

VASAVYA YAGATI

8-3-231/A-66, Sri Krishna Nagar,
Yousafguda, Hyderabad- 500045

Email: vasavya@gmail.com

Mobile: (+91) 9848 232 553

OBJECTIVE

To have bright career as a **Leader** in latest Embedded / Telecom / NW technologies and seeking quality environment where my knowledge can be utilised and improved.

SUMMARY

- ◆ Over **8+ years** of experience in Design and Development (**R&D**) of **Embedded / Telecom / Networking** systems.
- ◆ Involved in **Total Development Cycle** for Telecom Equipments DLC and IP-DLSAM
- ◆ **Developed** minimal **TCP/IP Stack, PPP** & NW Protocols with 2K RAM foot print for very lower end application (for handheld terminals).
- ◆ Designed **Diagnostics and Manufacturing software** in Linux and Uboot
- ◆ Debugging tool implemented for **Linux Kernel Crash / Panic**

SKILL SET

Embedded

- ◆ **Conversant with** Analog & Digital **circuits design**
- ◆ Strong in **C & Assembly**
- ◆ **Linux Device Drivers**
- ◆ Micro Processors/controllers - 64-bit (Wintegra) 32-bit(Motorola PowerPC **MPC860, IKANOS VX160 / Vx180**), 16-bit(**Hitachi H8** series)
- ◆ RTOS: **CMX, Montavista / embedded Linux**

Networking

- ◆ TCP/IP Stack Developed for 8/16 bit Micro controllers with 2K RAM
- ◆ Developed TCP/IP Over Ethernet
- ◆ Developed TCP/IP Over PPP
- ◆ Developed UDP, DHCP, DNS, ICMP, LCP, PAP & IPCP
- ◆ Worked on Linux networking for Residential Gateways
- ◆ Performance analysis of Networking devices

Telecom

- ◆ Telecom Domain Knowledge
- ◆ **DLC** (Digital Loop Carrier) on SDH
- ◆ **IP-DSLAM, ADSL, VDSL, Residential Getaways**
- ◆ Knowledge on **PSTN, ISDN, Leased Lines** Services.
- ◆ Worked on 56Kbps **Modems** for **Dial up network** access
- ◆ Interfaces – G.703, G.707, V.52, V.35, V.90, E1
- ◆ Knowledge on SONET/SDH (STM1)

Management

- ◆ As a **Project Leader**
 - i. Project proposals / Planning
 - ii. Work assigning to team members
 - ii. Team work status updates
- ◆ Technical Training to Internal / External people
- ◆ Application Engineering up to mark to build confidence to customer
- ◆ Communicating and maintaining good relations with Int departments to resolve issues

PROFESSIONAL EXPERIENCE

IKANOS Communications, Hyderabad <http://www.ikanos.com> **Dec 2006 – Till date**
Project Leader, A Semiconductor Company (Network Processor, VDSL and ADSL) **2+ Years**

- Nature of Work:
1. Second level technical support - Duplicating/Replication of customer issues on lab
 2. Debugging of customer issues - Bug fixing
 3. Preparing Application Notes for customer specific requirements
 4. New features development (Telecom Provider specific)

WIPRO Technologies, CHENNAI <http://www.wipro.com> **June 2005 – Nov 2006**
 Senior software Engineer (**Career Group: GROUP B2**) **1 ½ Years**

- Nature of Work:
1. Development of *Platform and Diagnostic* software for complete IP-DSLAM
 2. **Module Lead** for "Diagnostic" Module

NETINDIA Pvt. Ltd, Hyderabad <http://netindia.co.in> **June 2004 – May 2005**
Senior Engineer **1 Year**

- Nature of Work:
1. Design & Development of Network Protocols
 2. *Team Lead* for various projects

MIC ELECTRONICS LIMITED, Hyderabad <http://www.micelectronics.com> **Jan 2001 to May 2004**
Engineer (Design & Development) **3 ½ Years**

- Nature of Work:
1. Design & Development of Hardware for DLC, NG-DLC & DSLAM
 2. Design & Development of Firmware for DLC, NG-DLC & DSLAM

LIST OF MAJOR PROJECTS HANDLED/INVOLVED

Linux Kernel Crash Log

Projects # 1

Client: For All Ikanos NW processor Customers

Place of Work: Ikanos Communications

Firmware: u-boot, Linux Kernel 2.6.18, MIPS-GCC

Team Size: 1

Hardware: Fusiv Vx160 (IKANOS NW processor) based Ikanos Reference Board (Alaska / Himalaya)

Project Description

Standard Linux does not include the capability of creating crash dumps. Software such as LKCD, netdump, minidump and diskdump have been offered as solutions for those who want to add crash dump generation capabilities to Linux. However, in embedded systems, very difficult to incorporate those software due to limitation of FLASH memory. So, I have implemented some additions to existing Linux kernel crash handling mechanism. Such as exception handler has modified to log the important register values of peripherals (either internal or external) and log the network statistics and system parameters from proc file system at the time of Kernel Crash happened. This logged information is very useful to identify the root cause of Kernel crash occurred during system on development and field trails.

