Polyspace Code Verification

Developer Report for Project: Test

Report Author: aiyer

Polyspace Code Verification: Developer Report for Project: Test

by Report Author: aiyer

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Verification Author(s): aiyer  
Polyspace Version(s): 9.6 (R2016b)  
Project Version(s): 1.0

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Chapter 1. Polyspace Code Verification Summary

Table 1.1. Code Metrics Summary

|  |  |
| --- | --- |
| **Polyspace Code Metrics** | **Disabled** |
| Pass/Fail |  |

Table 1.2. Coding Rules Summary - Coding Rule Checker

|  |  |
| --- | --- |
| **Coding Rule Checker** | **Disabled** |
| Pass/Fail |  |

Table 1.3. Run-Time Checks Summary

|  |  |
| --- | --- |
| **Run-Time Checks** | **Enabled** |
| Number of Red Checks | 3 |
| Number of Gray Checks | 1 |
| Number of Orange Checks | 6 |
| Number of Green Checks | 29 |
| Proven | 84.6% |
| Pass/Fail |  |

Table 1.4. Global Variable Summary

|  |  |
| --- | --- |
| **Category** | **Total** |
| Unused variable | 1 |
| Used non-shared variable | 1 |

**Developer Name:  
  
Date Reviewed:  
  
  
Comments  
  
  
  
  
  
  
  
  
  
Approved By:  
  
Approved Date:**

Chapter 2. Polyspace Run-Time Checks Statistics

Run-Time Checks Summary for Test - Result\_6

Globally Proven: 84.6%

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **File** | **Proven** | **Green** | **Red** | **Gray** | **Orange** |
| sample\_code.c | 84.6% | 29 | 3 | 1 | 6 |
| **Total** | **84.6%** | **29** | **3** | **1** | **6** |

Percentage of code checked for run-time errors

|  |  |
| --- | --- |
| **Result Set** | **% Checked** |
| Test - Result\_6 | 93% |

Chapter 3. Polyspace Run-Time Checks Results

Reviewed Run-Time Checks

Untagged Checks

Table 3.1. C:\Users\aiyer\Documents\Ongoing\Test\sample\_code.c

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Check** | **Function** | **Line** | **Col** | **Detail** | **Jus** | **Comment** |
| 21 | Illegally dereferenced pointer | main() | 25 | 24 | Warning: pointer may be outside its bounds | No |  |
| 22 | Non-initialized variable | main() | 25 | 27 | Warning: variable may be non-initialized (type: int 32) | No |  |
| 41 | Illegally dereferenced pointer | main() | 47 | 27 | Warning: pointer may be outside its bounds | No |  |
| 42 | Non-initialized variable | main() | 47 | 29 | Warning: variable may be non-initialized (type: int 32) | No |  |
| 45 | Overflow | main() | 48 | 13 | Unproven: operation [+] on scalar may overflow (result strictly greater than MAX INT32) | No |  |
| 48 | Non-initialized pointer | main() | 49 | 23 | Warning: pointer may be non-initialized | No |  |
| 11 | Non-initialized local variable | entry\_point() | 59 | 23 | Error: local variable is not initialized (type: int 32) | No |  |
| 13 | Out of bounds array index | entry\_point\_1() | 67 | 26 | Error: array index is outside its bounds : [0..9] | No |  |
| 16 | Overflow | entry\_point\_2() | 72 | 17 | Error: operation [conversion from int64 to int8] on scalar overflows (result is always strictly greater than MAX INT8) | No |  |
| 17 | Function not called | entry\_point\_3() | 76 | 5 | entry\_point\_3 is defined but: - Never called, OR - Called by another function that is never called. The call must occur directly or indirectly from main or another entry point. | No |  |

Reviewed Global Variable Checks

Untagged Checks

Table 3.2. ?extern

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Check** | **Line** | **Col** | **Detail** | **Protection** | **Comment** |
| 61 | Used non-shared variable | 0 | 0 | Operations on variable '?extern.stdin' do not interfere with each other. |  |  |

Table 3.3. C:\Users\aiyer\Documents\Ongoing\Test\sample\_code.c

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Check** | **Line** | **Col** | **Detail** | **Protection** | **Comment** |
| 62 | Unused variable | 4 | 6 | There exists no reachable operation on variable 'sample\_code.b'. |  |  |

Chapter 4. Appendix 1 - Configuration Settings

Polyspace Settings

|  |  |
| --- | --- |
| **Option** | **Value** |
| -author | aiyer |
| -check-subnormal | allow |
| -compiler | gnu4.9 |
| -date | 30/08/2018 |
| -dos | true |
| -entry-points | entry\_point,entry\_point\_1,entry\_point\_2 |
| -float-rounding-mode | to-nearest |
| -import-comments | C:\Users\aiyer\Documents\Polyspace\_Workspace\Test\Module\_1\Result\_5 |
| -lang | C |
| -no-def-init-glob | true |
| -O | -O2 |
| -prog | Test |
| -results-dir | C:\Users\aiyer\Documents\Polyspace\_Workspace\Test\Module\_1\Result\_6 |
| -scalar-overflows-behavior | wrap-around |
| -scalar-overflows-checks | signed-and-unsigned |
| -target | i386 |
| -to | Software Safety Analysis level 4 |
| -uncalled-function-checks | all |
| -verif-version | 1.0 |

Chapter 5. Appendix 2 - Definitions

Table 5.1. Abbreviations

|  |  |
| --- | --- |
| **Abbreviation** | **Definition** |
| Col | Column |
| Jus | Justified |
| SQO | Software Quality Objectives |
| NA | Not Available |