SCK-Automation Work 2021

Kibana Dashboard

Explore, Visualize, Discover DATA

Last updated: Wednesday, October 20, 2021

1st Day Agenda

- Dashboard
- ELK Stack Overviews
- Install Kibana
- Explore the Data
- Simple Dashboard

2nd Day Agenda

- Import Data
- Complex Dashboard
- Design your Own Dashboard
- Source of Data
- Special Features

Dashboard Overview

Dashboard that drive insight and action

Why we need it. ?

1. You feel like your company can improve, but you have no idea how to or where to start.
2. You're monitoring and tracking data, but you don't know what to do with the information or how to make sense of it.
3. Your current solutions aren't giving you the ROI you need.
4. You are lagging behind your competitors.
5. You're struggling to see all of your data from multiple sources in one location.

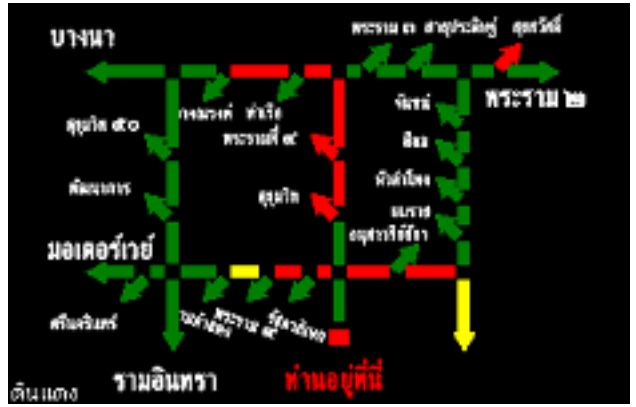
Visualization

http://searchuserinterfaces.com/book/images/wordle.png

Visual & Visualization

- Visual : เกี่ยวกับการมองเห็น, ใช้ในการมอง, เกี่ยวกับสายตา
- Visualize : ทำให้มองเห็น, ทำให้จินตนาการเห็น, นึกภาพในใจ
- Visualization : การทำให้เห็นได้, การสร้างมโนภาพ

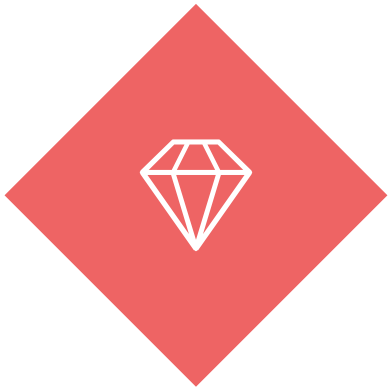
Example of Visualization



Visualize ?

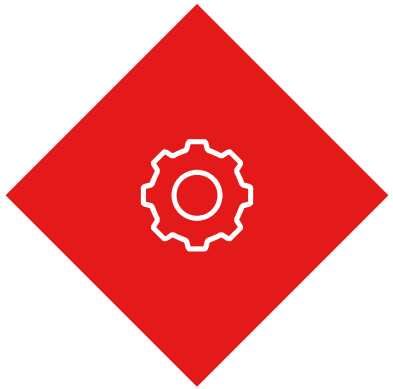
Shopping-Cart : Define Business Process Workflow

Type of Dashboard ?



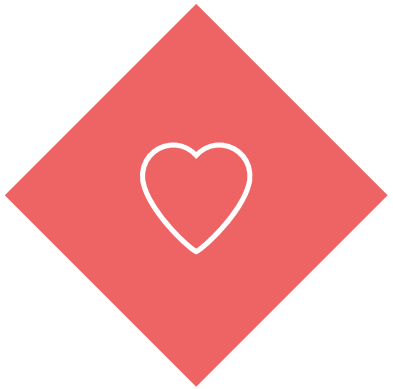
Strategic Dashboard

focused on long-term strategies and high-level metrics



Operational Dashboard

shows shorter time frames and operational processes.



Analytical Dashboard

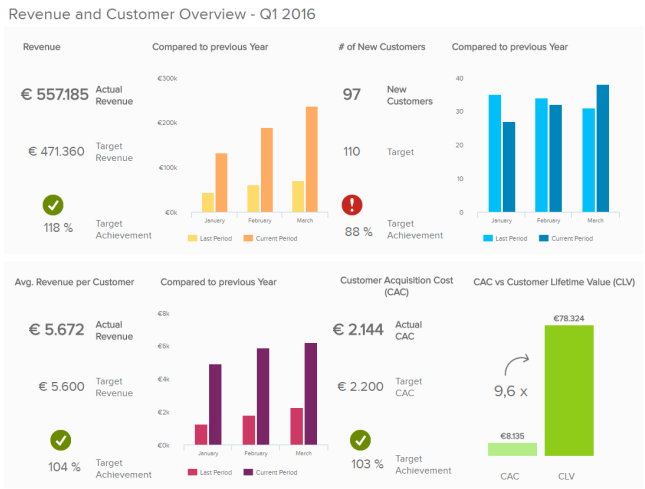
contains vast amounts of data created by analysts.

Tactical Dashboard

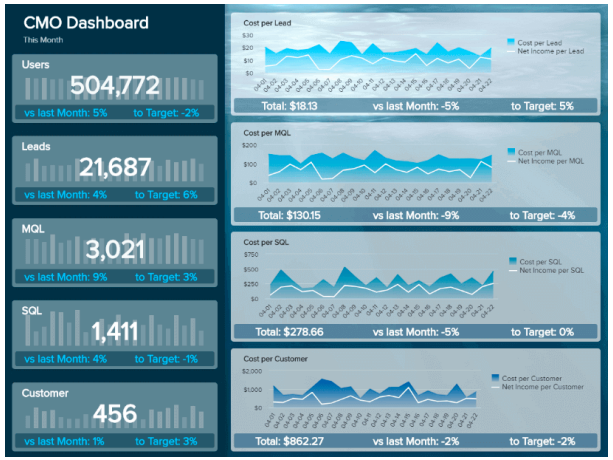
used by mid-management to track performance.

What Is A Strategic Dashboard?

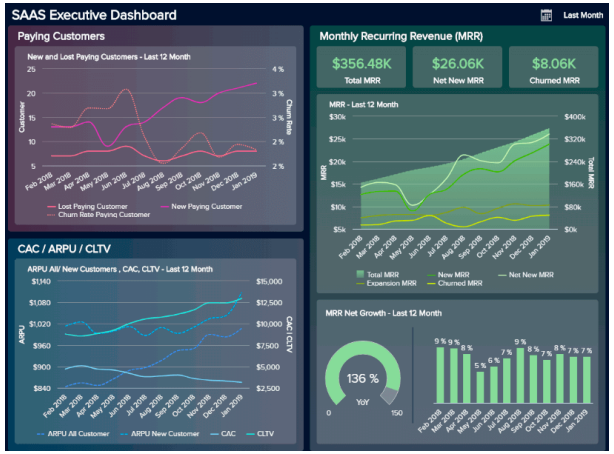
A **strategic dashboard** is a reporting tool for monitoring the long-term company strategy with the help of critical success factors. They're usually complex in their creation, provide an enterprise-wide impact to a business, and are mainly used by senior-level management.



Management strategic

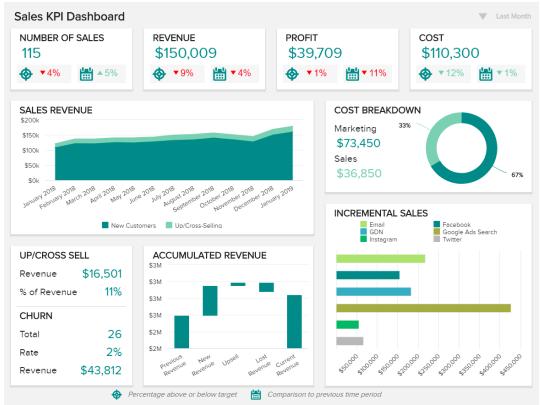


CMO strategic



SaaS management

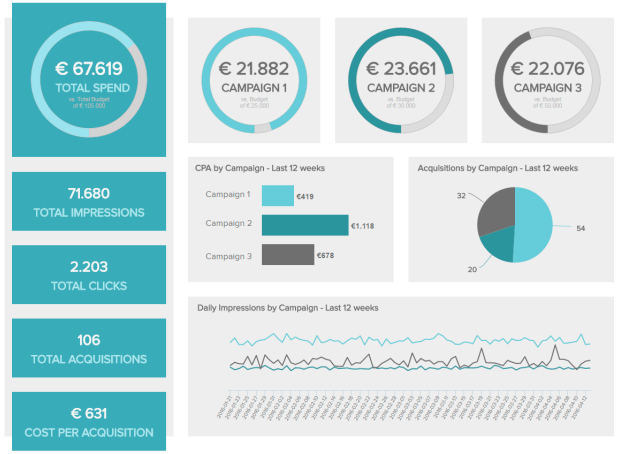
CFO dashboard for strategic planning



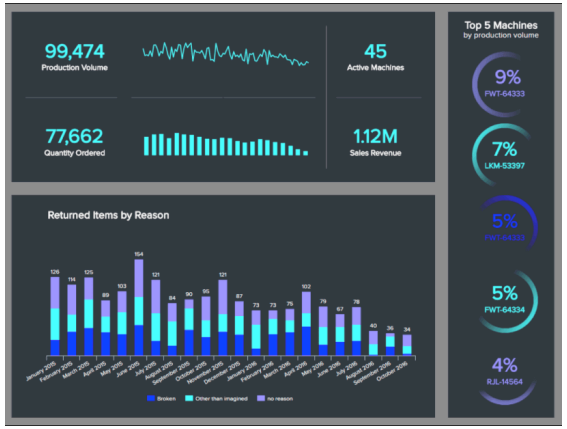
Sales KPI dashboard

What Is A Operational Dashboard?

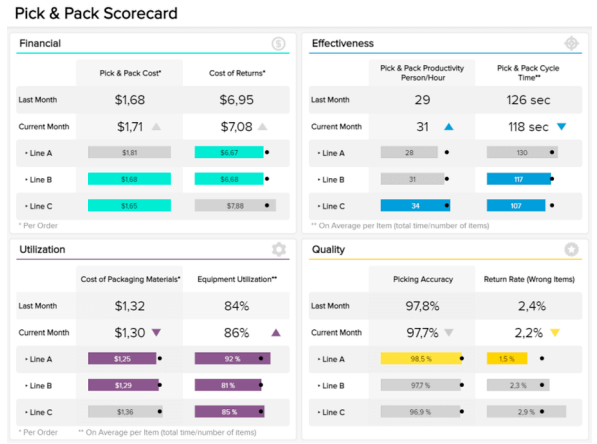
An **operational dashboard** is one of the types of dashboards used for monitoring and managing operations that have a shorter time horizon. Since they focus on tracking operational processes, they're usually administrated by junior levels of management.



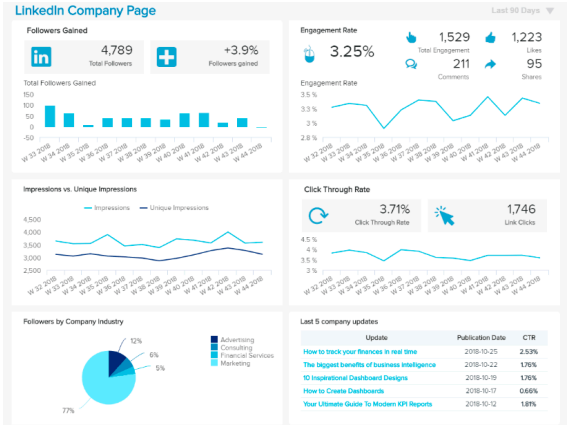
Marketing operational dashboard



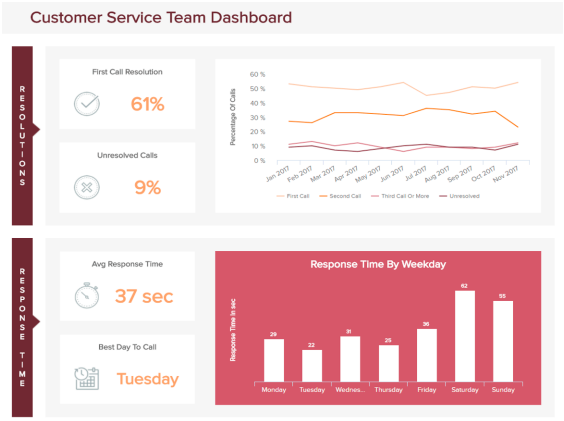
Manufacturing Production dashboard



Pick and pack operational dashboard for logistics



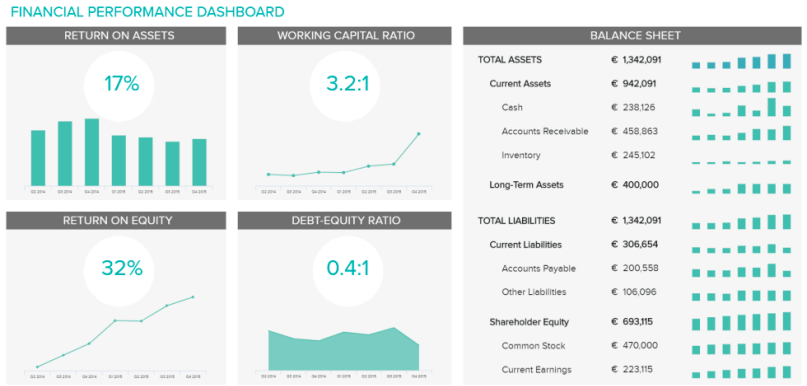
LinkedIn operations dashboard example



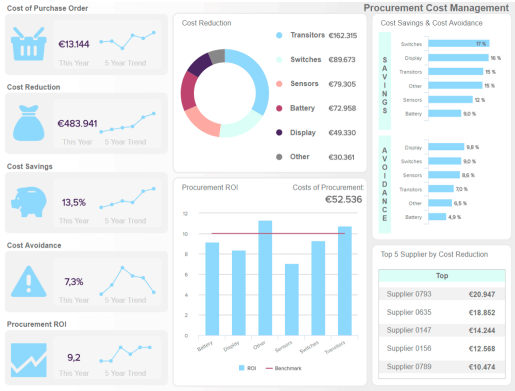
Customer service operational metrics dashboard

What Is An Analytical Dashboard?

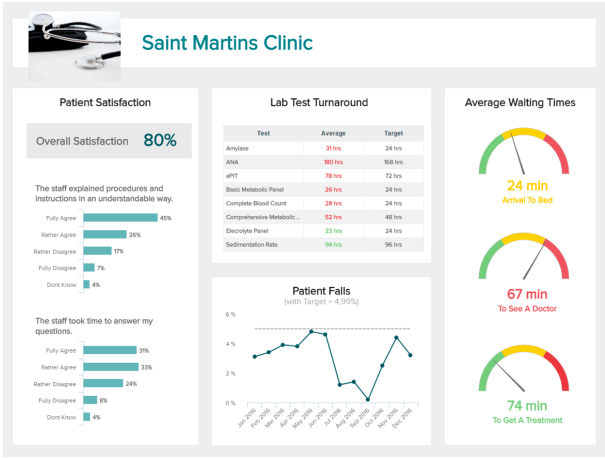
An **analytical dashboard** is a type of dashboard that contains a vast amount of data created and used by analysts to provide support to executives. They supply a business with a comprehensive overview of data, with middle management being a crucial part of its usage.



Financial performance dashboard



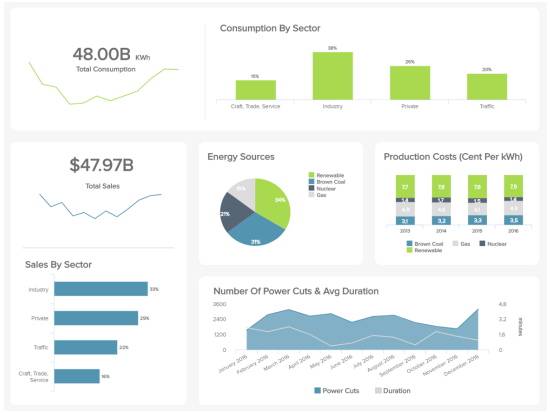
Procurement cost dashboard



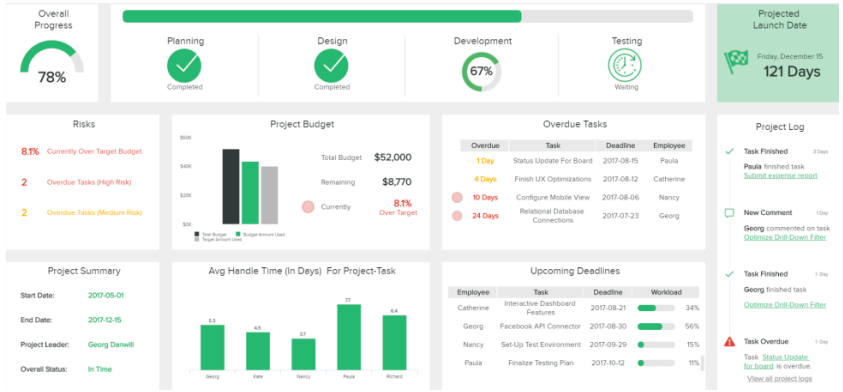
Healthcare analytical dashboard for patients

What Is A Tactical Dashboard?

A **tactical dashboard** is utilized in the analysis and monitoring of processes conducted by mid-level management, emphasizing the analysis. Then an organization effectively tracks the performance of a company's goal and delivers analytic recommendations for future strategies.



Energy Management tactical dashboard



IT project management dashboard

Human Resources talent management dashboard

Social media dashboard

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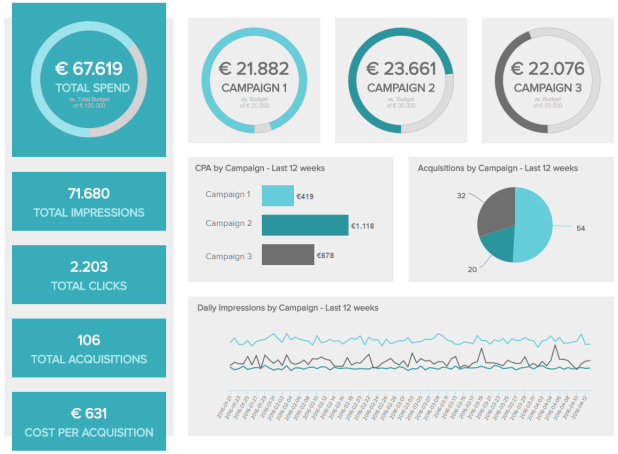

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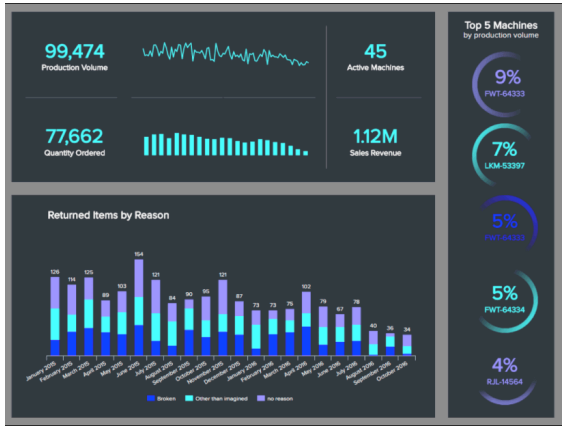

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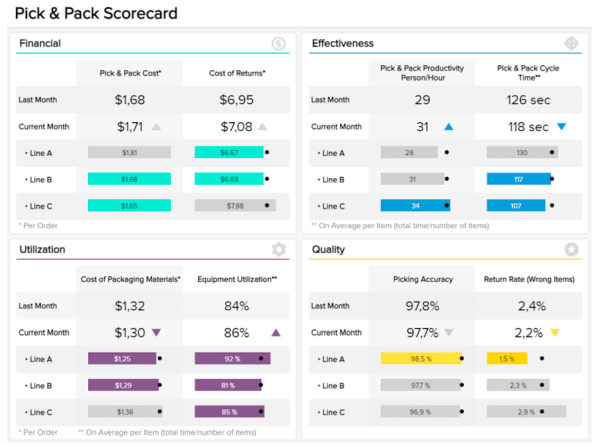

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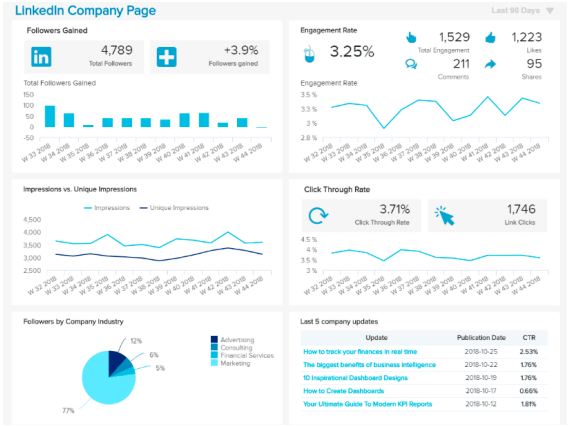

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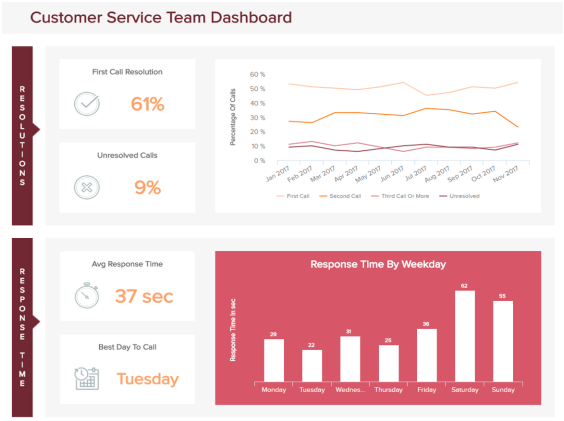


Customer service operational metrics dashboard

Type of Dashboard ?

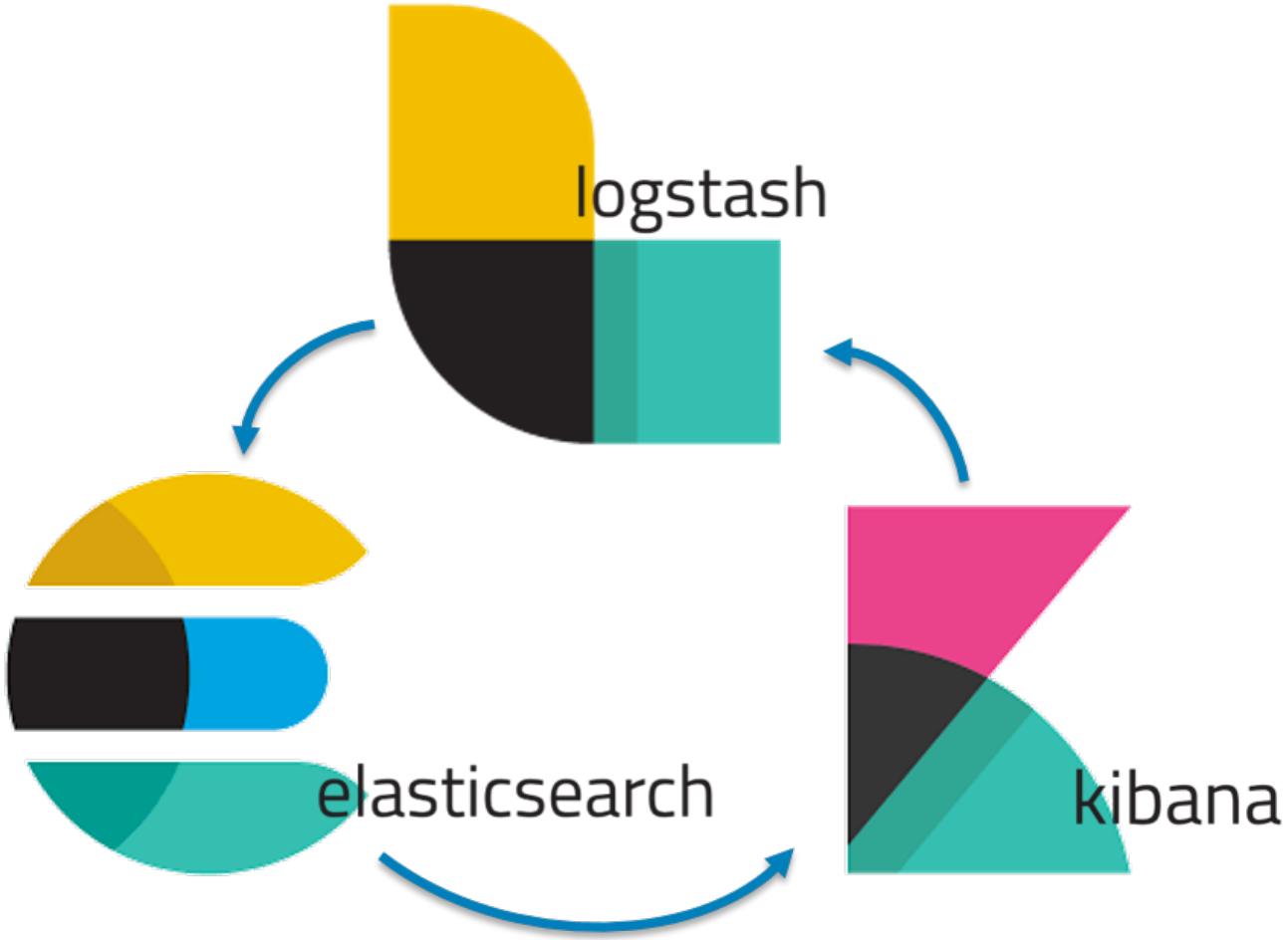
TYPE OF DASHBOARD	LEVEL OF SENIORITY	TIME APPLICATION	LEVEL OF COMPLEXITY
STRATEGIC	Senior Management	Long-term	Complex
TACTICAL & ANALYTICAL	Middle Management	Medium-term	Less Complex
OPERATIONAL	Junior Management	Routine	Simple

Which one ?

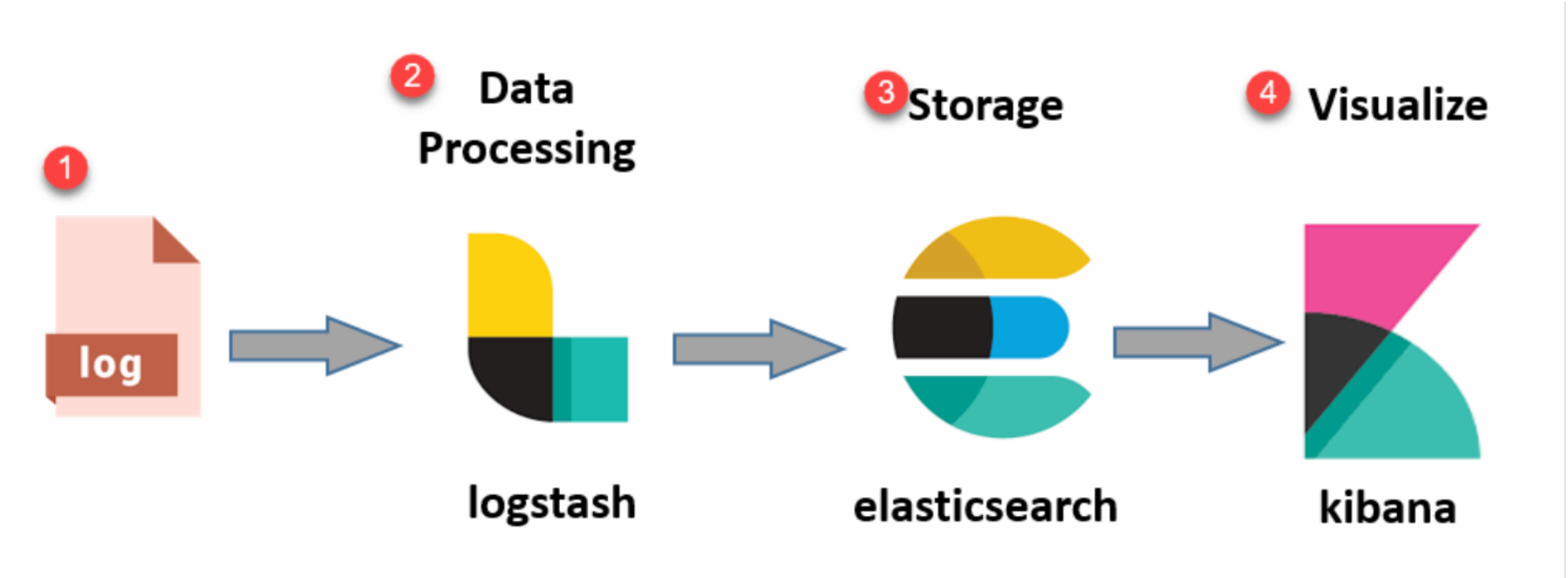
ELK Overview

Elasticsearch Logstash and Kibana

ELK Stack: Elasticsearch, Logstash and Kibana



Shopping-Cart : Define Business Process Workflow



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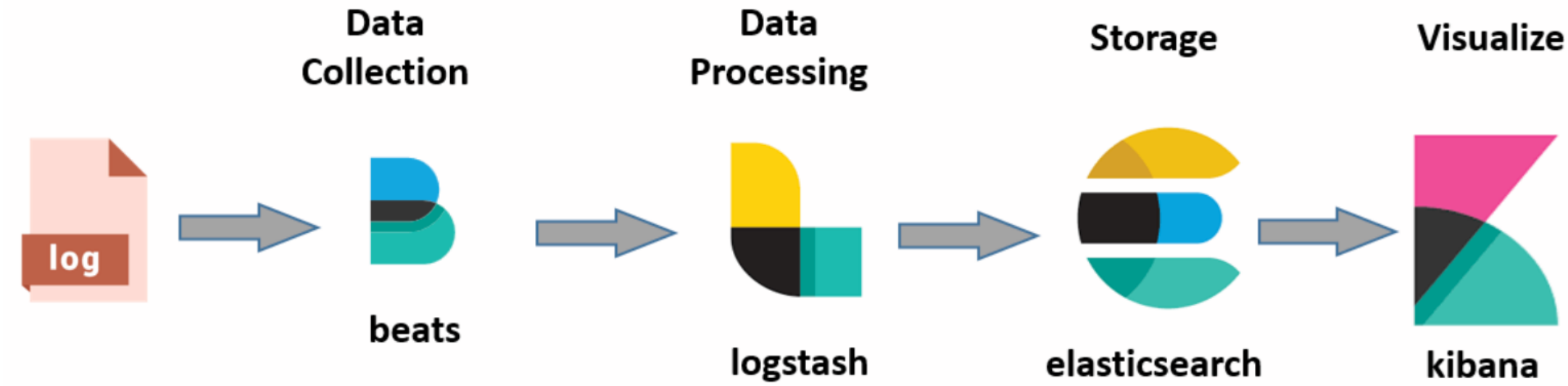
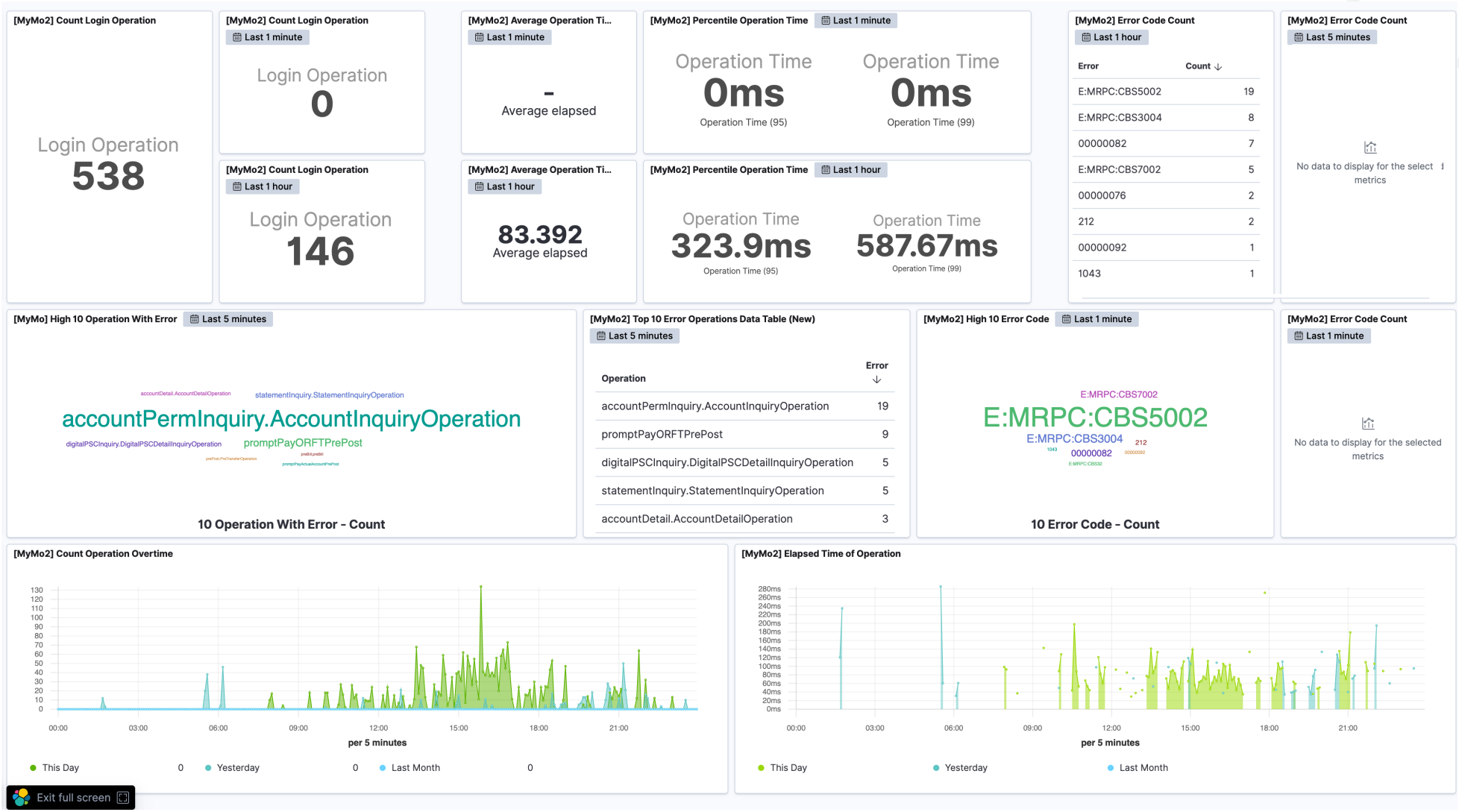


Dashboard Example



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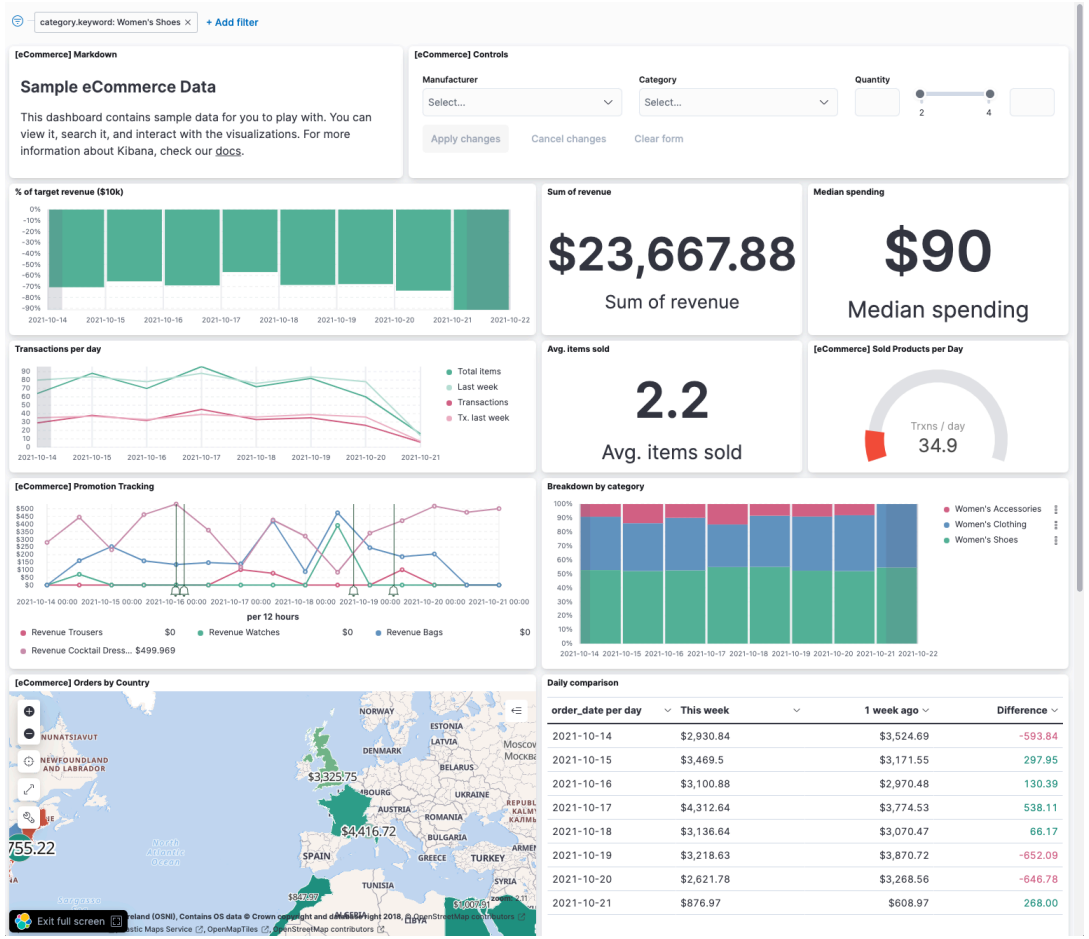

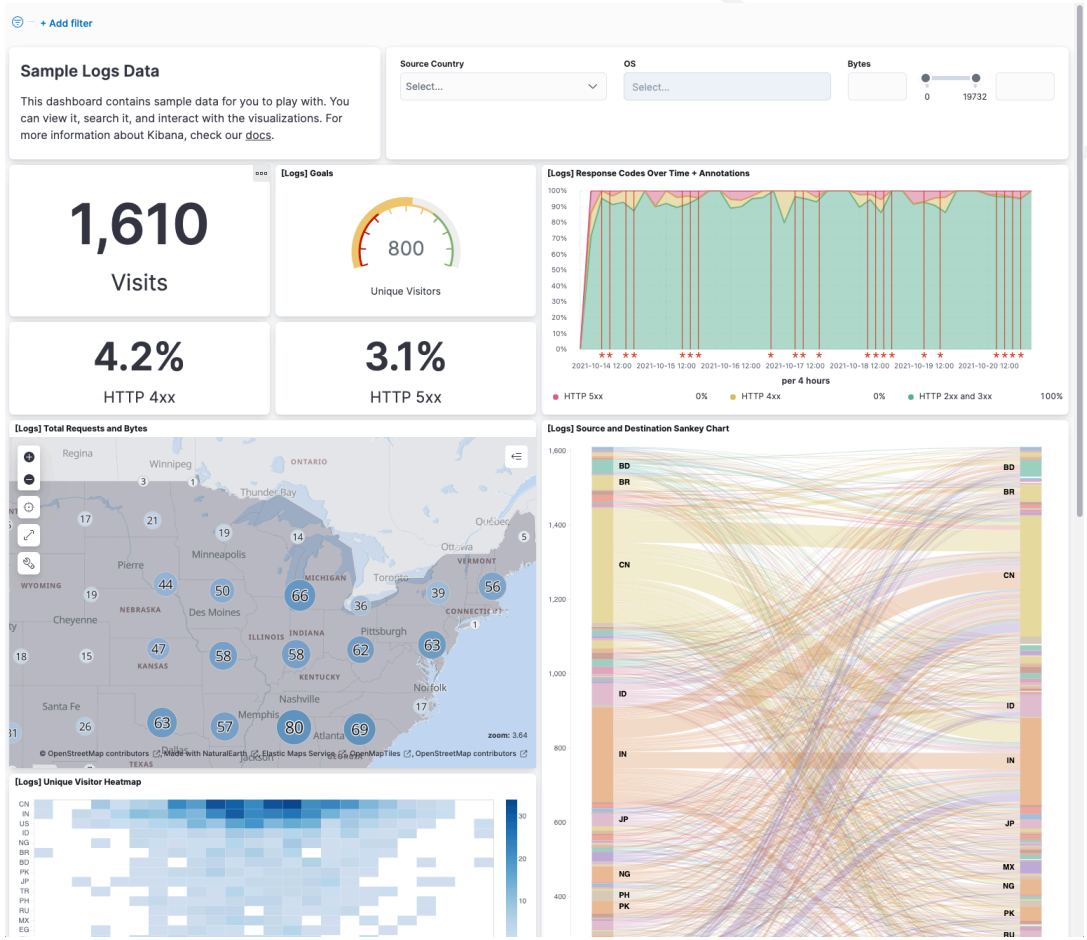

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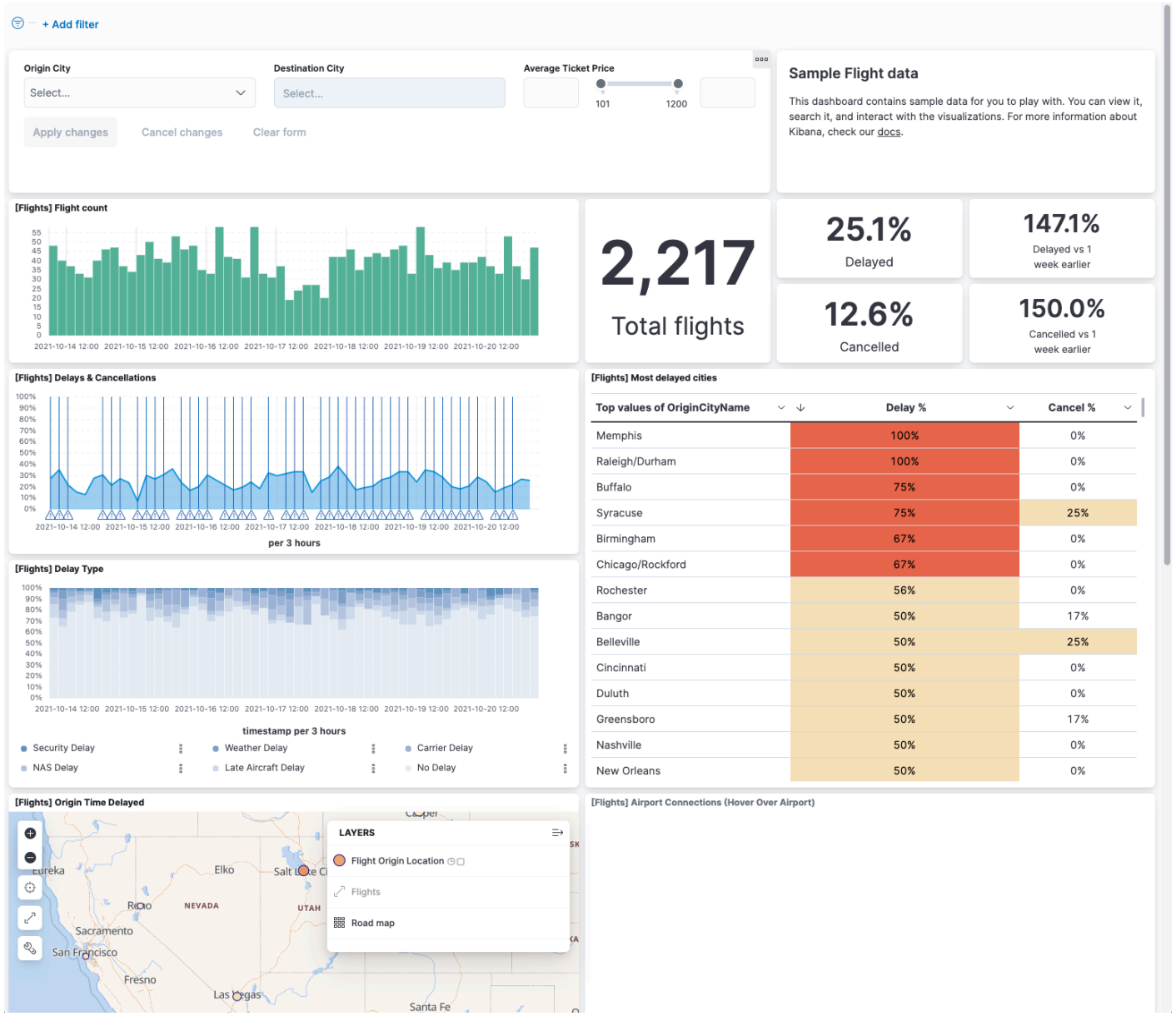

Setup Kibana LAB

Step by Step Installation

Install Elasticsearch

Step by Step Installation

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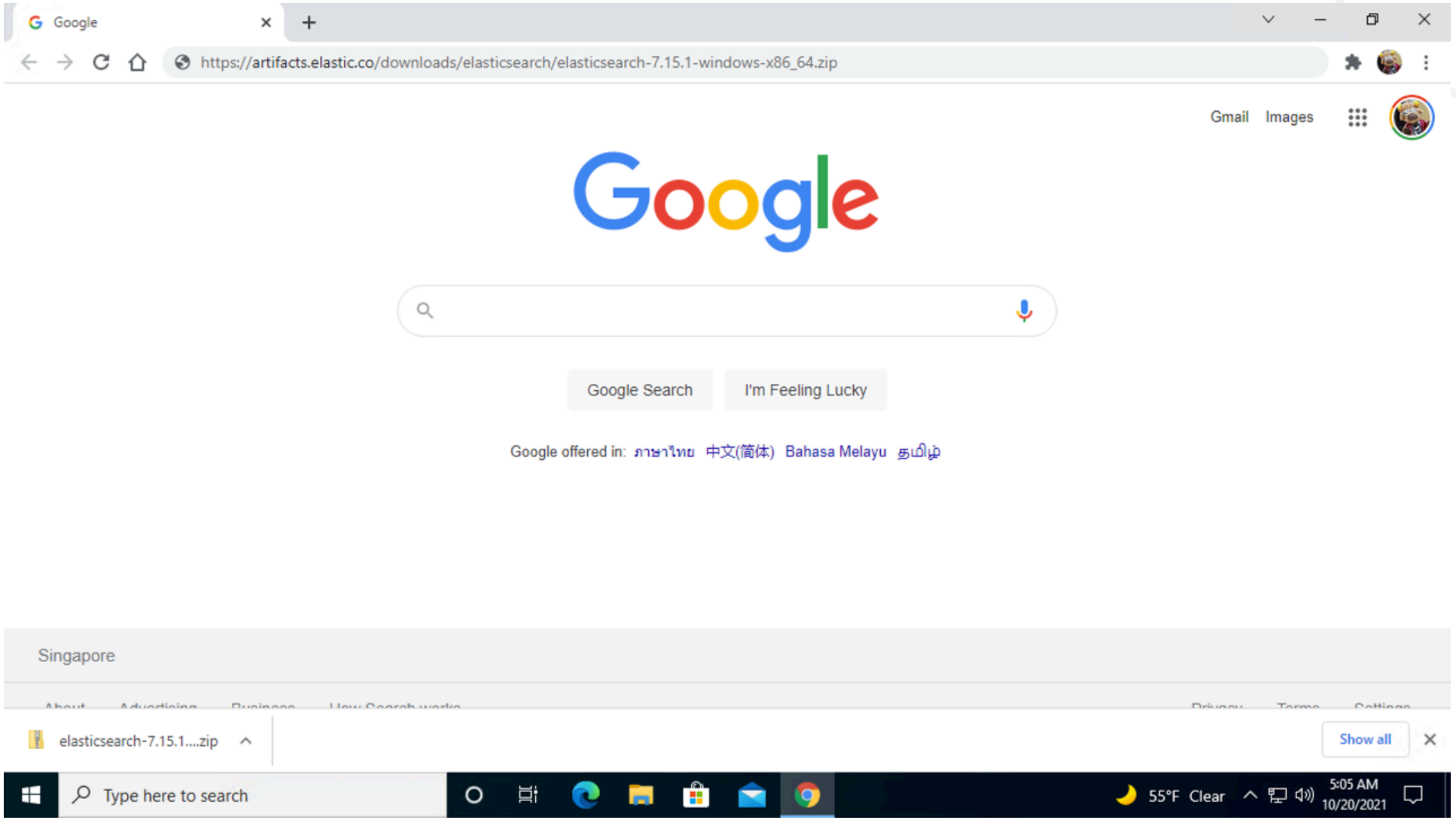

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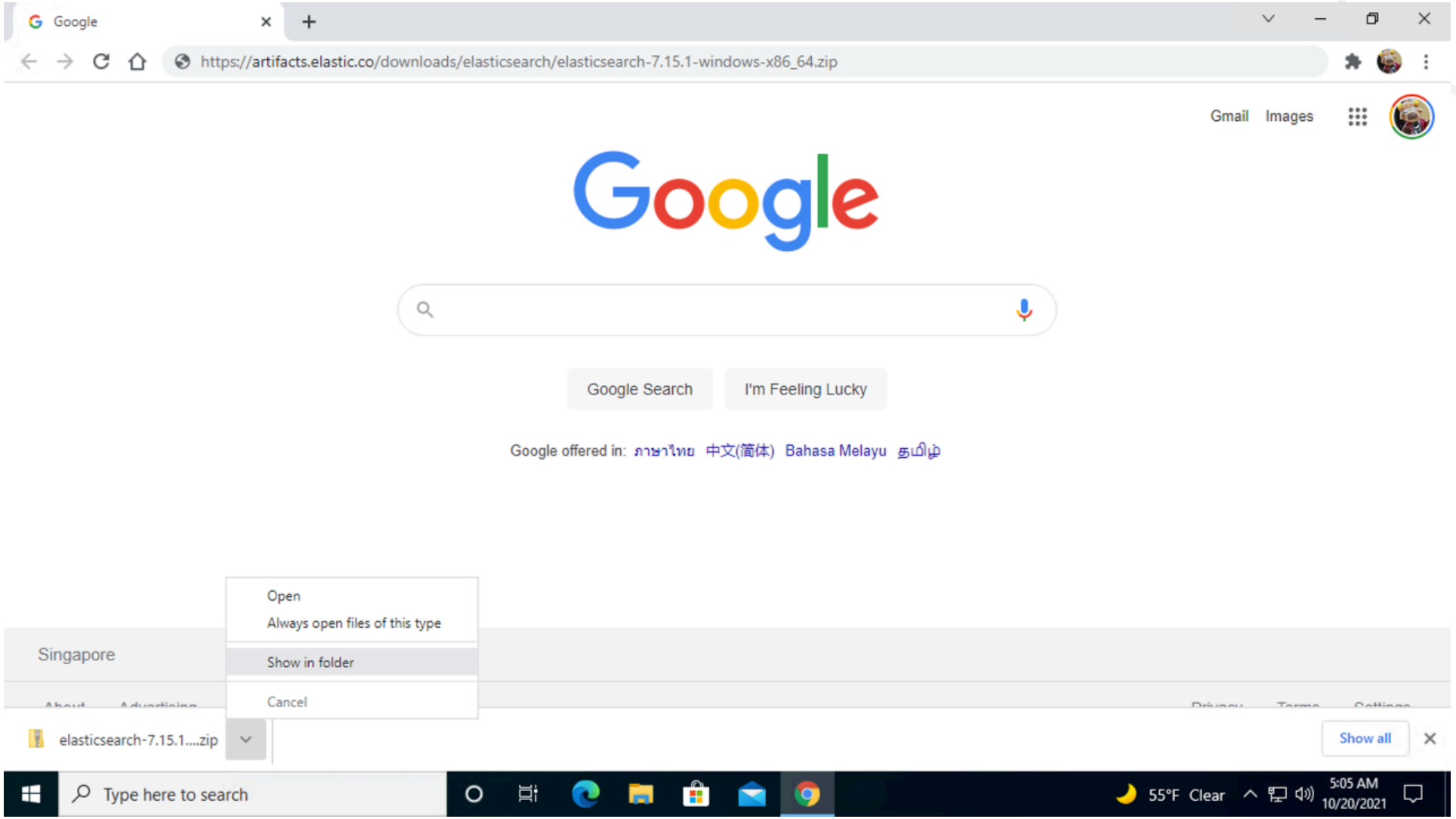
Install Elasticsearch