Objectives

- Easier to escalate kernel crash issues with more information to support team
- Easier to identify the root cause of kernel crash.
- Kernel problems are resolved more quickly.
- As possible as to log various statistics on console or into file.

My Role

1. Studying on Reasons for kernel Crash, kernel Panic and Kernel Hang
2. Software development for Crash Log
3. Simulation software for creating Kernel crash, Panic and Hang
4. Verification and testing of Kernel Crash Log

IP-DSLAM – Telecom Access Network

Projects # 2

Client: CALIX –USA

Place of Work: Wipro Technologies, Chennai

Firmware: C, Embedded Linux (Montavista)

Team Size: 8

Hardware: Winarrow 777 NP (MIPS 5Kc core), MPC 8247, Intel NOR Flash, Ethernet Controller-SMSC91c111, NANDFlash, Ikanos Chipset, JTAG (Abatron BDI2000), SDRAM, I2c controllers.

Project Description

The C5 IP DSLAM is designed for the reliable delivery of voice, video and data. Its network facing interfaces are GIGE, which are used to deliver VDSL2, ADSLx and POTS services to residents within the customer service area. The C5 is designed to allow carriers to compete with cable operators by offering integrated voice, video, and data (triple-play) services to their customers using the existing copper plant. The C5 is small Outside Plant equipment, which serves up to 192 customers with high-bandwidth services fed by a Gigabit Ethernet pipe. C5 IP DSLAM mainly consists of DSL Gigabit Ethernet Line Card (DSL GigE), Shelf Control Card, Aggregate Card, and POTS or IPOTS card.

DSL GigE Board Description:

The function of DSL/GIGE board is to accept DSL data and provide Gigabit uplink through SFP's and also to Aggregation boards through backplane. XDSL line card comprises of SL9402 chipset – ADSL/VDSL, WinArrow 117 Network Processor (MIPS 5KC core), SERDES, Ethernet Controllers and other hardware components and SMC91C111 Ethernet Controller.

Shelf Control Card Description:

SC Manages the xDSL line card, Aggregation Card, iPOTS & OPOTS card through backplane interface. The C5 has got two SC modules to support hot/standby feature. SC has NOR & NAND flash to maintain database, Linux OS image and application Images. SC has I2C controller to control the FAN, to read the input power and the C5 temperature. The SC provides interface to the User to manage C5.

My Role

1. I was worked as the **Module lead** for Diagnostic module of Platform and Diagnostic team.
2. JFFS2 file system modification / porting on Linux and Winmon (boot loader).
3. Diagnostic CLI Design and Implementation on Linux and boot loaders (U-boot, Winmon).
4. Ethernet Linux Device Driver Modification / Porting on Linux and Winmon for SMC9111 Ethernet Controller.
5. I2C Device Driver (Character Driver) Modification / Porting on Linux for I2C Switch

Embedded networking TCP/IP Stack Development**Projects #3****Client:** NetIndia Pvt. Ltd., Hyderabad**Place of Work:** NetIndia Pvt. Ltd., Hyderabad**Firmware:** C, HEW cross Compiler**Team Size:** 2**Hardware:** Hitachi **H8/3687**(16-Bit Processor), Ethernet Controller (**CS8900A**)**Protocol:** RRC793(TCP), RFC791(IP), RFC792(ICMP), RFC768(UDP), RFC1794(DNS), RFC1531(DHCP)**Tools:** **Ethereal**, Hitachi Debugging Tool**Project Description**

Developed Embedded TCP/IP, UDP, DHCP, ICMP & DNS protocols utilizing **10K Bytes Code** and **2 K Bytes RAM** without any RTOS in target.

Adaptable for lower end to higher end applications with configurable buffers usage. Handled **Sliding Window** (TCP layer) protocol to support less memory processors, i.e., processors having 1 K Bytes RAM.

Developed **UDP** also to achieve some networking features like Dynamic Host Configuration (DHCP) client & Domain Name Server (DNS) client.. Developed **ICMP** protocol for pinging operations like PING Request and Response.

My Role

1. I was worked as the **Team lead** for Design and Development of this team.
2. Study/Understanding all required RFCs and Protocols
3. Development/Writing Protocols in 'C' language
4. Evaluating & testing the code.

Developed **DNS** Client for getting IP address from Domain Name address. Both primary and Secondary DNS are provided. Developed DHCP Client for automatic configuration from Local Area Network. This TCP/IP Stack developed to target products like, TCP/IP on Ethernet & TCP/IP on PPP (Dialup Connection).

