Tempus

OSSCOM

Partnership with Enterprises Towards Building Open Source Software Communities and Rejuvenation of Technical Education and Innovation.

Newsletter 1st Quarter, september 2014

OSSCOM held the Kick-Off Meeting, an EU Tempus Funded Project on Open Source Software Curricula Enhancement in Universities

The Kick-Off Meeting of OSSCOM, an EU Tempus Funded Project on Open Source Software Curricula Enhancement (OSSCOM) in Universities in Lebanon and Jordan was held in Germany. The meeting was hosted by the Department of Computer Science at the German-based Bonn-Rhine-Sieg University of Applied Sciences and attended by 10 partners from five countries (Germany, Spain, UK, Lebanon and Jordan).

The OSSCOM project has been selected for funding by the European Commission - EACEA (Education, Audiovisual and Culture Executive Agency). It aims to promote the use of Open Source Software (OSS) through building capacity, where graduates of universities in Jordan and Lebanon will be equipped with the essential skills in OSS to improve their chances in the job market and enable them to contribute to the diffusion of OSS in key sectors as an alternative solution to proprietary software as well as to enhance their entrepreneurship and ICT innovation capabilities. The German Jordanian University and Lebanese university will operate as centers for Open Source Software to provide support for local companies as well as the society at large in OSS technology solutions.

Harb meets with the universities delegation: free software initiatives develops ICT sector

Lebanon ---- May 16, 2014 ---- Lebanese Communications Minister Mr. Boutros Harb met today in his office a delegation from the German, Jordanian and Lebanese universities participating in the project plans and educational partnership with the private sector in the free and open source software which is supported by the European Commission - the program "Tempus".

Harb said after the meeting: "There is no doubt that the free software initiatives, open source will contribute to the development of telecommunications and information technology sector in Lebanon and reduce the use of exchange volume on software licenses in many sectors and promote employment opportunities for graduates of communications software and information technology in the Lebanese universities in addition to contributing in the promotion of free software and the business sector on the market. "

Rainer Herpers

For his part, Dr. Rainer Herpers from Bonn-Rhein-Sieg University in Germany said "It is a pleasure to support such ambitions and contribute to the development of communication and free software in Lebanon and Jordan sector through knowledge and technology transfer project."

Alagtash

For his part, Dr. Salem Alagtash from the German Jordanian University in Amman said: "The project aims to set up a centers of excellence and accelerate business in the free and open source software to provide the necessary support for local companies in particular and society in general."

Karam

Dr. Walid Karam, a member of the executive body of the project and consultant of Minister of Communications said, "A key objective of this project is to improve cooperation between universities and institutions involved in addition to the establishment of a network of free software communities in Lebanonthat can grow in the Arab region."

Notre Dame University

The Notre Dame University hosts delegation of public and private bodies from Jordan, Lebanon and the European Union that participate in the project, which aims to strengthen the university partnership with the private sector, develop study plans in line with the free software technology and open source,promote their use in both Jordan and Lebanon, and finally to provide graduates with necessary skills to improve their chances in the labor market and enable them to contribute to the process of modernization in the ICT sector, and the localization of their contributions to be entrepreneurial graduates manufacturers of business instead of being job seekers.

About the project

With the support of the European Commission - Tempus - and the participation of a number of universities and institutions of the private sector in Lebanon, Jordan, Germany, Spain and Britain in the development of free software and open source and the telecommunications sector and information technology in the participating universities; German Jordanian, Yarmouk, Notre Dame and the Lebanese University (CNAM), to contribute to the promotion of the use of free software and its societies.

OSSCOM Follow up Meeting took a place in (FROSCon) Free and Open Source Software Conference

BONN, Germany ---- August 25, 2014 ---- Follow up Meeting of OSSCOM, was hosted by the Department of Computer Science at the German-based Bonn-Rhine-Sieg University of Applied Sciences. The meeting was for discussing and reporting the first quarter of the project. Partners reported on their work packages and presented their plan for the 2nd quarter.

OSSCOM Partners attended also FROSCon conference which took place on 23rd and 24th of August 2014 at the Computer Science Department of the University of Applied Sciences Bonn-Rhein-Sieg. The event was supported by the "Linux/Unix User Group Sankt Augustin" (LUUSA) and FrOSCon . It had an exciting program with talks and workshops for visitors of all ages. The event was topped off with a fair of booths from FLOSS projects and companies.

Open source bioinformatics data platform gets help from student hackers

Bio4J was selected to be part of Google Summer of Code 2014 this year, and what began this summer has recently culminated in great success, after months of work by the Era7 Bioinformatics team.

