What You Need to Know About InfoSec and Why You Should Care

Paul Gilzow

University of Missouri

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TL;DR

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Minimizing Risk

What is “Risk”?

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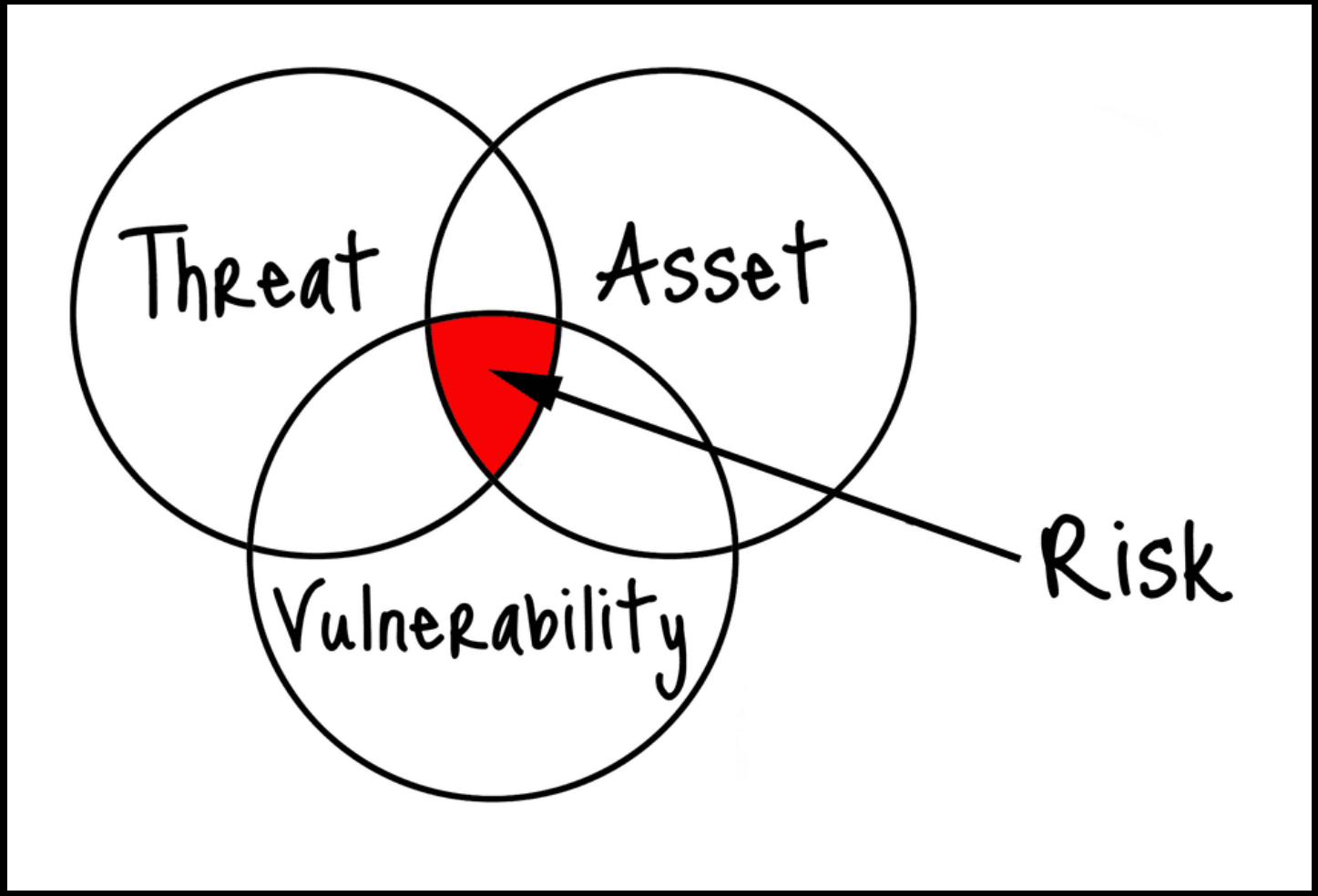

Asset


Approved for Release by NSA on 04-17-2018, FOIA Case # 83661
No Trick to Security
IT'S JUST
COMMON SENSE
NSA SECURITY EDUCATION PROGR

Asset

- People

Asset

- People
- Property

Asset

- People
- Property
- Information/Data

Asset

- People
- Property
- Information/Data
- An asset is what we are trying to protect

Threat

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- Anything that that represents a potential danger to an asset, whether deliberately or by accident

