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Sailfish Operating Systems: Versions, Security and Services

Selwyn Paul. J, Maddi Abhilash

Assistant Professor, Department of Computer Science, St. Joseph's College, Bangalore, India

Department of Computer Science, St. Joseph's College, Bangalore, India

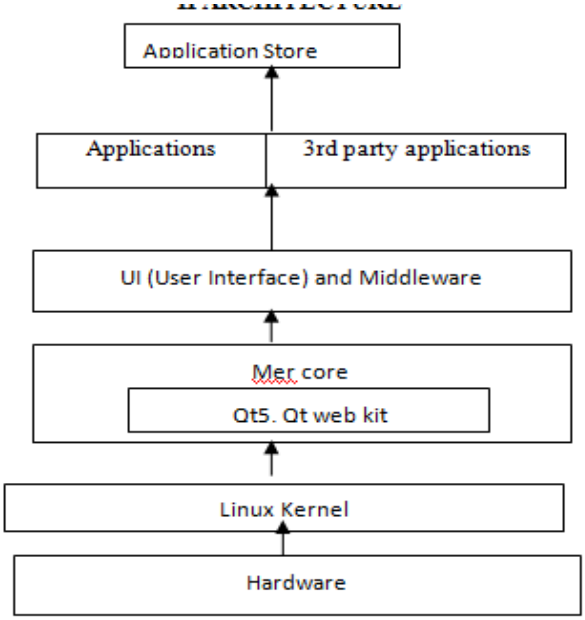
ABSTRACT: Sailfish operating system is from Jolla. Jolla, Jolla widely known as mobile operating system. This was the first device powered by sailfish operating system released in November 2013. Jolla's Sailfish OS is built to make a best**users'** experience by less taps and finger moves. New gestures allow the user to perform action quickly and efficiently. In this paper we discuss about the Sailfish OS architecture, different versionsof Sailfish operating system, security issues and services.

KEYWORDS: Mer Core,DAV,WLAN,Hands-Free Profile (HFP).

I.INTRODUCTION

Mobile operating system is designed on mobile devices namely mobile phones, smart mobiles, and tablet systems. Now a days more usage is with wireless version of broadband and connectively. Sailfish operating system is continued with Mee Go operating system which was developed by collaboration with Nokia and Intel. Sailfish is being developed by Jolla with cooperation with the sailfish community. Mee-Go legacy contains MER core 80% of the source code, it expands of MER, Mee Go reconstructed. [1]

II ARCHITECTURE



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Architecture of the sailfish system is divided into different phases. Namely, application store, applications, user interface, Mer core, Qt, kernel and hardware.

Application store

Sailfish has its own app store, which is currently contains hundreds of application.This operating system supports Android application for Google's OS. The operating system is proudly "open source" and "open for services".

Applications

The following are the few applications used in sailfish operating system.
Cover, Dialog, Split view, Docked panel, menu, Combo box, Switches, Sliders, Text field, Search field, contact, messaging , camera, etc.

3rd party applications

Some of the applications sailfish offers are listed below.
Cute tube, Stardict, Stockana, IRC chatter, MEE cast, Musikloud, Meetrainer, Meerun, Battery usage monitor, SeriesFinal

UI(User Interface) and Middleware

In the sailfish UI is written using QML declarative language that allows user interfaces to visual their components and how they interact and relate with each other.
It supports Java script expressions and dynamic property bindings. The most features are that it supports readable and allows components reused and customized with in user interface.
The sailfish SDK includes sailfish silica, an extension QML module, designed for use by sailfish applications.
Various functions used in user interface and Middleware:

- Home Screen.
- Ambience theming.
- Input methods.
- Real live multitasking.
- Localizations.
- Multimedia codec's.
- Power management optimizations.
- Integrated UXfor key web services.
- Application and UI performance optimizations.

