

ANDROID STATIC ANALYSIS REPORT



♠ NCOVI (1.5.3)

File Name: NCOVI 1.5.3.apk

Package Name: com.vnptit.innovation.ncovi

Average CVSS Score: 5.1

App Security Score: 75/100 (LOW RISK)

Trackers Detection: 1/285



File Name: NCOVI 1.5.3.apk

Size: 16.34MB

MD5: 4e6091e8c9fd4cd479277c2cc6c417f1

SHA1: 86c6ded5cdad2fd97f296692956766bda4d19b8d

SHA256: 138d33390b670d84f4d1784d8d2e559834c8c925f6d319b7a0c400598650e16c

i APP INFORMATION

App Name: NCOVI

Package Name: com.vnptit.innovation.ncovi

Main Activity: com.vnptit.innovation.covid19vnpt.activity.SplashActivity

Target SDK: 28 Min SDK: 16 Max SDK:

Android Version Name: 1.5.3 Android Version Code: 153

EE APP COMPONENTS

Activities: 28
Services: 8
Receivers: 1
Providers: 4
Exported Activities: 1
Exported Services: 6
Exported Receivers: 1
Exported Providers: 0



APK is signed v1 signature: True

v2 signature: True v3 signature: False

Found 1 unique certificates

Subject: C=84, ST=Vietnam, L=Hanoi, O=VNPT, OU=VNPT, CN=VNPT

Signature Algorithm: rsassa_pkcs1v15 Valid From: 2020-03-08 04:25:33+00:00 Valid To: 2045-03-02 04:25:33+00:00

Issuer: C=84, ST=Vietnam, L=Hanoi, O=VNPT, OU=VNPT, CN=VNPT

Serial Number: 0x33206b7b Hash Algorithm: sha256

md5: 3b87ba86ac18d0e68dc1cddb6cfde980

sha1: b84359bba6db99bd5eecf8813951d7004bc16629

sha256: 5d332444ac03bd785c6b25bebcaa29b7fd43bd9d2bfdf7197f4baa1113ca463c

sha512:

0689a84d665383b6fe154d8e805783f3002b9387cef3419e0e780fa25e571c2f4e6b838b0db79f9748be0edd613c78ceb8358c5a0eb5ef7a76a3d60f63d4bdf880f64bf880f6

PublicKey Algorithm: rsa

Bit Size: 2048

Fingerprint: 02e905771fd90778d7ad94529f0c4b271851af0db4e306603dbd9e0d991dc1a4

Certificate Status: Good

Description: Certificate looks good.

∷ APPLICATION PERMISSIONS

PERMISSION	STATUS	INFO	DESCRIPTION
android.permission.ACCESS_FINE_LOCATION	dangerous	fine (GPS) location	Access fine location sources, such as the Global Positioning System on the phone, where available. Malicious applications can use this to determine where you are and may consume additional battery power.
android.permission.ACCESS_NETWORK_STATE	normal	view network status	Allows an application to view the status of all networks.
android.permission.FOREGROUND_SERVICE	normal		Allows a regular application to use Service.startForeground
android.permission.INTERNET	dangerous	full Internet access	Allows an application to create network sockets.
android.permission.CALL_PHONE	dangerous	directly call phone numbers	Allows the application to call phone numbers without your intervention. Malicious applications may cause unexpected calls on your phone bill. Note that this does not allow the application to call emergency numbers.
android.permission.READ_EXTERNAL_STORAGE	dangerous	read SD card contents	Allows an application to read from SD Card.
android.permission.WRITE_EXTERNAL_STORAGE	dangerous	read/modify/delete SD card contents	Allows an application to write to the SD card.
android.permission.RECEIVE_BOOT_COMPLETED	normal	automatically start at boot	Allows an application to start itself as soon as the system has finished booting. This can make it take longer to start the phone and allow the application to slow down the overall phone by always running.
android.permission.CAMERA	dangerous	take pictures and videos	Allows application to take pictures and videos with the camera. This allows the application to collect images that the camera is seeing at any time.
android.permission.BLUETOOTH	dangerous	create Bluetooth connections	Allows an application to view configuration of the local Bluetooth phone and to make and accept connections with paired devices.
android.permission.BLUETOOTH_ADMIN	dangerous	bluetooth administration	Allows an application to configure the local Bluetooth phone and to discover and pair with remote devices.

