User Guide: qkbcc

INTRODUCTION

Qkbcc (QuickBCC) tries to detect vulnerable code clones in given binary executables.

Qkbcc analyzes binary files and identifies vulnerable functions by comparing them with a vulnerability database.

The vulnerability database is experimental and currently contains a limited number of signatures for well-known vulnerabilities.

USEAGE

Step 1. Getting Started

To use QKBCC, access the IoTcube platform: https://iotqv.korea.ac.kr/sast/qkbcc

No installation is required for web-based analysis.

Step 2. Prepare Input File

To use QKBCC, access the IoTcube platform: https://iotqv.korea.ac.kr/sast/qkbcc

No installation is required for web-based analysis.

QKBCC requires binary executables compressed into a .zip file.

QKBCC does not accept a single raw binary file directly.

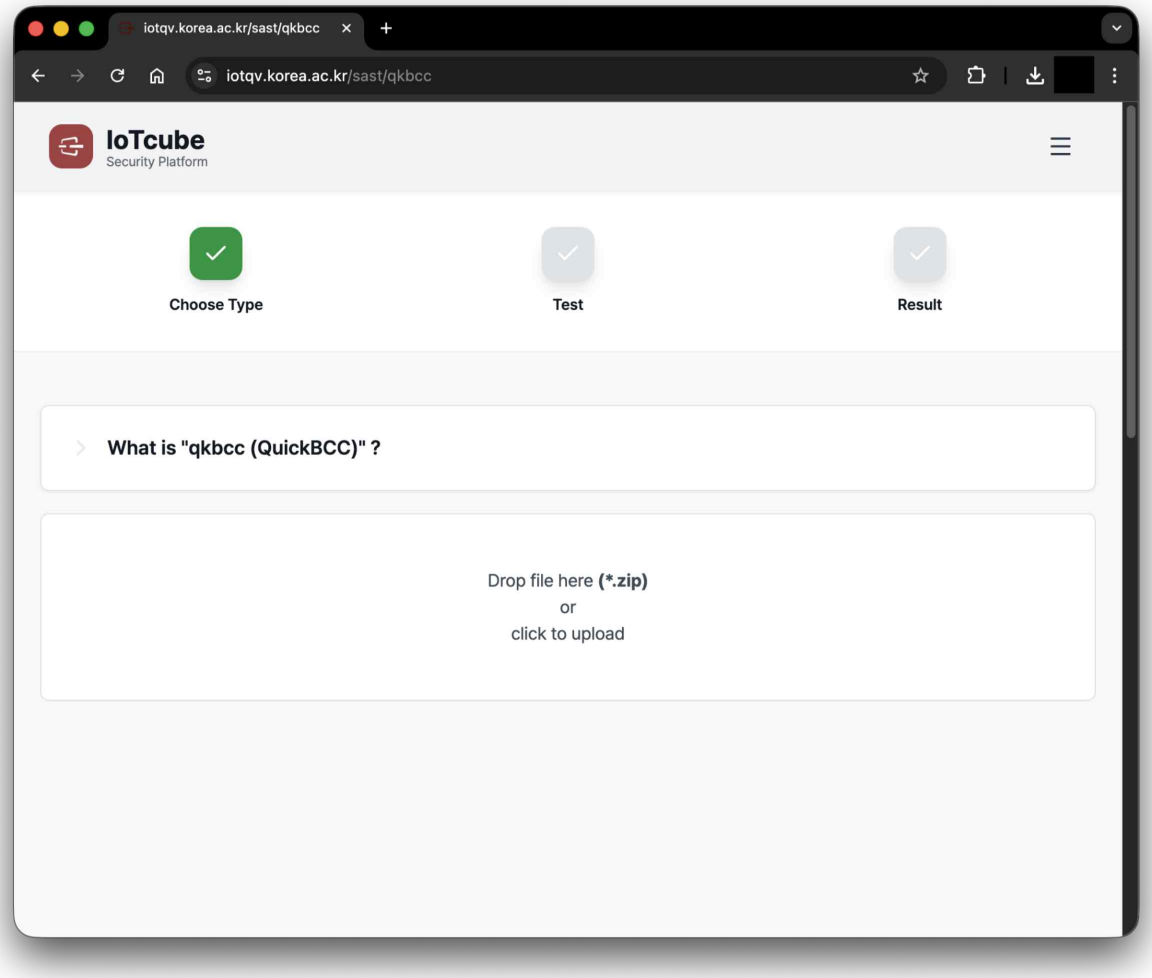
You must compress the executable(s) before uploading.

