

# QSFactor

User's manual

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## Compilation

The source code of QSFactor is contained in the archive src.zip. The source code can be compiled using the javac utility.

## Execution

The QSFactor program is contained in QSFactor.jar. The main class of the program is qsfactor.Main. The default input path for the program is **./FACTOR\_INPUT** and the name of the input file is **input**. The default output path for the program is **./FACTOR\_OUTPUT**. These default paths can be overridden by specifying optional command-line arguments (in this case both must be provided) or by changing them in the class qsfactor.Config. The input and output directories (if they exist) should be deleted before QSFactor is ran.

### Running QSFactor on a Hadoop cluster:

```
hadoop jar QSFactor.jar qsfactor.Main [n] [optional_input_path] [optional_output_path]
```

### Running QSFactor on the local machine:

```
java -cp QSFactor.jar;lib/* qsfactor.Main [n] [optional_input_path] [optional_output_path]
```

**n** – the integer to be factorized.

**optional\_input\_path** – the overridden input path.

**optional\_output\_path** – the overridden output path.

### Example usage on the local machine:

```
java -cp QSFactor.jar;lib/* qsfactor.Main 97097221068614748259
```

## Dependencies

Microsoft Windows specific:

QSFactor makes use of Unix shell commands. Cygwin needs to be installed and the bin directory of Cygwin needs to be in the PATH environment variable.

General:

Java is needed in order to compile/run QSFactor. Additionally, to compile QSFactor or run it on the local machine certain libraries are needed(the ones provided in the MapReduce practical).

## Provided files

KJ\_QSFactor\_manual.pdf – user's manual(this document).

KJ\_Breaking\_RSA.pdf - detailed description of the whole project and inner workings of QSFactor.

src.zip – archived source code.

QSFactor.jar – the QSFactor Java program.

run.cmd – Windows batch file to run QSFactor on the local machine. Edit the location of libraries and QSFactor command-line arguments in this file.