PERMISSION	STATUS	INFO	DESCRIPTION
android.permission.WAKE_LOCK	dangerous	prevent phone from sleeping	Allows an application to prevent the phone from going to sleep.
com.google.android.c2dm.permission.RECEIVE	signature	C2DM permissions	Permission for cloud to device messaging.
com.vnptit.innovation.ncovi.permission.C2D_MESSAGE	signature	Allows cloud to device messaging	Allows the application to receive push notifications.
android.permission.ACCESS_WIFI_STATE	normal	view Wi-Fi status	Allows an application to view the information about the status of Wi-Fi.
android.permission.GET_ACCOUNTS	normal	discover known accounts	Allows an application to access the list of accounts known by the phone.

SHARED LIBRARY BINARY ANALYSIS

ISSUE	SEVERITY	DESCRIPTION	FILES
Found elf built without Position Independent Executable (PIE) flag	high	In order to prevent an attacker from reliably jumping to, for example, a particular exploited function in memory, Address space layout randomization (ASLR) randomly arranges the address space positions of key data areas of a process, including the base of the executable and the positions of the stack, heap and libraries. Built with option -pie .	lib/mips64/libpl_droidsonroids_gif.so

ক্ল APKID ANALYSIS

FILE	DETAILS		
	FINDINGS	DETAILS	
classes.dex	Anti-VM Code	Build.FINGERPRINT check Build.MODEL check Build.MANUFACTURER check Build.BRAND check Build.DEVICE check Build.PRODUCT check Build.BOARD check network operator name check ro.kernel.qemu check	
	Compiler	dx	



ACTIVITY	INTENT
com.vnptit.innovation.covid19vnpt.activity.DeepLinkActivity	Schemes: ncovi://,

Q MANIFEST ANALYSIS

ISSUE	SEVERITY	DESCRIPTION
Application Data can be Backed up [android:allowBackup=true]	medium	This flag allows anyone to backup your application data via adb. It allows users who have enabled USB debugging to copy application data off of the device.
Activity (com.vnptit.innovation.covid19vnpt.activity.DeepLinkActivity) is not Protected. An intent-filter exists.	high	An Activity is found to be shared with other apps on the device therefore leaving it accessible to any other application on the device. The presence of intent-filter indicates that the Activity is explicitly exported.
Service (com.vnptit.innovation.covid19vnpt.serivce.GetLocationService) is not Protected. [android:exported=true]	high	A Service is found to be shared with other apps on the device therefore leaving it accessible to any other application on the device.
Service (com.vnptit.innovation.covid19vnpt.serivce.TraceTogertherService) is not Protected. [android:exported=true]	high	A Service is found to be shared with other apps on the device therefore leaving it accessible to any other application on the device.
Service (com.vnptit.innovation.covid19vnpt.serivce.SendLocationGiamSatService) is not Protected. [android:exported=true]	high	A Service is found to be shared with other apps on the device therefore leaving it accessible to any other application on the device.
Service (com.vnptit.innovation.covid19vnpt.serivce.TestService) is not Protected. [android:exported=true]	high	A Service is found to be shared with other apps on the device therefore leaving it accessible to any other application on the device.
Service (com.google.firebase.messaging.FirebaseMessagingService) is not Protected. [android:exported=true]	high	A Service is found to be shared with other apps on the device therefore leaving it accessible to any other application on the device.
Broadcast Receiver (com.google.firebase.iid.FirebaseInstanceIdReceiver) is Protected by a permission, but the protection level of the permission should be checked. Permission: com.google.android.c2dm.permission.SEND [android:exported=true]	high	A Broadcast Receiver is found to be shared with other apps on the device therefore leaving it accessible to any other application on the device. It is protected by a permission which is not defined in the analysed application. As a result, the protection level of the permission should be checked where it is defined. If it is set to normal or dangerous, a malicious application can request and obtain the permission and interact with the component. If it is set to signature, only applications signed with the same certificate can obtain the permission.
Service (com.google.firebase.iid.FirebaseInstanceIdService) is not Protected. [android:exported=true]	high	A Service is found to be shared with other apps on the device therefore leaving it accessible to any other application on the device.

