Cyber Ranges

WHAT

Cyber ranges are interactive, simulated representations of an organization's local network, system, tools, and applications that are connected to a simulated Internet level environment. They provide a safe, legal environment to gain hands-on cyber skills and a secure environment for product development and security posture testing.

A cyber range may include actual hardware and software or may be a combination of actual and virtual components. Ranges may be interoperable with other cyber range environments. The Internet level piece of the range environment includes not only simulated traffic, but also replicates network services such as webpages, browsers, and email as needed by the customer.

WHY

Cyber Ranges Can:

◆ Provide performance-based learning and assessment

◆ Provide a simulated environment where teams can work together to improve teamwork and team capabilities

◆ Provide real-time feedback

◆ Simulate on-the-job experience

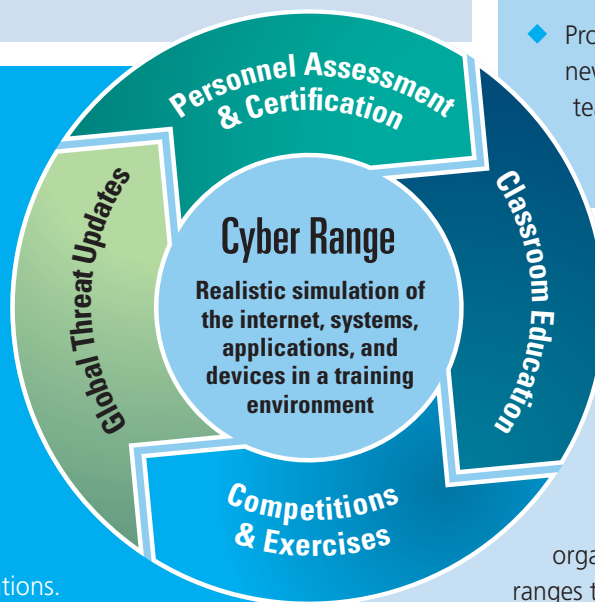◆ Provide an environment where new ideas can be tested and teams can work to solve complex cyber problems

WHO

Professionals from diverse groups such as information technology, cyber-security, law enforcement, incident handlers, continuity of operations, and others use cyber ranges to improve individual and team knowledge and capabilities.

Students can use cyber ranges to apply knowledge in a simulated network environment, develop cyber skills, work as teams to solve cyber problems, and prepare for cyber credentialing examinations.

Educators can use cyber ranges as a classroom aide or instruct or assess students virtually.

Organizations can use cyber ranges to evaluate their cyber capability, test new procedures, train their team on new organizational and technical environments and protocols before they are introduced into the organizational environment and expand personnel abilities.

Personnel Assessment & Certification

Global Threat Updates

Cyber Range

Realistic simulation of the internet, systems, applications, and devices in a training environment

Classroom Education

Competitions & Exercises

WHERE

Cyber ranges are virtual environments that use actual network equipment, as required. They can range from single stand-alone ranges in a single schoolhouse or an organization to internet replicating ranges that are accessible from around the world. Cyber ranges may be used internally by private and public organizations, or by students in the classroom or online from training and education providers.

Cyber ranges are in use and provided by organizations across the Government, Private Industry, and Academia.

The NICE Working Group Cyber Range Project Team is interested in learning about the range you use or provide. Contact us at *nist.nice@nist.gov.*

NICE
NATIONAL INITIATIVE FOR
CYBERSECURITY EDUCATION

nist.gov/nice

NIST
National Institute of
Standards and Technology
U. S. Department of Commerce