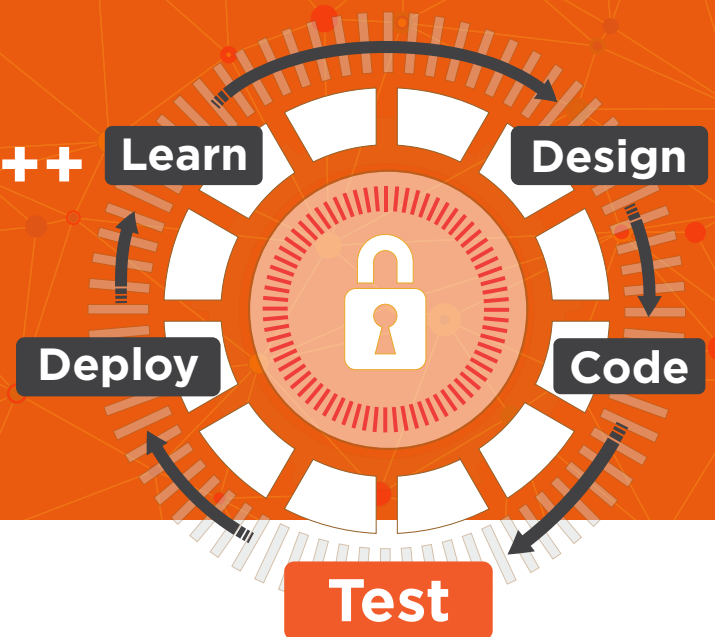


TRUSTINSOFT ANALYZER FOR C/C++

EXHAUSTIVE SOURCE CODE ANALYSIS
THAT MATHEMATICALLY PROVES
SOFTWARE SECURITY AND SAFETY



FEATURES

Static analysis

Formal methods-based analysis

Exhaustive detection of Undefined Behavior

Root cause investigation

Powerful Control-flow and Data-flow analysis



Standards:

- MISRA
- CERT-C
- ISO 26262



BENEFITS



Keep the focus on real bugs & vulnerabilities:

The tool raises very few false alarms: alarms correspond to real bugs or vulnerabilities.



Detect root cause: *TrustInSoft Analyzer provides hints to quickly find the root cause. Focus on relevant variables and track all relevant statements involved in the problem.*



Mathematical guarantee: *Conclusively obtain mathematical proof of the absence of undefined behaviors with no false negatives. Definitively prove that the code does exactly what it is supposed to do.*



Generalization of test inputs: *Quickly create the equivalent of billions of tests by generalizing test inputs. Confidently achieve up to 100% code coverage quickly.*



Hardware-aware analysis: *Methodically employ analysis that considers hardware characteristics to detect low-level software errors.*



Process integration: *Easily integrate the tool into different CI or fuzzing processes with access to a detailed and comprehensive report.*

AUTOMATED REPORTS

INVESTIGATION TOOLS

TrustInSoft Analyzer Report
Created on 11/7/2022

Summary of Tests

# UBs	Analysis	Function Coverage	Statement Coverage	Semantic Statement Coverage	Total Time	Memory Usage
0	1.positive-shift	60%	59%	87%	2.844 s	0 Gbytes
0	2.negative-shift	60%	59%	87%	2.771 s	0 Gbytes
1	3.generalized-shift	60%	59%	96%	2.780 s	0 Gbytes
0	4.generalized-string	60%	61%	100%	5.113 s	0 Gbytes

Bug Location

```

1-| int absolute_int(long x)
2-| {
3-|     long abs_x;
4-|     if (x < 0)
5-|         abs_x = -x;
6-|     else
7-|         abs_x = x;
8-|     return abs_x;
9-| }
    
```

Test Coverage Display

```

65 int tc_sha256_update(TCSha256State_t s, const uint8_t *data, size_t datalen)
66 {
67     /* input sanity check */
68     if (s == (TCSha256State_t) 0) {}
69     data = (void *) 0;
70     return TC_CRYPTO_FAIL;
71 } else if (Constant == 0) {
72     return TC_CRYPTO_SUCCESS;
73 }
74 }
75 while (datalen > 0) {
76     s->leftover[s->leftover_offset++] = *data++;
77     if (s->leftover_offset == TC_SHA256_BLOCK_SIZE) {
78         compress(s->iv, s->leftover);
79         s->leftover_offset = 0;
80     }
    
```

Analysis Summary

Analysis finished after <1sec

2 files successfully compiled
1 potential undefined behavior has been found.
Standard library: 5 functions used
Coverage: 60% of functions: 96% of statements.
The entry point function successfully returns with the value (0-1).
Architecture: gcc: 4.0.3.AMD64 (little endian)

Extensive investigation tools: Control flow and data flow, call stack, variable values

```

int absolute_int(long x)
{
    int __retres;
    long abs_x;
    if (x < (long)0) {
        signed_overflow: -x <= 9223372036854775807
        abs_x = -x;
    }
    else {
        abs_x = x;
    }
    __retres = (int)abs_x;
    return __retres;
}
    
```

TRUSTINSOFT ANALYZER DETECTS ALL UNDEFINED BEHAVIORS AND MORE

- Buffer overflow
- Use-after-free
- Division by zero
- Integer overflow
- Array subscript out of range
- Strict aliasing violation
- Dangerous function cast
- Uninitialized memory
- Memory leaks
- Etc.

These bugs are subtle and complex to detect with standard testing methods. They are used for cyberattacks. They also introduce non-deterministic behaviors and cause software to crash.

WHO IS TRUSTINSOFT?

Founded in 2013, TrustInSoft developed a game-changing product for software code analysis backed by 30 years of R&D. TrustInSoft Analyzer enables developers to apply formal methods in an incremental way and achieve powerful results. What makes TrustInSoft unique is the fact that it can help developers reach time-sensitive goals and prove the functionality of their software.

GUARANTEE ZERO-BUG SOFTWARE WITH TRUSTINSOFT ANALYZER - GET IN TOUCH WITH OUR EXPERTS TODAY.

✉ contact@trust-in-soft.com

☎ EUROPE +33 1 84 06 43 91

☎ USA +1 (408) 829-5882

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