



# **BUILDING IN HOUSE SCALABLE MOBILE** *DEVICE LAB*

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# INTRODUCTION



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# INTRODUCTION

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Why build a  
Smartphone lab?

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Smartphone Lab  
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Maintaining Devices

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# MOBILE TEST CHALLENGES

## Localization

Every language that will be added to the app, will create an obstacle to overcome.

## Network

Wi-Fi, mobile networks, roaming, online or offline, with a weak signal etc



## Device, Screen Size, OS fragmentation

More than 24,000 different Android



## Performance

Due to the limited hardware architecture of mobile devices, success and failure of application in market depends on performance of the app



## Mobile app tools

Which tools to choose for mobile Testing?



# MOBILE DEVICE LAB



## What is the Device Lab



A mobile device lab is a collection of mobile devices available for testing apps and services.

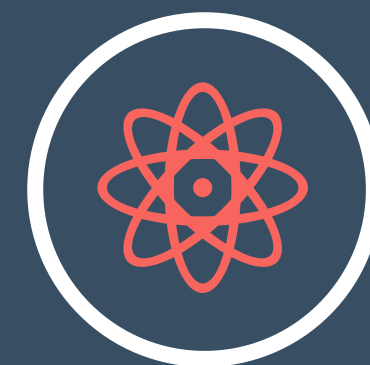


# WHY WE BUILD A DEVICE LAB?



## Ability to Test physical experiences

We create an opportunity to test the app on a physical devices and have testing close to a user scenarios



## We have a photo editor app

Lots of functionalities in the app are visual changed that needs to be tested.



## Create a custom infrastructure for automation

We have freedom to create/edit the infrastructure to have more effective automation suite



## Cost Efficient

The solution is cost efficient in the long term

# MAIN ACHIEVEMENTS WITH MOBILE LAB

1

## Use Real Devices

Use of emulation/simulation technology, it isn't the most trustworthy solution for testing. These tests often overlook critical errors and report false defects

3

## Use a Secure, Private Mobile Device Testing Cloud

Using a secure and private device lab is a crucial for enterprises with a large number of testers. This separation can range anywhere from a different building to another continent. Even when using a testing cloud, it's important to be high performing and secure.

2

## Apple Code Signing and Provisioning

A common challenge that testers face when creating a mobile device testing lab is iOS provisioning, the process by which Apple allows an app to be installed and launched on a real device.

4

## Don't Automate Everything

A solid mobile device testing strategy takes into consideration when to automate and when to fall back on manual testing. The fact remains that some tests are simply faster, easier and less expensive to run manually.

# THE STACK WE HAVE

## Android & iOS

We run test on both mobile platform  
Android & iOS



## Appium

We use Appium for our mobile  
automation due to its cross-  
platform nature and basis on the  
WebDriver protocol