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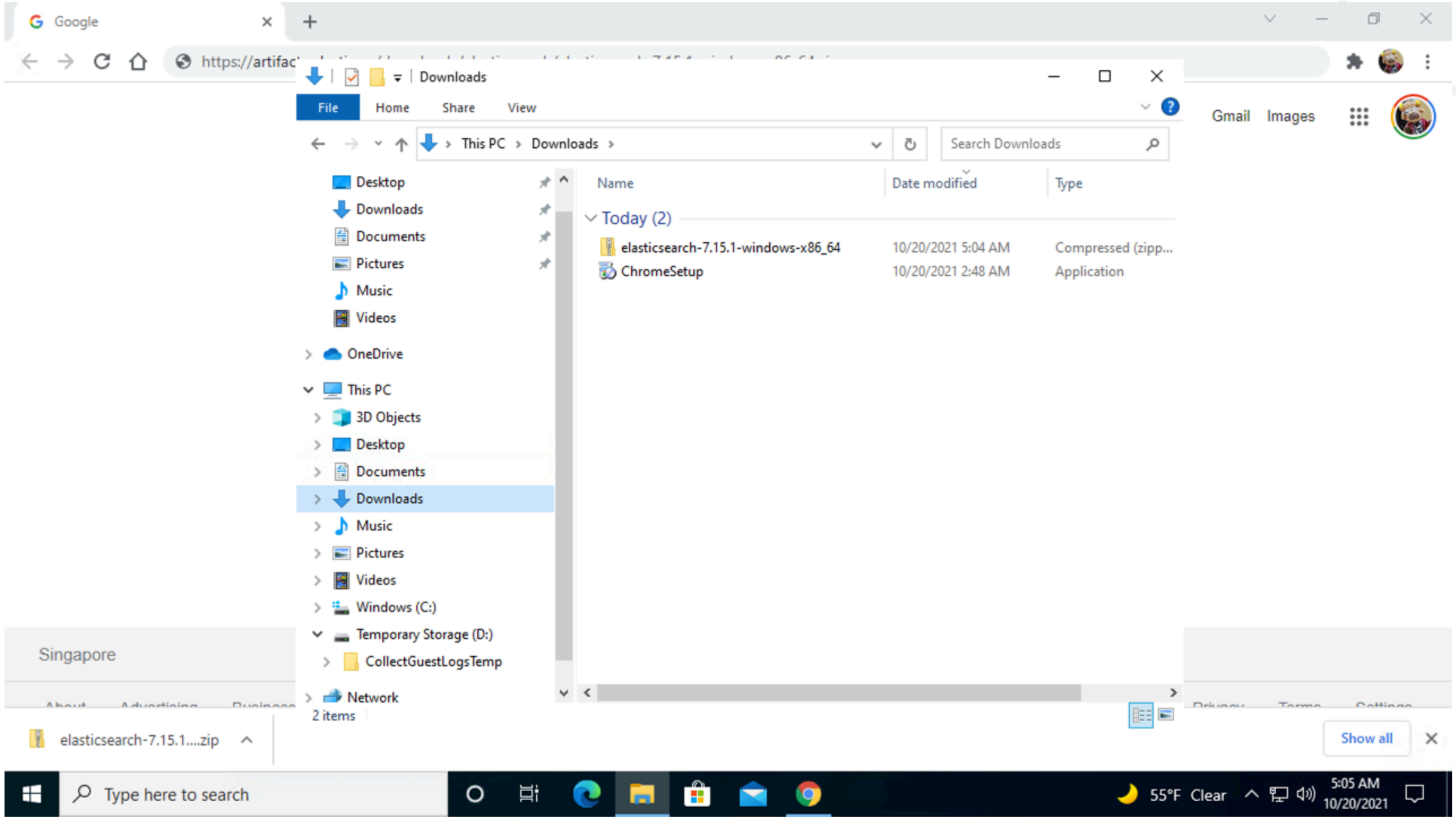

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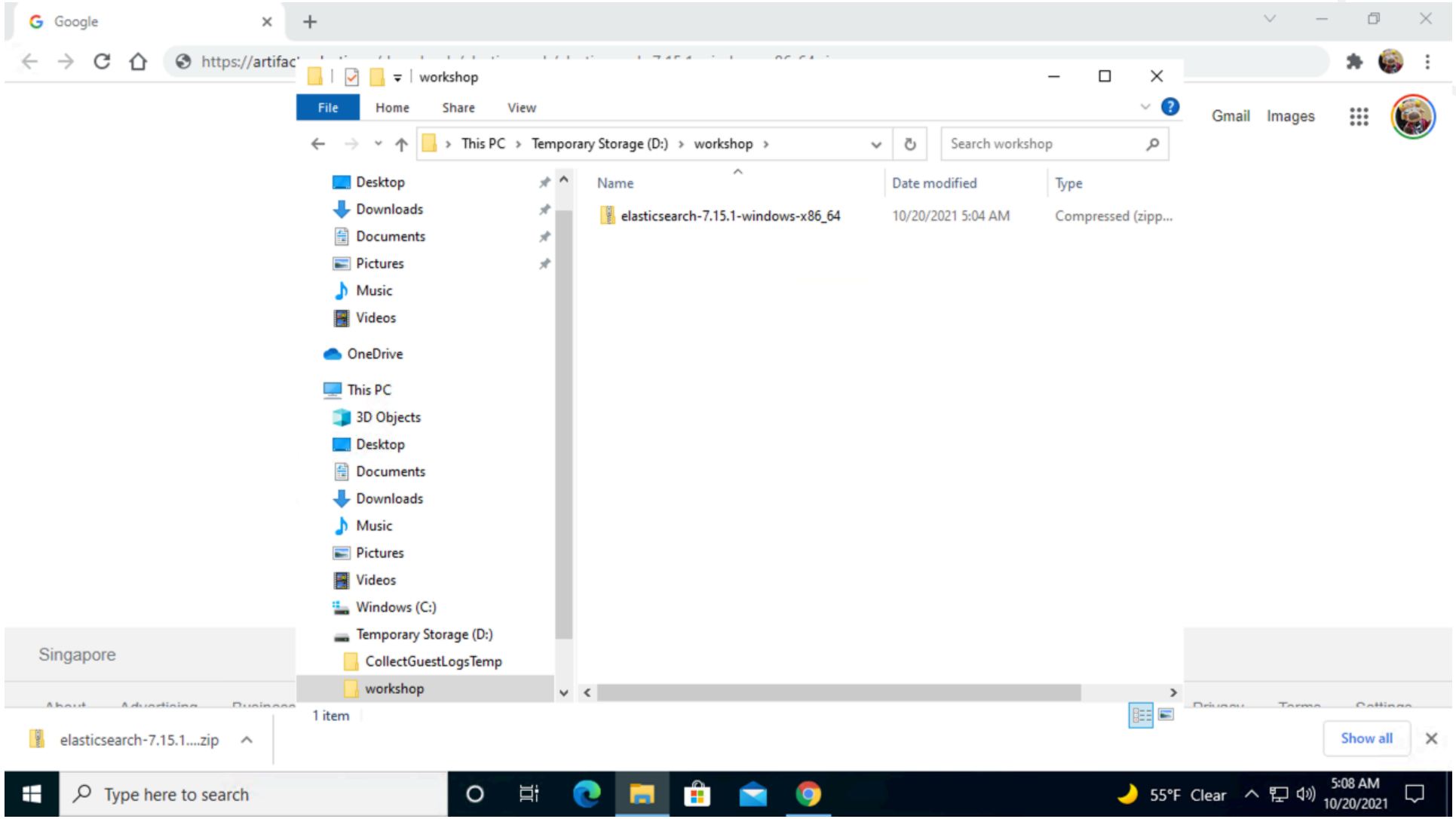

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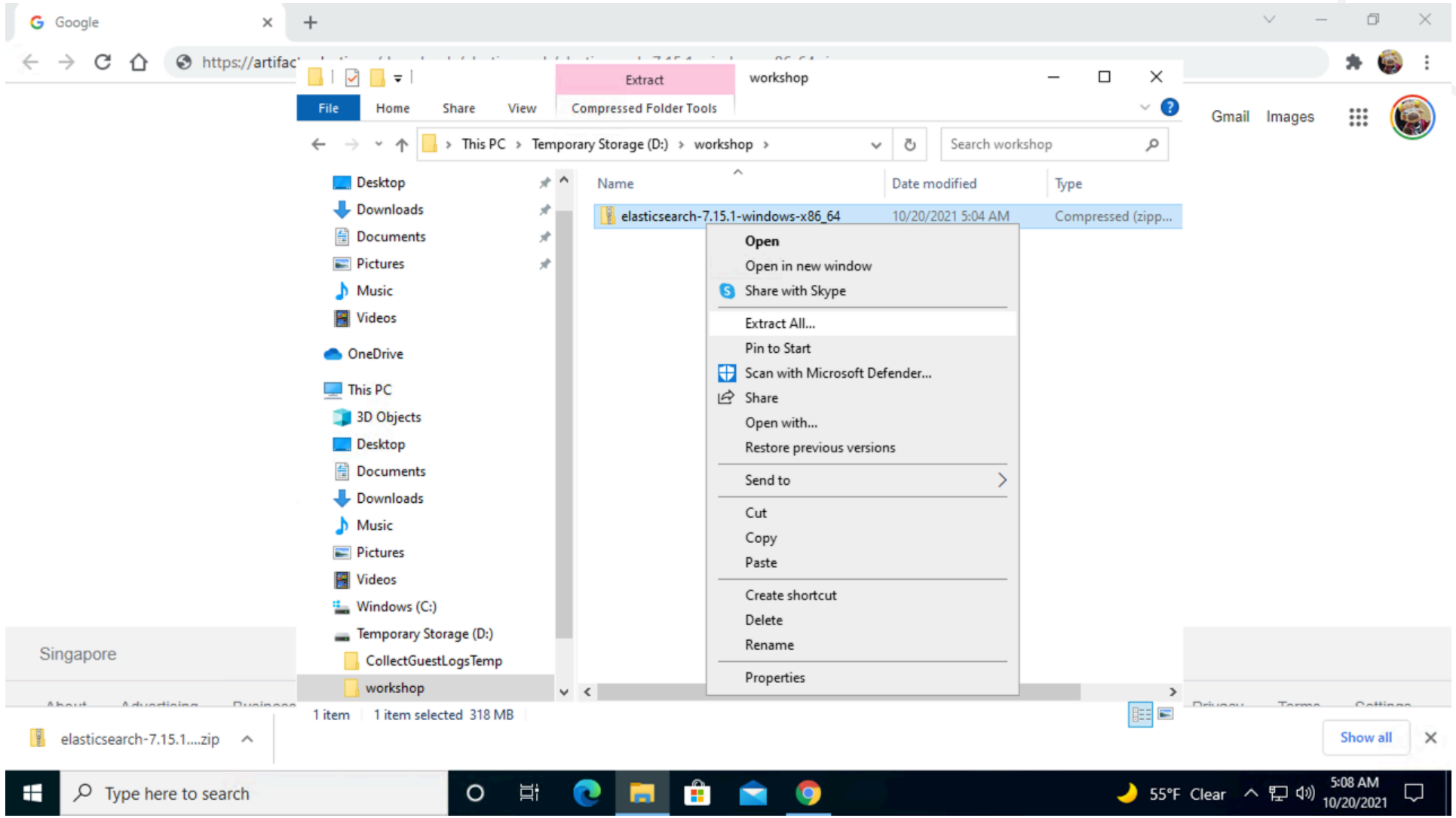

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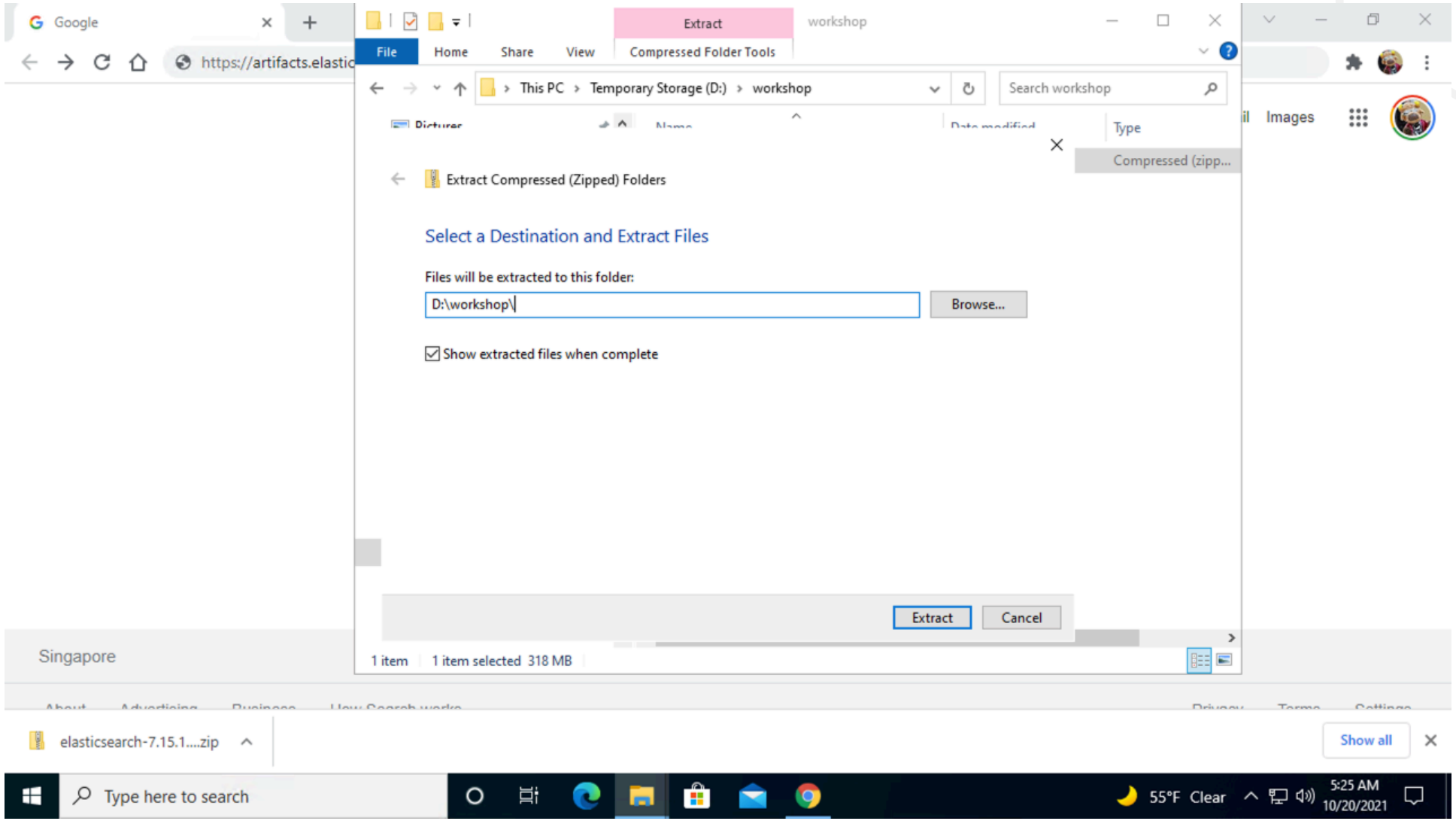

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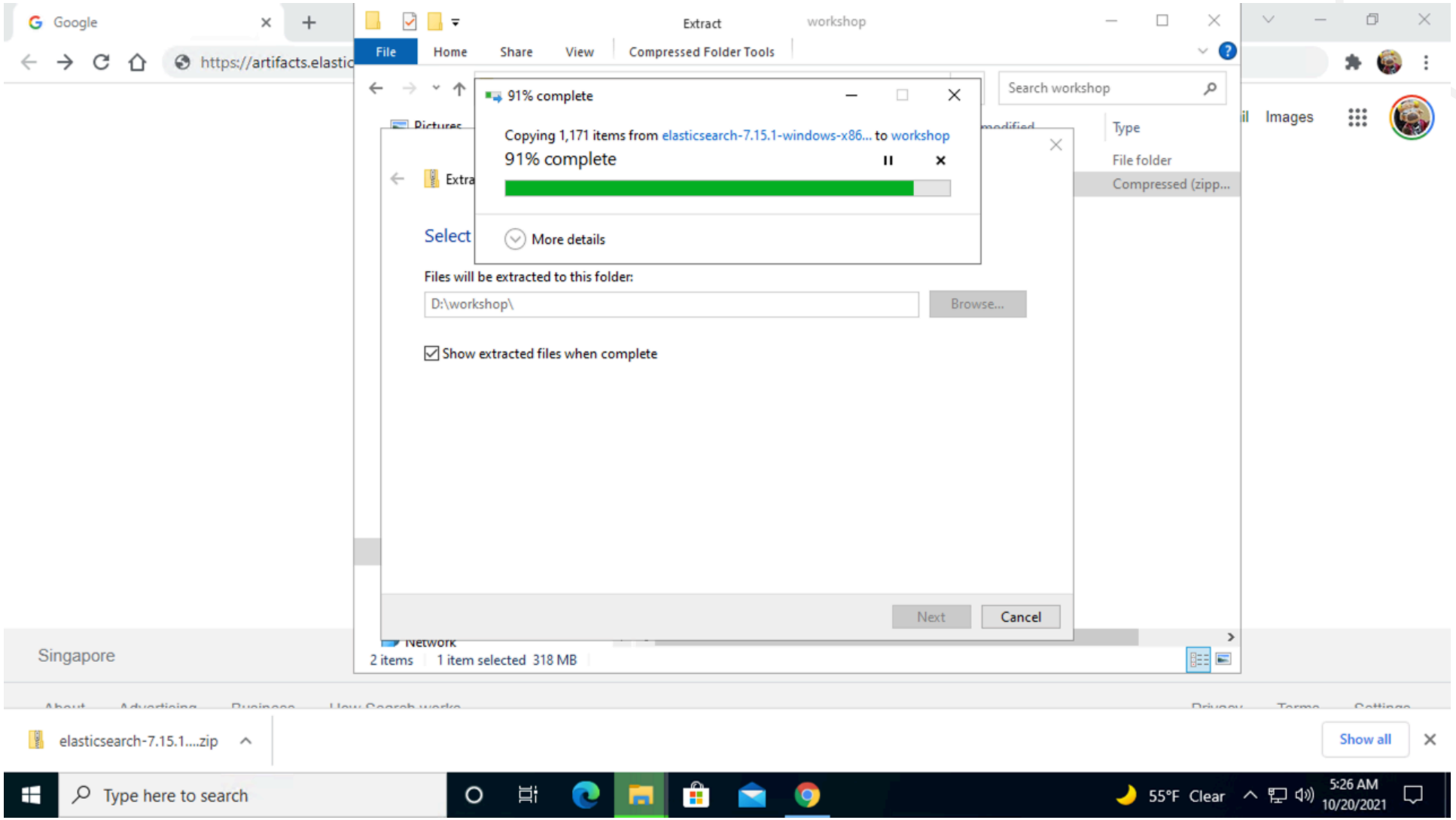

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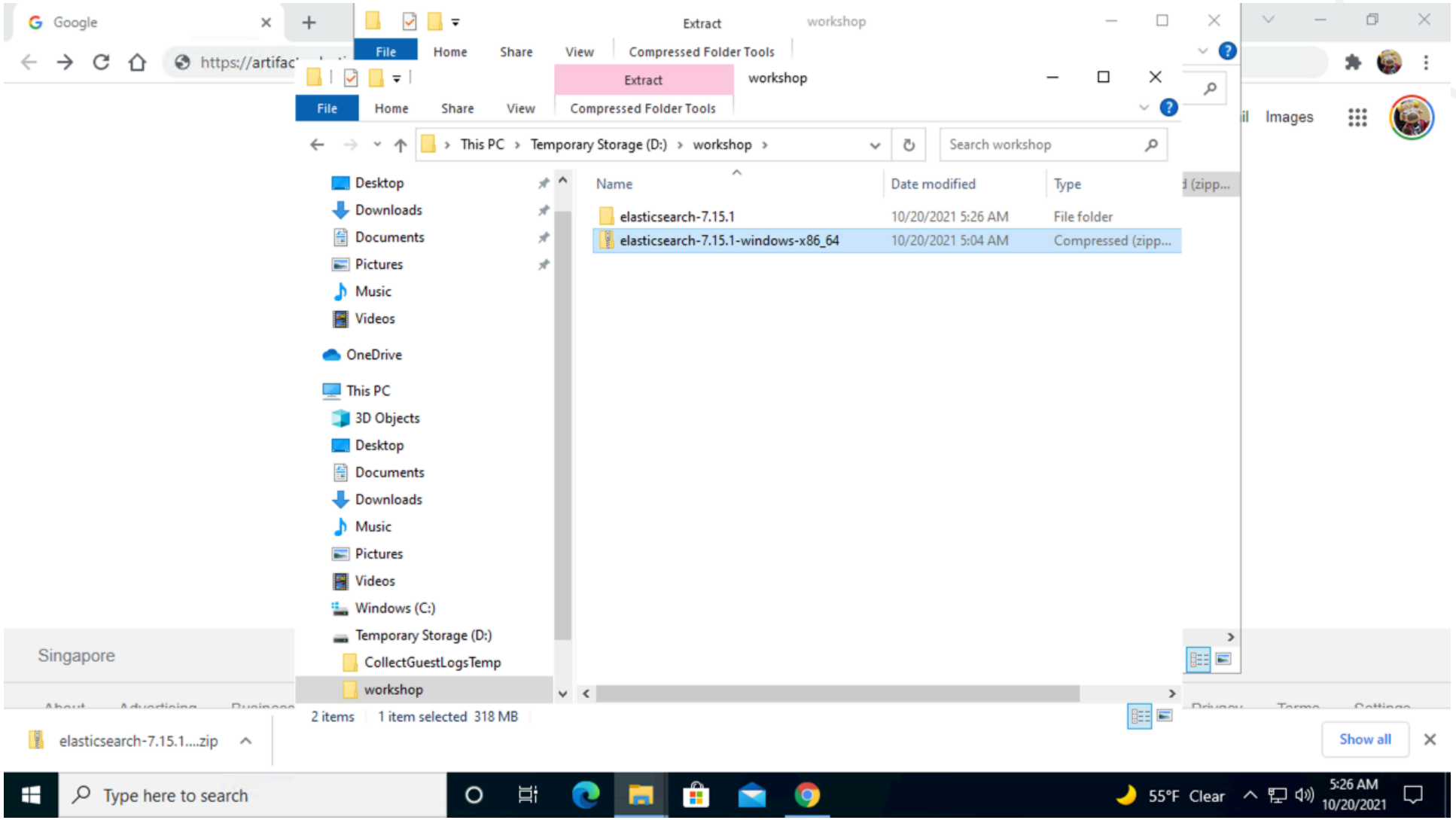

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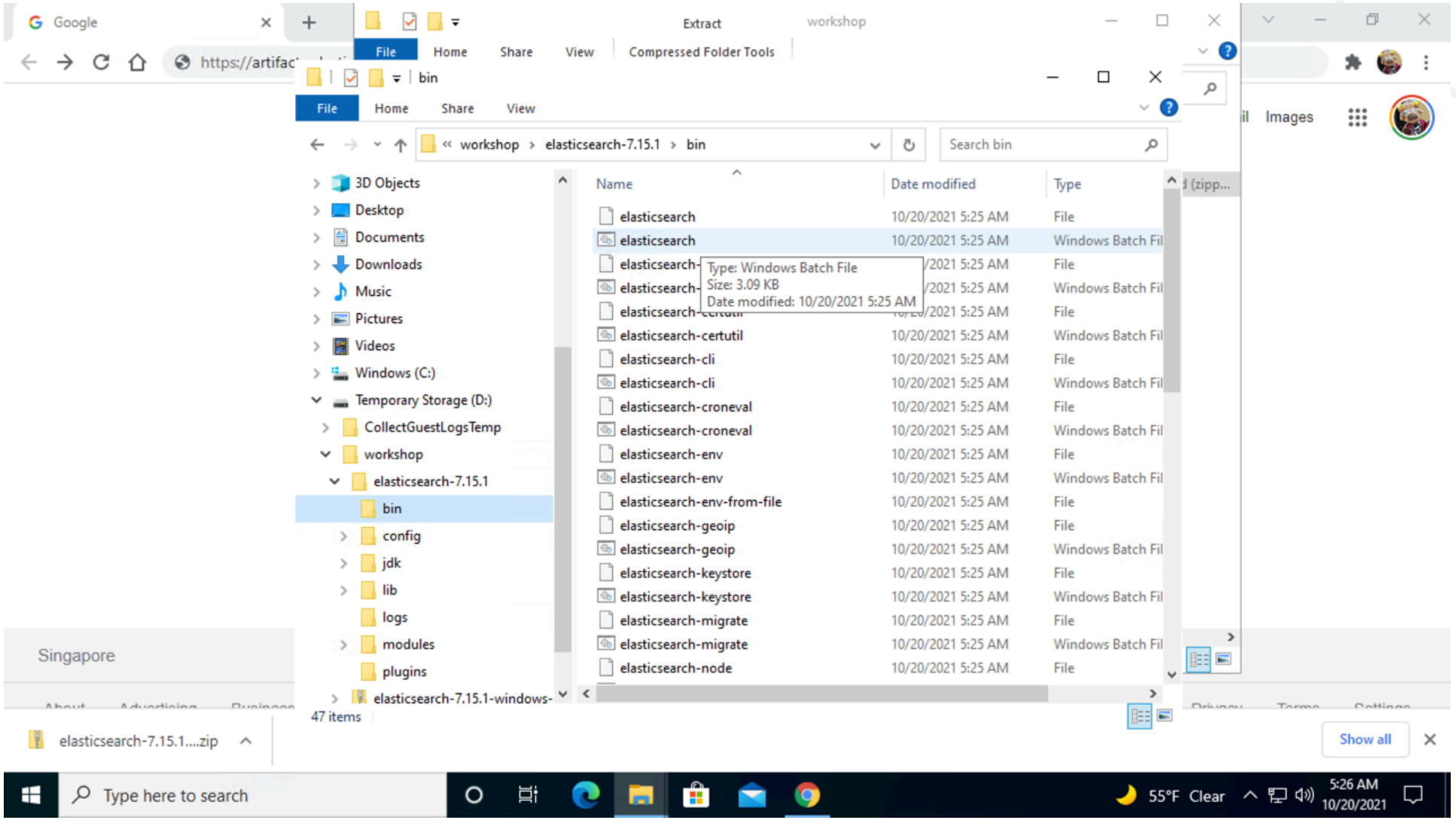

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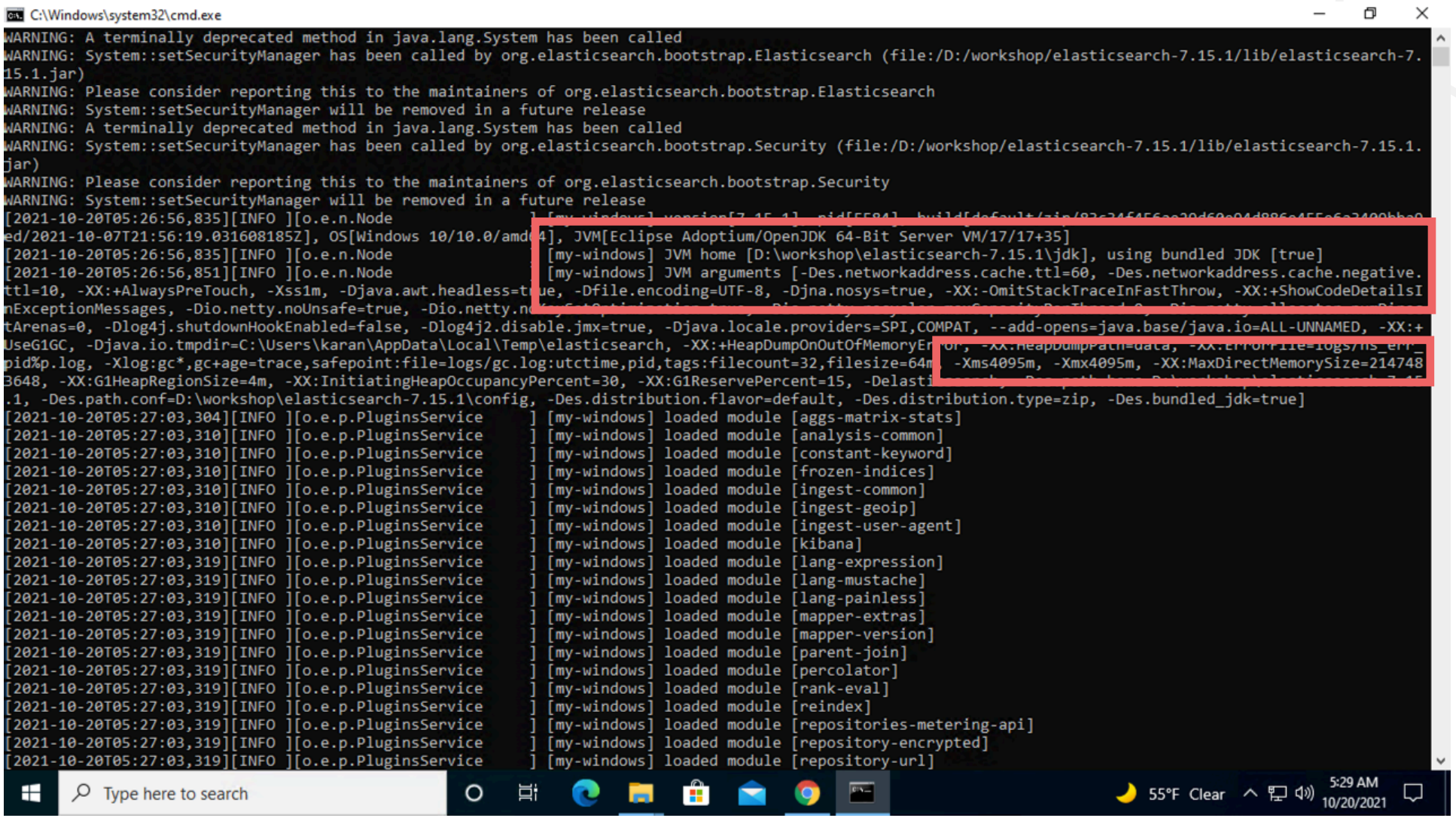

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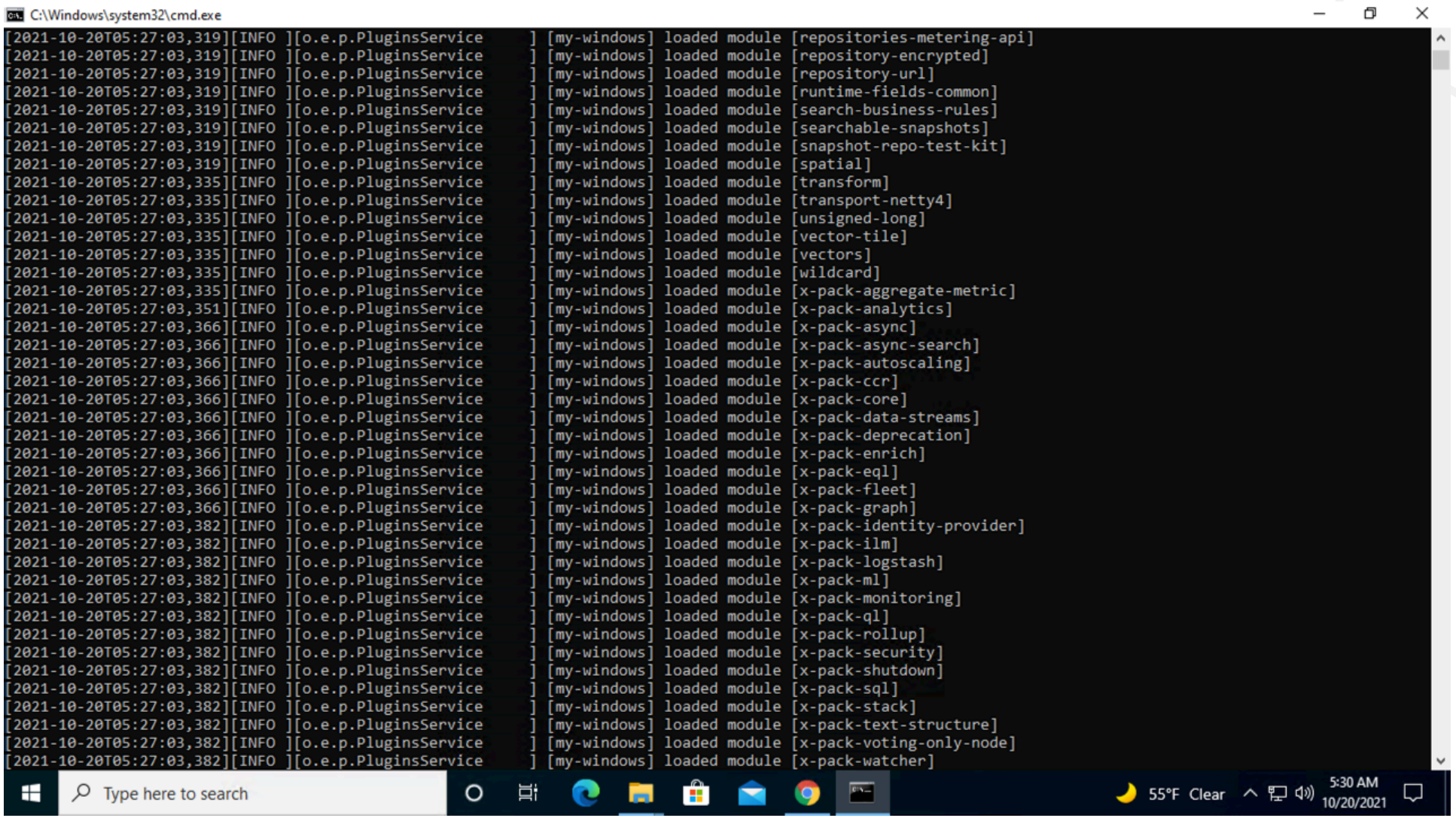

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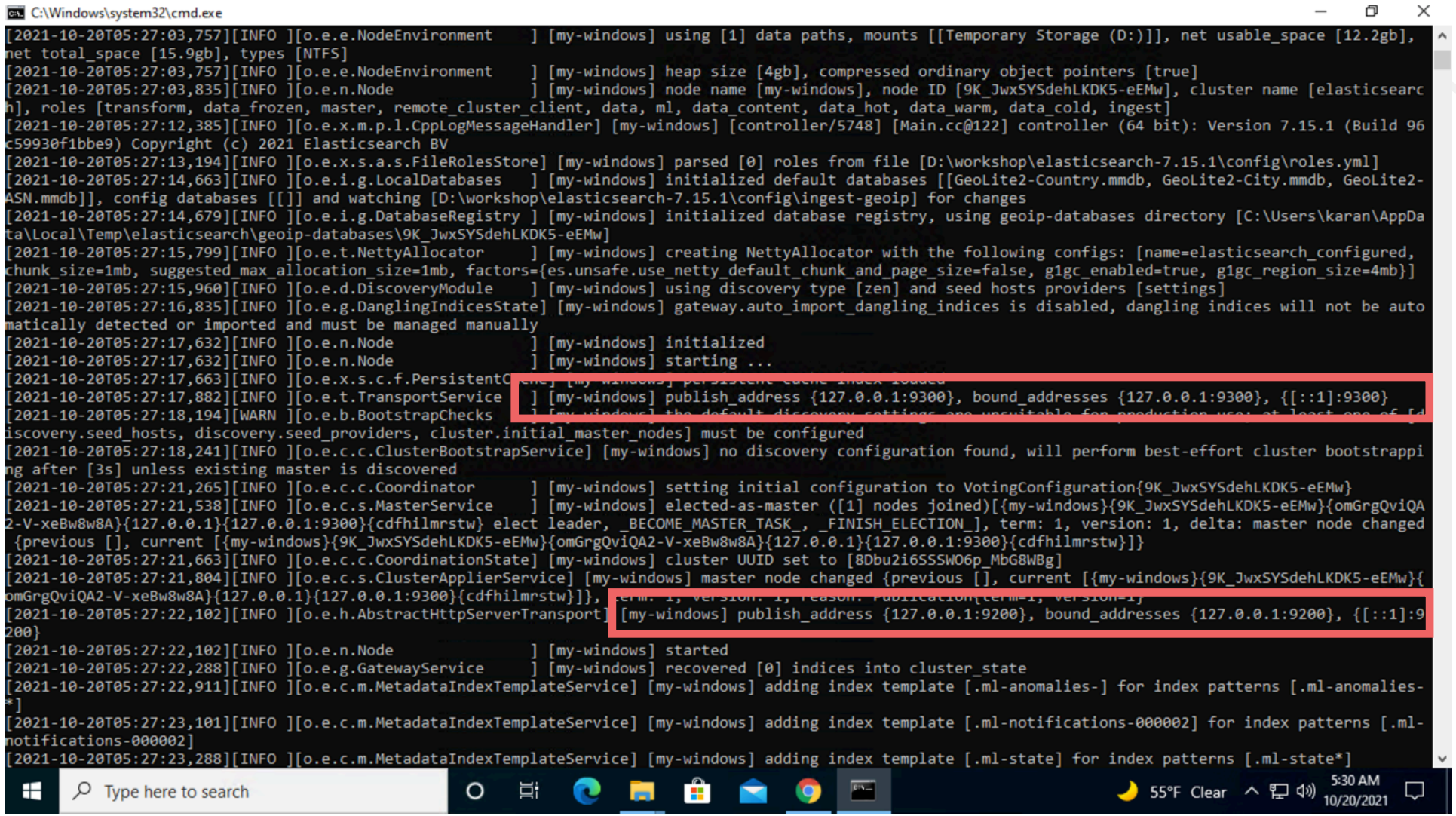

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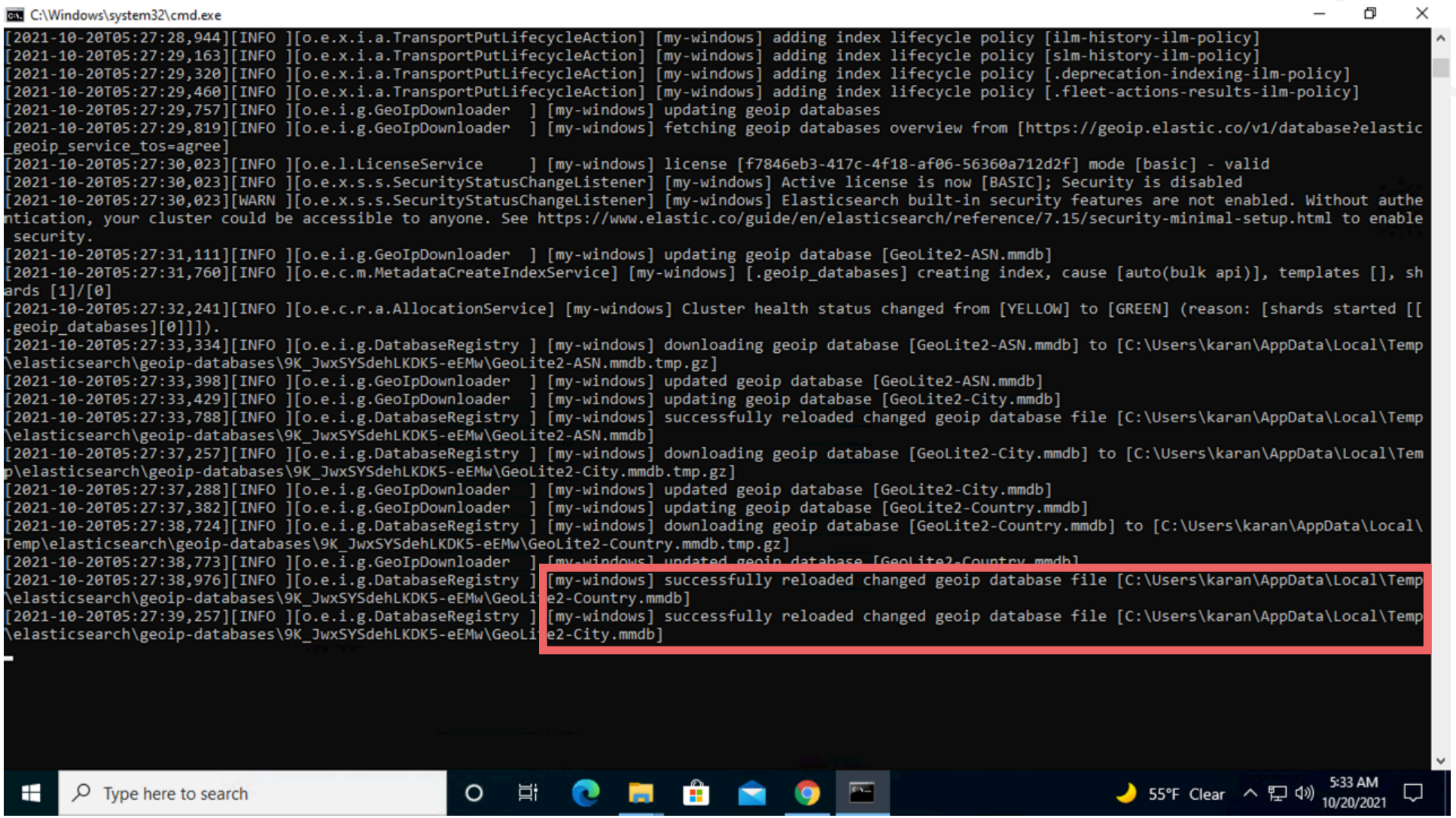

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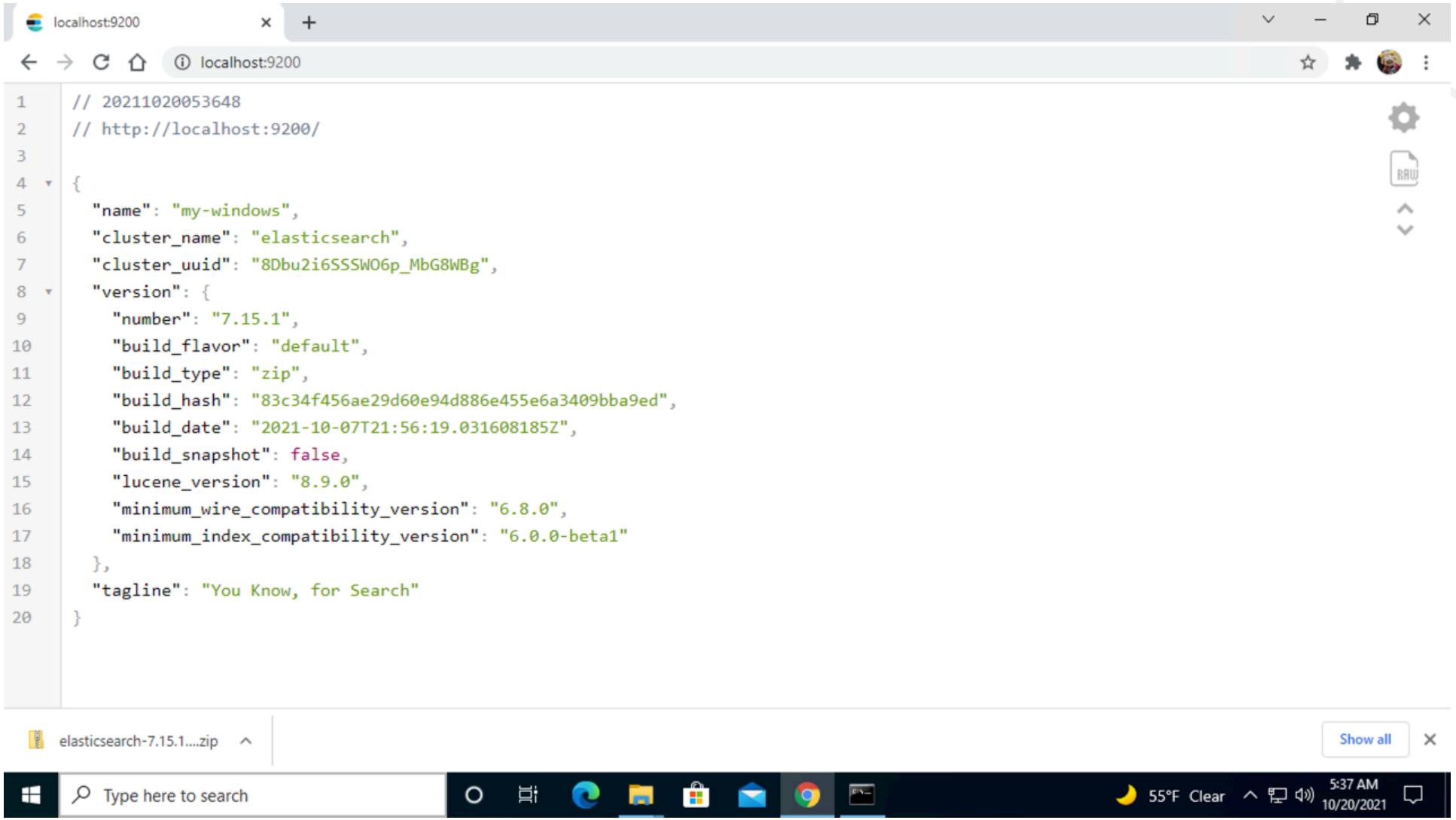

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https://www.elastic.co/guide/en/kibana/current/windows.html

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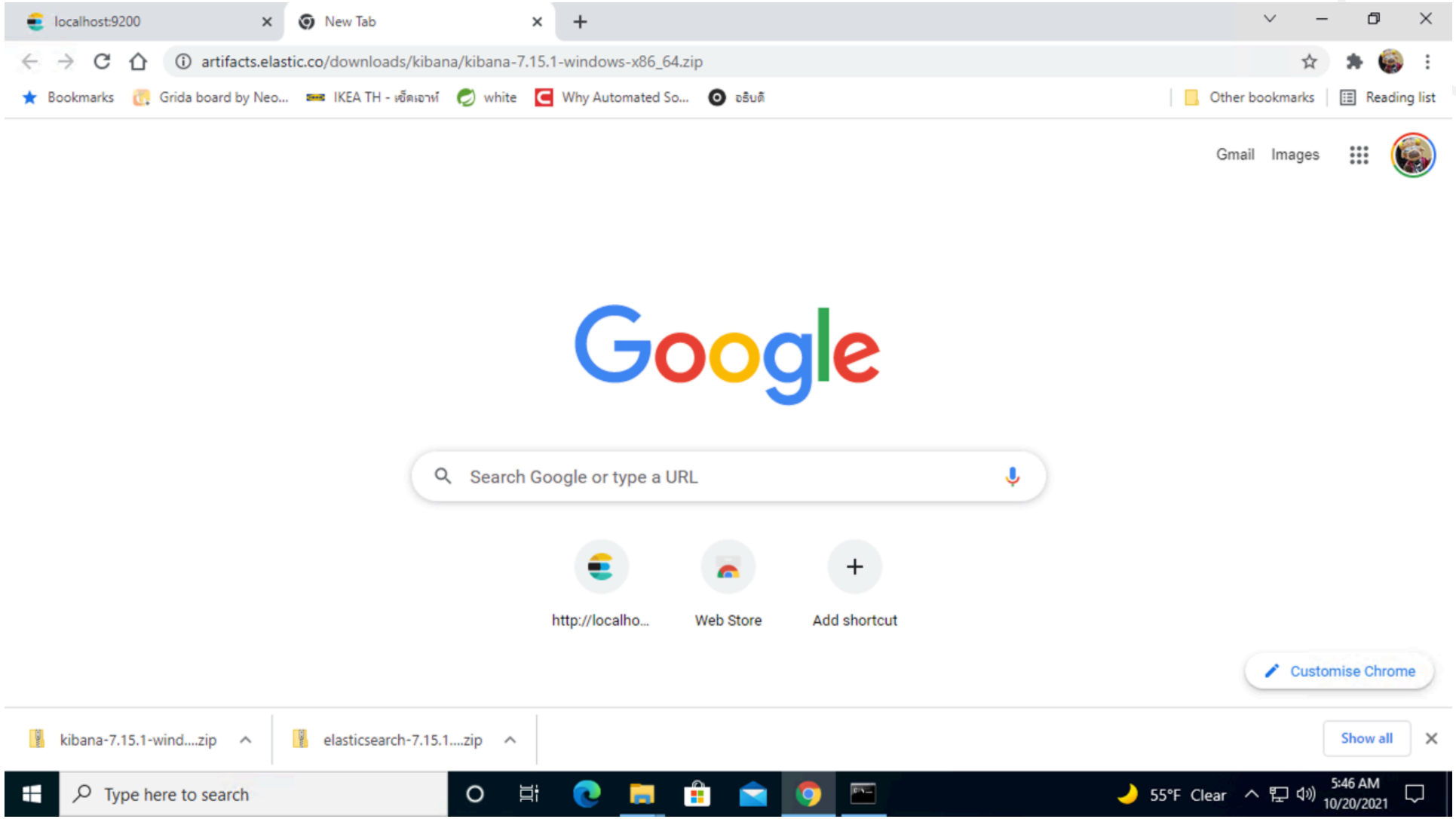

