

## *Skill Profile*

### *Real-Time Embedded Linux Guru*

#### **Role**

To design, code, test and debug C/C++ software for real-time embedded communications middleware on real-time Linux. While the primary focus of the role is to make the Linux kernel real-time and implement highly efficient multi-processor communications mechanisms, the successful candidate will demonstrate a passion for technology and a desire to grow his/her knowledge.

#### **Responsibilities**

- Detailed design, coding, test and debug of software on real-time embedded platforms
- Requirements review, analysis and interpretation into code
- Module-level interface definition, integration and test
- Coding and use of peripheral ports and services
- Documentation of software design and interfaces using suitable notations and methods
- Definition of test requirements, procedures and scripts
- Test equipment specification and use

#### **Essential Skills and Experience**

- Specification and design of real-time systems
- C/C++ embedded coding and test, incorporating asynchronous and re-entrant design principles
- Memory allocation principles and debugging, including MMU operation, stack and heap
- Real-Time (RT) Linux kernel configuration, building, tuning and operation
- Linux device drivers and ISRs
- Implementation and use of Flash File Systems and boot-loaders
- Sockets programming and TCP/IP networking
- Implementation of Board Support Packages (BSPs) for target hardware, consisting of RTOS, device drivers, ISRs, boot-loading and application APIs
- Use of POSIX interfaces, facilities and services
- Configuration, validation and use of the GNU toolchain on Linux
- Participation in design and coding reviews
- Use of software configuration control and build systems
- Use of defect tracking tools



## *Skill Profile* *Real-Time Embedded Linux Guru*

### **Desirable Skills and Experience**

- BASH scripting
- Use of JTAG emulators and BDM development tools, especially on ARM-based targets
- Use of real-time profiling tools for performance tuning
- Real-time performance optimisation techniques
- Use of static code analysers
- Experience of hypervisors and virtualisation techniques in embedded systems

### **Qualifications**

Good university degree in Electronics Engineering, Physics, Maths or Computing.

### **Personal Profile**

- Goal-oriented, with a desire to deliver on objectives as quickly as possible and a drive to meet deadlines
- Ability to operate under pressure and commitment when/if deadlines loom
- Ability to perform trade-offs and impact analyses of architectural design, coding and test decisions
- Flexible in outlook, and adaptable to change
- Able to take significant responsibility for developing a major component, and work with autonomy
- Significant initiative to help determine what is required, resolve issues, maintain progress and flag problems requiring wider resolution
- Ability to clearly express status and issues to team leaders and project management
- Able to work effectively as a key player within a small team
- Logical, thorough and methodical approach to task management and problem solving, with attention to detail in planning and execution
- A focus on quality and maintainability of work outputs
- Self-motivated and enthusiastic, with a continual desire to learn new technologies, tools and techniques