



www.clonera.net

Levent Karakaş

Real-time Streaming of Zabbix Metrics to Big Data Platforms

Zabbix Summit 2020

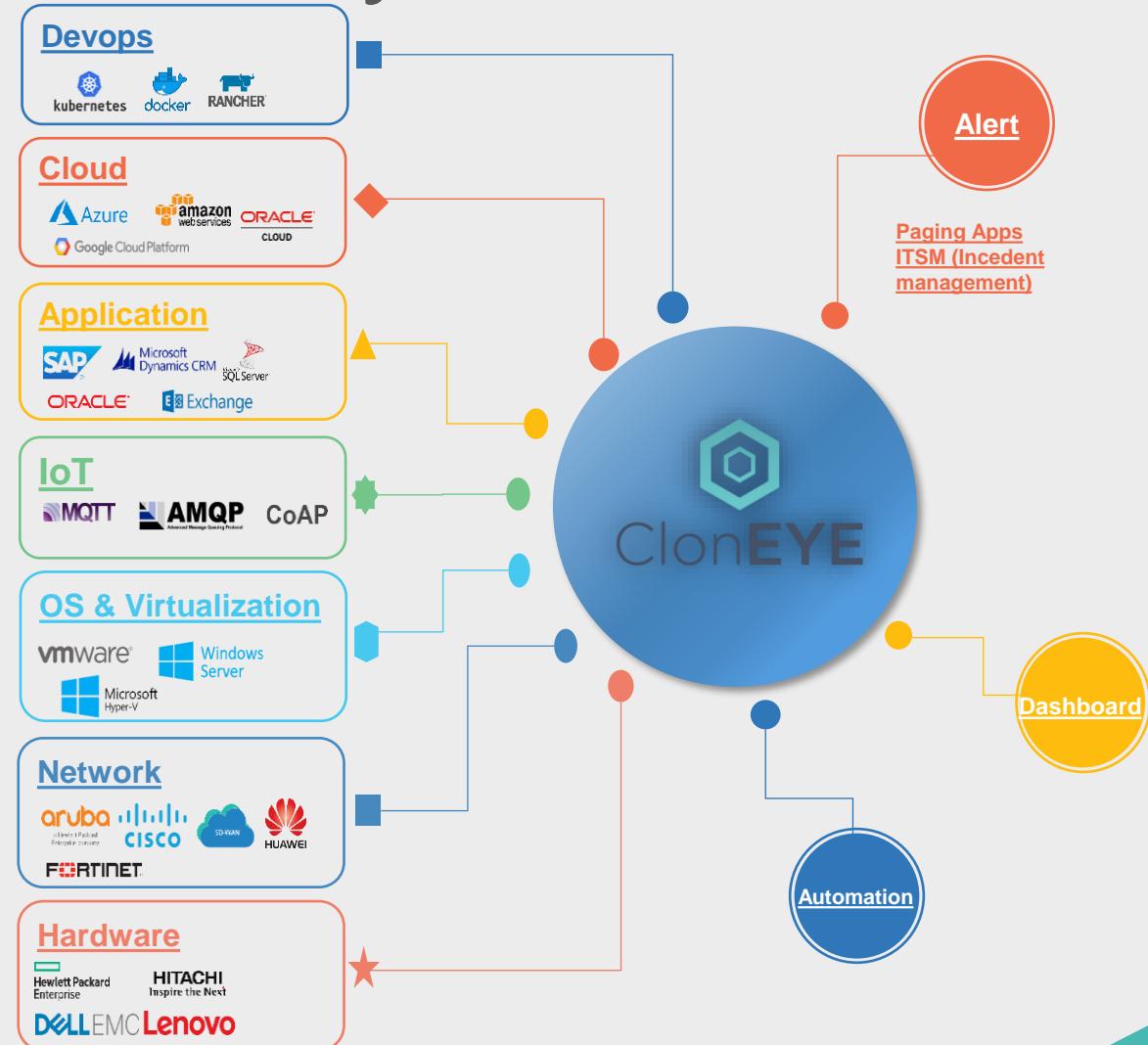
Storing Metrics in RDBMS

- Relational databases are not the ideal solution for storing metrics at scale
- Timescaledb support in Zabbix since version 4.2 is a huge relief (10x performance improvement)
- What if there are terabytes of metric data to manage?

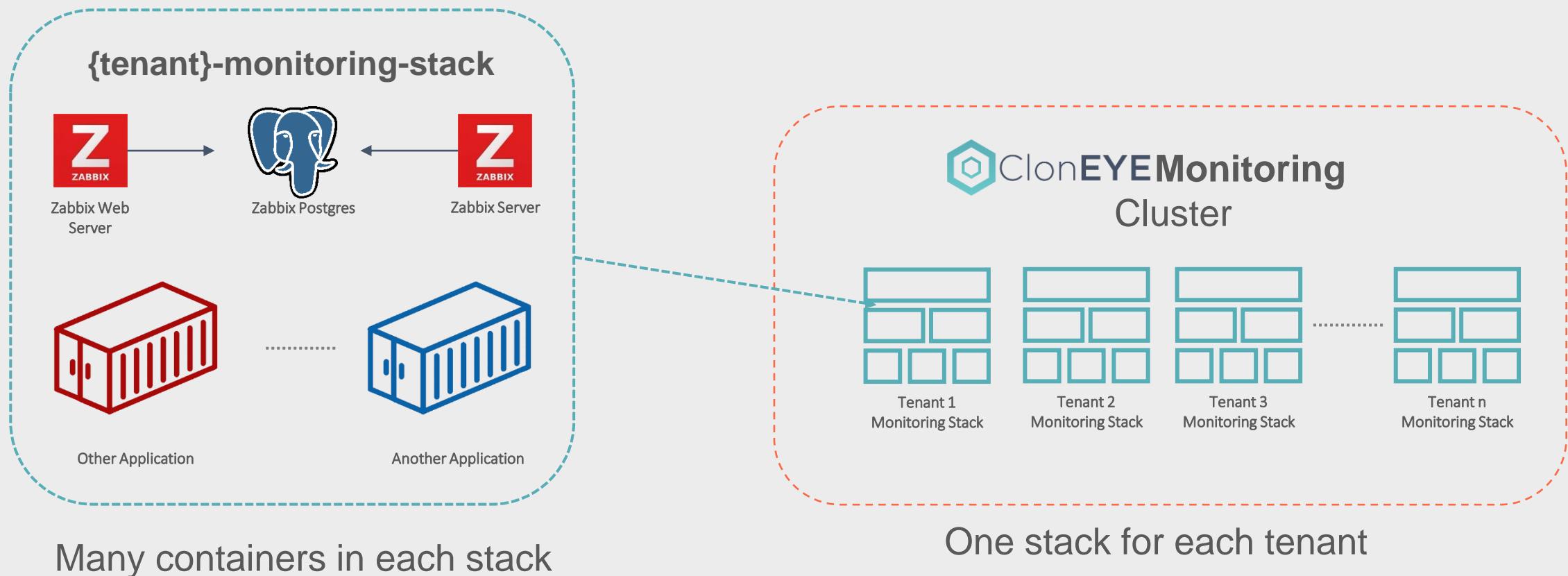


- Best of breed monitoring tools, all integrated
- Zabbix is the main pillar
- Multi tenant
- Single-Sign-On (SSO)
- Everything runs on containers
- CI/CD Orchestration

Who needs to manage terabytes of metric data?



