Embedding Eclipse Equinox for Fun & Profit

track	type	percent	positive	negative	day	time	room
Mobile and Embedded	Tutorial	100%	15	0	Mon.	8:00	Room 206

Eclipse has proven itself on the desktop as a world-class IDE and rich client platform, but few developers realize how Eclipse technologies provide a solid platform for embedded devices as well. Applications such as remote data logging, industrial control, and media servers can benefit from the same extensibility we have grown to expect on the desktop.

In this tutorial, we walk through the process that a development team might follow to build a remote weather monitoring station. Starting with an off-the-shelf Linux platform with integrated wireless connectivity (Arcom ZyWAN), participants will build a system from the ground up, including:

- Packaging and configuration of a JVM and the Equinox runtime
- Communicating with a remote embedded device using Eclipse DSDP/TM tooling
- Initial provisioning and remote updates of the application using p2/Mayinstall
- Providing a web-based UI using the Equinox HttpService
- Interfacing to weather-station hardware using the OHF DeviceKit framework
- Fall-back mechanisms for building high-reliability embedded Java applications
- and more...

Due to time constraints, we will provide source code for the custom components in the system for use during and after the tutorial. The focus will be on the practical integration of existing Eclipse technologies, with time for discussions and questions.

The tutorial will be completely non-commercial in nature, although we do expect at least a beer from any participants who make millions selling remote weather stations after completing the course.

Patrick Dempsey pd@bandxi.com Vice President Band XI International, LLC

Patrick Dempsey writes Java software for embedded platforms at Band XI International. He specializes in platform integration and does much of his programming utilizing the OSGi framework with Service Activator Toolkit and Device Kit. Once upon a time Patrick was a member of the Embedded Java Enablement Team (eJET) in IBM's Pervasive Computing Group. That time, all five years of it, has come and gone leaving only memories of RFID and Telematics and a much better understanding of OSGi, JAVA, embedded C, and all manners of hardware devices. Even before that he earned a BS in Electrical Engineering and a BS and MS in Computer Engineering from North Carolina State University.

Brett Hackleman bh@bandxi.com Software Developer Band XI International, LLC

Brett Hackleman is an agile/XP software developer with Band XI International. In his past life he was a member of the Embedded Java Enablement Team (eJET) in IBM's Pervasive Computing Group, where he worked for 6 years in the Telematics and RFID domains. Before that, Brett was happily employed by Object Technology International, Inc. He holds a BS in Computer Engineering (NC State University) and works to support his flying and snowboarding addictions.

John Cunningham jc@bandxi.com President Band XI International, LLC

John Cunningham leads Band XI International, a small software and services company started in 2005 that builds everything using Eclipse tooling and OSGi service-oriented bundle architectures. Although most of his work today is done in Java (and some Ruby), he really learned the most while working in LISP and Smalltalk. Mr. Cunningham has been building and managing software for 20 years in a wide variety of domains as a consultant and line manager. He has worked for Andersen Consulting (Accenture), Computer Sciences Corporation (CSC), Travelers Insurance (Citigroup), Object Technology International (OTI), and IBM. Mr. Cunningham holds the following degrees: BS in Mechanical Engineering (Columbia University), MS in Mechanical Engineering (University of Massachusetts/Amherst) and an MBA in Finance (University of Connecticut).

Comments

A little too much material to cover in one session.

Excellent overview of how to use OSGi in embedded devices.

Good overview. It was a lot of content w/good working examples to take home and explore.

Good talk. Lots to cover in 2 hours.

Good tutorial example. Very informative.

Good tutorial, well explained and the subject very interesting. The only problem was about the beginning because it was a bit confusing.

Great tutorial. A bit much to get through in 2 hours.

Love the jigsaw puzzle pieces!

Not enough time! Good material and presentation.

Very helpful information.

Well put together tutorial - given I was familiar with Eclipse, but had never used Equinox/Target mgmt before it was great I could do so much in 2 hours. Nice tying it in with a real world application of the weather station.