

# C++WordCount

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## C/C++ [MapReduce](#) Code & build

This is the [WordCount](#) example using C/C++.

```
#include "hadoop/Pipes.hh"
#include "hadoop/TemplateFactory.hh"
#include "hadoop/StringUtils.hh"

class WordCountMap: public HadoopPipes::Mapper {
public:
    WordCountMap(HadoopPipes::TaskContext& context){}
    void map(HadoopPipes::MapContext& context) {
        std::vector<std::string> words =
            HadoopUtils::splitString(context.getInputValue(), " ");
        for(unsigned int i=0; i < words.size(); ++i) {
            context.emit(words[i], "1");
        }
    }
};

class WordCountReduce: public HadoopPipes::Reducer {
public:
    WordCountReduce(HadoopPipes::TaskContext& context){}
    void reduce(HadoopPipes::ReduceContext& context) {
        int sum = 0;
        while (context.nextValue()) {
            sum += HadoopUtils::toInt(context.getInputValue());
        }
        context.emit(context.getInputKey(), HadoopUtils::toString(sum));
    }
};

int main(int argc, char *argv[]) {
    return HadoopPipes::runTask(HadoopPipes::TemplateFactory<WordCountMap,
                                WordCountReduce>());
}
```

To compile the example, build the Hadoop code and the C/C++ word count example:

```
# ant -Dcompile.c++=yes examples
```

## Upload C++ binary files to HDFS

To upload the binary files to HDFS, the command syntax is:

```
# bin/hadoop fs -put build/c++-examples/Linux-i386-32/bin /examples/bin
```

## Set the [MapReduce](#) Config

```
# vi src/examples/pipes/conf/word.xml

<?xml version="1.0"?>
<configuration>
  <property>
    // Set the binary path on DFS
    <name>hadoop.pipes.executable</name>
    <value>/examples/bin/wordcount</value>
  </property>
  <property>
    <name>hadoop.pipes.java.recordreader</name>
    <value>true</value>
  </property>
  <property>
    <name>hadoop.pipes.java.recordwriter</name>
    <value>true</value>
  </property>
</configuration>
```

## Execute

To run the example, the command syntax is:

```
# bin/hadoop pipes -conf src/examples/pipes/conf/word.xml -input in-dir -output out-dir
```