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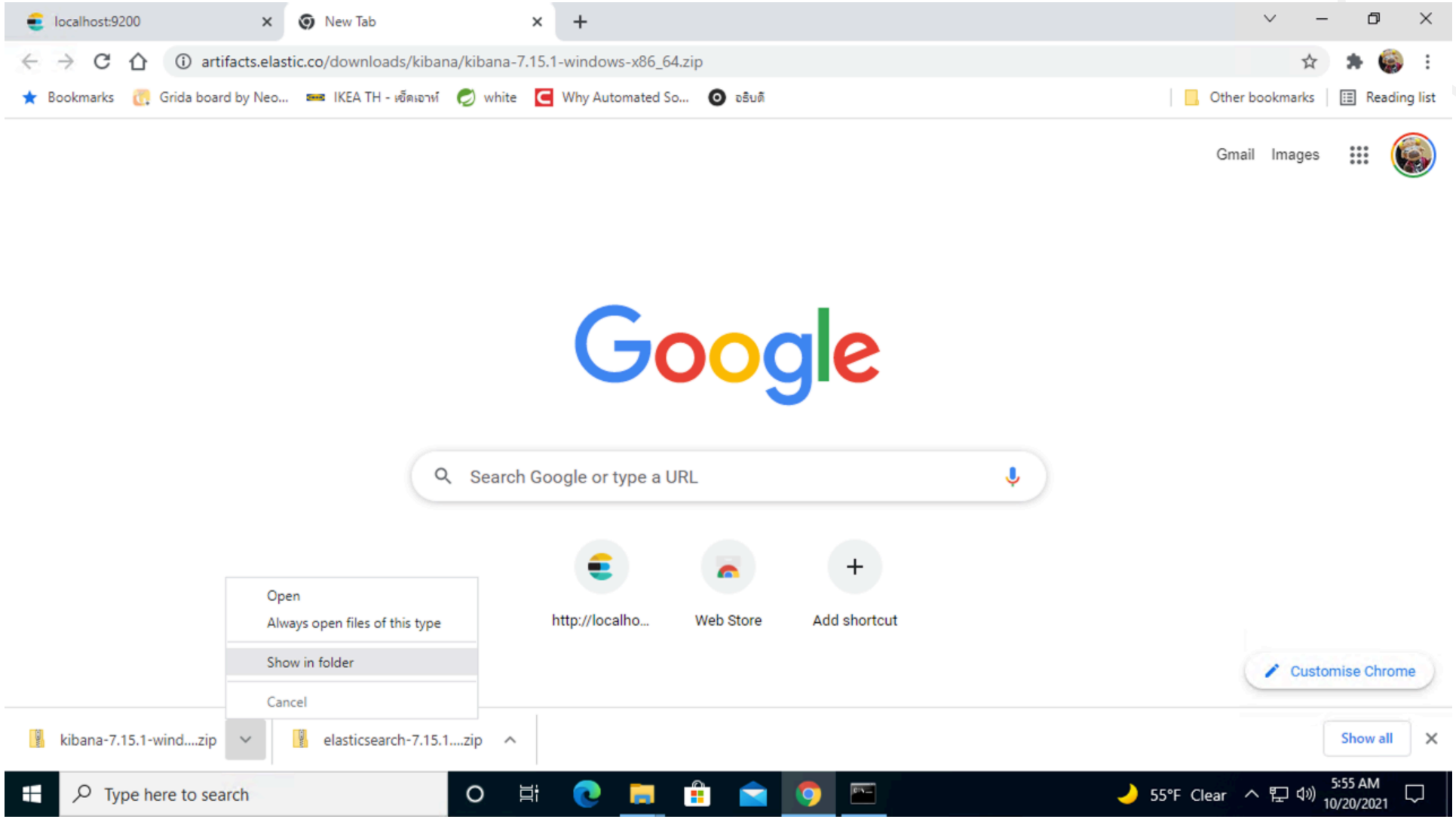
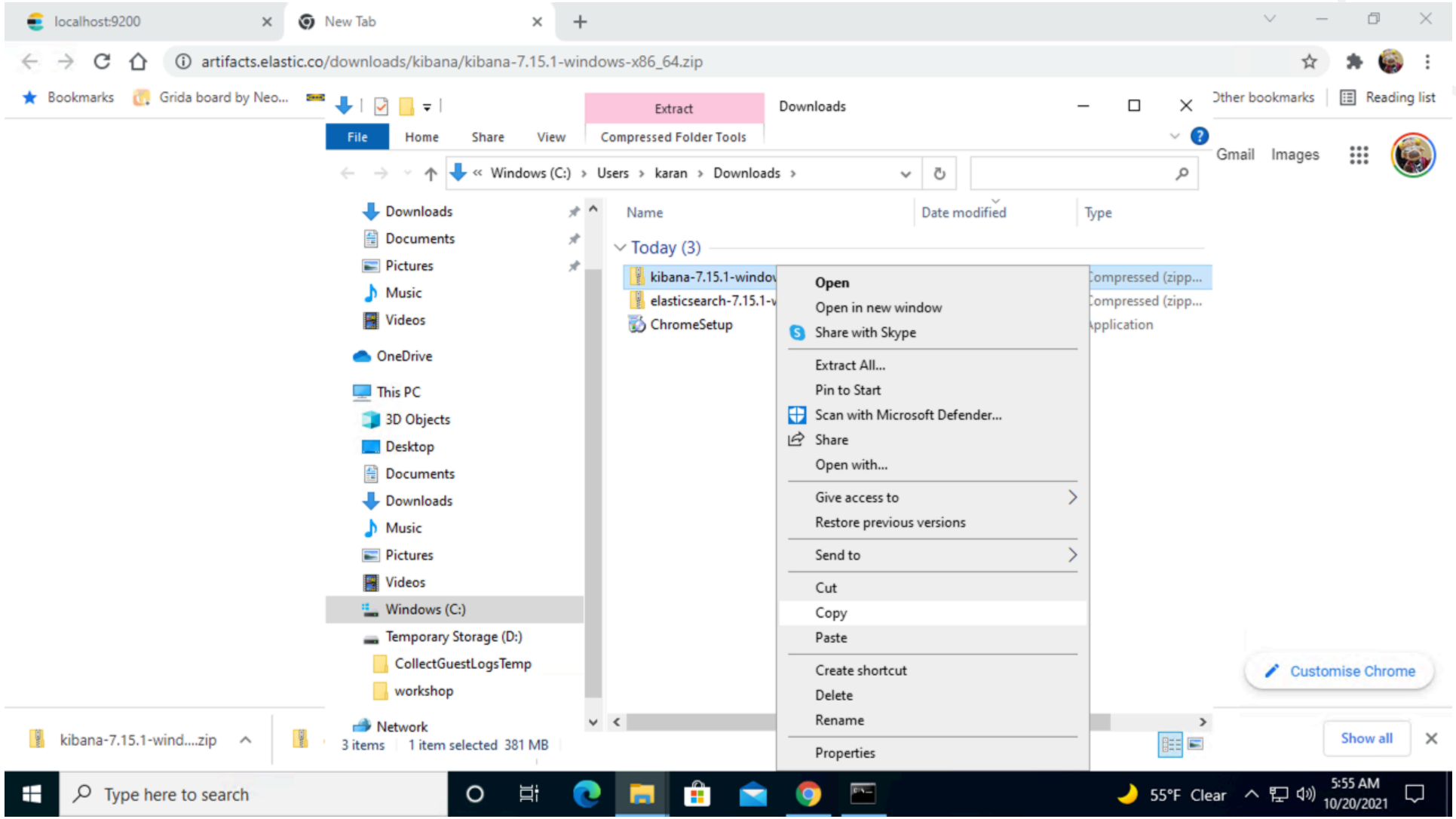
Install Kibana



Install Kibana



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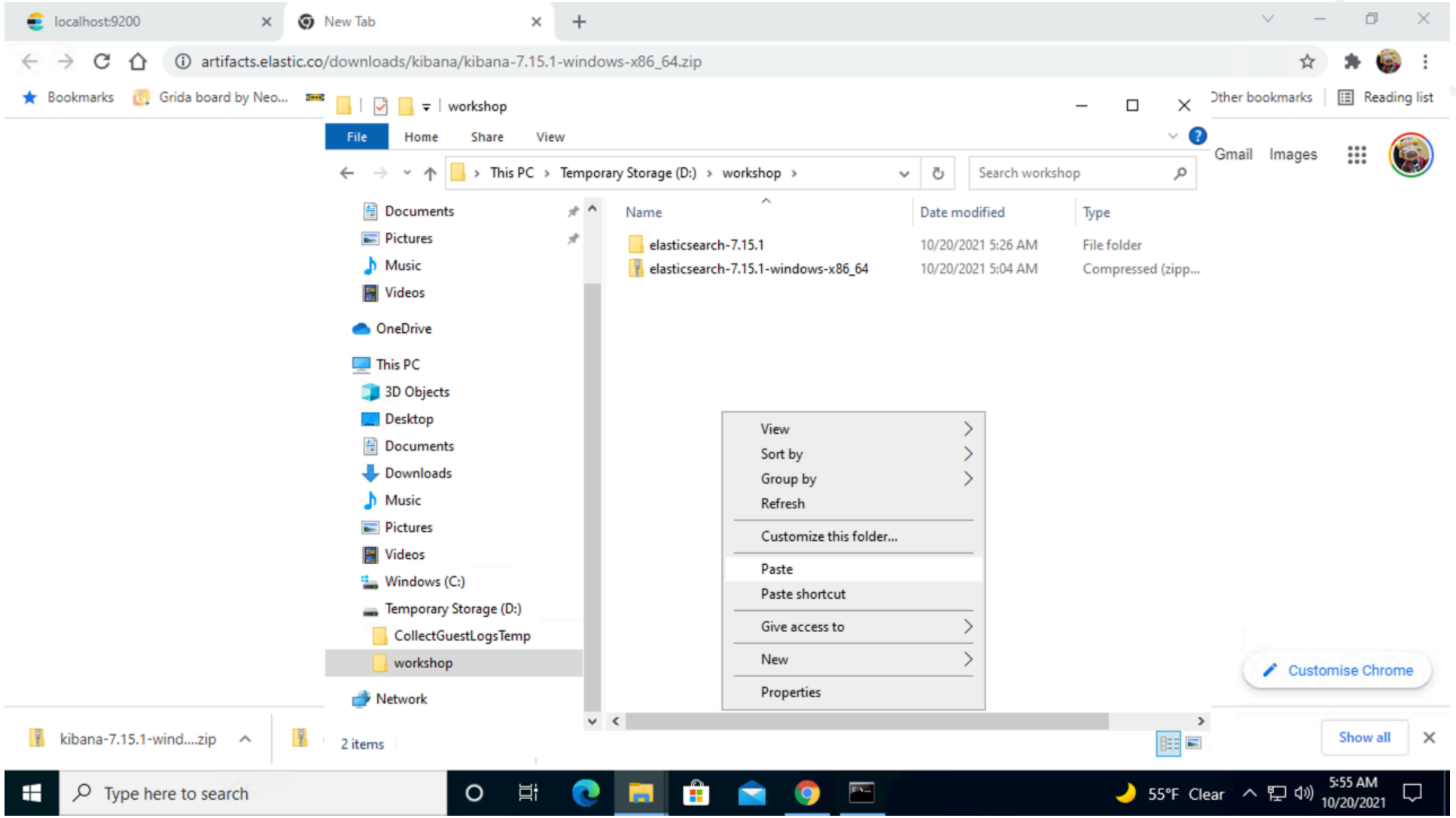

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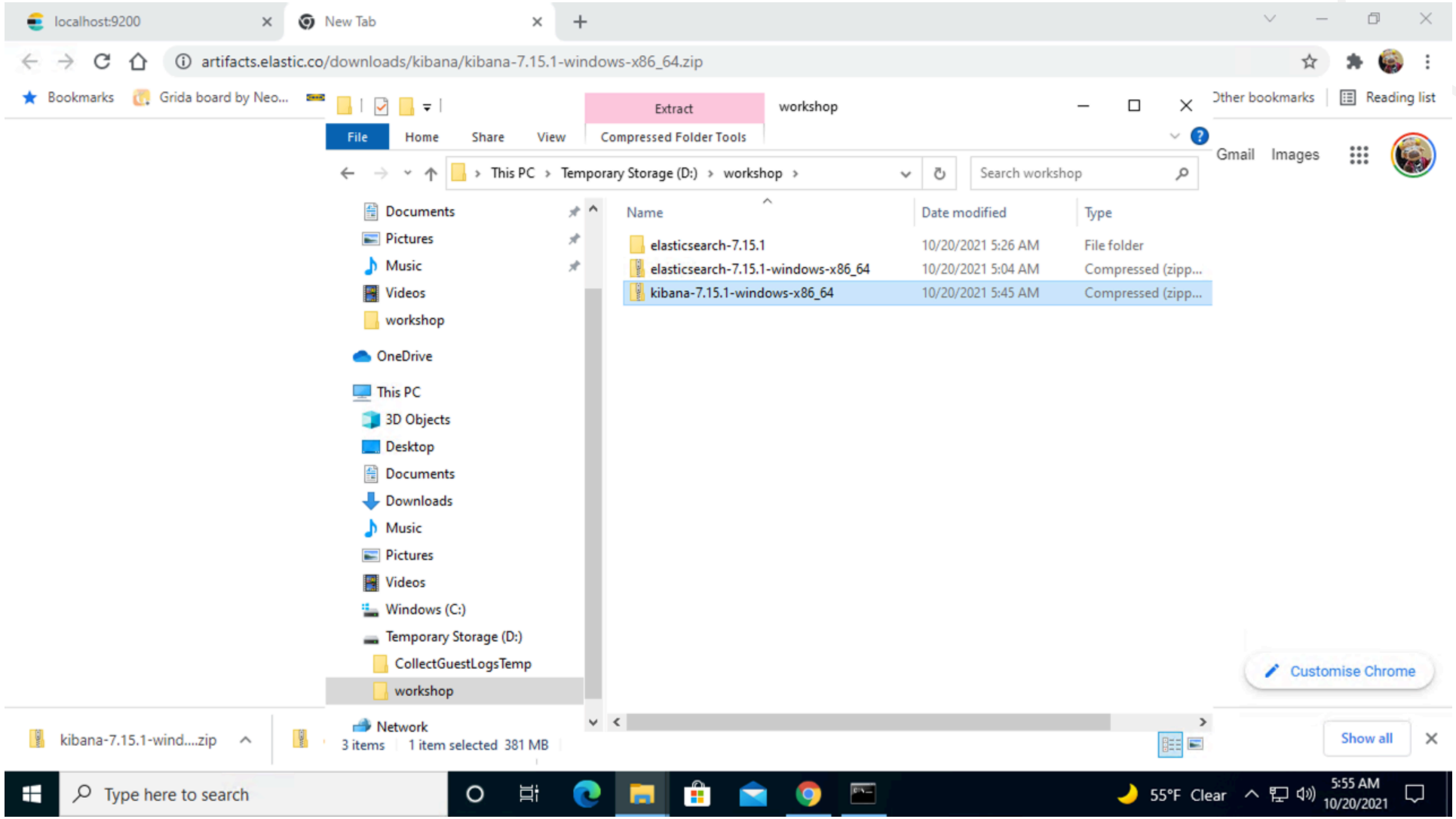

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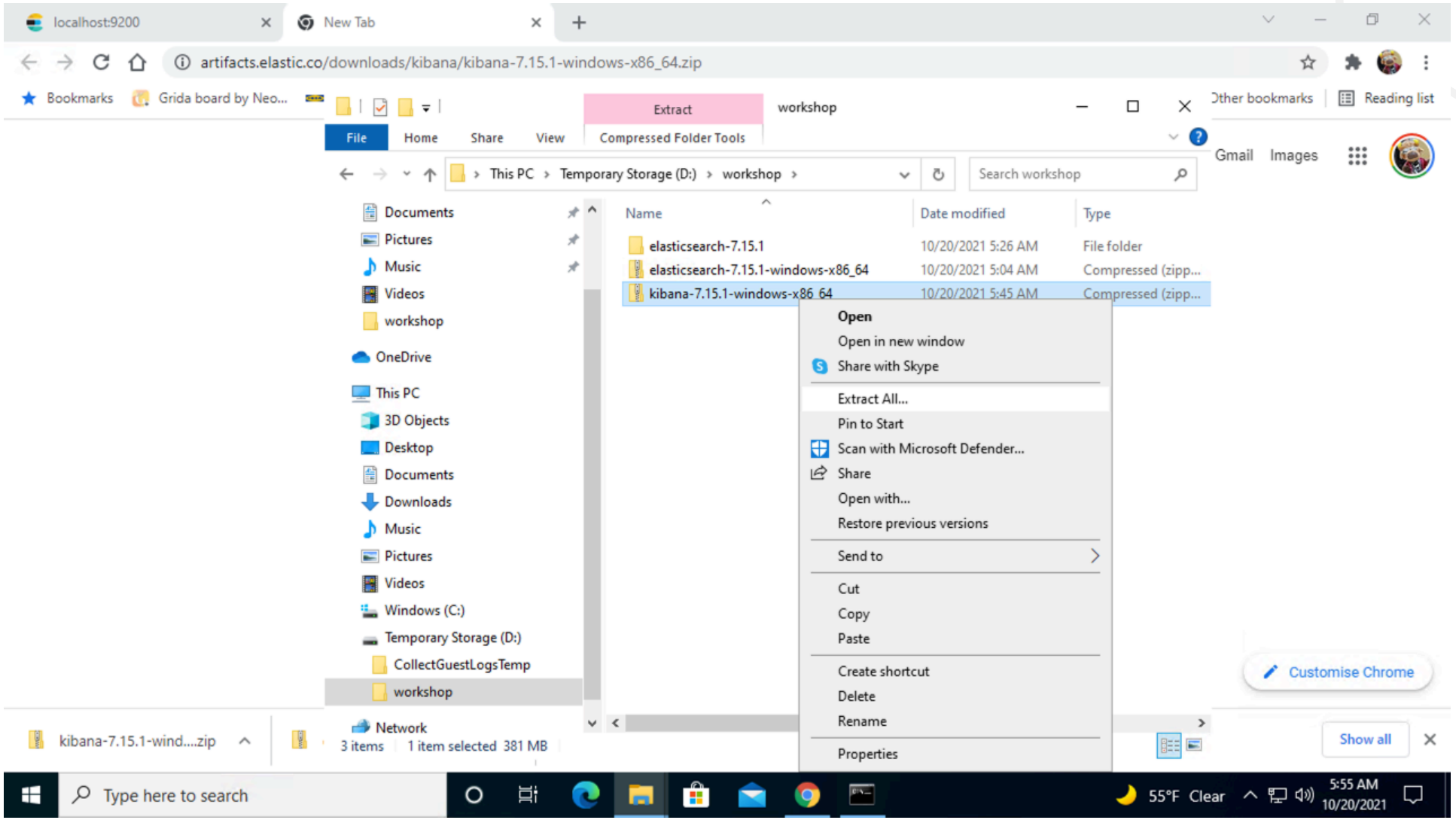

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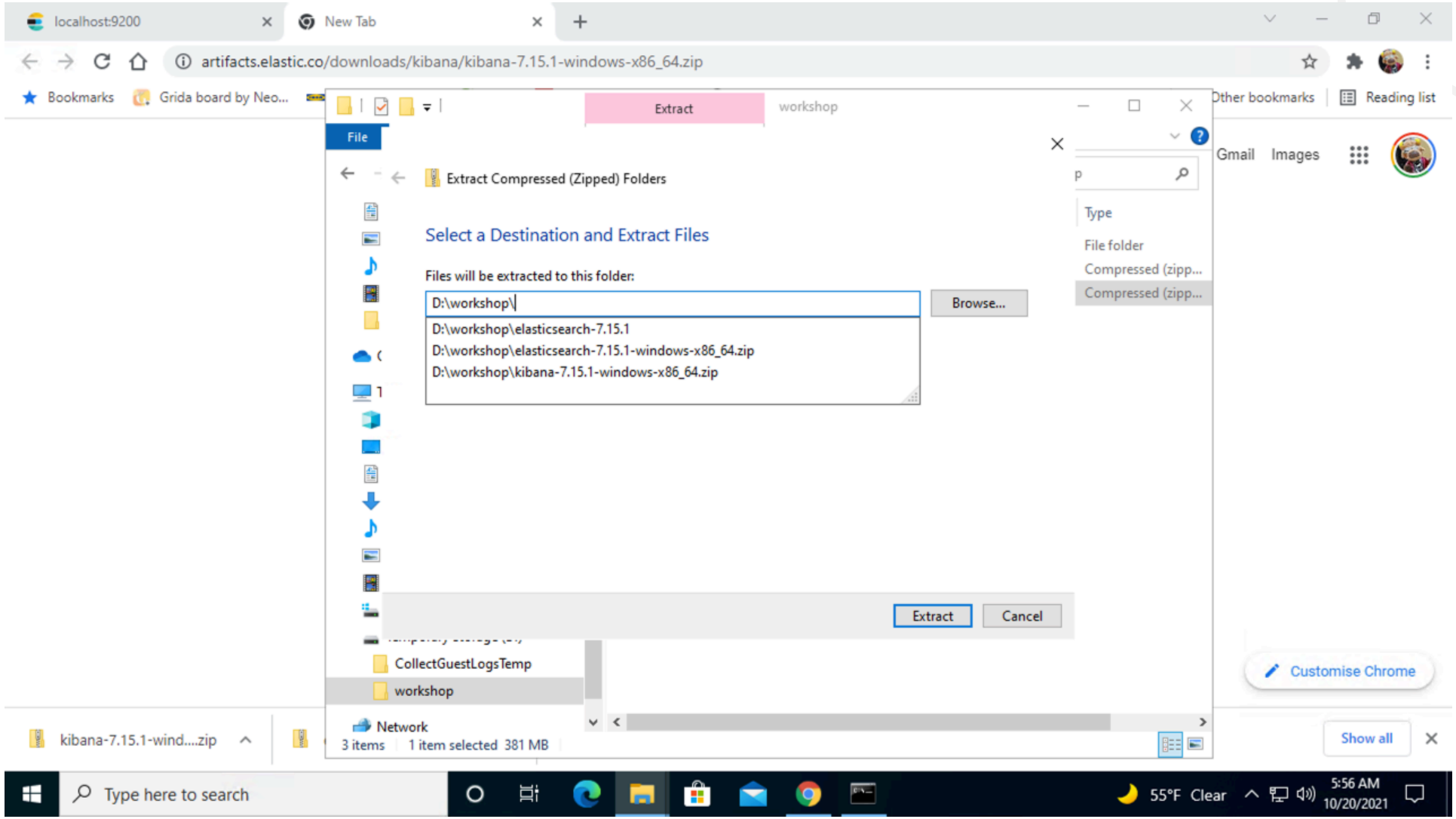

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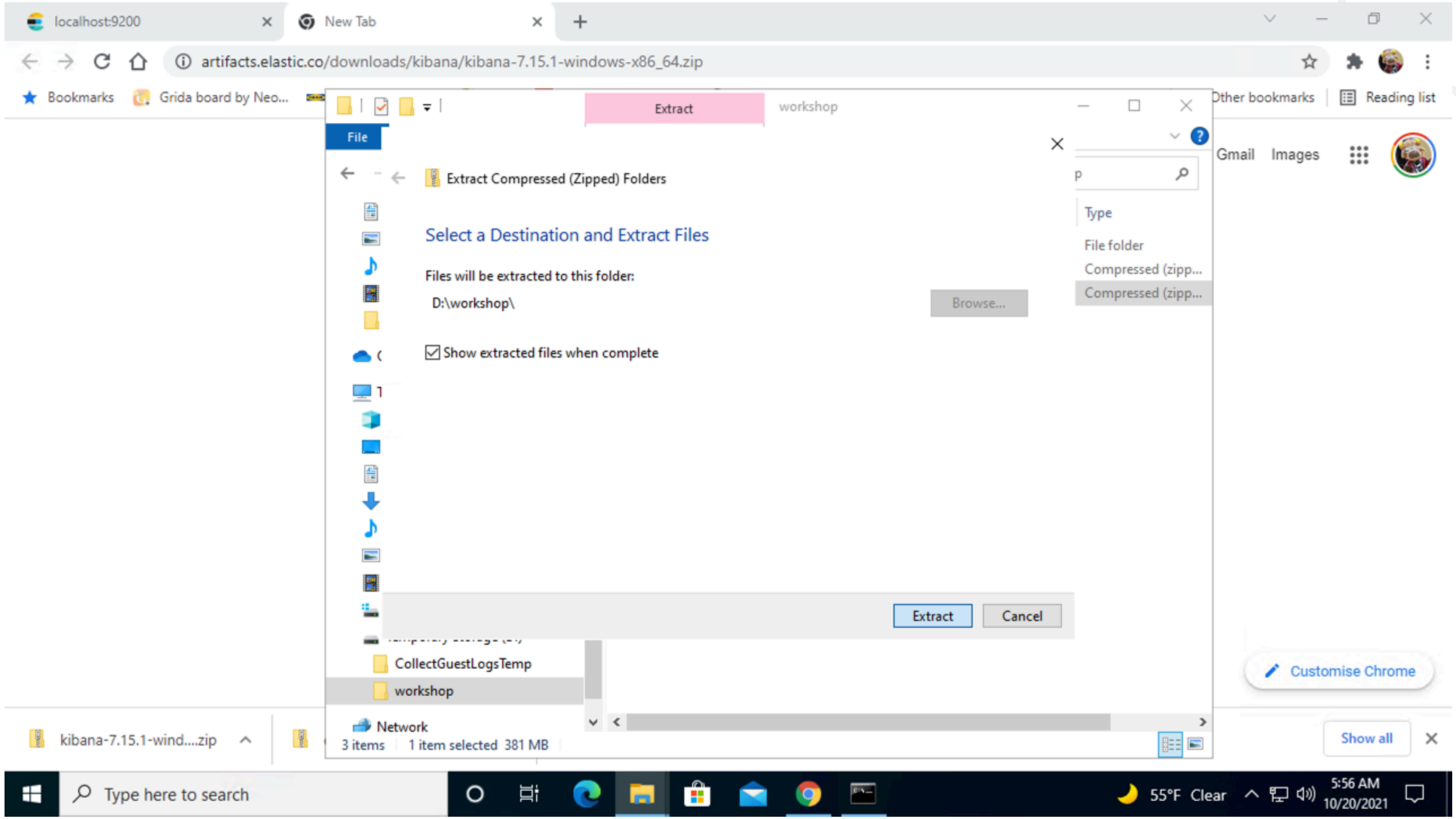

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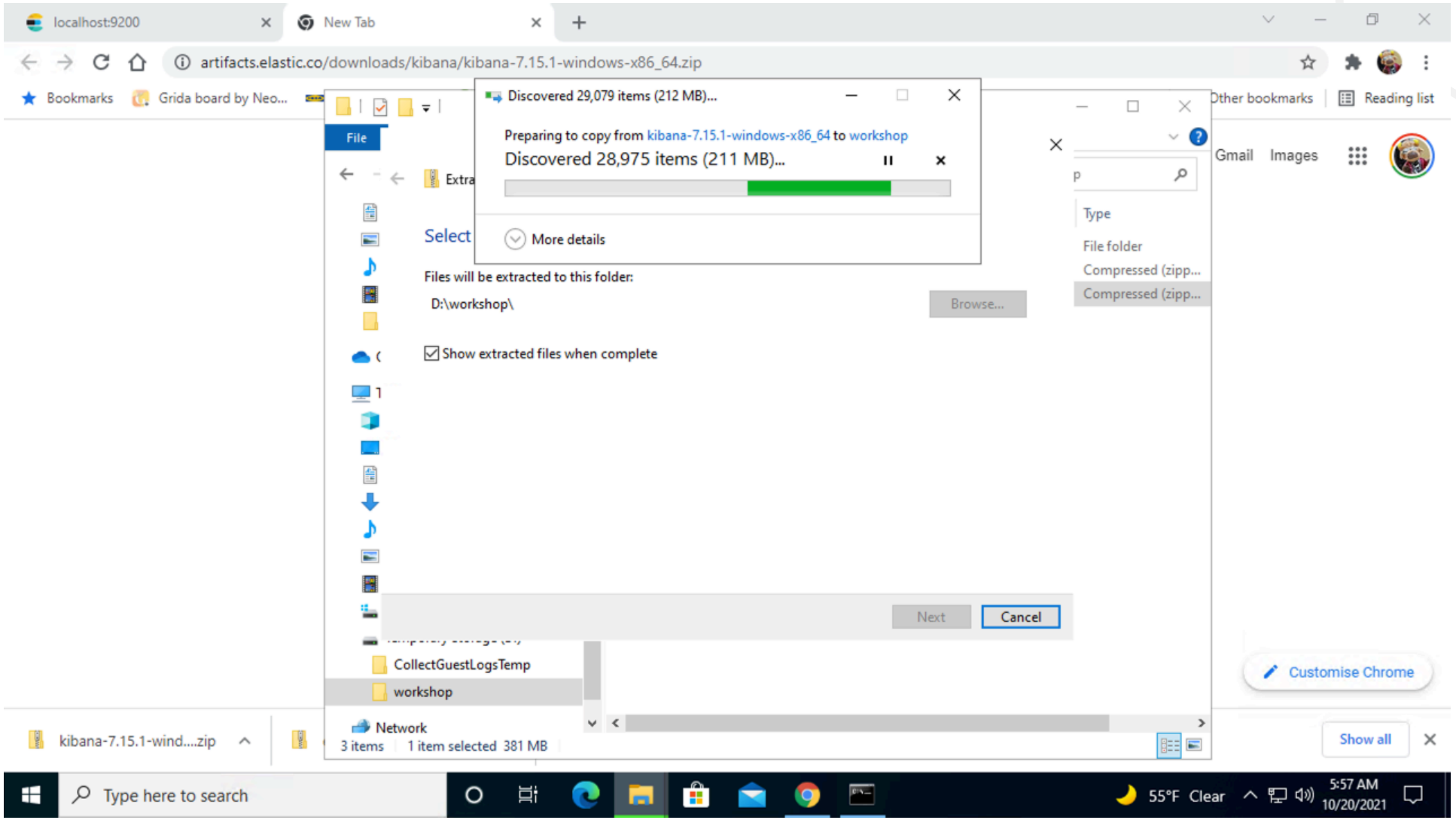

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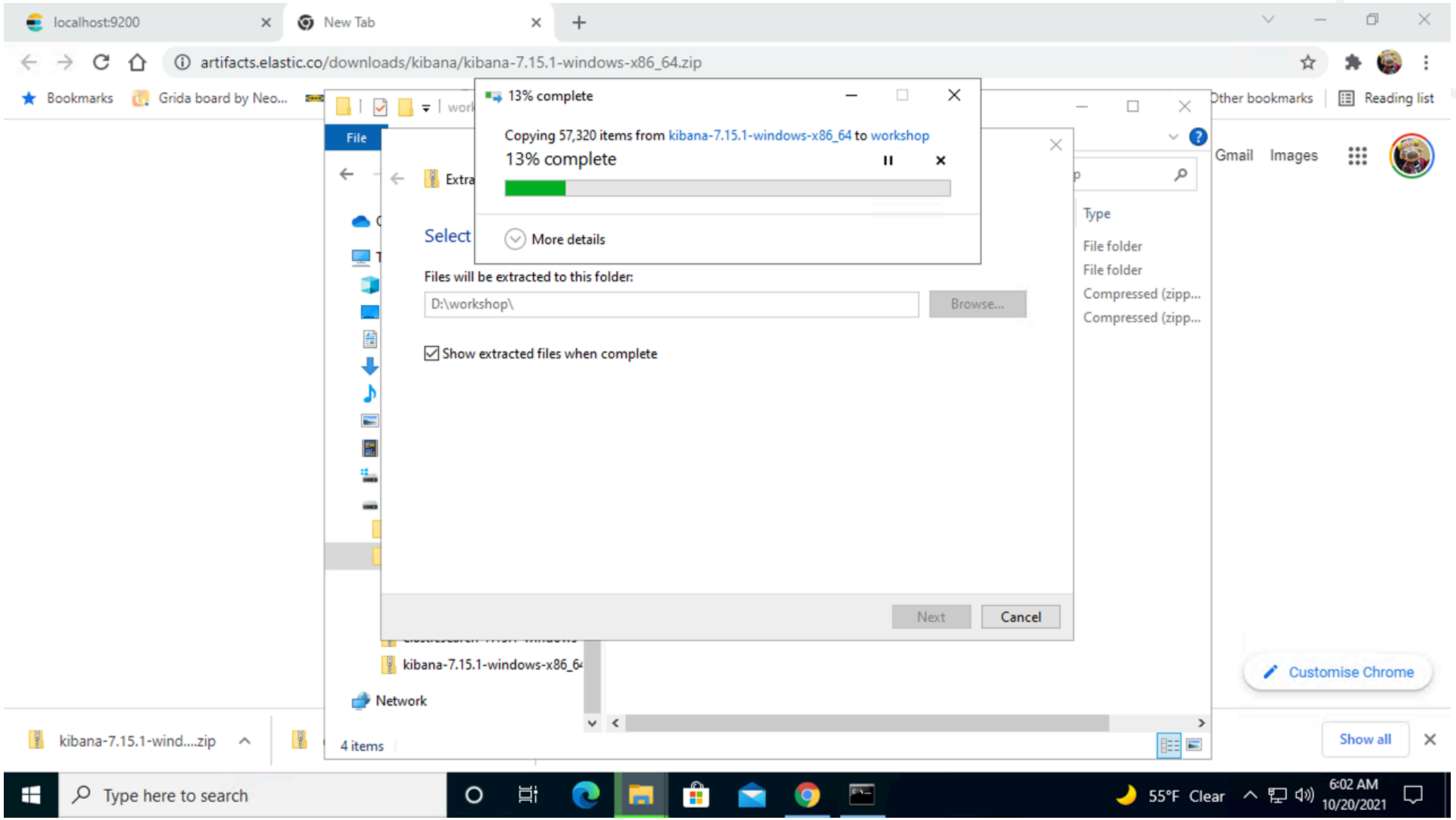

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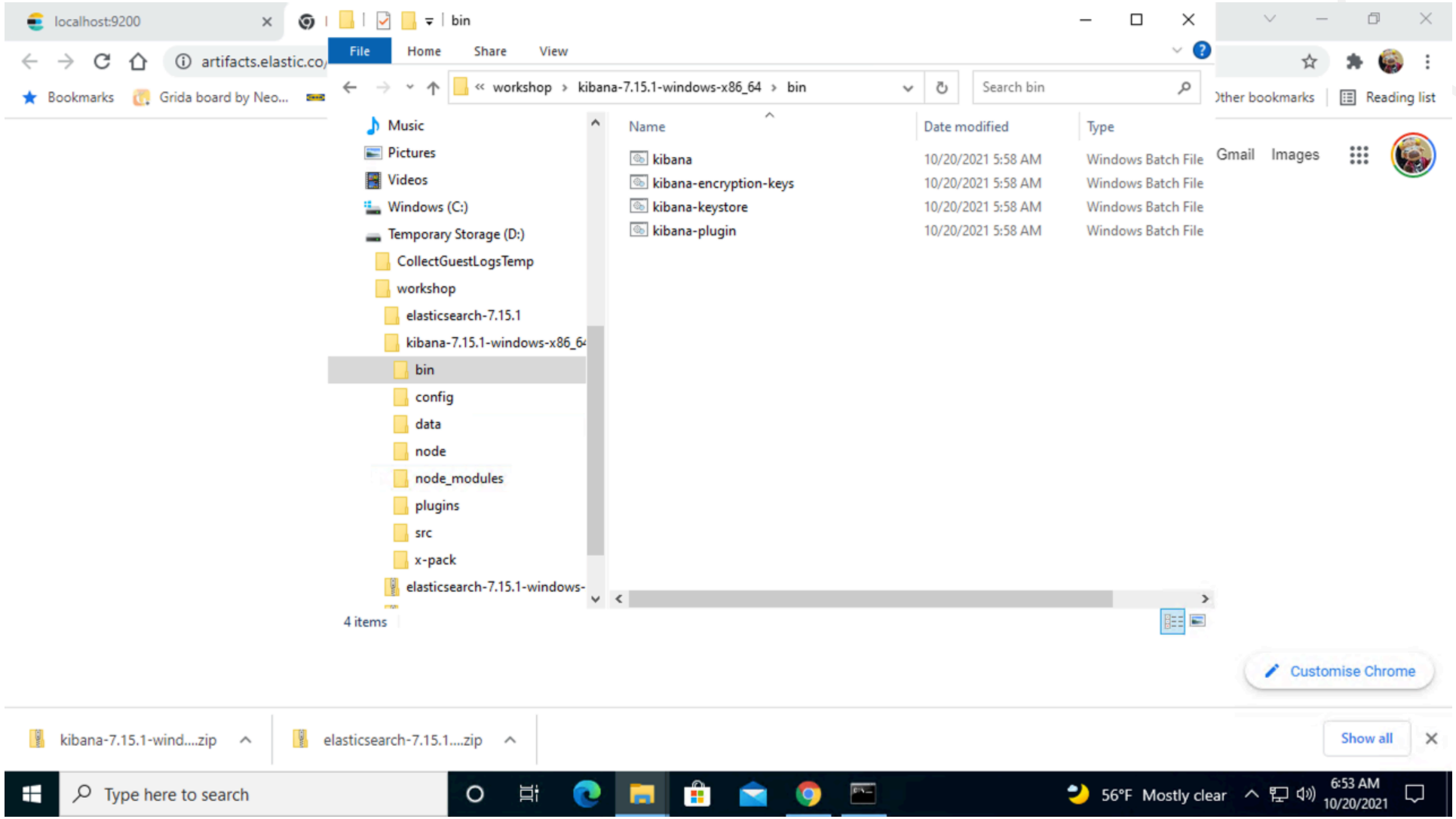

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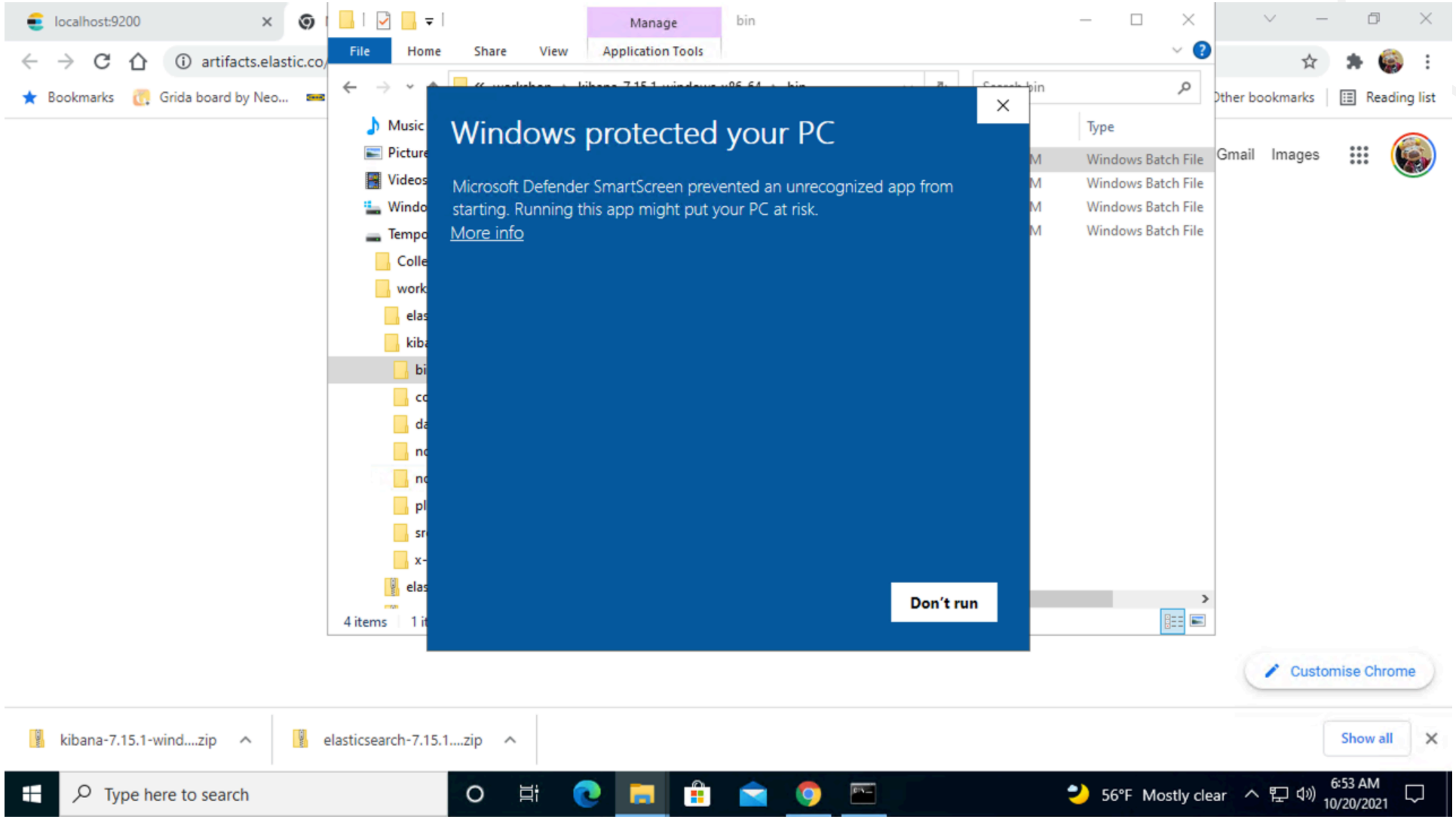

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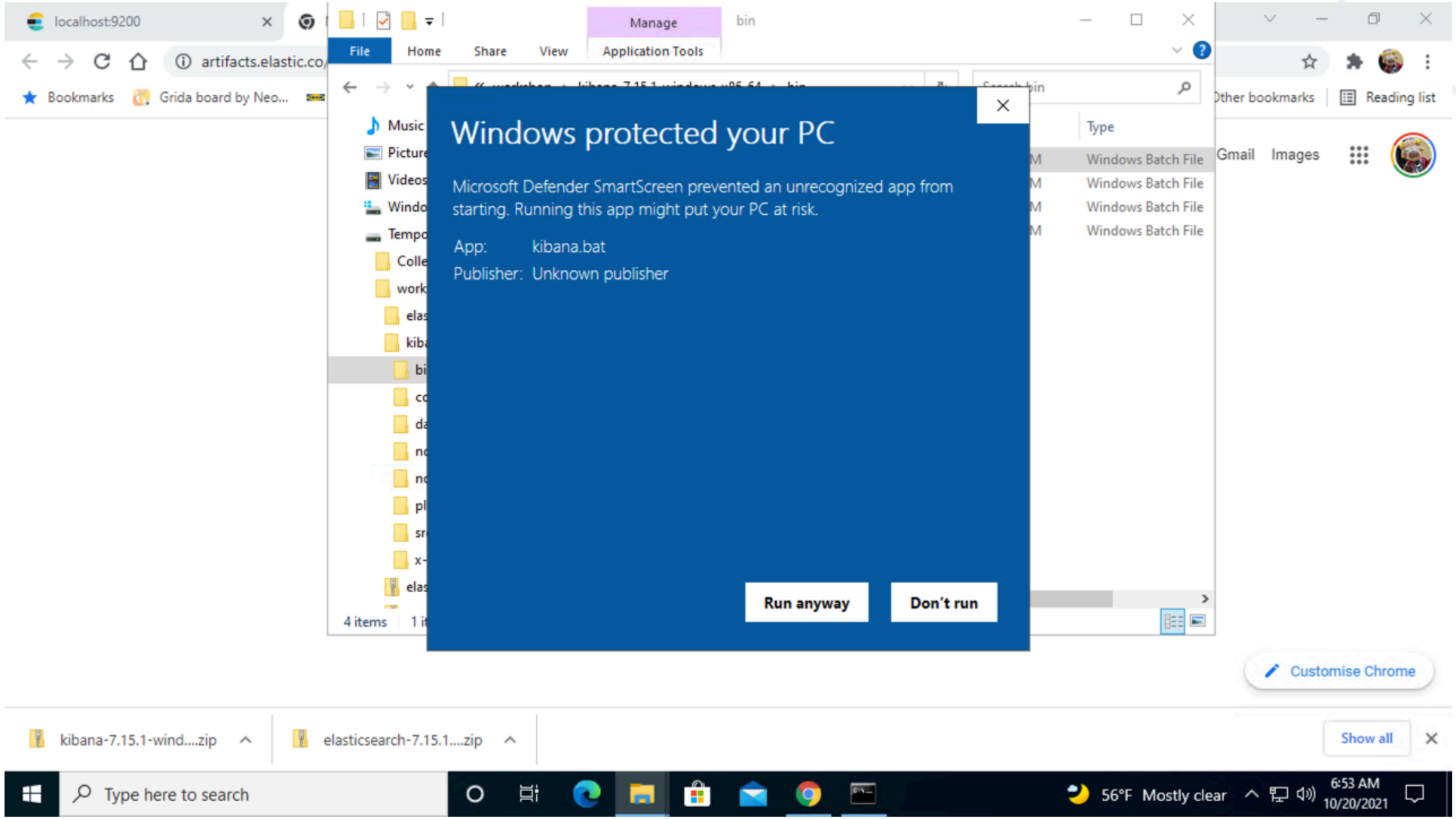

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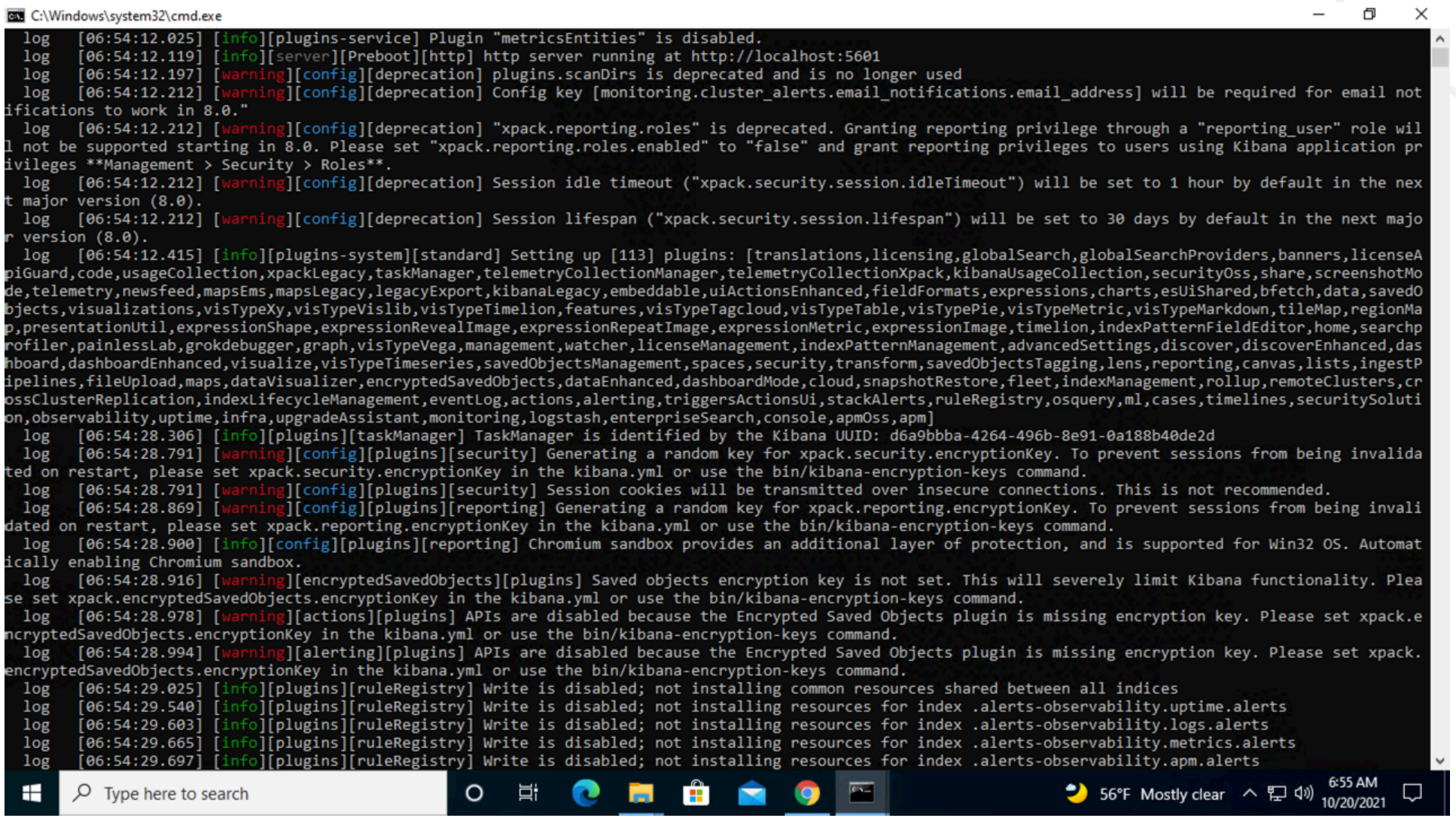

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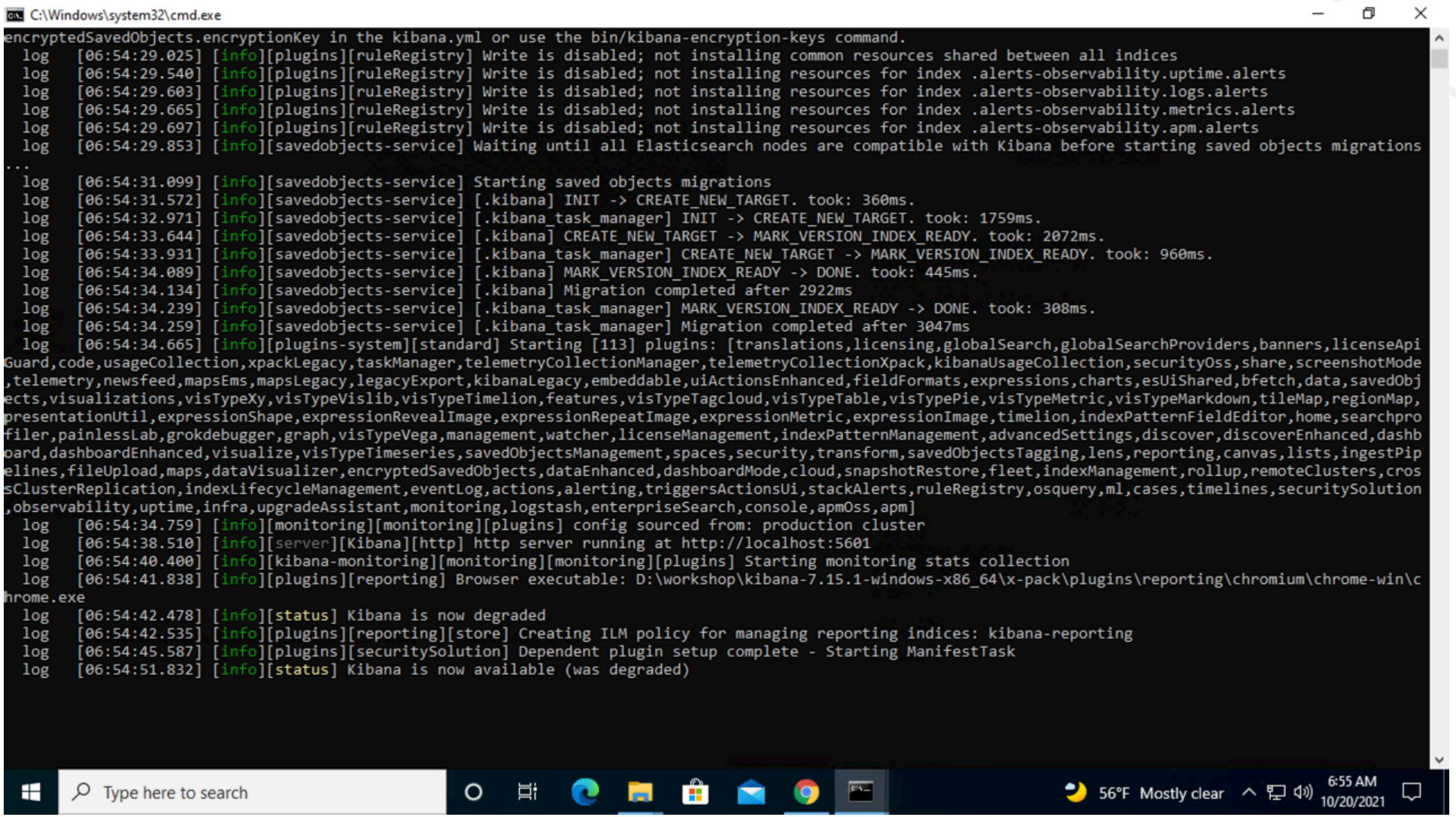

