

Security News Research Project

CS 558: Network Security, Spring 2017
Boston University

January 7, 2017

Students will work in **groups of four** to prepare and present a poster on a news-worthy topic related to security and privacy that has recently appeared in the popular press (e.g. the New York Times, the Washington Post, the Guardian, etc) or the technical press (e.g., arstechnica, slash-dot, bits.blogs.nytimes.com, www.washingtonpost.com/blogs/the-switch/, etc) or advocacy websites (e.g., the EFF, etc).

To keep the project exciting, you are strongly encouraged to pick an topic that has received a reasonable amount of media attention. Please do not present recently published research results unless you think there is a good chance that these results will be discussed in the Washington Post (or at least one of their blogs) by the end of 2017.

Each group must pick their own unique topic.

Project Contents

Each group's research should consider the following:

1. The superficial/sensational issues presented in the press.
2. The underlying technical issues. For instance, a story about a hacker compromising a certificate authority and then issuing fake TLS certificates should also include an explanation of what an TLS certificate is, why issuing fake TLS certificates compromises web security, and details about how the certificate authority was compromised.
 - Bonus points are available if the group points out where and how a media report on the incident made a technical error. (Exact quotes or a screen shot from the relevant media are required)
3. If possible, thoughts/suggestions on how the attack could have been prevented. Where there any bad security practices the enabled the attack?
4. Discussion of incentives. (a) What motivated the attacker? (b) What harm was caused to the entity that the attack compromised? (c) What other parties were affected/harmed by the attack?
5. Any interesting legal or ethical issues raised by the incident.
6. List of references you used in your research (including news articles, wikipedia, blogs, textbooks, *etc.*)

Notice that obtaining all this information will require you to dig deeper than just what was presented in the popular press.

Project Deliverables.

Each group should prepare the following:

1. A 9 minute presentation, accompanied by slides. **We are serious about the 9 minutes! Please rehearse your presentation and do not go over time!** The presentation **MUST** cover items 1-3,6 above, and **MAY** cover any other interesting items from the list above. In past years, students split the presentation up into parts and had one student present each part.
2. A 3-page report on your topic, that is due **at 11:59PM one week after the day of your presentation**. The report will be publicly available on the class blog. (URL TBD.)

The report should cover all of the issues enumerated above. The report **MUST** cover items 1-4,6 above, and **MAY** also cover item 5 as well, and should address any interesting issues that were discussed during the group's presentation.

Submitting your work. Your slides (.pdf format) must be submitted as "Security News Slides" via websubmit. Your report should be posted to the class blog. (URL and posting instructions TBD). Both are due **at 11:59PM one week after the day of your presentation**.

Every submitted report MUST include the following information:

1. List of references used (online material, course nodes, textbooks, wikipedia, etc.) If the references are online, please also include hyperlinks.
2. An "Acknowledgements" section listing any collaborators your worked when preparing your project, or alternatively the sentence "This work was done without any outside collaboration." should appear at the end of your report.

If any of this information is missing, 10% will automatically be deducted from your grade.

Dates and Administration.

Your group will be presenting in front of a class of over 100 students. Your report will be posted to a publicly-viewable class blog. So it is important to be prepared and do a good job!

To prepare for your presentation, you **MUST** do the following:

- **Choose a group and presentation date by 11:59PM January 23, 2017.** Groups **MUST** have signed up for the date of their presentation by January 23, 2017. Your presentation can either be during the first 10 minutes of a regular lecture, **OR** you can present during the mass presentation sessions on March 28 or March 30.

The signup sheet is available here:

<https://docs.google.com/spreadsheets/d/1uXWyNR15o3gM6v1xGLmmzwzg4iSHyDZUNBb4KzQJXi0/>

Presentation topics are assigned on a first-come-first-served basis, so you may find it beneficial choose your topic at the time you sign up. This is not required however. You are only required to commit to the topic of your presentation at the time you preform the first deliverable described next.

- **At least 2 weeks** before the date of your presentation: Come to either **Prof. Goldberg** or **Ann Ming's** office hours and have ready (1) the topic your presentation and (2) links to relevant news articles/blog posts/etc and (3) an outline of your slides that includes (a) the title of each slide and (b) what you plan to have on the slide (but the actual slide is not required).
- **At least 1 week** prior to the week of your presentation: Come to either **Prof. Goldberg** or **Ann Ming's** office hours with a draft of your presentation slides. If you saw Prof. Goldberg for the previous deliverable, you should also go see her for this deliverable. If you saw Ann Ming for the previous deliverable, you should also go see her for this deliverable.

IMPORTANT! If a holiday happens to fall during the office hours during the week prior to your presentation, you are responsible for coming to office hours with a draft of your slides one week earlier. "I was confused because of holidays" is not a valid excuse.

- On the day of your presentation: Presenters should arrive early. We reserve the right to give a zero to an entire group, if one of the group members fails to show up, or shows up late to the presentation.

To avoid presentation problems, have the slides ready on a google doc that you can email to Prof. Goldberg before class starts, or a powerpoint file that works on Microsoft Office 10. If you wish to use your own laptop, arrive in class by 9am to test the projector in the classroom.

- 11:59PM one week after the day of your presentation: Submit your slides as PDF via web-submit. Post your report to the class blog.

You are welcome to chat/ask questions/brainstorm for your presentation during any of our office hour

Individual Wrap-up Report

As a final deliverable, each individual student in the class will be required to submit a **two page** report at the end of the semester, due at **11:59PM on May 3, 2015**.

The (imagined) recipient of the report is the United States' Special Assistant to the President and Cybersecurity Coordinator. Your goal is to advise him/her on the most important "cybersecurity" issues of the year. The Cybersecurity Coordinator leads the interagency development of national cybersecurity strategy and policy, and he oversees federal agencies' implementation of those policies.

The contents of your report **MUST** come from topics that were presented in class this semester. Your report should discuss:

- A description of the 5 most important cybersecurity events of the year, including a justification of why you believe these events were the most important. For each event, explain what could be done to thwart a similar incident from occurring in the future.
- Five recommendations that the national cybersecurity coordinator can make to improve the nation's security. These recommendations can be of any type, including suggesting increased (or decreased) regulation, modifications to laws, recommendations to fund research in certain areas or development in certain industries, recommendations to train users, engineers,

politicians, *etc.* in certain topics, or whatever else you can think of. You must justify why you believe your recommendation will improve the nation's security, and explicitly reference incidents that were presented in class that lead you to arrive at these recommendations.

You may optionally post your individual report on the class blog, but this is not required. Anonymous posting is allowed.

Grading scheme.

This project is worth 25% of your final grade, broken down as:

- 21% for the group project, broken down as: 15% for technical depth (judged both from presentation and report), 3% for presentation style (clarity, ability to answer questions, quality of slides), and 3% for report style (clarity, completeness).
- 4% for the wrap-up report, broken down as 3% for content and 1% for style.