Overview of the FIWARE ecosystem

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FIWARE Foundation, e.V.
FIWARE is your first choice for building the smart digital future.

1,500+ Developers using FIWARE technologies
300+ Members from 35+ countries
140+ Powered by FIWARE solutions
150+ Open source projects
100+ Evangelists
16 FIWARE iHubs

10+ Strategic partnerships
13 FIWARE Lab Nodes
FIWARE Foundation is growing rapidly. More than 300* global members within just over two years.

Platinum: 5
Gold: +35
Gold SEU: +15
Associates: +25
Individual Members: +230
We are global
(and growing at a fast pace)

13
FIWARE Lab Nodes

*Currently under analysis
THINK GLOBALLY, ACT LOCALLY

FIWARE supports local digital hubs to enrich their services, to build a network of tech-enabling communities and to encourage the formation of internet based businesses at a local level.

Play a fundamental role in growing the global community of developers, companies and cities adopting and contributing to FIWARE.
Our key domains

Smart Cities  Smart Energy  Smart Industry  Smart AgriFood
Our key domains

- Smart Cities
- Smart Energy
- Smart Industry
- Smart AgriFood
- Smart Water

Coming soon
Global partnerships, collaborations...

The European Commission has selected the FIWARE Context Broker technology as a building block for the creation of cross-border digital service infrastructures.

A forum to design a new society by combining manufacturing and information technologies, and for all enterprises to take on initiatives collaboratively.

The FIWARE Community actively leads the work at the Context Information Management (CIM) ISG, where the NCSI-LD API specifications were defined and are now maintained.

The IDSA aims to guarantee data sovereignty by an open, vendor-independent architecture for a peer-to-peer network which provides usage control of data from all domains.

Established in 2010, WeGO is an international organization comprised of city and other local governments, smart tech solution providers, and national and regional institutions, which all share the solid vision of transforming cities into smart sustainable cities.

TM Forum and FIWARE Foundation launched the “Front-runner Smart Cities Program” aimed at defining a Common Reference Architecture and Data Models for Smart Cities, with the active involvement of cities worldwide. TM Forum’s Smart City Component suite uses FIWARE technologies.
FIWARE Foundation participates in the GSMA IoT Big Data Ecosystem project, working on the harmonization of APIs and data models for fueling IoT and Big Data ecosystems.

A non-profit organization delivering the world’s first scalable, fee-less and decentralized distributed ledger technology. Under the agreement, IOTA’s Tangle technology will serve as an immutable, trusted audit trail for relevant context data transactions in “Powered by FIWARE” architectures. This collaboration is an important joint step towards building the technology foundation for the smart solutions of the future.

The Fast RTPS technology, integrated as a Generic Enabler of FIWARE has been adopted as the default communication middleware in ROS2.

Korea’s Agency National Strategic Smart City Programme, KAIA-NSSC is responsible for the implementation of new smart city solutions, aimed at improving citizens’ welfare, the municipalities management system and promoting sustainable growth.

FIWARE brings relevant baselines for the Minimal Interoperability Mechanism (MIMs) defined by OASC, in order to support a Digital Single Market for Smart Cities.
The new Digital Life will gravitate around context data. Context data which describes **what** is going on, **where**, **when**, **why** ...
What if … there were a standard API for accessing context information?
Open Standards: Why do you need this sort of thing?

- No vendor lock-in
- Interoperability
FIWARE in a nutshell

FIWARE is an open source initiative defining a universal set of standards for **context data management** which facilitate the development of **smart solutions**.

- REST done right
- Standard mapping of HTTP verbs and status codes
- JSON payloads plus some additional structure rules
- Registrations to augment context
- Publish/Subscribe mechanism for asynchronous processing
Publish/Subscribe pattern
Entrepreneurs will benefit from the opportunities of a larger market

“We can invest on development of solutions we don’t have to adapt for each and every customer”
Mapping of FIWARE GEs

Cloud Edge (FogFlow)

Real-time processing of context events (Perseo)

Business Intelligence (Knowage)

Development of Context-aware applications (Orion, STH-Comet, Cygnus, QuantumLeap, Draco, Scorpio)

Creation of Application Dashboards (Wirecloud)

Big Data Context Analysis (Cosmos)

Real-time Processing of media streams (Kurento, OpenVidu)

Authorization and Access Control to APIs (Keyrock, Wilma, AuthZForce, APIInf)

Publication and Monetization of Context Information (CKAN extensions, Data/API Biz Framework, IDRA)

Context Processing, Analysis, Visualization

Core Context Management (Context Broker)

Deployment tools

Interface to IoT, Robotics and third-party systems

Connection to the Internet of Things (IDAS, OpenMTC)

Connection to robots (FIROS, Fast RTPS, Micro XRCE-DDS)

Documents exchange (Domibus)
Mapping of FIWARE GEs

https://www.fiware.org/developers/catalogue/
https://github.com/fiware
That’s all folks, but there’s more

ARCHITECTURE

Our demo application will only make use of one FIWARE component - the Orion Context Broker, flowing through i) is sufficient for an application to qualify as "Powered by FIWARE".

Currently, the Orion Context Broker relies on open source MongoDB technology to keep persistence. It consists of two elements:

- The Orion Context Broker which will receive requests using NGSI
- The underlying MongoDB database:
  - Used by the Orion Context Broker to hold context data information such as data entities, services, etc.
  - Used by the DB layer for persistence

Since all interactions between the two services are initiated by HTTP requests, the services can be accessed using different clients such as cURL, Postman, etc.

https://fiware-tutorials.readthedocs.io
That’s all folks, but there’s more

FIWARE is a curated framework of open source platform components which can be assembled together and with other third-party platform components to accelerate the development of Smart Solutions.

The FIWARE Academy lists the video tutorials, slide decks and other training materials available for developers learning about the FIWARE Ecosystem. The training materials within the academy are arranged into a series of the chapters as defined within the FIWARE catalogue:

https://fiware-academy.readthedocs.io
But we are not creating just technology ....

... but a sustainable open innovation ecosystem
#Community

#Ecosystem
Thank you!

http://fiware.org
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