The Context Broker is a reference implementation of **NGSI-LD standard** specifications that comply with ETSI standards. IoT data is collected, processed and stored with **dynamic context** and the use of **linked data concepts.**

The Context Broker provides an implementation of **REST API endpoints** for various data context operations that conform to the NGSI-LD API specification. The context broker allows us to **collect, process, report and store** IoT data with dynamic context using advanced data concepts.
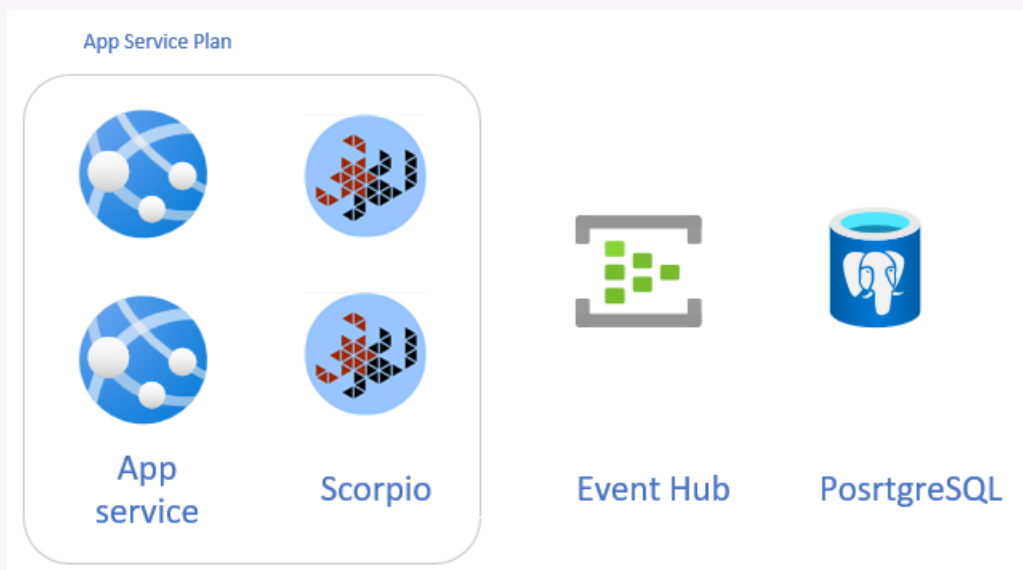
The NGSI-LD based context broker we propose is the **Scorpio Broker.** This component is the furthest in NGSI-LD compatibility and supports both the basic state NGSI-LD API as well as the more advanced timeseries and federation portion of the API.
The component is set up so that it is **interchangeable** with another component if we find that others are more conserved.

Scorpio's choice comes after extensive testing of the various NGSI-LD compliant brokers and our experiences in various projects such as Luxembourg, Esch and Paderborn. Within the ODALA project we have drawn up various architectures together with IMEC and

there too Scorpio was chosen as the best broker for the setup of the project. Thanks to the ODALA project, we have an intensive collaboration with NEC. NEC is the company that created the **Scorpio broker** and has global production deployments.

SCORPIO CONTEXT BROKER

Scorpio is an NGSI-LD Broker that allows managing and requesting context information. It supports the following functionalities:

Context Producers can manage their context – creating, updating, appending and deleting context information

Context Consumers can request the context information they require, either identifying the entity or discover relevant entities by providing the entity type, possibly filtering according to property value, existing relationship and/or geographic scope provided as a GeoJSON feature

Two interaction styles are supported, a synchronous query-response, and an asynchronous subscribe / notify, where notifications can be based on a change in property or relationship, or on a fixed time interval.

Scorpio implements NGSI-LD's optional temporal interface for requesting historic information, e.g. the property values measured within a specified time interval.

Scorpio supports multiple deployment configurations including centralized, distributed and federated ones. In addition to the Context Producers mentioned above, there can be Context Sources that themselves implement the NGSI-LD interface. These Context Sources can register themselves with the information they can provide on request (not the information (values) itself). A Scorpio Broker in a distributed setting can then discover the Context Sources that may have information for answering a request based on their registrations, request and aggregate the information from different Context Sources and provide it to the requesting Context Consumer.

In a federated setting the Context Source can itself be an NGSI-LD Broker. Federations can be used to combine information from multiple providers that want to (partially) share information. An important difference is then typically in the granularity of the registration, e.g. "I have information about entities of entity type building within a geographic area", instead of "I have information about Building A"

Scorpio supports all the mentioned deployment configurations. Thus it provides scalability and the possibility of extending scenarios in an evolutionary way. For example two separate deployments can be combined or for scalability reasons different brokers can be used – completely transparent to Context Consumers that can still use a single point of acces