

NAME

`llvm-remark-size-diff` - diff size remarks

SYNOPSIS

`llvm-remark-size-diff` [*options*] *file_a* *file_b* **--parser** *parser*

DESCRIPTION

`llvm-remark-size-diff` diffs size *remarks* in two remark files: **file_a** and **file_b**.

`llvm-remark-size-diff` can be used to gain insight into which functions were impacted the most by code generation changes.

In most common use-cases **file_a** and **file_b** will be remarks output by compiling a **fixed source** with **differing compilers** or **differing optimization settings**.

`llvm-remark-size-diff` handles both *YAML* and *bitstream* remarks.

OPTIONS

--parser=<yaml|bitstream>

Select the type of input remark parser. Required. * **yaml**: The tool will parse YAML remarks. * **bitstream**: The tool will parse bitstream remarks.

--report-style=<human|json>

Output style. * **human**: Human-readable textual report. Default option. * **json**: JSON report.

--pretty

Pretty-print JSON output. Optional.

If output is not set to JSON, this does nothing.

-o=<file>

Output file for the report. Outputs to stdout by default.

HUMAN-READABLE OUTPUT

The human-readable format for `llvm-remark-size-diff` is composed of two sections:

- ⊕ Per-function changes.
- ⊕ A high-level summary of all changes.

Changed Function Section

Suppose you are comparing two remark files OLD and NEW.

For each function with a **changed instruction count** in OLD and NEW, **llvm-remark-size-diff** will emit a line like below:

```
(++|--|==) (>|<) function_name, N instrs, M stack B
```

A breakdown of the format is below:

(++|--|==)

Which of OLD and NEW the **function_name** is present in.

- ⊕ ++: Only in NEW. ("Added")
- ⊕ --: Only in OLD. ("Removed")
- ⊕ ==: In both.

(>|<)

Denotes if **function_name** has more instructions or fewer instructions in the second file.

- ⊕ >: More instructions in second file than first file.
- ⊕ <: Fewer instructions in second file than in first file.

function_name

The name of the changed function.

N instrs

Second file instruction count - first file instruction count.

M stack B

Second file stack byte count - first file stack byte count.

Summary Section

llvm-remark-size-diff will output a high-level summary after printing all changed functions.

instruction count: N (inst_pct_change%)

stack byte usage: M (sb_pct_change%)

N Sum of all instruction count changes between the second and first file.

inst_pct_change%

Percent increase or decrease in instruction count between the second and first file.

M Sum of all stack byte count changes between the second and first file.

sb_pct_change%

Percent increase or decrease in stack byte usage between the second and first file.

JSON OUTPUT

High-Level view

Suppose we are comparing two files, OLD and NEW.

llvm-remark-size-diff will output JSON as follows.

```
"Files": [
  "A": "path/to/OLD",
  "B": "path/to/NEW"
]
```

```
"InBoth": [
  ...
],
```

```
"OnlyInA": [
  ...
],
```

```
"OnlyInB": [
  ...
]
```

Files

Original paths to remark files.

- ⊕ **A**: Path to the first file.
- ⊕ **B**: Path to the second file.

InBoth

Functions present in both files.

OnlyInA

Functions only present in the first file.

OnlyInB

Functions only present in the second file.

Function JSON

The **InBoth**, **OnlyInA**, and **OnlyInB** sections contain size information for each function in the input remark files.

```
{
  "FunctionName" : "function_name"
  "InstCount": [
    INST_COUNT_A,
    INST_COUNT_B
  ],
  "StackSize": [
    STACK_BYTES_A,
    STACK_BYTES_B
  ],
}
```

FunctionName

Name of the function.

InstCount

Instruction counts for the function.

⊕ **INST_COUNT_A**: Instruction count in OLD.

⊕ **INST_COUNT_B**: Instruction count in NEW.

StackSize

Stack byte counts for the function.

⊕ **STACK_BYTES_A**: Stack bytes in OLD.

- ⊕ **STACK_BYTES_B**: Stack bytes in NEW.

Computing Diffs From Function JSON

Function JSON does not contain the diffs. Tools consuming JSON output from **llvm-remark-size-diff** are responsible for computing the diffs separately.

To compute the diffs:

- ⊕ Instruction count diff: **INST_COUNT_B - INST_COUNT_A**
- ⊕ Stack byte count diff: **STACK_BYTES_B - STACK_BYTES_A**

EXIT STATUS

llvm-remark-size-diff returns 0 on success, and a non-zero value otherwise.

AUTHOR

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