

OFELIA Control Framework

The currently released version of the OFELIA Control Framework is OCF 0.5 which includes e.g. Improvements for user data presentation in the UI, full public access to code in all its stages (via GitHub), addition of automated processes for administrators and a new plug-in system for the development of new Aggregate Managers.

The OCF plug-in system is a way to ease the development of new Aggregate Managers (AM) and their interaction with the GUI (Expedient). With this, a real independence is obtained between the GUI core and every AM. Each AM developer shall code the corresponding plug-in for the AM by extending the predefined hooks but having enough freedom to code the internals as they wish.

The integration of the FOAM OpenFlow Aggregate Manager within the OCF is on its way. The new OpenFlow AM component is in the debugging stage and is expected to ease the management of OpenFlow resources.

More information about the OCF can be found at: <https://github.com/fp7-ofelia/ocf>

AMsoil—The Glue for Aggregate Manager Developers



OFELIA's control framework manages a diverse variety of resources. For each experiment, multiple different resource types need to be configured, allocated and provisioned. This orchestration is a complex task. With a simple trick the framework reduces the complexity: Each resource type is managed

by one Aggregate Manager (AM). These AMs can be stacked in a hierarchical architecture to combine multiple resource types.

During the project, multiple Aggregate Managers have been created (e.g. for flowspace, virtual machines). In the final implementation phase of OFELIA, the developers will refactor all existing AMs to a new orchestration protocol. Additionally, new AMs will be developed in order to separate concerns into single-purpose software entities.

AM developers typically face a number of similar problems when starting to create a new AM. These problems include parsing XML, managing configuration, persisting data, logging information, etc. In order to minimize the duplication of work, OFELIA created AMsoil. AMsoil is a light-weight framework for creating Aggregate Managers in test beds. AMsoil provides a plugin-based system, which provides helpers for common tasks in AM development. It provides the necessary modules for handling incoming communication and a structure for the actual resource management.

Please find a quick start via:

<https://github.com/fp7-ofelia/AMsoil/wiki>

OFELIA at Recent Events Successfully Demonstrated

The OFELIA Control Framework (OCF) was demonstrated at the Open Networking Summit (ONS) as part of the GÉANT OpenFlow Facility demonstration. The orchestration software deployed on top of the GÉANT OpenFlow Facility to implement management plane functionality is the OCF, that has been adapted to fulfill the GÉANT OpenFlow Facility requirements.

At ONS, researchers from ETH Zurich also presented a poster on Outsourcing Routing using SDN. OFELIA was advertised as the testbed of choice for hosting such novel SDN ideas and research endeavors.

At the Future Internet Assembly (FIA) in Dublin, GÉANT and OFELIA jointly demonstrated their innovative OpenFlow facility. On top of GÉANT's multi-domain OpenFlow testbed an innovative network virtualization framework was demonstrated allowing experimenters to instantiate virtual programmable networks with arbitrary topology. The network virtualization framework that was used in the demonstration is VeRTIGO. Compared to traditional OpenFlow-based virtualization tools like FlowVisor, VeRTIGO enables researchers to test novel network protocols

and innovative SDN mechanisms on arbitrary virtual topologies instantiated across several testbeds.

The Ofelia GÉANT facility as well as the OCF were also demonstrated at TNC 2013. This demonstration showed the i2cat island zoomed out to GÉANT.

See also <http://www.geant.net/Innovation>

EDOBRA (Extending and Deploying OFELIA in Brazil) Updates

The OFELIA Island in Brazil, located at Federal University of Uberlândia (UFU) is being deployed and by the end of June it is expected to complete the federation with OFELIA at Europe. The Island is based on L2/L3 switches (DATACOM) and also NetFPGA based switches with focus on new network architectures that consider aspects such as multicast and mobility in the presence of heterogeneous networks.

As the host of this OFELIA Island, UFU recently became an associated partner of FP7 FIBRE project (www.fibre-ict.eu), thus strengthening OFELIA international co-operation.

As a result of the work, a carrier-grade service level execution environment that extends SDN based services and puts together OpenFlow protocol and the Media Independent Handover protocol (IEEE 802.21) is being deployed and will be publicly available. Moreover, a clean slate network architecture, called Entity Title Architecture (ETARch), that applies new naming and addressing scheme based on the title and offers an integrated support to multicast and mobility within the Workspace is being deployed and will be experimented at scale under OFELIA.

EWSDN 2013

The Second European Workshop on Software Defined Networks (EWSDN, www.ewsdn.eu) is going to take place October 10th - 11th, 2013 in Berlin, Germany. Traditional strengths of European research and development have been in optical transmission and wireless, especially cellular networks. The workshop emphasizes aspects of Software Defined Networks that come up when extending SDN 'beyond Ethernet'. In this regard, "European" does not mean that we restrict to a geographic scope, we welcome contribution and participation from all over the world. One goal of the workshop is to bring together industry and academia on the topics of SDN; in particular the workshop will feature an "industry forum", i.e. a session with presentations of key industrial players.