

Project Fly

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Introduction

- Newer approach to share files between laptops
- Simplicity of bluetooth
- Performance of Wi-fi

Problem statement

- Bluetooth is simple to use but has disadvantage of
 - slower bandwidth
 - gets often discont when distance between devices increases
- Access Point, AdHoc still complex
 - Access Point is not available everywhere
 - It is difficult to configure for normal users
- Lacking an application that delivers simplicity of bluetooth and performance of WiFi

Objectives

- To make file transfer between laptops simpler
- To develop an application that gives intuitive user experience to share file
- To make user friendly environment for establishing connection between laptops

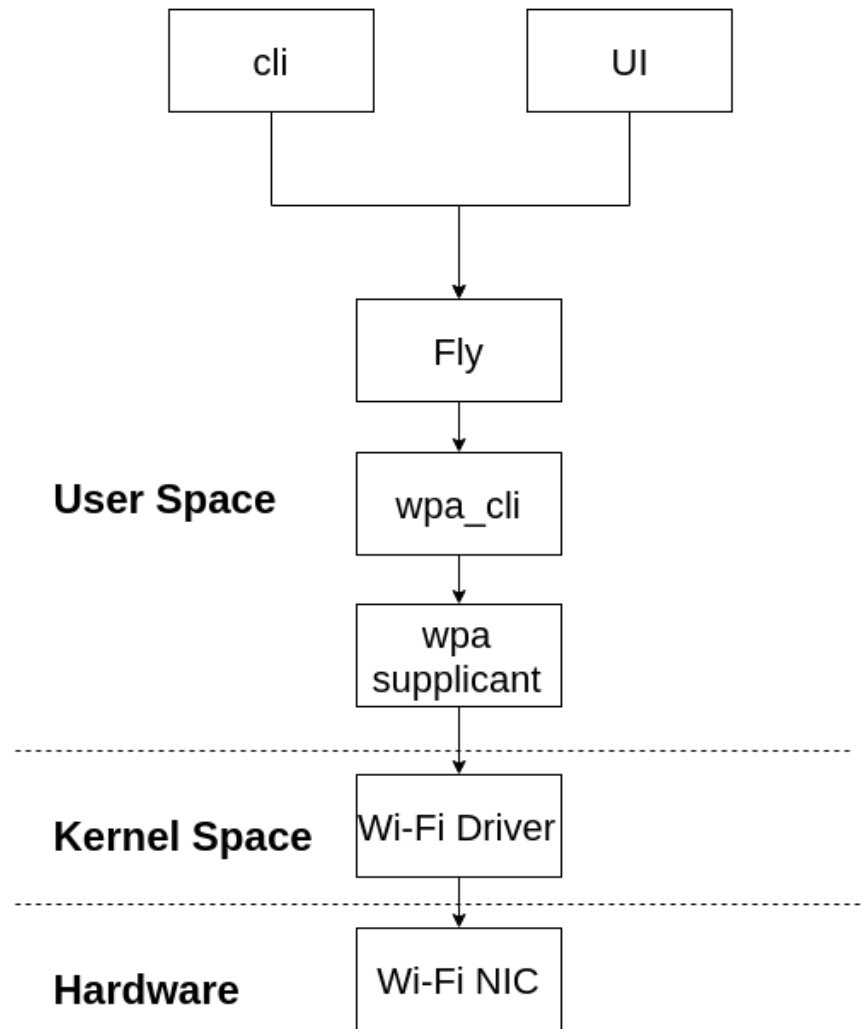
Features

- Easily establish connection between two laptops
- Easily share files between laptops
- Application has both GUI and CUI
 - Seamlessly works across GUI and CUI

