



CAE Tech Talk



National Centers of Academic Excellence

15 March 2018

Using the PyPy Sandbox to explore Mobile Code Sandboxing (1:10-1:50 pm ET)

Mark your calendars and come join your friends in the CAE community for a Tech Talk. We are a warm group that shares technical knowledge. CAE Tech Talks are free and conducted live in real-time over the Internet so no travel is required. You can attend from just about anywhere (office, home, etc.) Capitol Technology University (CTU) hosts the presentations using their online delivery platform (Adobe Connect) which employs slides, VOIP, and chat for live interaction. Just log in as “Guest” and enjoy the presentation(s).

Below is a description of the presentation(s) and logistics of attendance:

Date: Thursday, 15 March 2018

Time: 1:10-1:50 pm ET

Location: https://capitol.adobeconnect.com/cae_tech_talk/

Just log in as “Guest” and enter your name. No password required.

Title/Topic: Using the PyPy Sandbox to explore Mobile Code Sandboxing

Audience Skill Level: Intermediate

Presenter(s): Dr. Seth Nielson -- Johns Hopkins University

Description:

Technology rarely follows the paths the visionaries imagine. Consider “Mobile Code.” Although the idea pre-dates Java, Java’s Applets were going to make Mobile Code in the Internet powerful, yet safe. Now more than 20 years later, Applets are deprecated and the sandbox designed to secure them is seen by many as a failure. Mobile Code did not die, of course. JavaScript, running in Browser Sandboxes has

become ubiquitous and powers much of the dynamic Internet. Moreover, applications are increasingly being treated like Mobile Code and sandboxed in one form or another.

PyPy is “python written in python.” Primarily written as a faster python interpreter, it has an auxiliary feature of offering a “sandbox” for python. It can build an interpreter that has all operating system calls re-routed to a controlling process for authorization and execution. This redirection enables virtual file systems, mediated access to operating system API’s, and even mechanisms for controlling resource abuses. In this talk, we will introduce the PyPy architecture as background, and then highlight key components in the sandboxing low-level code. We will then demo several sandboxed applications, examining different example security policies and access features. Finally, we will discuss how the Sandbox might be used in the classroom.

CAE Tech Talks are also recorded

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For questions on CAE Tech Talk, please send email to CAETechTalk@nsa.gov