

## About TWGrid

Grid and cloud technology is considered the most influential technology of the century. The main concept is to integrate distributed computing resources, storage capabilities, and all kinds of information systems to create a virtual environment. Through virtual organizations and collaborative mechanisms, researchers can now solve problems of greater scale without distance barriers.

A paradigm shift for scientific research has occurred due to the development of distributed computing technologies. Researchers will no longer be confined to existing computer resources. Via international collaboration, grids and clouds provide resources in a more flexible on-demand manner, thus allowing scientists to focus on larger-scale challenges. To help scientists tackle problems, e-Science technology has not only been applied to High Energy Physics and Biomedicine, but is also increasingly used in other areas such as Earth Sciences, Astronomy, Atmospheric Science, Ecological Environment and Humanities.

TWGrid aims to facilitate the paradigm shift of local scientific collaboration and to expand worldwide collaboration. The Academia Sinica Grid Computing Centre (ASGC) has established a new e-Science research infrastructure by sharing its experience. Based on previous experiences in High Energy Physics and Biomedicine, ASGC applied the collaboration model to other scientific fields and provides technical support to create a domestic e-Science research environment.

With the support of the National Science Council, ASGC has deployed grid infrastructure technology and has also offered various training tutorials and application workshops since 2002. In recent years, more academic research institutes have participated in e-Science activities. The ASGC team collaborates with research institutions in Taiwan (Academia Sinica, National Taiwan University, National Tsing Hua University, National Yang-Ming University, National Central University, Taipei Medical University, National Taiwan Normal University, National Chung Cheng University and National Sun Yat-Sen University) and in the Asia-Pacific region (Australia, China, Hong Kong, Japan, Korea, India, Indonesia, Malaysia, Mongolia, New Zealand, Pakistan, the Philippines, Singapore, Thailand and Vietnam) and currently supports numerous scientific fields, such as Earth Sciences, Environmental Change, Biomedicine, High Energy Physics and Social Sciences. Taking advantage of global collaborations, ASGC facilitates an encompassing paradigm shift for the next-generation research infrastructure of Taiwan.