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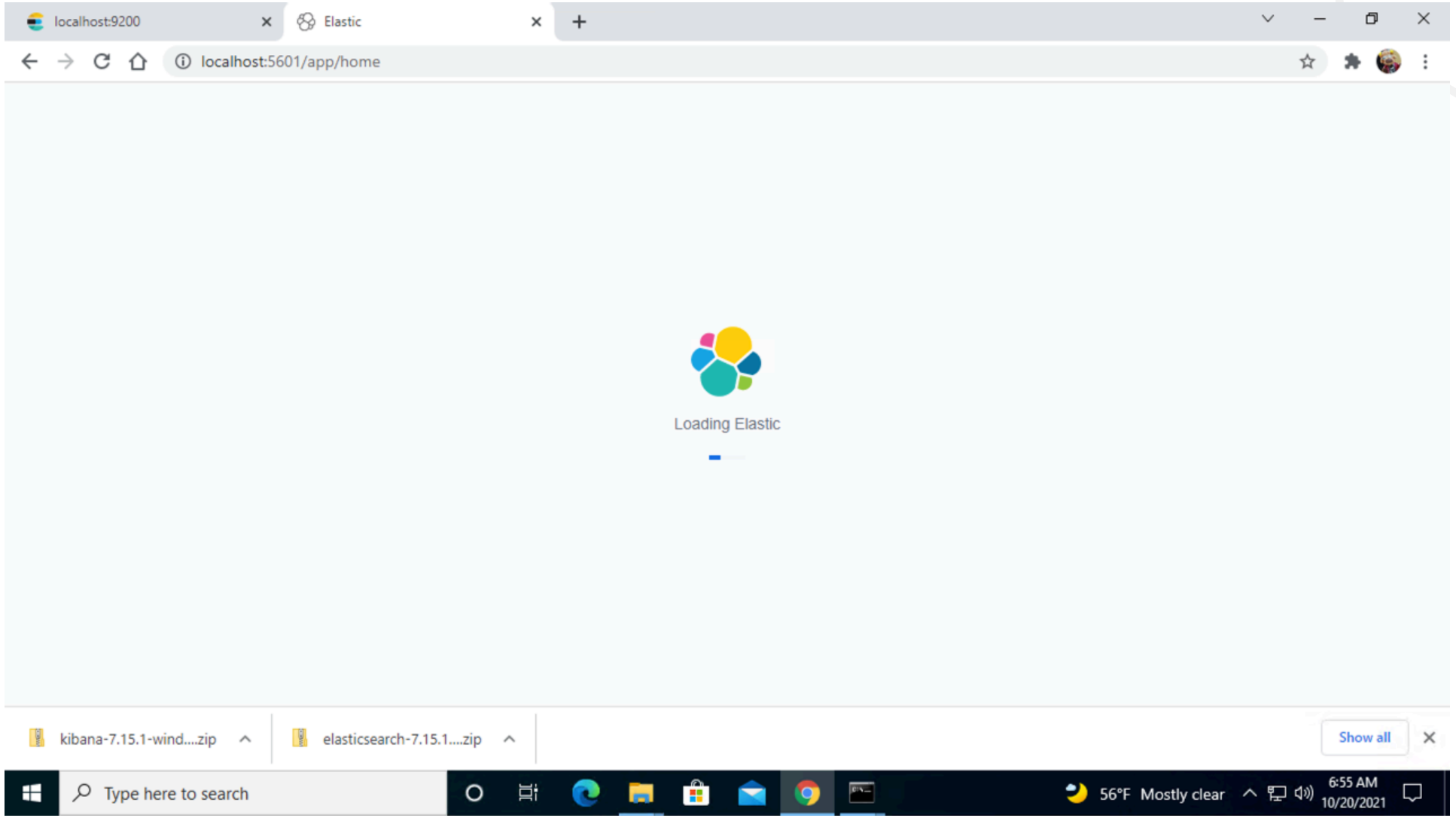

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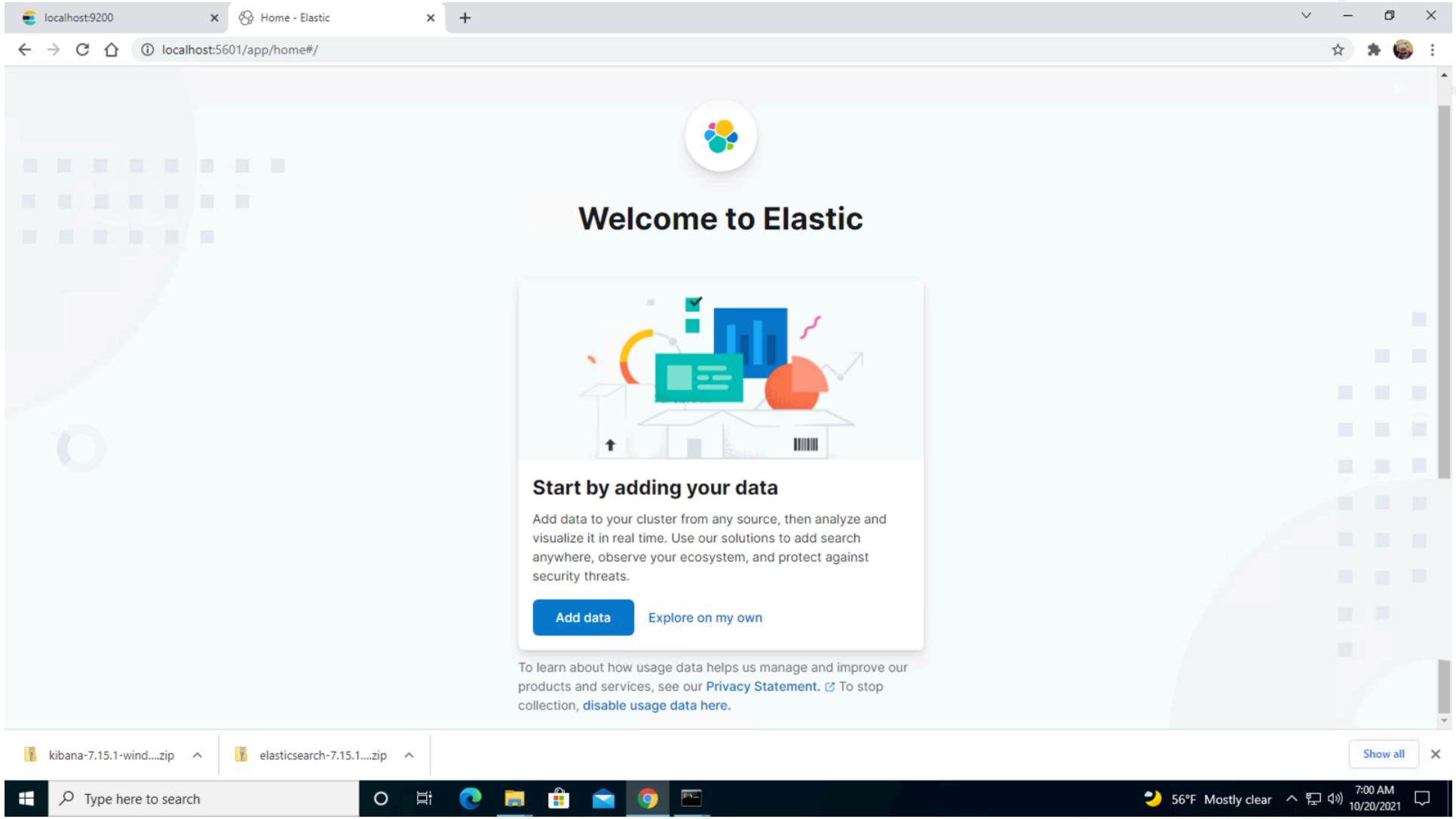

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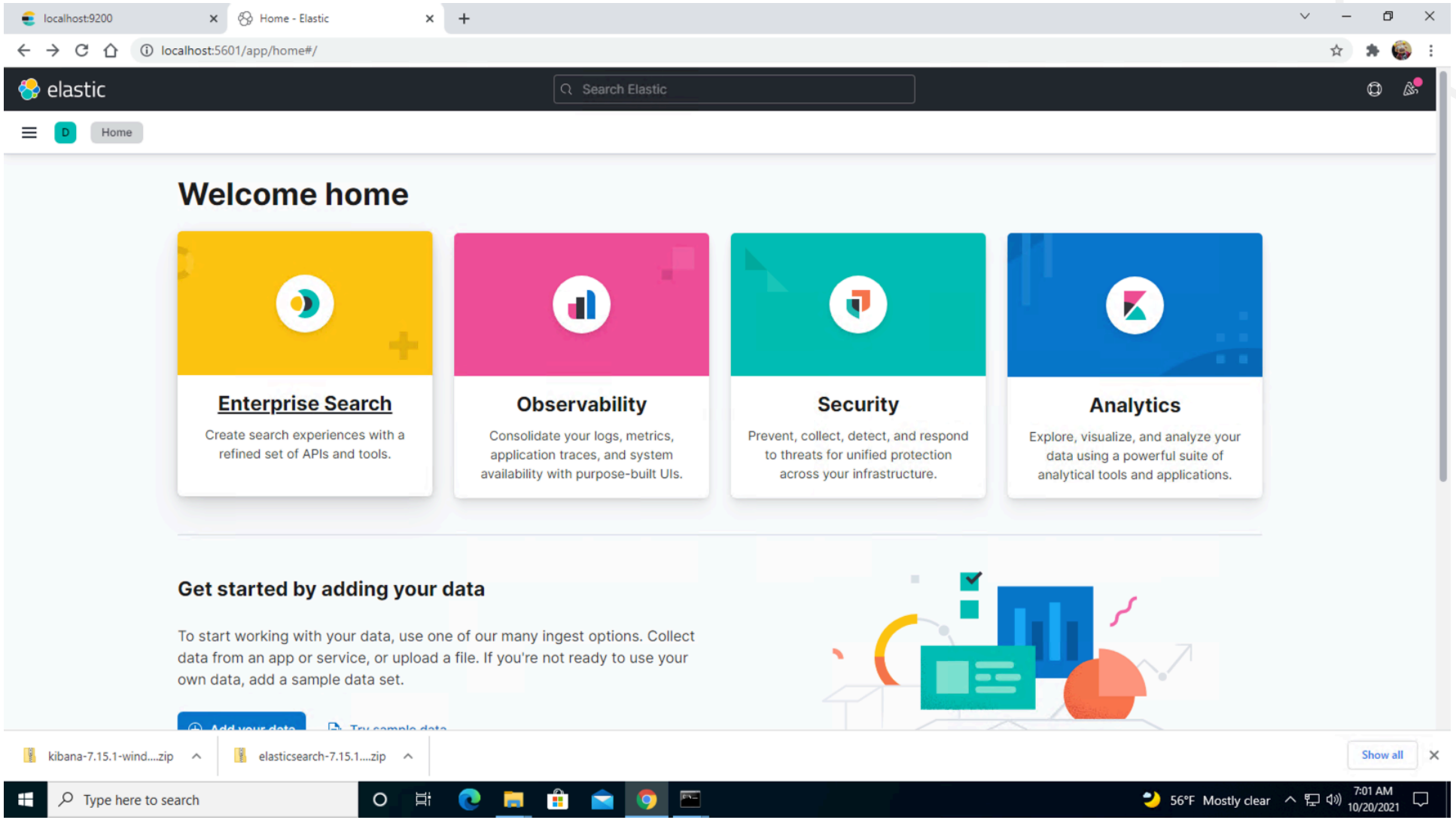
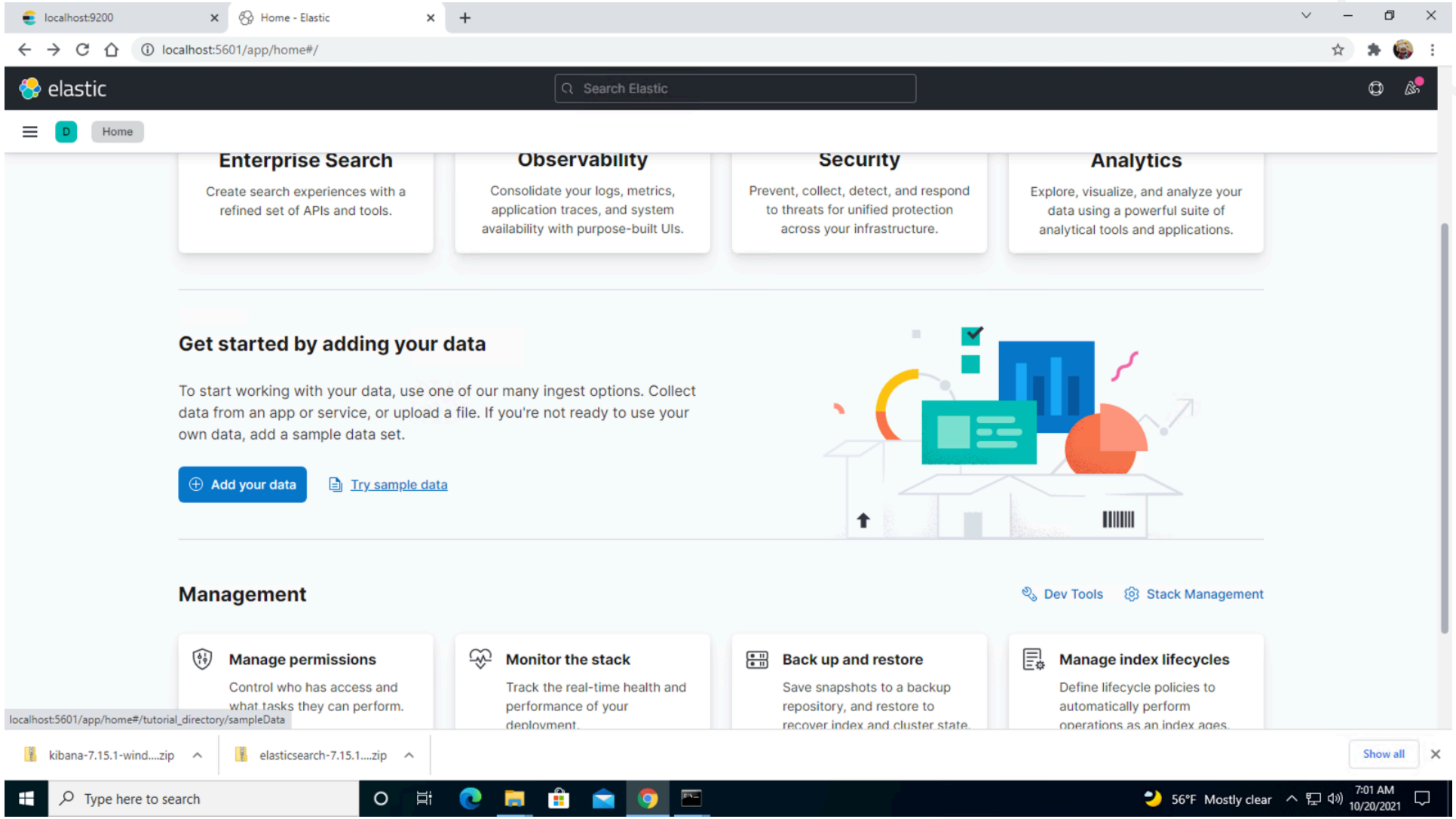


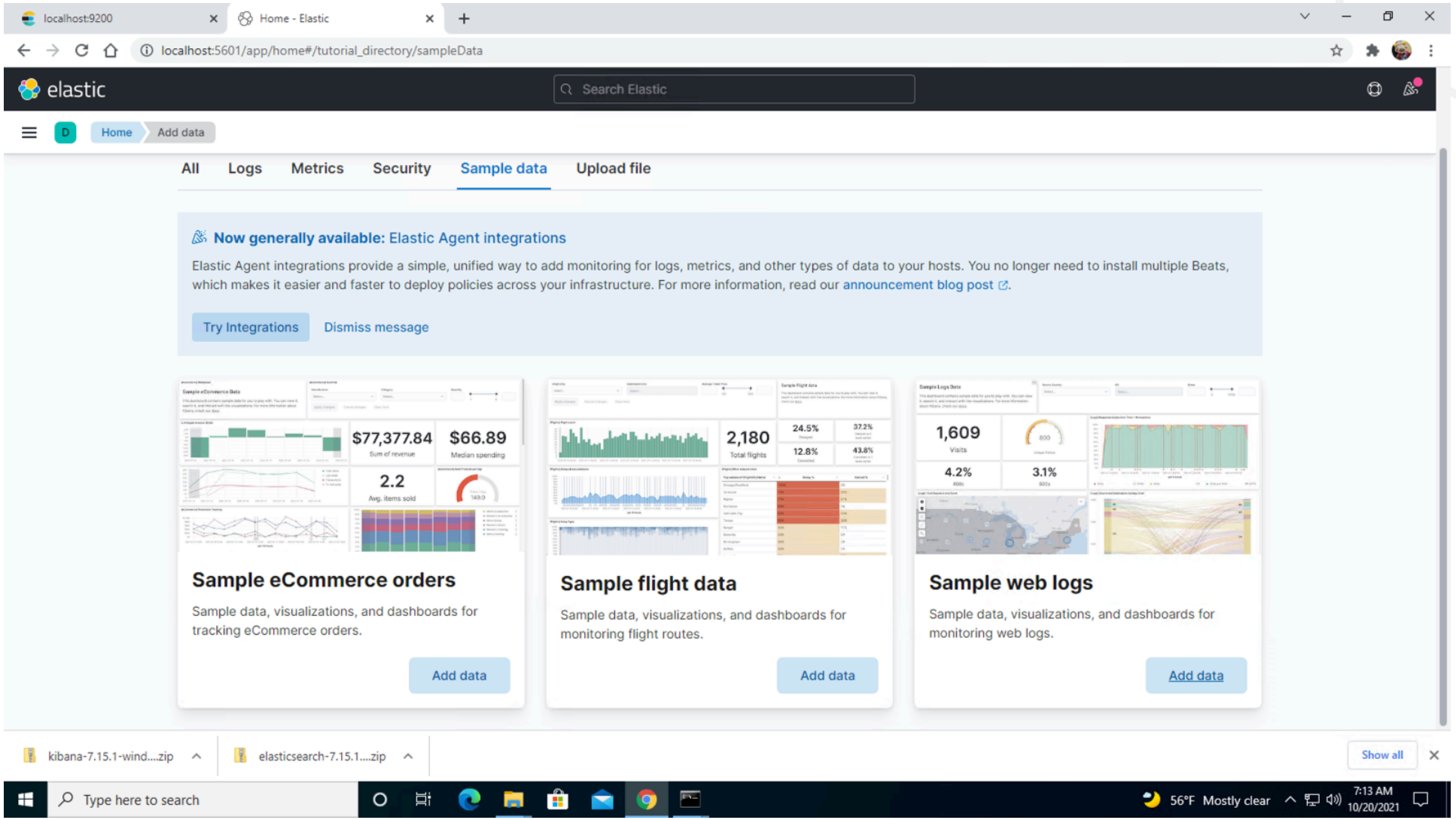
Try Sample Data for Kibana

Step by Step Installation

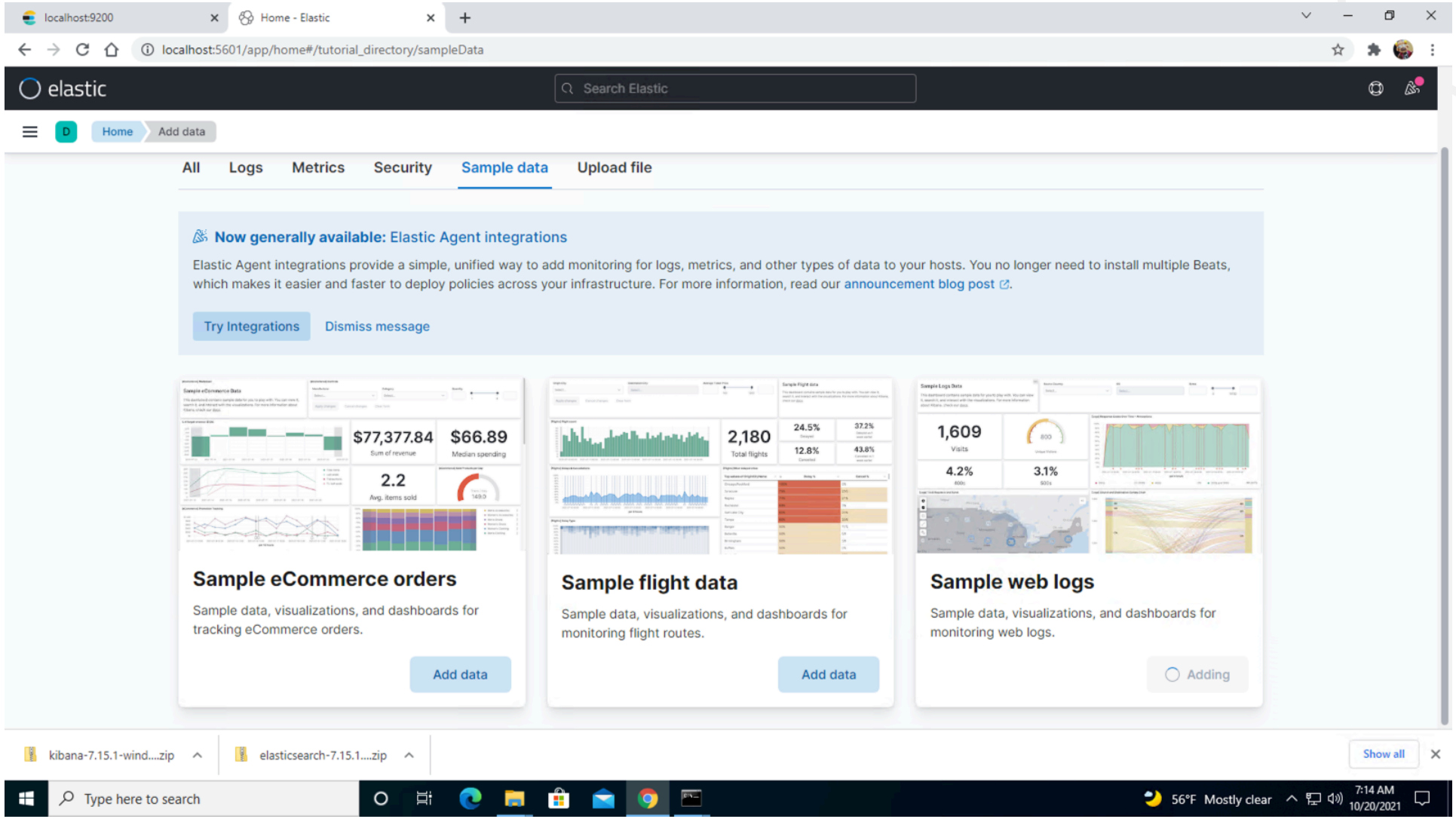
Try Sample Data from Kibana



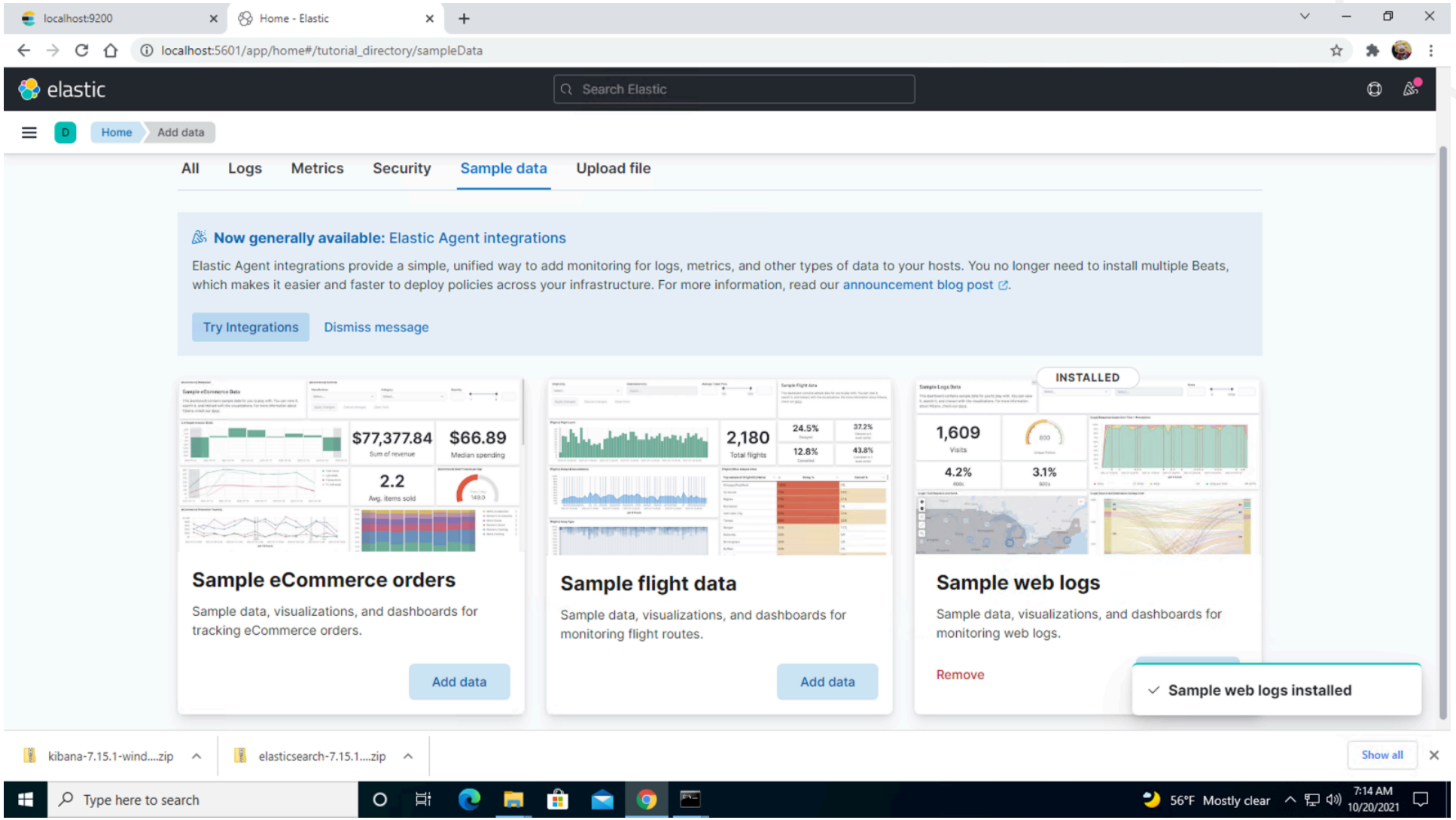
Try Sample Data from Kibana



Try Sample Data from Kibana



Try Sample Data from Kibana



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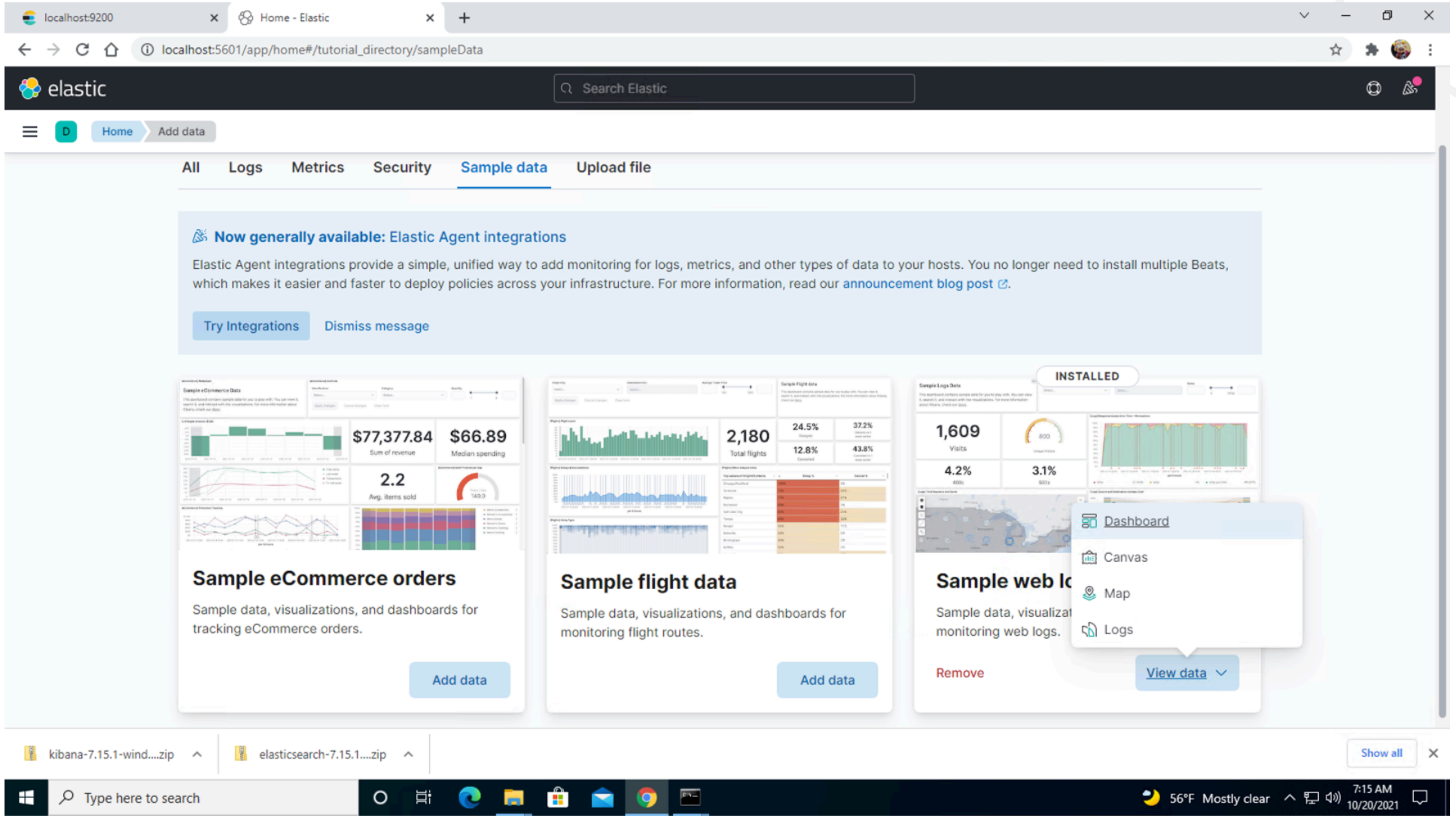

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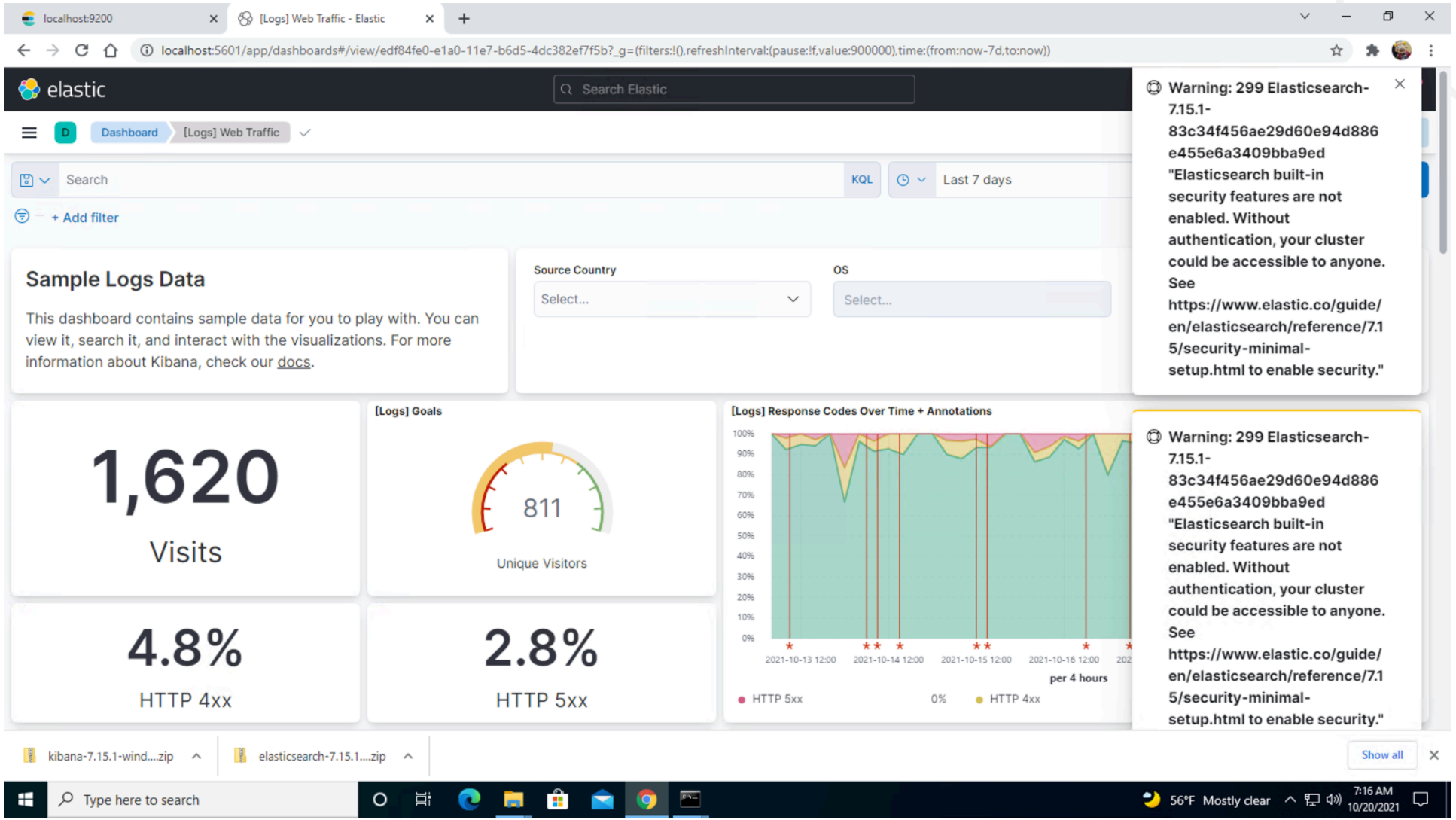
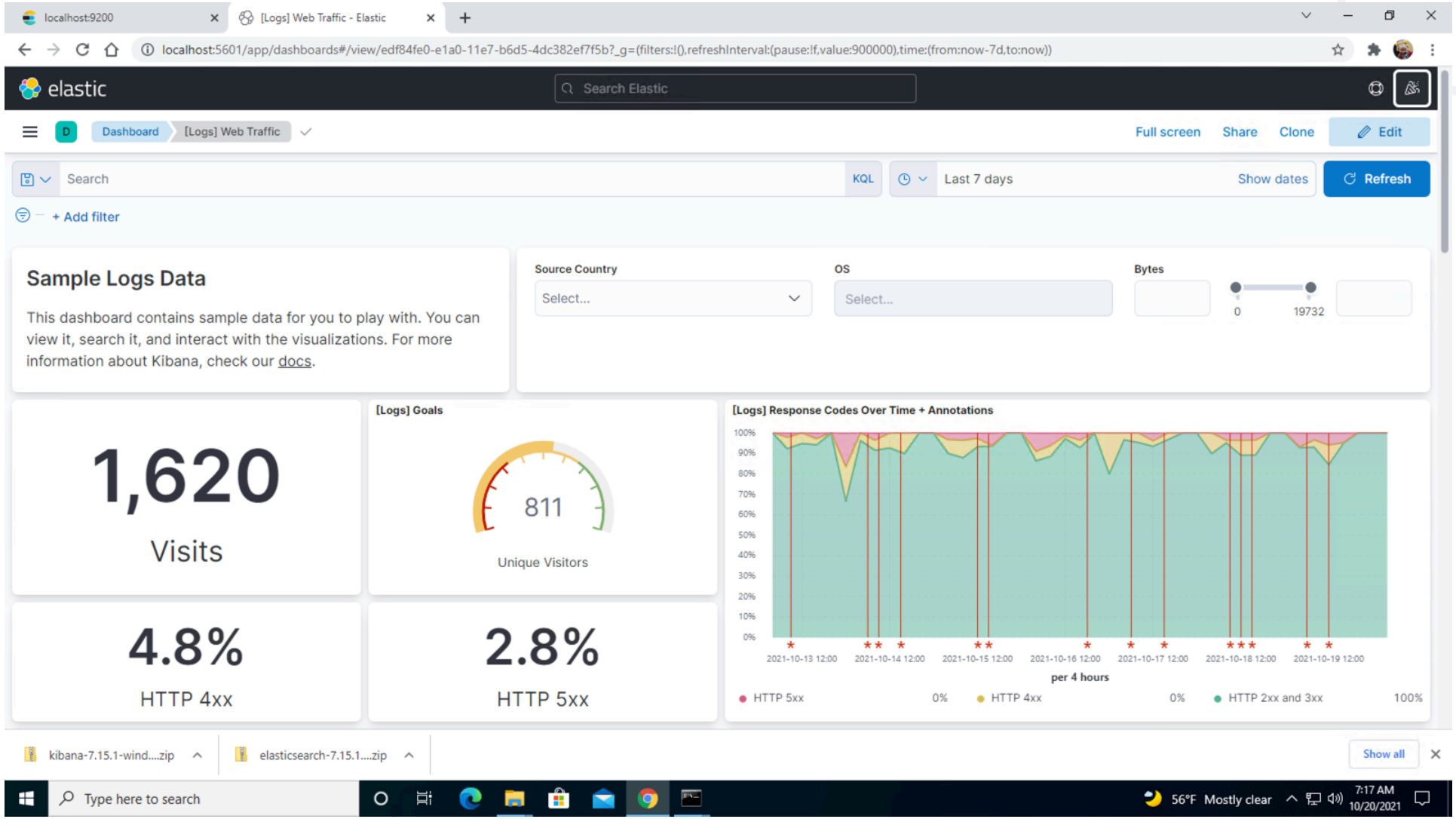


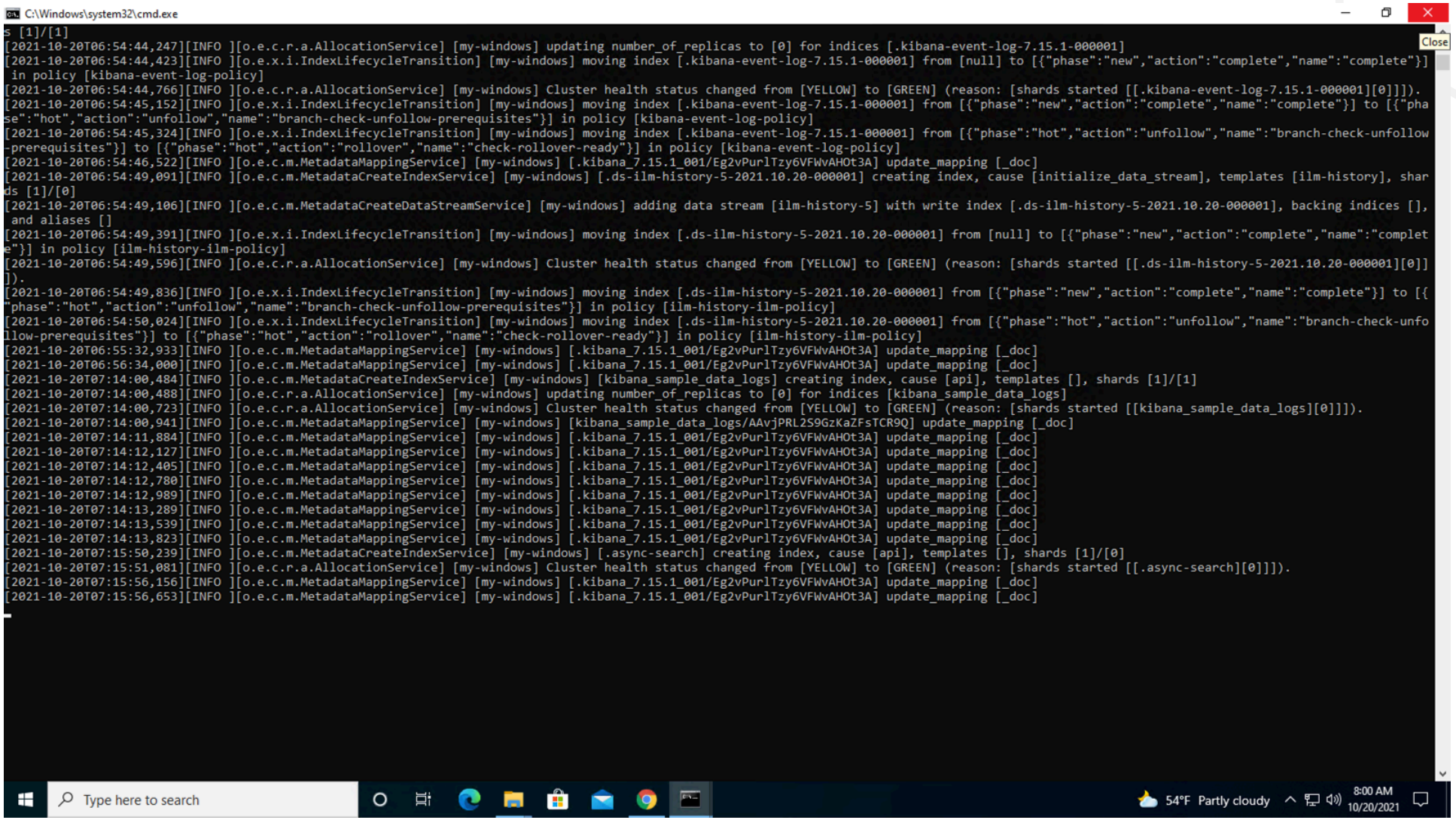
Try Sample Data from Kibana



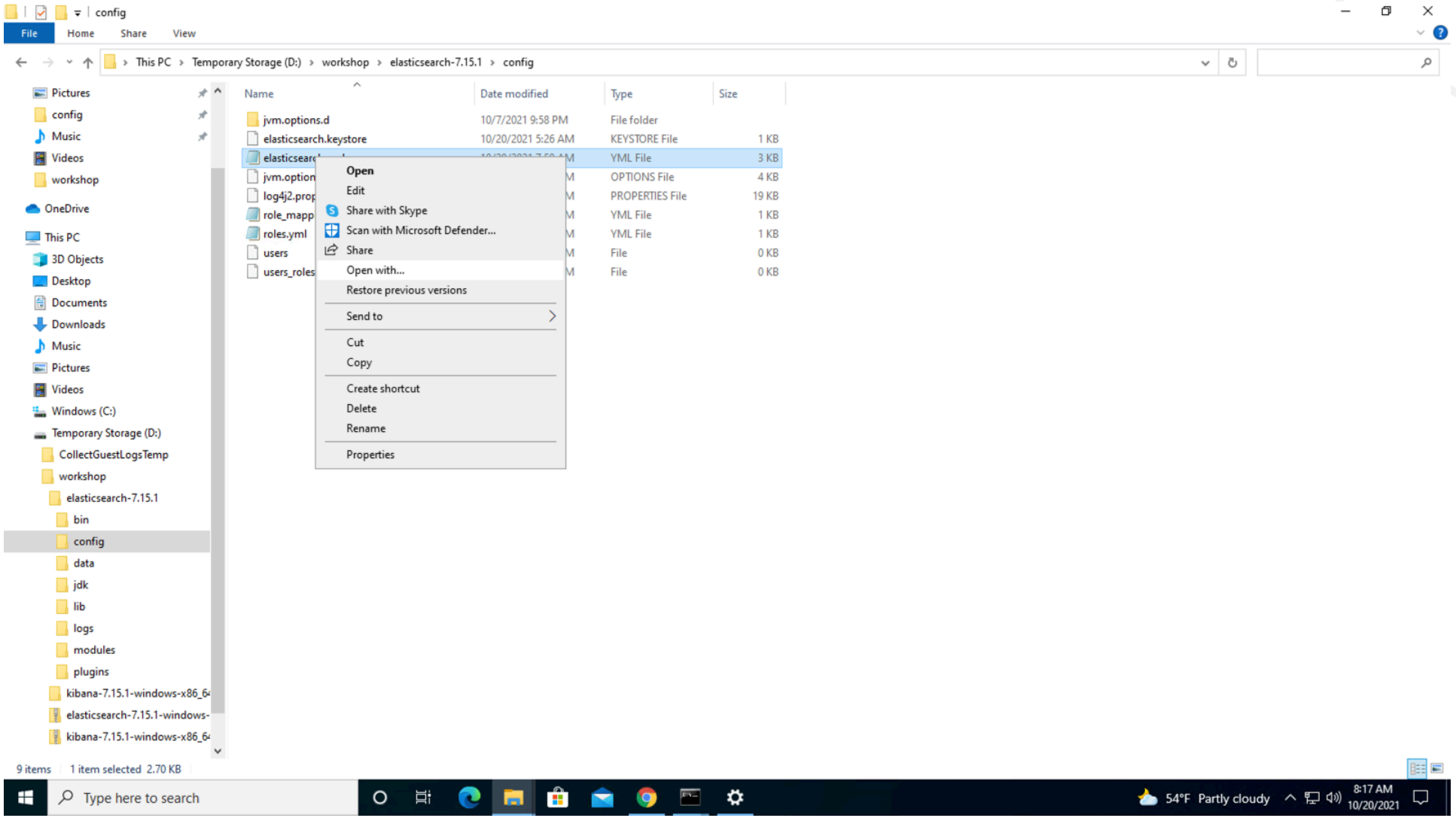
Disabled Security Features

Step by Step Installation

Disable Security features in Elasticsearch



Disable Security features in Elasticsearch

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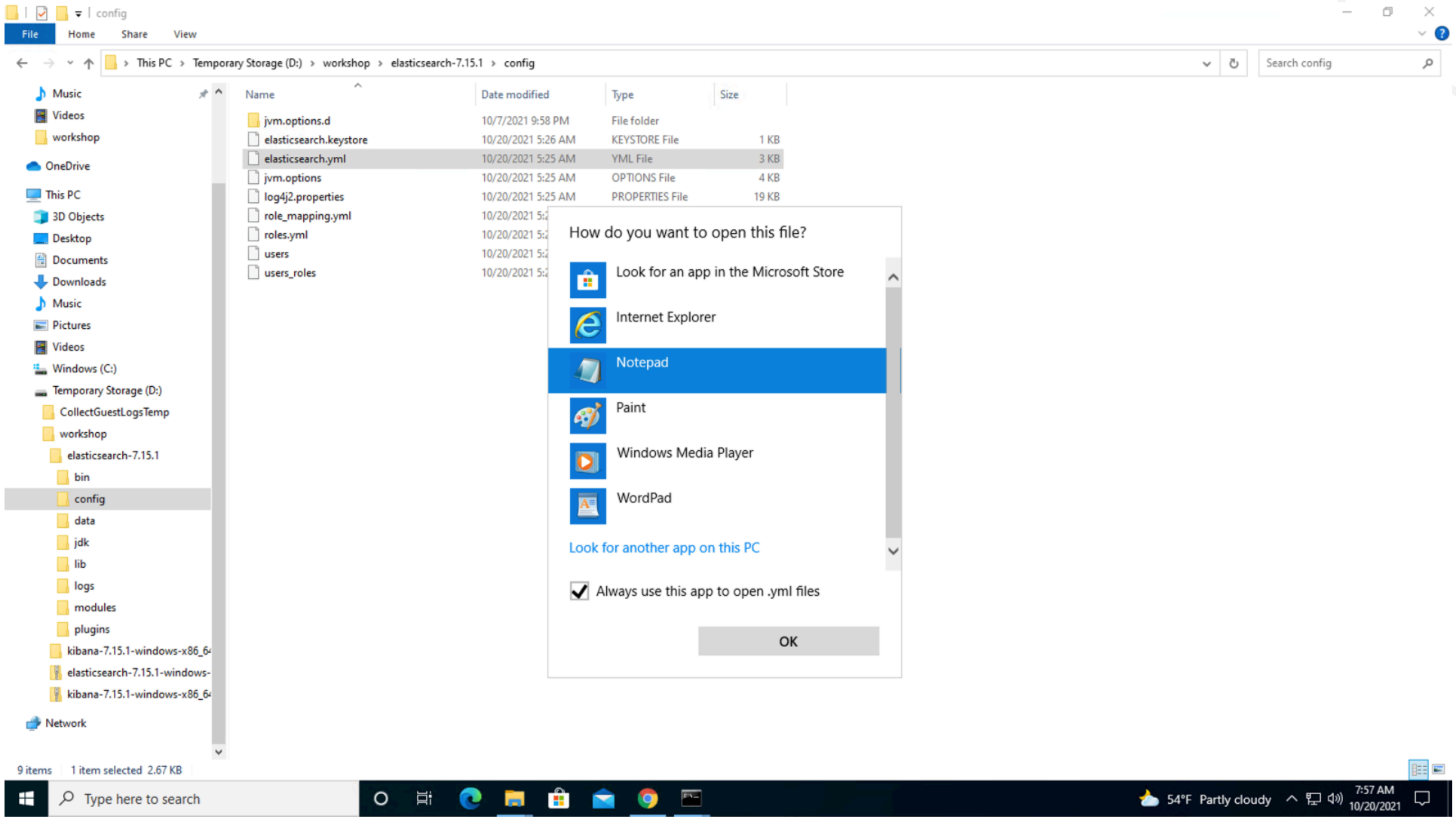
Disable Security features in Elasticsearch



