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jShark
Network Protocol Analyzer for Android

Project Vision

Version 1.0

Arukgodā J.S.	Version: 1.0
Project Vision	Date: 07/07/2013

Revision History

Date	Version	Description	Author
05/07/2013	1.0	Initial version of the Project Vision	Arukgodā J.S.

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Vision (Small Project)

1. Introduction

jShark is a network protocol analyzer for mobile devices with Android platform. jShark enables the user to capture, filter, analyze, log and edit WLAN packets.

The purpose of this document is to collect, analyze, and define high-level needs and features of the **jShark**. It focuses on the capabilities needed by the stakeholders and the target users, and why these needs exist. The details of how jShark fulfills these needs are detailed in the use-case and supplementary specifications.

1.1 References

- [1] Wireshark GSoC 2013, <http://wiki.wireshark.org/GSoC2013>
- [2] Protocol Analyzer Android Apps, http://www.appszoom.com/android_applications/protocol-analyzer
- [3] Free Download Manager, <http://www.freedownloadmanager.org/download/network-protocol-analyzer-android-5026249.html>
- [4] Softonic Apps, <http://softperfect-network-protocol-analyzer.en.softonic.com/>

2. Positioning

2.1 Problem Statement

The problem of	Porting core functionalities of PC based network protocol analyzers such as Wireshark to Android ^[1]
affects	Android device users who wants to use a network protocol analyzer
the impact of which is	Mobile device users do not have a way to analyze WLAN traffic
a successful solution would be	Users will be able to troubleshoot WLANs, do packet sniffing using smartphones or tablet computers

2.2 Product Position Statement

For	Android device users
Who	Are interested in analyzing WLAN traffic
The (product name)	jShark
That	Enables users capture, display, filter, analyze WLAN traffic
Unlike	bitShark,
Our product	Is simple and basic, easy for an average Android device user to understand and operate

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3. Stakeholder and User Descriptions

3.1 Stakeholder Summary

Name	Description	Responsibilities
Project Supervisors	jShark is a project started under Semester 5 module 'Software Engineering Project' and is supervised by lecturers of dept. of Computer Science and Engineering, University of Moratuwa.	Approve the project proposal Monitor project progress Ensure that developed software maintains accepted standards Offer suggestions, guidance
Open Source Development Community	jShark is an open source project	Debug, patch existing software Add extensions Create new versions Ensure that the system is maintainable
Original Author	I am the original author of this project who came up with the idea	Develop the initial release of jShark Publish the documentation and source code and invite open source developers to contribute

3.2 User Summary

Name	Description	Responsibilities
Android device users (End User)	Any android device user who wants to do analyze WLAN traffic using his device	Provide requirements / need for the project Report bugs and errors Report need for extensions, new features

3.3 User Environment

jShark is a stand-alone application developed specifically for the mobile devices using Android platform. The software will be used when the device is connected to a WLAN. The software requires only 1 user. jShark may be use services from tcpdump/libcap. However that decision has not been finalized yet.

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3.4 Summary of Key Stakeholder or User Needs

Need	Stakeholder / User	Current Solution	Proposed Solutions
Analyze WLAN traffic on a mobile device	End User	Web Based Solution	Stand-alone Android application
Simple network protocol analyzer	End User	N/A	Offer a simple interface easy to understand and use

3.5 Alternatives and Competition

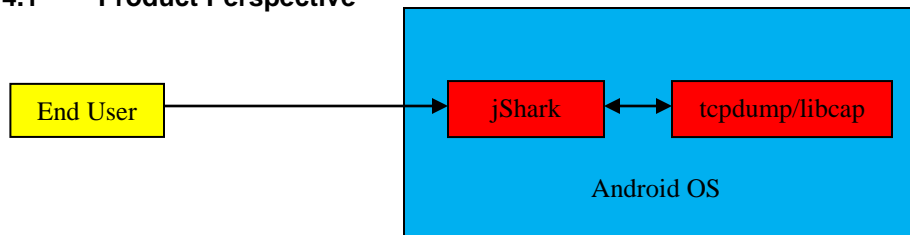
Alternative: Use the browser based solution

Competition^{[2][3][4]}:

- bitShark
- AirGab Network Packet Analyzer
- SoftPerfect Network Protocol Analyzer

4. Product Overview

4.1 Product Perspective



4.2 Assumptions and Dependencies

- The product is deployed on Android 4.1 Jelly Bean platform
- The user has root permission
- Features of jShark does not create security vulnerabilities in the mobile device
- Network hardware in the mobile device is compatible with services used by jShark (tcpdump/libcap)

5. Product Features

- jShark can capture traffic from WLANs that the device receives signals from. The device need not necessarily be able to connect to the network
- jShark displays captured packets in an informative way
- jShark can filter packets by protocols and source and destination addresses that the user specifies
- jShark can log the capture session for further reference.

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- jShark can edit packets

6. Other Product Requirements

- jShark should not cause interference with network traffic
- All network traffic should be captured without loss
- The process overhead and memory overhead should be limited so that the software can be deployed on a mobile device