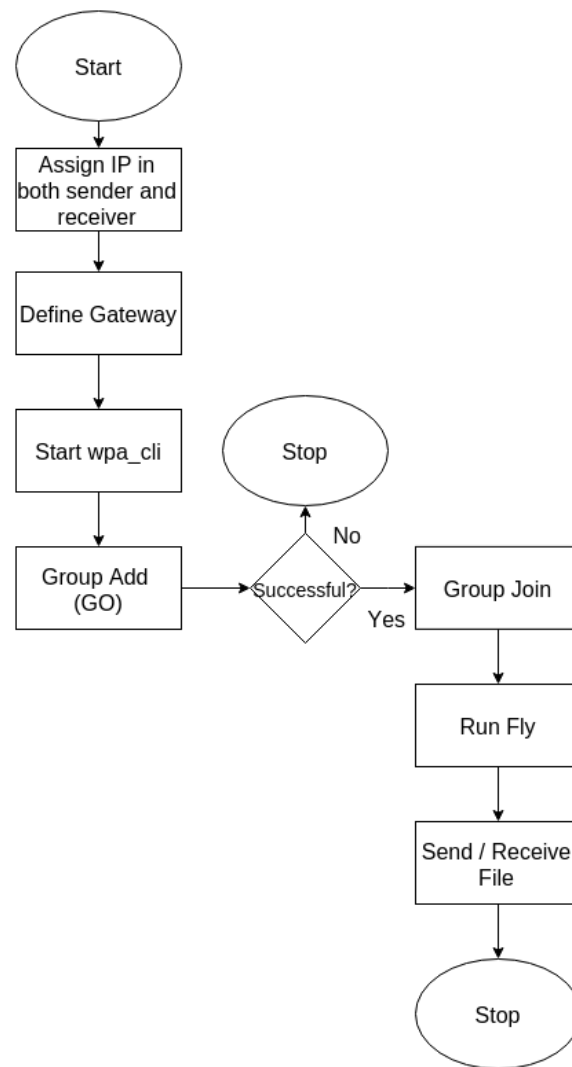
Methodology

- Divided our work into four phase
 - Socket study / implementation
 - Study of Wi-Fi Direct
 - Implementation of Wi-Fi Direct
 - Integration of Wi-Fi direct and Socket

System Design



Program Flow



Send File

1. Get path of file to be send
2. Get address information
3. Create socket followed by set options and bind to establish connection
4. Wait for client socket connection
5. Open the file and send its contents in certain buffer size and EOF at the end
6. Send file name
7. Close file and socket

* For flow chart refer to page no: 23-24

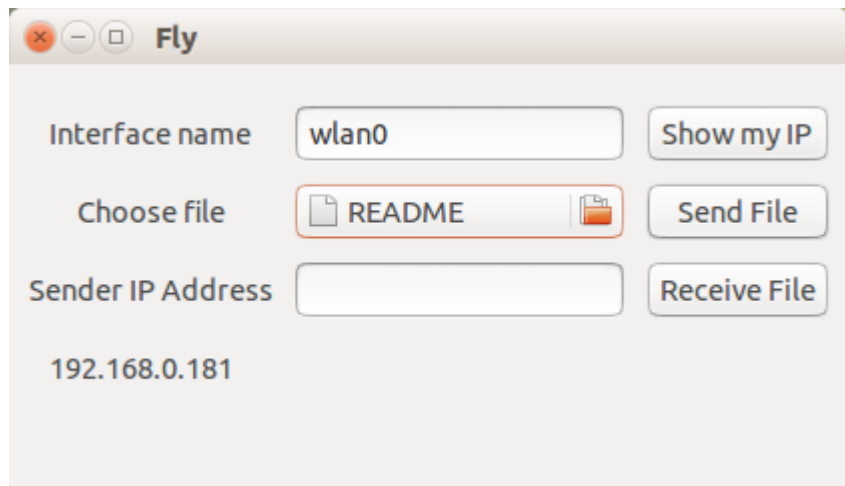
Receive File

1. Get address information
2. Create socket followed by connect
3. Open temporary file
4. Start to write buffer contents until EOF is received
5. Rename temporary file name to the received file name
6. Close file and socket

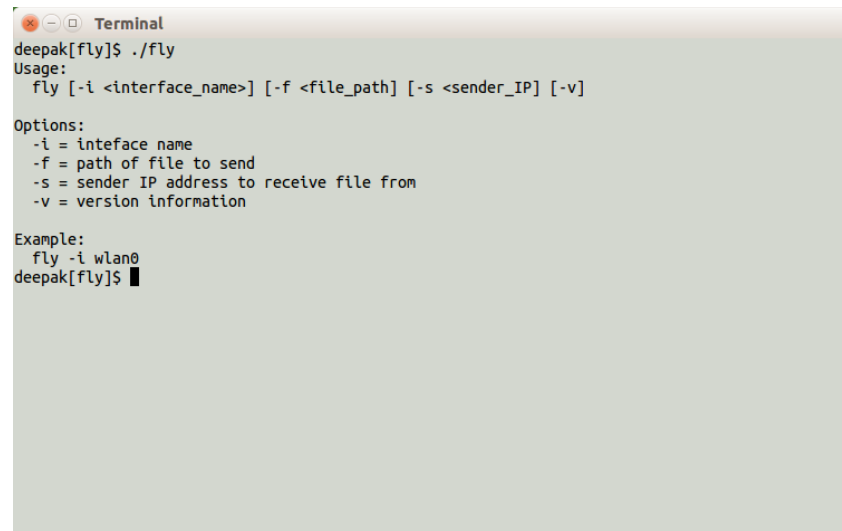
* For flow chart refer to page no: 26-27

Output

Fly GUI



Fly CUI



Requirements

- Hardware
 - Wi Fi Direct certified hardware for Group Owner
 - Legacy Wifi or Wifi certified for clients
- Software
 - Machine running Linux alike OS
 - WPA supplicant

Conclusion

- Wifi direct delivers simplicity of Bluetooth and at the same time Bandwidth performance of Wifi
- Although OEM ships with Wifi Direct certification, connecting and sharing contents across different OEM is still difficult
- Wifi is new and emerging technology. It will take some time to commonly use across all devices and become standard

Limitations

- The application only works on Linux alike system
- IP needs to be assigned manually
- Character files can only be transferred

Future enhancements

- Implementation of DHCP
- Support across all Operating System
- Transfer of file with any file format
- Establish Wifi Direct connection from fly

Demo

Thank You