

How errors are grouped

Error Reporting groups errors which are considered to have the same root cause.

Before grouping

Before Error Reporting evaluates any error for grouping, it decides the following:

- On App Engine standard environment, errors logged with a severity lower than `ERROR` are ignored.
- Stack frames which are not owned by the user are ignored (for instance, those that belong to public libraries).
- Any repeating sequence of one or more stack frames is replaced by a single occurrence of that sequence.
- Compiler-introduced methods and symbols are removed.

Grouping

When the system is evaluating errors, it follows these general patterns:

- Exceptions are grouped together if they have the same exception type and similar stacks.
- The stack trace is ignored for exceptions that are typically unrelated to the source location where they occur.
- Errors without an exception stack are grouped together if they were created by the same log statement, approximated by the source location it was reported from (`reportLocation`).

Specifically, the following grouping rules are applied in this order:

Error type	Grouped by
Errors caused by a general problem in the environment.	Grouped by exception type.

For example, App Engine specific problems:

```
com.google.apphosting.runtime.HardDeadlineExceededError
```

```
com.google.appengine.api.datastore.DatastoreTimeoutException
```

Java problems:

```
java.util.concurrent.CancellationException
```

Errors with a stack trace. In the case of nested exceptions, the innermost exception is considered.

Grouped by exception type and the 5 top-most frames.

For example:

```
runtime error: index out of range
package1.func1()
    file1:20
package2.func2()
    file2:33
```

Errors without a stack trace, but with a message.

Grouped by message and (if present) function name. Only the first 3 literal tokens of the message are considered. In the example to the left, these are **runtime**, **error**, and **index**.

For example:

```
runtime error: index out of range
    func1()
```

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Last updated 2020-07-10 UTC.

