

Arquitetura do Kafka com Tópicos LOCATIONS e EQUIPMENTS

Este documento descreve a arquitetura de um sistema baseado no Kafka, com foco nos tópicos **LOCATIONS** e **EQUIPMENTS**, responsáveis por armazenar dados de diferentes módulos e eventos relacionados.

Estrutura Geral

O Kafka é utilizado como a principal plataforma de mensageria e streaming de dados entre os diferentes módulos do sistema. Cada tópico é configurado para receber, armazenar e distribuir mensagens estruturadas no formato JSON, facilitando a integração entre sistemas.

Tópico: LOCATIONS

Descrição

Responsável por armazenar os dados relacionados à organização espacial e hierárquica das plantas, fábricas, departamentos, centros de custo, locais e tags.

Exemplos de Dados Armazenados

- Plantas
- Fábricas
- Departamentos
- Centros de custo
- Locais
- Tags

Formato da Mensagem

Planta

Registration

```
{
  "message_id": "1733447603805-equipment_service-a19a3f",
  "timestamp": "2024-12-06T01:13:23.805Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "plant_registration",
  "user": "admin",
  "payload": {
    "name": "THOR",
    "status": true
  }
}
```

Modification

```
{
  "message_id": "1733447603805-equipment_service-a19a3f",
  "timestamp": "2024-12-06T01:13:23.805Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "plant_modification",
  "user": "admin",
  "payload": {
    "name": "THOR",
    "status": true
  }
}
```

Removal

```
{
  "message_id": "1733447603805-equipment_service-a19a3f",
  "timestamp": "2024-12-06T01:13:23.805Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "plant_removal",
  "user": "admin",
  "payload": {
    "name": "THOR",
    "status": true
  }
}
```

Fábrica

Registration

```
{
  "message_id": "1733447821171-equipment_service-f6df9e",
  "timestamp": "2024-12-06T01:17:01.171Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "factory_registration",
  "user": "admin admin",
  "payload": {
    "factory_plant": "67524fb36c6cb6df475609a2",
    "name": "FABRICA THOR",
    "status": true
  }
}
```

```
}  
}
```

Modification

```
{  
  "message_id": "1733447821171-equipment_service-f6df9e",  
  "timestamp": "2024-12-06T01:17:01.171Z",  
  "source_system": "equipment_service",  
  "destination_system": "voyager-2",  
  "event_type": "factory_modification",  
  "user": "admin admin",  
  "payload": {  
    "factory_plant": "67524fb36c6cb6df475609a2",  
    "name": "FABRICA THOR",  
    "status": true  
  }  
}
```

Removal

```
{  
  "message_id": "1733447821171-equipment_service-f6df9e",  
  "timestamp": "2024-12-06T01:17:01.171Z",  
  "source_system": "equipment_service",  
  "destination_system": "voyager-2",  
  "event_type": "factory_removal",  
  "user": "admin admin",  
  "payload": {  
    "factory_plant": "67524fb36c6cb6df475609a2",  
    "name": "FABRICA THOR",  
    "status": true  
  }  
}
```

Departamento

Registration

```
{  
  "message_id": "1733448052093-equipment_service-8dc086",  
  "timestamp": "2024-12-06T01:20:52.093Z",  
  "source_system": "equipment_service",  
  "destination_system": "voyager-2",  
  "event_type": "department_registration",  
  "user": "admin admin",  
}
```

```
"payload": {  
  "factory": "6752508d6c6cb6df475609a3",  
  "name": "DEP THOR",  
  "status": true  
}
```

Modification

```
{  
  "message_id": "1733448052093-equipment_service-8dc086",  
  "timestamp": "2024-12-06T01:20:52.093Z",  
  "source_system": "equipment_service",  
  "destination_system": "voyager-2",  
  "event_type": "department_modification",  
  "user": "admin admin",  
  "payload": {  
    "factory": "6752508d6c6cb6df475609a3",  
    "name": "DEP THOR",  
    "status": true  
  }  
}
```

Removal

```
{  
  "message_id": "1733448052093-equipment_service-8dc086",  
  "timestamp": "2024-12-06T01:20:52.093Z",  
  "source_system": "equipment_service",  
  "destination_system": "voyager-2",  
  "event_type": "department_removal",  
  "user": "admin admin",  
  "payload": {  
    "factory": "6752508d6c6cb6df475609a3",  
    "name": "DEP THOR",  
    "status": true  
  }  
}
```

Centro de Custo

Registration

```
{  
  "message_id": "1733448113961-equipment_service-783fdb",  
  "timestamp": "2024-12-06T01:21:53.961Z",
```

```
"source_system": "equipment_service",
"destination_system": "voyager-2",
"event_type": "cost_center_registration",
"user": "admin admin",
"payload": {
  "department": "675251746c6cb6df475609a4",
  "name": "CENTRO THOR",
  "status": true
}
}
```

