CEP - Complex Event Processing

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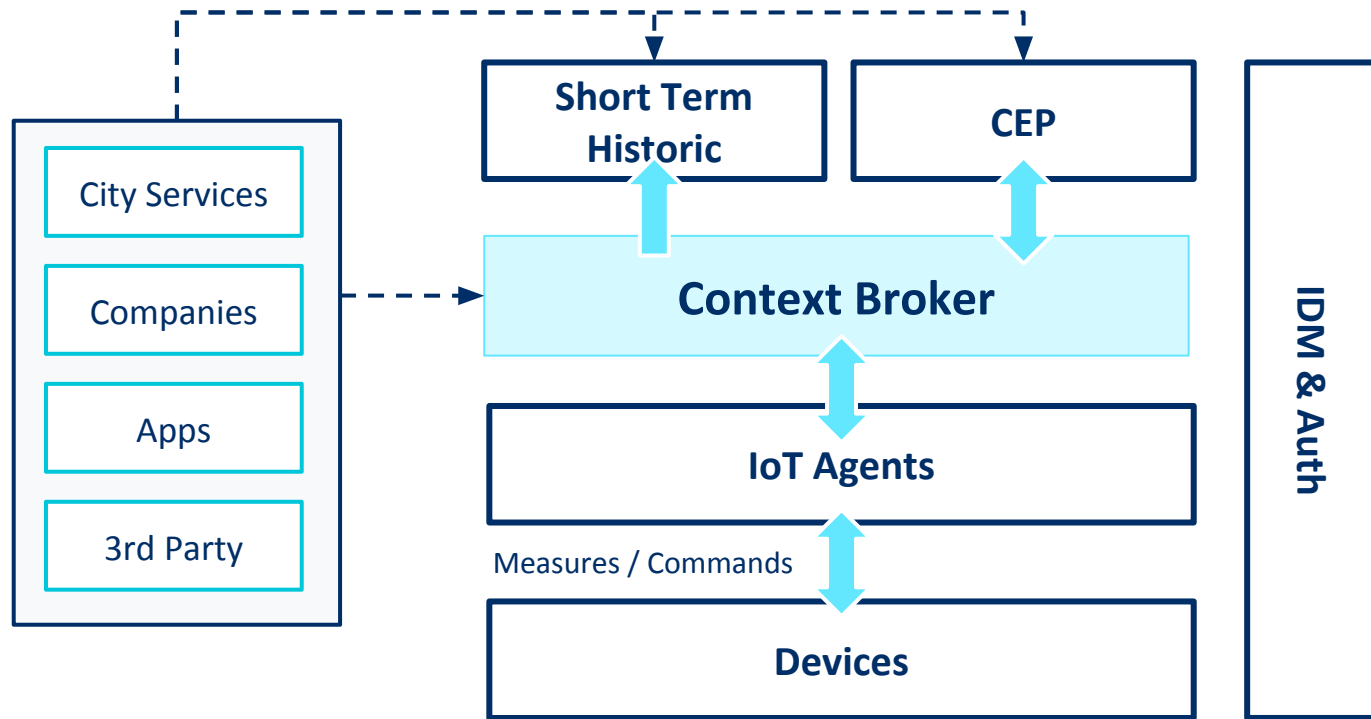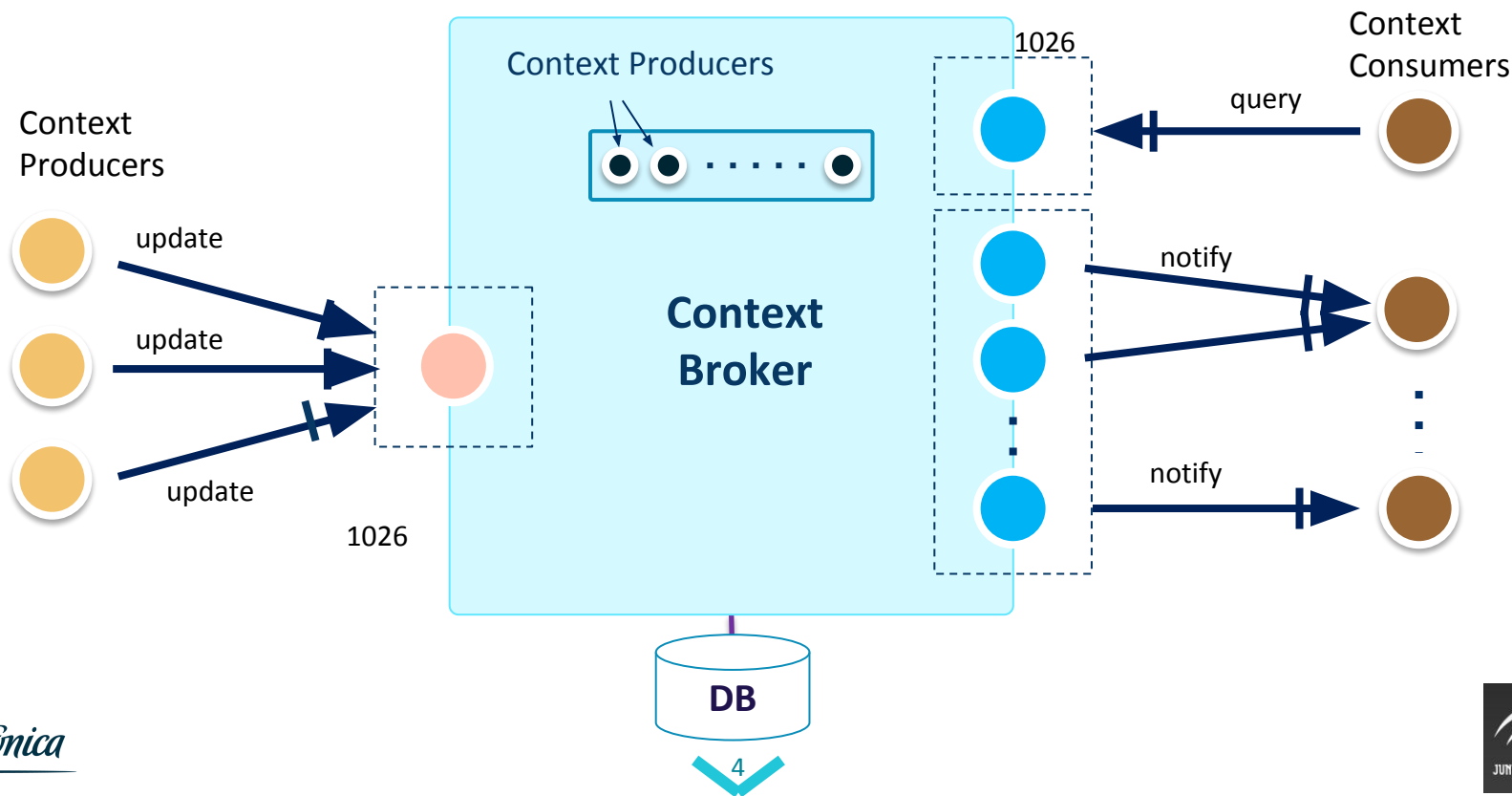
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JUNTA DE ANDALUCÍA

