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Clearing hurdles with cloud computing
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The MS Ramaiah Institute of Technology (MSRIT), based in Bangalore, is one of the premier autonomous universities in the country and offers engineering and medical courses. To cope with technological advancements, it required a software solution which could help the students obtain updated study material.

Moving with the Times

MSRIT needed to ensure the availability of the resources to students in order to support the practical implementation of the course. The university was also required to keep the course material up to date and to differentiate itself from the scores of other institutions in the country by attracting more and more talent from across the world. In line with the industry trends, the university created a course in high-performance cluster and grid computing so that students could learn the technology.

After researching various solutions, MSRIT came across Manjrasoft's Aneka software, which is used to build enterprise grids and clouds in a Windows environment. With the help of Manjrasoft, a mid-level solutions provider for computing, the university was able to develop a new course syllabus, known as 'High Performance Cluster and Grid Computing' with Aneka, which, in addition to the theoretical aspects, also covered the practical implementation of the system. Moreover, the university was able to utilise the funding from the All India Council for Technical Education, which encourages the development of next-generation technologies in educational institutions.

Gaining an Advantage

As it was very difficult to programme the grid and cloud computing environment directly, Aneka provided a highly effective and user-friendly interface for cloud programming. The tool is .NET-based , making it easy for the students to program the Cloud. MSRIT also installed an Aneka-based Cloud Computing Laboratory which basically provides high-performance grid computing (HPC) solutions for different engineering problems. The solution implementation process was supported by an Aneka platform from Manjrasoft and LAN-connected Windows systems.

MSRIT installed Aneka on all the systems in its existing lab and was able to create an enterprise-level grid network. The other advantages MSRIT gained include: Building distributed applications and learning implementing on the grid network Multiple programming models which are easy to learn and implement Mounting the distributed applications on in-house grids and clouds Developing a grid network on its existing infrastructure using Aneka in a cost-effective manner Meeting industry needs by using state-of-the-art technology in its institutions A better platform to implement parallel algorithms A good tool for practising HPC. With the solution in place, the university has introduced a course on grid computing as an elective for both undergraduate and postgraduate students. Research scholars from biotechnology, chemistry and chemical engineering branches use Aneka to program their models. M. Tech and B. Tech students also use this tool effectively to carry out their final year and undergraduate projects.