

Final Security Test Specification and Tools Report

Mobile Platform	Android App
Application domain type	m-Payment
Authentication	Yes
Authentication schemes	Biometric-based authentication ; Factors-based authentication ; ID-based authentication
Has DB	Yes
Type of data storage	SQL
Which DB	MySQL
Type of data stored	Personal Information ; Critical Data
User Registration	Yes
Type of Registration	Will be an administrator that will register the users
Programming Languages	Java
Input Forms	Yes
Upload Files	No
The system has logs	Yes
The system has regular updates	Yes
The system has third-party	No
System Cloud Environments	Private Cloud
Hardware Specification	Yes
HW Authentication	Basic Authentication (user/pass)
HW Wireless Tech	3G ; 4G/LTE ; 5G ; Wi-Fi
Data Center Physical Access	Yes

In order to avoid or prevent *Botnet, Spoofing and Sniffing attacks*, the following security tests should be performed.

Test Parameter	Testing Types	Testing Methods	Tools		
			Both	Android	iOS
Exploit Database Vulnerabilities	White Box	Manual Dynamic Analysis via Penetration Test	SQLite browser		Xcode
Proper SSL usage and Use of encryption	Black Box	Dynamic Analysis via Proxies	WebScarab		
Database fragility scanner	Grey Box	Dynamic Analysis via Vulnerability Scanner	Database Scanner of Internet Security Systems Co. and MetaCortex		
Find Bugs	White Box	Static Analysis via Bytecode Scanner	FindBugs, BugScan of LogicLab Co.		
	White Box	Static Analysis via source code Analyser	C++Test, RATS, C Code Analyzer(CCA)		
	White Box	Static Analysis via Binary code Scanner	BugScan of LogicLab Co. and Fx-Cop; BugScam		
Input validation of user SID	Grey Box	Manual Dynamic Analysis Checking input fields in GUI			
Runtime manipulation: code injection, patching	Grey Box	Static Analysis via Test Penetration	Cydia Substrate		Cycript

In order to avoid or prevent *Malicious Insider and VM-Migration attacks*, the following security tests should be performed.

Test Parameter	Testing Types	Testing Methods	Tools		
			Both	Android	iOS
Input validation	Grey Box	Static Analysis via Forensic Mobile	Slueth Kit+Autopsy Browser	AndroGuard, Drozer, apktool, Amandroid	

In order to avoid or prevent *Malware injection and Side-channel Attacks*, the following security tests should be performed.

Test Parameter	Testing Types	Testing Methods	Tools		
			Both	Android	iOS
Debug flag	White Box	Static Analysis via Forensic Mobile	BlackBag Blacklight, Encase forensics	AndroGuard, Drozer, FindBugs, Andriker	
Content providers	White Box	Static Analysis via Forensic Mobile	Slueth Kit+Autopsy Browser	AndroGuard, Drozer, apktool	
Code quality	White Box	Static Analysis via Bytecode Scanner	FindBugs, BugScan of LogicLab Co.		
	White Box	Static Analysis via source code Analyser	C++Test, RATS, C Code Analyzer(CCA)		
	White Box	Static Analysis via source code Analyser	BugScan of LogicLab Co. and Fx-Cop, BugScam		class-dump-z

In order to avoid or prevent *physical attacks*, the following security tests should be performed.

Test Parameter	Test Approach	Test Method	Tools		
			Both	Android	iOS
Debug flag, Content providers, Code quality	White Box	Static Analysis via Forensic Mobile		AndroGuard, Drozer, FindBugs	
Leak, Breach and data Loss	Black Box	Manual Dinamic Analysis Checking input fields from device and GUI			