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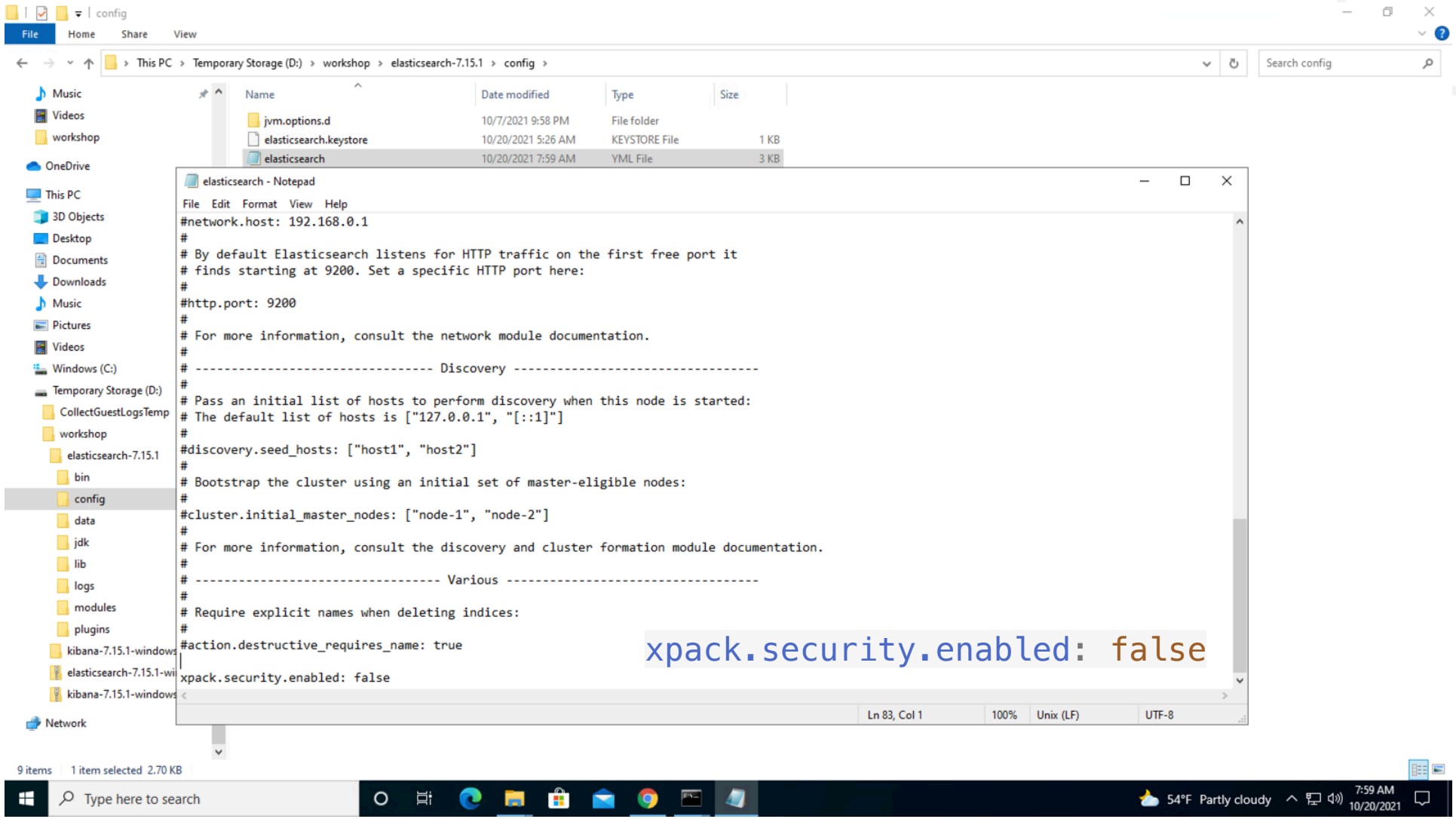
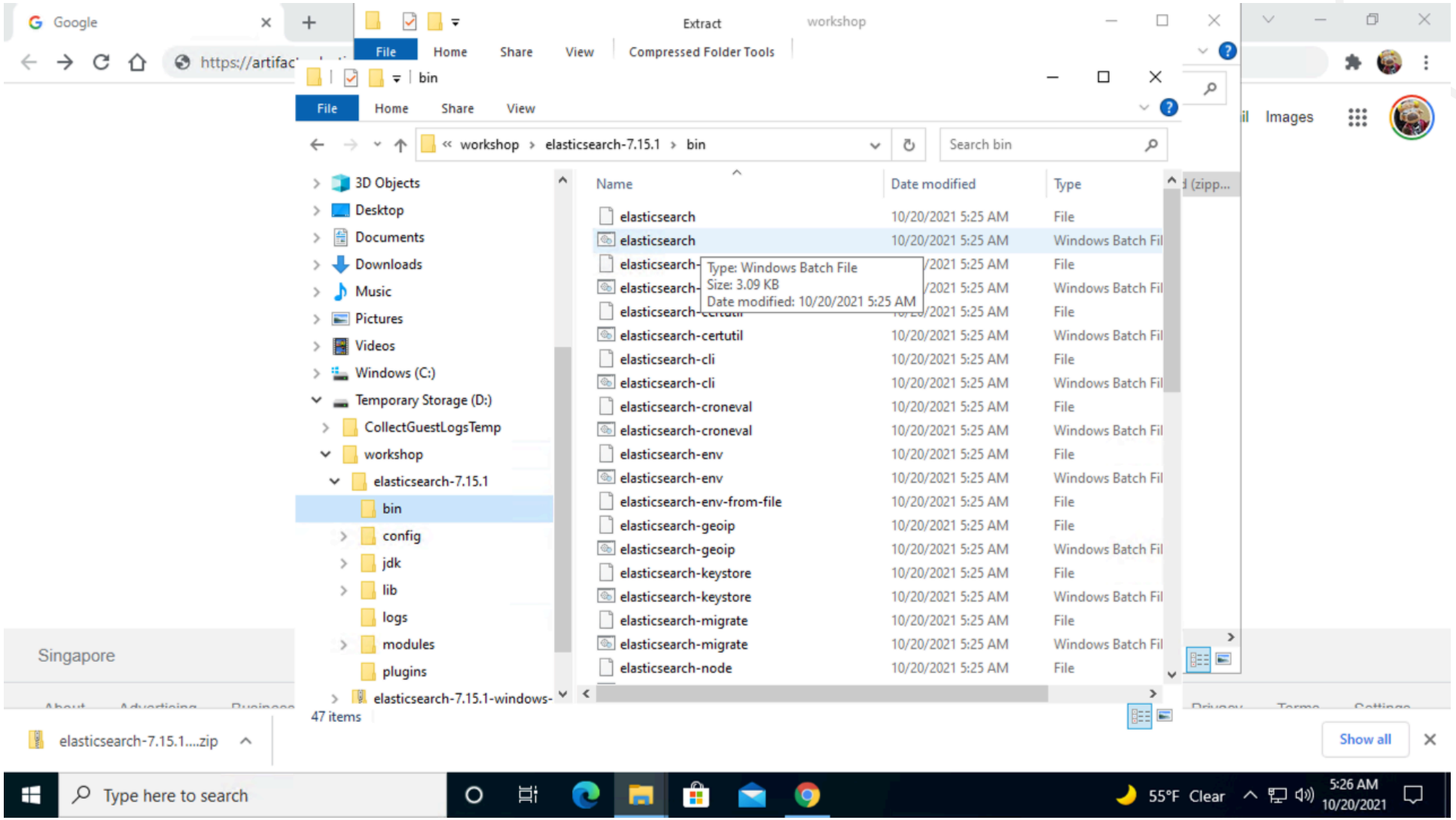


Disable Security features in Elasticsearch



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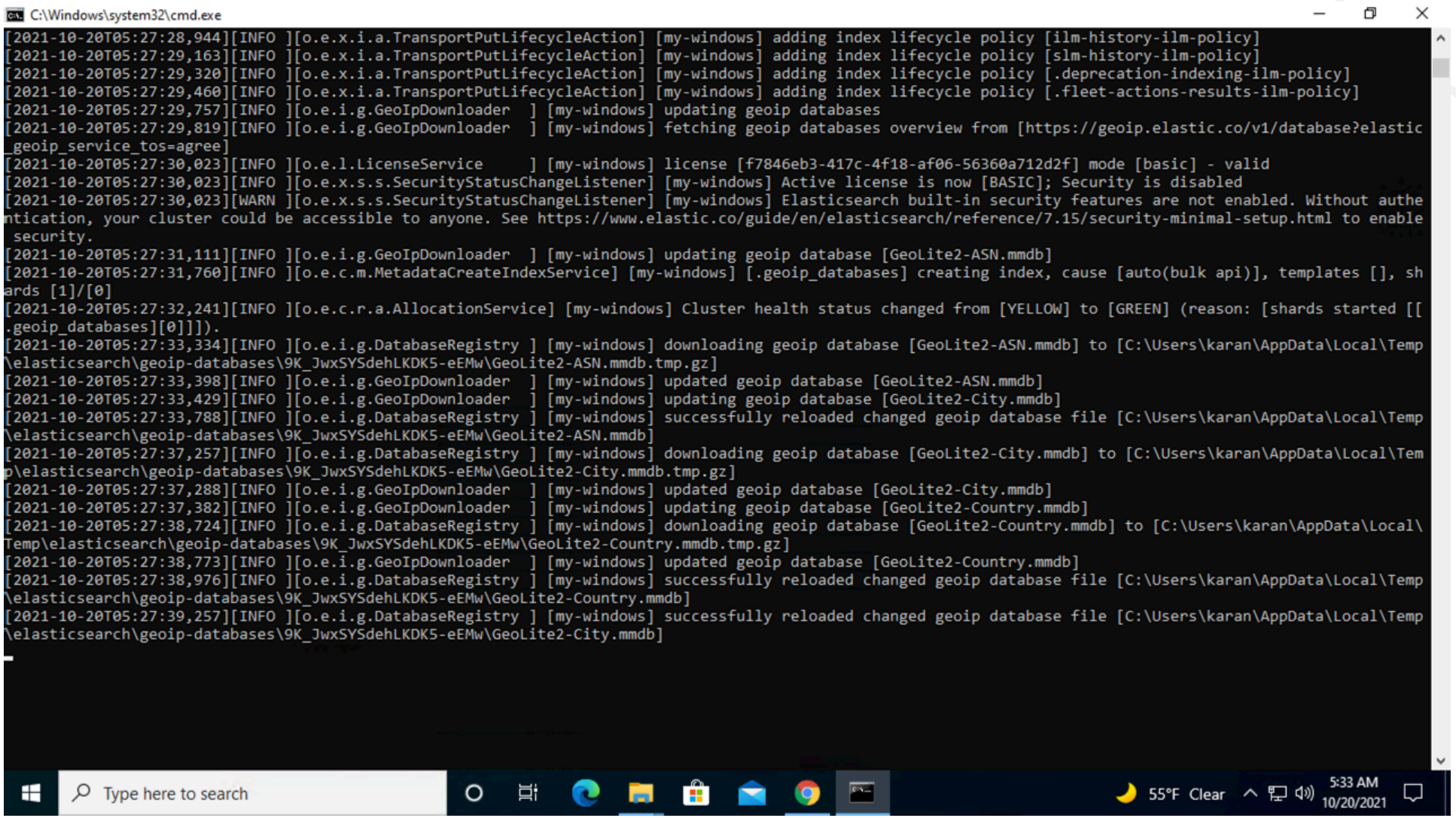
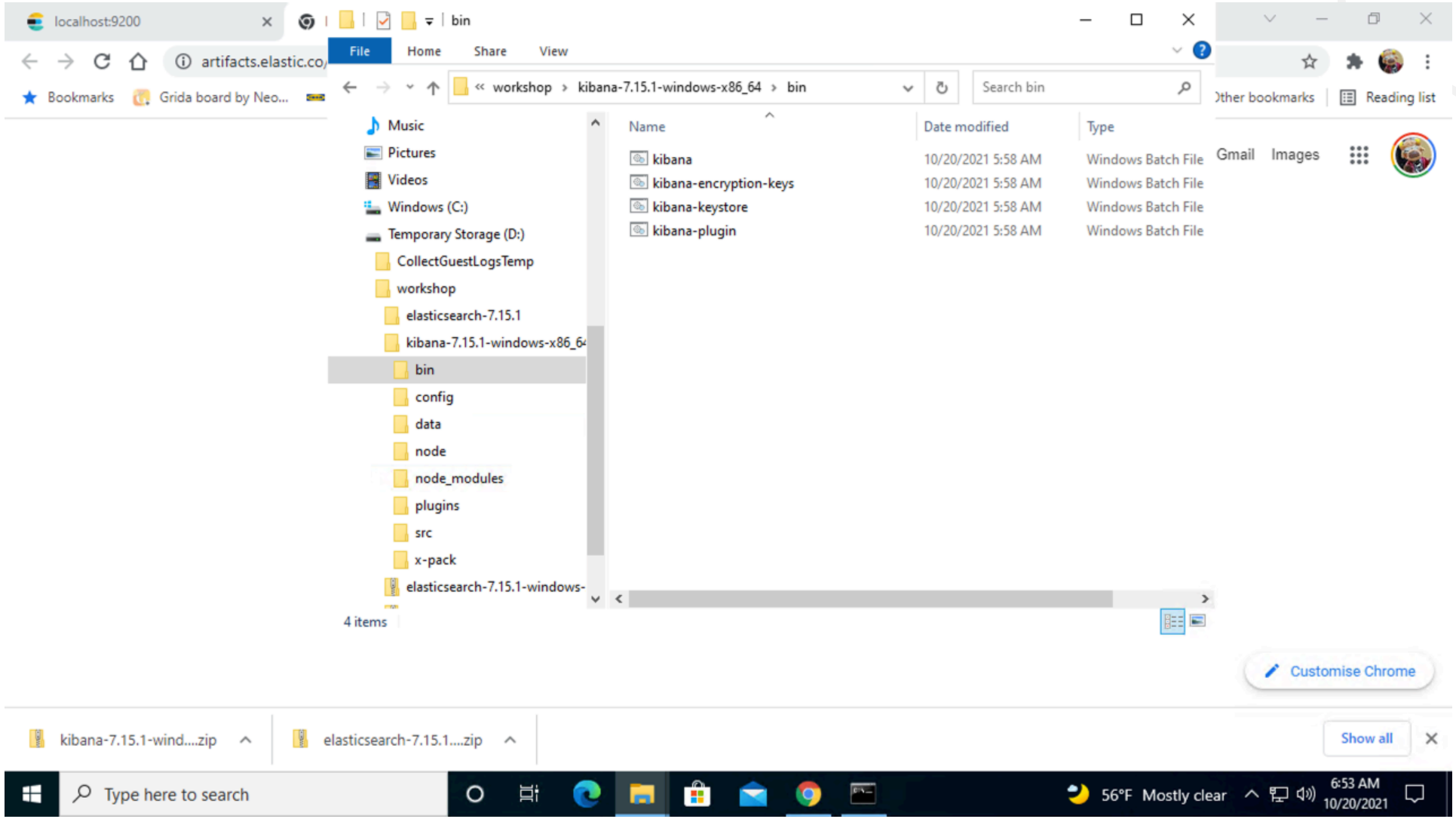


Disable Security features in Elasticsearch



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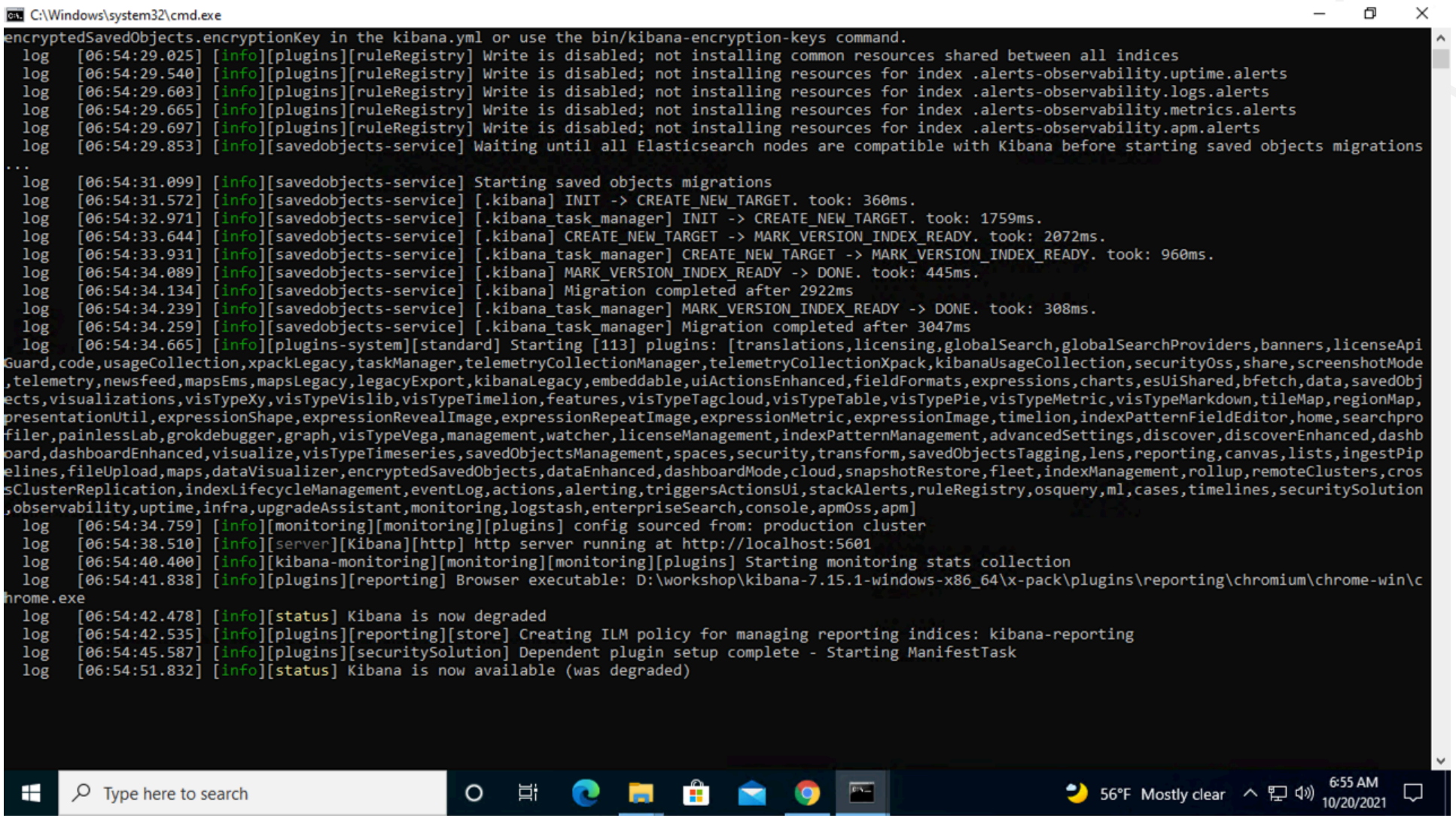

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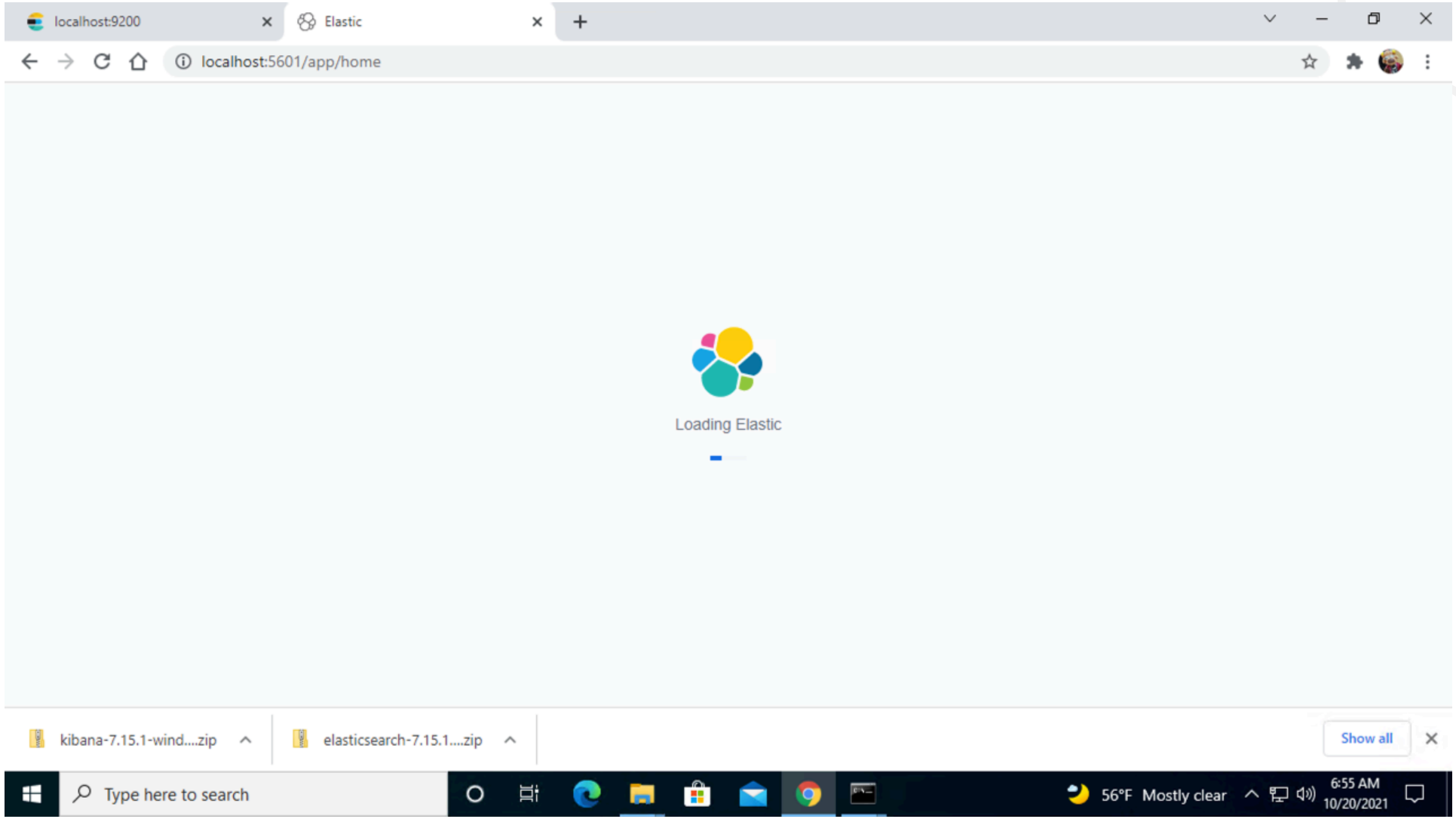

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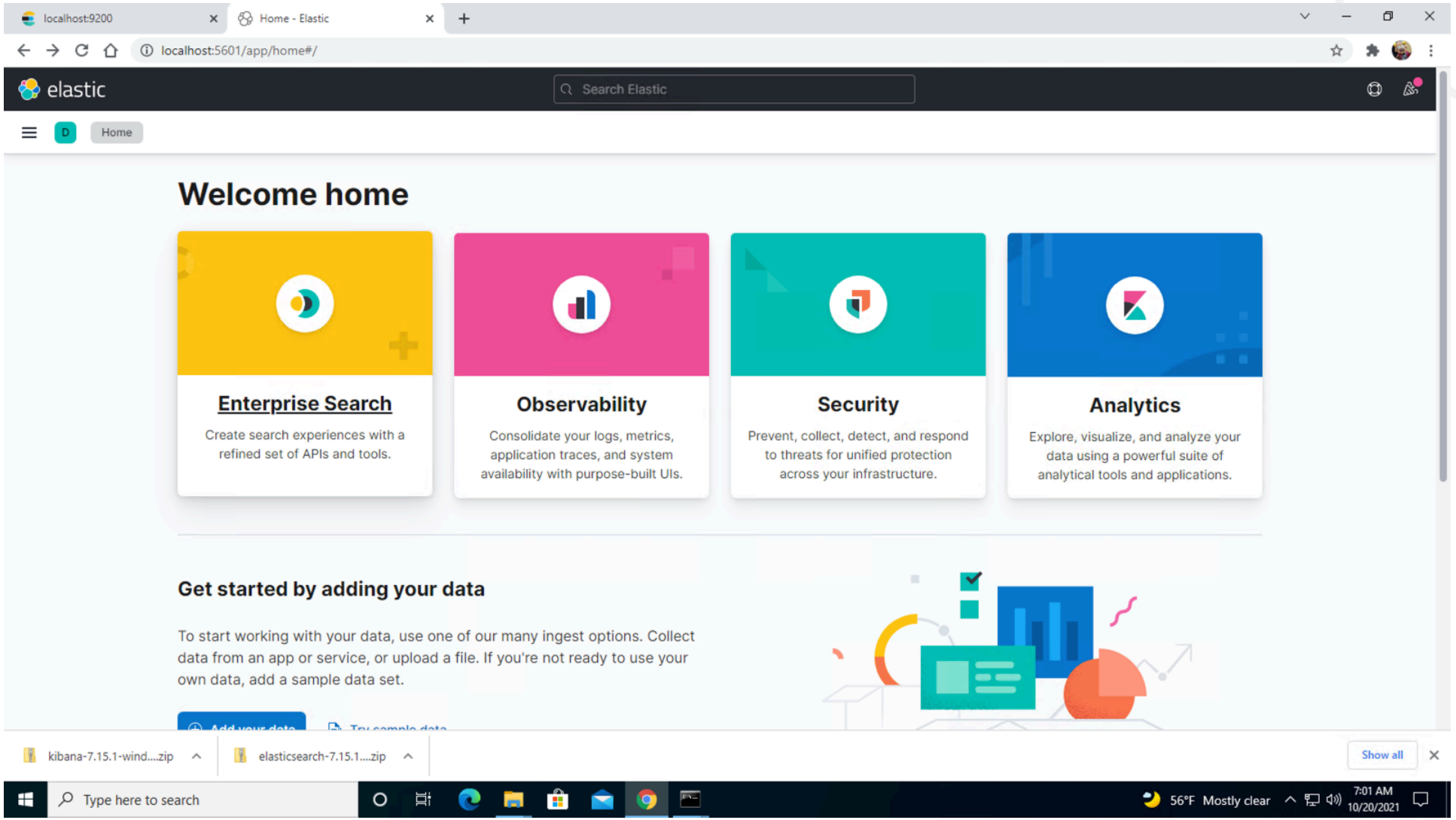

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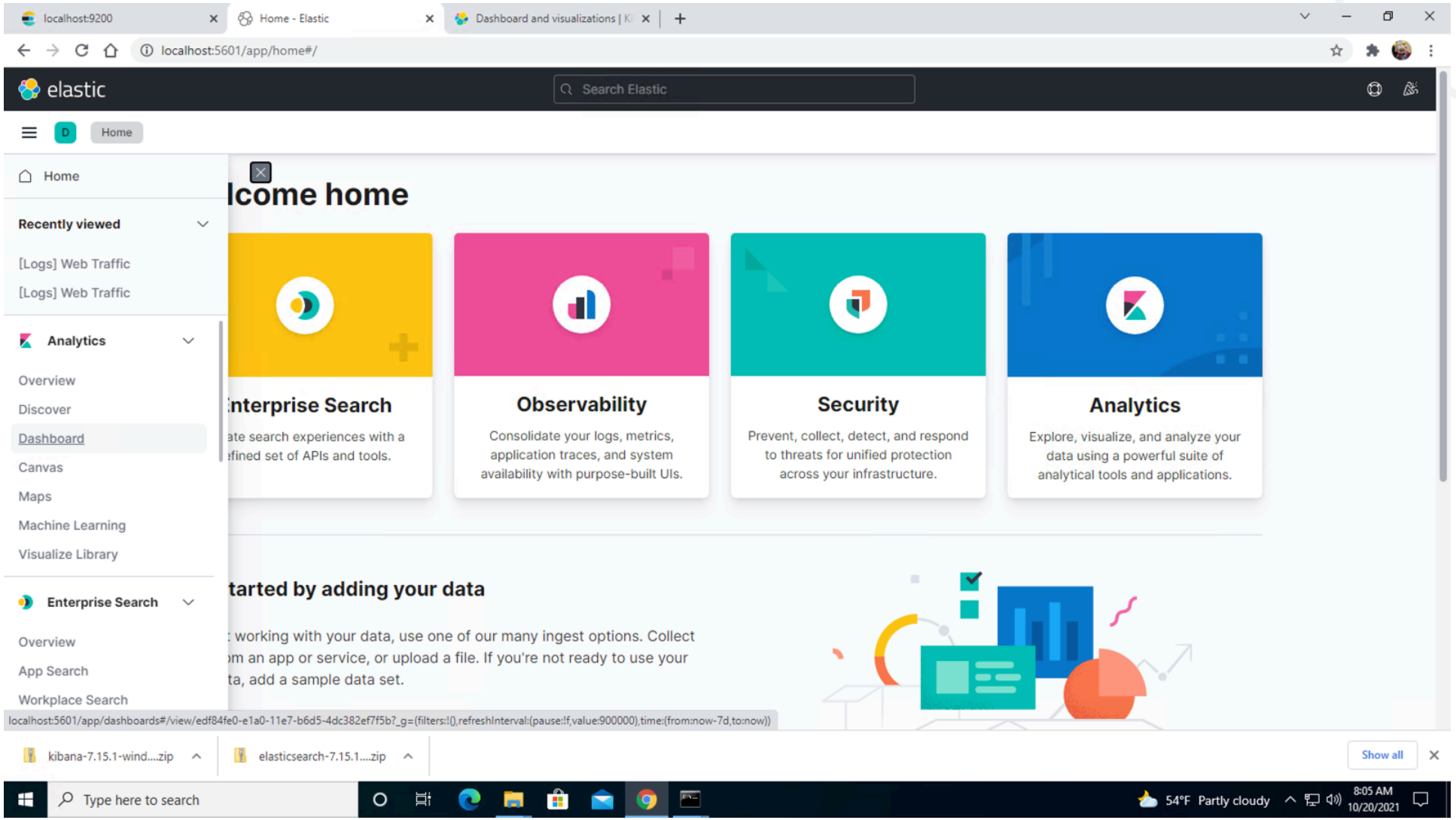

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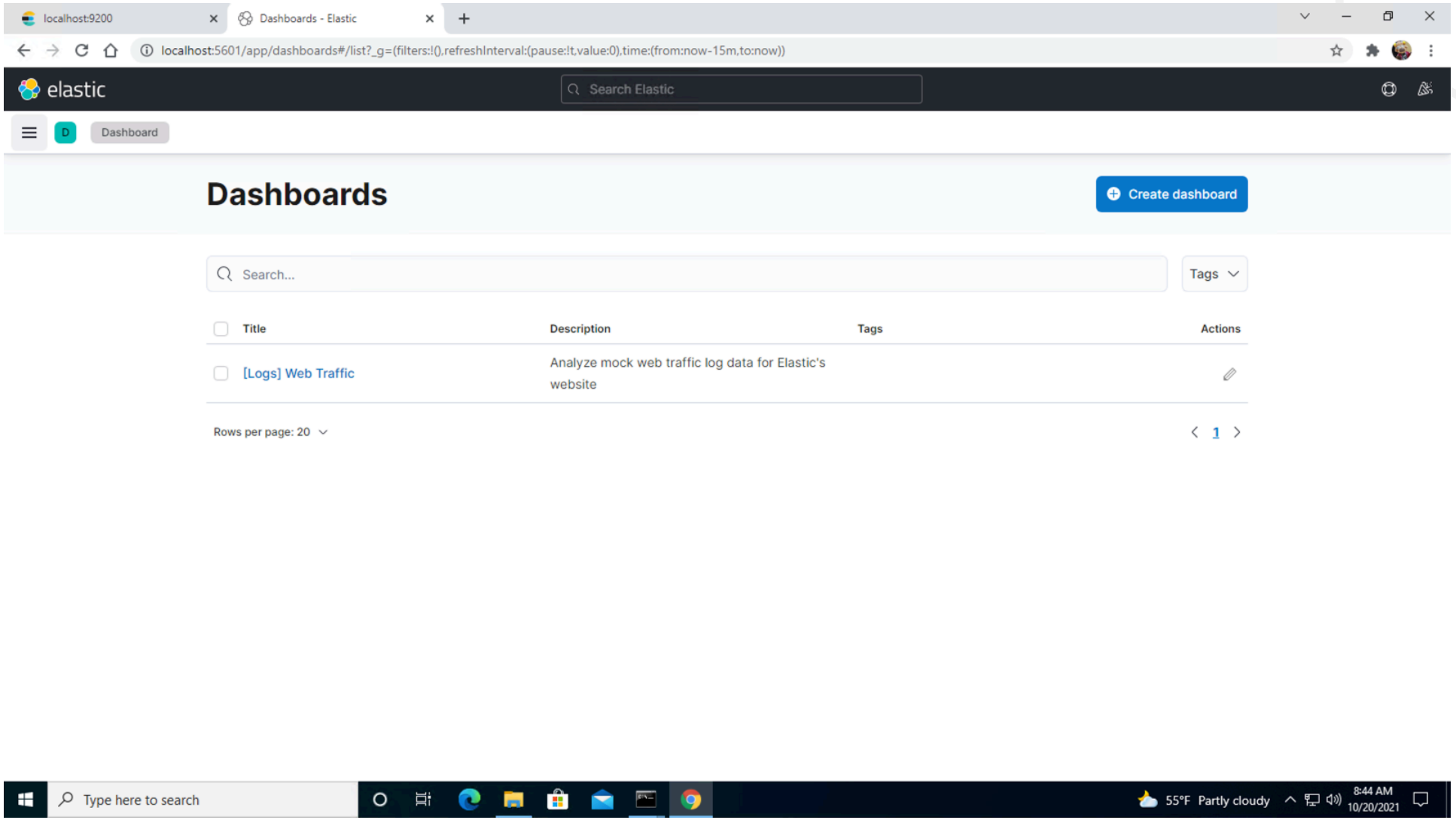

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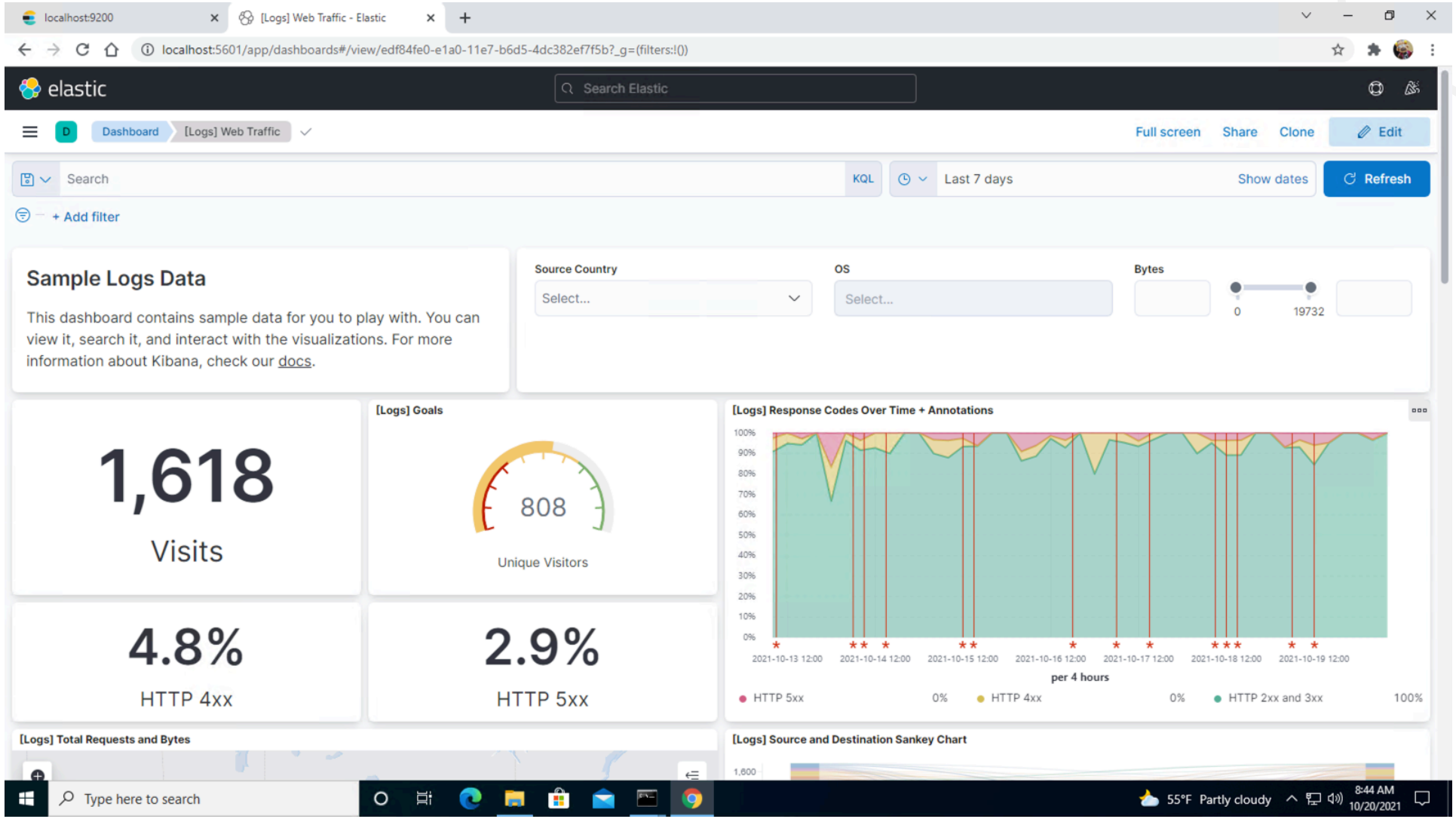
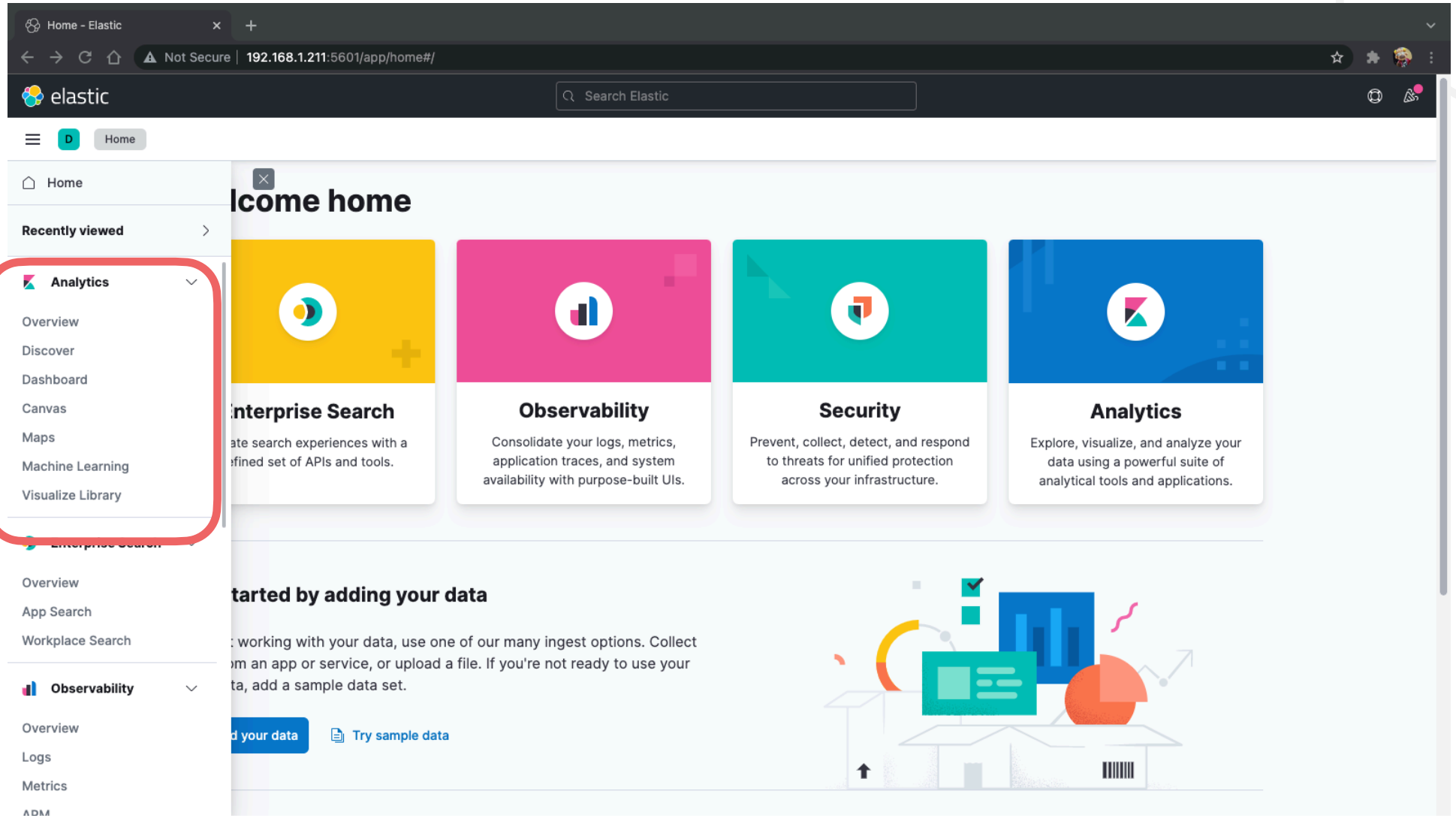


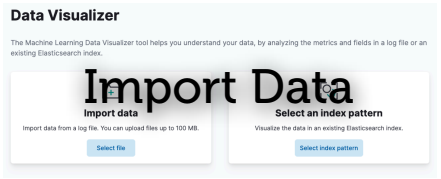
Intro to Kibana Analytics

Views, Search and Filter

Kibana Analytics



Kibana Analytics - Overviews



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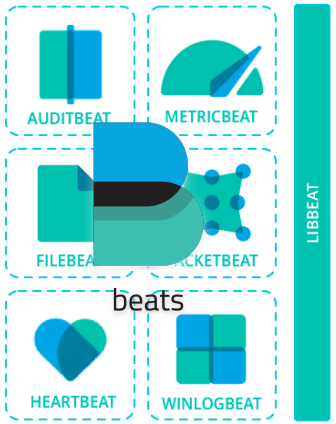
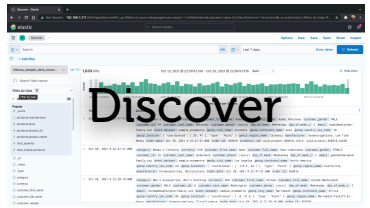
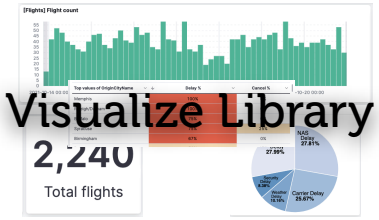