At Era7 Bioinformatics, we are a bioinformatics company specializing in sequence analysis, knowledge management, and sequencing data interpretation. Our mission is to help our customers obtain the maximum value from their Next Generation Sequencing projects. And, Bio4j is our high-performance, cloud-enabled, graph-based, and open source bioinformatics data platform, integrating the data available in the most representative open data sources around protein information. It integrates the data available in UniProt KB (SwissProt + Trembl), Gene Ontology (GO), UniRef (50, 90, 100), RefSeq, NCBI taxonomy, and Expasy Enzyme DB. The current version has more than 2,000,000,000 relationships, 400,000,000 nodes and 1,000,000,000 properties. Bio4j provides a completely new and powerful framework for protein related information query and management. Since it relies on a high-performance graph engine, the data is stored in a way that semantically represents its own structure. On the contrary, traditional relational databases must flatten the data they represent into tables, creating artificial ids in order to connect the different tuples; which can in some cases eventually lead to domain models that have almost nothing to do with the actual structure of data.

If you aren't familiar with the successful and popular Google Summer of Code (GSoC) program, it is a 10 year-old global program that offers funding to leading open source projects from various fields. Funding is given directly to students to help them create new functionalities or improvements for the selected open source projects. To celebrate the success of the program this year, Google organized a meeting at its headquarters from October 23 - 26 and invited delegates from each successfully participating organization to greet and collaborate. Two Era7 Bioinformatics delegates attended the event at Google's Mountain View offices and participated actively in the different activities organized by Google.

"This project has been a great opportunity to make our Bio4j platform an even more useful and valuable tool that we use under the hood of many of our pipelines and services, like BG7 and Genome7," said Eduardo Pareja, CEO of Era7 Bioinformatics. "Based, in part, in these improvements, we can offer now tailored Bio4j based services to be used by other parties in their bioinformatics solutions," added Dr. Pareja.

This was Bio4j's first year as a GSoC organization and was in charge of mentoring three students who worked on these projects:

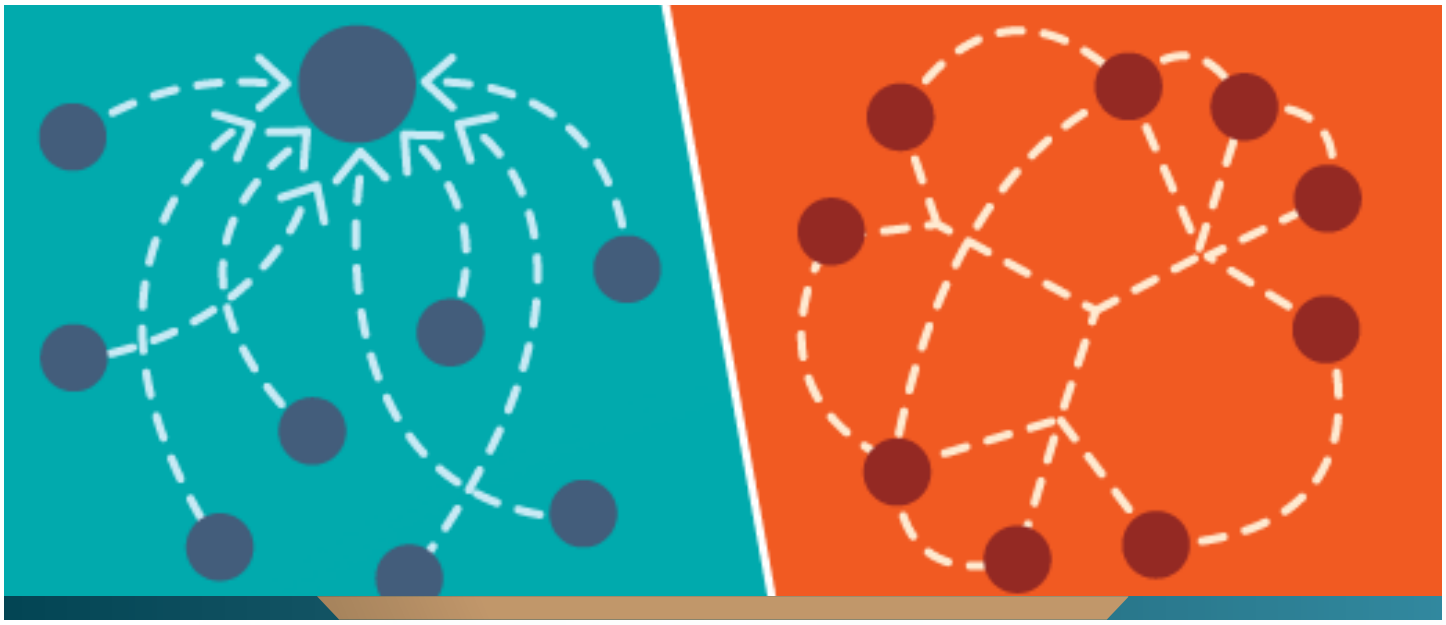
Dynamograph, a simple graph database based on DynamoDb that offers the possibility of persisting and retrieving data organized in graph structures.

