


Balakumaran Kannan


System Programmer

Linux system programmer having 7 years of experience with Bachelor of Engineering degree specialized in computer science and engineering. Open source contributor, hobby blogger and proud fan of Vim

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Work Experience

Now
|
2014
Aug

● Hewlett Packard Enterprise

 Software Engineer - System  Bangalore

- Owner of Service OS kernel for ARM based switches
- Owner of High-Availability and Redundant File System modules

2014
Aug
|
2012
May

● SONY

 Consultant Software Engineer  Bangalore

- Network library development
- Linux kernel debugging
- IPsec tools, Curl library, Squid proxy
- IPv6 verification using TAHI tools

2012
May
|
2011
Jun

● Tata Elxsi

 Software Engineer  Chennai

- Application development for connected TVs

Education

2011
|
2007

● B.E., Computer Science & Engineering

 Jeppiaar Engg. College  Chennai

- Passed with **72%**
- Done project on mitigation of ARP cache poisoning attack

2007
|
2005

● Higher Secondary Education

 SRV Higher Secondary School  Namakkal

- Passed with **92.6%**

2005
|
2003

● SSLC

 Govt. Higher Secondary School  Pattukkottai

- Passed with **93%**

Skills

C

Linux

Platform

Yocto

Significant Works

● Patents filed

1. High available DHCP service by running DHCP servers on a Blockchain network
2. Multiple-site Virtual Private Network secured by IPsec, using Blockchain application for key exchange to optimize number of IPsec rules

● Contribution to Linux kernel

- smsc911x: set NOCARRIER flag in driver initialization [link](#)
- Check for aneg completion before setting state to PHY_RUNNING [link](#)
- Remove stale condition check in phy [link](#)
- Fix broken IPv6 routing table after loopback down-up [link](#)

Projects

Now
|
2018
Jan

ARM board bring-up

 Hewlett Packard Enterprise  Bangalore

- Brought-up two boards one is based on ARM64 NXP SoC. Another is internal developed ARM32 SoC
- Compiled complete Linux OS using Yocto
- Worked on kernel config and userland package selection
- Modified the device-tree for board requirements
- Fixed multiple compile-time and bring-up time issues
- Also worked some part of u-boot and First Stage Loader for the ARM32 board

2018
Dec
|
2017
May

Core-dump capture design

 Hewlett Packard Enterprise  Bangalore

- As a part of core-team that developed new generation Linux based access switches, I was initially responsible for core-dump capture mechanism
- Developed a method to capture core-dump on a NFS drive
- Worked with kexec system call to capture kernel core-dump
- Used Yocto framework to add necessary kernel config options and packages

2017
May
|
2014
Aug

HA/RFS module development

 Hewlett Packard Enterprise  Bangalore

- Owner of High-Availability [HA] and Redundant File System [RFS] modules for a range of HPE procurve switches
- Played a key role in the core-team that developed Fron Plane Stacking [FPS] switches
- Re-architected HA/RFS modules to make it work seamless in both BPS and FPS environment
- Participated in complete development cycle - Design, Develop, Test and Maintenance

2014
Aug
|
2013
Apr

Preperation of open source tools

 SONY  Bangalore

- Part of a team that developed a Linux distribution to be used in SONY devices
- Ported open source network packages like Curl, OpenSSL, Squid, Connmon, IPSEC tools to ARM platform
- Replaced all deprecated system calls from OpenSSL and added IPv6 support to it

2014
Aug
|
2013
May

IPv6 compliance verification

 SONY  Bangalore

- Performed IPv6 Ready Logo tests with TAMI test framework
- Basic IPv6, DHCPv6, IPsec tests were performed
- Identified bugs with Linux IPv6 kernel stack and a driver. Contributed fixes kernel community

2012
May
|
2013
Mar

Networking library development

 SONY  Bangalore

- Developed a full-fledged network library in Linux that supports both wired and wireless
- This library was developed to be used in SONY TVs and Blu-ray DVD players and are still in use
- Developed with both IPv4 and IPv6 support
- Participated in all phases of development cycle - investigation, design, development, test and maintenance

2012
May
|
2011
Jun

Application development for connected devices

 Tata Elxsi  Coimbatore

- Developed two prototype applications - BigFlix and Flickr - on Samsung Smart TV, Panasonic VIERA connect TV, ROKU and BOXEE streaming player