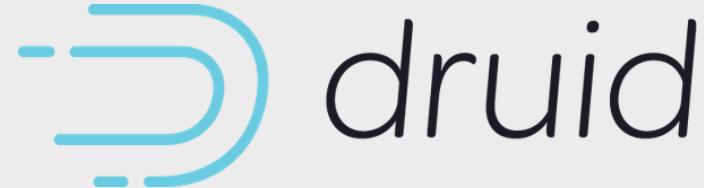
ClonEYE Platform



How to store lots of metrics?



- Cost effective
- Large Datasets
- Replication
- Fault Tolerance
- High Availability
- Scalability
- High throughput



- Cloud Native
- Stream Native
- Batch Ingestion
- Time optimized partitioning
- Horizontal Scalability
- Flexible Schema
- SQL Support

How to import data?

- Batch Ingestion
 - Bulk data import
 - Supports many file formats and file sources
 - Task based
- Streaming
 - Real-time
 - Druid service ingests directly from streams

Zabbix Real-Time Export

- Zabbix supports exporting to file (which can be batch digested)
- File format is JSON (which is supported by Druid ingestion)
- A new file is created when the file reaches to a size (They should be moved, imported, deleted?)

https://www.zabbix.com/documentation/current/manual/appendix/install/real_time_export

Kafka for real-time streaming



- If we can stream zabbix events to kafka, Druid Kafka index service can ingest
- No files to manage!

Zabbix History Kafka Loadable Module



- Found a module in github
- Tested and realized that it is not working
- Tried fixing
- Tried writing a brand new one
- After lots of debugging, realized it is not possible to keep librdkafka state open and reuse for events
- Gave up

Use a REST to kafka middleware



- Kafka REST by Confluent
<https://github.com/confluentinc/kafka-rest>
- Kafka Pixy by Mailgun
<https://github.com/mailgun/kafka-pixy>

Zabbix History Webhook Module

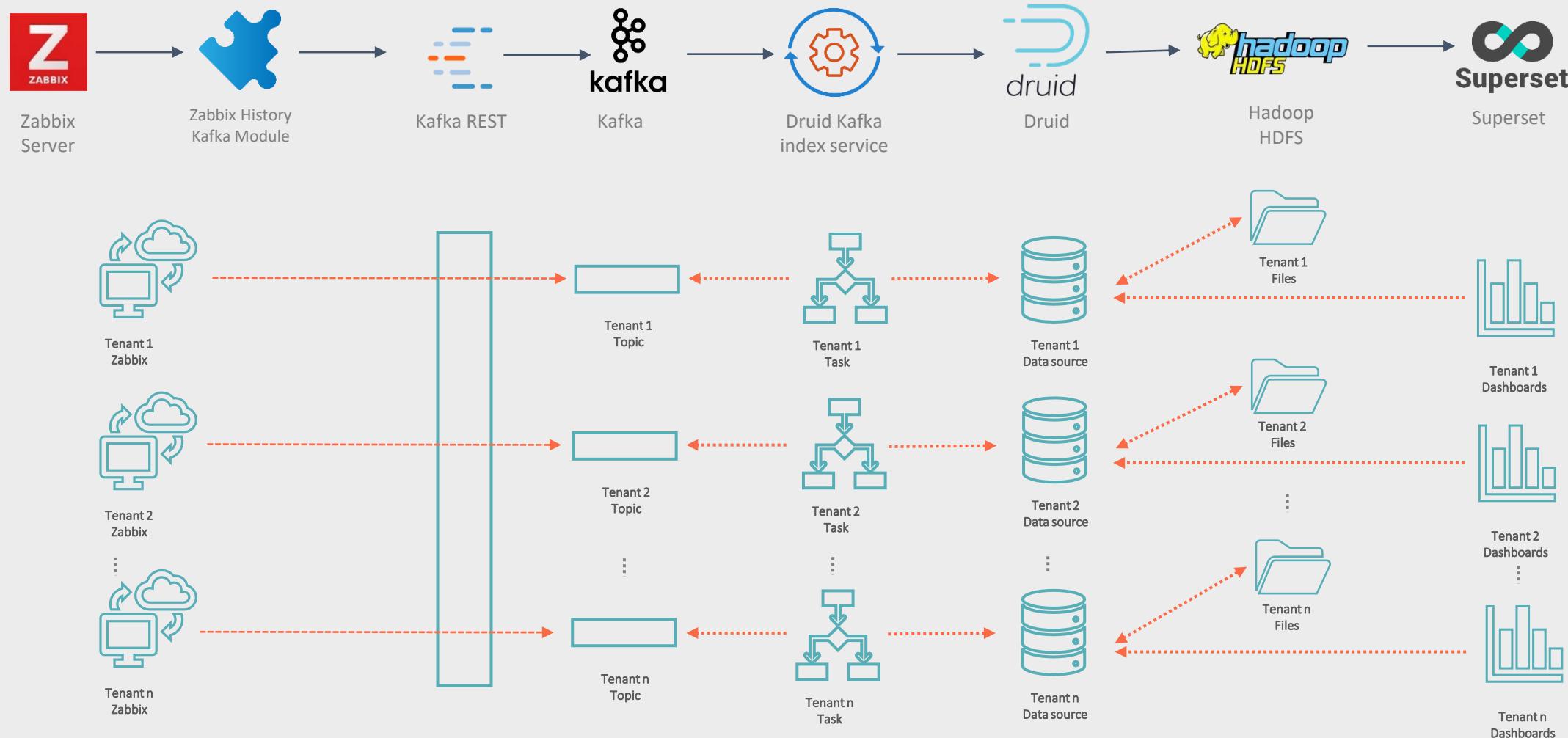
- Formats and writes Zabbix history to a webhook in zabbix real-time export protocol in JSON (one additional tag: item key)
- Full support for float, integer, string, text and log
- Content type can be specified (default: application/json)
- SSL verification errors can be ignored

Zabbix History Webhook Module

- Ability to call webhook per measurement or multiple measurements (bulk mode)
- Possibility to use custom tags while exporting in bulk mode (needed for kafka rest)
- Environment variables supported (for ease of use with containers)
- Can be used to export to any system that accepts web push

<https://github.com/clonera/zabbix-history-webhook>

Final Topology



Configuration #1: Zabbix Server

Environment variables to Zabbix Server Container

ZBX_LOADMODULE = "history_webhook.so"

ZBX_WEBHOOK_URL = "http://\${kafka-rest}:38082/topics/\${tenant}-zabbix"

ZBX_WEBHOOK_CONTENT_TYPE="application/vnd.kafka.json.v2+json"

ZBX_WEBHOOK_ENABLE_TEXT = "1"

ZBX_WEBHOOK_ENABLE_STRING = "1"

(float and integer is enabled by default we also enable text and string here)

<https://github.com/clonera/zabbix-history-webhook>

Configuration #2: Kafka Rest

Environment variables to Kafka Rest Container

KAFKA_REST_ZOOKEEPER_CONNECT = "\${zookeper}:2181"

KAFKA_REST_HOST_NAME = "\${kafka-host}"

KAFKA_REST_LISTENERS = "http://0.0.0.0:38082"

<https://docs.confluent.io/current/kafka-rest/quickstart.html>

Configuration #3: Kafka

Environment variables to Kafka Container

KAFKA_BROKER_ID = 3

KAFKA_ZOOKEEPER_CONNECT = "\${zookeper}:2181"

KAFKA_ADVERTISED_HOST_NAME = "\${hostname}"

