

▼ Cyber Test Range

Emulating Networks to Find Vulnerabilities

- High-confidence testing and vulnerability analysis
- Robust TCP/IP environment
- Thousands of hosts capability
- Actionable solutions prioritized by metrics
- Programmable logical architectures run user scenarios



One of the challenges of computer network operations research and development is how to test and train with network and Internet technologies and systems when scenarios, vulnerabilities, and exploiting and attacking tools are too sensitive to be used on the Internet. These technologies cannot be developed, tested or demonstrated on standalone computers. It takes a complete network with Internet services and protocols.

A Robust Internet Environment

Northrop Grumman addresses this challenge with its Cyber Test Range – a robust Internet environment for emulating, attacking and evaluating information technology, network operations and cybersecurity defense. The facility has grown exponentially since its inception in 1999, keeping up with state-of-the-art technology.

Highly Controllable and Configurable

Unrestricted and unconstrained, the Cyber Test Range is highly controllable and configurable. The test range has a capacity of thousands of hosts with client/server systems and configurations using best commercial practices. Today, it houses more than 1,200 hosts, with networking, image management, traffic generation, network instrumentation, information assurance and power management.

Reconfigurable Network Architecture

In the Cyber Test Range, hosts communicate through a reconfigurable network architecture that supports dynamic routing and core enterprise services. The test range is highly instrumented and performs packet capture and reconstruction, protocol analysis and network monitoring. Its information assurance technologies include firewalls, intrusion detection, anti-virus and vulnerability management software.

A Wide Variety of Complex Logical Architectures

Based upon user scenarios, a wide variety of complex logical architectures can be programmed. The Cyber Test Range's data center is optimized for dense hosting of test range systems with controlled power and environmental systems. Its layer 2, 3 and 7 routing and switching architecture includes core and network routers. These routers also manage bandwidth. User domains are populated and connected to multiple Internet service providers, all connected through core Internet routing infrastructure and enterprise services.

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