Abstract

Academic organizations are supposed to seek certain balance between the concerns of security, stability and availability of shared computer labs to achieve the course learning objectives. Some academic activities in computer science courses require students to control and configure some laboratory devices. Students in advanced courses may use some risky applications for some learning activities. It may affect the stability, availability and security of the working nature in the shared lab and networks. Virtualization Platform has the ability to overcome these concerns to achieve learning objectives. Virtualization technologies allow students to access and control the computer settings as well as the working environment in advanced applications without affecting the operational availability of computer labs throughout the college day. Virtualization enables computer security teachers to train their students on many hands-on activities without exposing or causing damages to computer labs.

This paper presents the usage of virtualization technology in such environment, the opportunities and benefits of using this technology in computer security oriented courses. The
Virtualization Environment for Computer Labs to Maintain Security, Stability and Availability

This paper also discusses the use of the VMware workstation pro as a sandbox for risky lab activities in computer security courses. Here the Desktop Virtualization offers great opportunities to teach advanced skills in computer security courses. Also, this paper outlines the challenges and limitations of virtualization along with some recommendations to address these limitations.

References

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Index Terms

Computer Science  Security

Keywords

Virtualization, virtual machine, Desktop virtualization, hypervisor, hands-on activities, computer security.