KAFKA_LISTENERS = "PLAINTEXT://0.0.0.0:9092"

KAFKA_LOG_RETENTION_HOURS = 48

(9092 port is published on the host in this configuration)

Configuration #4: Druid HDFS

Download druid-hdfs-storage into extension folder and change configuration file:

```
# vi conf/druid/cluster/_common/common.runtime.properties  
  
druid.extensions.loadList=["druid-hdfs-storage", "druid-kafka-indexing-service", "druid-datasources",  
"druid-influx-extensions", "postgresql-metadata-storage"]  
  
druid.storage.type=hdfs  
  
druid.storage.storageDirectory=hdfs://hadoop.local:8020/apps/druid/warehouse
```

<https://druid.apache.org/docs/latest/development/extensions-core/hdfs.html>

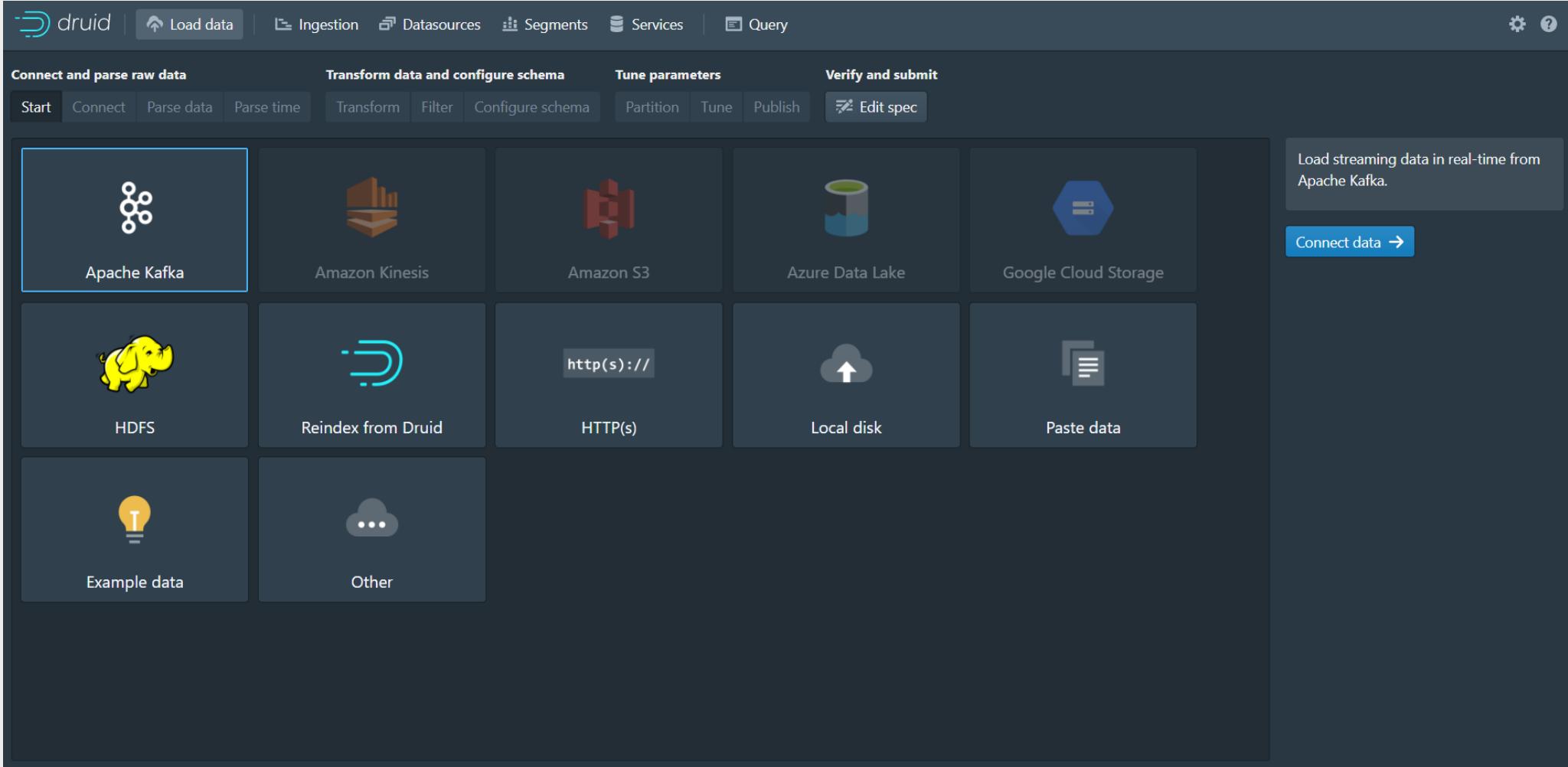
Configuration #5: Druid Kafka indexing

Download druid-kafka-indexing-service into extensions folder and change configuration file:

```
# vi conf/druid/cluster/_common/common.runtime.properties  
druid.extensions.loadList=["druid-hdfs-storage", "druid-kafka-indexing-service", "druid-datasources",  
"druid-influx-extensions", "postgresql-metadata-storage"]
```

<https://druid.apache.org/docs/latest/development/extensions-core/kafka-ingestion.html>

Configuration #6: Druid ingestion



The screenshot shows the Druid Ingestion interface. At the top, there's a navigation bar with tabs: druid (active), Load data, Ingestion, Datasources, Segments, Services, and Query. To the right of the tabs are settings and help icons.

The main area is divided into four horizontal sections:

- Connect and parse raw data:** Contains buttons for Start, Connect, Parse data, Parse time, Transform, Filter, Configure schema, Partition, Tune, Publish, and Edit spec. The Apache Kafka button is highlighted with a blue border.
- Transform data and configure schema:** Buttons for Transform, Filter, and Configure schema.
- Tune parameters:** Buttons for Partition, Tune, and Publish.
- Verify and submit:** Buttons for Edit spec and a large green "Verify and Submit" button.

Below these sections is a grid of data source icons:

- Apache Kafka (highlighted)
- Amazon Kinesis
- Amazon S3
- Azure Data Lake
- Google Cloud Storage
- HDFS
- Reindex from Druid
- HTTP(s)://
- Local disk
- Paste data
- Example data
- Other

To the right of the grid, there's a sidebar with the following text and button:

Load streaming data in real-time from Apache Kafka.

