

# TOPIC: ANDROID OPERATING SYSTEM

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ANDROID  
AND  
ANDROID PHONES

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# HISTORY OF ANDROID

- ANDROID INC. FOUNDED IN PALO ALTO, CALIFORNIA, UNITED STATES IN OCTOBER 2003 BY ANDY RUBIN [CO-FOUNDER OF DANGER], RICH MINER [CO-FOUNDER OF WILDFIRE COMMUNICATION INC.], NICK SEARS [ONCE VP AT T MOBILE], AND CHRIS WHITE [HEADED DESIGN AND INTERFACE DEVELOPMENT AT WEB TV] TO DEVELOP.

# WHAT IS ANDROID?

- IT IS AN OPEN SOURCE SOFTWARE PLATFORM AND OPERATING SYSTEM FOR MOBILE DEVICES
- BASED ON THE LINUX KERNEL
- DEVELOPED BY GOOGLE AND LATER THE OPEN HANDSET ALLIANCE (OHA)
- ALLOWS WRITING MANAGED CODE IN THE JAVA LANGUAGE
- ANDROID HAS ITS OWN VIRTUAL MACHINE I.E. DVM(DALVIK VIRTUAL MACHINE), WHICH IS USED FOR EXECUTING THE ANDROID APPLICATION.
- GOOGLE PURCHASED THE INITIAL DEVELOPER OF THE SOFTWARE, ANDROID INCORPORATED IN 2005.

# ANDROID VERSION

- ANDROID 1.0 (ANGEL CAKE)

THE FIRST VERSION OF THE OPEN SOURCE SOFTWARE WAS RELEASED BACK IN 2008

- ANDROID 1.1 (BATTENBERG)

IN FEB 2009, VERSION 1.1

- ANDROID 1.5 (CUPCAKE)

LAUNCHED IN APRIL 2009

- ANDROID 1.6 (DONUT)-RELEASED IN SEPT 2009

- ANDROID 2.0 2.1 (ÉCLAIR)-RELEASED IN 26 OCTOBER 2009

- ANDROID 2.2 (FROYO)

RELEASED IN THE SUMMER OF 2010

- ANDROID 2.3 (GINGERBREAD)

GINGERBREAD LANDED BY THE END OF 2010

- ANDROID 3.0 (HONEYCOMB)

FOR THE FIRST TIME GOOGLE RELEASED A SOFTWARE THAT WAS TOTALLY FOCUSED ON TABLETS. THIS VERSION, RELEASED IN 2011

- ANDROID 4.0 (ICE CREAM SANDWICH 4.0) RELEASED 2012

- ANDROID 4.1 (JELLY BEAN 4.1) RELEASED IN 2013

- ANDROID 5.0 = KEY LIME PIE

# SECURITY

- ❖ ANDROID IS A MULTI-PROCESS SYSTEM, IN WHICH EACH APPLICATION (AND PARTS OF THE SYSTEM) RUNS IN ITS OWN PROCESS. MOST SECURITY BETWEEN APPLICATIONS AND THE SYSTEM IS ENFORCED AT THE PROCESS LEVEL THROUGH STANDARD LINUX FACILITIES, SUCH AS USER AND GROUP IDS THAT ARE ASSIGNED TO APPLICATIONS.

# CONTD..

- ANDROID IS DESIGNED HAVING MULTI LAYER SECURITY WHICH PROVIDES FLEXIBILITY FOR THIS PLATFORM. WHEN ATTACKERS ATTEMPT ATTACK ON DEVICE, ANDROID PLATFORM HELP TO REDUCE THE PORTABILITY OF THE ATTACK.

THERE ARE KEY COMPONENTS OF ANDROID SECURITY WHICH ARE DESCRIBED AS FOLLOWS:

- DESIGN REVIEW:-WHEN A SECURITY MODEL IS DESIGNED THEN IT WILL BE REVIEWED BY THE DEVELOPERS SO THAT RISK LEVEL WILL BE VERY LESS WHILE USING THE MODEL.
- CODE REVIEW AND PENETRATING TESTING:-THE GOAL OF THIS CODE REVIEW IS THAT IN WHICH IT WILL BE CHECKED THAT HOW THE SYSTEM WILL BECOME STRONG?
- OPEN SOURCE AND COMMUNITY REVIEW:-ANDROID USES OPEN SOURCE TECHNOLOGIES THAT HAVE SIGNIFICANT EXTERNAL REVIEW SUCH AS LINUX KERNEL.
- INCIDENT RESPONSE:-ANDROID TEAM ENABLES THE RAPID MITIGATION OF VULNERABILITIES TO ENSURE THAT POTENTIAL RISKS TO ALL ANDROID USERS ARE MINIMIZED.