## Java

We use Java to write end to end  
automation tests



## Jenkins

We use Jenkins to run the test  
parallel





# THE HARDWARE STACK WE HAVE



**Mac mini**



**iPhone & Cabling**



**Powered USB hub**

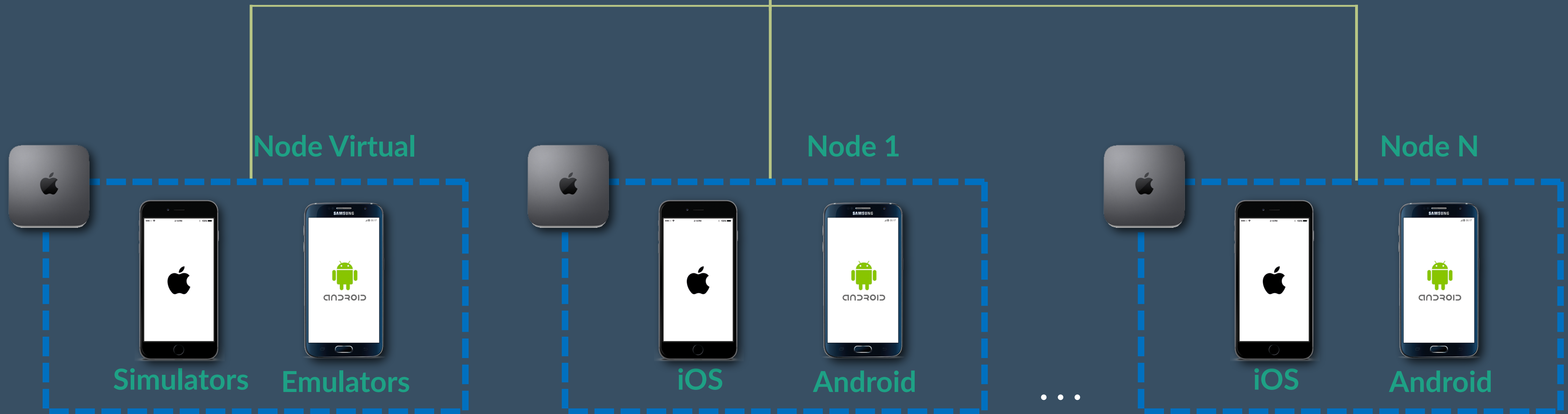


**Android Phone and Cabling**



**Monitors for Reports**

# ECOSYSTEM



# POWER MANAGEMENT

**Plugable USB 2.0 High  
Speed Charging Hub  
with 60W Power  
Adapter**



\*Where to buy this adapter?