Limitations

1. Single socket only
2. Segmentation not implemented
3. IPv4 only
4. Header Compression Techniques are not implemented

Point-to-Point Protocols (PPP) Development**Projects #4****Client:** NetIndia Pvt. Ltd., Hyderabad**Place of Work:** NetIndia Pvt. Ltd., Hyderabad**Firmware:** C, HEW cross Compiler**Team Size:** 2**Hardware:** Hitachi H8/3687(16-Bit Processor), TDK2901 (Modem)**Protocol:** RFC1548(PPP), RFC1549(PPP-HDLC), RFC1332(IPCP), RFC1570, 2484(LCP), RFC1334(PAP),**Tools:** Ethereal, Hitachi Debugging Tool, Windows 2000 Prof Server - RAS, Ethereal, Serial sniffer**Project Description**

Developed Point-to-Point Protocol (PPP) for Embedded Lower End Processor utilizing just **2K Bytes Code** and **2 K Bytes RAM** without any RTOS in target.

PPP comprises Link Control Protocol (LCP), Password Authentication Protocol (PAP) & Internet Protocol Control Protocol (IPCP).

Developed Link Control Protocol (LCP) to negotiate the link Configuration according to RFC1570 & 2484. Developed Password Authentication Protocol (PAP) to authenticate Username and Password at server (RAS / ISP).

Developed Internet Protocol Control Protocol (IPCP) for getting source IP address, DNS IP addresses, and Local IP address. Integrated with customized Embedded TCP/IP suite. i.e., TCP/IP over PPP. TCP/IP suite consists of UDP, DHCP, DNS and ICMP.

My Role

1. I was worked as the **Team lead** for Design and Development of this team.
2. Study/Understanding all required RFCs and Protocols
3. Development/Writing Protocols in 'C' language
4. Evaluating & testing the code.

Implemented UDP to achieve networking features like Domain Name Server (DNS) client. Implemented ICMP protocol for pinging operations like PING Request and Response. Implemented DNS Client for getting IP address from Domain Name address. Both primary and Secondary DNS are provided.

This PPP developed to target products like, Serial to IP over PPP (wired or Wireless).

Limitations

1. CHAP not implemented. Only PAP
2. 32-bit FCS not implemented. 16-bit FCS only
3. Compression Techniques not implemented

DLC – Convergent (Optical Multi Service Access Network)**Projects #5****Client:** BSNL**Place of Work:** MIC Electronics Ltd., Hyderabad**Firmware:** ppc C cross Compiler**Team Size:** 2**Hardware:** Motorola MPC860T, 8MB Flash, 8MB SDRAM, PCMCIA interface (FLASH DISK), DISK on Chip, 8 port Ethernet Repeater(HUB), RS485, I2C, Rs232, FPGA & PLD.**Tools:** CodeWarrior for EPPC R6.0 software through BDM**Project Description**

This is the Latest Technology for Access nodes in the Telecom filed. Not yet developed any one in India. This is basically same to Digital Loop Carrier (DLC). But, It will Support **Packet Switching** and Networking interferences like LAN, WAN, VOIP, VPN, VPLN, DSL and STM. It will meet with Indian Telecom GR for OMSAN.

Shelf Management Card (SMC)

The Shelf Management Card (SMC) will be used to Network Management to Local Craft Terminal (LCT), Configuration to common cards, Software Upload Software (to Common Cards), Monitoring Alarms of all service, Control & PS cards, Record the generated Alarms in various service cards, Orderwire facility and User Data bytes for STM-1, Rack & Stack interface.

My Role

1. Developed Hardware and Firmware for SMC
2. Designed Hardware Schematics
3. Diagnostics software
4. Board bring up

EDUCATIONAL QUALIFICATIONS

Course	Subjects	Collage	Board	Passed	%
Diploma Engineering	Electronics & Communication	Sir C.R.Reddy Collage, Eluru	SBTET, A.P	1995	76%
Intermediate (10+2)	Electronic, Physics, Maths Chemistry,	Sir C.R.Reddy Collage, Eluru	Board of Intermediate Education, AP	1992	68%

CERTIFICATION

A Certificate Course from J.N.T.U., Hyderabad in **"C, C++, UNIX, Networking Concepts with TCP/IP Programming"**

PERSONAL PROFILE

Father's Name : Yagati Kanaka Rao
 Date of Birth : 10th May, 1973
 Sex : Male
 Marital Status : Married
 Nationality : Indian
 Passport Number : B3495855
 Notice Period : 2 to 4 Weeks

PERMANENT ADDRESS

S/o Yagati Kanaka Rao
 20C-11-39, 41st Division,
 ELURU, AP. PIN: 534 002
 Ph: +91 9392399191

COMMUNICATION ADDRESS

2ND Floor, 8-3-231/A-66,
 Sri Krishna Nagar, Yousafguda,
 Hyderabad - 500045
 Ph: +91-9840850698 Res: 040 - 23600143