

A Team Up in Server Cooling

Written by Marco Attard
11 April 2014

3M, SGI and Intel reveal a fully functional proof-of-concept supercomputer combining Intel and SGI hardware with "revolutionary" 3M-developed two-phase immersion cooling technology.



The machine consists of an Intel Xeon E5-2600-powered SGI ICE X supercomputer submerged "Novec Engineered Fluid", a liquid 3M describes as "an efficient dielectric that keeps the hardware cooled with minimum additional energy, maximum performance and better reliability."

According to the 3M the liquid reduces cooling costs by up to 95%, eliminates the equipment air and water cooling require and takes up to 10 times less space than conventional air cooling systems. It also allows the use of generated heat for heating or other processes such as sea water desalination.

Overall the system enables up to 100kW of computing power per square metre, 3M claims.

The three companies are already in talks with the Naval Research Laboratory, Lawrence Berkeley National Labs and APC by Schneider Electric on the deployment of such systems.

3M, SGI and Intel are not the only companies investigating alternative fluids for server cooling--
[Iceotrope](#)
makes server racks cooled with a combination of Novec and water, while
[Green Revolution Cooling sells CarnotJet](#)
, a system consisting of sealed components dunked in what amounts to vegetable oil.

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