



Analysis, Partitioning, and Mapping Tools for Large Experiments

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Cybersecurity Research Acceleration Workshop and Showcase

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Quad Chart for:

Analysis, Partitioning, and Mapping Tools for Large Experiments

Challenge:

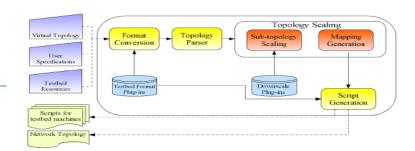
How to conduct *large-scale* and *high fidelity* network experiments?

Solution:

Pre-process a large experimental network scenario to produce smaller experiment(s) where each experiment is mapped onto a selected platform and resources.

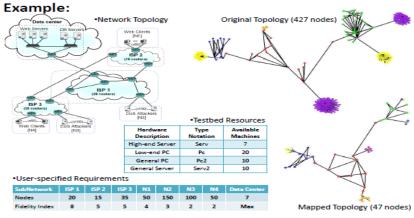
Approaches:

Reduce the size of network experiments; Partition experiments; Profile available resources; Intelligently map experiments onto platforms, resources, and virtualization technologies.



Value proposition:

Enable Internet-scale experiments and emulation to test and evaluate protocols, applications, and defenses against large-scale attacks.



What we need to TTP

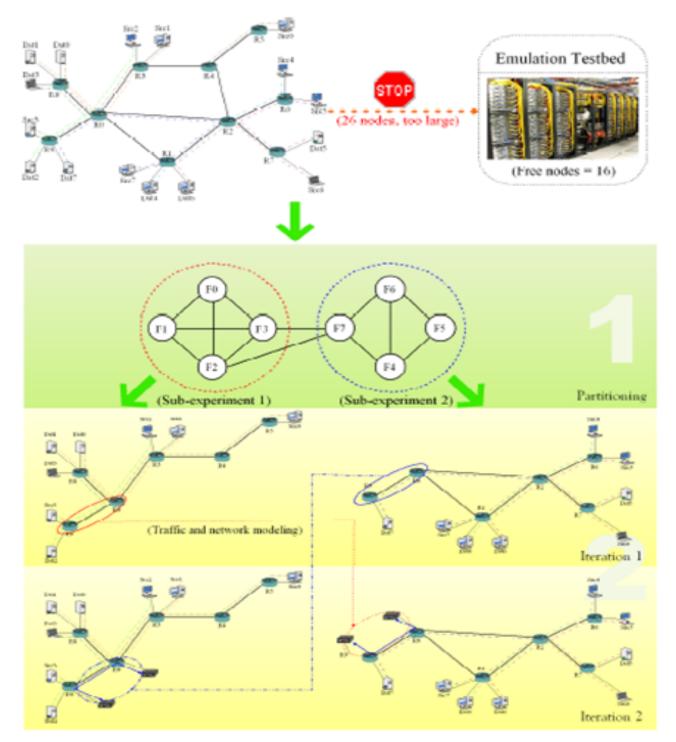
 Integrate and use the software with different network testbeds and network emulators, e.g., mininet, DETER.

NSF CNS #1319924

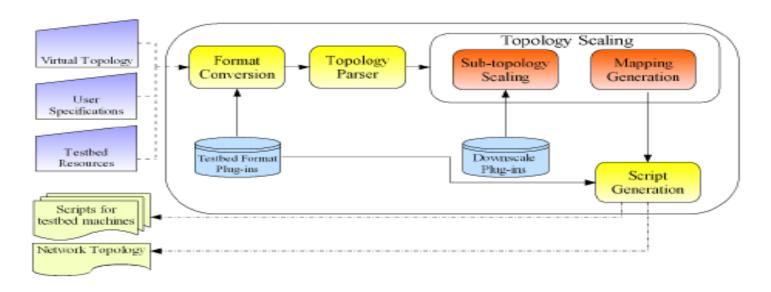
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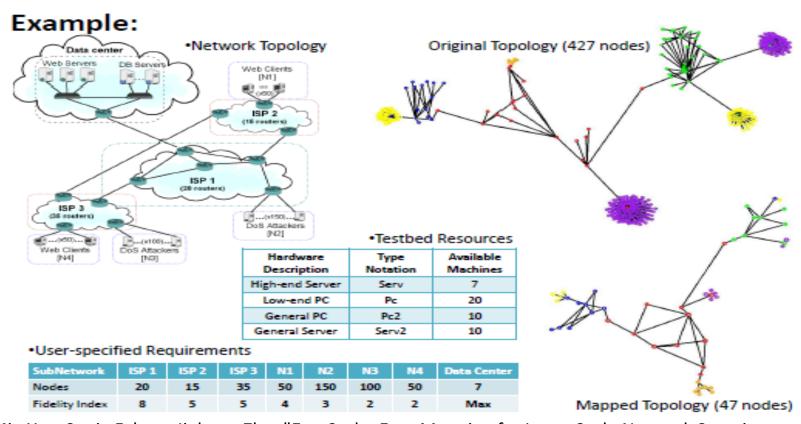
Contact us

