Republic Polytechnic

The first educational institution in Singapore to leverage the problem-based learning approach for all its diploma programs, RP has seven schools offering forty-one diplomas in applied science, engineering, management and communication, events and hospitality, infocomm, sports, health and leisure, and technology for the arts.

RP is committed to nurturing innovation and entrepreneurial learning in an environment that develops problem-solving skills and lifelong learning opportunities. Its holistic and broad-based curriculum prepares students for an active and meaningful role in society as problem solvers, respected professionals, and passionate citizens.

Republic Polytechnic Partners with Ixia to Nurture Cybersecurity Professionals

Republic Polytechnic (RP) has partnered with Ixia as part of its continuing efforts to build a pool of skilled cybersecurity professionals in Singapore. The aim is to develop students from RP's Diploma in Infocomm Security Management (DISM) into technically competent cybersecurity professionals who protect and strengthen the systems of organizations from rising cyberattacks.
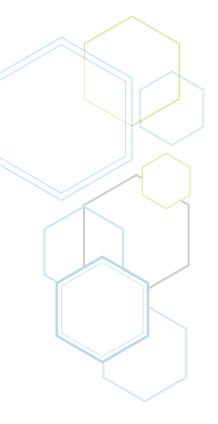
Students will graduate with real-world IT security technology skills, using industry-benchmarked security systems and learning facilities, and apply strategies and best practices. A DISM graduate will be able to direct, manage, and operate the security operations center and be directly involved in tracking and fighting cybercrime.

CHALLENGES

Singapore has long embraced infocomm technologies (ICT) as part of its development thrust. While ICT brings new opportunities, it also opens up new vulnerabilities through increasingly sophisticated cyberattacks in different forms.

Singaporeans constantly use online services to manage work, finance, social interactions, and business transactions. Singapore has been a long-standing target of cybercrime. Organizations have experienced phishing, intrusions, and malware targeting their IT infrastructure and systems' vulnerabilities.

Some have also encountered distributed denial-of-service (DDoS) attacks to bring their networks and systems down.

Networks are the most complex and most critical asset of most enterprises today. One of the biggest challenges facing network administrators: complete network visibility. Organizations need application intelligence that serves IT monitoring tools the right information at the right time.

Lastly, organizations worldwide face a dangerous shortage of experts with the skills required to defend against cyber terrorism. This urgent situation is made worse by the weaknesses and vulnerabilities that continue to pervade critical IT infrastructures. Currently, there is a severe shortage of cybersecurity talent and skilled expertise.

SOLUTION

Singapore is a smart city that requires a growing pool of skilled cybersecurity professionals. RP's DISM equips students with the needed capabilities and helps to address the skills gap faced by organizations in this area.

"The partnership between RP and Ixia will provide students a robust and battle-hardened environment in which students can develop and hone their cybersecurity skills. Singapore has long pride itself in staying at the forefront of IT and new skill development. This diploma offered by RP is a shining example of an educational institution taking the lead in building unmatched talent in this relatively new profession of cyber experts," said Naveen Bhat, Managing Director, Ixia, Asia Pacific.

Addressing these challenges requires Internet-scale simulation environments, along with a comprehensive training curriculum and proven methodologies, to develop elite cyber warriors capable of addressing and simulating attacks on IT infrastructures.

Leveraging its cyber range experience, Ixia has formulated a strategy for preparing organizations to defend their interests by assessing, educating, and training elite cyber warriors from the student class at the RP DISM security program and equipping them to harden the resiliency of critical networks and data centers.

Cyber range training

This three-year diploma program will give students an understanding of offensive and defensive cybersecurity methods. They will gain skills in reacting to a myriad of cybersecurity and application traffic flows. Students will be put through operational scenarios that include malicious and non-malicious traffic in a safe, secure environment.

In addressing these training needs, the approach is to provide students with an authentic learning environment to help them better visualize the threat landscape. It deploys network simulation equipment so that network topologies can be configured to mirror the actual infrastructure environment in

Key Issues
- To simulate real-life scenarios for working professionals to develop network security skills as part of IT security education training
- To help organizations develop a workforce capable of understanding and taking action based on data from complete network visibility.
- With the growing risk of cyberattacks, government organizations and businesses need qualified IT professionals who can resolve security issues across multiple complex IT systems

Results

- Delivers an authentic learning experience for IT security training through a new three-year program

- Allows organizations to hire IT professionals with complete cyber range training

- DISM students who learn about Ixia ATI technology will understand the impact of real-time application data on IT networks and its impact on security

- Helps organizations to comply with the security assurance requirements of their industry

an organization. It also sets up a security operations center for incident detection and response. Additionally, polytechnic graduates gain real-world skills in the use of current leading-edge hardware, such as Ixia's technologies for generating attack traffic and security monitoring.

"The Ixia traffic generator is an integral piece of industry-benchmarked learning equipment of our security operations center (SOC) lab. It enables us to create a myriad of attack scenarios to be used in the SOC lab so as to teach our infocomm security students the appropriate responses and mitigation strategies," said James Tham, Programme Chair of Diploma in Infocomm Security Management of the School of Infocomm at Republic Polytechnic.

Delivers an authentic learning experience for IT security training

By simulating real traffic and attacks with Ixia technologies, RP provide its students with an authentic learning experience.

With a complete infrastructure now in place for IT security training, graduates have industry-valued skills and hands-on experience in specialties such as ethical hacking, intrusion detection and prevention, and cloud infrastructure.
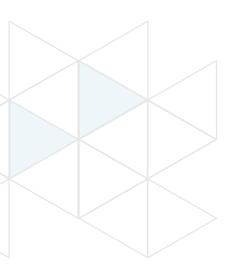
A DISM graduate, with experience using Ixia industry leading tools, will be well prepared for a career in infocomm security management and fill a valuable organization role of identifying and plugging gaps in their IT security, especially in the area of network resiliency.

Helps students to understand real-time application data and its impact on network infrastructure

DISM students who learn about Ixia Application and Threat Intelligence (ATI) technology will understand the impact of real-time application data on IT networks and its impact on security. Graduates will be ready to identify unknown network applications and mitigate network security threats from suspicious applications and locations.

Through the Ixia ATI technology, graduates will be able to evaluate and select the most appropriate network equipment for their critical infrastructure. The students will learn from real-time scenarios to leverage Ixia technology to easily identify unknown network applications, mitigate security threats, and identify trends in application usage.

With the growing risk of cyberattacks, government organizations and businesses need qualified IT professionals who can resolve security issues across multiple-complex IT systems.

ABOUT IXIA

Ixia provides the industry's most comprehensive converged IP network validation and network visibility solutions. Equipment manufacturers, service providers, enterprises, and government agencies use Ixia solutions to design, verify, and monitor a broad range of wired, Wi-Fi, and 3G/LTE equipment and networks. Ixia test solutions emulate realistic media-rich traffic and network conditions so that customers can optimize and validate the design, performance, and security of their pre-deployment networks. Ixia intelligent network visibility platforms provide clarity of physical and virtual production networks for improved performance, security, resiliency, and application delivery of cloud, data center, and service provider networks. For more information, visit www.ixiacom.com.

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