# FEATURES OF ANDROID

- BACKGROUND WI-FI LOCATION STILL RUNS EVEN WHEN WI-FI IS TURNED OFF
- DEVELOPER LOGGING AND ANALYZING ENHANCEMENTS
- IT IS OPTIMIZED FOR MOBILE DEVICES.
- IT ENABLES REUSE AND REPLACEMENT OF COMPONENTS.
- JAVA SUPPORT, MEDIA SUPPORT, MULTI TOUCH, VIDEO CALLING, MULTI TASKING, VOICE BASED FEATURES, SCREEN CAPTURE, CAMERA, BLUETOOTH, GPS, COMPASS AND ACCELEROMETER, 3G

# ADVANTAGES

- THE ABILITY FOR ANYONE TO CUSTOMIZE THE GOOGLE ANDROID PLATFORM
- IT GIVES YOU BETTER NOTIFICATION.
- IT LETS YOU CHOOSE YOUR HARDWARE.
- IT HAS BETTER APP MARKET(1,80,000 APPLICATION)
- A MORE MATURE PLATFORM
- WITH THE SUPPORT OF MANY APPLICATIONS, THE USER CAN CHANGE THE SCREEN DISPLAY.
- WITH GOOGLE CHROME YOU CAN OPEN MANY WINDOW AT ONCE.
- SUPPORTS ALL GOOGLE SERVICES: ANDROID OPERATING SYSTEM SUPPORTS ALL OF GOOGLE SERVICES RANGING FROM GMAIL TO GOOGLE READER. ALL GOOGLE SERVICES CAN YOU HAVE WITH ONE OPERATING SYSTEM, NAMELY ANDROID.

# DIS-ADVANTAGES

- ANDROID MARKET IS LESS CONTROL OF THE MANAGER, SOMETIMES THERE ARE MALWARE.
- WASTEFUL BATTERIES, THIS IS BECAUSE THE OS IS A LOT OF "PROCESS" IN THE BACKGROUND CAUSING THE BATTERY QUICKLY DRAINS.
- SOMETIMES SLOW DEVICE COMPANY ISSUED AN OFFICIAL VERSION OF ANDROID YOUR OWN.
- EXTREMELY INCONSISTENCE IN DESIGN AMONG APPS.
- VERY UNSTABLE AND OFTEN HANG OR CRASH.

# LIMITATIONS OF ANDROID

## DEVELOPMENT REQUIREMENTS IN

- JAVA
- ANDROID SDK
- ECLIPSE IDE (OPTIONAL)
- BLUETOOTH LIMITATIONS:
  - ANDROID DOESN'T SUPPORT:
    - BLUETOOTH STEREO
    - CONTACTS EXCHANGE
    - MODEM PAIRING
    - WIRELESS KEYBOARDS
- FIREFOX MOBILE ISN'T COMING TO ANDROID BECAUSE OF ANDROID LIMITATIONS
  - APPS IN ANDROID MARKET NEED TO BE PROGRAMMED WITH A CUSTOM FORM OF
  - JAVA
  - MOZILLA AND THE FENNEC WON'T HAVE THAT
- THERE ARE NO SPLIT OR INTERVAL TIMES AVAILABLE.
- SMALL MEMORY SIZE.
- CONTINUOUS INTERNET CONNECTION IS REQUIRED

# CONCLUSION

WE HOPE THAT THE NEXT VERSIONS OF ANDROID HAVE OVERCOME THE ACTUAL LIMITATIONS AND THAT THE FUTURE POSSIBILITIES BECAME A REALITY AND MAY THIS SOFTWARE IS ALSO DEVELOPED TO USE IN PC'S ALSO.