elasticsearch

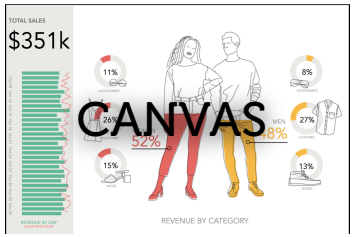


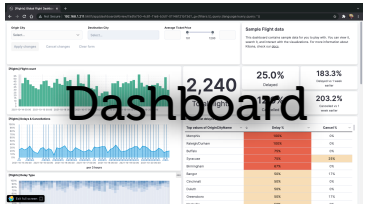
Discover



Visualize Library

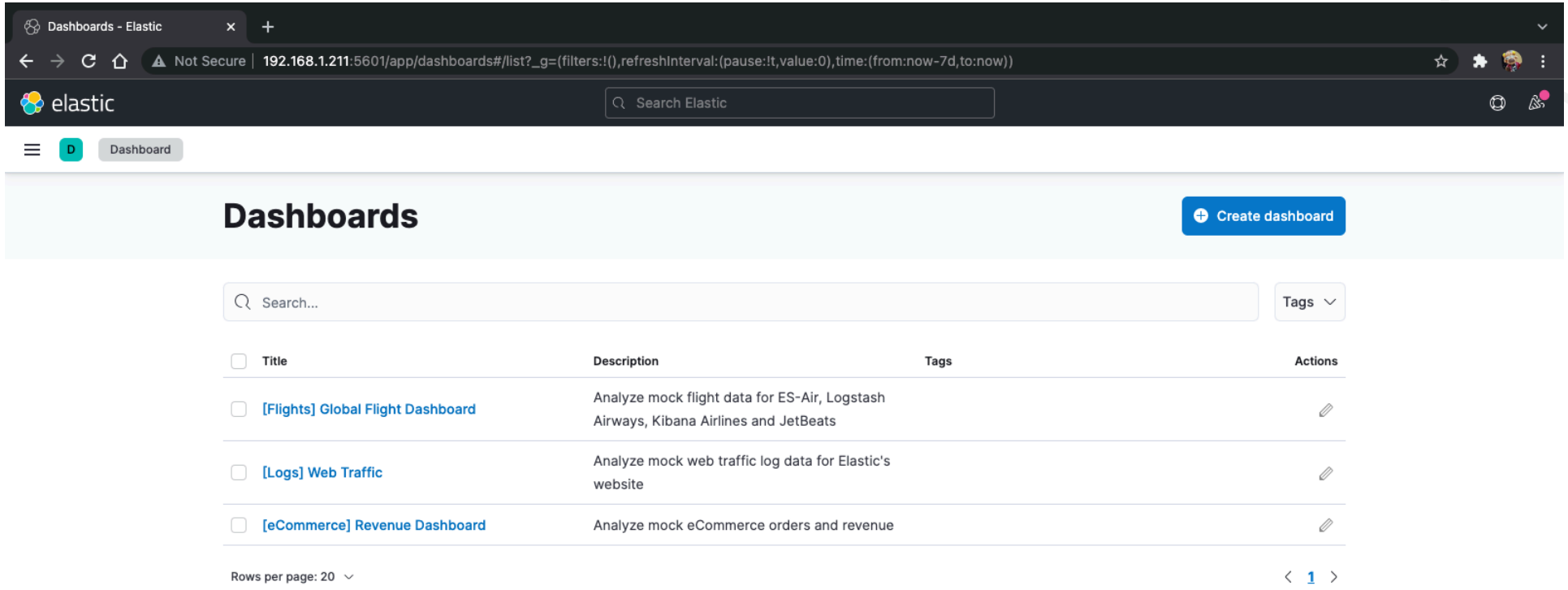
MAP



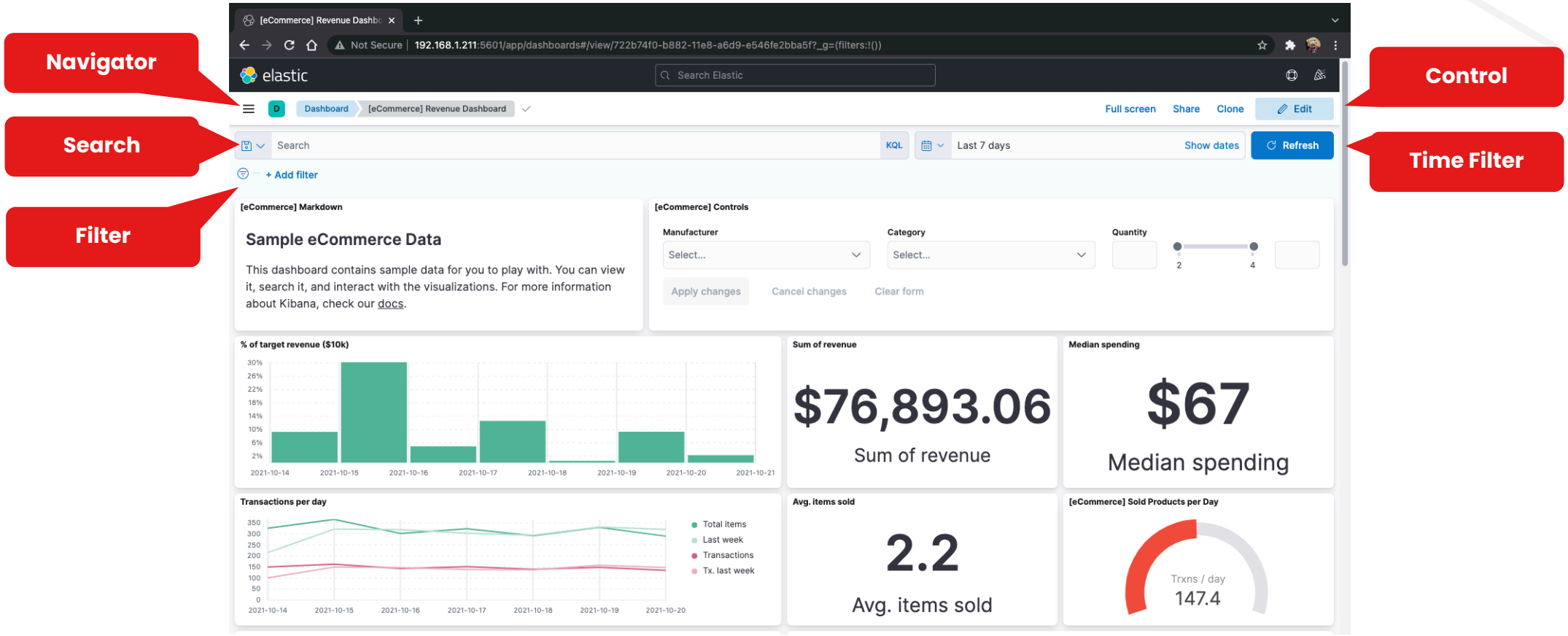


Dashboard

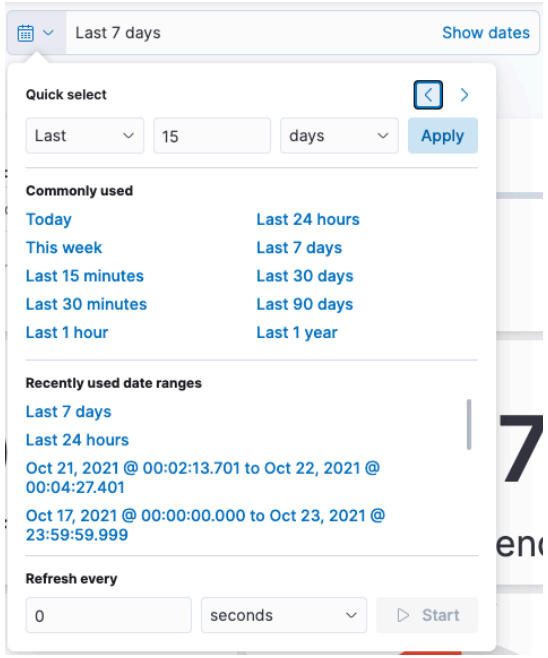
Kibana Analytics - Dashboard



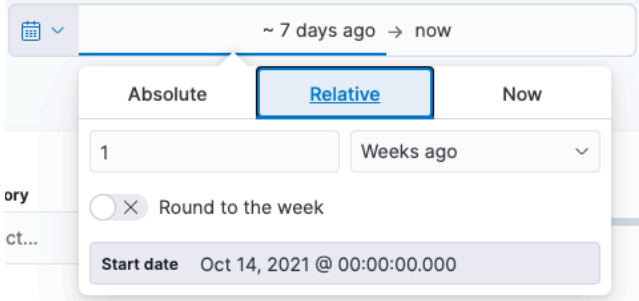
Kibana Analytics - Dashboard

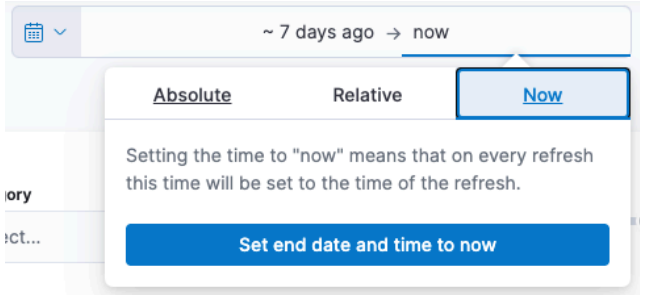


Kibana Analytics - Time Filter



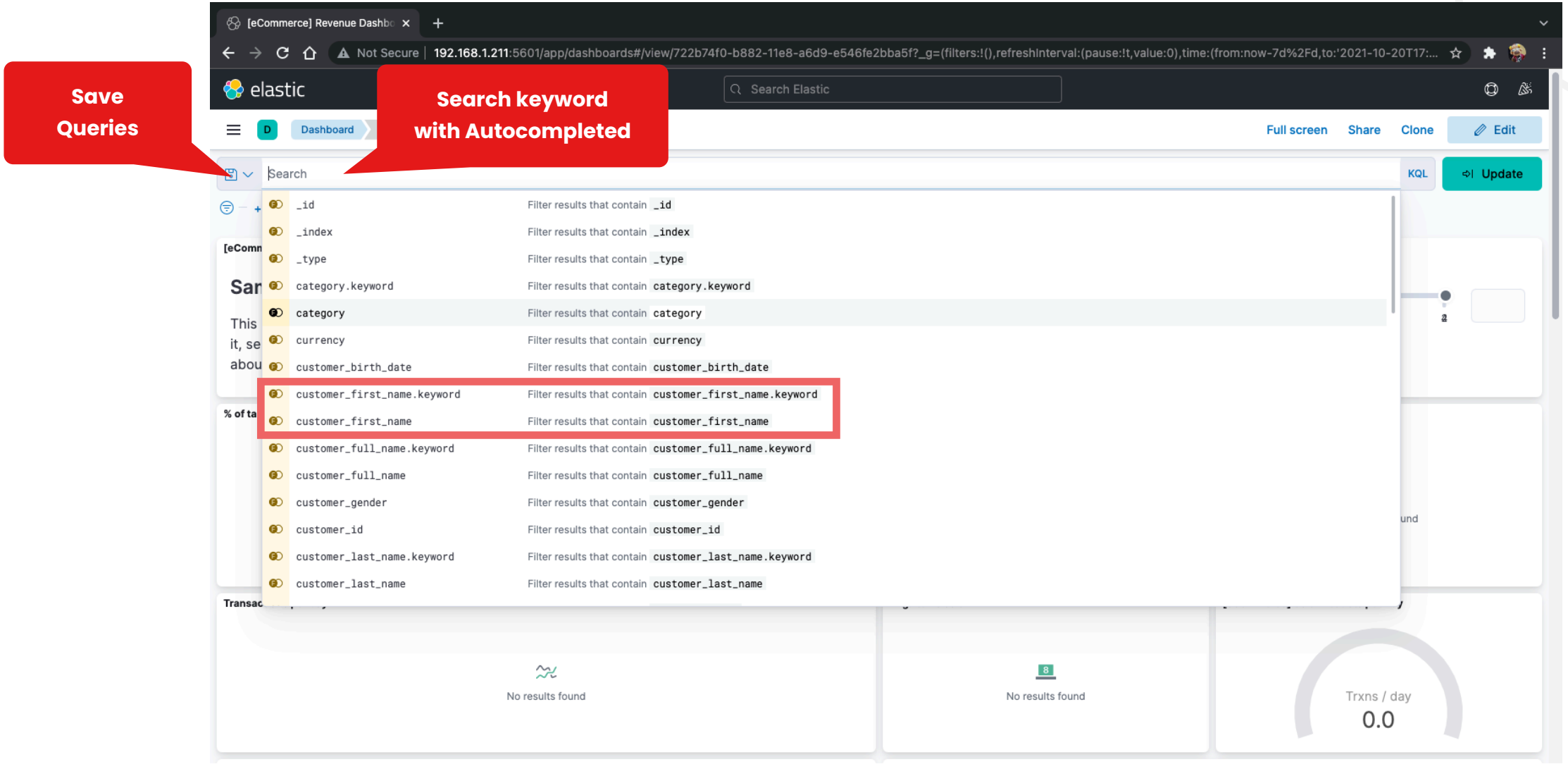
Quick Select





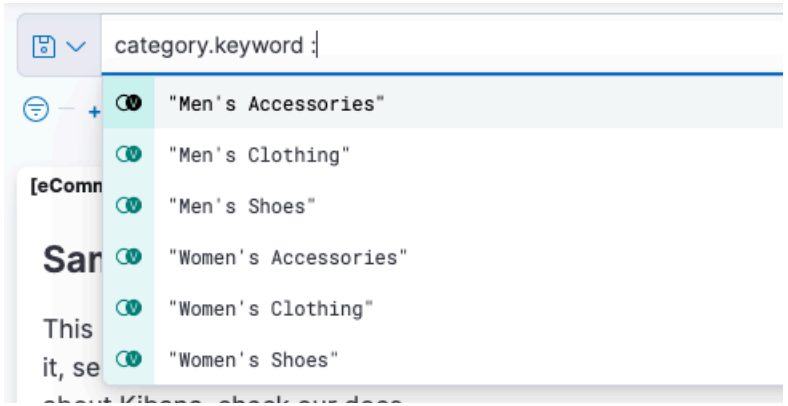
Customize

Kibana Analytics - Search

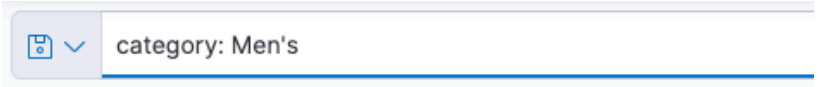


Kibana Analytics - category vs category.keyword

category.keyword

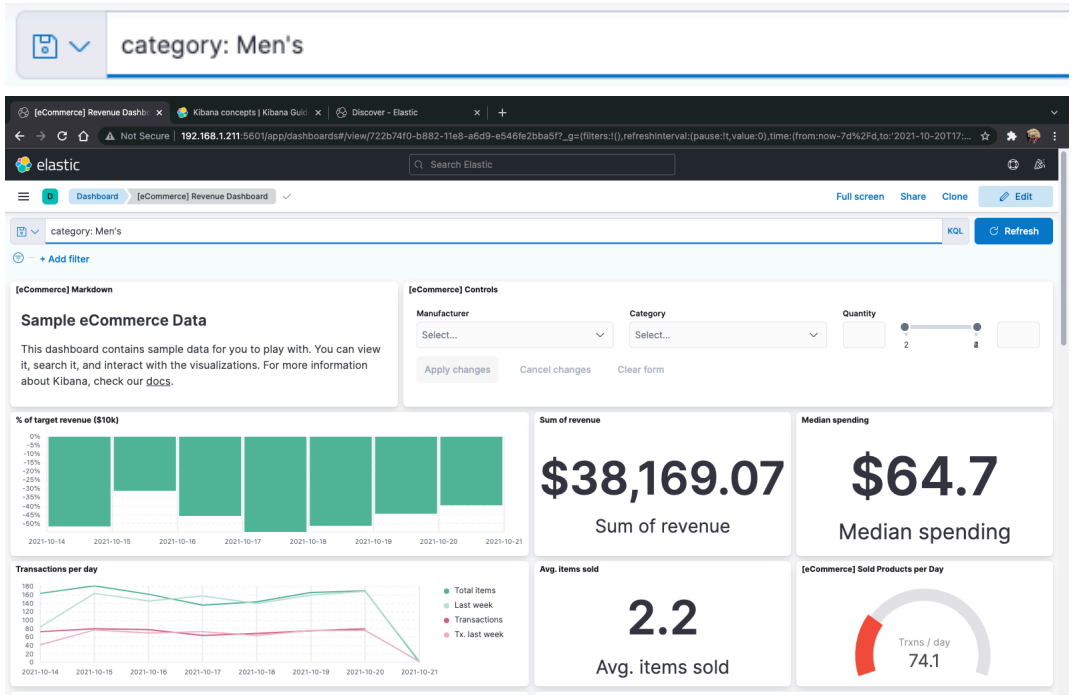


category

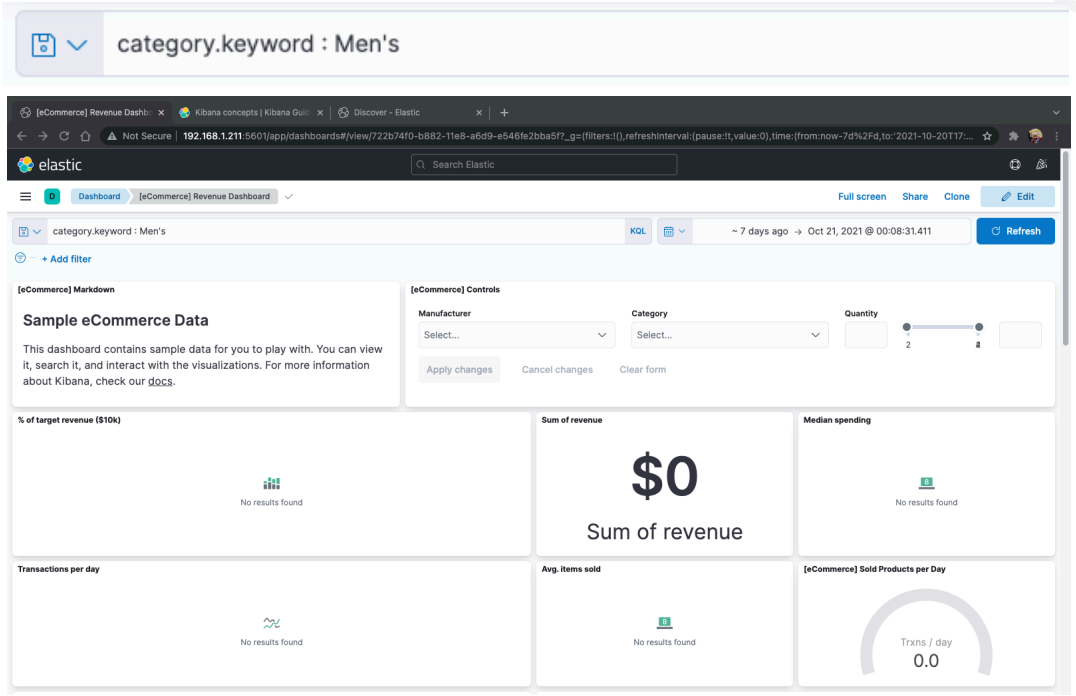


Kibana Analytics - category vs category.keyword

category



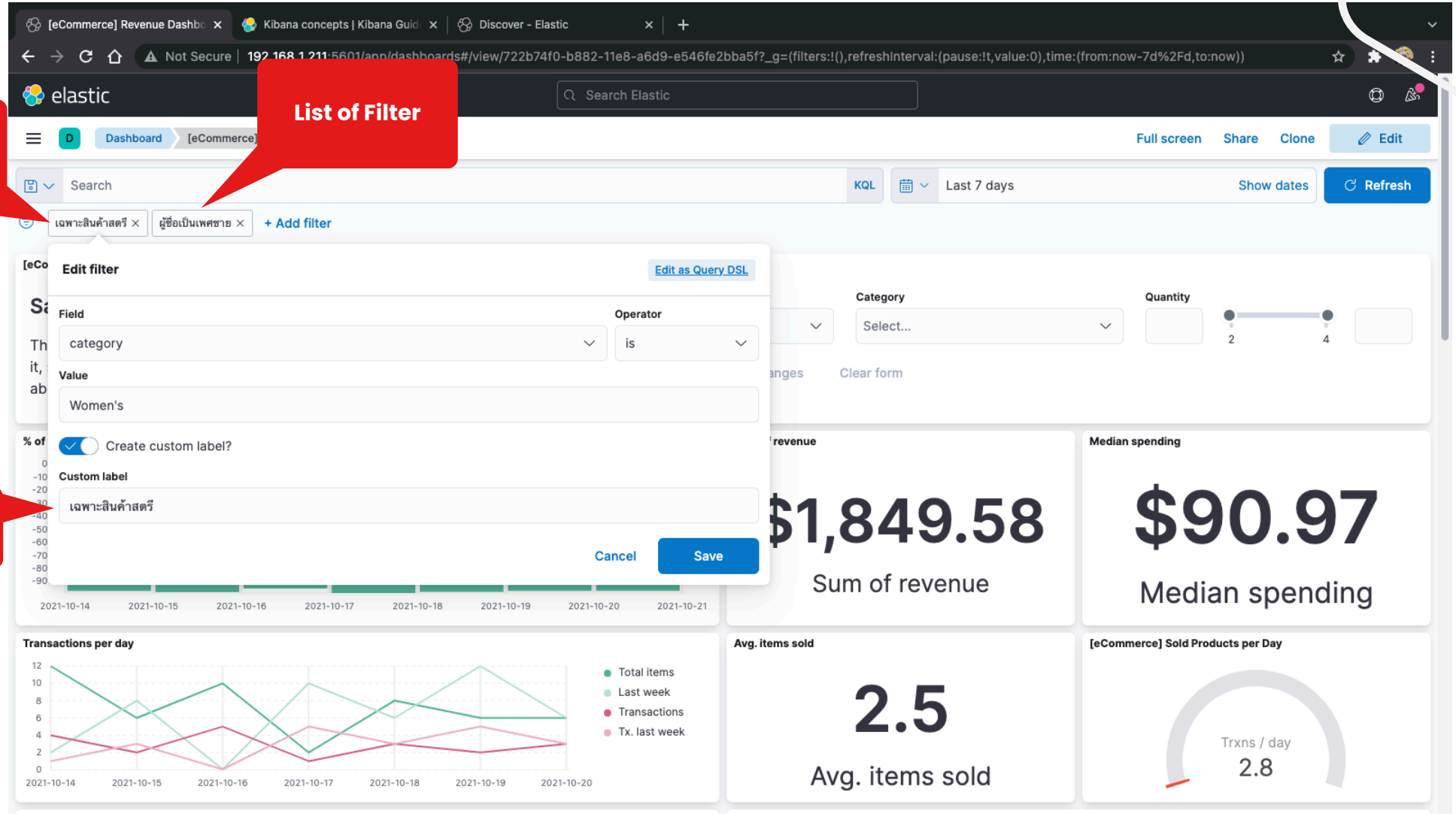
category.keyword



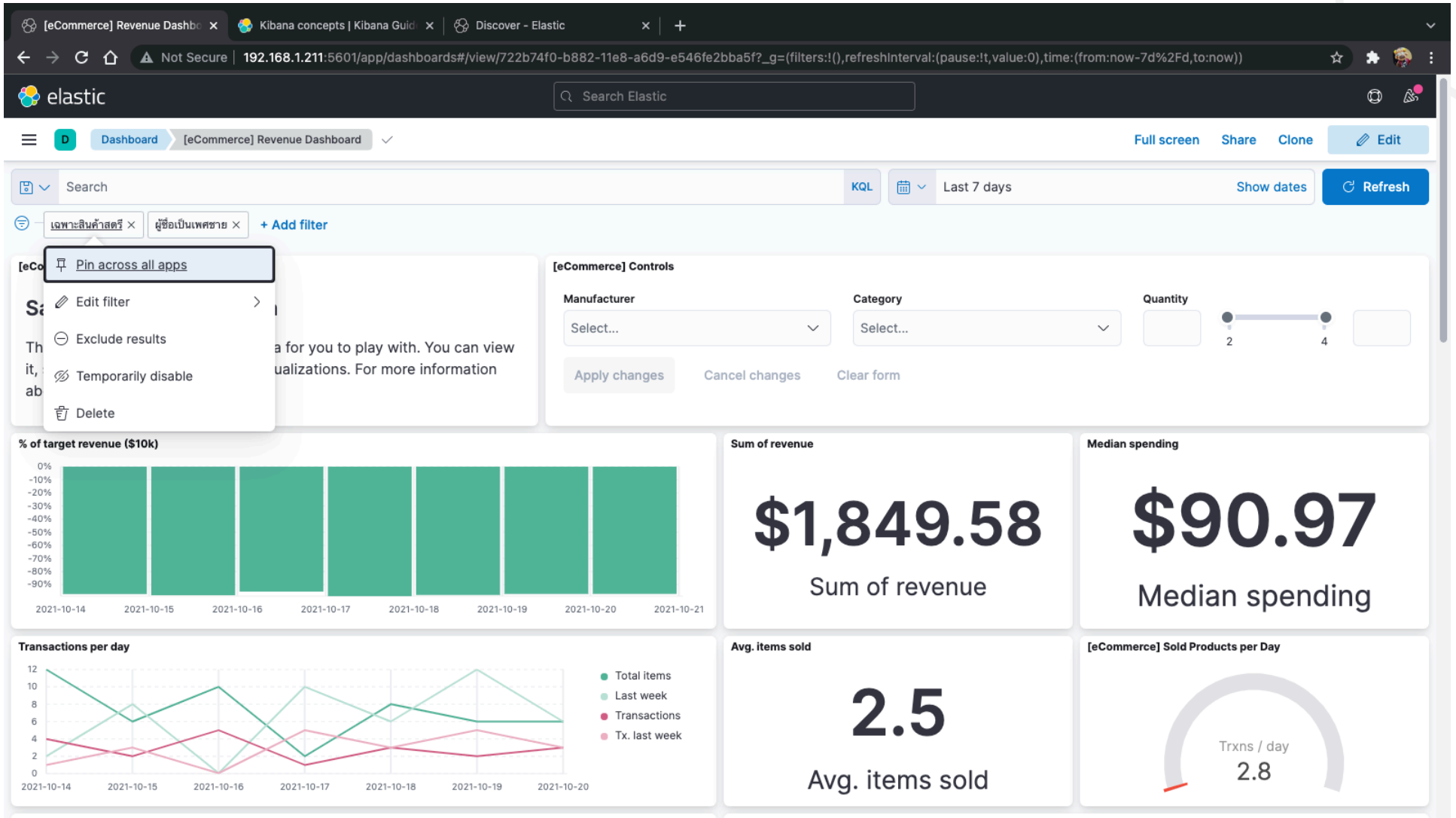
Search in Text Field

Search in Keyword Field

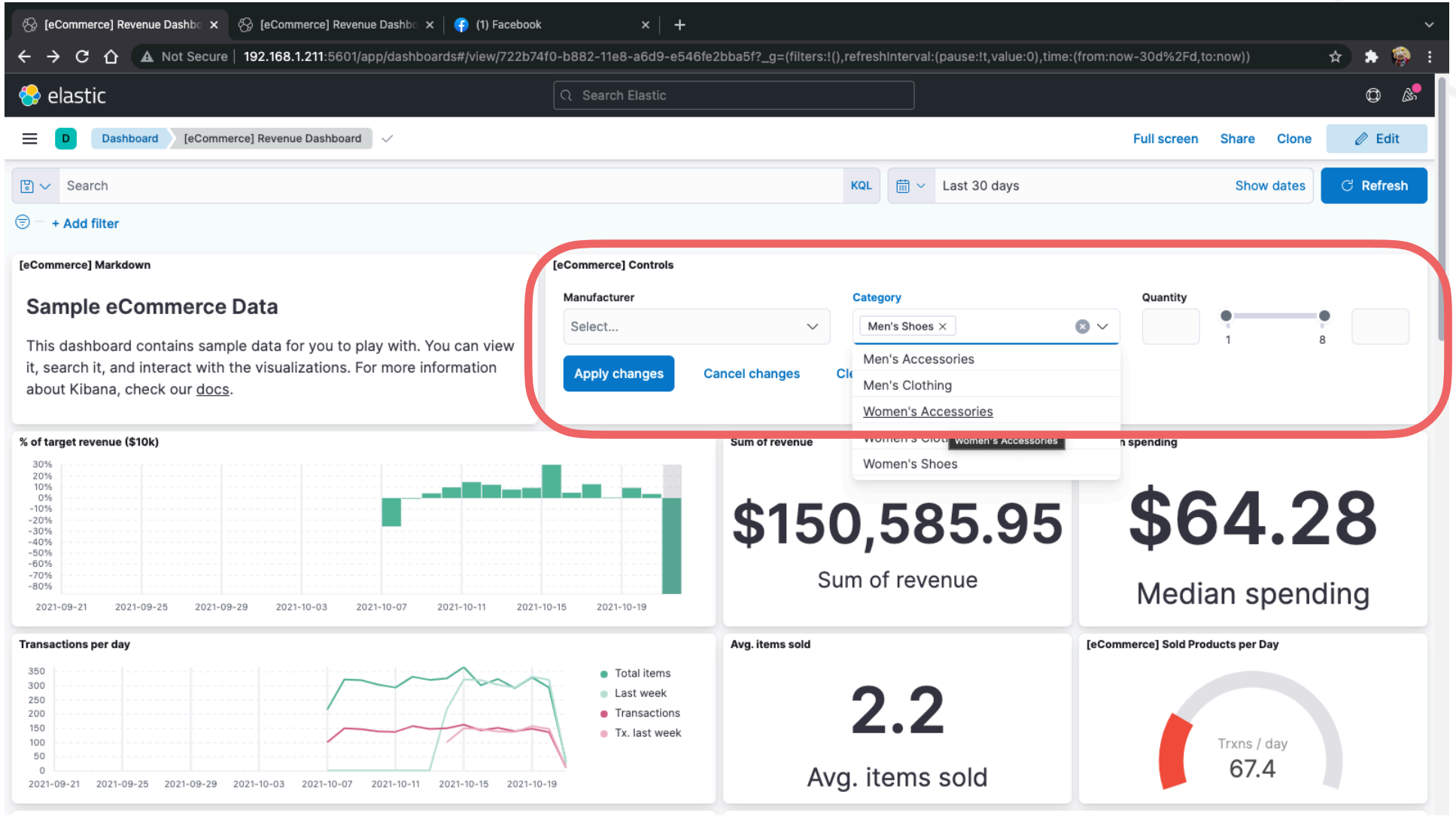
Kibana Analytics - Filter



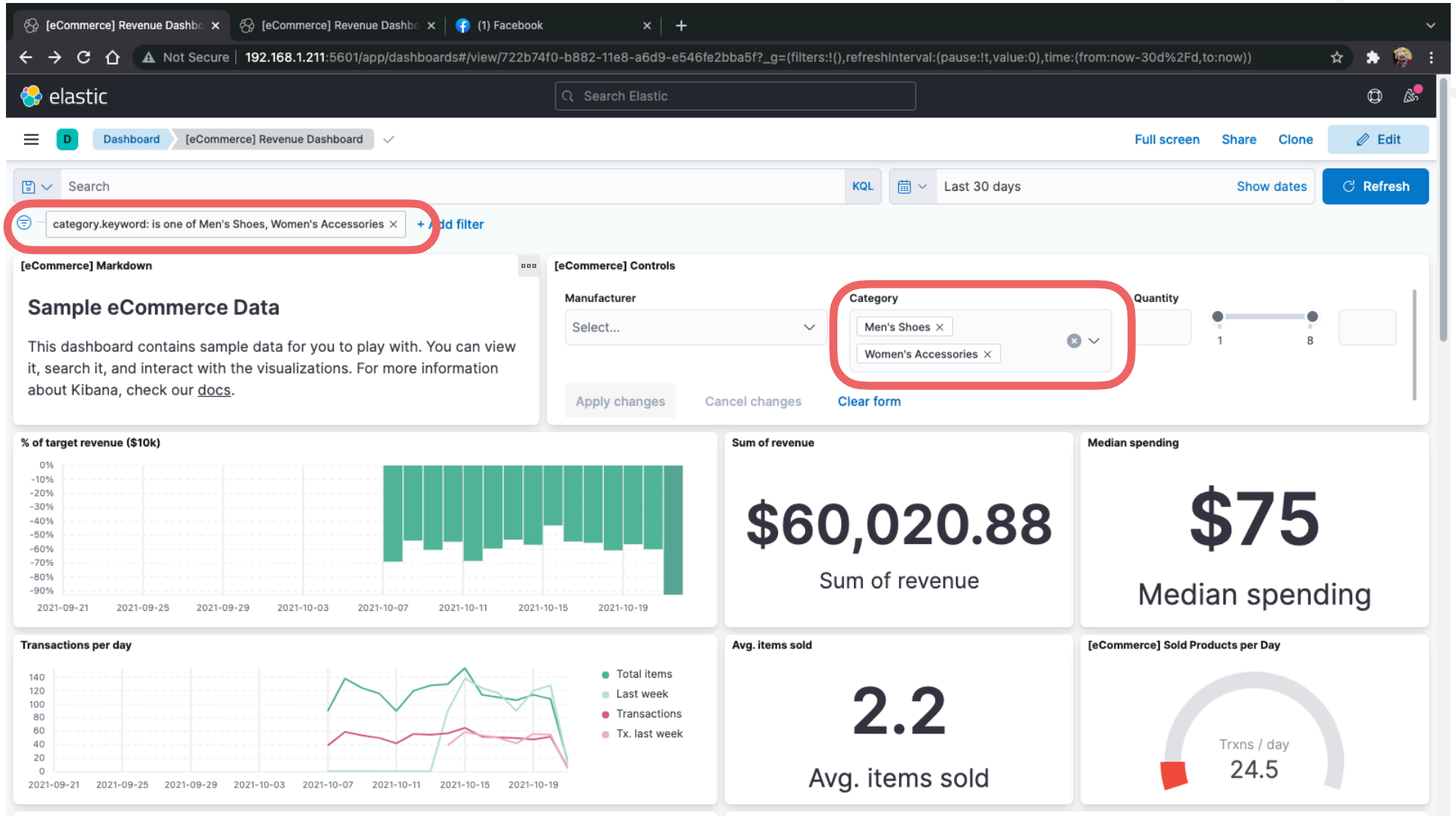
Kibana Analytics - Filter Option



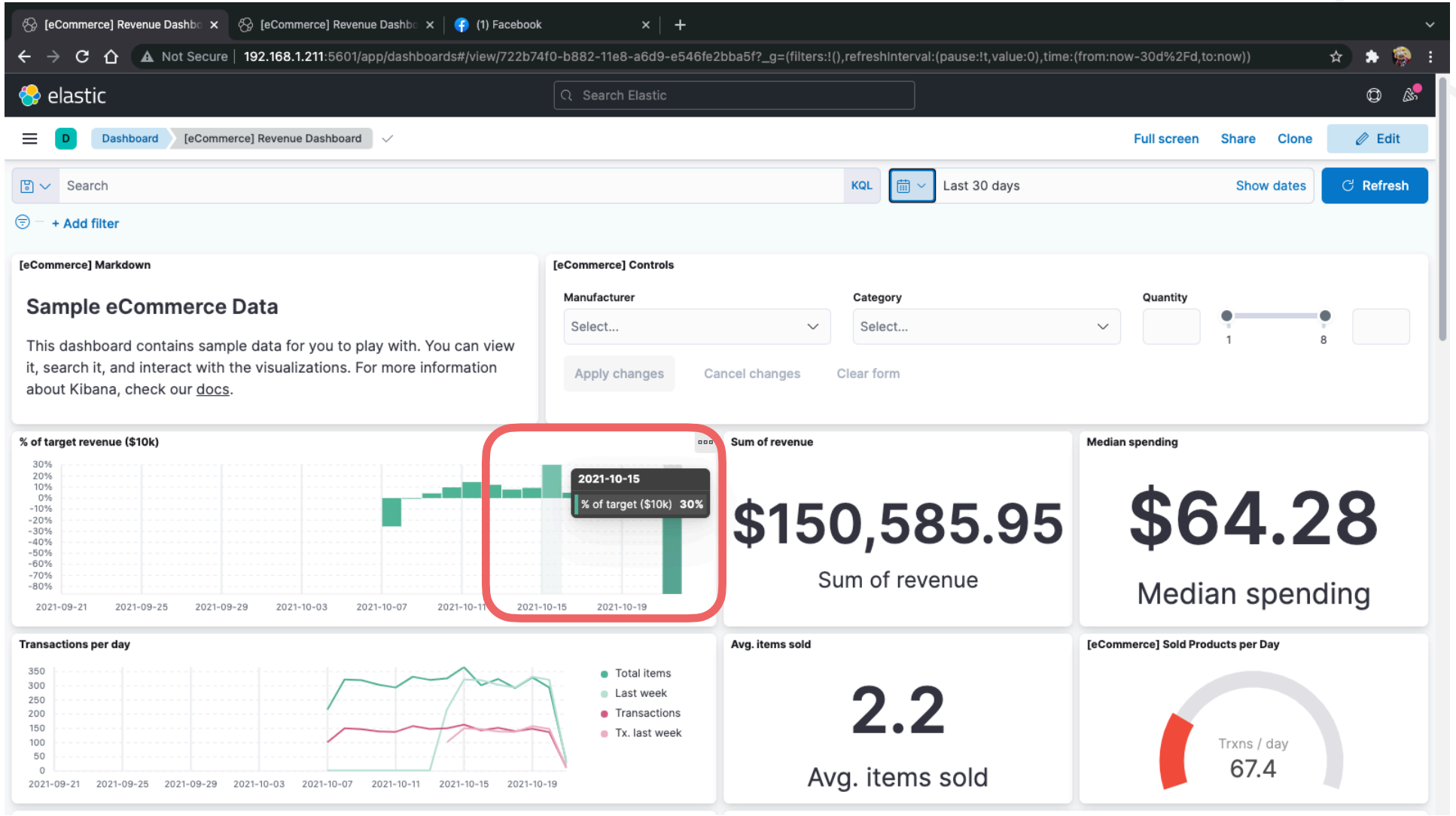
Kibana Analytics - Filter from Controls



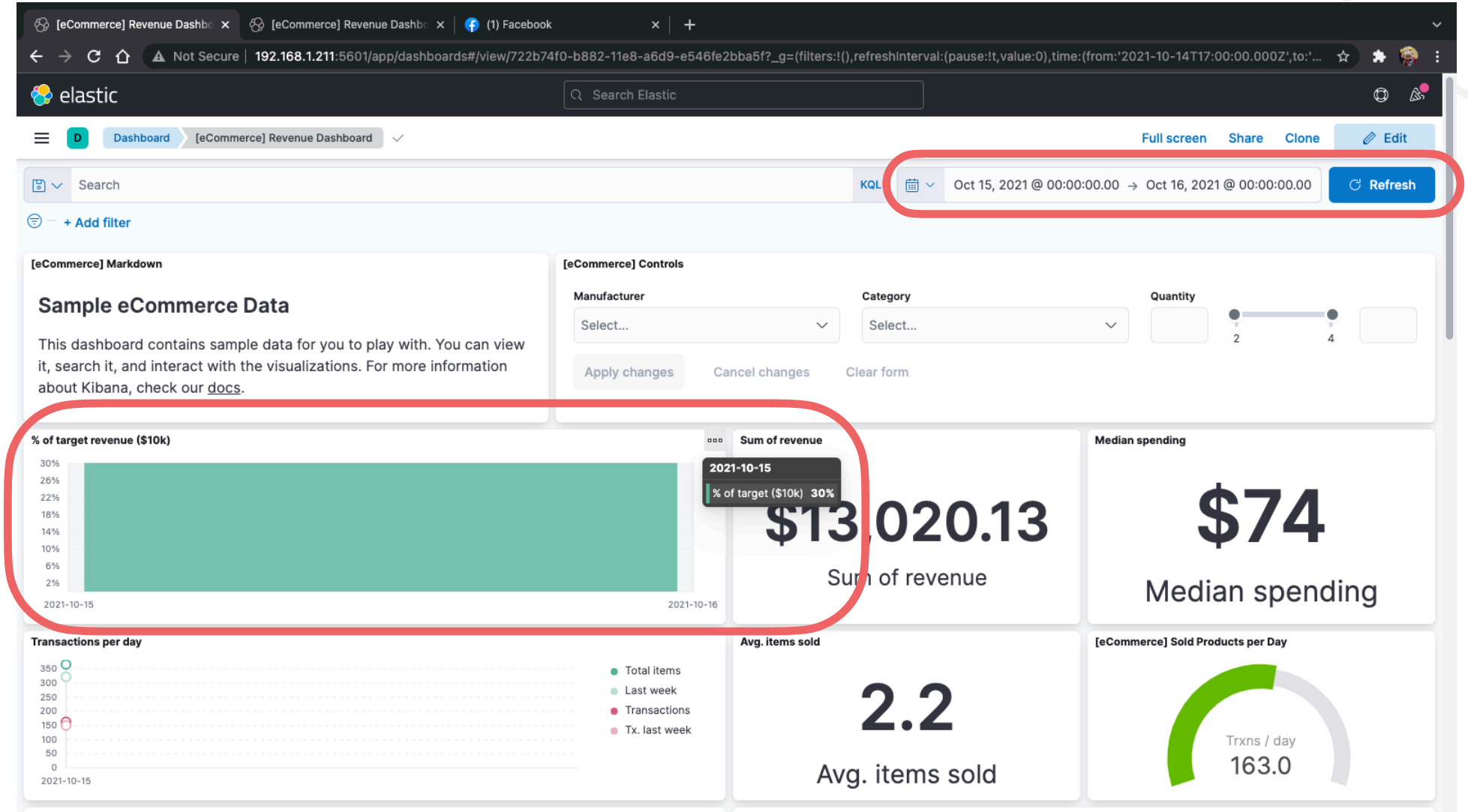
Kibana Analytics - Filter from Controls



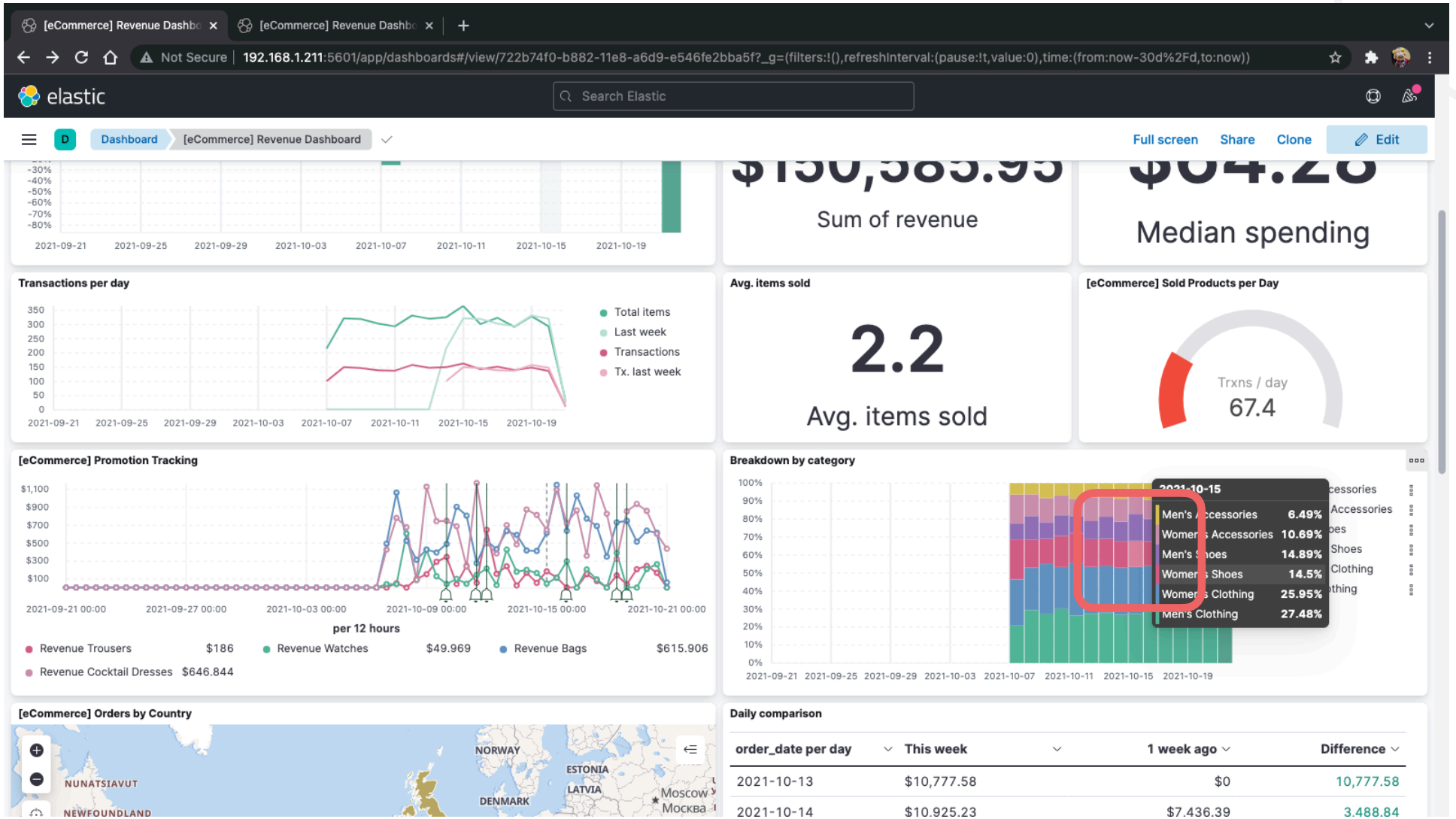
Kibana Analytics - Filter from Visualization



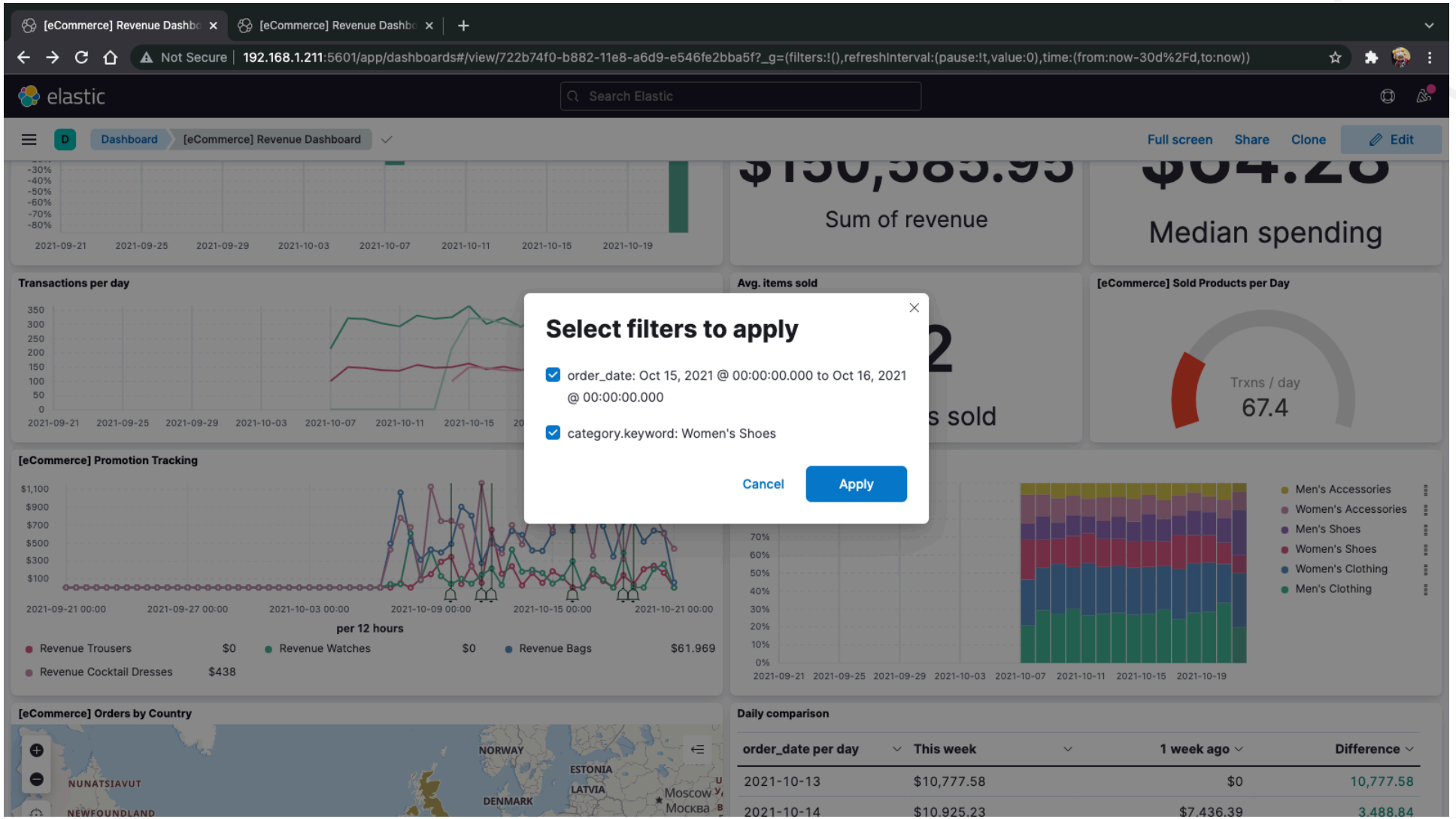
Kibana Analytics - Filter from Visualization



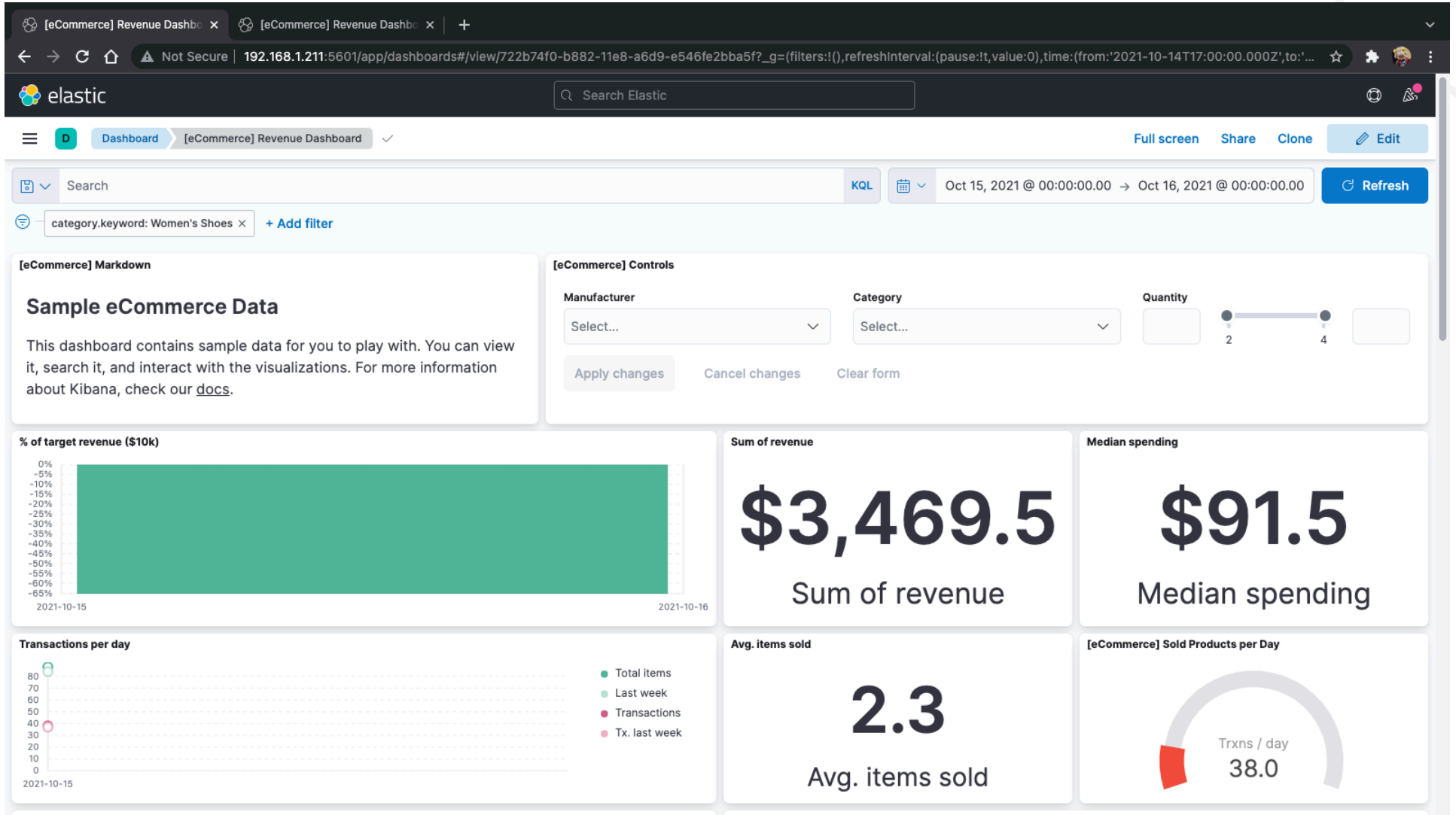
Kibana Analytics - Filter from Visualization



Kibana Analytics - Filter from Visualization



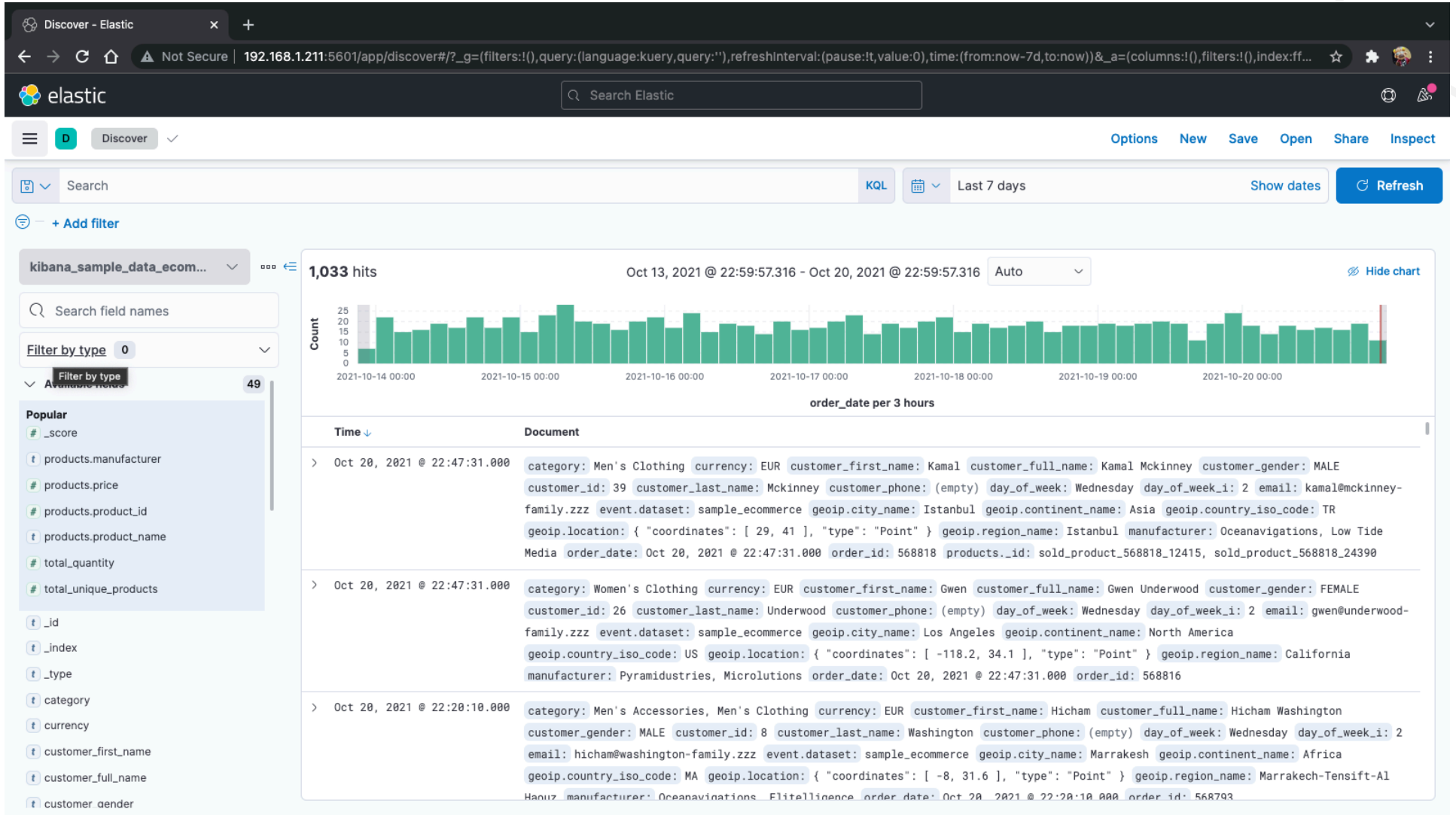
Kibana Analytics - Filter from Visualization



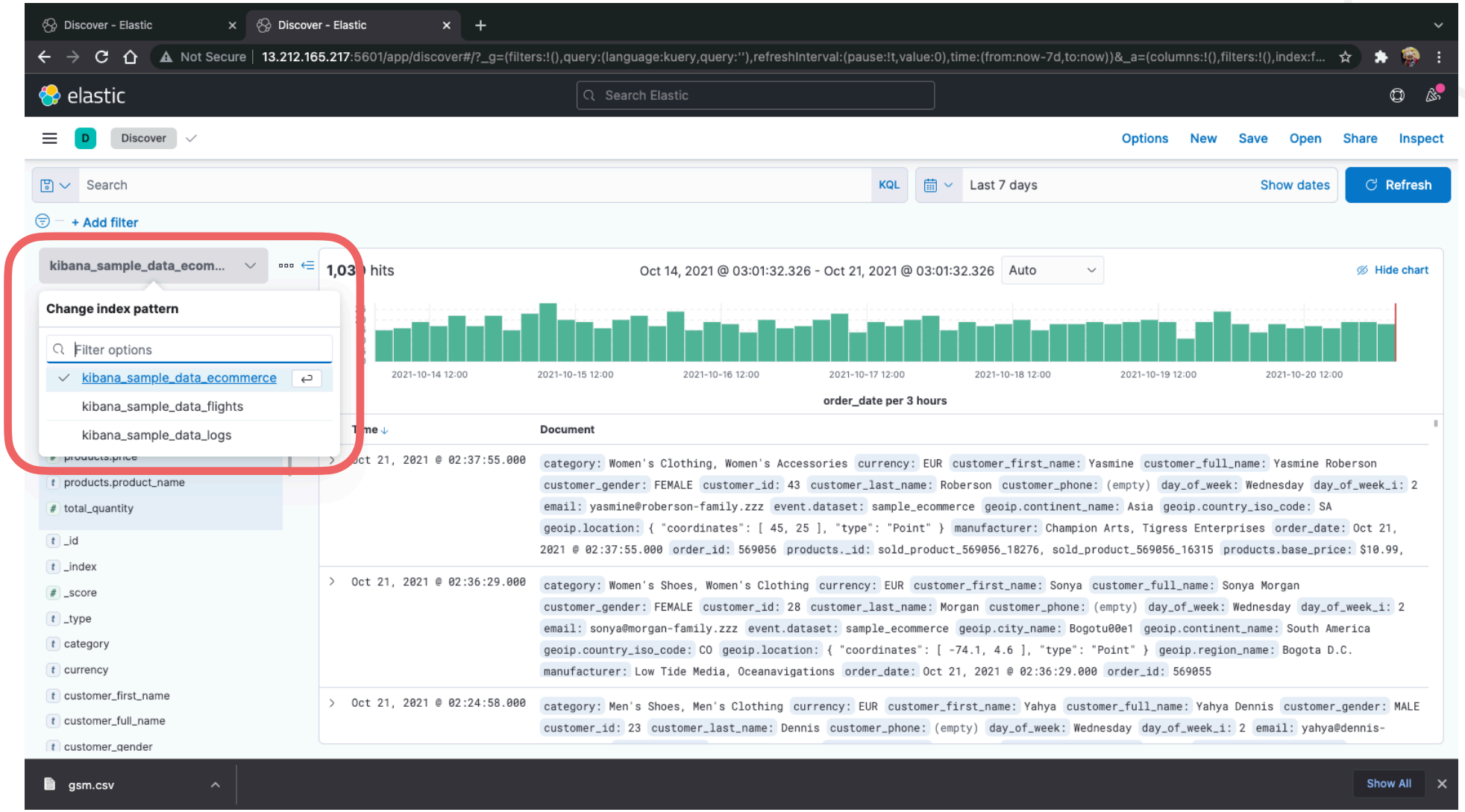
Explore The Data

Known Your Data

Kibana Analytics - Discover



Kibana Analytics - Change index pattern



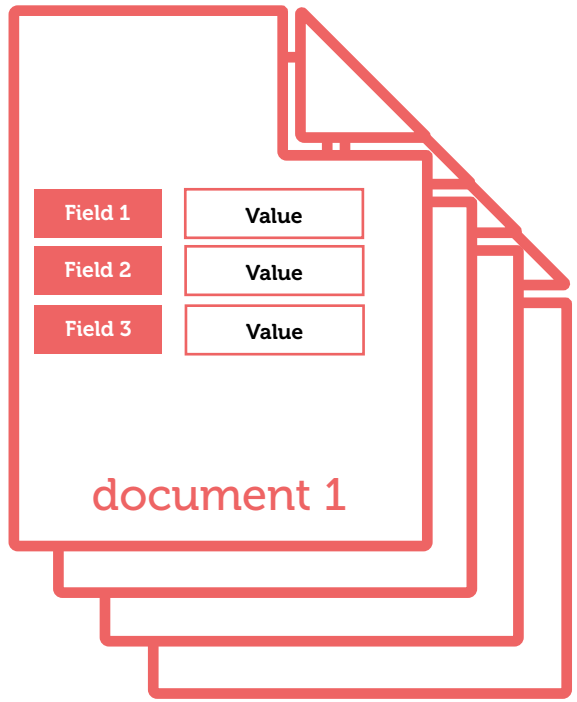
Elasticsearch - Data Structure

RDBMS : MySQL, MSSQL, OracleDB

	Column 1	Column 2	Column 3
Row 1			
Row 2			
Row 3			
Row 4			

Table

Document oriented Database



Index

https://www.elastic.co/guide/en/elasticsearch/reference/current/_mapping_concepts_across_sql_and_elasticsearch.html

