Research Assistant in System Administration group in Dept. of Computer Science and Engineering (3 positions)

Brief description:
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The department of Computer Science and Engineering at IIT Bombay operates a significant compute and network infrastructure for the use of its students and faculty. This includes the following types of infrastructure:

a. Programming Labs where course labwork is conducted (such as for the introductory programming course, the data structures course, the operating systems course, the data bases course and so on). These are typically populated with Linux desktops or laptops and can contain between 40 and 150 machines.

b. Server infrastructure that hosts services such as mail, dns, ldap. These are virtualized server environments configured for high availability.

c. Server infrastructure that can be used to give students and faculty virtual machines for infrastructure as a service.

d. A L2/L3 network that connects all of this together and uplinks to the IIT Bombay network.

In all, we own and operate around 500 personal computers and up to 15 server machines. In order to support and expand all of this, we are looking for RAs to act as systems administrators. The Sysad group has the following responsibilities:

1. Provide lab support for course related labs - ensure the OS is up to spec, the required software is installed and debug any issues that may arise during the labs.

2. Monitor the CSE production network and services mentioned in (b) above. Debug any issues that arise on a day to day basis.

3. Participate in enhancing the infrastructure - this could involve bringing up new services (such as an inventory management system which we are now building), enhancing the monitoring capability (monitor at the VMM instead of just understanding host level statistics) and automate diagnosis and repair of services (remote rebooting, service restart etc.). We are also planning to offer Infrastructure as a Service to the department and this will involve building and managing a small private cloud (compute and storage) for the department. Currently the Sysad group is involved in configuring the infrastructure for high availability.

We are looking for students with good Linux programming skills and are not afraid to dive into (possibly messy) code! Expertise managing and maintaining a network (both wireless and wired) would be great to have. The Sysad group is a great way to build up your systems programming and management skills and enhance your resume improving your job prospects in the future.