# NETWORK MANAGEMENT

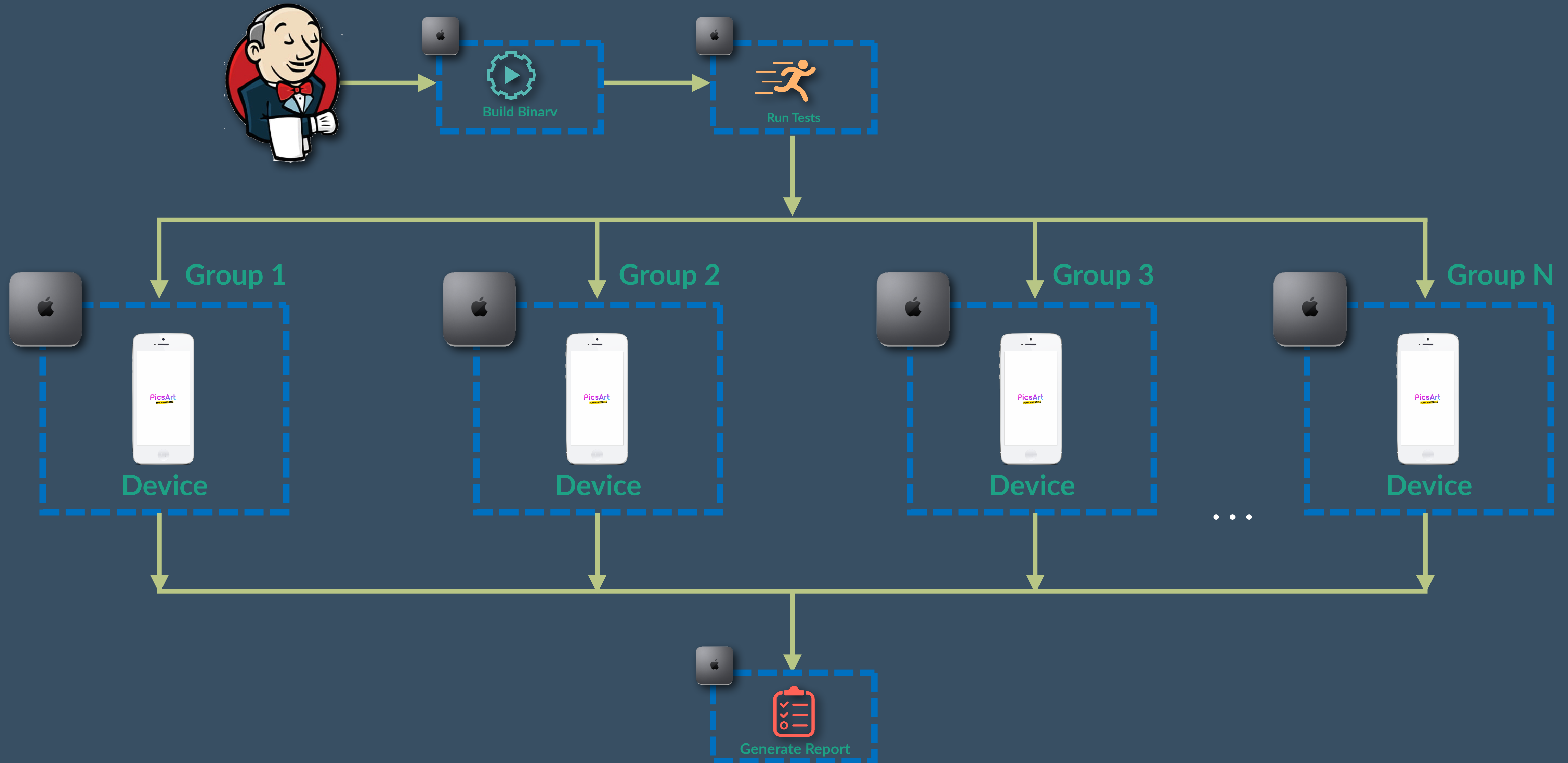
**We use reverse tether.**

- Android - *gnirehtet* to reverse the network
- iOS - Native USB tethering



\*Where to find gnirehtet?

