

Private Public Partnership Project (PPP)

Large-scale Integrated Project (IP)



D.4.2.3: FI-WARE SW Release

Project acronym: FI-WARE

Project full title: Future Internet Core Platform

Contract No.: 285248

Strategic Objective: FI.ICT-2011.1.7 Technology foundation: Future Internet Core Platform

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1.1 Executive Summary

This version of the deliverable provides the details of the second software release of FI-WARE.

The software releases take place following three standard methods:

- **Publicly:** under the tool [Files](#) of the project called [FI-WARE](#) under the [FI-WARE forge](#)
- **Restricted to PPP members and the EC:** under the tool [Files](#) of the project called [FI-WARE PPP Restricted](#) under the [FI-WARE forge](#)
- **Offered as a service:** exceptionally, a few partners host their software delivery themselves on their private infrastructures. They can supply access to the PPP members or the EC (password protected location) if requested.

1.2 About This Document

The original purpose of this document (associated to the official deliverable D.4.2.3), is to accompany the official deliverable, marked as "P". The EC requires a report with each one of the deliverables of such nature and the present document satisfies such request by giving a succinct account of the software delivered for Release 3 for the respective chapter.

1.3 Intended Audience

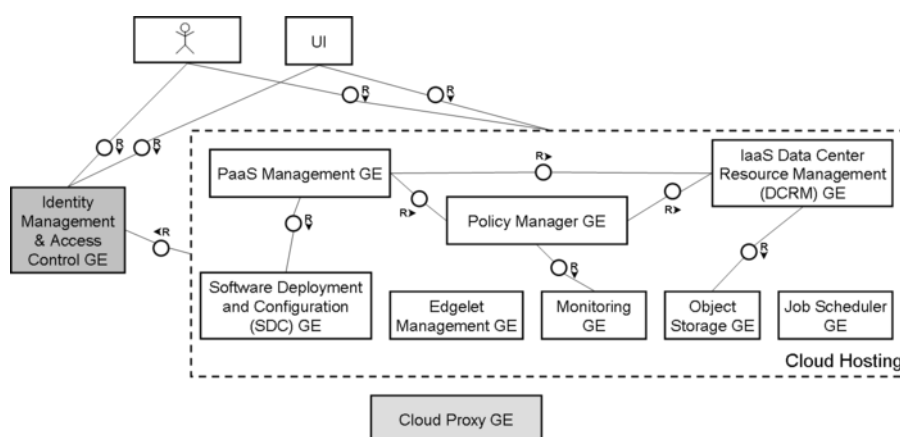
This document and the sw deliverables described are mainly oriented to provide an orderly report to the EC but it could also be used by anyone who has interest in installing the GEi or who wants to gain knowledge of the actual software delivered in the 2nd Release of FI-WARE.

1.4 Chapter Context

The Cloud Chapter offers Generic Enablers that comprise the foundation for designing a modern cloud hosting infrastructure that can be used to develop, deploy and manage Future Internet applications and services, as outlined in [Materializing Cloud Hosting in FI-WARE](#).

The capabilities available in the second release of FI-WARE Cloud Hosting platform are outlined in [Roadmap of Cloud Hosting](#).

The following diagram shows the main components (Generic Enablers) that comprise the second release of FI-WARE architecture.



The architecture comprises a set of Generic Enablers that together provide hosting capabilities of several kinds and at several levels of resource abstraction -- aiming at the needs of different applications hosted on the cloud platform. **IaaS Data Center Resource Management (DCRM) GE** is offering provisioning and life cycle management of virtualized resources (compute, storage, network) associated with **virtual machines**, which can run general purpose Operating Systems as well as arbitrary software stacks. Application developers and providers can use these virtual machines to develop and deploy their own software components that comprise their application stacks. **Object Storage GE** offers provisioning and life cycle

management of **object**-based storage containers and elements, which can be efficiently used to store unstructured fixed content (such as images, videos, etc) as well as accompanying metadata. **Job Scheduler GE** offers the application to submit and manage computational jobs in a unified and scalable manner. **Edgelet Management GE** offers the capability to host lightweight application components, called *edgelets*, on devices typically located outside of the Data Center, such as those provided by the **Cloud Proxy GE** (developed jointly by the Cloud chapter and the Interfaces to Network and Devices chapter). **Software Deployment and Configuration (SDC) GE** offers a flexible framework for installation and customization of software products within individual virtual machines. **Policy Manager GE** provides a framework for rule-based management of cloud resources, including application auto-scaling based leveraging metrics collected by **Monitoring GE**. Lastly, **PaaS Management GE** uses the above capabilities to offer holistic provisioning and ongoing management of complex workloads comprising sophisticated combination of interdependent VMs and associated resources (such as multi-tier web applications or even complete custom-built PaaS environments), as well as configuration and management of software components within the VMs.