[Connect data →](#)

Configuration #6: Druid ingestion

druid | [Load data](#) | [Ingestion](#) | [Datasources](#) | [Segments](#) | [Services](#) | [Query](#)

Connect and parse raw data | **Transform data and configure schema** | **Tune parameters** | **Verify and submit**

[Start](#) | [Connect](#) | [Parse data](#) | [Parse time](#) | [Transform](#) | [Filter](#) | [Configure schema](#) | [Partition](#) | [Tune](#) | [Publish](#) | [Edit spec](#)

```

{
  "name": "ICMP loss", "key": "icmppingloss", "host": "Clonera İzmir SesVeeam | 172.16.220.169", "groups": ["İzmir/Application/Veeam", "İzmir/Operating systems/Windows"], "applications": ["Status"], "itemid": 1034.1.233
  "name": "MODULE LEVEL1: Temperature", "key": "sensor.temp.value[hh3cEntityExtTemperature.192]", "host": "Clonera İstanbul BB_switch | 10.34.2.253", "groups": ["İstanbul/Network devices/HP Comware"], "applications": ["Status"]
  "name": "MODULE LEVEL1: Temperature", "key": "sensor.temp.value[hh3cEntityExtTemperature.210]", "host": "Clonera İstanbul BB_switch | 10.34.2.253", "groups": ["İstanbul/Network devices/HP Comware"], "applications": ["Status"]
  "name": "CPU guest time", "key": "system.cpu.util[,guest]", "host": "Clonera İstanbul clnrstdruid-query01 | 10.34.1.233", "groups": ["İstanbul/Application/Druid"], "applications": ["Performance", "CPU"], "itemid": 1034.1.233
  "name": "Board: Memory utilization", "key": "vm.memory.pused[hh3cEntityExtMemUsage.192]", "host": "Clonera İstanbul BB_switch | 10.34.2.253", "groups": ["İstanbul/Network devices/HP Comware"], "applications": ["Status"]
  "name": "Free disk space on /boot (percentage)", "key": "vfs.fs.size[/boot,pfree]", "host": "Clonera İstanbul STR03 | 10.34.254.183", "groups": ["İstanbul/Operating Systems/Linux"], "applications": ["Filesystem"], "itemid": 1034.1.233
  "name": "Free disk space on G: (percentage)", "key": "vfs.fs.size[G,pfree]", "host": "Clonera İstanbul SM Server | 10.0.0.50", "groups": ["İstanbul/Operating systems/Windows"], "applications": ["Filesystem"], "itemid": 1034.1.233
  "name": "Free disk space on MON04 (percentage)", "key": "vfs.fs.size[MON04,pfree]", "host": "Clonera İstanbul MON04 | 10.34.254.184", "groups": ["İstanbul/Operating Systems/Linux"], "applications": ["Filesystem"], "itemid": 1034.1.233
  "name": "CPU steal time", "key": "system.cpu.util[,steal]", "host": "Clonera İstanbul STR04 | 10.34.254.184", "groups": ["İstanbul/Operating Systems/Linux"], "applications": ["Performance", "CPU"], "itemid": 1034.1.233
  "name": "Number of processed character values per second", "key": "zabbix[wcache,values,str]", "host": "Clonera İzmir Zabbix Proxy | 172.16.220.70", "groups": ["Zabbix servers"], "applications": ["Zabbix"]
  "name": "Average disk write queue length", "key": "perf_counter[\\"234_Total\\]\\"1404]", "host": "Clonera Izmir ZVM_1 | 172.16.220.20", "groups": ["İzmir/Application/Zerto", "İzmir/Operating systems/Windows"], "applications": ["Status"]
  "name": "Processor load (15 min average)", "key": "system.cpu.load[percpu,avg15]", "host": "Clonera İzmir CLNRIZMDC01 | 172.16.220.105", "groups": ["İzmir/Application/Microsoft Domain Controller"], "applications": ["Status"]
  "name": "Board: CPU utilization", "key": "system.cpu.util[hh3cEntityExtCpuUsage.210]", "host": "Clonera İstanbul BB_switch | 10.34.2.253", "groups": ["İstanbul/Network devices/HP Comware"], "applications": ["Status"]
  "name": "Board: Memory utilization", "key": "vm.memory.pused[hh3cEntityExtMemUsage.210]", "host": "Clonera İstanbul BB_switch | 10.34.2.253", "groups": ["İstanbul/Network devices/HP Comware"], "applications": ["Status"]
  "name": "Free swap space in %", "key": "system.swap.size[pfree]", "host": "Clonera İstanbul MON04 | 10.34.254.164", "groups": ["İstanbul/Operating Systems/Linux"], "applications": ["Memory"], "itemid": 1034.1.233
  "name": "Free virtual memory, in %", "key": "vm.vmemory.size[pavailable]", "host": "Clonera İstanbul TREOISTNPS01 | 10.34.0.16", "groups": ["İstanbul/Operating systems/Windows"], "applications": ["Memory"]
  "name": "Free disk space on /opt/cloneye (percentage)", "key": "vfs.fs.size[/opt/cloneye,pfree]", "host": "Clonera İstanbul STR03 | 10.34.254.183", "groups": ["İstanbul/Operating Systems/Linux"], "applications": ["Filesystem"]
  "name": "Free virtual memory, in %", "key": "vm.vmemory.size[pavailable]", "host": "Clonera İstanbul CLNRISTSMWEB01 | 172.16.1.50", "groups": ["İstanbul/Operating systems/Windows"], "applications": ["Memory"]
  "name": "CPU guest nice time", "key": "system.cpu.util[,guest_nice]", "host": "Clonera İstanbul clnrstdruid-query01 | 10.34.1.233", "groups": ["İstanbul/Application/Druid"], "applications": ["Performance"]
  "name": "Free virtual memory, in %", "key": "vm.vmemory.size[pavailable]", "host": "Clonera İstanbul TREOISTKGS01 | 10.0.0.47", "groups": ["İstanbul/Operating systems/Windows"], "applications": ["Memory"]
  "name": "Free virtual memory, in %", "key": "vm.vmemory.size[pavailable]", "host": "Clonera İstanbul VeeamOne | 10.34.0.66", "groups": ["İstanbul/Operating systems/Windows"], "applications": ["Memory"]
  "name": "Free disk space on C: (percentage)", "key": "vfs.fs.size[C,pfree]", "host": "Clonera İstanbul CLNRISTDC02 | 10.34.0.11", "groups": ["İstanbul/Application/Microsoft Domain Controller", "İstanbul/Network devices/HP Comware"], "applications": ["Filesystem"]
  "name": "CPU system time", "key": "system.cpu.util[,system]", "host": "Clonera İstanbul STR04 | 10.34.254.184", "groups": ["İstanbul/Operating Systems/Linux"], "applications": ["Performance", "CPU"], "itemid": 1034.1.233
  "name": "Free disk space on C: (percentage)", "key": "vfs.fs.size[C,pfree]", "host": "Clonera İstanbul VeeamOne | 10.34.0.66", "groups": ["İstanbul/Operating systems/Windows"], "applications": ["Filesystem"]
  "name": "Processor load (15 min average per core)", "key": "system.cpu.load[percpu,avg15]", "host": "Clonera İstanbul MON05 | 10.34.254.165", "groups": ["İstanbul/Operating Systems/Linux"], "applications": ["Status"]
  "name": "Free virtual memory, in %", "key": "vm.vmemory.size[pavailable]", "host": "Clonera İstanbul SM Server | 10.0.0.50", "groups": ["İstanbul/Operating systems/Windows"], "applications": ["Memory"]
  "name": "Free virtual memory, in %", "key": "vm.vmemory.size[pavailable]", "host": "Clonera İstanbul internal.clonera.net | 10.0.0.60", "groups": ["İstanbul/Operating systems/Windows"], "applications": ["Memory"]
  "name": "Level 1 Virtual Module #1: CPU utilization", "key": "system.cpu.util[hh3cEntityExtCpuUsage.8]", "host": "Clonera İstanbul TREOYENIOFISSW | 10.34.2.251", "groups": ["İstanbul/Network devices/HP Comware"], "applications": ["Status"]
  "name": "MODULE LEVEL1: Temperature", "key": "sensor.temp.value[hh3cEntityExtTemperature.8]", "host": "Clonera İstanbul TREOYENIOFISSW | 10.34.2.251", "groups": ["İstanbul/Network devices/HP Comware"], "applications": ["Status"]
  "name": "Level 1 Virtual Module #1: Memory utilization", "key": "vm.memory.pused[hh3cEntityExtMemUsage.8]", "host": "Clonera İstanbul TREOYENIOFISSW | 10.34.2.251", "groups": ["İstanbul/Network devices/HP Comware"], "applications": ["Status"]
  "name": "Utilization of history syncer internal processes, in %", "key": "zabbix[process,history syncer,avg,busy]", "host": "Zabbix server", "groups": ["Zabbix servers"], "applications": ["Zabbix server"], "itemid": 1034.1.233
  "name": "Interface GigabitEthernet2/0/19(GigabitEthernet2/0/19 Interface): Bits received", "key": "net.if.in[ifHCInOctets.84]", "host": "Clonera İstanbul BB_switch | 10.34.2.253", "groups": ["İstanbul/Network devices/HP Comware"], "applications": ["Status"]
  "name": "Interface Bridge-Aggregation5(CLONERA-2_LACP): Bits sent", "key": "net.if.out[ifHCOutOctets.914]", "host": "Clonera İstanbul BB_switch | 10.34.2.253", "groups": ["İstanbul/Network devices/HP Comware"], "applications": ["Status"]
  "name": "Interface GigabitEthernet1/0/17(treo_finland_test_sophos_noç_bitti): Bits received", "key": "net.if.in[ifHCInOctets.171]", "host": "Clonera İstanbul BB_switch | 10.34.2.253", "groups": ["İstanbul/Network devices/HP Comware"], "applications": ["Status"]
}