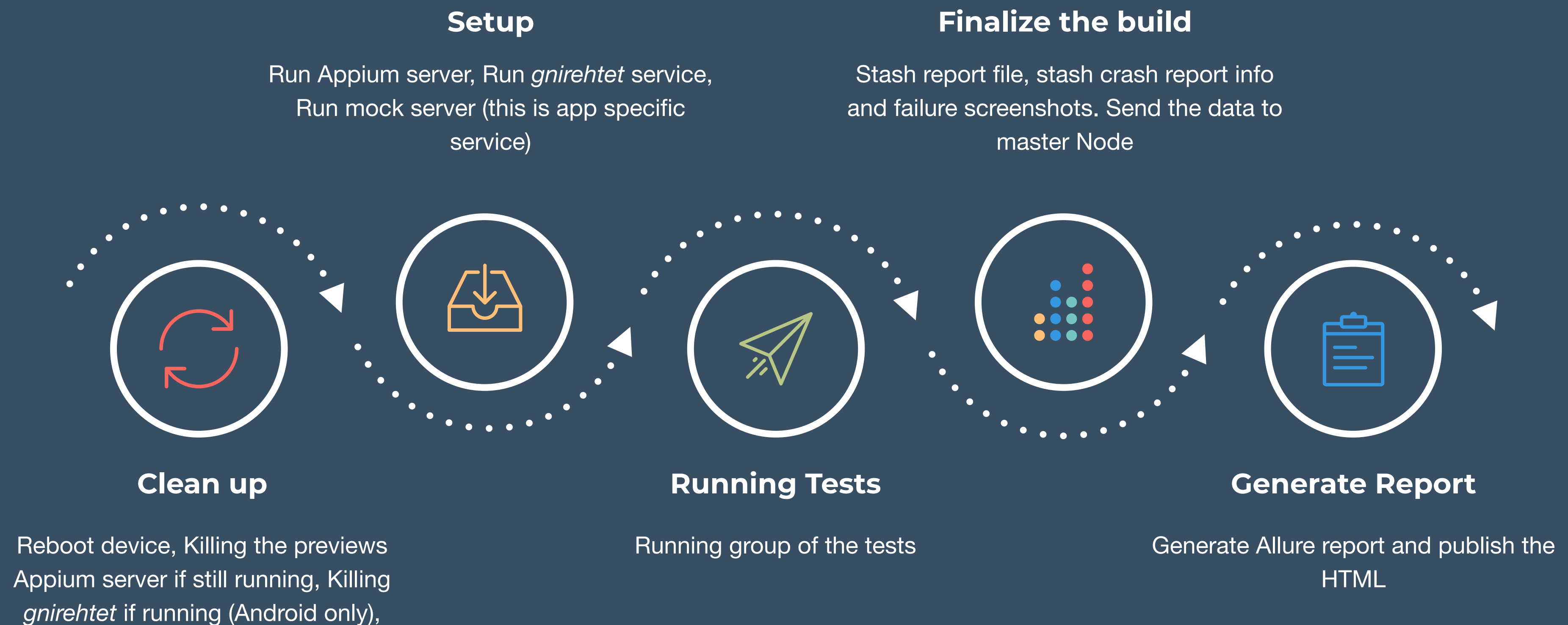
# JENKINS PIPELINE ARCHITECTURE



# ACTIONS INSIDE THE NODE



Group 1





# GET INTO REPORTING

How did we  
customize the  
reporting

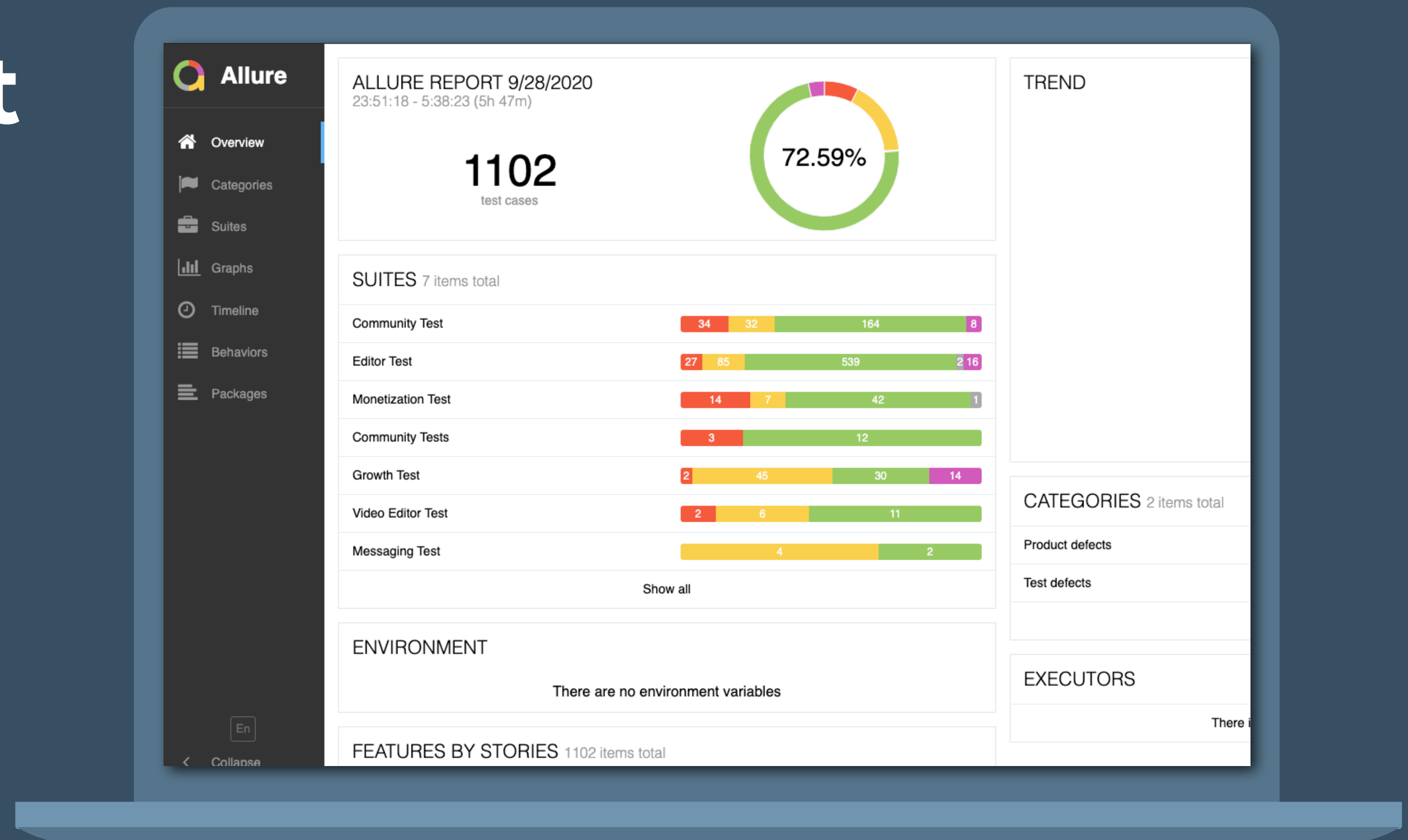


# ALLURE REPORT

## Customizing report With Allure Report




Allure Framework is a flexible lightweight multi-language test report tool that not only shows a very concise representation of what have been tested in a neat web report form, but allows everyone participating in the development process to extract maximum of useful information from everyday execution of tests.



\*[Link](#) to Allure Report?

# ALLURE REPORT

 Allure

Overview

Categories

Suites

Graphs

Timeline

Behaviors

Packages

En

Collapse

! #12 stickerAddFunctionalityInComments

37s 627ms

android.community.browsers.PhotoBrowserTest

1 1 7 1

Total: 2h 08m Max: 11m 53s Sum: 27m 13s

#2 descriptionAndLocationCheck

1m 47s

#3 gestureCheck

1m 54s

#4 moreMenuItemsCheck

1m 27s

#5 moreMenuItemsCheckForOtherUser

1m 48s

#6 remixButtonFunctionality

1m 05s

#7 remixesSectionAppearance

2m 53s

#8 screenAccessibilityAndUiCheck

11m 53s

#9 similarSectionAppearance

2m 11s

#10 socialAttributesFunctionality

2m 11s

#1 socialAttributesFunctionalityWithBlockedUser

1ms

> android.community.browsers.ReplayBrowserTest

1 3 5 1

> android.community.browsers.StickerBrowserTest

1 1 7 1

> Challenges Test

8 6 32 4

> Profile Test

4 6 68 1

> Search Test

1 1 13

> Share Test

16 8 26

> SMain Tab Bar Test

1 1

> Community Tests

3 12

> Editor Test

27 85 539 2 16

> Growth Test

2 45 30 14

> Messaging Test

4 2

> Monetization Test

