Computing and Information Grid Development in Thailand

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Grid projects are continuously developed in Thailand. After its approval last year, Thailand National Grid Project (TNGP) called for meetings among participating institutes to coordinate technical details, and held user training sessions. More details about TNGP are in a separate report. National Electronics and Computer Technology Center (NECTEC) also continues its effort in building computing infrastructure for computational science and engineering. Grid computing technology is considered as a viable solution. NECTEC, therefore, has focused in developing and deploying Grid infrastructure, namely, a Grid Test bed, a Grid Certification Authority (CA), and Access Grid (AG) facilities. The Grid Test bed is based on Globus Toolkits version 4, and consists of 3 Grid nodes, one node being geographically separated from the others. Tests, such as authentication, job scheduling, file system and resource monitoring, are being conducted. The Grid CA is set up under the Asia Pacific Grid Policy Management Authority (APGrid PMA). Currenlty the Grid CA is operating according to APGrid PMA Experimental CA level, and it is planned to be upgraded to Operation level. More details about the Grid CA are in a separate report. The AG facilities such as venue servers, a bridge server, AG client nodes, have been developed and are used in 2 conferences to demonstrate AG utilization.

Complementary to Computing Grid development, NECTEC has been developing a framework and a prototype system called Information Grid. It is proposed as an open platform for flexible integration of information from heterogeneous sources leveraging the tremendous benefit of sharing of information across different organizations. The framework consists of two specifications, namely, the Marker Description Language and the Information Broker Interface. All information in the Information Grid is described by Markers, which specify the hierarchy and structure of information according to different areas and scopes. The other specification describes the interface between the information sources, participating in the Information Grid, and the Information Broker. This allows the Information Broker to be developed without too much complexity for handling different protocols and architectures of the information sources. In addition to the specifications, the Information Grid has 3 components that work collaboratively. These are the Marker Directory, the Information Broker and the Discovery Service. Currently, we have drafted a version of MDL specification. A prototype of Information Grid components and a simple client are being developed based on middleware and standards such as Globus Toolkit 4.0, WSRF Specification, OGSA-DAI and UDDI.