

GIMPS – Great Internet Mersenne Prime Search

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GPU Computing Guide v0.01 – 2011-05-26

This is a quick start guide. More information can be found in the [GPU Computing Forum](#) and in the app-spec readmes.

Possibilities

What can I do with my GPU?

Nvidia – CUDA capable

- GIMPS Trial Factoring → [mfaktc](#)
- GIMPS Lucas Lehmer Test → [CUDALucas](#)
- llrCUDA
- genefer

ATI

- Nothing (yet) ☹

mfaktc

Name	mfaktc
Description	Trial factoring
Restrictions	$1,000,000 < \text{Exponent} < 2^{32}$ and prime, $2^{64} \leq \text{Factor size} \leq 2^{95}$
Author	Oliver Weihe
Latest Version	0.17
Latest Version released	2011-05-06
Compute Capability needed	1.0/1.1 possible but slow (too few registers) ≥ 1.2 better (kernel fits in registers)
Can be compiled with	CUDA Toolkit 3.0, 3.1, 3.2
Download links	Source Win32 Executable (needs additional CUDA 3.2 32bit library) Win64 Executable (needs additional CUDA 3.2 64bit library cudart64_32_16.dll)

CUDALucas

Name	CUDALucas
Description	Lucas Lehmer Test
Restrictions	$2 \leq \text{Exponent} < 151,150,000$ $\text{Exponent} < 39,800,00 \rightarrow 2\text{MB FFT size}$ $\text{Exponent} < 79,600,00 \rightarrow 4\text{MB FFT size}$ $\text{Exponent} < 159,200,00 \rightarrow 8\text{MB FFT size}$
Latest Version	Source: 1.2 Windows: 1.0b
Latest Version released	2011-02-20
Compute Capability needed	1.3
Download links	Source Win32 Executable? (needs additional CUDA 3.1 32bit library) Win64 Executable (needs additional CUDA 3.1 64bit library: cudart64_31_9.dll, cufft64_31_9.dll)