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Portable Network Monitor using ARM Processor

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Abstract

The ever increasing demands for energy and cost reduction of networking devices and servers is driving the scientific and industrial communities to take in deeper considerations over the hardware and software techniques deployed in making these accessories. The best approach is to have parallel simultaneous development of the software and hardware as well rather opting for development of any one of the aspect from software or hardware of a system. For having reduced cost but same hardware effect over a system, the upcoming smart processors like ARM can handle well amount of loads and the software part needs to be fabricated in the manner to support such System-On-Board (SOB) mechanisms. This paper defines a scope for developing a network monitor which is established over traditional computers on just a credit card sized small computer. Basic idea is to replace general systems with dedicated systems for achieving power consumption and cost reduction goals.

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Keywords: ARM processor, Embedded web server, Traffic classification, Packet clustering, Internet protocol, Android platform.

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1. INTRODUCTION

To develop a network Monitor model over ARM processor as a handy tool for specific network administrators, new technologies are proving the secure significance of networking domain and embedded systems[1]. Now we have much smarter network tools for administration and prolonged security methods by which we can have even firm grip over the essential uses and exploitation of the network resources. But these tools are either software or hardware belongings of admin domain are also competing to acquire less space and voracity by the physical means. So, today much more dedicated systems are developed to support specific and integrated tasks pertaining to dedicated loads like if you want to have a computer just for reading books then better go with kindle.

Things to note here is to only develop applications supporting concurrency or sequential form of execution as BBB offers only one core and it will not ever give response to parallel programming. This all comes to its compiler’s last stage where all the parallel executions are converted to sequential executions [6].

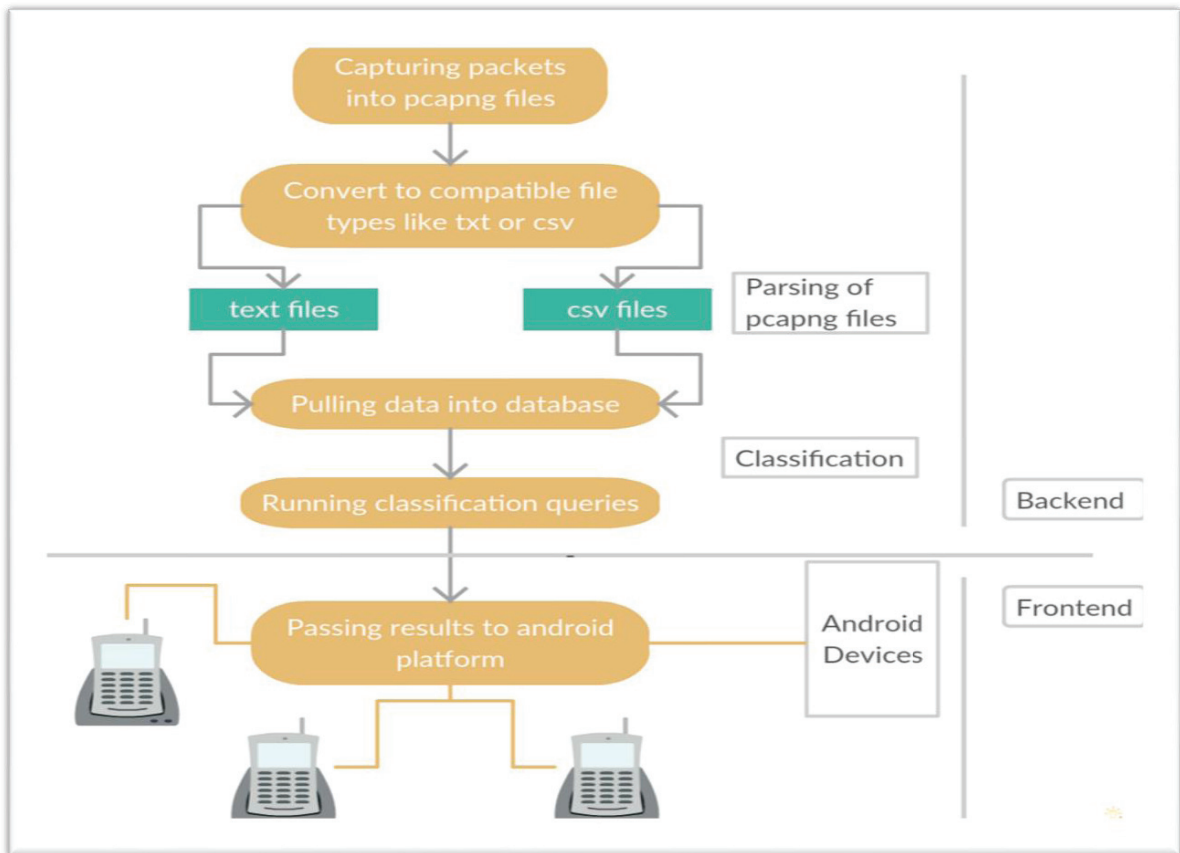


Figure 1 System Flow

2. SETTING UP THE RIGHT BOARD

Family of SOBs

Different families like Arduino, Beagle Bone offers a great range of different SOBs but the most preferred one is Beagle Bone Black (BBB) with ARM processor A8 cortex as it is successor of Beagle Bone

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