</> CODE ANALYSIS

ISSUE	SEVERITY	STANDARDS	FILES
This App uses Java Hash Code. It's a weak hash function and should never be used in Secure Crypto Implementation.	warning	CVSS V2: 2.3 (low) CWE: CWE-327 - Use of a Broken or Risky Cryptographic Algorithm OWASP MASVS: MSTG-CRYPTO-4	org/greenrobot/eventbus/o.java org/greenrobot/eventbus/q.java retrofit2/Utils.java com/roughike/bottombar/l.java com/roughike/bottombar/l.java com/mapbox/geojson/Polygon.java com/mapbox/geojson/BoundingBox.java com/mapbox/geojson/BoundingBox.java com/mapbox/geojson/MultiPoint.java com/mapbox/geojson/GeometryCollection.java com/mapbox/geojson/GeometryCollection.java com/mapbox/geojson/MultiLineString.java com/mapbox/geojson/BaseGeometryTypeAdapte r.java com/mapbox/geojson/MultiPolygon.java com/mapbox/geojson/FeatureCollection.java com/mapbox/geojson/FeatureCollection.java com/mapbox/geojson/FeatureCollection.java com/mapbox/geojson/FeatureAllection.java com/mapbox/mapboxsdk/maps/m.java com/mapbox/mapboxsdk/camera/CameraPositio n.java com/mapbox/mapboxsdk/camera/CameraPositio n.java com/mapbox/mapboxsdk/module/telemetry/Perf ormanceEvent.java com/mapbox/mapboxsdk/module/telemetry/Offl ineDownloadEndEvent.java com/mapbox/mapboxsdk/module/telemetry/Offl ineDownloadStartEvent.java com/mapbox/mapboxsdk/style/types/Formatted Section.java com/mapbox/mapboxsdk/style/a/a.java com/mapbox/mapboxsdk/style/a/a.java com/mapbox/mapboxsdk/style/a/a.java com/mapbox/mapboxsdk/a/a.java com/mapbox/mapboxsdk/a/a.java com/mapbox/mapboxsdk/d/a.java com/mapbox/mapbox/mapbox-demetry/TelemetryRespo nse.java
			me/dm7/barcodescanner/a/c.java me/dm7/barcodescanner/zxing/ZXingScannerVie w.java com/makeramen/roundedimageview/b.java com/makeramen/roundedimageview/RoundedIm ageView.java com/roughike/bottombar/BottomBar.java com/vnptit/innovation/covid19vnpt/MainApplicat ion.java com/vnptit/innovation/covid19vnpt/ui/category/ QRCodeActivity.java com/vnptit/innovation/covid19vnpt/ui/category/S

ISSUE	SEVERITY	STANDARDS	canQRCodeActivity.java Edu社 Snptit/innovation/covid19vnpt/ui/category/S hareActivity.java
The App logs information. Sensitive information should never be logged.	info	CVSS V2: 7.5 (high) CWE: CWE-532 - Insertion of Sensitive Information into Log File OWASP MASVS: MSTG-STORAGE-3	com/vnptit/innovation/covid19vnpt/ui/category/g iamsat/DiemDanhActivty,java com/vnptit/innovation/covid19vnpt/notification/ MyFirebaseMessagingService.java com/vnptit/innovation/covid19vnpt/activity/Valid ateOTPActivity.java com/vnptit/innovation/covid19vnpt/activity/Main Activity.java com/vnptit/innovation/covid19vnpt/serivce/GetL ocationService.java com/vnptit/innovation/covid19vnpt/serivce/Trace TogertherService.java com/vnptit/innovation/covid19vnpt/serivce/FetS ervice.java com/vnptit/innovation/covid19vnpt/serivce/FetS ervice.java com/vnptit/innovation/covid19vnpt/g/e.java com/vnptit/innovation/covid19vnpt/g/h.java com/vnptit/innovation/covid19vnpt/g/e.java com/vnptit/innovation/covid19vnpt/g/e.java com/vnptit/innovation/covid19vnpt/g/b.java com/vnptit/innovation/covid19vnpt/g/b.java com/vnptit/idg/sdk/activity/VnptInputIdentityActivity.java com/vnptit/idg/sdk/activity/VnptPortraitBasicActivity.java com/vnptit/idg/sdk/activity/VnptPortraitBasicActivity.java com/vnptit/idg/sdk/activity/VnptPortraitActivity.java com/vnptit/idg/sdk/bc.java com/vnptit/idg/sdk/bc.java com/vnptit/idg/sdk/bc.java com/vnptit/idg/sdk/bc.java com/vnptit/idg/sdk/bc.java com/vnptit/idg/sdk/bc.java com/vnptit/idg/sdk/bc.java com/mapbox/android/core/location/MapboxFuse dLocationEngineImpl.java com/mapbox/android/core/location/MapboxFuse dLocationEngineImpl.java com/mapbox/android/telemetry/ConcurrentQue ue.java com/mapbox/android/telemetry/ConcurrentQue ue.java com/mapbox/android/telemetry/ConfigurationCli ent.java com/mapbox/android/telemetry/ConfigurationCli