14 7 42 1

> Video Editor Test

2 6 11

Test body

Failure in method android.community.browsers.PhotoBrowserTest.socialAttributesFunctionality


31.3 KB

1:59

Search

@jennsthetic REPLAY

RECOMMENDED / 1.43M views



Save password to Google?

Username

verif

Password

.....

NOT NOW

SAVE



# ALLURE REPORT

Overview

Categories

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#12 stickerAddFunctionalityInComments37s 627ms

android.community.browsers.PhotoBrowserTest1171

Total: 2h 08mMax: 11m 53sSum: 27m 13s

#2 descriptionAndLocationCheck1m 47s

#3 gestureCheck1m 54s

#4 moreMenuItemsCheck1m 27s

#5 moreMenuItemsCheckForOtherUser1m 48s

#6 remixButtonFunctionality1m 05s

#7 remixesSectionAppearance2m 53s

#8 screenAccessibilityAndUiCheck11m 53s

#9 similarSectionAppearance2m 11s

#10 socialAttributesFunctionality2m 11s

#1 socialAttributesFunctionalityWithBlockedUser1ms

android.community.browsers.ReplayBrowserTest1351

android.community.browsers.StickerBrowserTest1171

Challenges Test86324

Profile Test46681

Search Test1113

Share Test16826

SMain Tab Bar Test11

Community Tests312

Editor Test2785539216

Growth Test2453014

Messaging Test42

Monetization Test147421

Video Editor Test2611

Failure in method android.community.browsers.PhotoBrowserTest.socialAttributesFunctionality31.3 KB

NOT NOWSAVE

<—

Current user info127 B

key : 0c616  
username : ver.  
id : 327  
email : ver

Device Name38 B

device :Mi A3  
device id :eed

build properties100 B

automation branch: master  
app branch: master  
backend api urlhttps://ap.

organize button did not appear expected [true] but found [false]