```

Druid ingests raw data and converts it into a custom, [indexed format](#) that is optimized for analytic queries.

To get started, please specify what data you want to ingest.

[Learn more](#)

Bootstrap servers [i](#)
kafka-server

Topic [tenant-zabbix](#)

Consumer properties [i](#)
`{
 "bootstrap.servers": "kafka-server"
}`

Where should the data be sampled from?

[Start of stream](#) [Apply](#) [Cancel](#)

[Next: Parse data →](#)

Configuration #6: Druid ingestion

druid | [Load data](#) | [Ingestion](#) | [Datasources](#) | [Segments](#) | [Services](#) | [Query](#) | [⚙️](#) | [?](#)

Connect and parse raw data **Transform data and configure schema** **Tune parameters** **Verify and submit**

[Start](#) [Connect](#) [Parse data](#) [Parse time](#) [Transform](#) [Filter](#) [Configure schema](#) [Partition](#) [Tune](#) [Publish](#) [Edit spec](#)

Search columns Flattened columns only

applications	clock	groups	host	itemid	key	name	ns	value
▶ Status	1602037233	İzmir/Application ...	Clonera İzmir SesV...	124607	icmppingloss	ICMP loss	625364770	0.0
▶ Temperature	1602037235	İstanbul/Network ...	Clonera İstanbul B...	49648	sensor.temp.value[...]	MODULE LEVEL1: T...	321958346	89.0
▶ Temperature	1602037235	İstanbul/Network ...	Clonera İstanbul B...	49649	sensor.temp.value[...]	MODULE LEVEL1: T...	321958346	84.0
▶ [CPU, Performance]	1602037235	İstanbul/Application...	Clonera İstanbul B...	159635	system.cpu.util[gu...]	CPU guest time	358063540	0.0
▶ Memory	1602037235	İstanbul/Network ...	Clonera İstanbul B...	49646	vm.memory.pused...	Board: Memory uti...	414268847	37.0
▶ Filesystems	1602037235	İstanbul/Operating...	Clonera İstanbul S...	92015	vfs.fs.size[boot,pfr...	Free disk space on ...	472113003	76.822553
▶ Filesystems	1602037235	İstanbul/Operating...	Clonera İstanbul S...	102635	vfs.fs.size[G,pfree]	Free disk space on ...	477447009	99.926742
▶ [CPU, Performance]	1602037235	İstanbul/Operating...	Clonera İstanbul S...	161855	system.cpu.util[ste...	CPU steal time	491039928	0.0
▶ Zabbix proxy	1602037235	Zabbix servers	Clonera Izmir Zabb...	29075	zabbix[wcache,valu...	Number of proces...	686034074	0.214555
▶ [Filesystems, Perfo...	1602037235	İzmir/Application ...	Clonera Izmir ZVM...	109295	perf_counter[\234(...)	Average disk write ...	688160488	0.005514
▶ [CPU, Performance]	1602037235	İzmir/Application/...	Clonera Izmir CLN...	105275	system.cpu.load[p...]	Processor load (15 ...	691237121	0.004444
▶ CPU	1602037235	İstanbul/Network ...	Clonera İstanbul B...	49645	system.cpu.util[hh...]	Board: CPU utilizat...	726038047	12.0
▶ Memory	1602037235	İstanbul/Network ...	Clonera İstanbul B...	49647	vm.memory.pused...	Board: Memory uti...	726038047	35.0
▶ Memory	1602037236	İstanbul/Operating...	Clonera İstanbul M...	161616	system.swap.size[...]	Free swap space in...	84638362	1.67E-4
▶ Memory	1602037236	İstanbul/Operating...	Clonera İstanbul T...	101196	vm.vmemory.size[...]	Free virtual memor...	86990906	75.505651
▶ Filesystems	1602037236	İstanbul/Operating...	Clonera İstanbul S...	92016	vfs.fs.size[opt/clo...	Free disk space on ...	115888868	28.855717

Druid requires flat data (non-nested, non-hierarchical). Each row should represent a discrete event.

If you have nested data, you can [flatten](#) it here. If the provided flattening capabilities are not sufficient, please pre-process your data before ingesting it into Druid.

Ensure that your data appears correctly in a row/column orientation.

[Learn more](#)