Modification

```
{
  "message_id": "1733448113961-equipment_service-783fdb",
  "timestamp": "2024-12-06T01:21:53.961Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "cost_center_modification",
  "user": "admin admin",
  "payload": {
    "department": "675251746c6cb6df475609a4",
    "name": "CENTRO THOR",
    "status": true
  }
}
```

Removal

```
{
  "message_id": "1733448113961-equipment_service-783fdb",
  "timestamp": "2024-12-06T01:21:53.961Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "cost_center_removal",
  "user": "admin admin",
  "payload": {
    "department": "675251746c6cb6df475609a4",
    "name": "CENTRO THOR",
    "status": true
  }
}
```

Local

Registration

```
{
  "message_id": "1733448172516-equipment_service-d36477",
  "timestamp": "2024-12-06T01:22:52.516Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "location_registration",
  "user": "admin admin",
  "payload": {
    "department": "675251746c6cb6df475609a4",
    "name": "THOR",
    "initials": "THO",
    "status": true
  }
}
```

Modification

```
{
  "message_id": "1733448172516-equipment_service-d36477",
  "timestamp": "2024-12-06T01:22:52.516Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "location_modification",
  "user": "admin admin",
  "payload": {
    "department": "675251746c6cb6df475609a4",
    "name": "THOR",
    "initials": "THO",
    "status": true
  }
}
```

Removal

```
{
  "message_id": "1733448172516-equipment_service-d36477",
  "timestamp": "2024-12-06T01:22:52.516Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "location_removal",
  "user": "admin admin",
  "payload": {
    "department": "675251746c6cb6df475609a4",
    "name": "THOR",
    "initials": "THO",
    "status": true
  }
}
```

Tag

Registration

```
{
  "message_id": "1733448231263-equipment_service-205b74",
  "timestamp": "2024-12-06T01:23:51.263Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "tag_registration",
  "user": "admin admin",
  "payload": {
    "location": "675251ec6c6cb6df475609a6",
    "status": true
  }
}
```

Modification

```
{
  "message_id": "1733448231263-equipment_service-205b74",
  "timestamp": "2024-12-06T01:23:51.263Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "tag_modification",
  "user": "admin admin",
  "payload": {
    "location": "675251ec6c6cb6df475609a6",
    "status": true
  }
}
```

Removal

```
{
  "message_id": "1733448231263-equipment_service-205b74",
  "timestamp": "2024-12-06T01:23:51.263Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "tag_removal",
  "user": "admin admin",
  "payload": {
    "location": "675251ec6c6cb6df475609a6",
    "status": true
  }
}
```

```
}  
}
```

Tópico: EQUIPMENTS

Descrição

Responsável por armazenar os dados relacionados aos equipamentos, incluindo suas movimentações, modelos e associações.

Exemplos de Dados Armazenados

- Siglas
- Fabricante
- Modelos
- Equipamentos
- Movimentações

Formato da Mensagem

Tipo/Sigla

Registration

```
{  
  "message_id": "1733448275747-equipment_service-94a59a",  
  "timestamp": "2024-12-06T01:24:35.747Z",  
  "source_system": "equipment_service",  
  "destination_system": "voyager-2",  
  "event_type": "types_registration",  
  "user": "admin",  
  "payload": {  
    "name": "THOR",  
    "initials": "THO",  
    "status": true  
  }  
}
```

Modification

```
{  
  "message_id": "1733448275747-equipment_service-94a59a",  
  "timestamp": "2024-12-06T01:24:35.747Z",  
  "source_system": "equipment_service",  
  "destination_system": "voyager-2",  
  "event_type": "types_modification",  
  "user": "admin",  
}
```



```
"payload": {  
  "name": "THOR",  
  "initials": "THO",  
  "status": true  
}
```

Removal

```
{  
  "message_id": "1733448275747-equipment_service-94a59a",  
  "timestamp": "2024-12-06T01:24:35.747Z",  
  "source_system": "equipment_service",  
  "destination_system": "voyager-2",  
  "event_type": "types_removal",  
  "user": "admin",  
  "payload": {  
    "name": "THOR",  
    "initials": "THO",  
    "status": true  
  }  
}
```

Fabricante

Registration

```
{  
  "message_id": "1733845519243-equipment_service-cc5bd1",  
  "timestamp": "2024-12-10T15:45:19.243Z",  
  "source_system": "equipment_service",  
  "destination_system": "voyager-2",  
  "event_type": "manufacturer_registration",  
  "user": "admin admin",  
  "payload": {  
    "name": "Fabricante X",  
    "cnpj": "47.960.950/0001-21",  
    "status": true  
  }  
}
```