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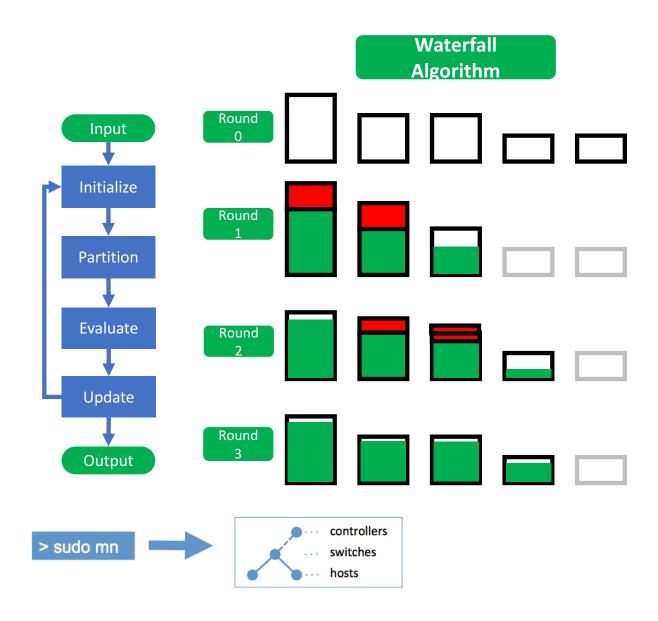


Wei-Min Yao, Sonia Fahmy, "Flow-based Partitioning of Network Testbed Experiments," Computer Networks, Volume 58, 15 January 2014, pp. 141-157 (earlier version appeared in Proc of ICDCS)

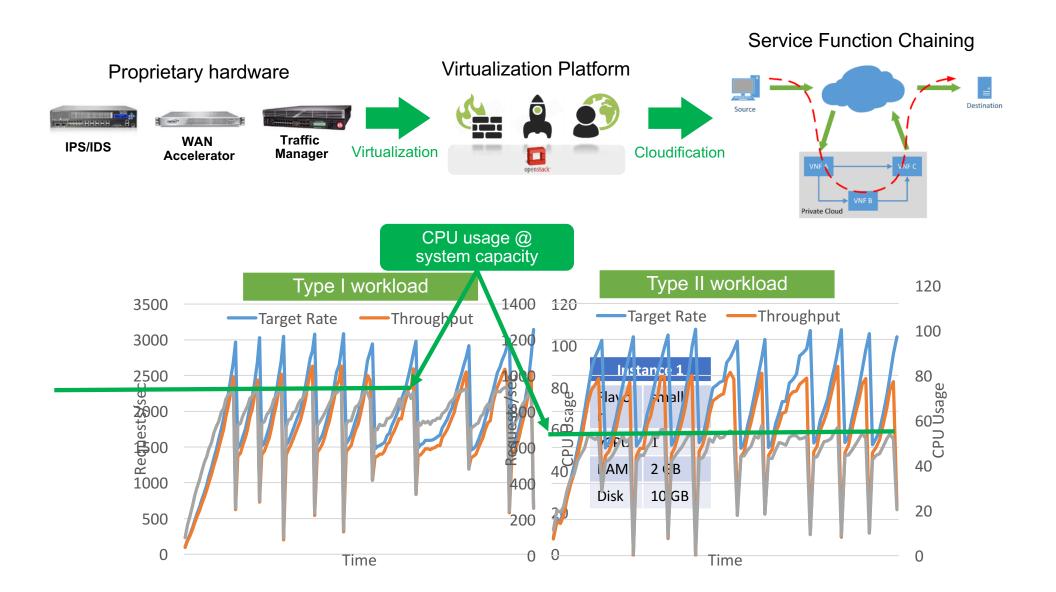




Wei-Min Yao, Sonia Fahmy, Jiahong Zhu, "EasyScale: Easy Mapping for Large-Scale Network Security Experiments," In Proceedings of the first IEEE Conference on Communications and Network Security (CNS), 9 pp., October 2013



Lianjie Cao, Xiangyu Bu, Sonia Fahmy, Siyuan Cao, "Towards High Fidelity Network Emulation," In Proceedings of IEEE International Conference on Computer Communications and Networks (ICCCN), 11 pp., July 2017



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