Elasticsearch - Data Structure

RDBMS : MySQL, MSSQL, OracleDB		Document oriented Database
Column can contain **exactly** one value of said type	⟺	Field can contain **multiple** values of the same type
Row tends to strict	⟺	Document tends to be a bit more flexible or loose
Table	⟺	Index
Schema	⟺	Implicit
Cluster, Database	⟺	Cluster, Cluster Instance

https://www.elastic.co/guide/en/elasticsearch/reference/current/_mapping_concepts_across_sql_and_elasticsearch.html

Elasticsearch - Field Data Types

Common types

binary | boolean | Keywords | Numbers | Dates | alias

Objects and relational types

object | join | nested | flattened

Text search types

text | annotated-text | completion | search_as_you_type | token_count

Aggregate data types

aggregate_metric_double | histogram

Structure data types

Range | murmur3 | ip | version

Document ranking types

dens_vector | sparse_vector | rank_feature | rank_features

Spatial data types

geo_point | geo_shape | point | shape

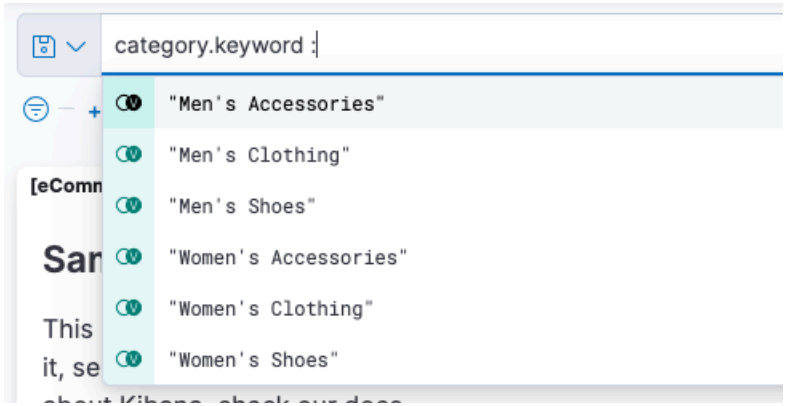
Other types

percolator

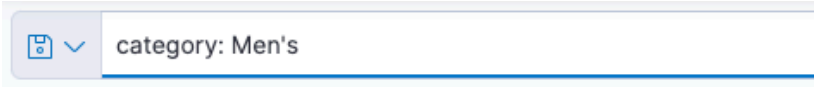
https://www.elastic.co/guide/en/elasticsearch//reference/current/mapping-types.html#spatial_datatypes

Kibana Analytics - category vs category.keyword

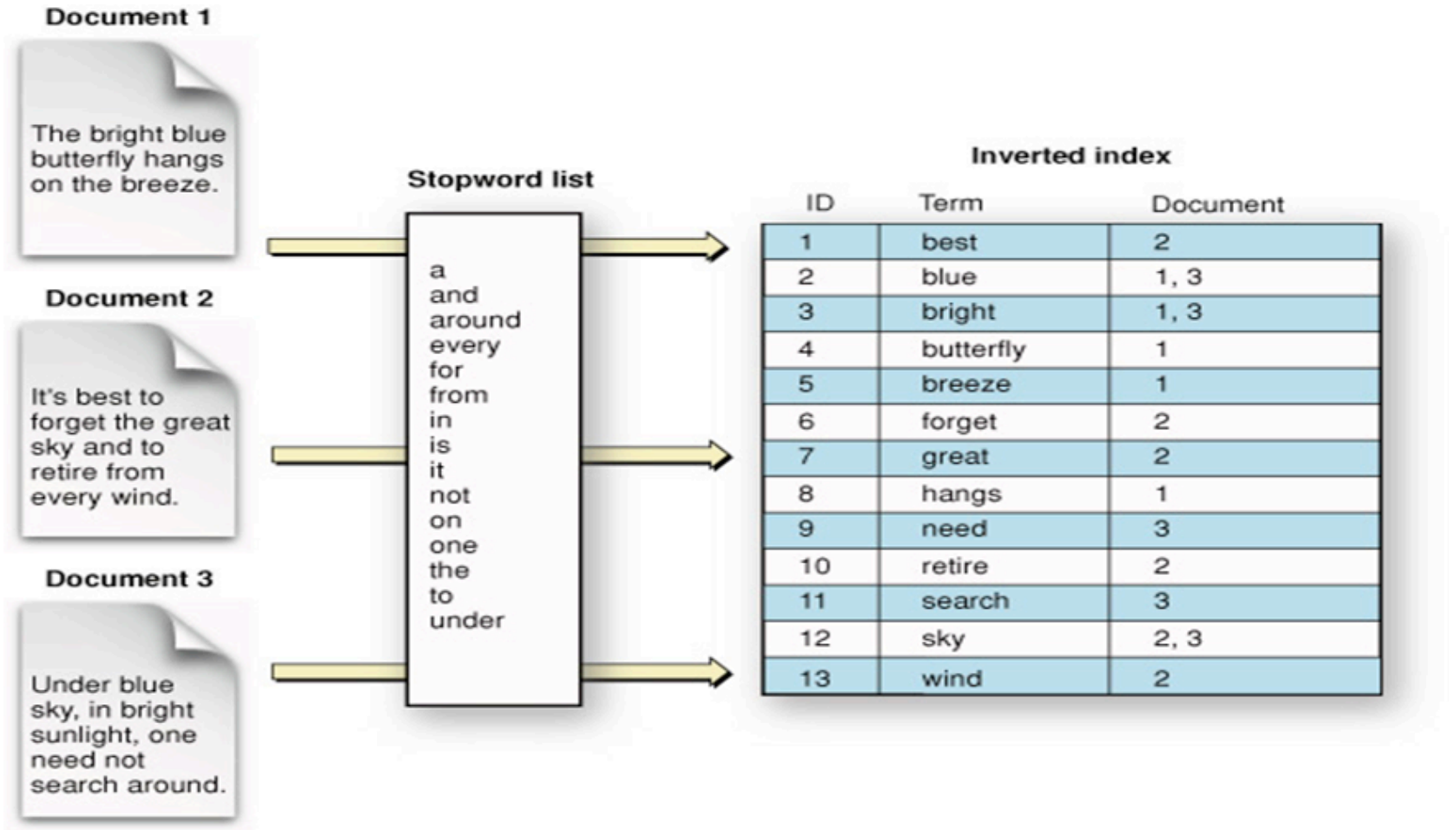
category.keyword



category

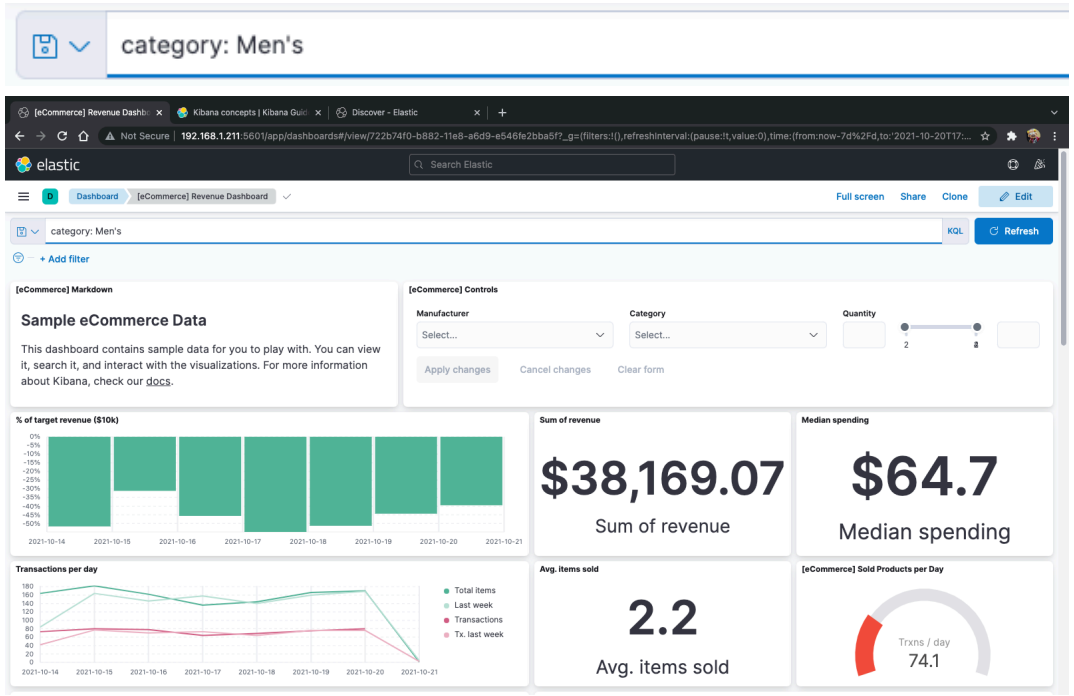


Elasticsearch - Apache Lucene: Inverted Index



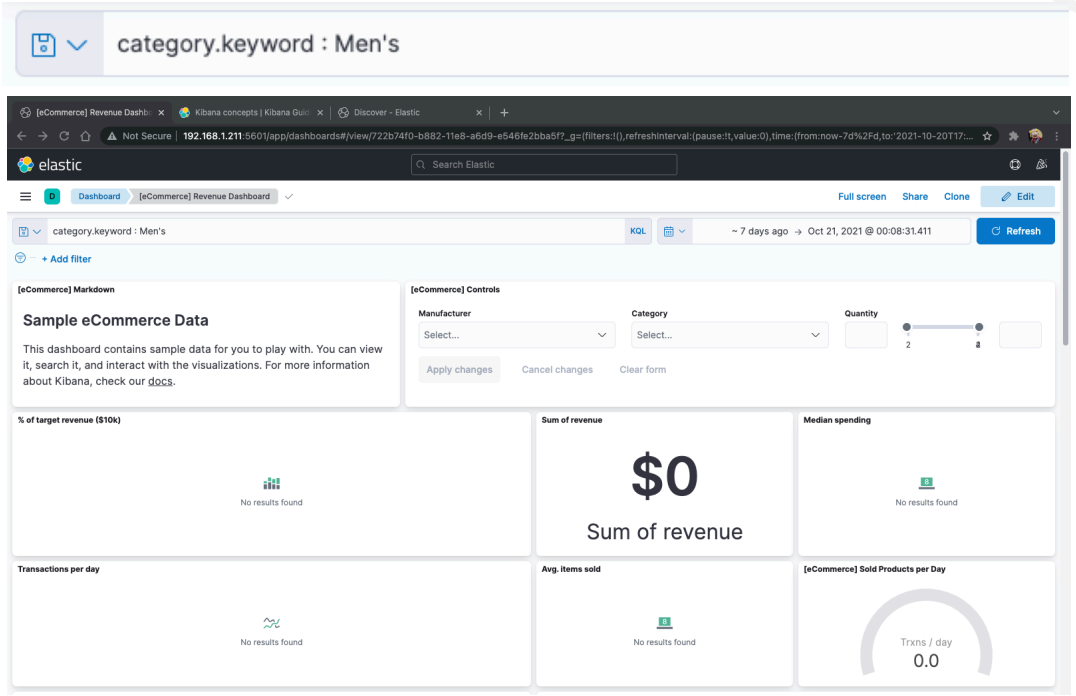
Elasticsearch - Apache Lucene: Inverted Index

category



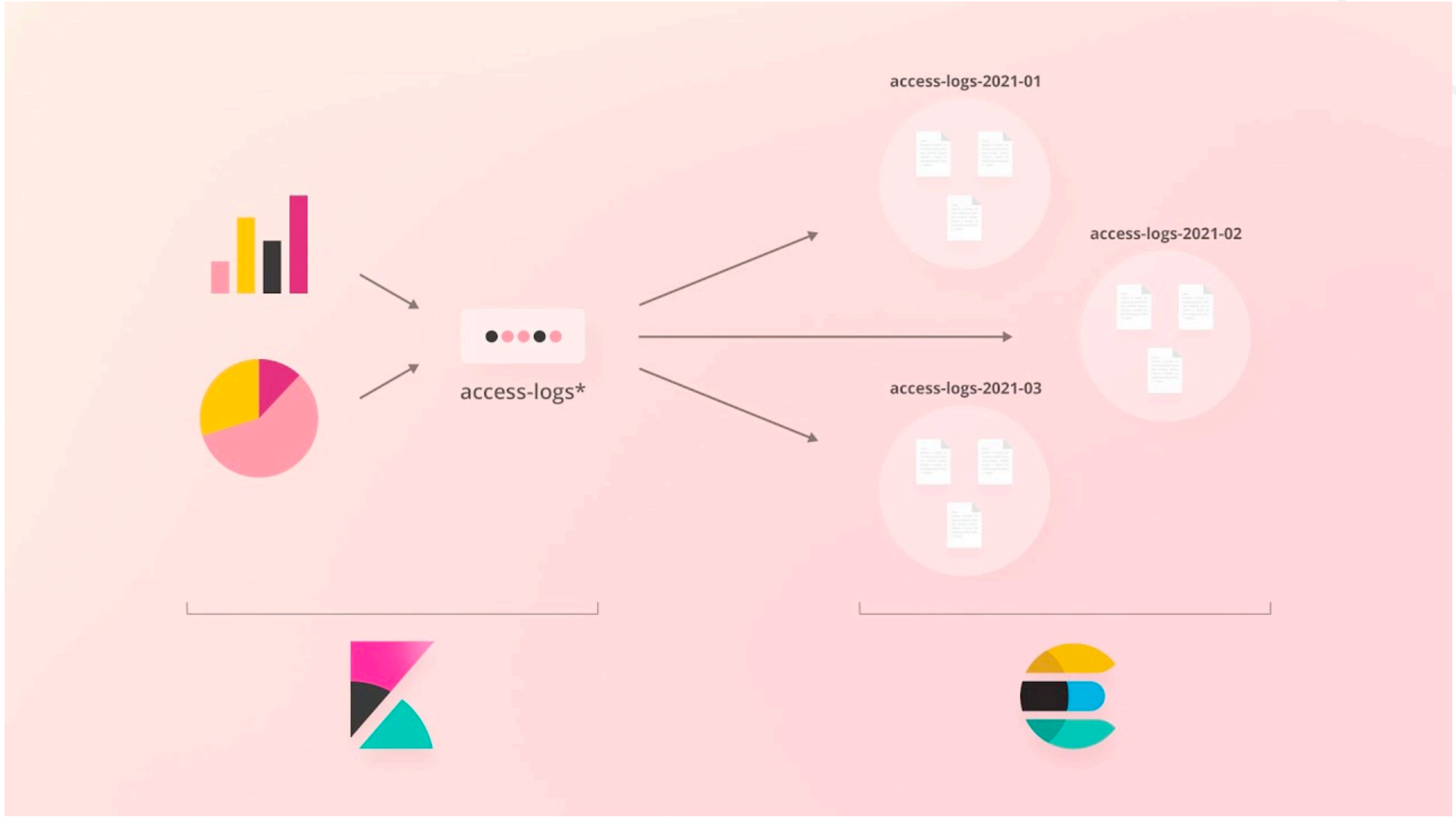
Search in Text Field

category.keyword

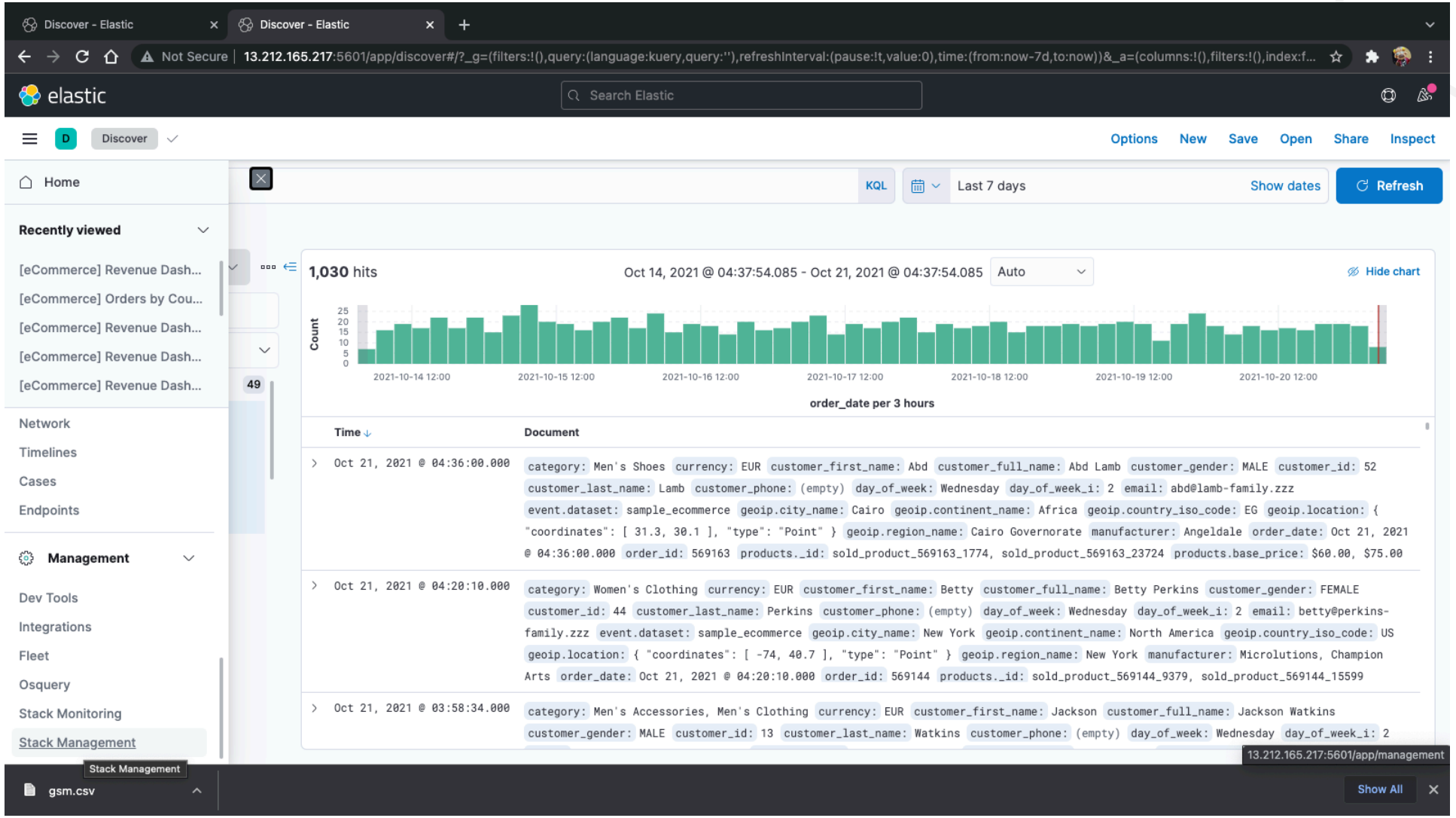


Search in Keyword Field

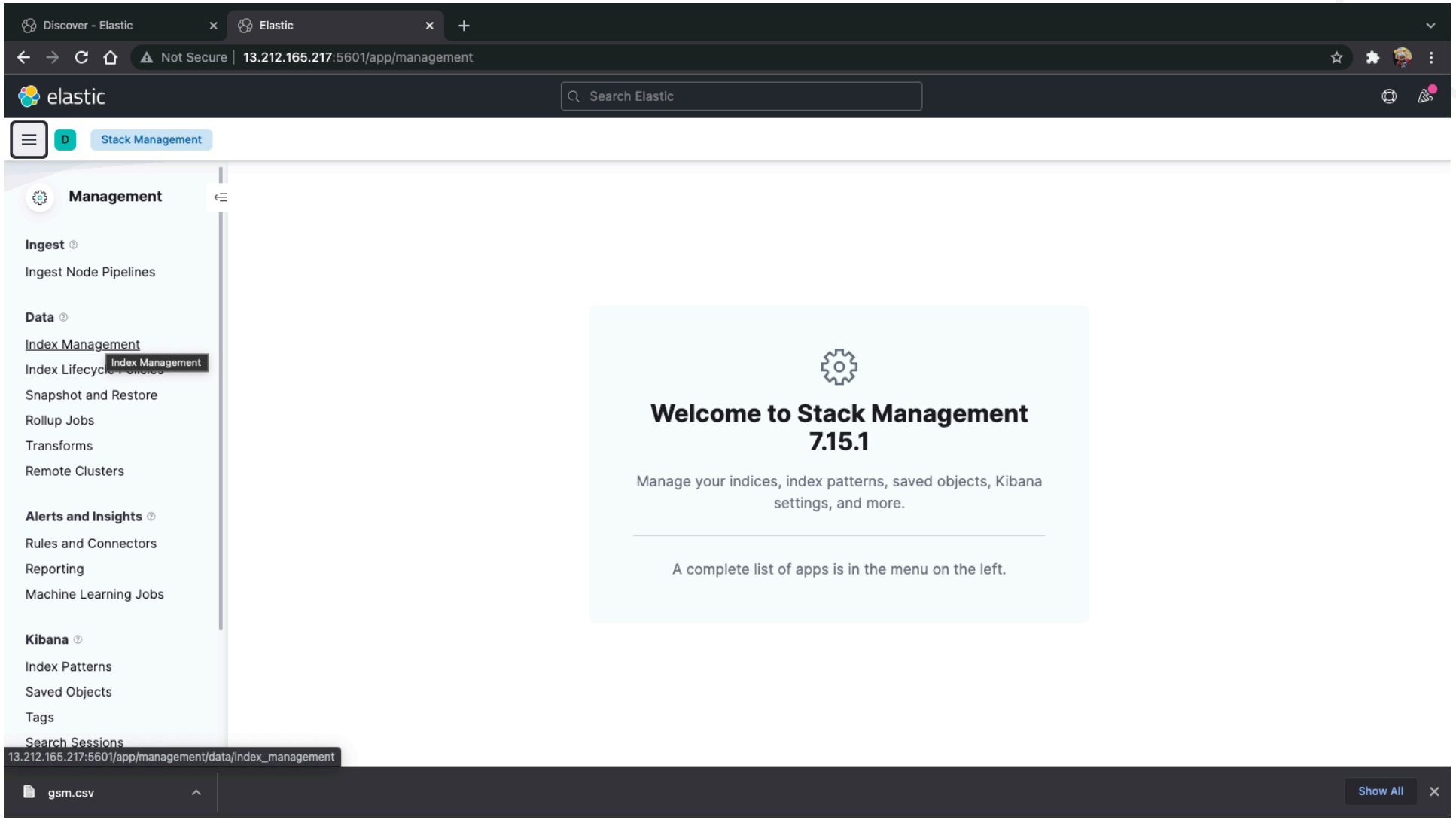
Kibana - Index Pattern



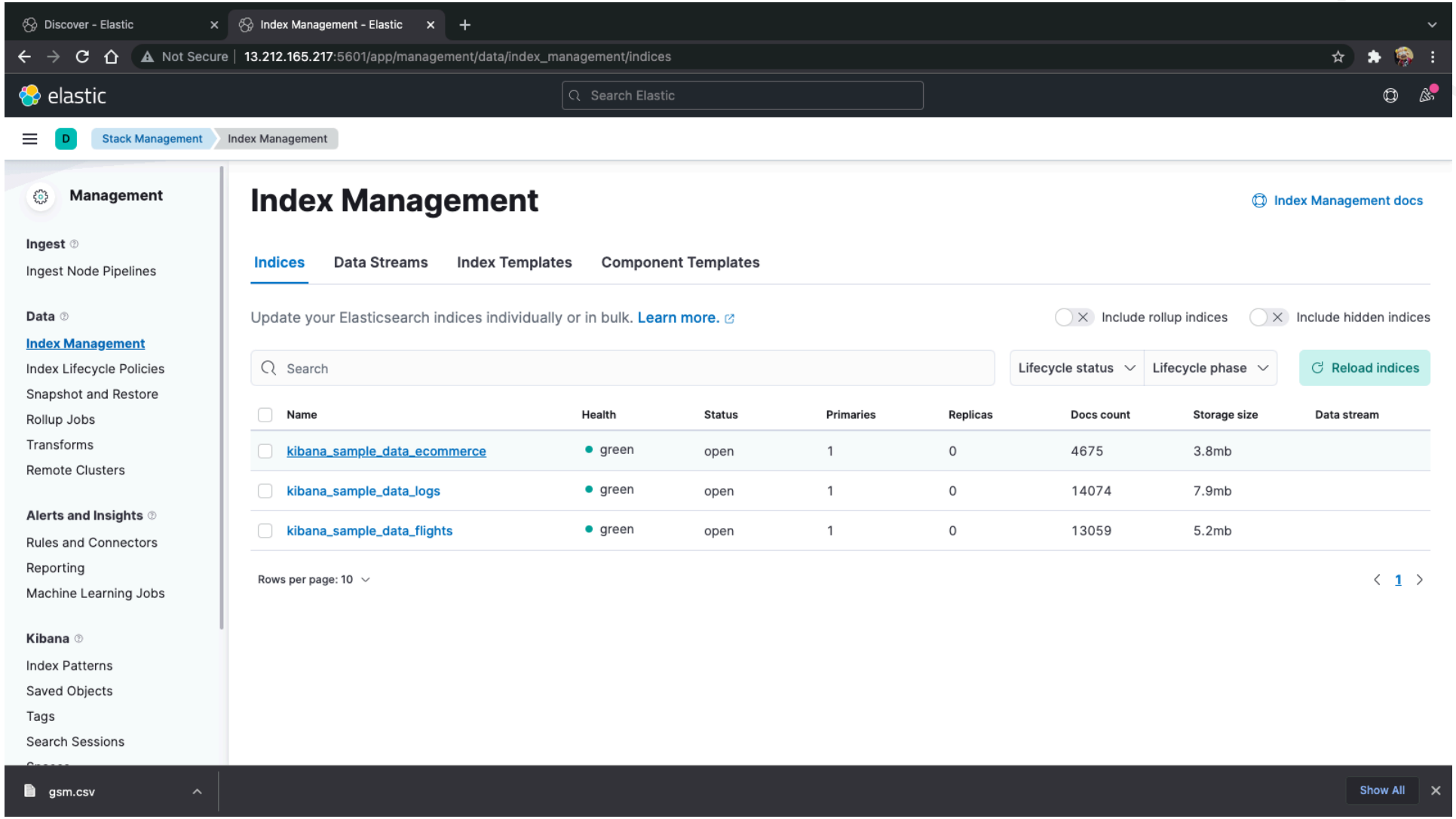
Kibana - Menu Management -> Stack Management



