

Why all first primality tests practical should be PRP with proof generation

Computing cost (less is better)	primality test equivs
PRP (for proof power = 9)	
PRP first test	1
PRP Proof generation	0.0009
PRP server overhead	1.60E-05
PRP Cert (verification)	0.00195
PRP Total	1.002866
LL (for typical 2% error rate per LL test)	
LL first primality test	1
LL double check	1
Probability weighted triple check	0.04
Probability weighted quadruple and higher checks	0.0008163265
LL Total	2.0408163265
Ratio, LL total / PRP total	2.034984

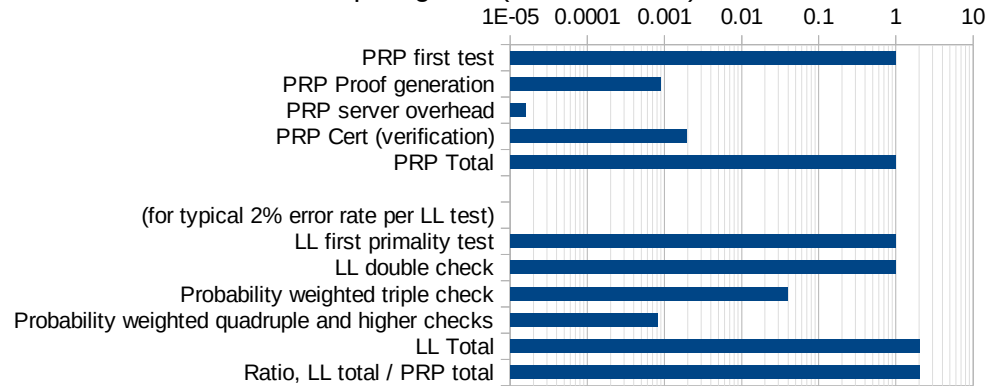
<https://www.mersenneforum.org/showpost.php?p=523345&postcount=4>

Delay in verification (smaller is better)	days
PRP Very prompt feedback on reliability allows corrective action during service life of hardware	
PRP GEC check (immediate during run)	0.04
PRP Cert (verification)	1
LL LL Double check, approx.	1825
LL LL Triple and higher checks approx	30
LL LL Double check typically comes too late to identify unreliable hardware during its normal service life	

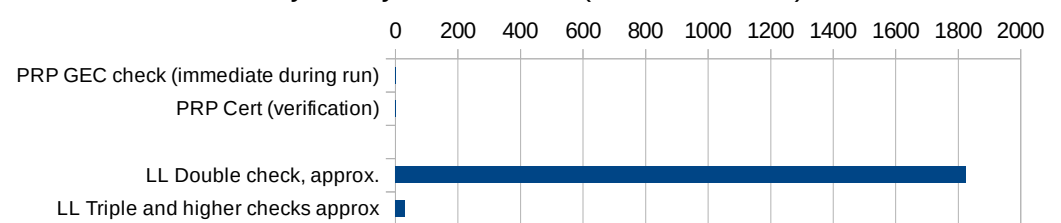
Odds of an error being detected, % (higher is better)	
PRP PRP GEC	100
LL LL without Jacobi check (CUDALucas)	0
LL LL with Jacobi symbol check	50

Please PM kriesel with any constructive comments or corrections

Computing cost (lower is better)



Days delay in verification (smaller is better)



Odds of an error that occurs being detected by number theory check during first test, % (higher is better)

