新闻天天译：IBM夺回最快计算机桂冠 PDF转换可能丢失图片或格式，建议阅读原文 https://www.100test.com/kao_ti2020/502/2021_2022__E6_96_B0_E9_97_BB_E5_A4_A9_E5_c94_502407.htm ASCI Purple will be used to simulate nuclear explosions in 3-D Scientists will soon be able to observe the first instants after a nuclear warhead detonates. Fortunately, it will be a three-dimensional simulation, made possible by the worlds fastest computer. IBM and the U.S. Department of Energy announced Tuesday the sale of a $290 million supercomputer, capable of performing 100 trillion calculations per second. Armed with that much computing firepower, a 3-D simulation of the first one-millionth of a second in a nuclear explosion will take eight weeks to calculate. "ASCI紫色计算机"将被用于三维模拟核爆炸 科学家不久将能观察到核弹头爆炸的第一瞬间。幸运的是，世界上运算最快的计算机使三维模拟核爆炸成为可能。周二，IBM和美国能源部宣布，一台售价为2.9亿美元的超级计算机每秒钟可执行100兆次运算。一个关于百万分之一秒核弹爆炸的情况只需8周就可以通过这台计算机运算并做出它的三维模拟。而这是史无前例的模拟。 ASCI PURPLE, as the massive computer will be called, has a sobering task. Working at Lawrence Livermore National Laboratories, the hefty computer will be dedicated to the task of monitoring the nations nuclear missile stockpile. 被称作巨大计算机的"ASCI紫色计算机"承担着极其严峻的任务。这台座落(把"座落"改为"安装")在Lawrence Livermore国家实验室中的重型计算机，将被用于执行监测全国核导弹库的重任。 Every year, the Department of

Energy has to certify to the U.S. president that the missiles are safe and in working order. Computers are constantly running simulations to predict the likelihood of missile failure in a war, or the consequences of a missile mishap while still in peacetime. 每年，能源部都要向美国总统证明美国的导弹是安全的，它们正在正常工作。许多计算机持续运转，模拟预测在战时导弹失败的可能性或在和平时期导弹惹祸的恶果。 Currently, the former worlds No. 1 computer, ASCI White, did the job. But it can only run simulations on simple theoretical models, said lab spokesman David Schwoegler. ASCI Purple will do the first true-to-life, three-dimensional simulation of a detonation. 实验室发言人David Schwoegler说，当前，前世界运行最快的计算机--"ASCI白计算机"曾经承担这个重任，但它仅能在简单的理论模型中模拟核爆炸的瞬间情况,而"ASCI紫计算机"将首次逼真地三维模拟核爆炸。 And testing the nuclear arsenal requires much more than simulating the behavior of the plutonium inside a bomb. In fact, everything inside the bomb must be tested because materials tend to act in unpredictable ways during a detonation. One thing the computer will be able to test, for example, is whether aging materials hold potential hazards. 检测核武器库比模拟炸弹中的钚huang元素的反应要求要高得多。事实上，因为在核爆炸时，许多物质的反应难以预测，所以要检测核弹中的每一种物质。例如，计算机要能够检测出久置的核材料是否具有潜在的危险。 In the process, the computer will also help scientists unmask some of the 20th centurys great mysteries. Nuclear weapons, Schwoegler said, were built in the past "pragmatically, not scientifically." In other

words - the bombs worked, but the scientists building them were basing their construction on theories, instead of observation. 在这个过程,该计算机还将有助于科学家揭开上世纪一些重大的秘密。Schwoegler说，以前所造的核武器是"实用性，而不是科学性的"。换句话说，尽管核弹成功了，但是，建造核弹的科学家是根据理论而不是根据实际观察建造它们的。 "Ive seen scientists look at materials calculations on ASCI White and say, I knew that happened, but I couldnt prove it," Schwoegler said. Schwoegler说："靠ASCI白计算机计算核弹物质的科学家们说，我知道发生了什么，但我不能证明它。" ASCI Purple is as fast as 50,000 top-of-the-line PCs performing calculations simultaneously. Its operating memory is 400,000 times greater than that of the average PC, and it can store data equivalent to the U.S. Library of Congress - 30 times over. At 100 teraflops - or 100 trillion calculations per second - it will be about eight times faster than its predecessor, ASCI White, and about three times faster than the worlds current No. 1 computer, The Earth Simulator in Yokohama, Japan. That NEC-built machine was installed earlier this year, knocking IBM out of the top spot." ASCI紫计算机"的计算速度相当于5万台最好的个人电脑同步运算。与普通的个人电脑相比，它的应用贮存能力比普通个人电脑要高出40万倍，它贮存的数据要比美国国会图书馆高出30倍之多。以100每秒万亿次浮点运算或每秒100兆计算的能力，"ASCI紫计算机"比它的前任"ASCI白计算机"要快8倍，它比目前世界上最快的计算机，即位于日本Yokohama的"地球模拟器"要快3倍。本年初，NEC建成这台巨无霸把IBM挤出了世界最快计算机的头把交椅。

THE POWER OF THE HUMAN BRAIN犹如人脑的能力 Hans Moravec, a professor at Carnegie Mellon Universitys Robotics Institute, says ASCI Purple represents an important milestone for the computing industry. Twenty years ago, he predicted that computers would require 100 terraflops of calculating power to simulate the activity of the human brain. Right on the schedule he predicted, that milestone has been reached.Carnegie Mellon 大学机器人研究所的教授Hans Moravec说，"ASCI紫计算机的问世"代表着计算机产业的一个重要里程碑。20年前，他预测计算机若能达到每秒100兆的计算能力，就能模拟人脑活动了。正如他的预测，这个里程碑已经达到了。 "It seemed astronomically large back then," Moravec said. In fact, his predictions were first published in a science fiction magazine. "Im glad somebody remembered." Moravecs approximation is based on some observed facts - namely, the amount of computing power required to simulate the activity of the retina, which is about 1 billion calculations per second. For an approximation, he then calculated that the retina is about 1/100,000th the size of the entire brain. So he simply multiplied 1 billion times 100,000. Moravec说："这个运算能力的数字在当时像天文数据一样巨大"。事实上，他的预测当初是刊登在一本科幻杂志上的。他说："我很高兴还有人记得此事。"Moravec的近乎准确的估计是根据观察到的一些现象后而做出的"，模拟人眼视网膜活动的计算能力要达到大约每秒10亿次运算。为了取得近似数值，他计算出视网膜大约只有整个大脑的10万分之一的大小，所以，他仅仅用10亿乘以10万。 The real trick for the industry, however, is to get the cost of ASCI Purple

sized-computing power down from $290 million to about $1,000. At that point, he said, there will be robots which can act more or less like people. That kind of cost reduction might again sound like science fiction, but dont be fooled, said Moravec."I expect that in about 2020," he said. 然而，对于计算机行业来说，真正的目标是将具有"ASCI紫"计算能力计算机的价格，从2.9亿美元降到大约1千美元。他说，能达到这目标，就能造出多少有些人样的机器人了。这种大幅度的降价听起来又像科幻小说，但是这次不要被愚弄了。Moravec说："我希望大约在2020年就达到这个目标。"