ISSUE	SEVERITY	STANDARDS	st.java Fdh F66apbox/android/telemetry/MapboxTelemet rv.java
			com/mapbox/android/telemetry/EventsQueue.ja va com/mapbox/android/telemetry/location/Locatio nCollectionClient.java com/mapbox/android/telemetry/location/Locatio nEngineControllerImpl.java com/mapbox/android/telemetry/location/Locatio nUpdatesBroadcastReceiver.java com/mapbox/android/telemetry/provider/Mapbo xTelemetryInitProvider.java com/mapbox/android/telemetry/crash/CrashRep orterClient.java com/mapbox/android/telemetry/crash/TokenCha ngeBroadcastReceiver.java com/mapbox/android/telemetry/crash/CrashRep orterJobIntentService.java butterknife/ButterKnife.java
App can read/write to External Storage. Any App can read data written to External Storage.	high	CVSS V2: 5.5 (medium) CWE: CWE-276 - Incorrect Default Permissions OWASP Top 10: M2: Insecure Data Storage OWASP MASVS: MSTG-STORAGE-2	com/vnptit/idg/sdk/e/f.java com/mapbox/mapboxsdk/storage/FileSource.jav a

Q DOMAIN MALWARE CHECK

DOMAIN	STATUS	GEOLOCATION
www.mapbox.com	good	IP: 151.101.52.143 Country: United States of America Region: California City: San Francisco Latitude: 37.7757 Longitude: -122.395203 View: Google Map
api.idg.vnpt.vn	good	IP: 14.225.15.6 Country: Viet Nam Region: Ha Noi City: Hanoi Latitude: 21.0245 Longitude: 105.841171 View: Google Map
apps.mapbox.com	good	IP: 52.85.43.53 Country: Australia Region: Victoria City: Melbourne Latitude: -37.813999 Longitude: 144.963318 View: Google Map

DOMAIN	STATUS	GEOLOCATION
ncovi.vnpt.vn	good	IP: 14.225.13.26 Country: Viet Nam Region: Ha Noi City: Hanoi Latitude: 21.0245 Longitude: 105.841171 View: Google Map
vnpt-ncovi.firebaseio.com	good	IP: 35.201.97.85 Country: United States of America Region: California City: Mountain View Latitude: 37.405991 Longitude: -122.078514 View: Google Map
maps.vnpost.vn	good	IP: 42.117.1.2 Country: Viet Nam Region: Ha Noi City: Hanoi Latitude: 21.0245 Longitude: 105.841171 View: Google Map
schemas.android.com	good	No Geolocation information available.
github.com	good	IP: 13.236.229.21 Country: Australia Region: New South Wales City: Sydney Latitude: -33.867851 Longitude: 151.207321 View: Google Map
play.google.com	good	IP: 216.58.196.142 Country: United States of America Region: California City: Mountain View Latitude: 37.405991 Longitude: -122.078514 View: Google Map
egov.mic.gov.vn	good	IP: 14.225.7.70 Country: Viet Nam Region: Ha Noi City: Hanoi Latitude: 21.0245 Longitude: 105.841171 View: Google Map

DOMAIN	STATUS	GEOLOCATION
ncov.moh.gov.vn	good	IP: 20.44.209.93 Country: Singapore Region: Singapore City: Singapore Latitude: 1.28967 Longitude: 103.850067 View: Google Map
www.facebook.com	good	IP: 157.240.8.35 Country: Australia Region: New South Wales City: Sydney Latitude: -33.867851 Longitude: 151.207321 View: Google Map
baohiemxahoi.gov.vn	good	IP: 113.20.111.67 Country: Viet Nam Region: Ha Noi City: Hanoi Latitude: 21.0245 Longitude: 105.841171 View: Google Map