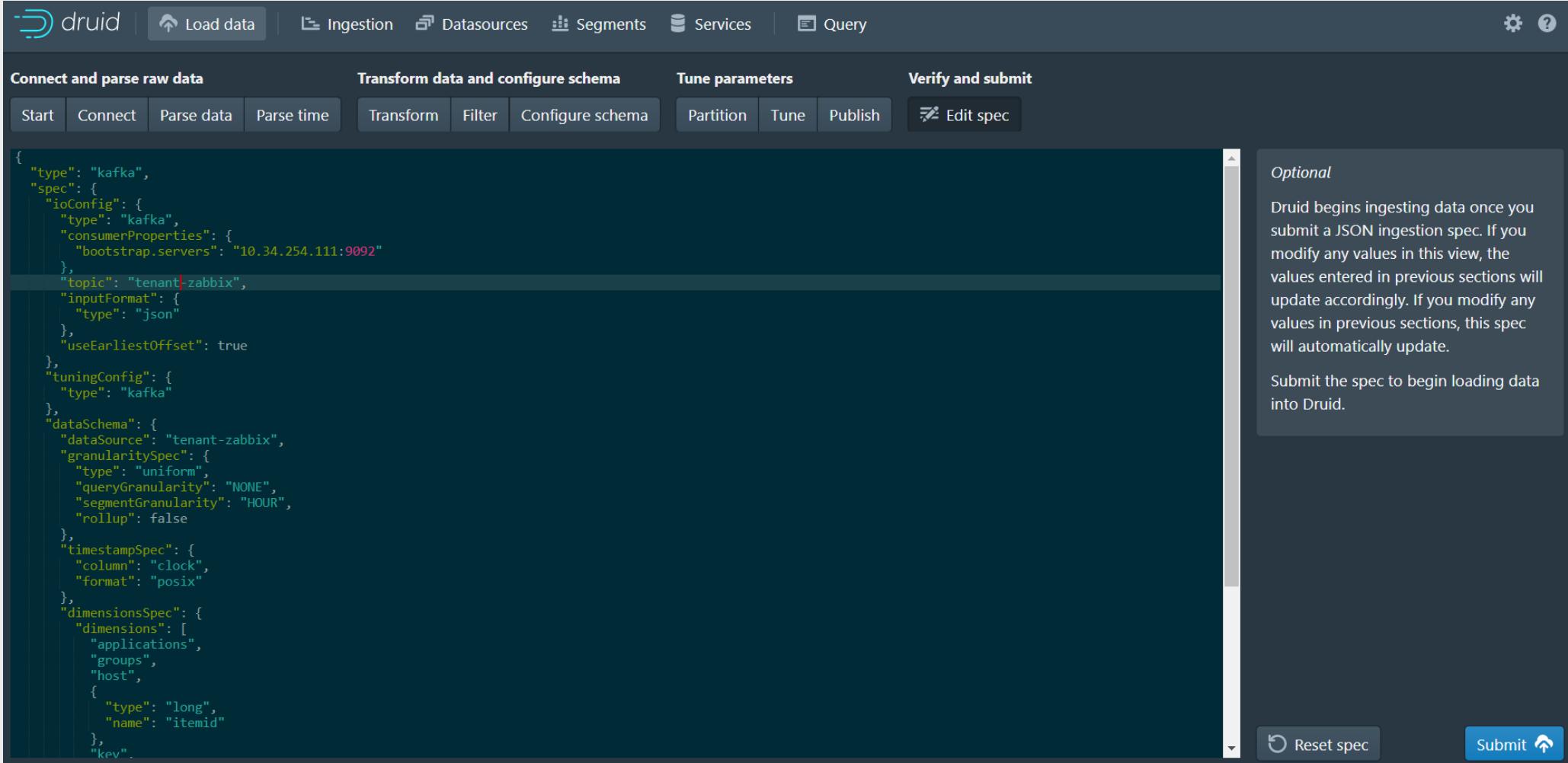
Input format [i](#)
json [▼](#)

[Apply](#)

[Add column flattening](#) [i](#)

[Next: Parse time →](#)

Configuration #6: Druid ingestion



The screenshot shows the Clonera UI for Druid Ingestion. The top navigation bar includes links for druid, Load data, Ingestion, Datasources, Segments, Services, and Query, along with settings and help icons.

The main area is divided into four tabs: **Connect and parse raw data**, **Transform data and configure schema**, **Tune parameters**, and **Verify and submit**. The **Transform data and configure schema** tab is active, showing sub-options for Transform, Filter, Configure schema, Partition, Tune, Publish, and Edit spec.

The **Edit spec** section contains a JSON configuration for a Kafka source:

```
{
  "type": "kafka",
  "spec": {
    "ioConfig": {
      "type": "kafka",
      "consumerProperties": {
        "bootstrap.servers": "10.34.254.111:9092"
      },
      "topic": "tenant|zabbix",
      "inputFormat": {
        "type": "json"
      },
      "useEarliestOffset": true
    },
    "tuningConfig": {
      "type": "kafka"
    },
    "dataSchema": {
      "dataSource": "tenant-zabbix",
      "granularitySpec": {
        "type": "uniform",
        "queryGranularity": "NONE",
        "segmentGranularity": "HOUR",
        "rollup": false
      },
      "timestampSpec": {
        "column": "clock",
        "format": "posix"
      },
      "dimensionsSpec": {
        "dimensions": [
          "applications",
          "groups",
          "host",
          {
            "type": "long",
            "name": "itemid"
          },
          "key"
        ]
      }
    }
  }
}
```

The right side of the interface features an **Optional** sidebar with instructions about submitting the spec to begin loading data into Druid, and buttons for **Reset spec** and **Submit**.

Configuration #6: Druid ingestion

Supervisors

Datasource	Type	Topic/Stream	Status	Actions
clonera-zabbix				
clonera-zabbix	kafka	clonera-zabbix	• RUNNING	

