



**BANGALORE SECTION**

## **TUTORIAL ON Gnu/Linux KERNEL**

**DATE: 18<sup>th</sup> October 2008**

**VENUE: Atria Hotel  
Palace road, Bangalore**

The Tutorial aims at increasing the technical excellence of programmers in defining technologies in free software domain. This is targeted at programmers in the industry and engineering students.

### **Schedule:**

<b>18<sup>th</sup> October, 2008</b>		
08.30 AM		<b>Registration</b>
09.00AM		<b>Inauguration and talk by IEEE Bangalore Section</b>
09.30AM	Basics of Gnu/Linux Programming & Tools	<ol style="list-style-type: none"><li>1.Simple C Programs</li><li>2.Simple Makefiles</li><li>3.Gcc, stace, Itrace, gdb, objdump, nm, LD_PRELOAD</li><li>4.Quick overview of a typical hardware on which Gnu/Linux runs (CPU, Memory, Interrupt controller, IO Bus etc)</li><li>5.Overview the Gnu/Linux Kernel<ul style="list-style-type: none"><li>• Kernel Layout</li><li>• Coding Style</li><li>• Important Subsystems</li><li>• Kernel configuration</li></ul></li><li>6.Building and booting a new kernel EXERCISE</li></ol>
<b>10.30 AM: Tea</b>		
10.45AM	Gnu/Linux Kernel Internals – An Overview	<ul style="list-style-type: none"><li>• Process and threads Memory management</li><li>• File systems</li><li>• Interrupts and exceptions &amp; System Calls</li><li>• Kernel Synchronization</li><li>• EXERCISE</li></ul>
<b>1.00 PM: Lunch</b>		
2.00PM	Device Drivers	<ul style="list-style-type: none"><li>• Kernel Module programming</li><li>• Char and block drivers</li><li>• Ioctls</li><li>• Writing simple char device driver EXERCISE</li></ul>
<b>3.15 PM: Tea</b>		
3.30 PM	Kernel Debugging	<ul style="list-style-type: none"><li>• Printk</li><li>• Dynamic instrumentation techniques</li><li>• System Tap [EXERCISE]</li><li>• Kerec/kdump/ crash analysis EXERCISE</li></ul>
5.00 PM	Free software philosophy	<ul style="list-style-type: none"><li>• Introduction to the open source community</li><li>• How to contribute</li><li>• New exciting areas of work in the kernel</li></ul>
<b>5.30 PM: Conclusion</b>		

## Pre requisites

It is expected that all participants will have:

- Basic knowledge of operating Systems
- Good working knowledge of C
  - Hands-on experience desirable
  - Kernel programming experience is a bonus
- Basic scripting knowledge (ex: shell scripts)
- Working knowledge of Gnu/Linux

## Resource Persons

Arun Krishnan, Huawei Technologies India.  
Srivatsa Vaddagiri, Linux Technology Centre, IBM India  
Balbir Singh, Linux Technology Centre, IBM India  
Ananth N Mavinakayanahalli, Linux Technology Centre, IBM India  
Sachin Sant, Linux Technology Centre, IBM India  
Ankita Garg, Linux Technology Centre, IBM India

## Course Fee per participant

**Non-member: Rs. 1200/-; Student Rs. 600/-**  
**IEEE member Rs. 1000/- ; IEEE Student member Rs. 500/-**

The course fee includes tutorial kit, inter session tea and lunch.

## Organizing Committee

M. M. Babu Narayanan, IEEE Bangalore Section  
Hitesh Mehta, IEEE Bangalore Section  
Ravikiran. A, IEEE Bangalore Section  
Dr. Debabrata Das, IEEE Bangalore Section  
Dr. T. Srinivas, IEEE Bangalore Section

***Please send your registration to:*** Mr. M.M. Babu Narayanan  
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