Ultimatix | SSA Software Security Assurance

Software Security Assurance

SSA Knowledgebase

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Software Security Test Cases

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Buffer Overflow Testing

1. Testing for stack and heap overflow

Objective: To test if someone can manipulate the program stack.

Test case ID	Description	Expected results
Overflow.1.1	Validate if pointer based language or native code used into program	Program is written with managed code and no native calls are made
Overflow.1.2	Validate if unsafe or deprecated APIs are used	Program do uses safe and latest APIs
Overflow.1.3	Validate all array bounds and loops	Array bounds are secure
Overflow.1.4	Validate if all memory allocation and de-allocation are proper	All allocation and de-allocation are proper
Overflow.1.5	Validate if validation library contain checks for validating length for input	Validation library does length check along with other checks for all input (i.e from user, network, file)
Overflow.1.6	Validate if code is generated using compiler switch for overflow check (if language support)	Program is written with managed code

2. Testing for integer overflow

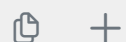Objective: To test if someone can manipulate integer errors

Test case ID	Description	Expected results
Overflow.2.1	Validate if all casting operations are properly handled	All casting operations are handled properly
Overflow.2.2	Validate if mathematical and conversion operations are performed after checking variable type and length	Mathematical and conversion operations are performed securely

3. Testing for format string

Objective: To test if unfiltered input is used into format string parameter into functions

Test case ID	Description	Expected results
Overflow.3.1	Validate if all inputs to formatting functions are checked	All inputs are validated before used
Overflow.3.2	Check if all inputs are validated before logging	All inputs are validated before logging

Configuration Testing   ⧉ +

Denial of Service Testing   ⧉ +