

Grid Activities in NECTEC

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As the government research institute directly responsible for computer technology development, NECTEC has been a major player of Grid Computing development in Thailand. In this talk, I will update NECTEC's activities in Grid Computing including infrastructure development, middleware testing and deployment and Information Grid development. NECTEC has been providing computing infrastructure for both networking and high performance computing for more than 10 years. As a part of this effort, Grid computing test bed has been developed. After the initial middleware deployment, the computation efficiency of the test bed has been studied for both fine and coarse grain applications. To ensure the interoperability, the networking and middleware deployment have also been tested, in cooperation with Thai National Grid Project (TNGP), for the compliance with community standards. Another important part of Grid computing infrastructure is the certificate authority. After successfully operating at the experimental level, NECTEC Grid CA has been approved as an accredited production level CA by APGrid PMA. The CA is allowed to issue certificates for the domestic Grid-based applications and projects. NECTEC has also joined an international Grid test bed, PRAGMA, and tested the Gfarm file systems. Information Grid is a continual effort initiated by NECTEC to develop a generic infrastructure for integrating information across heterogeneous environments by leveraging Grid computing technologies. The infrastructure consists of a standard language, Marker Description Language (MDL), for defining data structure, and three essential services: (i) Information Source to represent accessible information published by providers; (ii) Information Broker to provide generic information access; and (iii) Discovery&Integration Service to discovery and integrate information in a distributed manner. The infrastructure development is in progress where we currently focus on generic data access on relational database, distributed information retrieval based on peer-to-peer technology, and schema matching for relational database. In the meantime, we have collaborated with "The Best and The Brightest Project" run by NSTDA such that the infrastructure will be deployed to integrate the research information from different organizations.