05 > Uso de CEP (Complex Event Processing)

5.1. Intro. Arquitectura FIWARE IoT

5.2. Intro. Arquitectura Context Broker

5.3. CEP. Flujo de datos

CRUD Rules

Admin

CEP

Context Broker

IoT Agents

Operaciones

SMS

EMAIL

Notificaciones Custom

Notificaciones NGSI (Orion)
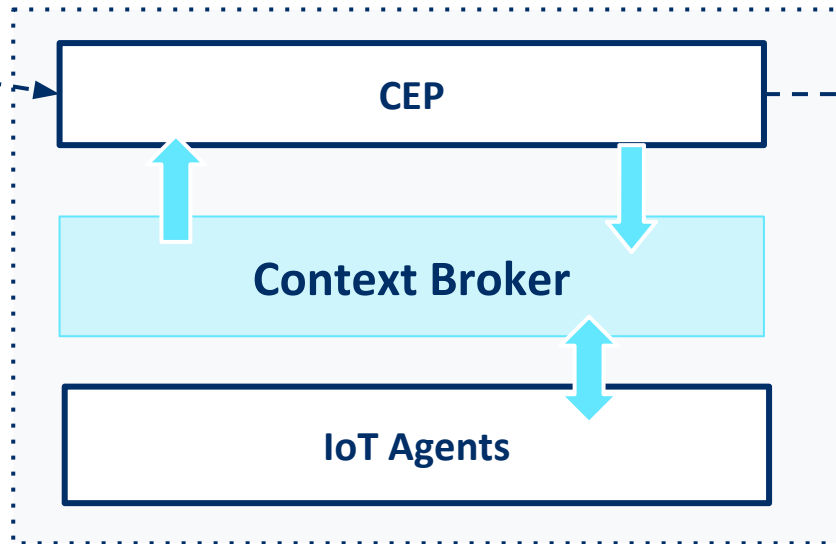
5.4.1 API CEP: Operaciones CRUD

