Project 12u

The challenge, build a mobile server rack for students to gain hands on experience with actual servers .

Project 12u

What's in the project?

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This project provides the ability to build and work on real world servers, test them and make them work.

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What does the 12u project consist of?

- ✓ One rolling 12u server rack
- ✓ A KVM switch to connect up to
    4 servers or pcs
- ✓ 3 slide in sections for just about
    any server
- ✓ One surge protector
- ✓ Open framework to access equipment
- ✓ One monitor, mouse and keyboard
    To control KVM switch

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Project 12u software configuration

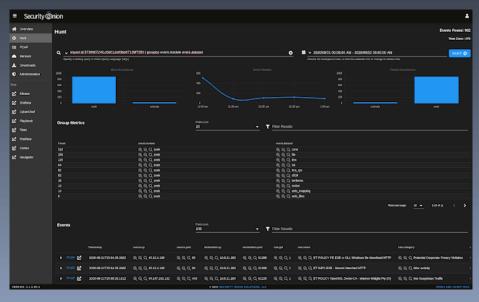Currently 12u has one server with Ubuntu 20.04 configured as a range server with targets
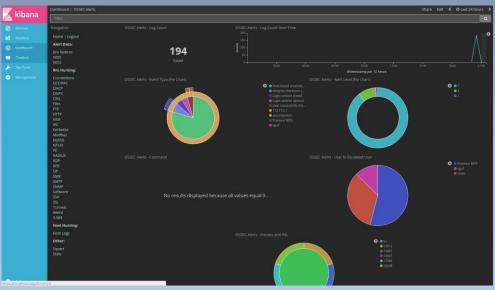
One server configured as TrueNAS

One server configured with Onion

Project v12u

Security Onion web interface
screenshots

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TrueNAS screenshots

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Target server screenshots

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What do you do with it?

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The 12u project is an excellent tool that can provide hands on experience with real world servers, something you can't get from a book or an online course. The project is as versatile as you want it to be. In its current configuration, three servers are "stacked". The "target" server is setup to run a Mobile Cyber Warfare Range. Adding in the security onion server adds many software platforms to the stack. Adding in a TrueNAS completes the stack. Security Onion is an open-source and free Linux distribution for log management, enterprise security monitoring, and intrusion detection. It incorporates NetworkMiner, CyberChef, Squert, Sguil, Wazuh, Bro, Suricata, Snort, Kibana, Logstash, Elasticsearch, and numerous other security onion tools. Also in the rack, a server with TrueNAS. TrueNAS is a free open-sourced network attached storage operating system. TrueNAS can also provide an opportunity to experience web-based server management.

The server rack is designed which students in mind. They can install and replicate a business technology environment. This practice is invaluable in the public/private sectors. Since almost all of our equipment is life cycled out donated equipment, it provides an excellent tool for experience in troubleshooting and solving server problems.

All three servers as they're currently configured can be used simultaneously to create a real-world scenario of office network storage, a working environment and security monitoring.