Mer core

MER is open source software, which can be used to serve as a middle ware for Linux kernel mobile operating systems[1].
Mer provides equivalent of the MeeGo core. The MeeGo user interfaces are done by various hardware manufacturers, which able to build their products on top of the Mer core.
In the Mer core the concepts used are Qt5, Qt web kit.
Qt5 is the latest version of Qt. It gives platform for developers to develop application based on user interfaces for multiple targets, faster than before.
Qt5 makes much easier to address the latest UI model touch screens require.
Qt web kit uses various Qt APIs (Application Programming interfaces), it can be used to build applications for sailfish.

Linux Kernel

Sailfish is an open source mobile operating system based on the Linux kernel, which means it supports both ARM and x86 devices. It builds on the Mer core that uses a custom-built user interface[2].
A monolithic kernel is operating system architecture where the entire operating system is working in supervisor mode.

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The monolithic model differs from other operating system architectures. In the monolithic kernel based operating system it's divided into 3 portions Application, kernel mode and hardware. In the kernel mode (VFS, system call, IPC file system, scheduler, virtual memory, device drivers, dispatcher).

Hardware

Sailfish OS is used in any hardware in support of Linux Kernel and it is compatible with middleware of Mer core. Devices running ported this way has been created from community [3].

III. VERSIONS

In Sailfish operating system, two versions are available i.e. v1.0 and v2.0, and the first versions had a numerous updates. The second version was updated recently. Each updates of these two versions are named after Finnish lakes.

List of versions and updatesnames startingfrom, 27 November to 19 January 2016.

1. Kaajanlampi,
2. Laadunjärvi,
3. Maadajävri,
4. Naamankajärvi,
5. Ohijärvi,
6. Paarlampi,
7. Saapunki,
8. Tahkalampi,
9. Uitukka,
10. Vaarainjärvi,
11. Yliaavanlampi,
12. Äijänpäivänjärvi,
13. Aaslakkajärvi,
14. Björnträsket,
15. Eineheminlampi,
16. Saimaa,
17. Taalojärvi.

Sailfish v2.0 is currently used in mobile phones. Sailfish OS v2.0 was developed with continuous integration model, which provides the software to update all the Sailfish OS users and software development engineers.

The significant elements used in Sailfish OS v2.0 includes the following:

- Stronger in technical OS core.
- Compatibility of Android application is improved.
- Intel architecture is supported.
- Integration of mobile commerce which is used to enable the provider for digital content which helps in the visibility of UI.
- Stronger multitasking.
- Stronger privacy and personalization.
- User interface is enhanced with new UI/UX features.
-

IV. SECURITY

Sailfish security develop in the mobile space [3].
Sailfish operating system using hardware, creation of security version of the platform which is called as sailfish secure. Jolla having a partnership with SSH having a connection security, it integrates protocol security firstly inside the mobile. SSH having encryption to sailfish secure.

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Sailfish approach which secures and provides solution for adaption. Jolla is not used for startup security, but it is used in security hardened android device called black phone.

Sailfish operating system in SSH security which is used to communicate .so that the security aspects builds a new architecture foe communication to secure.
Service: prerequisites
The device which runs a software version lower than the version and have having Ware House app installed, which will disable all upgrading devices.

It is necessary to all app before we start the update.

Do ever start the device before the update will be in progress.

Battery charges can be plug in to the phone.

When the devices are getting updated, we can close the power key so the update are in process.

After the device has been rebooted with a success upgrade, android starts its update process for environment. After few minutes of its update process we can use the phone.

Accounts

User interface option is used to allow setting of address book path during the creation of account.

Android support

Application specific setting which is used to install android apps

Option to stop app, clear the temporary data and to clear all data of the app.

Option to let the back ground services which uses Android to start when the phone is turned on which enables to gather the notification for android messaging apps.

Start and stop all android support is easy.

Android apps are there use, so that contact information in the phone are updated.

Email

Emails with help of calendar are displayed with a calendar icon and the calendar app are used to import the events from it.

Key board

All the possibility to choose any sort of different keyboard with helps for Bluetooth keyboard which is paired with any other language.

