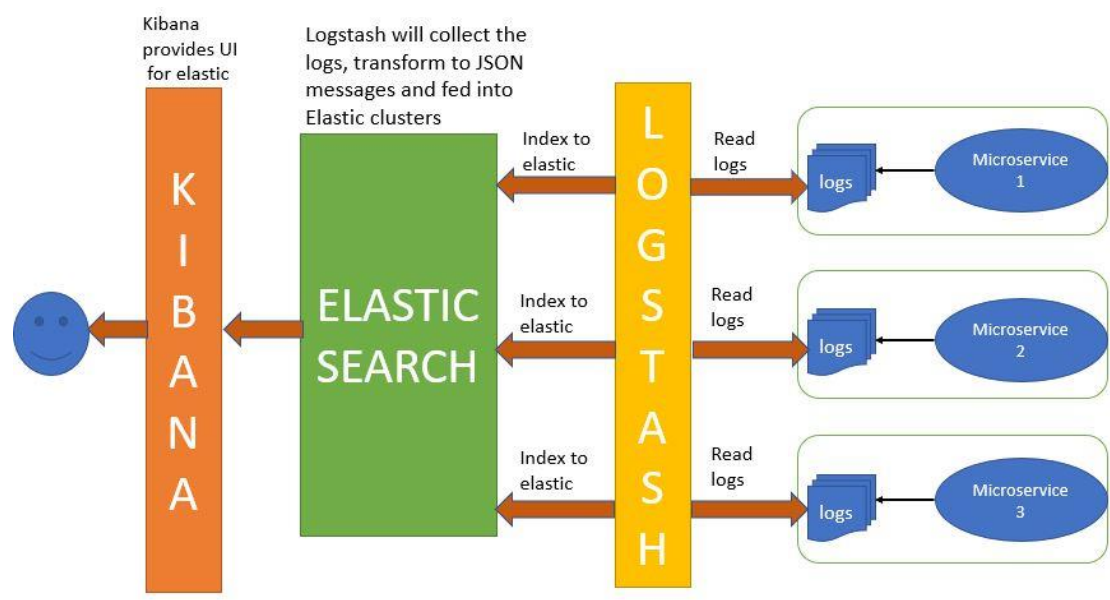


Logging your microservice using ELK

ELK stands for the 3 services we use for this action:

1. ElasticSearch
2. LogStash
3. Kibana



(See credit below)

The tutorial includes those steps:

1. Installation
2. Project Properties
3. Code implementation
4. Data search

1. Installation

Download ElasticSearch from:

<https://www.elastic.co/downloads/kibana>

Unzip the file to your file system and

Run: /bin/kibana.bat

Download kibana from:

<https://www.elastic.co/downloads/kibana>

Unzip the file to your file system and

Run: /bin/kibana.bat

Download LogStash from:

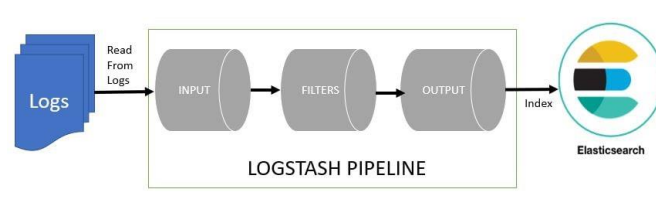
<https://www.elastic.co/downloads/logstash>

Unzip the file to your file system

Create conf file (This is a configurations file. See below example)

Run: `/bin/logstash -f logstash.conf` (Where logstash.conf is the config file you created)

The conf file includes 3 sections: input, filter and output:



(See credit below)

In this guide, we will use the application log file as input, and the ElasticSearch as output.

```
input {
  file {
    type => "java"
    path => "C:/logDemo.log"
    codec => multiline {
      pattern => "^\{YEAR\}-\{MONTHNUM\}-\{MONTHDAY\} \{TIME\}.*"
      negate => "true"
      what => "next"
    }
  }
}

filter {
  #If log line contains tab character followed by 'at' then we will tag that entry
  as stacktrace
  if [message] =~ "\tat" {
    grok {
      match => ["message", "^(\\tat)"]
      add_tag => ["stacktrace"]
    }
  }
}

output {

  stdout {
    codec => rubydebug
  }

  # Sending properly parsed log events to elasticsearch
  elasticsearch {
    hosts => ["localhost:9200"]
  }
}
```