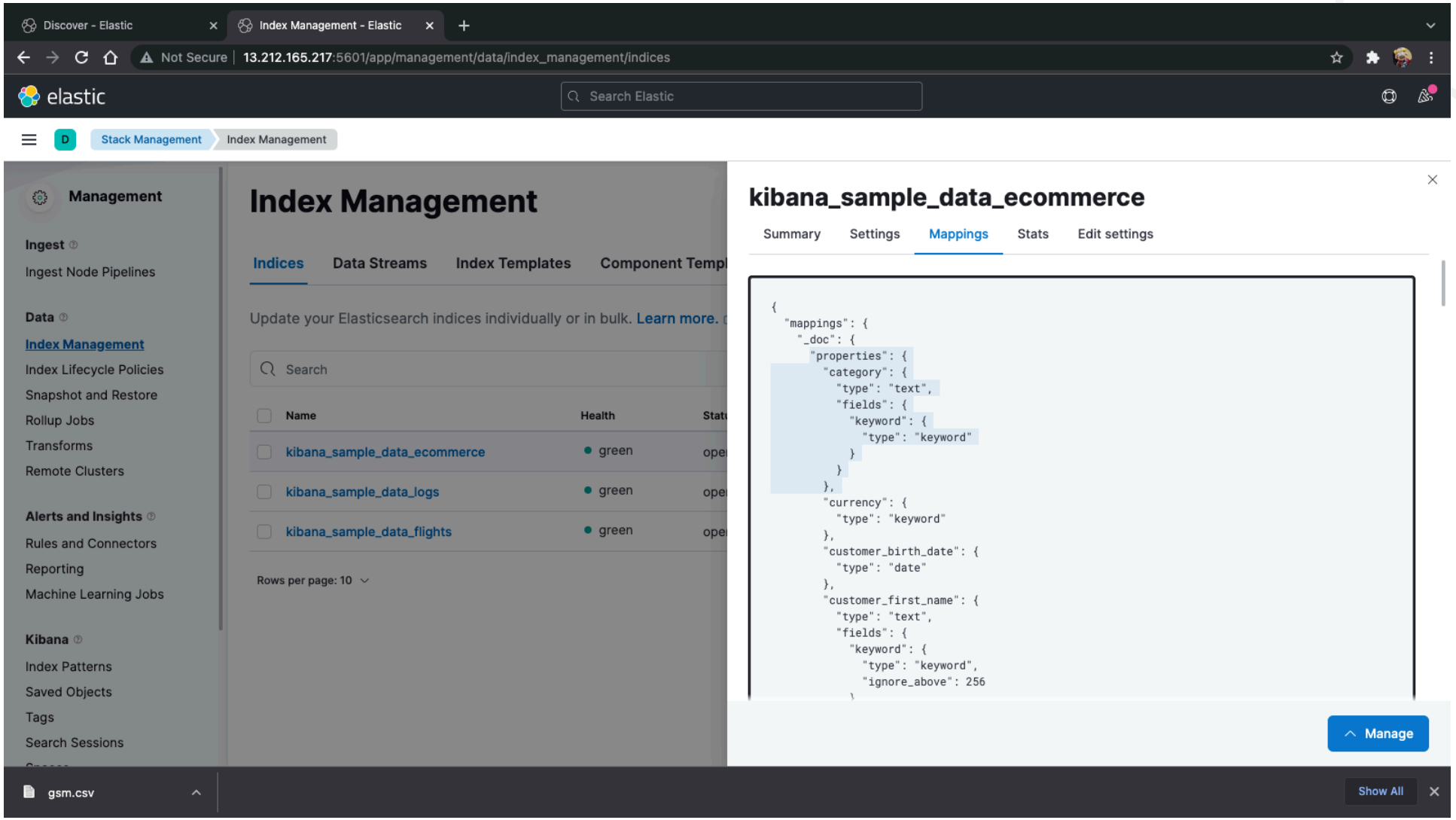
Kibana - Stack Management



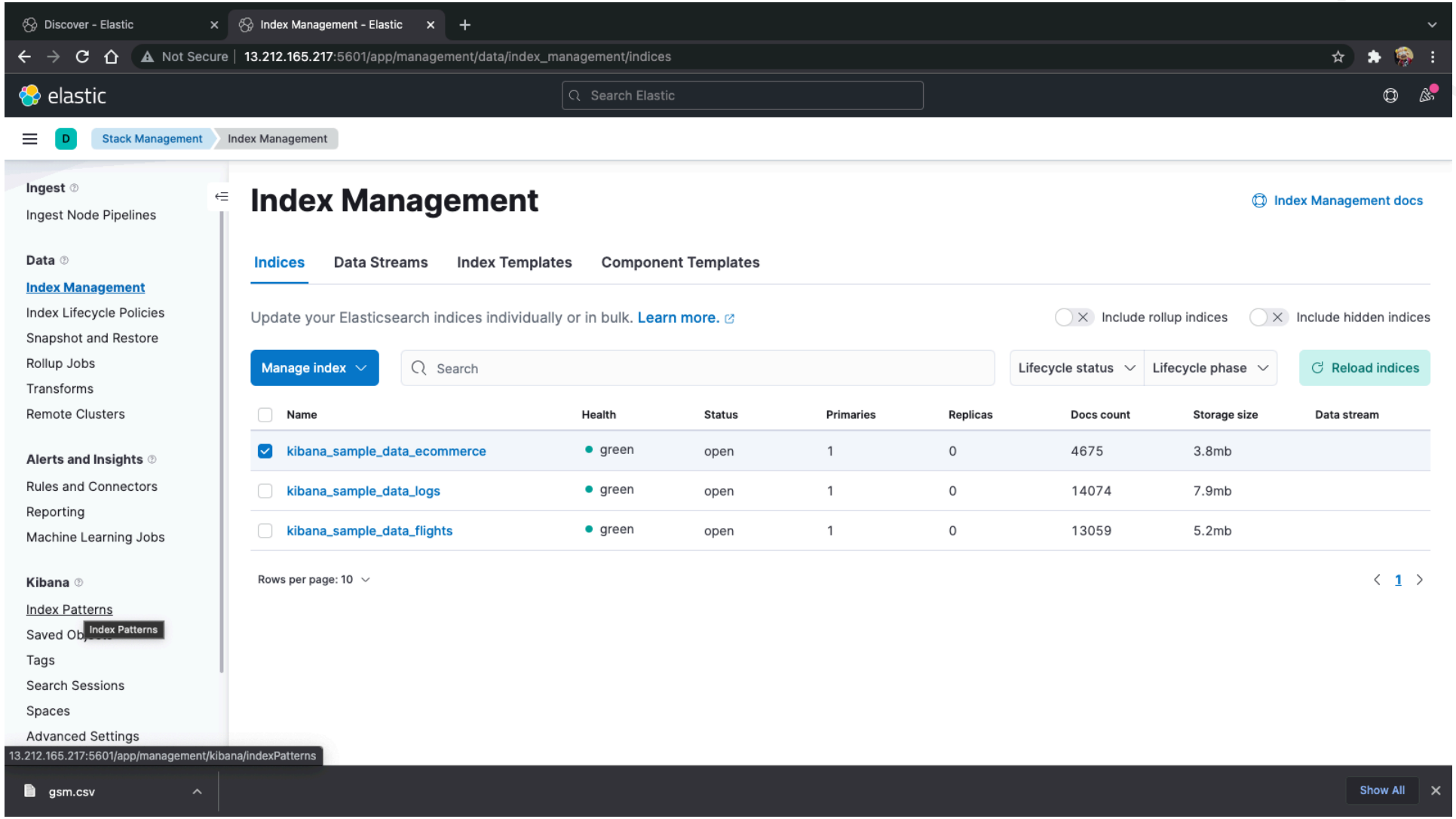
Kibana - Index Management



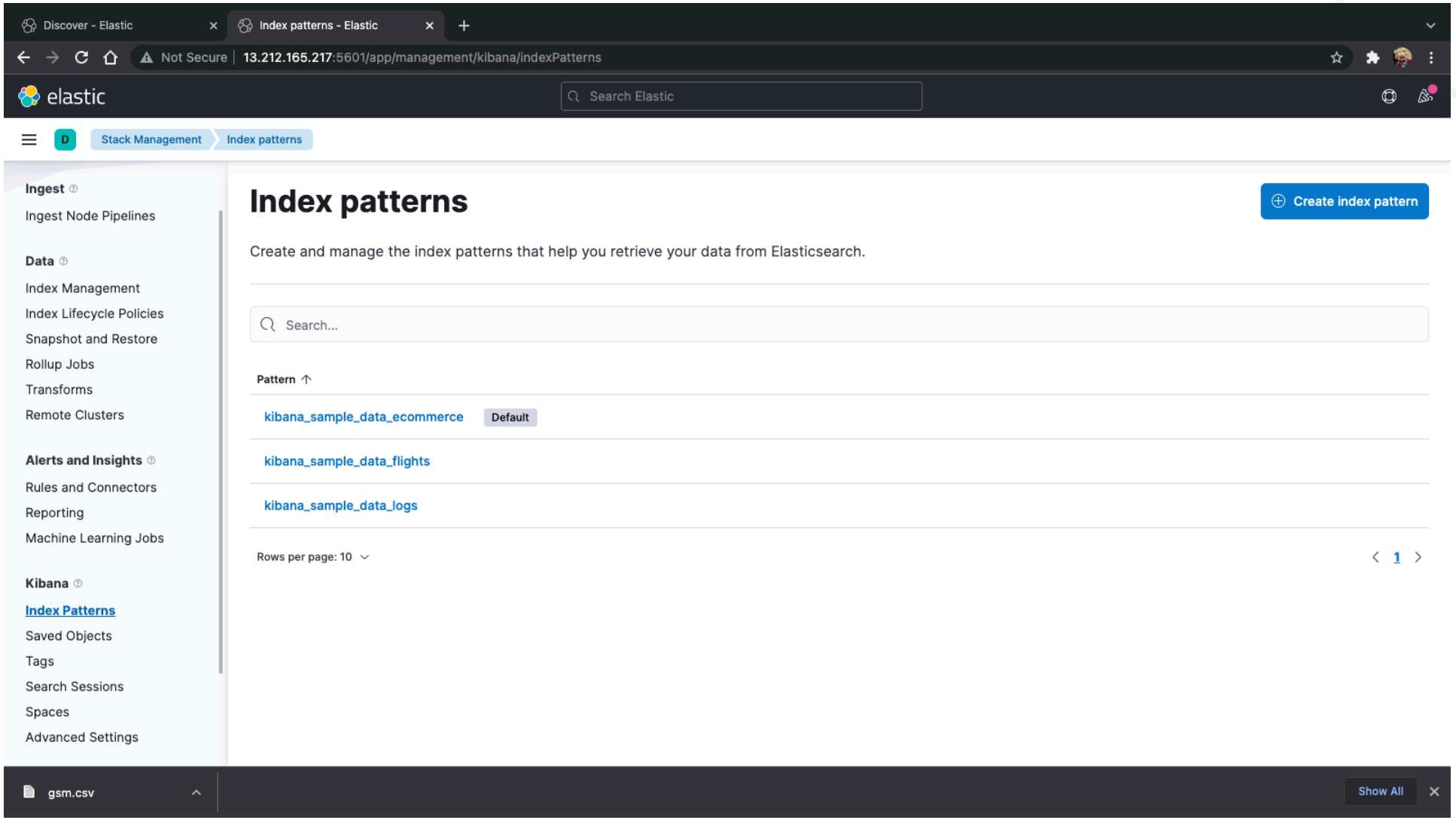
Kibana - Index Management



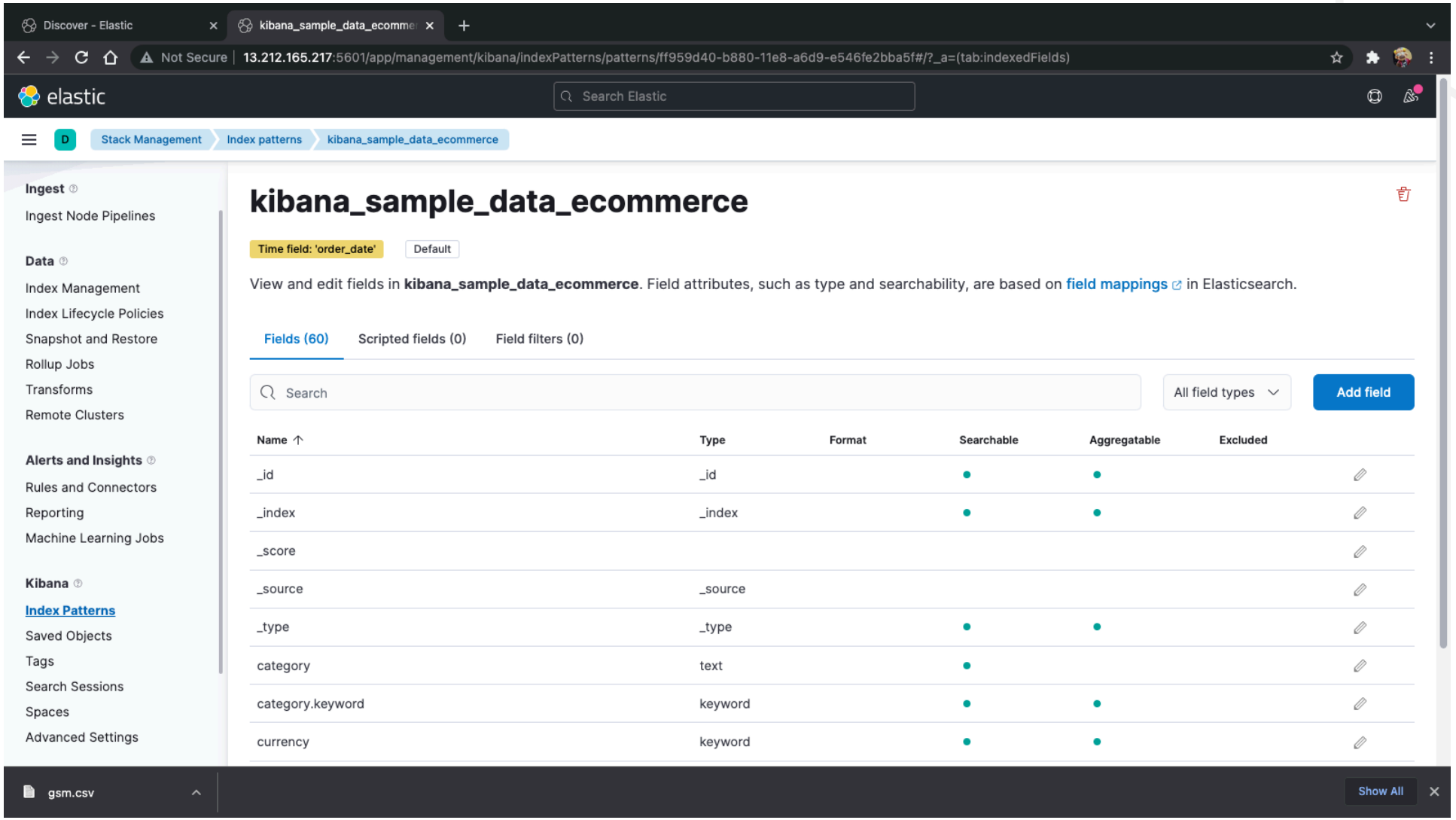
Kibana - Index Pattern



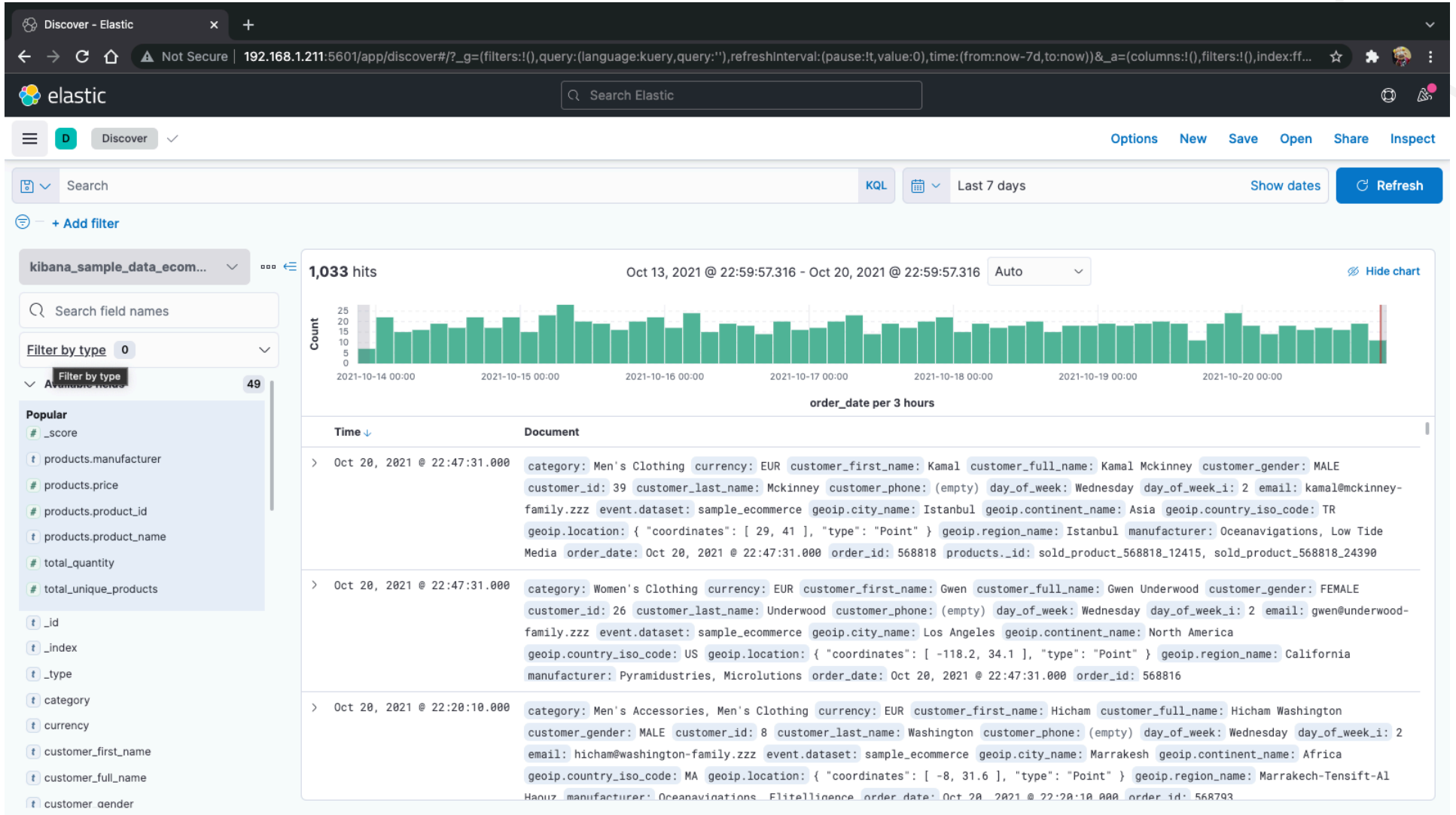
Kibana - Index Pattern



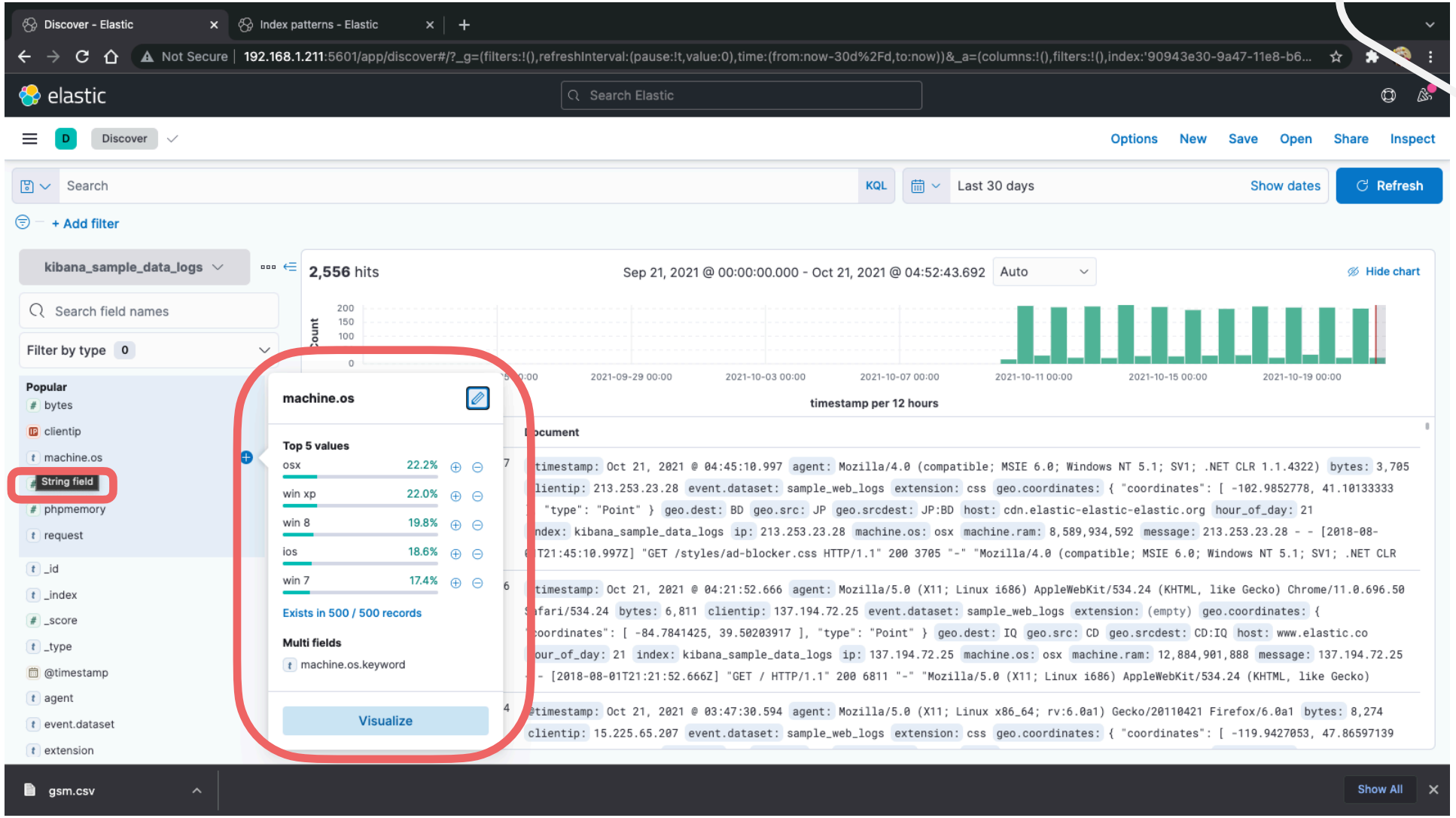
Kibana - Index Pattern



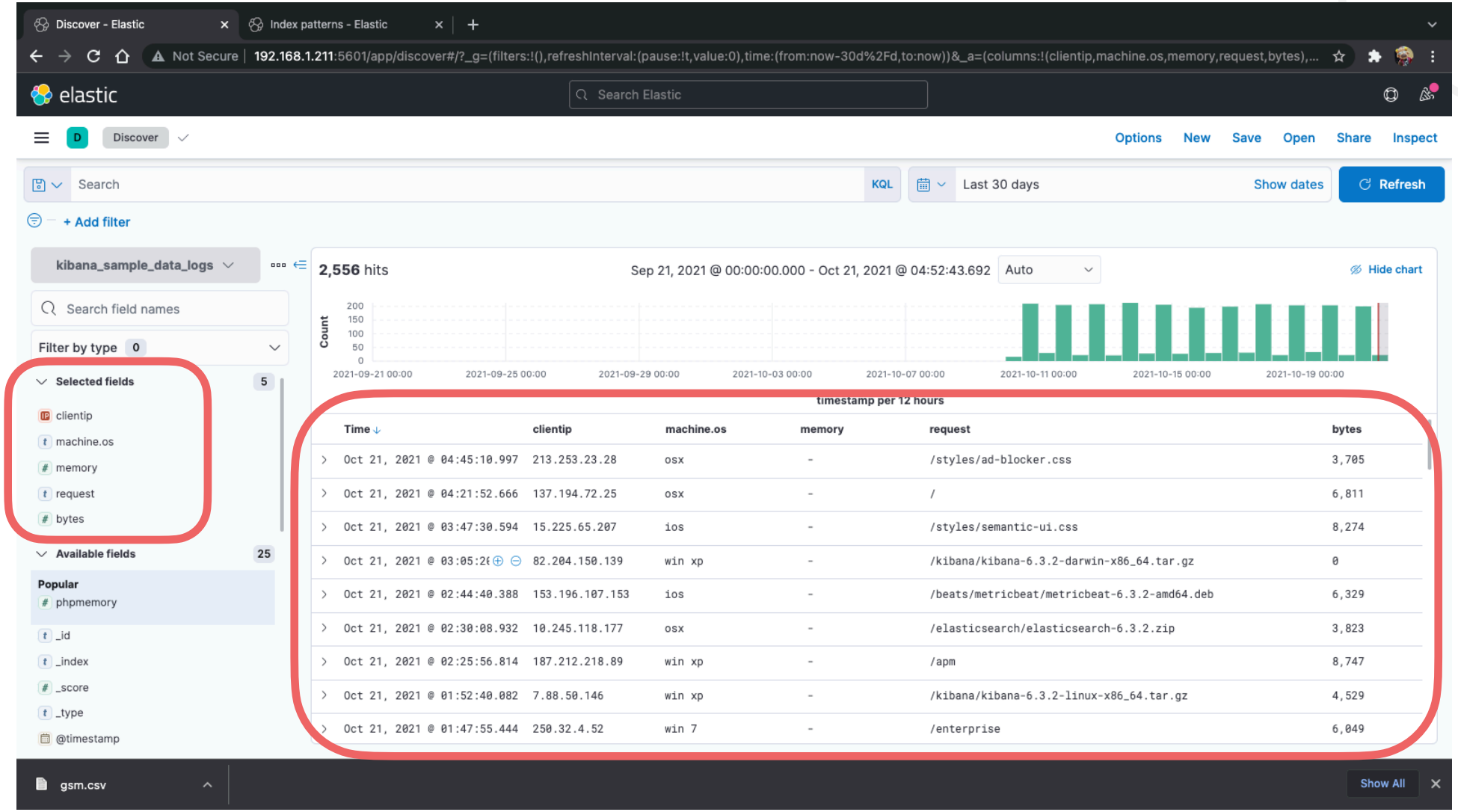
Kibana Analytics - Discover



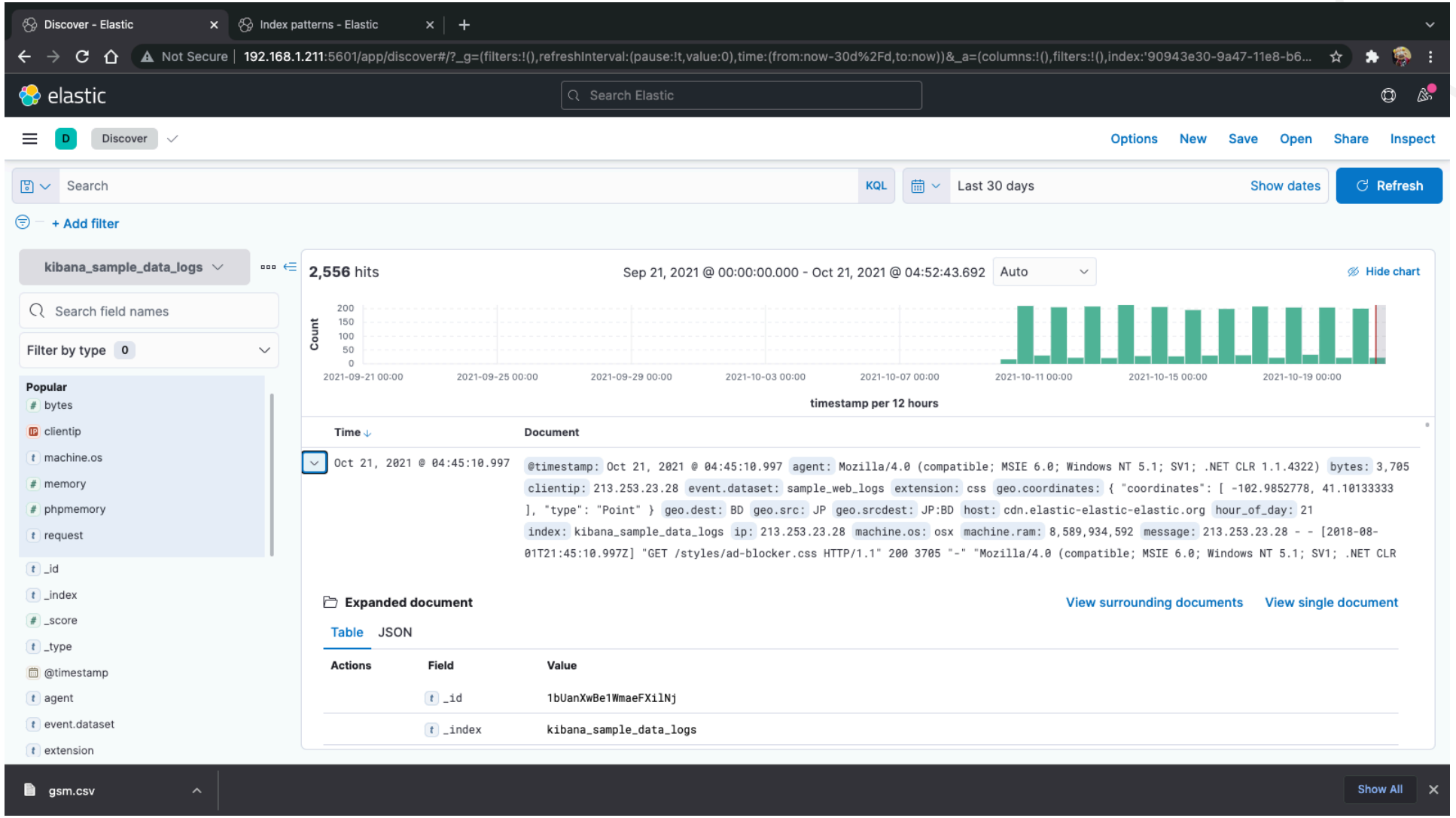
Kibana Analytics - Top X Values



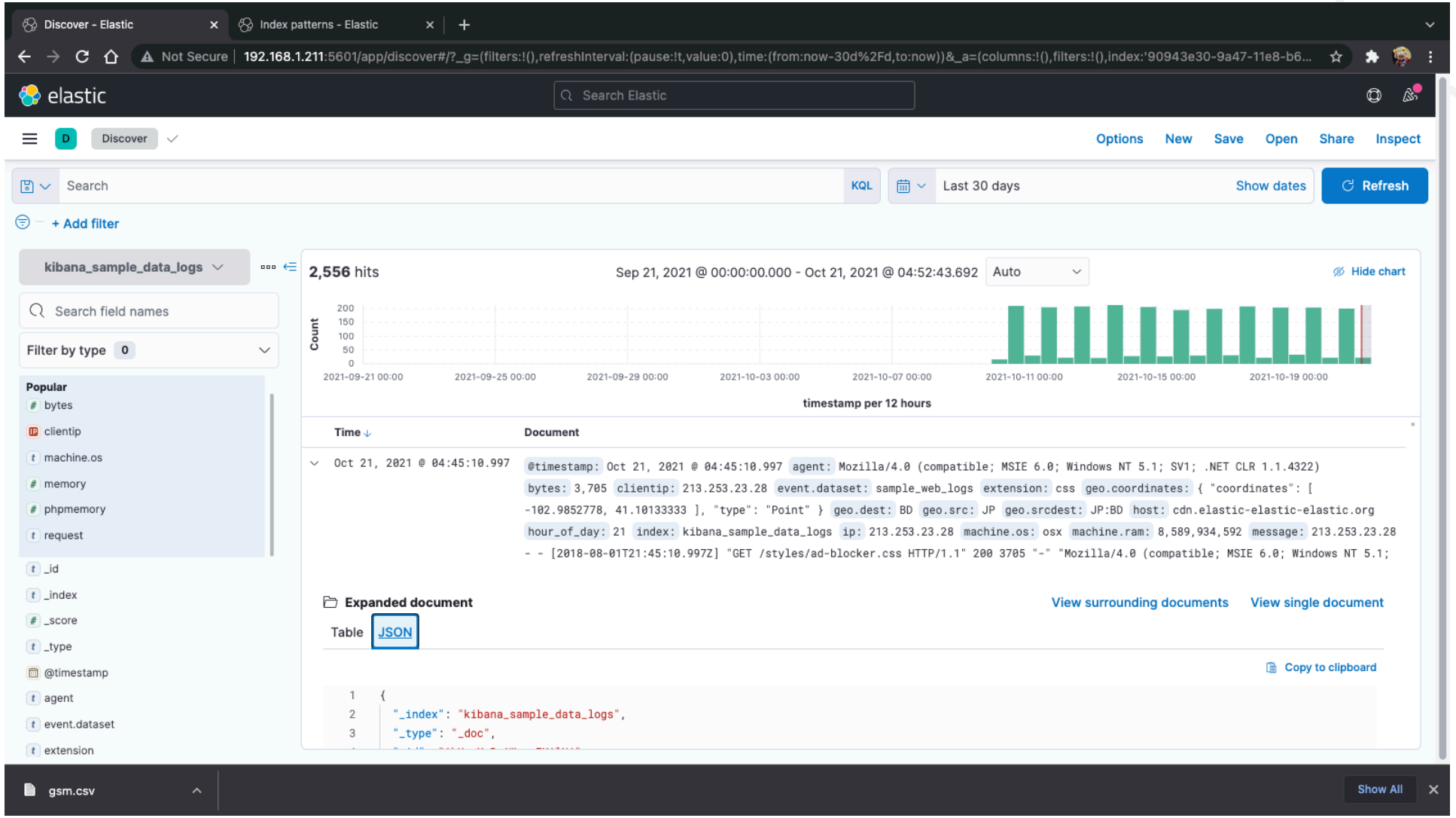
Kibana Analytics - Selected fields



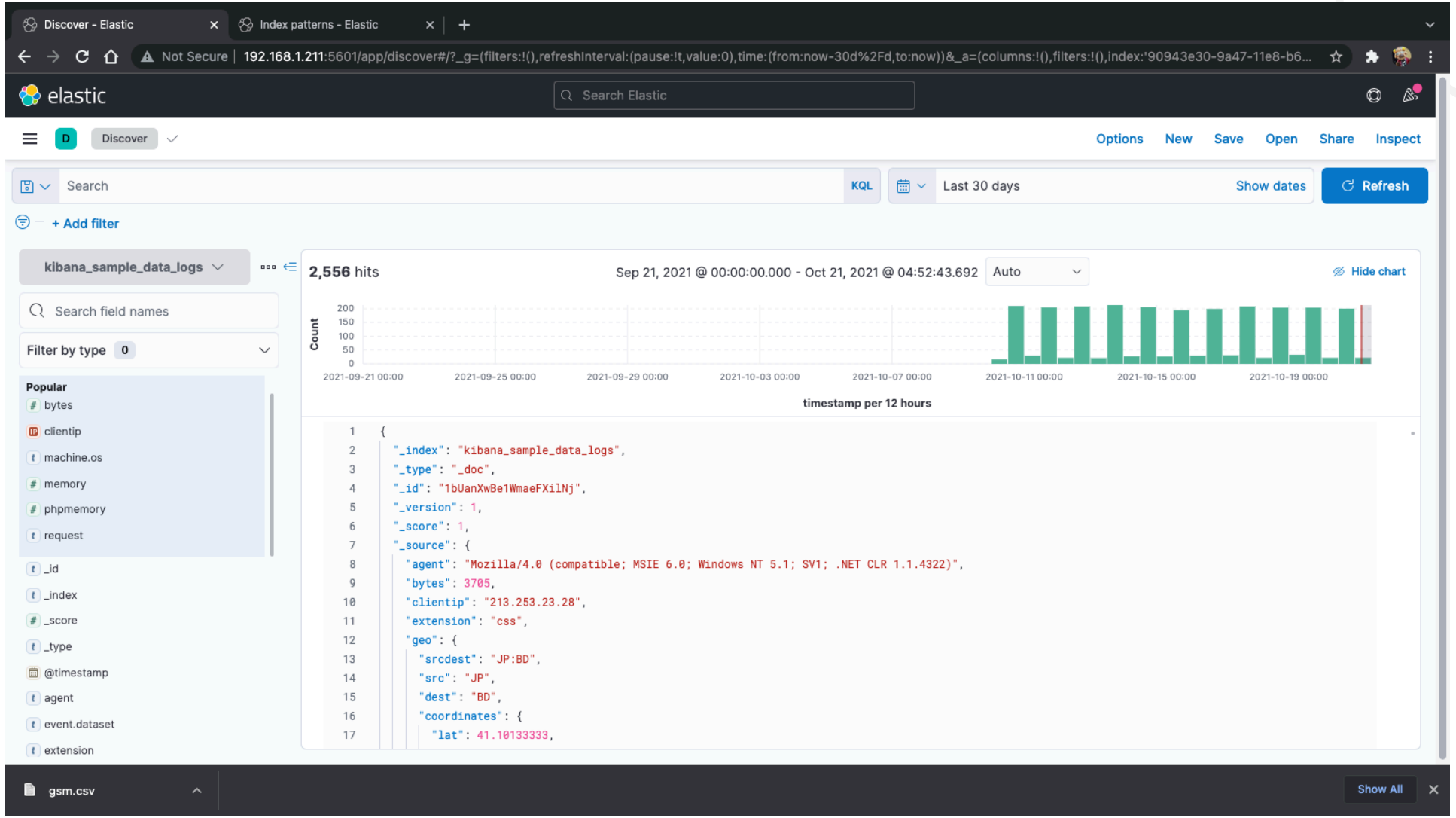
Kibana Analytics - Document Details



Kibana Analytics - Document Details - JSON



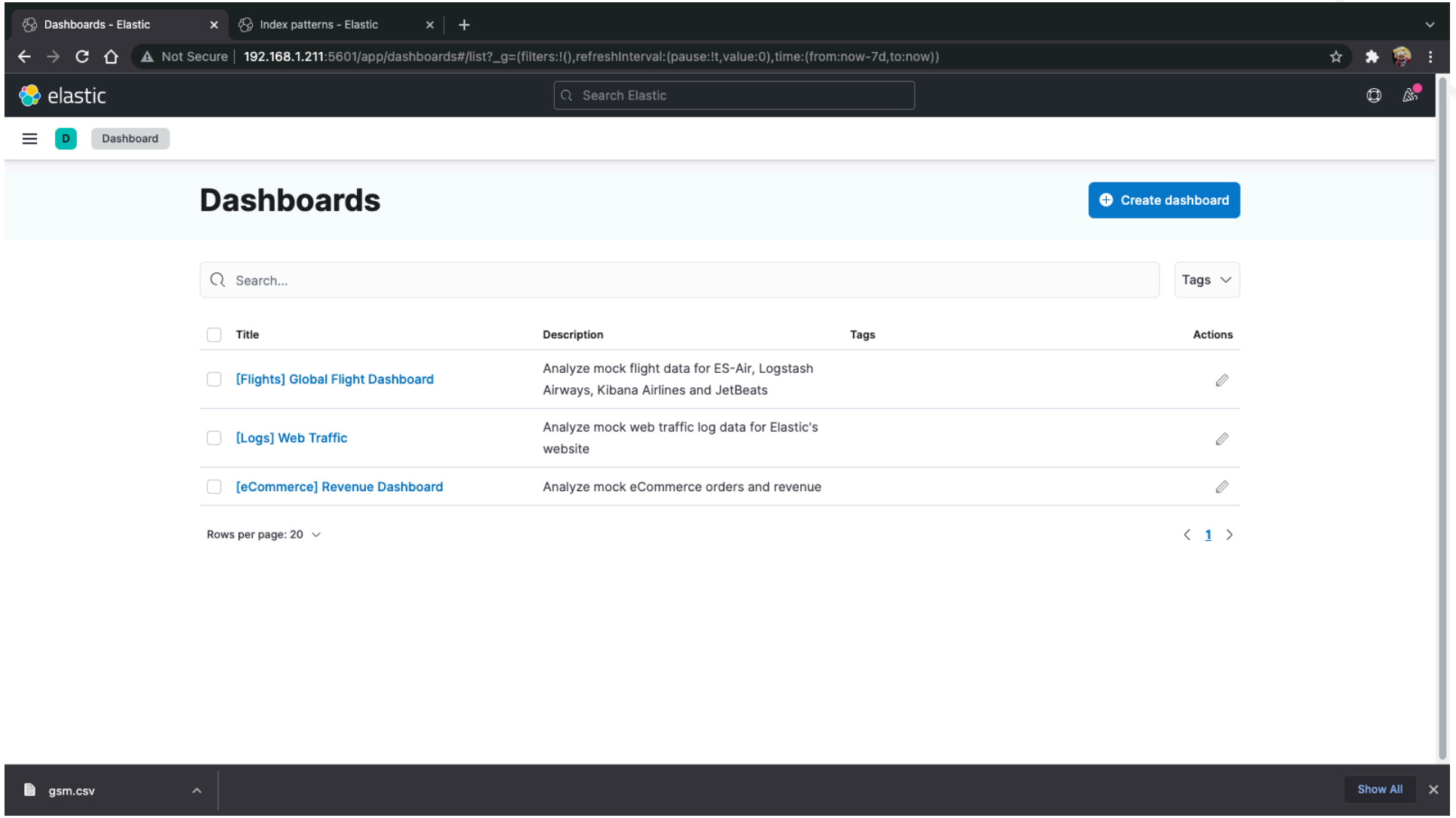
Kibana Analytics - Document Details - JSON



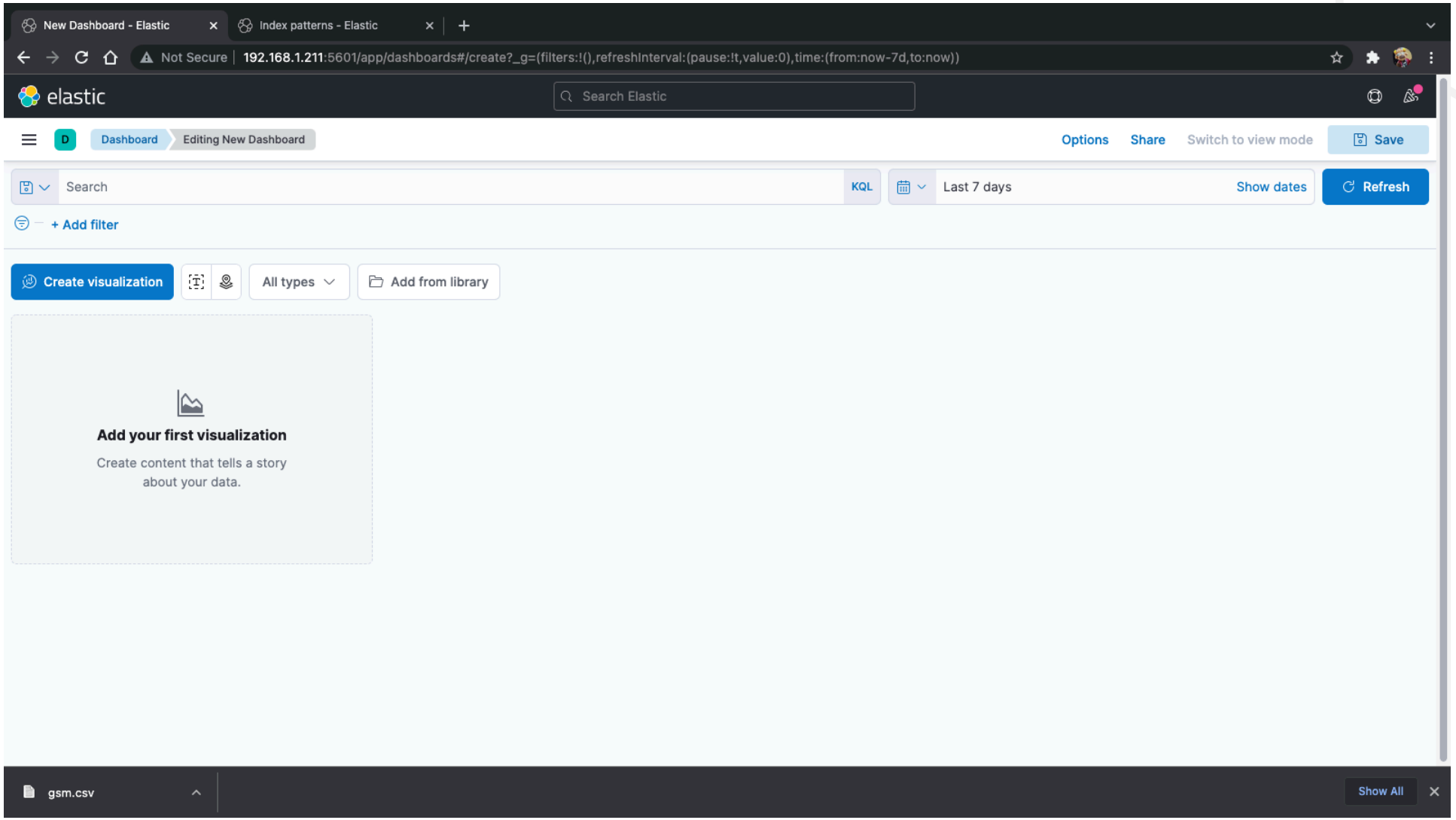
Simple Dashboard

Visualized in The First Step

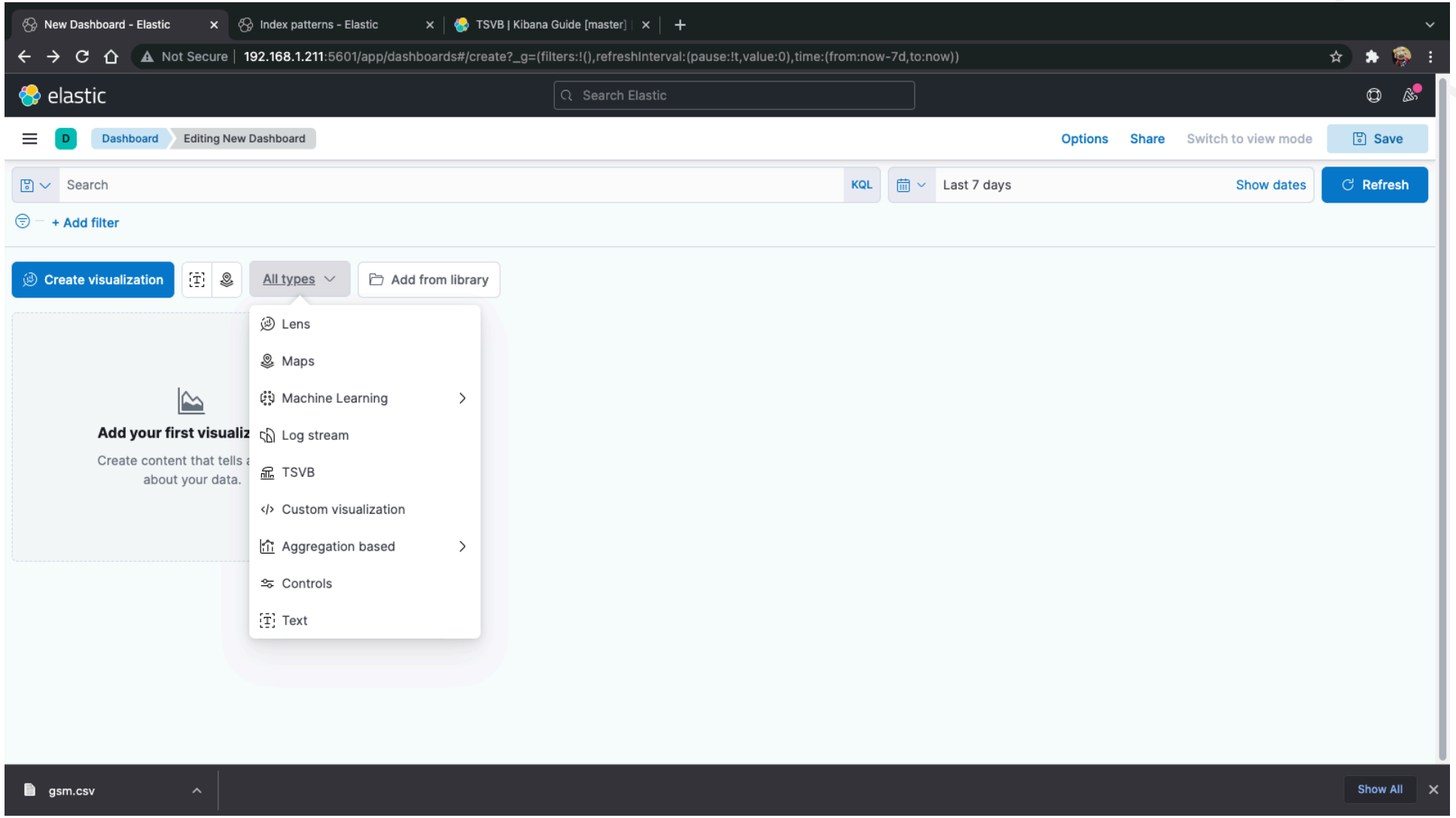
Kibana : Create Dashboard



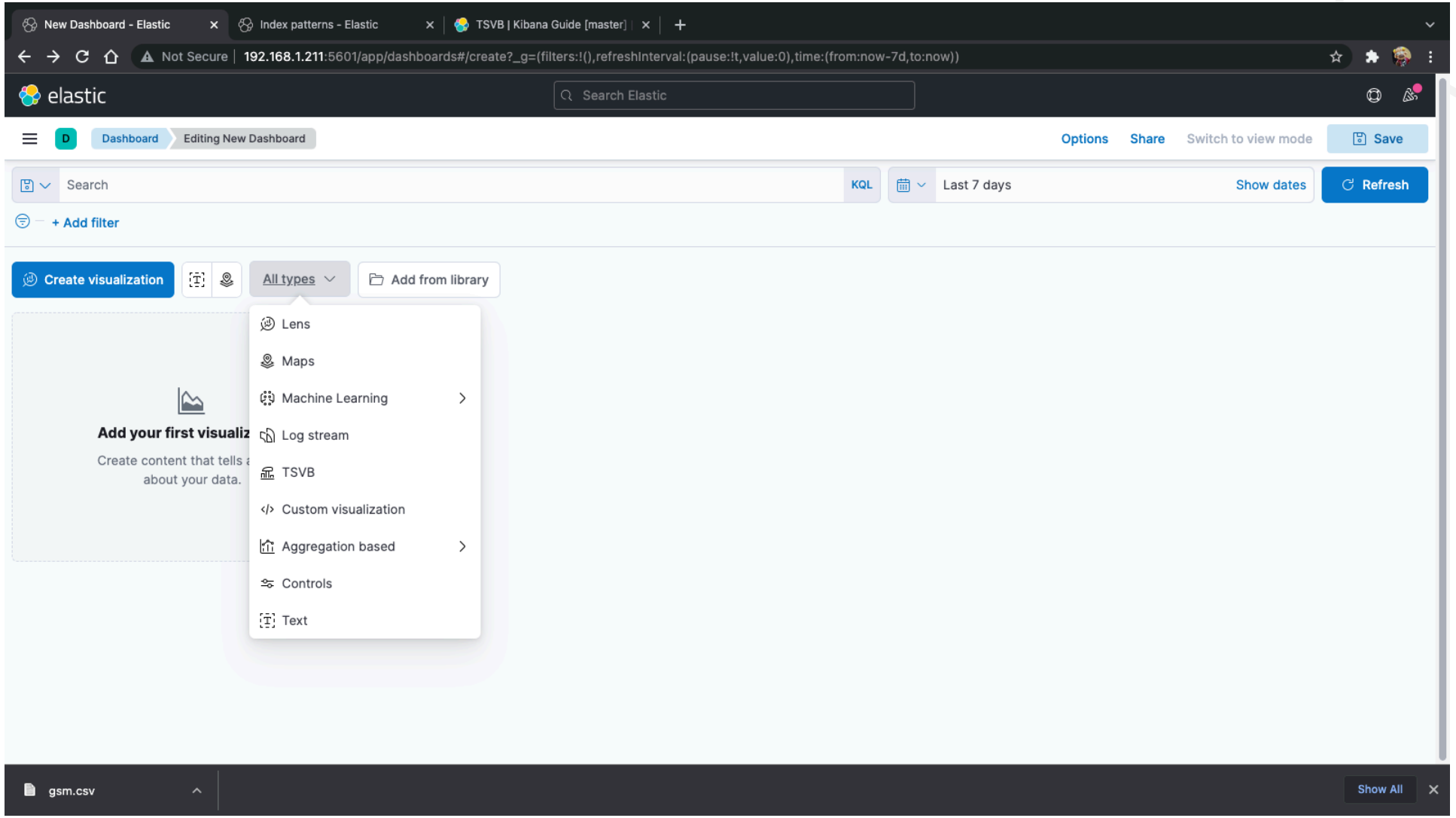
Kibana : Create Dashboard



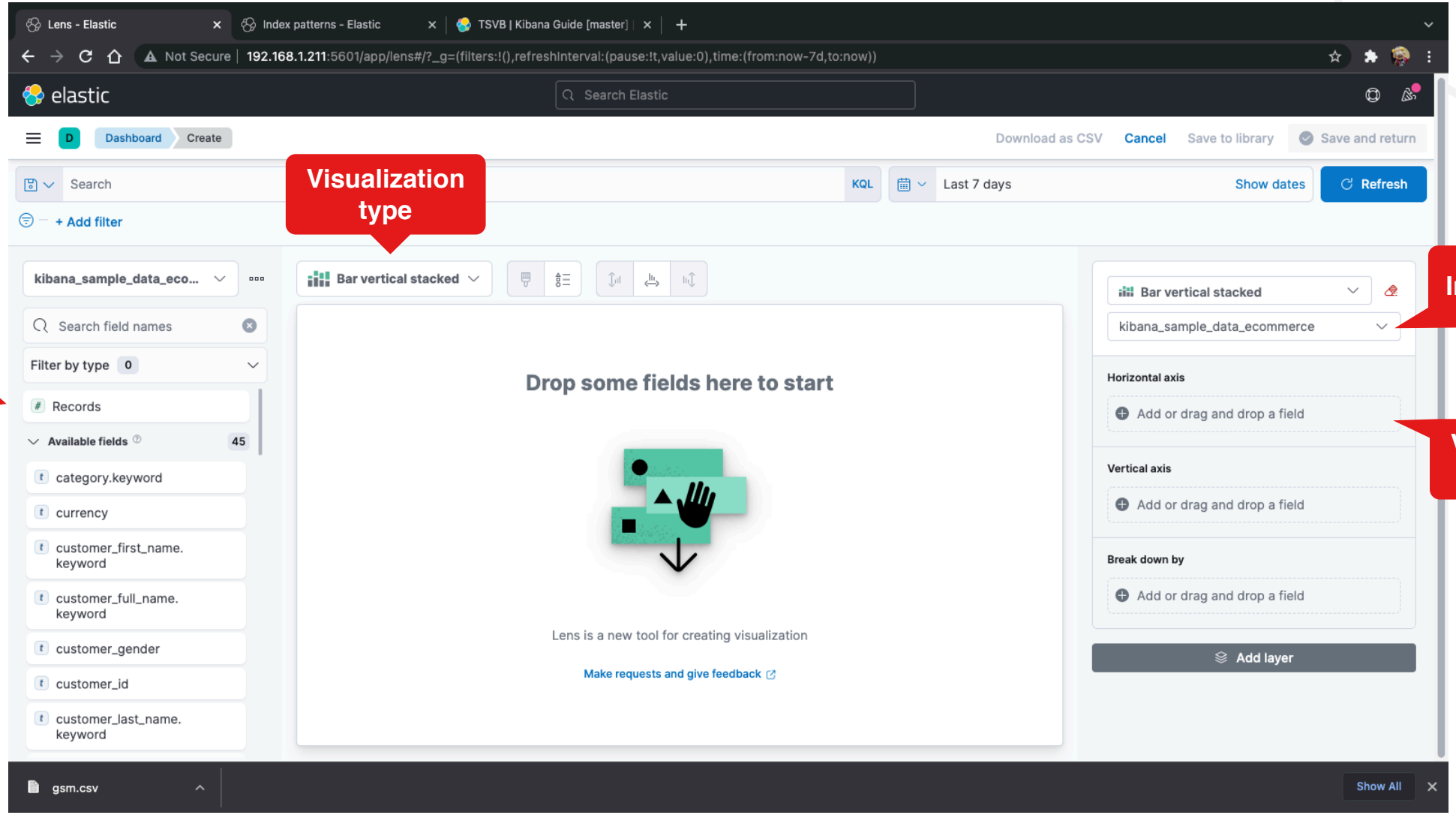
Kibana : Create Visualization



Kibana : Create Visualization



Kibana : Len



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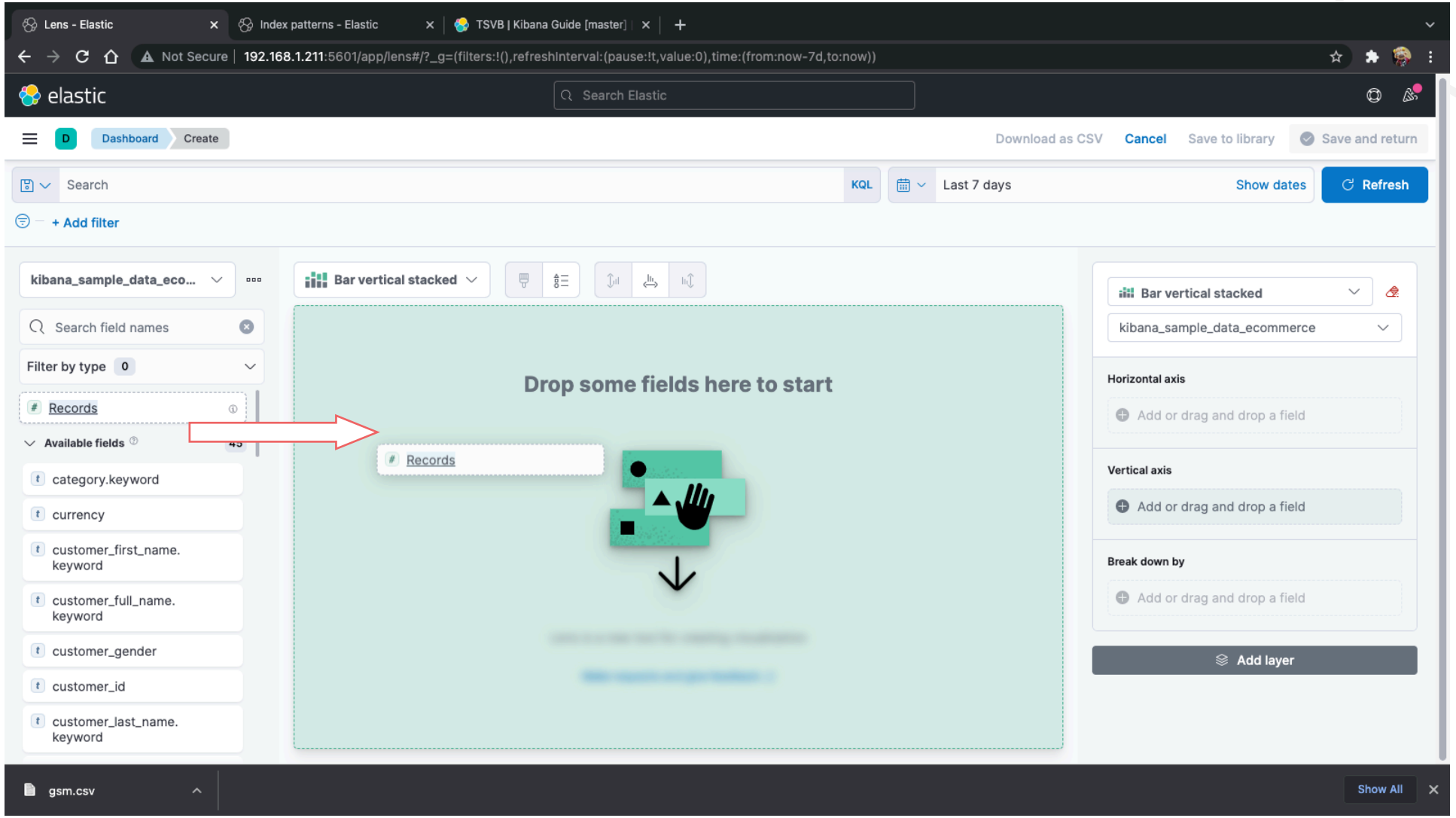
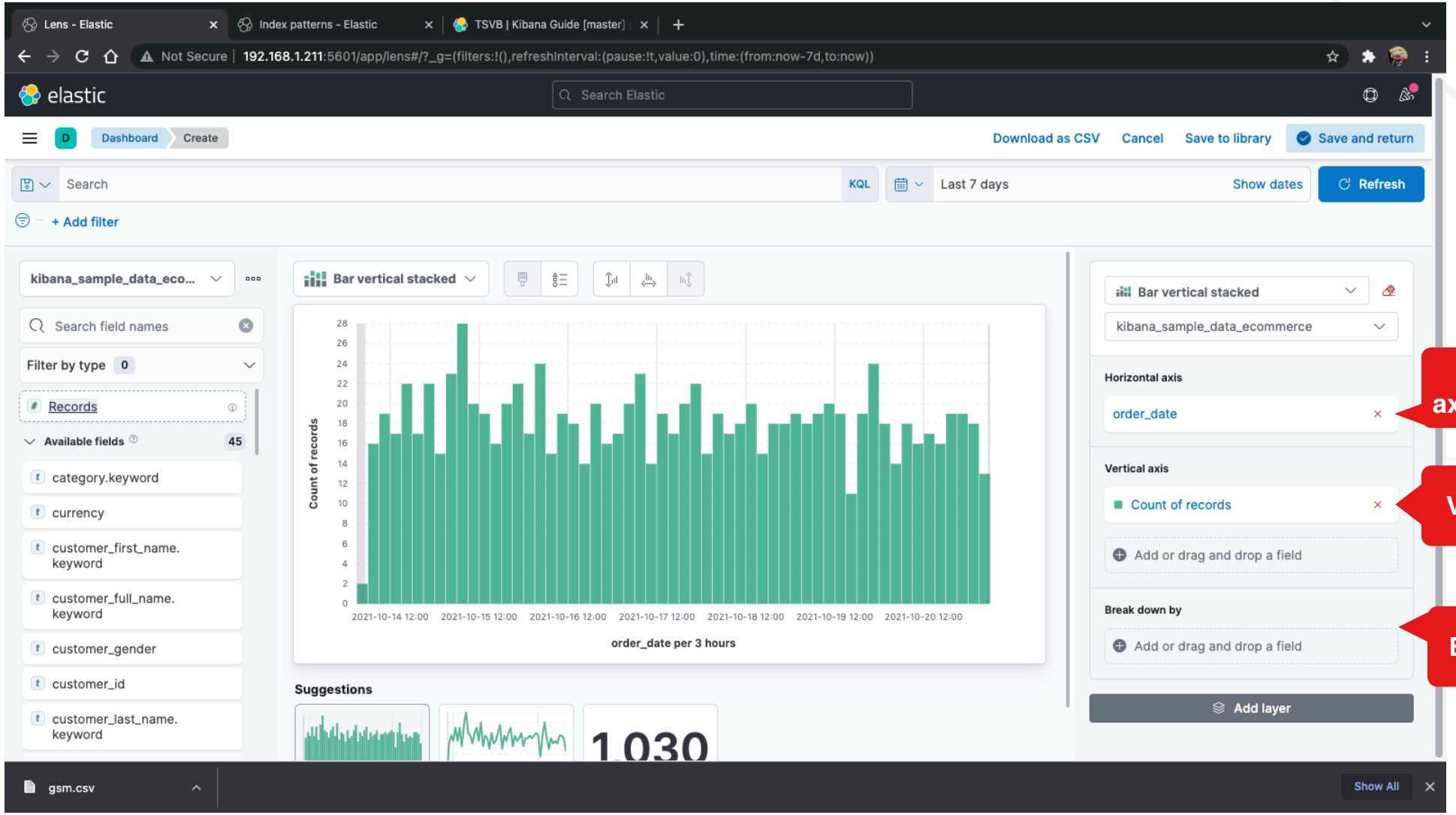
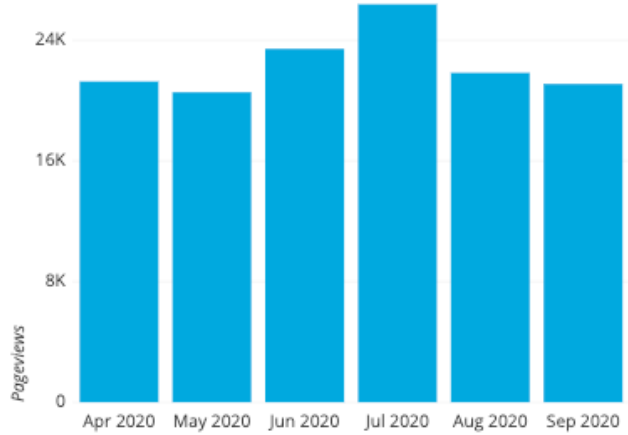
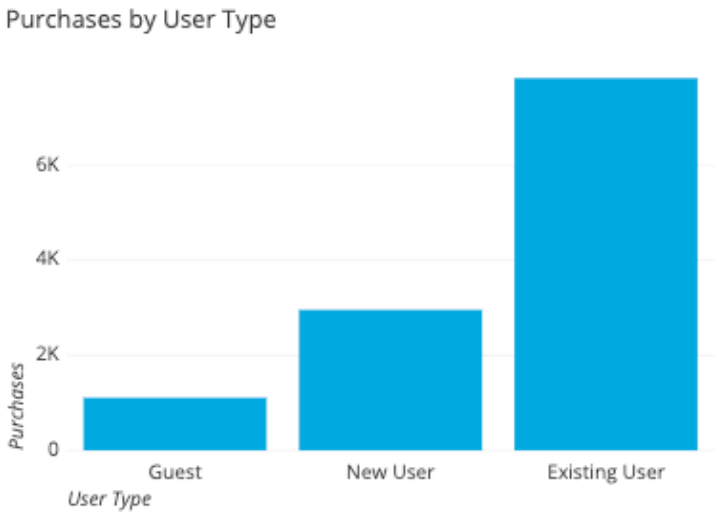


Kibana : Len



Kibana : Bar Chart

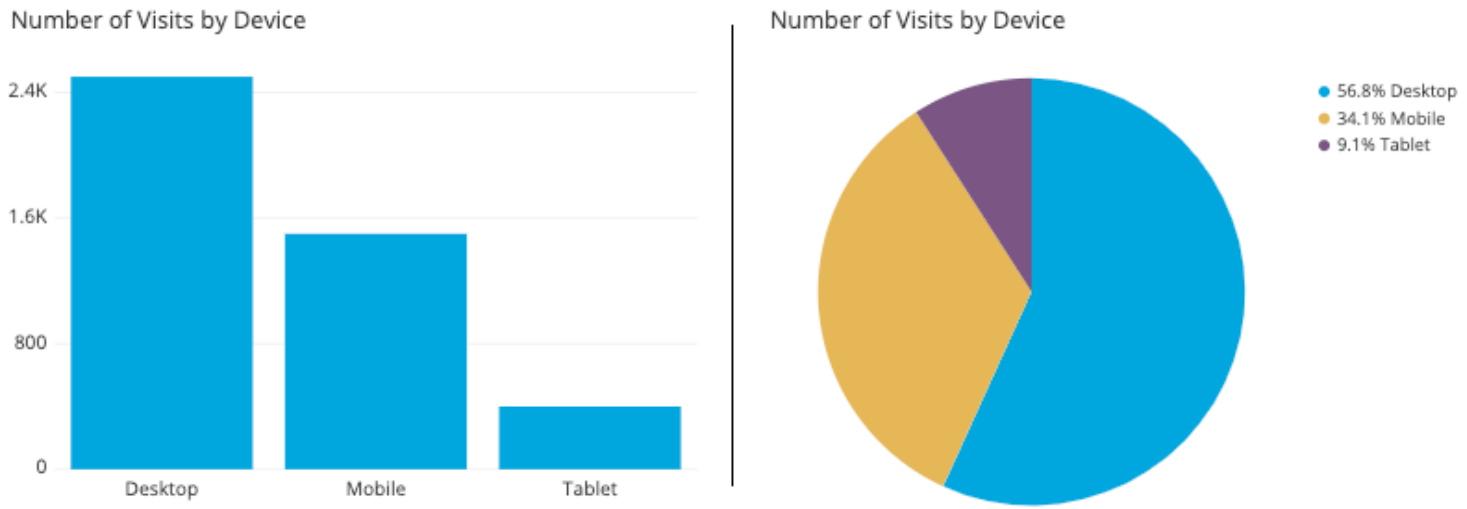




A bar chart is used when you want to show a distribution of data points or perform a comparison of metric values across different subgroups of your data. From a bar chart, we can see which groups are highest or most common, and how other groups compare against the others. Since this is a fairly common task, bar charts are a fairly ubiquitous chart type.

https://chartio.com/learn/charts/bar-chart-complete-guide/

Kibana : Pie Chart



A pie chart shows how a total amount is divided between levels of a categorical variable as a circle divided into radial slices. Each categorical value corresponds with a single slice of the circle, and the size of each slice (both in area and arc length) indicates what proportion of the whole each category level takes.

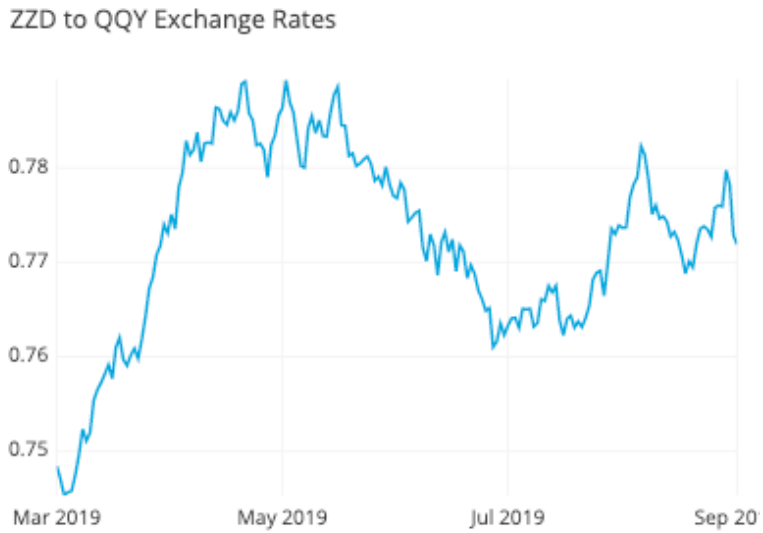
https://chartio.com/learn/charts/pie-chart-complete-guide/

Kibana : Stacked Bar Chart

The stacked bar chart (aka stacked bar graph) extends the standard bar chart from looking at numeric values across one categorical variable to two. Each bar in a standard bar chart is divided into a number of sub-bars stacked end to end, each one corresponding to a level of the second categorical variable.

https://chartio.com/learn/charts/stacked-bar-chart-complete-guide/

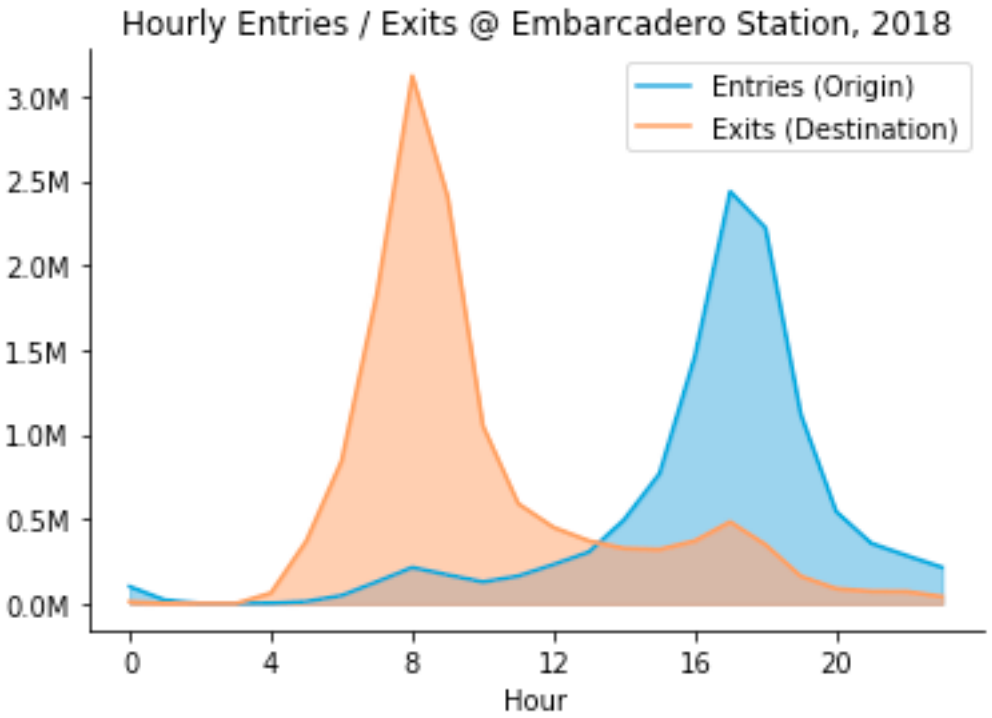
Kibana : Line Chart



A line chart (aka line plot, line graph) uses points connected by line segments from left to right to demonstrate changes in value. The horizontal axis depicts a continuous progression, often that of time, while the vertical axis reports values for a metric of interest across that progression.

https://chartio.com/learn/charts/line-chart-complete-guide/

Kibana : Area Chart



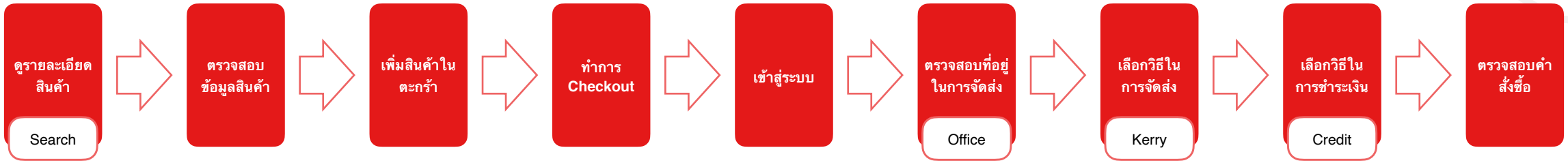
An area chart combines the line chart and bar chart to show how one or more groups' numeric values change over the progression of a second variable, typically that of time. An area chart is distinguished from a line chart by the addition of shading between lines and a baseline, like in a bar chart.

https://chartio.com/learn/charts/area-chart-complete-guide/

Thanks For 1st Day

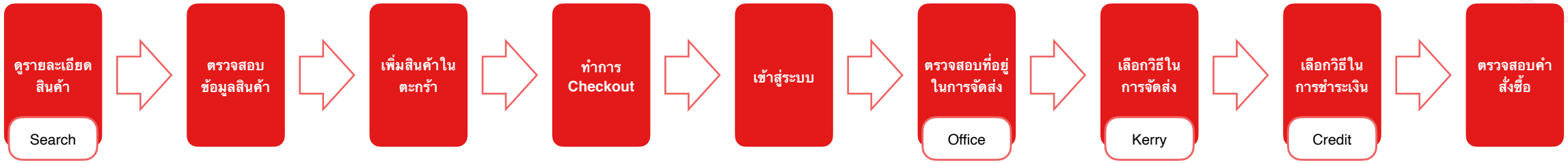
Shopping-Cart : Selected Business Scenario

อยากซื้อสินค้า



Shopping-Cart : Selected Business Scenario

อยากซื้อสินค้า



Shopping-Cart : Selected Business Scenario

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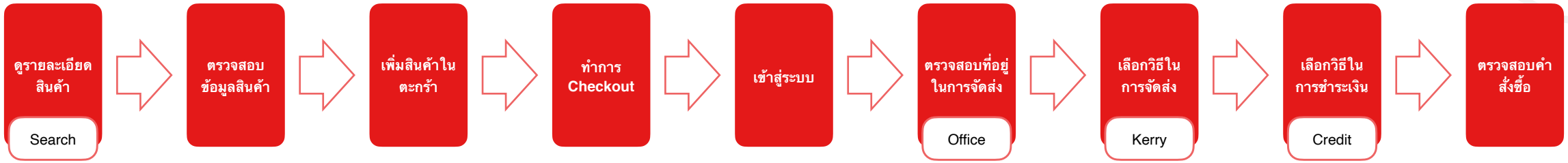

Shopping-Cart : Selected Business Scenario

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