

## **Recent development in Grid Computing & e-infrastructures in India**

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Today's networks are based on a light paths (OFC) providing bandwidth of the higher magnitude (at low latency) than available till recently. Though bandwidth demand is increasing, it has been observed that data comes in bursts and full bandwidth utilization cannot be guaranteed for 24/7 operations. In an effort to improve bandwidth management and promote a more efficient use of it, current trend is to adopt a new model of sharing of common e-infrastructure for multiple applications just like sharing of transport through highways. This approach also allows reduction of cost of to a large extent.

Grid technology has received a lot of interest as a possible enabling technology to solve current problems of inefficient use of expensive bandwidth due to its capability to use or share the common e\_infrastructure for multiple applications by number of stakeholders simultaneously, making most efficient use of the e-infrastructure.

The Grid initiatives have gained a lot of momentum in India with the launch of National Knowledge Network (NKN) - a vision of what nationwide high bandwidth backbone could deliver. Also the establishment of the Indian Grid Certification Authority (IGCA), the participation of India in Trans-Eurasia Information Network (TEIN3) phase 3, International Collaborations in WLCG, ITER etc. represents just the most prominent landmarks India has achieved in recent times. As a national grand challenge problem, India has also taken up an initiative to solve climate change modeling applications

using Grid Computing on the NKN.

In this talk, an overview of recent developments in India in Grid computing & e\_infrastructure including that of NKN is provided with a brief description about its impact in solving national grand challenge problems. Its capabilities such as bandwidth management, scalability, security and sharing of applications using MPLS technology are also explained.

