Author

CAST



**MIPS Reduction Index**

**Summary Report**

Application Name –

Version –

CAST AIP -

|  |
| --- |
|  |
|  |

Monday, xx July 2012

My Application Name

Version Number

My CAST Version

# Table of Content

Table of Content

1. Introduction

1.1. Application Characteristics

2. Security Violation Overview

2.1. MIPS Reduction Index vulnerabilities

2.2. MIPS Reduction – focus on algorithmic costs

2.3. MIPS Reduction – focus on data access efficiency

2.4. MIPS Reduction – focus on avoiding transaction failure

3. Appendix

3.1. About CAST Software Intelligence

# Introduction

The TCO (Total Cost Ownership) of an IBM mainframe system is determined from various elements such as MIPS (Million Instructions Per Second) and MSU (Million Service Units) values. There is a correlation between MIPS, that denotes the workload capacity, and MSU, that depends on the actual hardware configuration. Thus, even if MSU value is used by IBM for the pricing, reducing the MIPS value influences the TCO. The total cost per MIPS is estimated between 3.000-5.000$ per year. Companies that want to reduce IT cost are working on reducing the number of MIPS per year.

This report presents the outcome for CAST AIP measure related to the CAST MIPS Reduction Index.

## Application Characteristics

The MIPS Reduction index is computed from the source code used to implement the application. Only the technical aspect of that code is taken in account. Functionalities are not used to compute the index.

|  |  |
| --- | --- |
| Name | Value |
| kLoC | 504 |
| Files | 6,586 |
| Classes | 593 |
| SQL Art. | 0 |
| Tables | 119 |

*Fig 1: Application Technology characteristics Table 1: Application characteristics*

# Security Violation Overview

This section provides a summary of the most severe violations identified in the structural quality analysis and measurement by CAST AIP against the MIPS (Million Instructions Per Second) Reduction Index.

## MIPS Reduction Index vulnerabilities

The MIPS Reduction index is based on the CAST AIP quality rules that address resource consumption aspects and thus presents MIPS reduction opportunities for the application.

These quality rules are related to costly statements or constructs, data access efficiency, and application reliability.

|  |  |  |  |
| --- | --- | --- | --- |
| MIPS Reduction | Total Violations | Added Violations | Removed Violations |
| MIPS Reduction – focus on algorithmic costs | 0 | 0 | 0 |
| MIPS Reduction – focus on data access efficiency | 0 | 0 | 0 |
| MIPS Reduction – focus on avoiding transaction failure | 0 | 0 | 0 |

*Table 2: MIPS Reduction Index rules*

## MIPS Reduction – focus on algorithmic costs

Some statements are known as being resource consuming and therefore should be avoided. It is the also case of particular constructs, mainly based on loops, as well.

Rules presented in next tables cover that part of the MIPS Reduction Index.

|  |  |  |  |
| --- | --- | --- | --- |
| CAST Rules | Total Violations | Added Violations | Removed Violations |
| Rule 1 | 0 | 0 | 0 |
| Rule 2 | 0 | 0 | 0 |
| Rule 3 | 0 | 0 | 0 |
| Rule 4 | 0 | 0 | 0 |
| Rule 5 | 0 | 0 | 0 |

*Table 3: MIPS Reduction – focus on algorithmic costs*

## MIPS Reduction – focus on data access efficiency

Inefficient file accesses or database queries decrease performance and increase resource consumption. Fixing the corresponding violations will impact positively the MIPS value.

The rules listed below contribute to the MIPS Reduction Index regarding that topic.

|  |  |  |  |
| --- | --- | --- | --- |
| CAST Rules | Total Violations | Added Violations | Removed Violations |
| Rule 1 | 0 | 0 | 0 |
| Rule 2 | 0 | 0 | 0 |
| Rule 3 | 0 | 0 | 0 |
| Rule 4 | 0 | 0 | 0 |
| Rule 5 | 0 | 0 | 0 |

*Table 4: MIPS Reduction – focus on data access efficiency*

## MIPS Reduction – focus on avoiding transaction failure

Application reliability influences the MIPS value. Each time a transaction stops or a batch terminates, the system must log the issue and reload the context. These system operations consume resources and should be avoided as much as possible.

The below rules address that aspect of the MIPS Reduction Index.

|  |  |  |  |
| --- | --- | --- | --- |
| CAST Rules | Total Violations | Added Violations | Removed Violations |
| Rule 1 | 0 | 0 | 0 |
| Rule 2 | 0 | 0 | 0 |
| Rule 3 | 0 | 0 | 0 |
| Rule 4 | 0 | 0 | 0 |
| Rule 5 | 0 | 0 | 0 |

*Table 5: MIPS Reduction – focus on avoiding transaction failure*

# Appendix

## About CAST Software Intelligence

Software Intelligence creates understanding into software architecture, end to end transaction flows, data access patterns and more, helping teams work confidently and faster. Hundreds of companies rely on CAST Software Intelligence to improve end-user satisfaction and time-to-market, prevent business disruption and reduce cost, enabling them to move past today’s obstacles and to tackle the next wave of innovation.

[Click here](https://www.castsoftware.com/software-intelligence) for more information about CAST Software Intelligence.