Input Requirements

- A .zip file containing:
- One binary executable, or
- Multiple binary executables

Step 3. Upload File (Testing)

On the Qkbcc page you will see the upload area:



Upload the prepared .zip file by:

- Dragging and dropping the file into the upload area, or
- Clicking the area to select the file manually.

After uploading, Qkbcc automatically starts the analysis.

Step 4. Running Analysis

After the .zip file is uploaded:

1. QKBCC extracts the compressed files.
2. Binary executables are parsed.
3. Function-level features are extracted.
4. Extracted functions are compared with the vulnerability database.
5. Potential vulnerable code clones are identified.

The analysis may take several minutes depending on the file size.

Step 5. Inspect Results

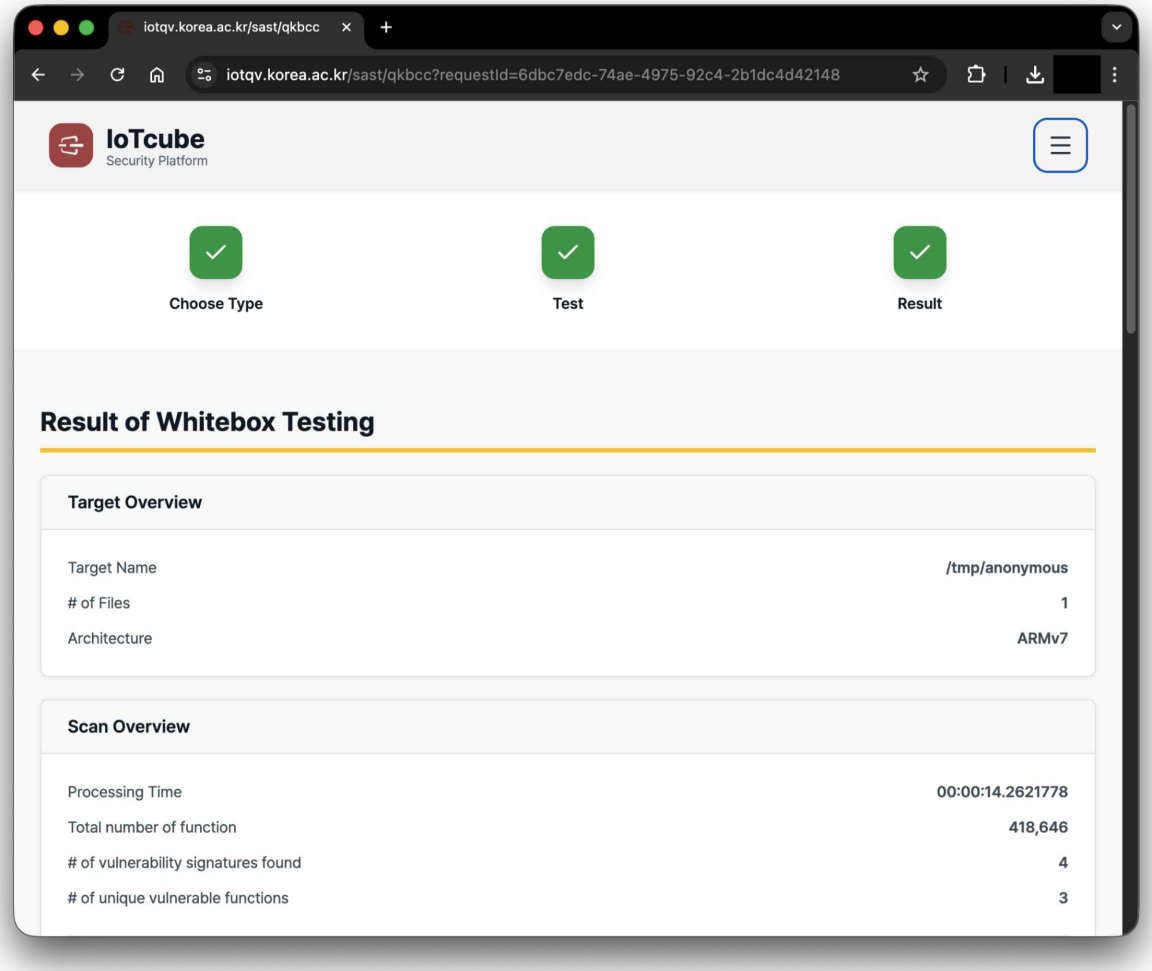
After analysis is completed, move to the **Result** stage.