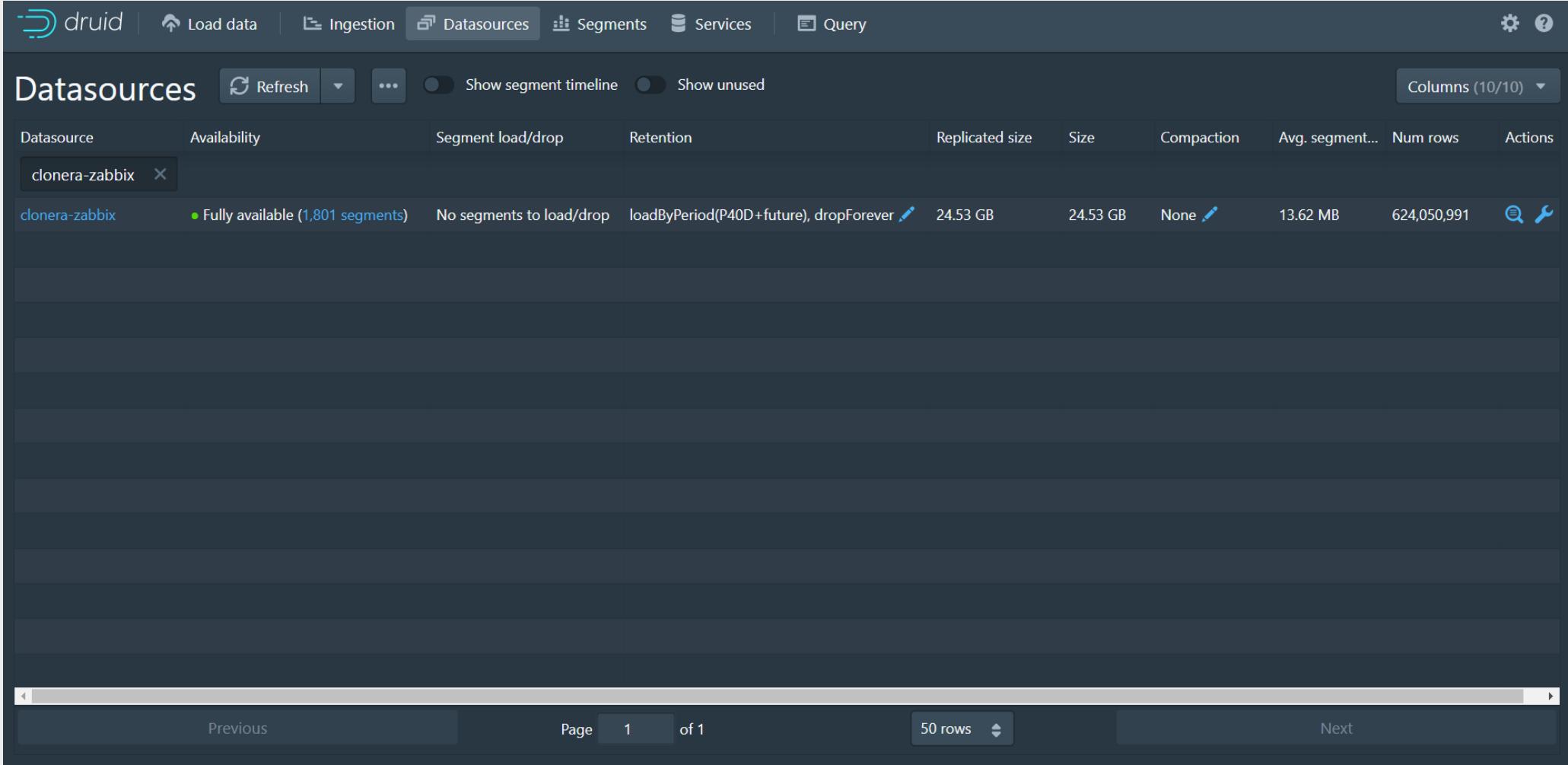
Previous Page 1 of 1 20 rows Next

Tasks

Task ID	Group ID	Type	Datasource	Location	Created time	Status	Duration	Actions
index_kafka_clonera-zabbix_6ff89594d201518_ogochhdg	index.kafka.clonera-zabbix	index.kafka	clonera-zabbix	10.34.1.234:8105	2020-10-09T07:34:44.790Z	• RUNNING		
index_kafka_clonera-zabbix_cd84bd28a55ba17_ocnniokp	index.kafka.clonera-zabbix	index.kafka	clonera-zabbix	10.34.1.234:8112	2020-10-09T06:32:38.853Z	• SUCCESS	1:01:17	
index_kafka_clonera-zabbix_1b9ef7b50cef420_eahjabne	index.kafka.clonera-zabbix	index.kafka	clonera-zabbix	10.34.1.234:8110	2020-10-09T05:31:25.747Z	• SUCCESS	1:02:12	
index_kafka_clonera-zabbix_0e34a83242294de_ohdfnlja	index.kafka.clonera-zabbix	index.kafka	clonera-zabbix	10.34.1.234:8110	2020-10-09T04:30:10.526Z	• SUCCESS	1:01:14	
index_kafka_clonera-zabbix_eff2b21cab9b58f_enammkab	index.kafka.clonera-zabbix	index.kafka	clonera-zabbix	10.34.1.234:8105	2020-10-09T03:28:54.890Z	• SUCCESS	1:01:13	
index_kafka_clonera-zabbix_449a031421f2e03_pmjdfhli	index.kafka.clonera-zabbix	index.kafka	clonera-zabbix	10.34.1.234:8110	2020-10-09T02:27:28.782Z	• SUCCESS	1:01:15	
index_kafka_clonera-zabbix_2a8895ff1704da9_hccmgope	index.kafka.clonera-zabbix	index.kafka	clonera-zabbix	10.34.1.234:8103	2020-10-09T01:25:22.357Z	• SUCCESS	1:02:12	
index kafka clonera-zabbix 436f5c7c15a9fe3 nbliodlo	index.kafka.clonera-zabbix	index.kafka	clonera-zabbix	10.34.1.234:8112	2020-10-09T00:23:53.900Z	• SUCCESS	1:02:13	

Previous Page 1 of 2 20 rows Next

Configuration #6: Druid ingestion

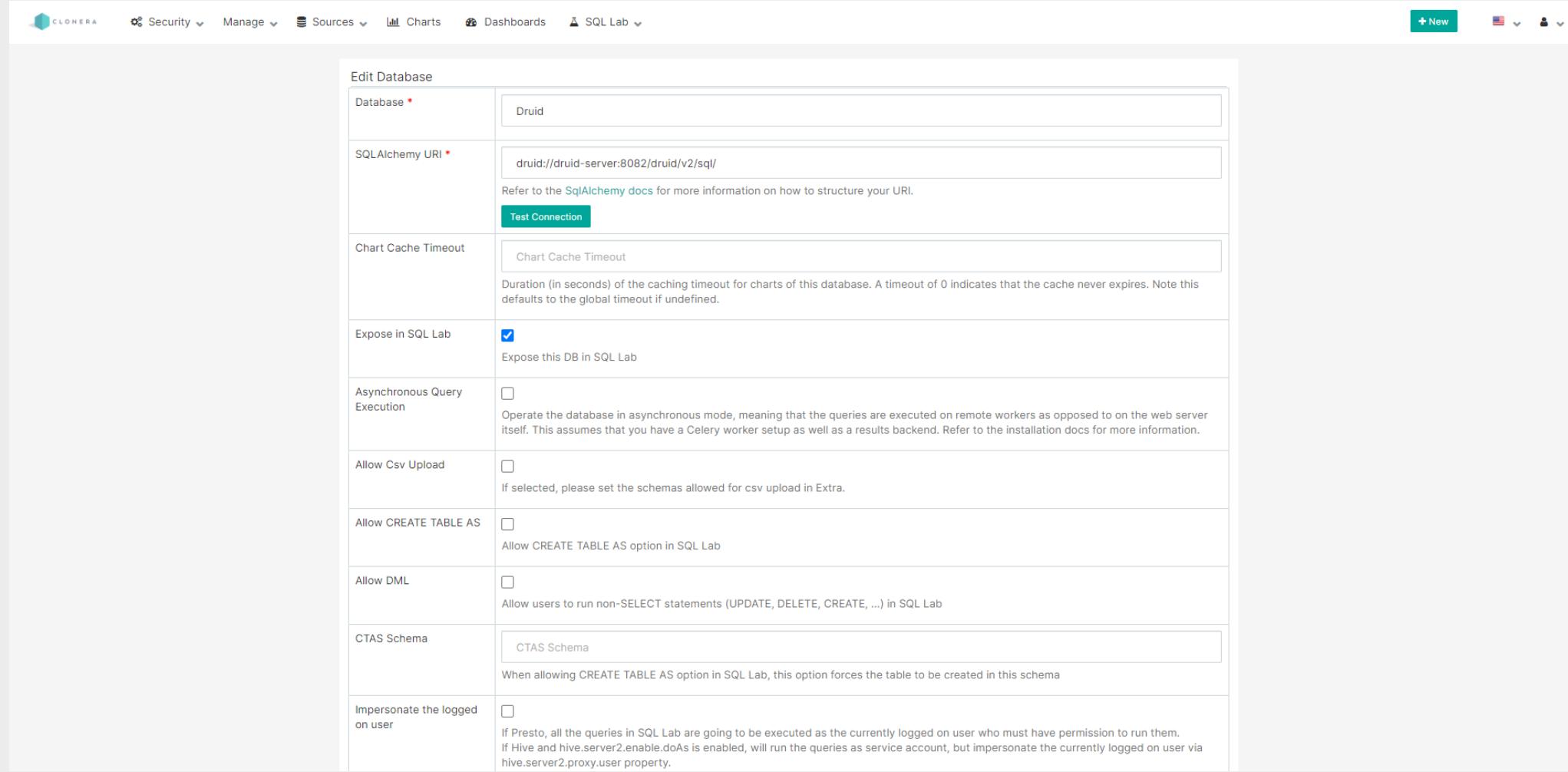


The screenshot shows the Druid UI's Datasources page. The top navigation bar includes links for druid, Load data, Ingestion, Datasources (which is selected), Segments, Services, and Query, along with settings and help icons. The main content area is titled "Datasources" and features a table with the following columns: Datasource, Availability, Segment load/drop, Retention, Replicated size, Size, Compaction, Avg. segment..., Num rows, and Actions.

Datasource	Availability	Segment load/drop	Retention	Replicated size	Size	Compaction	Avg. segment...	Num rows	Actions
clonera-zabbix X	● Fully available (1,801 segments)	No segments to load/drop	loadByPeriod(P40D+future), dropForever ✎	24.53 GB	24.53 GB	None ✎	13.62 MB	624,050,991	🔍 🔧

At the bottom of the page, there are navigation buttons for "Previous" and "Next", a page number indicator "Page 1 of 1", and a dropdown for selecting the number of rows per page, currently set to "50 rows".

