

ObjectWeb - Annual Conference 2006 - UseCase - No6

No6

UC6: Grid Computing World Record using Proactive by INRIA-I3S-CNRS- University of Nice

Use Case	
ObjectWeb components	ProActive Grid Technology
Other components	Fractal and ASM
Abstract	<p>ObjectWeb ProActive holds a Grid Computing World Record</p> <p>The OASIS research group of INRIA Sophia is the first one in the world to have computed the number of ways of placing 25 queens on a 25 x 25 chessboard so that they do not check each other. The computation was performed on a desktop PC grid at INRIA Sophia Antipolis. By performing the computation in six months, the computing grid solely composed of 260 desktop PCs working when they were not or very little otherwise used, made it possible to bypass a computation of over 50 years.</p>
Details	
URL	http://www-sop.inria.fr/oasis/ProActive/nqueens25.html
Additional materials	<ul style="list-style-type: none"> nqueens3.png
Why is this use case a success?	
<p>The success of that use case is that we are the first (http:// www.research.att.com/projects/OEIS?Anum=A000170) to have computed all the solutions for 25 queens for the nQueens problem.</p> <p>Thanks to the Peer-to-Peer infrastructure provided by ProActive, which has permitted us to use all your 250 lab desktop workstations for a computation of 6 months. This experimentation has shown that is possible to use a grid, which is composed only by desktop workstations daily used.</p> <p>While the 6 months of computation, we did not have to step in on the deployed infrastructure because it is self-organized. After the installation of the P2P daemon on all our desktop workstations, the infrastructure requires only few administration tasks.</p> <p>The ProActive P2P infrastructure main qualities are:</p> <ul style="list-style-type: none"> • High availability of the infrastructure; • No cost or extra charge because using existing user desktop workstations; • Low need of administration. 	

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