

C1

CCP 2011

What is world's fastest computer and how fast?

8.2 Petaflops K machine (Kobe Japan)  
 $\uparrow$   
 $10^{12}$

How much does such a super computer cost?

$\approx$  \$200,000,000

How much power / cost of power?

3-10 MWatt  $\approx$  \$1,000,000/year per MWatt

How many cores?

$\approx$  200,000

Top machines in US (5 of top 10)

Jaguar	Cray	1.76	Pflop
Cielo	Cray	1.11	
Pleiades	SGI	1.09	
Keppeler	Cray	1.05	
Roadrunner	IBM	1.04	

DOE plans Titan in 2012 20 Pflops

C2

Of top 500 computers in world

251 US

Your Laptop (12 Gflops)

64 China

would have been in top 500

31 Germany

Supercomputer list in 1997

28 UK

Your iPhone, iPad in 1995,

26 Japan

25 France

What is 2020 goal?

"Computing at Exascale"

↑  
 $10^{18}$

Critical Issues

- Communication between nodes (slow!)