Configuration #7: Superset

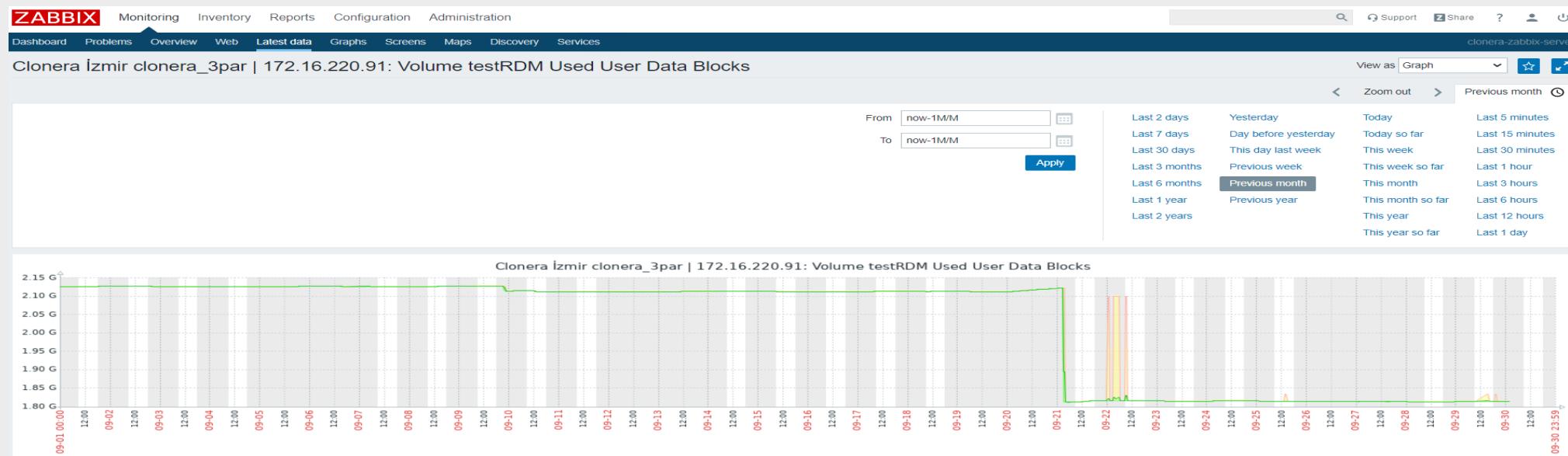


The screenshot shows the 'Edit Database' configuration page for a database named 'Druid'. The page includes fields for SQLAlchemy URI, Chart Cache Timeout, and various permissions like Expose in SQL Lab, Asynchronous Query Execution, Allow Csv Upload, Allow CREATE TABLE AS, Allow DML, CTAS Schema, and Impersonate the logged on user.

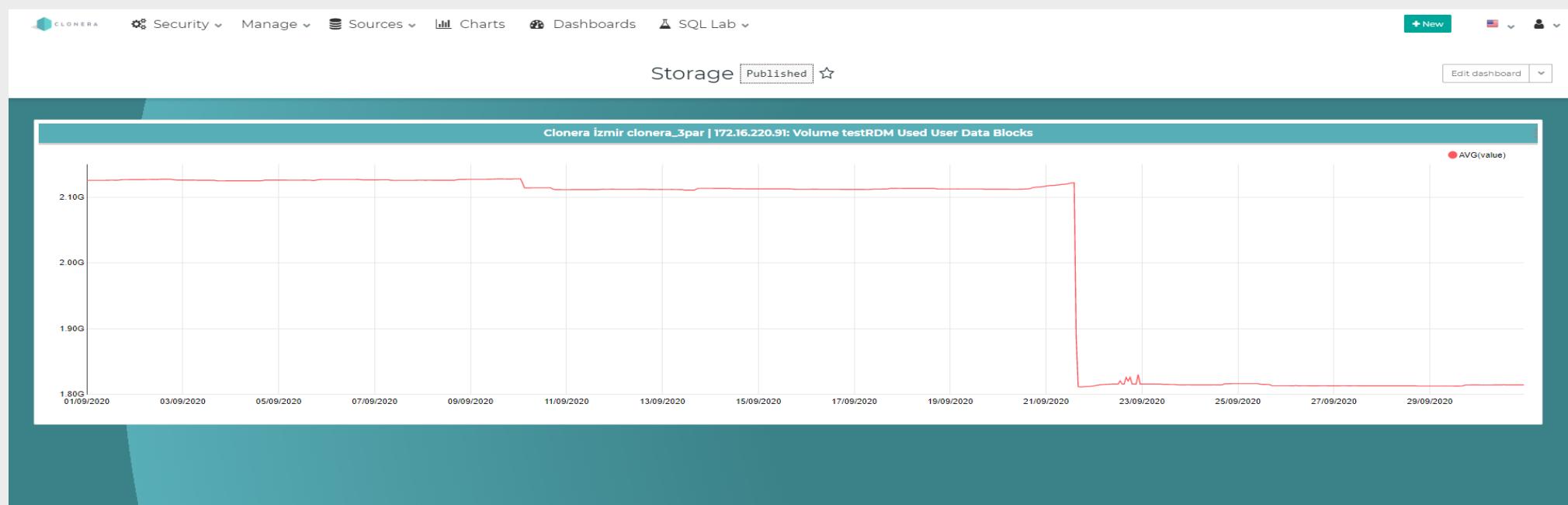
Edit Database	
Database *	Druid
SQLAlchemy URI *	druid://druid-server:8082/druid/v2/sql/ Refer to the SqlAlchemy docs for more information on how to structure your URI. Test Connection
Chart Cache Timeout	Chart Cache Timeout Duration (in seconds) of the caching timeout for charts of this database. A timeout of 0 indicates that the cache never expires. Note this defaults to the global timeout if undefined.
Expose in SQL Lab	<input checked="" type="checkbox"/> Expose this DB in SQL Lab
Asynchronous Query Execution	<input type="checkbox"/> Operate the database in asynchronous mode, meaning that the queries are executed on remote workers as opposed to on the web server itself. This assumes that you have a Celery worker setup as well as a results backend. Refer to the installation docs for more information.
Allow Csv Upload	<input type="checkbox"/> If selected, please set the schemas allowed for csv upload in Extra.
Allow CREATE TABLE AS	<input type="checkbox"/> Allow CREATE TABLE AS option in SQL Lab
Allow DML	<input type="checkbox"/> Allow users to run non-SELECT statements (UPDATE, DELETE, CREATE, ...) in SQL Lab
CTAS Schema	CTAS Schema When allowing CREATE TABLE AS option in SQL Lab, this option forces the table to be created in this schema
Impersonate the logged on user	<input type="checkbox"/> If Presto, all the queries in SQL Lab are going to be executed as the currently logged on user who must have permission to run them. If Hive and hive.server2.enable.doAs is enabled, will run the queries as service account, but impersonate the currently logged on user via hive.server2.proxy.user property.



Zabbix



Superset



Development Team

DevOPS Engineer

Doğuş Peynirci

Software Developer

Burak Köseoğlu

BI Expert

Rahma Bayhatun

Software Developer

Nurdan Kolay



CLONERA

Thanks