Tear down

# PHYSICAL DEVICE LAB



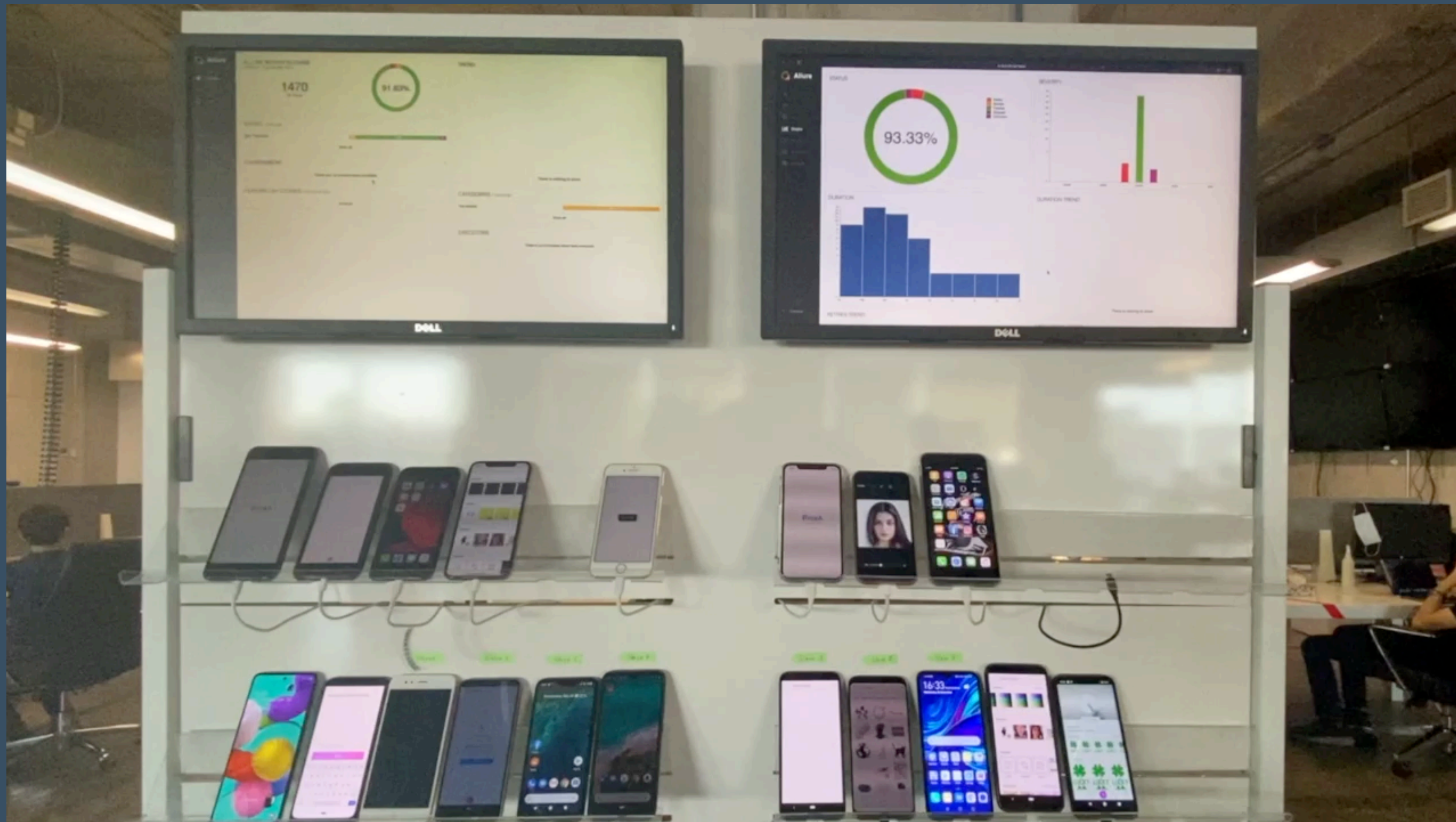


# PHYSICAL DEVICE LAB





# PHYSICAL DEVICE LAB



# THANK YOU

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