GET /rules

Obtiene todas las reglas

POST /rules

Crea una regla

GET /rules/{ruleD}

Obtiene una regla dado su "name" ruleID

DELETE /rules/{ruleID}

Borra una regla

5.4.2 API CEP: Acciones

- SMS
- Email
- Custom http POST
- Twitter
- Actualizaciones Orion NGSI

5.4.3 API CEP: **Estructura**

Estructura para la creación de reglas

- **name**: nombre de la regla en CEP

- **text**: regla en formato traducible a EPL

- **action**: Operación a realizar cuando se cumple la condición de la regla

  - sms: envía un SMS

  - email: envía un email

  - post: envía un http POST configurable

  - twitter: envía un tweet

  - update: envía una notificación NGSI a Orion

5.4.4 API CEP: **Requisitos**

Formato de la descripción de la regla "text"

- nombre de la regla como **"ruleName"** (opcional, recomendado por compatibilidad hacia atrás)
- la condición definida como "**pattern**"
- el flujo de eventos **iotEvent,** nombrado como "**ev"**

```
  "text":"select *,\"temperature-rule\" as ruleName
from pattern [every ev=iotEvent(cast(cast(ev.temperature?,String),float)>40.0)]"
```

5.4.5 CEP. Enviar email

Action

- "type": "email"

```
{
    "name":"temperature-rule",
    "text":"select *,\"temperature-rule\" as ruleName from pattern [every
ev=iotEvent(cast(cast(ev.temperature?,String),float)>40.0)]",
    "action": {
        "type": "email",
        "template": "Alert! temperature is now ${ev.temperature}.",
        "parameters": {
            "to": "someone@yourclient.com",
            "from": "notificactions@yourdomain.com"
            "subject": "Alert! high pression detected"
        }
    }
}
```

5.4.6 CEP. Enviar sms

Action

- "type": "sms"

```
{
    "name":"temperature-rule",
    "text":"select *,\"temperature-rule\" as ruleName from pattern [every
ev=iotEvent(cast(cast(ev.temperature?,String),float)>40.0)]",
    "action": {
    "type": "sms",
    "template": "Alert! temperature is now ${ev.temperature}.",
    "parameters": {
        "to": "123456789"
        }
    }
}
```

5.4.7 CEP. Enviar un tweet

Action

- "type": "twitter"

```
{
     "name":"temperature-rule",
     "text":"select *,\"temperature-rule\" as ruleName from pattern [every
ev=iotEvent(cast(cast(ev.temperature?,String),float)>40.0)]",
     "action": {
          "type": "twitter",
          "template": "Alert! temperature is now ${ev.temperature}.",
          "parameters": {
                    "consumer_key": "xvz1evFS4wEEPTGEFPHBog",
                    "consumer_secret": "L8qq9PZyRg6ieKGEKhZolGC0vJWLw8iEJ88DRdyOg",
                    "access_token_key": "xvz1evFS4wEEPTGEFPHBog",
                    "access_token_secret": "L8qq9PZyRg6ieKGEKhZolGC0vJWLw8iEJ88DRdyOg"
          }
     }
}
```

4.3.1 CEP. Enviar POST http

Action

- "type": "post"

```
{
    "name":"temperature-rule",
    "text":"select *,\"temperature-rule\" as ruleName from pattern [every
ev=iotEvent(cast(cast(ev.temperature?,String),float)>40.0)]",
    "action": {
        "type": "post",
        "parameters":{
            "url": "http://somewhere.com/
            "method":"PUT",
            "headers": {
                "Content-type": "text/plain"
            }
            "qs": {
                "${ev.id}":"${ev.temperature}"
            }
        }
    }
}
```

4.3.1 CEP. Enviar actualización a Orion

Action

- "type": "update"

```
{
    "name":"temperature-rule",
    "text":"select *,\"temperature-rule\" as ruleName from pattern [every
ev=iotEvent(cast(cast(ev.temperature?,String),float)>40.0)]",
    "action": {
        "type": "update",
        "parameters":{
            "id":"${id}_mirror",
            "attributes": [
                {
                    "name": "alert",
                    "type": "boolean",
                    "value": "true"
                }
            ]
        }
    }
}
```

5.4 API CEP. Más información

google:

- readthedocs + cep

- github + cep

- readthedocs + thinking cities:

  https://thinking-cities.readthedocs.io/en/master/cep/index.html

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