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Capital Area Advanced Research and Education Network | Powered by GW

CICI: Regional: Substrate for Cybersecurity Education; a Platform for Training, Research and Experimentation (SCEPTRE)

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THE QUILT



Product: CRACR (CAPITAL REGION ADVANCED CYBER RANGE)

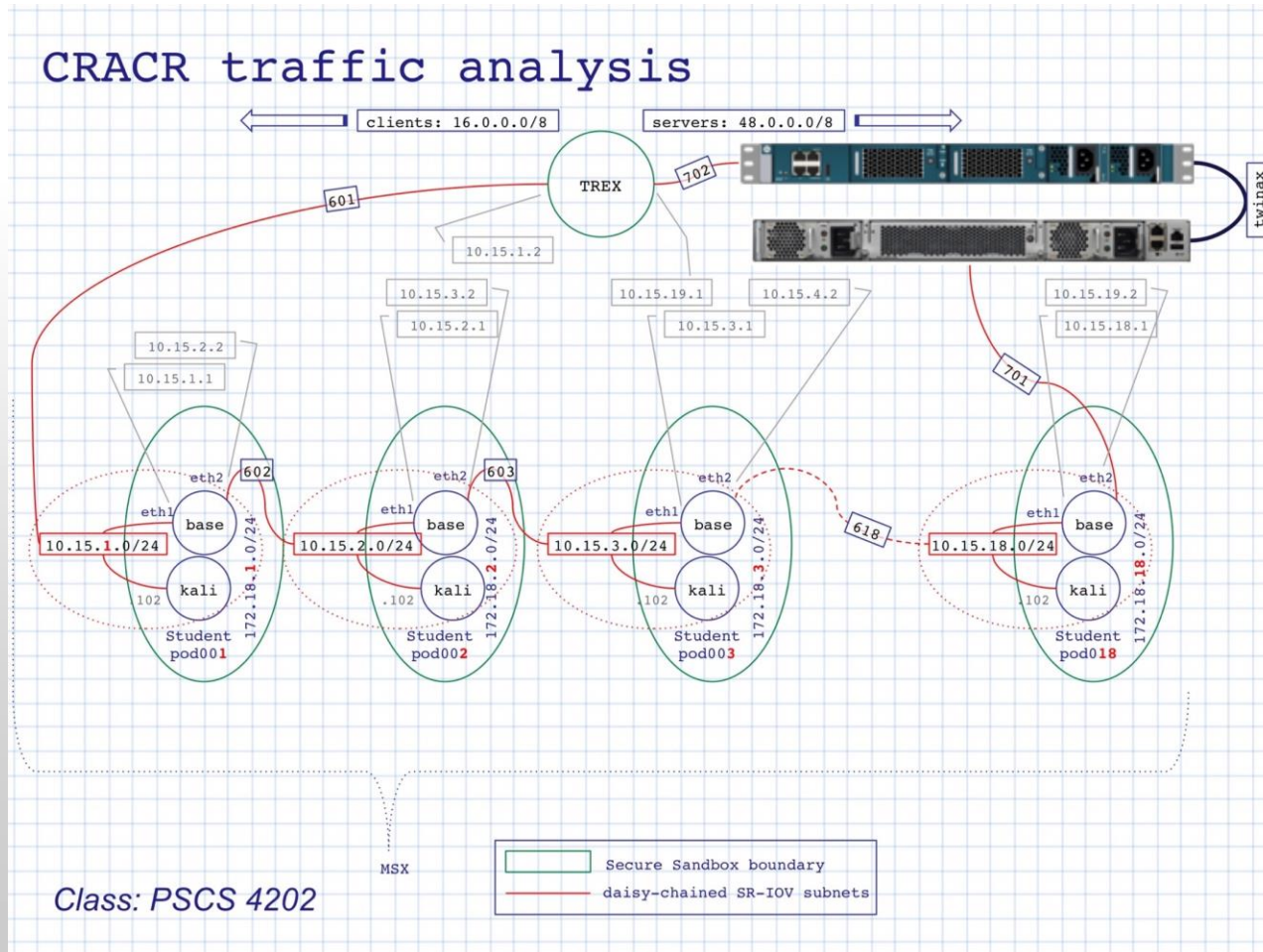
- **Substrate:** OpenStack/ceph distributed platform on top of 100G DWDM network – CAAREN (NSF Award 1246386)
- **Framework:** orchestrated, Dynamic Topology Engine with Cyber Range semantics: security protocols, targets, hits, misses, scoring, events (NSF Award 1642118)
- **Payload:** per-student, arbitrary, dynamic scenarios and topologies for Cybersecurity education, fully integrated with GW Cyber Academy labs and students' devices



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CRACR Payload Example



Capital Region Advanced Cyber Range (CRACR)

Final Exam

Toolset	Kali Linux	↑	REBUILD	REBOOT	REFRESH
Linux Server 1	Ubuntu 16.04	↑	REBUILD	REBOOT	REFRESH
Linux Server 2	Ubuntu 16.04	↓	REBUILD	BOOT	REFRESH
Windows Client	Windows 10	↑	REBUILD	REBOOT	REFRESH
Web Server	Windows 2016 Core	↑	REBUILD	REBOOT	REFRESH
Domain Controller	Windows 2016 Core	↑	REBUILD	REBOOT	REFRESH

prepared for Jaroslav Flidr (jflidr@gwu.edu)



Transition to Practice (Workforce Development, Training and Collaboration)

- Michigan Cyber Range (MCR)/Merit
- Smarter DC, Resilient DC & Smart City Works
 - CRACR → Cybersecurity Education Platform
 - Customizable Learning Management System
 - Provides Access to Physical IoT and SCADA systems
 - Real-World Sandbox using 2D representations
 - Future is AI and 3D Gamification
- DOL/GSA
 - evaluation and testing of newly proposed environments