Modification

```
{  
  "message_id": "1733845519243-equipment_service-cc5bd1",  
  "timestamp": "2024-12-10T15:45:19.243Z",
```

```
"source_system": "equipment_service",
"destination_system": "voyager-2",
"event_type": "manufacturer_modification",
"user": "admin admin",
"payload": {
  "name": "Fabricante X",
  "cnpj": "47.960.950/0001-21",
  "status": true
}
}
```

Removal

```
{
  "message_id": "1733845519243-equipment_service-cc5bd1",
  "timestamp": "2024-12-10T15:45:19.243Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "manufacturer_removal",
  "user": "admin admin",
  "payload": {
    "name": "Fabricante X",
    "cnpj": "47.960.950/0001-21",
    "status": true
  }
}
```

Modelos

Registration

```
{
  "message_id": "1733845617075-equipment_service-2f9f2a",
  "timestamp": "2024-12-10T15:46:57.075Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "model_registration",
  "user": "admin admin",
  "payload": {
    "equipment_type": "672e2993327fab9cbac786e4",
    "name": "MODELO X",
    "manufacturer": "6758620f47d23f648aa96ba1",
    "status": "true",
    "removedFiles": "[]",
    "files": []
  }
}
```

Modification

```
{
  "message_id": "1733845617075-equipment_service-2f9f2a",
  "timestamp": "2024-12-10T15:46:57.075Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "model_modification",
  "user": "admin admin",
  "payload": {
    "equipment_type": "672e2993327fab9cbac786e4",
    "name": "MODELO X",
    "manufacturer": "6758620f47d23f648aa96ba1",
    "status": "true",
    "removedFiles": "[]",
    "files": []
  }
}
```

Removal

```
{
  "message_id": "1733845617075-equipment_service-2f9f2a",
  "timestamp": "2024-12-10T15:46:57.075Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "model_removal",
  "user": "admin admin",
  "payload": {
    "equipment_type": "672e2993327fab9cbac786e4",
    "name": "MODELO X",
    "manufacturer": "6758620f47d23f648aa96ba1",
    "status": "true",
    "removedFiles": "[]",
    "files": []
  }
}
```

Equipamentos

Registration

```
{
  "message_id": "1733719006926-equipment_service-a5c9ef",
  "timestamp": "2024-12-09T04:36:46.926Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
```

```
"event_type": "equipment_registration",
"user": "admin admin",
"payload": {
  "equipment_model": "67478799951405bff298e07e",
  "is_active_status": "true",
  "cost_center_id": "674e070fd29124881c8d1ba8",
  "serial_number": "IPH013",
  "fixed_asset_number": "IPH013",
  "digital_twin": "opc.tcp://10.60.100.85:4848"
}
```

Modification

```
{
  "message_id": "1733719006926-equipment_service-a5c9ef",
  "timestamp": "2024-12-09T04:36:46.926Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "equipment_modification",
  "user": "admin admin",
  "payload": {
    "equipment_model": "67478799951405bff298e07e",
    "is_active_status": "true",
    "cost_center_id": "674e070fd29124881c8d1ba8",
    "serial_number": "IPH013",
    "fixed_asset_number": "IPH013",
    "digital_twin": "opc.tcp://10.60.100.85:4848"
  }
}
```

Removal

```
{
  "message_id": "1733719006926-equipment_service-a5c9ef",
  "timestamp": "2024-12-09T04:36:46.926Z",
  "source_system": "equipment_service",
  "destination_system": "voyager-2",
  "event_type": "equipment_removal",
  "user": "admin admin",
  "payload": {
    "equipment_model": "67478799951405bff298e07e",
    "is_active_status": "true",
    "cost_center_id": "674e070fd29124881c8d1ba8",
    "serial_number": "IPH013",
    "fixed_asset_number": "IPH013",
    "digital_twin": "opc.tcp://10.60.100.85:4848"
  }
}
```

```
}  
}
```

Movimentação

Registration

```
{  
  "message_id": "1733845697955-equipment_service-b23add",  
  "timestamp": "2024-12-10T15:48:17.955Z",  
  "source_system": "equipment_service",  
  "destination_system": "voyager-2",  
  "event_type": "movement_registration",  
  "user": "admin admin",  
  "payload": {  
    "equipment": "674f413533c2c1934961faeb",  
    "destination": "674f71fe9612e1091ef88839"  
  }  
}
```

Modification

```
{  
  "message_id": "1733845697955-equipment_service-b23add",  
  "timestamp": "2024-12-10T15:48:17.955Z",  
  "source_system": "equipment_service",  
  "destination_system": "voyager-2",  
  "event_type": "movement_modification",  
  "user": "admin admin",  
  "payload": {  
    "equipment": "674f413533c2c1934961faeb",  
    "destination": "674f71fe9612e1091ef88839"  
  }  
}
```