**** EXAMPLE:** You can use the attached file logDemo.conf

You can see documentation of the conf file in:

<https://www.elastic.co/guide/en/logstash/current/configuration.html>

2. Project Properties

In the **application.properties** file, add this configuration:

/src/main/resources/application.properties

```
logging.file=C:/logDemo.log
```

***** IMPORTANT:** make sure to use the same file path in the conf file of the Logstash.

3. Code implementation

In your app, create an instance of Logger (org.apache.logging.log4j.Logger) using this code:

```
Logger LOG = LogManager.getLogger(YOUR_CLASS.class.getName());
```

By using the function **Log ()** you add a new line to the log file. This function accept the parameters:

level - the logging level: Level (org.apache.logging.log4j.Level)

message - the message string to log: String

Example:

```
String response = "This is Logging Demo, Hello " + name + ", " + new Date();  
  
logger.log(Level.INFO, "helloWorld(String) : " + response);
```

3. Data Search

Go to your browser and enter: <http://localhost:5601>

This is the **Kibana** dashboard

On first time you must add index for the Logstash data:

GoTo: Management > Index pattern > create an index pattern **logstash-***

Then – GoTo: Discover > see the logged data.

Discover

11 hits

New Save Open Share Inspect

Filters 1 Search

message: welcome X + Add filter

logstash-*

Selected fields

- @timestamp
- t_message

Available fields

- @version
- t_id
- t_index
- _score
- _type
- host
- path
- type

message

>	2019-05-27 16:39:11.496	INFO 7244 ---	[http-nio-8089-exec-7] demo.log.LoggingController	:	Welcome to JavaInUseMon May 27 16:39:11 IDT 2019
>	2019-05-27 16:11:54.319	INFO 7244 ---	[http-nio-8089-exec-4] demo.log.LoggingController	:	Welcome to JavaInUseMon May 27 16:11:54 IDT 2019
>	2019-05-27 16:11:39.790	INFO 7244 ---	[http-nio-8089-exec-1] demo.log.LoggingController	:	Welcome to JavaInUseMon May 27 16:11:39 IDT 2019
>	2019-05-27 16:02:22.617	INFO 6224 ---	[http-nio-8089-exec-6] demo.log.LoggingController	:	Welcome to JavaInUseMon May 27 16:02:22 IDT 2019
>	2019-05-27 16:01:18.951	INFO 6224 ---	[http-nio-8089-exec-10] demo.log.LoggingController	:	Welcome to JavaInUseMon May 27 16:01:18 IDT 2019
>	2019-05-27 16:00:32.326	INFO 6224 ---	[http-nio-8089-exec-7] demo.log.LoggingController	:	Welcome to JavaInUseMon May 27 16:00:32 IDT 2019
>	2019-05-27 15:58:54.859	INFO 6224 ---	[http-nio-8089-exec-1] demo.log.LoggingController	:	Welcome to JavaInUseMon May 27 15:58:54 IDT 2019
>	2019-05-27 15:57:03.023	INFO 6224 ---	[http-nio-8089-exec-5] demo.log.LoggingController	:	Welcome to JavaInUseMon May 27 15:57:03 IDT 2019
>	2019-05-27 15:55:59.847	INFO 6224 ---	[http-nio-8089-exec-2] demo.log.LoggingController	:	Welcome to JavaInUseMon May 27 15:55:59 IDT 2019
>	2019-05-27 15:55:49.009	INFO 6224 ---	[http-nio-8089-exec-9] demo.log.LoggingController	:	Welcome to JavaInUseMon May 27 15:55:49 IDT 2019
>	2019-05-27 15:50:29.834	INFO 6224 ---	[http-nio-8089-exec-6] demo.log.LoggingController	:	Welcome to JavaInUseMon May 27 15:50:29 IDT 2019

**** Credit:** <https://www.javainuse.com/spring/springboot-microservice-elk>