Each of the above GEs provides a REST API that can be used programmatically. The human actor represents the programmatic user of the different capabilities of the Cloud GEs via REST APIs. Moreover, the Cloud chapter provides a Web-based **Portal** (part of of the **UI** layer) , which surfaces main capabilities in an interactive manner --such as provisioning and monitoring of VM instances and services.

Cloud Hosting Generic Enablers are using the **Identity Management and Access Control** framework provided by the Security chapter, as outlined in the [Cloud Security Architecture](#).

1.5 Structure of this Document

The document is generated out of an ad hoc wiki page.

The following resources were used to generate this document:

D.4.2.3 FI-WARE SW Release front page

[D.4.2.3 FI-WARE SW Release report](#)

1.6 Acknowledgements

The current document has been elaborated using a number of collaborative tools, with the participation of the Working Package Leader and Architect as well as those partners in their teams acting as GEi owners.

1.7 Keyword list

FI-WARE, PPP, FI-CoDE, Future Internet, Collaboration, Development, FusionForge, ICT, Living Lab, OIL, Steering Board, Roadmap, Reference Architecture, Generic Enabler, Implementation, GEi, GE, Open Specifications, I2ND, Cloud, IoT, Data/Context Management, Applications/Services Ecosystem, Security, Developers Community and Tools , ICT, es.Internet, Latin American Platforms, Cloud Edge, Cloud Proxy, Use Cases.

1.8 Changes History

Release	Major changes description	Date	Editor
v1	First draft	2014-07-22	IBM
V2	Internal Review & ready for delivery.	2014-07-28	IBM

1.9 Table of Contents

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The following table provides a summary of the GEi's delivered for Release 3 in this chapter.

GE Name	GE implementation	Partner	Repository	Release Code	Optional Notes
IaaS Data Center Resource Management		IBM	FI-WARE PPP Restricted	CLOUD-DCRM 3.3	The implementation of this GE is largely based on OpenStack code, which is open source, available from github.com and included in various Linux distributions (Ubutnu, Fedora, Red Hat, Suse, etc). The FI-WARE repository contains optional proprietary extensions developed by IBM (prior to and during FI-WARE). Notice that the emphasis of IBM's work in FI-WARE was on contributions to the open source community, so that the results are adopted and supported by the community, and included in official releases of OpenStack.
Object Storage		Intel	FIWARE	CLOUD-ObjectStorage 3.3.3	The implementation of this GE is largely based on OpenStack code, which is open source, available from github.com and included in various Linux distributions (Ubutnu, Fedora, Red Hat, Suse, etc). The FI-WARE repository contains the implementation of CDMI-based standard interface to access the object storage capabilities, developed jointly by IBM and Intel, and available as open source. In addition, some OpenStack enhancements developed by IBM within FI-WARE has been already contributed to OpenStack open source community, and included in OpenStack release, and hence are not uploaded here separately.
PaaS	Pegasus	TID	FI-WARE	CLOUD-	The implementation of this GE is

Management				Pegasus 3.3.3	done from scratch by TID. Its binaries are available in the FIWARE repository. This version incorporates functionalities for the query of blueprint templates and its instantiation in the testbed.
Software Deployment And Configuration	Sagitta	TID	FI-WARE	CLOUD-Sagitta 3.3.3	The implementation of this GE is done from scratch by TID, although part of its functionality is based on the Chef server engine. Its binaries are available in the FIWARE repository. This version provides functionalities for installing and uninstalling software in a VM and incorporate a software catalogue.
Policy Manager	Bosun	TID	FI-WARE	CLOUD-Bosun 3.3.3	The implementation of this GE is done from scratch by TID. Its binaries are available in the FIWARE repository. This GE is new in release 3, replacing Service Management GE (which is now obsolete).
Monitoring		TID	FI-WARE	CLOUD-Monitoring 3.5.1	This GE is based on the collected monitoring software tool although part of its internal components have implemented from scratch. Its binaries are available in the FIWARE repository. This version provides functionalities for the monitoring agents, collector and monitoring api.
Self-Service Interfaces		UPM	FIWARE	CLOUD-SelfService Interfaces 3.3.3	
Job Scheduler	ProActive Job Scheduler	INRIA	FI-WARE	CLOUD-JobScheduler 3.2.3	
Edgelets		Thales	FI-WARE	CLOUD-Edgelets 3.3	

Notes:

- The field "Repository" has three possible values ("FI-WARE", "FI-WARE PPP Restricted" or "SaaS"), depending on the standard delivery method chosen.
- An empty GEi column means that the name of the GEi is the same as the GE name(only for GEi with a single implementation)