Removal

```
{  
  "message_id": "1733845697955-equipment_service-b23add",  
  "timestamp": "2024-12-10T15:48:17.955Z",  
  "source_system": "equipment_service",  
  "destination_system": "voyager-2",  
  "event_type": "movement_removal",  
  "user": "admin admin",  
  "payload": {  
    "equipment": "674f413533c2c1934961faeb",  
    "destination": "674f71fe9612e1091ef88839"  
  }  
}
```

```
    "destination": "674f71fe9612e1091ef88839"
  }
}
```

Estrutura do Payload

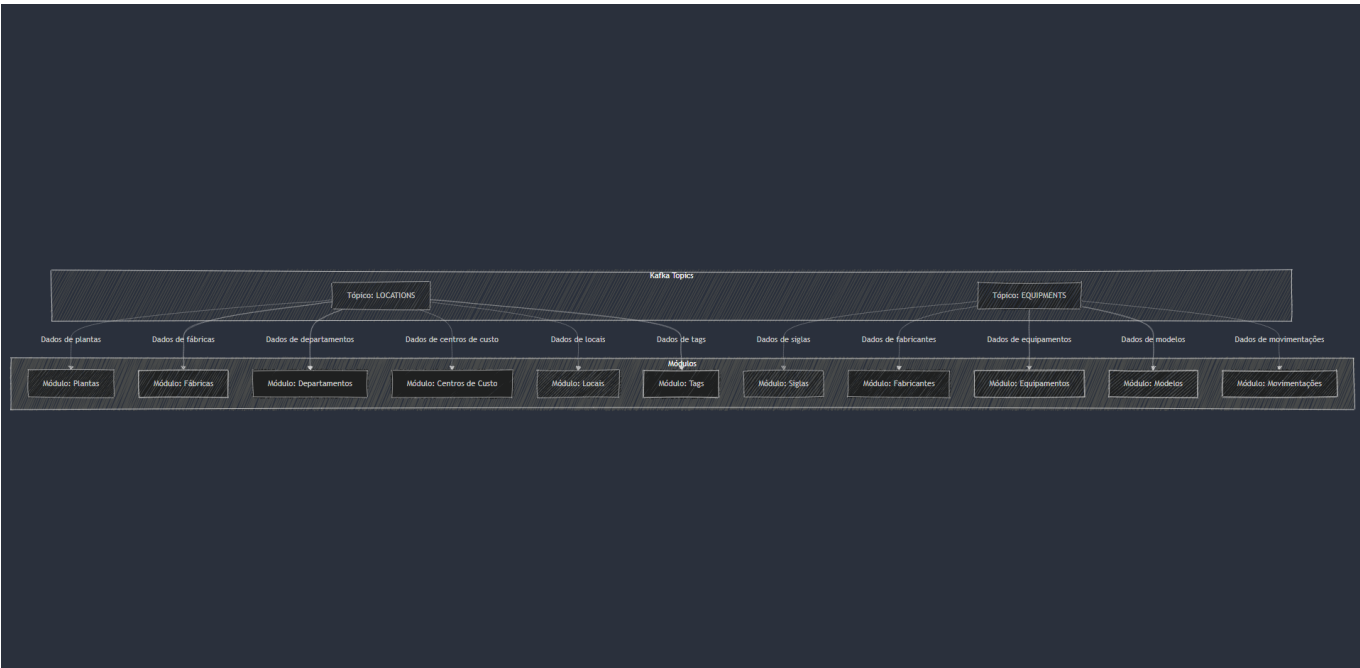
Ambos os tópicos compartilham um padrão de mensagem que facilita a integração e rastreabilidade.

Campos Gerais

- **message_id**: Identificador único da mensagem, combinando timestamp, sistema de origem e ID único.
- **timestamp**: Data e hora do evento no formato ISO 8601.
- **source_system**: Nome do sistema que originou o evento.
- **destination_system**: Nome do sistema de destino.
- **event_type**: Tipo do evento ocorrido (e.g., **plant_registration**, **plant_modification** e **plant_removal**).
- **user**: Usuário responsável pela alteração.

Payload Específico

- **LOCATIONS**: Contém informações sobre locais e suas associações.
- **EQUIPMENTS**: Inclui dados sobre equipamentos e movimentações.



UI for Apache Kafka 83b5a60 v0.7.2

Dashboard

local

Brokers

Topics

Consumers

Topics

+ Add a Topic

Search by Topic Name

Show Internal Topics

Delete selected topics Copy selected topic Purge messages of selected topics

Topic Name	Partitions	Out of sync replicas	Replication Factor	Number of messages	Size
EQUIPMENTS	1	0	1	4	2 KB
LOCATIONS	1	0	1	23	10 KB