URLS

URL	FILE
http://schemas.android.com/apk/res/android	pl/droidsonroids/gif/e.java
http://localhost/	retrofit2/Response.java
https://ncov.moh.gov.vn/	com/vnptit/innovation/covid19vnpt/ui/home/HomeFragment.ja va
https://play.google.com/store/apps/details?id=com.vnptit.innovation.ncovi	com/vnptit/innovation/covid19vnpt/activity/MainActivity.java
https://play.google.com/store/apps/details?id=com.vnptit.innovation.ncovi	com/vnptit/innovation/covid19vnpt/activity/MainActivityV2.java
https://ncovi.vnpt.vn/views/policy.html https://ncovi.vnpt.vn/policy_en.html https://egov.mic.gov.vn/ https://ncovi.vnpt.vn/views/huongdan.html https://ncovi.vnpt.vn/views/ncovi_detail.html https://ncov.moh.gov.vn https://baohiemxahoi.gov.vn/tracuu/Pages/tra-cuu-ho-gia-dinh.aspx https://maps.vnpost.vn/corona/#/app https://www.facebook.com/quantriungdungNcovi/	com/vnptit/innovation/covid19vnpt/g/a.java
https://maps.vnpost.vn https://ncovi.vnpt.vn	com/vnptit/innovation/covid19vnpt/retrofit/c.java

URL	FILE
https://api.idg.vnpt.vn/ai/v1/ocr/id https://api.idg.vnpt.vn/ai/v1/ocr/id/front https://api.idg.vnpt.vn/file-service/addFile https://api.idg.vnpt.vn/face-service/face/add https://api.idg.vnpt.vn/ai/v1/postcode/matching https://api.idg.vnpt.vn/ai/v1/face/compare https://api.idg.vnpt.vn/face-service/face/add-ereception https://api.idg.vnpt.vn/ai/v1/face/liveness https://api.idg.vnpt.vn/ai/v1/face/mask https://api.idg.vnpt.vn/face-service/face/verify?challenge_code= https://api.idg.vnpt.vn/ai/v1/card/liveness	com/vnptit/idg/sdk/c/a.java
https://www.mapbox.com/help/create-api-access-token/ https://www.mapbox.com/help/first-steps-android-sdk/#access- tokens.Currently	com/mapbox/mapboxsdk/Mapbox.java
https://www.mapbox.com/map-feedback https://apps.mapbox.com/feedback	com/mapbox/mapboxsdk/maps/d.java
https://www.mapbox.com/about/maps/ https://www.mapbox.com/telemetry/	com/mapbox/mapboxsdk/a/d.java
https://www.mapbox.com/feedback/ https://www.mapbox.com/map-feedback/ https://apps.mapbox.com/feedback/	com/mapbox/mapboxsdk/a/a.java
https://www.mapbox.com/help/create-api-access-token/ https://www.mapbox.com/help/first-steps-android-sdk/#access-tokens.	com/mapbox/mapboxsdk/c/c.java
https://vnpt-ncovi.firebaseio.com https://github.com/vinc3m1 https://github.com/vinc3m1/RoundedImageView https://github.com/vinc3m1/RoundedImageView.git https://www.mapbox.com/telemetry/	Android String Resource

FIREBASE DATABASES

FIREBASE URL	DETAILS
https://vnpt-ncovi.firebaseio.com	info App talks to a Firebase Database.

TRACKERS

TRACKER	URL
Mapbox	https://reports.exodus-privacy.eu.org/trackers/171



Title: NCOVI

Score: 4.6895823 Installs: 1,000,000+ Price: 0 Android Version Support: 4.1 and up Category: Medical Play Store URL: com.vnptit.innovation.ncovi

Developer Details: Cục Tin học hóa, Bộ Thông tin và Truyền thông,

C%E1%BB%A5c+Tin+h%E1%BB%8Dc+h%C3%B3a,+B%E1%BB%99+Th%C3%B4ng+tin+v%C3%A0+Truy%E1%BB%81n+th%C3%B4ng, 68 Dương Đình Nghệ, Cầu Giấy, Hà Nội, https://egov.mic.gov.vn/, ncovi@vnpt.vn,

Release Date: Mar 7, 2020 Privacy Policy: Privacy link

Description:

App Security Score Calculation

Every app is given an ideal score of 100 to begin with.

For every findings with severity high we reduce 15 from the score.

For every findings with severity warning we reduce 10 from the score.

For every findings with severity good we add 5 to the score.

If the calculated score is greater than 100, then the app security score is considered as 100.

And if the calculated score is less than 0, then the app security score is considered as 10.

Risk Calculation

APP SECURITY SCORE	RISK
0 - 15	CRITICAL
16 - 40	HIGH
41 - 70	MEDIUM
71 - 100	LOW

Report Generated by - MobSF v3.0.8 Beta

Mobile Security Framework (MobSF) is an automated, all-in-one mobile application (Android/iOS/Windows) pen-testing, malware analysis and security assessment framework capable of performing static and dynamic analysis.

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