

Supercomputer Engineering for Supporting Decision-making on Energy Systems Resilience

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Abstract	<p>We propose a new approach to creating a subject-oriented distributed computing environment. Such an environment is used to support decision-making in solving relevant problems of ensuring energy systems resilience. The proposed approach is based on the idea of advancing and integrating the following important capabilities in supercomputer engineering: continuous integration, delivery, and deployment of the system and applied software, high-performance computing in heterogeneous environments, multi-agent intelligent computation planning and resource allocation, big data processing and geo-information servicing for subject information, including weakly structured data, and decision-making support. This combination of capabilities and their advancing are unique to the subject domain under consideration, which is related to combinatorial studying critical objects of energy systems. Evaluation of decision-making alternatives is carrying out through applying combinatorial modeling and multi-criteria selection rules. The Orlando Tools framework is used as the basis for an integrated software environment. It implements a flexible modular approach to the development of scientific applications (distributed applied software packages).</p>

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