Educating the Security Workforce through On-Demand Live Competitions

Challenge:

- Live cyber-security competitions are an excellent tool to help teach and reinforce security concepts in students.
- However, live cyber-security competitions create technical and logistical burdens on the teams, which prevents some teams from competing and developing their skill.
- Creating a live cyber-security competition is difficult and time consuming for educators.

Solution:

- Allow any educator or student, regardless of technical skills, to host their own security competition.
- Allow teams to create the intentionally-vulnerable software.
- Create infrastructure for hosting live security competitions in the cloud.
- Use this framework to host the 2017 iCTF on March 3rd, 2017.
- http://shellweplayagame.org
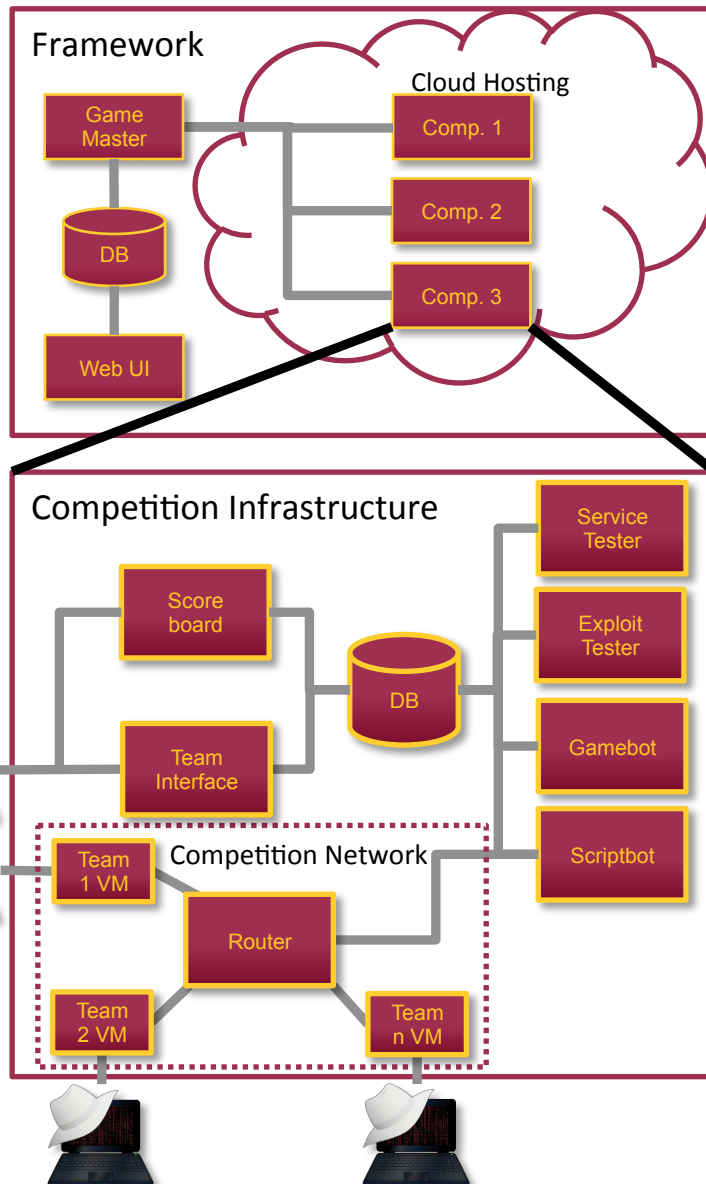
Education Impact:

- Demonstrate that creating intentionally-vulnerable software is as valuable, if not more so, than finding intended vulnerabilities in software.
- Develop a series of intentionally-vulnerable software based on classic vulnerabilities.

Broader Impact:

- The ability for students to create their own cyber-security competitions, at anytime and with no technical knowledge, will enable self-directed students to learn about cyber-security concepts.
- Open-source the framework, intentionally-vulnerable software, and the on-demand competitions.
- All data from all competitions, with annotated successful attacks will be released as a research dataset.