Bio4j Graphml/GraphSON exporter, a plugin for Tinkerpop3's Gremlin Console that provides Traversal Steps implemented in Bio4j's Domain Specific Language and the:bio4j console command. The :bio4j command allows you to export queries expressed in the Gremlin Graph Querying Language or in the Bio4j DSL to GraphSON or GraphML formats.

GSoC 2014 el-grafo project, the first development of an interactive web-based tool that allows users to intuitively explore the abstract domain model of the Bio4j open source bioinformatics data platform.

By: Rosa Martin

Open source accelerating the pace of software



When we talk about the innovation that communities bring to open source software, we often focus on how open source enables contributions and collaboration within communities. More contributors, collaborating with less friction.

However, as new computing architectures and approaches rapidly evolve for cloud computing, for big data, and for the Internet of Things (IoT), it's also becoming evident that the open source development model is extremely powerful because of the manner in which it allows innovations from multiple sources to be recombined and remixed in powerful ways. Consider the following examples.

Containers are fundamentally enabled by Linux. Asdiscussed in more detail recently, all the security hardening, performance tuning, reliability engineering, and certifications that apply to a bare metal or virtualized world still apply in the containerized one. And, in fact, the operating system arguably shoulders an even greater responsibility for tasks such as resource or security isolation than when individual operating system instances provided a degree of inherent isolation.

What's made containers so interesting in their current incarnation—the basic concept dates back over a decade—is that they bring together work from communities such as Docker, that are focused on packaging applications for containers and generally making containers easier to use with complementary innovations in the Linux kernel. Its Linux security features

(such as those discussed in this post by Red Hat's Dan Walsh) and resource control such as Control Groups that provide the infrastructure foundation needed to safely take advantage of container application packaging and deployment flexibility. Project Atomic then brings together the tools and patterns of container-based application and service deployment.

We see similar cross-pollination in the management and orchestration of containers across multiple physical hosts; Docker is mostly just concerned with management within a single operating system instance/host. One of the projects you're starting to hear a lot about in the orchestration space is Kubernetes, which came out of Google's internal container work. It aims to provide features such as high availability and replication, service discovery, and service aggregation. However, the complete orchestration, resource placement, and policy-based management of a complete containerized environment will inevitably draw from many different communities.

For example, a number of projects are working on ways to potentially complement Kubernetes by providing frameworks and ways for applications to interact with a scheduler. One such current project is Apache Mesos, which provides a higher level of abstraction with APIs for resource management and scheduling across cloud environments. Other related projects include Apache Aurora, which Twitter employs as a service scheduler to schedule jobs onto Mesos. At a still higher level, cloud management platforms such as ManageIQ extend management across hybrid cloud environments and provide policy controls to control workload placement based on business rules as opposed to just technical considerations.

We see analogous mixing, matching, and remixing in storage and data. "Big data" platforms increasingly combine a wide range of technologies from Hadoop MapReduce to Apache Spark to distributed storage projects such as Gluster and Ceph. Ceph is also the typical storage backend for OpenStack—having first been integrated in OpenStack's Folsom release to provide unified object and block storage.

In general, OpenStack is a great example of how different, perhaps only somewhat-related open source communities can integrate and combine in powerful ways. I previously mentioned the software-defined storage aspect of OpenStack, but OpenStack also embeds software-defined compute and software-defined networking (SDN). Networking's an interesting case because it brings together a number of different communities including Open Daylight (a collaborative SDN project under the Linux Foundation), Open vSwitch (which can be used as a node for Open Daylight), and network function virtualization (NFV) projects that can then sit on top of Open Daylight—to create software-based firewalls, for example.

It's evident that, interesting as individual projects may be, taken in isolation, what's really accelerating today's pace of change in software is the combinations of these many parts building on and amplifying each other. It's a dynamic that just isn't possible with proprietary software.

By: Gordon Haff

OSSCOM organized a workshop on mobile applications using the Android operating system

The College of Engineering (ESII) at University of Castilla-La Mancha (UCLM) of Albacete, one of OSSCOM partners, hosted the workshop "Programming with Android mobile applications" as part of the TEMPUS project "Towards Building Enterprises Partnership with Open Source Software Communities and Rejuvenation of Technological Education and Innovation" during the week 22-26 September, 2014 in Spain.

Attendees from Lebanon and Jordan have been trained on Android basics, visual interfaces and multimedia elements for the Android application, meeting the workshop objectives to understand the Android OS architecture and install and use appropriate tools for Android development, pursue the project objectives in promotion and implementation of the use of free software in both universities curricula and the development of new business models based on free software.

During the workshop week, the Center for Technological Entrepreneurship Support BILIB has been visited by the attendees.

Project members learned the various technologies of Albacete Free Software in the School of Engineering. The team members visited the facilities and the Demonstration Centre SFA to learn the experience of BILIB (and CESLCAM old) in the promotion and revitalization of Free Software and ICT in Castilla La Mancha.

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