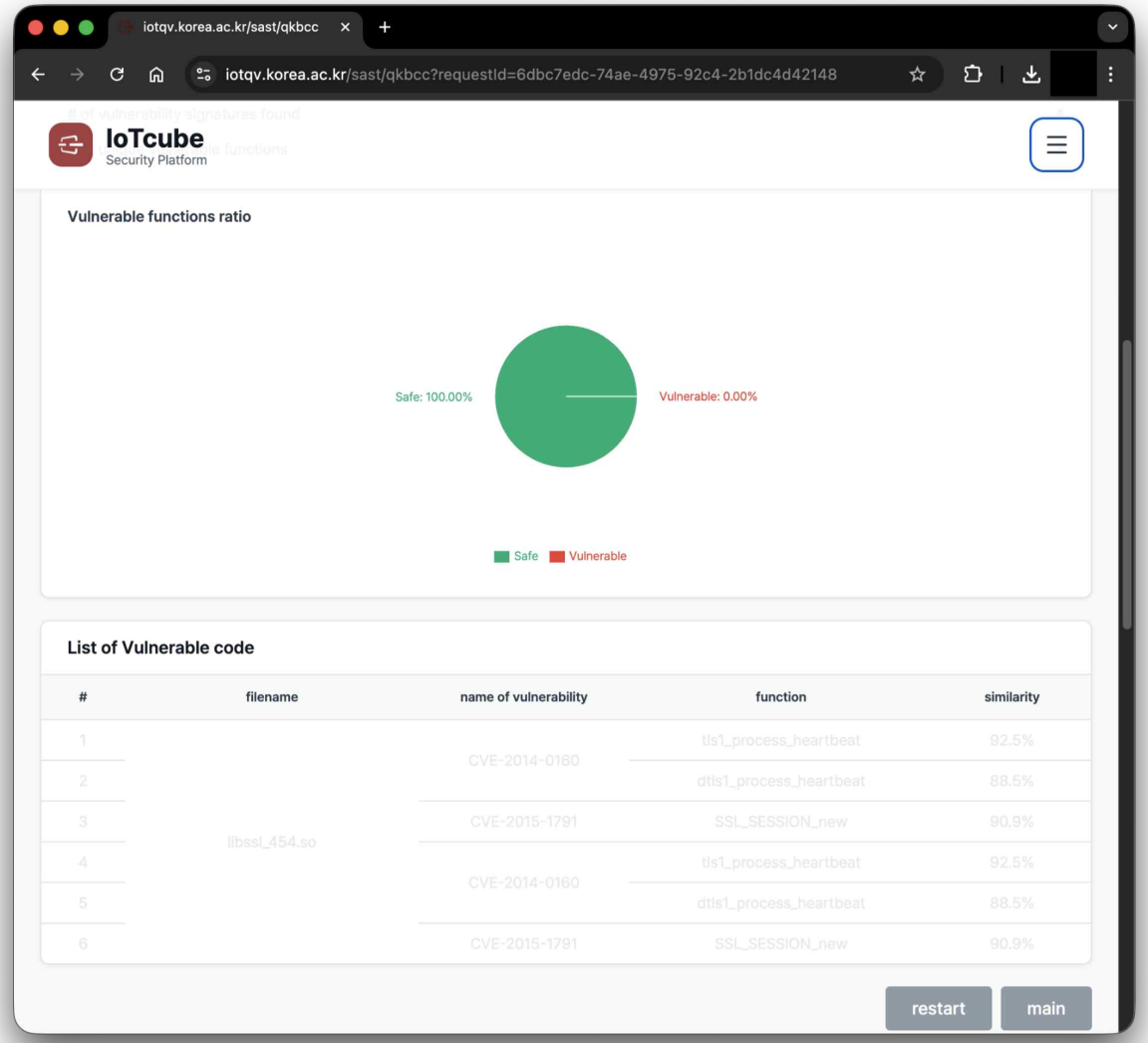
The result page shows:

- Detected vulnerable functions
- Matched vulnerability signatures
- Related vulnerability information

Each result corresponds to a matched vulnerable code clone detected in the uploaded binary.

(figure: After Drag & Drop result zip file)




iotqv.korea.ac.kr/sast/qkbcc
iotqv.korea.ac.kr/sast/qkbcc?requestId=6dbc7edc-74ae-4975-92c4-2b1dc4d42148
IoTcube
Security Platform
Vulnerable functions ratio
Safe: 100.00%
Vulnerable: 0.00%
Safe
Vulnerable
List of Vulnerable code
filename name of vulnerability function similarity
1 libssl_454.so CVE-2014-0160 tls1_process_heartbeat 92.5%
2 dtls1_process_heartbeat 88.5%
3 CVE-2015-1791 SSL_SESSION_new 90.9%
4 CVE-2014-0160 tls1_process_heartbeat 92.5%
5 dtls1_process_heartbeat 88.5%
6 CVE-2015-1791 SSL_SESSION_new 90.9%
restart
main