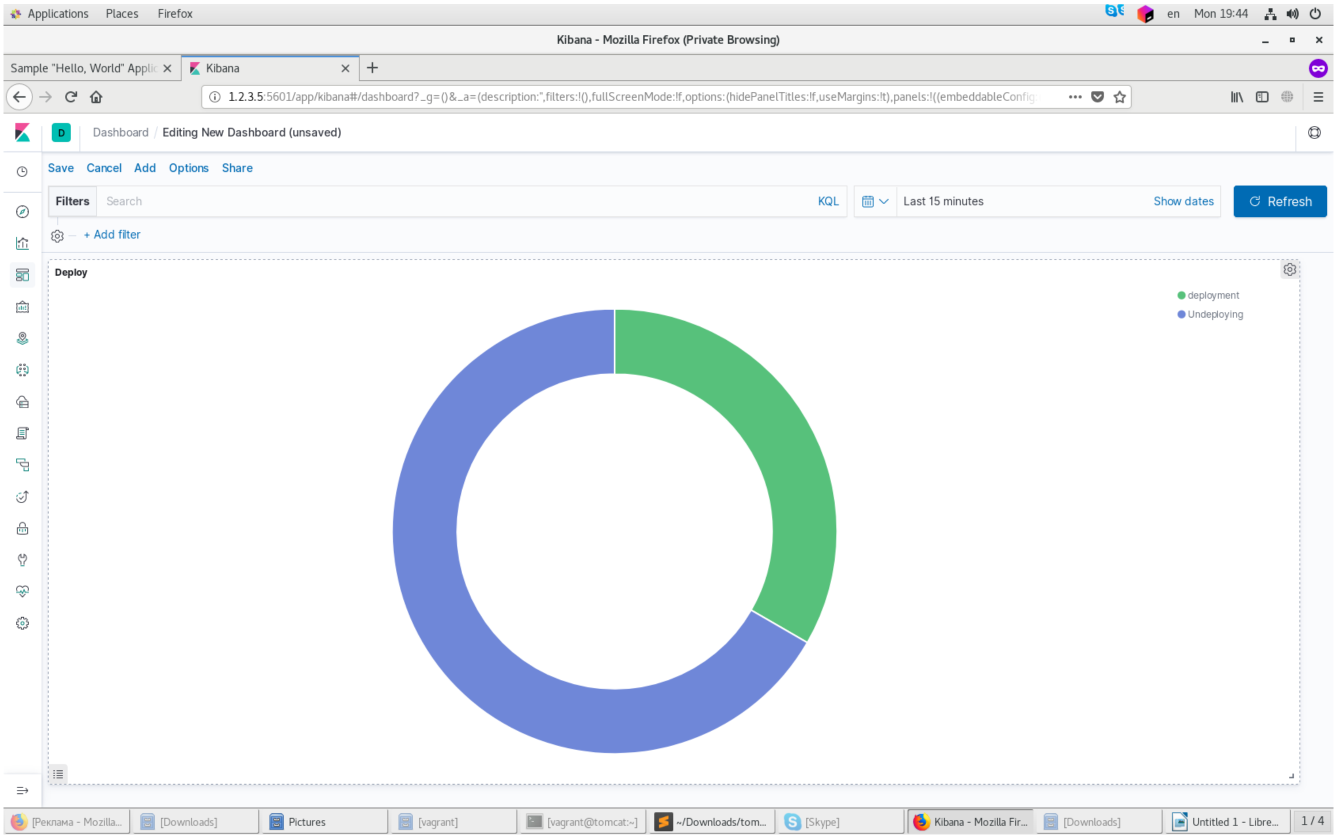


Kibana - Mozilla Firefox (Private Browsing)

1.2.3.5:5601/app/kibana#/dashboard?_g=()&_a=(description:'',filters:!(),fullScreenMode:!f,options:(hidePanelTitles:!f,useMargins:!t),panels:!((embeddableConfig

Dashboard / Editing New Dashboard (unsaved)

# Stretching panel


Applications
Places
Firefox
en
Mon 19:44
Kibana - Mozilla Firefox (Private Browsing)
Sample "Hello, World" Applic
Kibana
1.2.3.5:5601/app/kibana#/dashboard?_g=()&_a=(description:'',filters:!(),fullScreenMode:!f,options:(hidePanelTitles:!f,useMargins:!t),panels:!((embeddableConfig
D
Dashboard / Editing New Dashboard (unsaved)
Save
Cancel
Add
Options
Share
Filters
Search
KQL
Last 15 minutes
Show dates
Refresh
+ Add filter
Deploy
● deployment
● Undeploying
[Реклама - Mozilla...
[Downloads]
Pictures
[vagrant]
[vagrant@tomcat:~]
~/Downloads/tom...
[Skype]
Kibana - Mozilla Fir...
[Downloads]
Untitled 1 - Libre...
1 / 4