What is world's fastest computer and how fast?

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

How much does such a super computer cost?

\( \approx \$200,000,000 \)

How much power/cost of power?

3-10 MWatt  \( \approx \$1,000,000/\text{year} \) per MWatt

How many cores?

\( \approx 200,000 \)

Top machines in US (5 of top 10)

Jaguar Cray 1.76 Pflop
Ciro Cray 1.11
Pleides Cray 1.09
Hopper Cray 1.05
Roadrunner IBM 1.04

DOE plans Titan in 2012 20 Pflop
Of top 500 computers in world

251 US

64 China

31 Germany

28 UK

26 Japan

25 France

What is 2020 goal?

"Computing at Exascale"

Critical Issues

- Communication between nodes (slow!)