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eclipse scada

www.eclipse.org/eclipsescada

Community Bulletin

ECLIPSE SCADA PROJECT RELEASES FIRST OFFICIAL VERSION (0.1.0)

Mai 06, 2014 – We are proud to announce the 0.1.0 release of the Eclipse SCADA project.

Features in the 0.1.0 release

The last year was pretty busy for us. Not only all the source code had to be migrated from openSCADA to the Eclipse repositories, but the implementation of an all new configuration system had to be done as well.

We changed our build system from using PDE to Maven/Tycho. This enables now to easily build Eclipse SCADA on a local machine, which was challenging before.

Following features were implemented over the course of the last year:

- a completely new designed, sophisticated configuration system based on EMF which for easy deployment creates:
  - debian packages (on linux)
  - rpm packages (on linux)
  - msi packages (on windows)
- a new **Modbus** implementation:
  - based on Apache Mina
  - reconfigurable at runtime
  - can also be used to expose an Eclipse SCADA master server as a Modbus slave
  - ability to change byte order
- a REST API

We also created a small demo system based on Arduino, which is available at demo.openscada.org.

The need to include some important dependencies also caused that Jens Reimann became a committer in the **Eclipse Orbit** project. Because of this, there will always be a complete and up to date version of Apache Mina provided.

It also turned out that the **Tycho** maven plugin couldn't create the **JavaDoc** for the bundles, so we added that ability as well.

To provide the ability to create msi packages we had to have the **WIX toolkit** approved as

a works-with dependency by the Eclipse foundation. That means now it is possible for every Eclipse project to provide msi packages using WIX. These can be signed through the existing signing infrastructure as well. We are also pushing for dedicated Windows build slaves to be able to compile there. This is also of importance for any other of the IoT projects which have to compile native code in Windows.

Since we are using the p2-director to provision our Equinox containers and we want to be able to do that on the **ARM platform**, we also need an ARM based distribution of Eclipse. Again this is a platform which is of huge importance to all IoT projects, so we are pushing for ARM build slaves as well.

Next steps on the road to 0.2.0

Over the course of the last few months the **roadmap** for the next 0.2.0 version practically wrote itself.

We are going to migrate the last important missing pieces from openSCADA to Eclipse SCADA. This is the **Utgard** library together with the **OPC** Driver and the **SNMP** driver. In both cases there were some licensing issues which needed addressing before a migration could happen. Since CQs tend to take some time, we concentrated our efforts on other areas and decided to postpone the migration of those to the 0.2.0 release. As it turned out, the library on which Utgard is based, **jinterop**, has changed its license from LGPL to EPL in August 2013. That means we can put it into Orbit now and finally move Utgard to Eclipse SCADA. Additionally this should enable the **Hudson** project to move the functionality to launch Windows slaves from a plugin back into core.

Apart from fixing minor bugs we will make some minor improvements to the HMI components. The biggest and most important part of the 0.2.0 release will be an implementation of the **IEC-60870-5-104** protocol. This is a widely used protocol standard for telecontrol, teleprotection, and associated telecommunications for electric power systems.

The release of 0.2.0 is planned for October 2014. Most functionality should be available well before that, for more information please follow the mailing list or have a look at http://www.eclipse.org/eclipsescada

Beyond Eclipse SCADA

One common need between all IoT projects, is the ability to store time series data for archival over a long time. To facilitate this we started a project with the working title »**Haystack**«. It is still in the early stages of development, but we plan to release it as an

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separate Eclipse project, independent from Eclipse SCADA. The core of the project is a set of common interfaces for pushing date to a storage and retrieving the values from there. The storage itself is supposed to be swappable with a minimal amount of glue code. Since the licenses of most suitable storages (e.g. OpenTSDB, Druid, etc) are incompatible with the EPL we have also implemented a storage engine based on HBase. To do this we will also push **HBase** and the dependencies to Orbit.

Another effort we are working on, is the definition of **common data formats** between the different IoT projects. At the moment there is a lot of momentum in the area of different messaging protocols, but there is no focus on the payload. Since for many use cases the requirements are pretty much identical – send sensor values with a given index or name – it makes total sense to consolidate the formats to a few common variants.

A possible contribution by us to the **Eclipse Smart Home** project is the implementation of an adapter for **HomeMatic** products. We are also thinking about a general bridge between Eclipse SCADA and Smart Home.

To demonstrate the interaction between different Eclipse IoT Projects, we started to create a demonstrator which will closely mimic a real industrial application. It is an elevator simulation which will combine the Eclipse SCADA project, **4DIAC** and **eTrice**. Hopefully we are able to demonstrate it at EclipseCon Europe 2014 in Ludwigsburg in October.

About Eclipse SCADA

Eclipse SCADA launched in 2006 under the name openSCADA as a modular system to develop custom SCADA applications. It provides facilities for data access (DA), alarms & events (AE), recording of historical data (HD) and user interface development (VI). Access modules for popular protocols and devices are included, such as Modbus, OPC, JDBC, SNMP, Siemens S7, but it is easy to build additional modules if the need arises.

About IBH SYSTEMS Gmbh

IBH SYSTEMS GmbH provides customers with technological consulting from automation to enterprise application development. A major area of expertise is the integration of legacy devices into the ever changing world of business applications. For this, IBH SYSTEMS is using the Eclipse SCADA project and is the major contributor there. Since 2005 the main focus of business has moved to providing solutions for utilities, in

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particular oil & gas and renewable energy companies.

About the Eclipse Foundation

Eclipse is an open source community, whose projects are focused on building an open development platform comprised of extensible frameworks, tools and runtimes for building, deploying and managing software across the lifecycle. A large, vibrant ecosystem of major technology vendors, innovative start-ups, universities and research institutions and individuals extend, complement and support the Eclipse Platform.

The Eclipse Foundation is a not-for-profit, member supported corporation that hosts the Eclipse projects. Full details of Eclipse and the Eclipse Foundation are available at www.eclipse.org.

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