OS updates

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File system is checked before downloading and updating the device and fix the problem. For all the implementation of work enough space are required like it's mentioned in prerequisites above.

Development

Sailfish OS platform which is chained to bring the core version of C++11 from other forms.

Improvement of highlights

The changes taken place in mobile irrespective of small or more will be known by all the users.

Android

Wireless LAN connection are fixed in android apps.

Bluetooth

Robustness of using Hands-Free Profile (HFP) are used vastly.

OS updates

Minimum of 50% of charge level in the battery are required are else the update will not been started and it will recommend always to connect the charger before the OS update.

While downloading OS update in the back screen it's possible to continue to install or uninstall apps while background download is on.

Touch screen

The approach of the touch screen to user is to have gestures which will be improved. Sailfish OS apps will respond by swipes and tapping the screen.

V. FEATURES

Sailfish OS look a bit similar to android and blackberry user. It brings 9 windows grid which provides maximum multitasking. All the 9apps are independently interactive, which means that you can swipe in a particular direction in order to perform specific task.

For example: - in WhatsApp, if you drag right for contactand right to go to your chat. The tab can stay at background to be live and play contents like music and video.

Button less multitasking

Nine grids allow you to operate at the same time instantly right from the home screen up to 9 open apps. Gesture allows the OS to switchfrom one running app to another, if we dragdown from the top which close on app and bring to the home screen. Repeating the same on the home screen will lock the device. Without the virtual button with form of gesture based movements all for maximum screen estate.

Support for Android and Ubuntu apps

Sailfish OS can support android and Ubuntu apps

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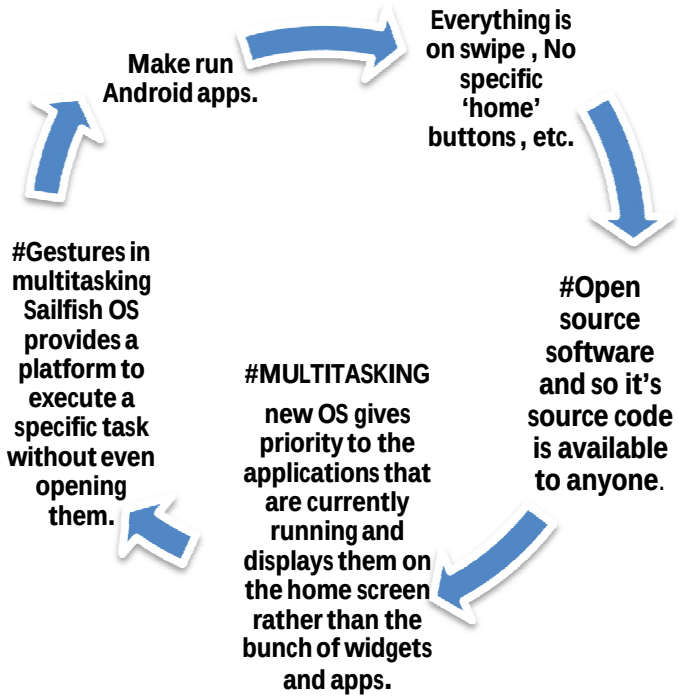
Unified messaging

Sailfish OS will also provide a platform called unified messaging service. In which WhatsApp, texts and face book can be grouped and allows instance access and posting.

VI. SAILFISH UNIQUE than other O.S.



VII CONCLUSION

Objective behind this paper presentation was to discuss all basic details to know about sailfish operating system and Jolla Company had launched the sailfish operating system. Simplicity was the major factor in explaining about sailfish operating systems services, features, which give to all aspiring sailfish developers.

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BIOGRAPHY

Selwyn Paul. J, Assistant Professor, Department of Computer Science, St. Joseph's College, Bangalore. Completed Master of Computer Science (M.sc) in 2012 from, St. Joseph's College (Autonomous), Bangalore University, India. Research interests are Computer Networks, Operating System, Image processing, etc.…