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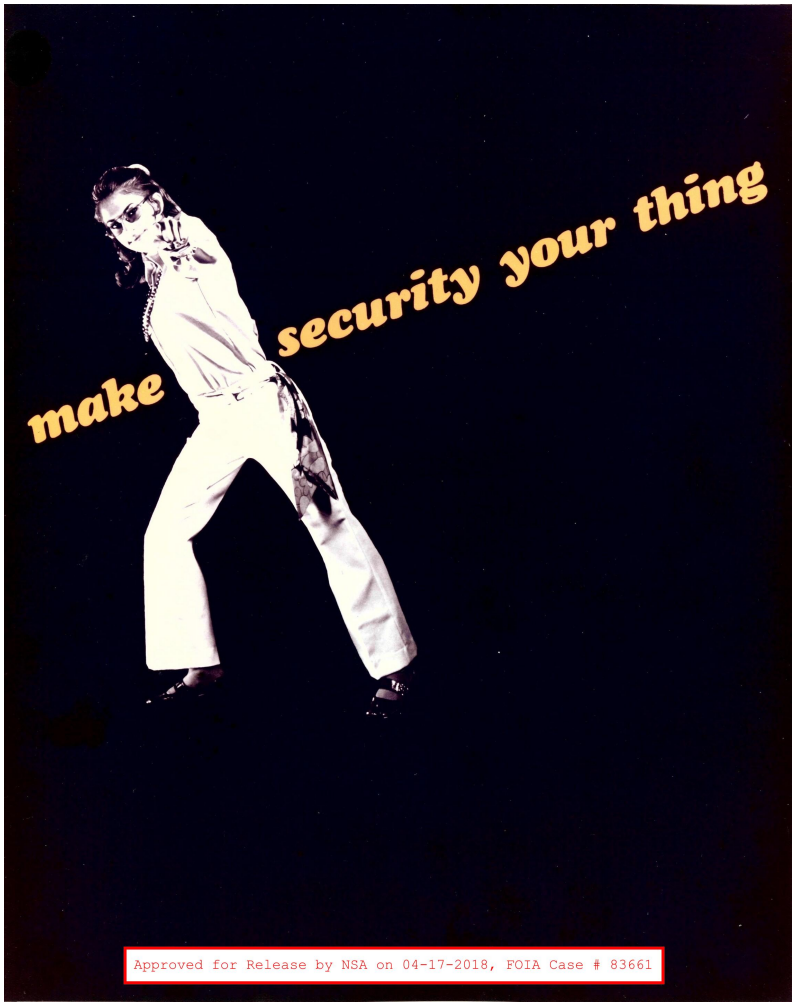
Threat

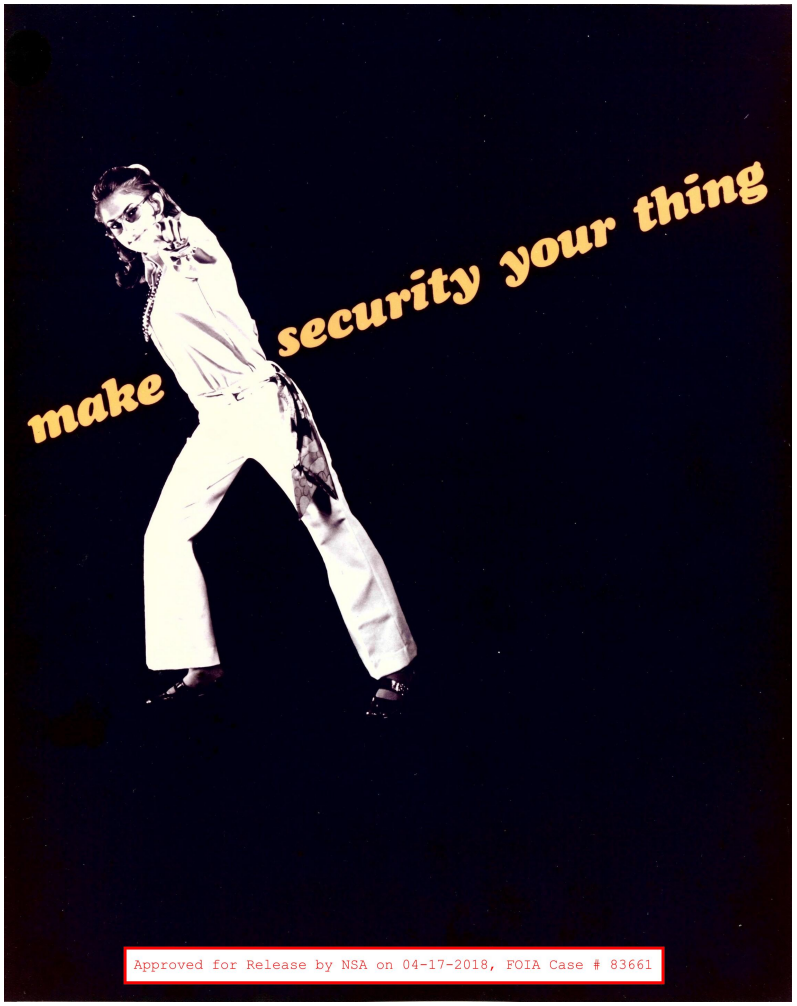
- Anything that that represents a potential danger to an asset, whether deliberately or by accident
- A threat is what we're trying to protect against
- *Threat Agent* is a group or individual who exploits a vulnerability to manifest or cause a threat to occur

Vulnerability



Vulnerability

- Weakness or holes/ gaps in security procedures or program that can be exploited by a threat to affect assets



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- Asset = You


xE3

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- Asset = You
- Vulnerability = Hole in your umbrella

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- Threat = Getting wet

What is “Risk”?

- Asset = You
- Vulnerability = Hole in your umbrella
- Threat = Getting wet
- Risk = Rain

What is “Risk”?

The potential for loss, damage or destruction of
an asset(s) as a result of a threat exploiting a vulnerability
multiplied by the impact of the threat occurring

Higher Education Assets

Higher Education Assets

- Network bandwidth and availability

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- Network bandwidth and availability
- Computing power

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- Network bandwidth and availability
- Computing power
- SEO reputation

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- Network bandwidth and availability
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Higher Education Assets

- Network bandwidth and availability
- Computing power
- SEO reputation
- Brand and reputation
- Social Media accounts

Higher Education Assets

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- Personally Identifiable Information (PII) / Sensitive Personal Information (SPI)

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- Protected Health Information (PHI)

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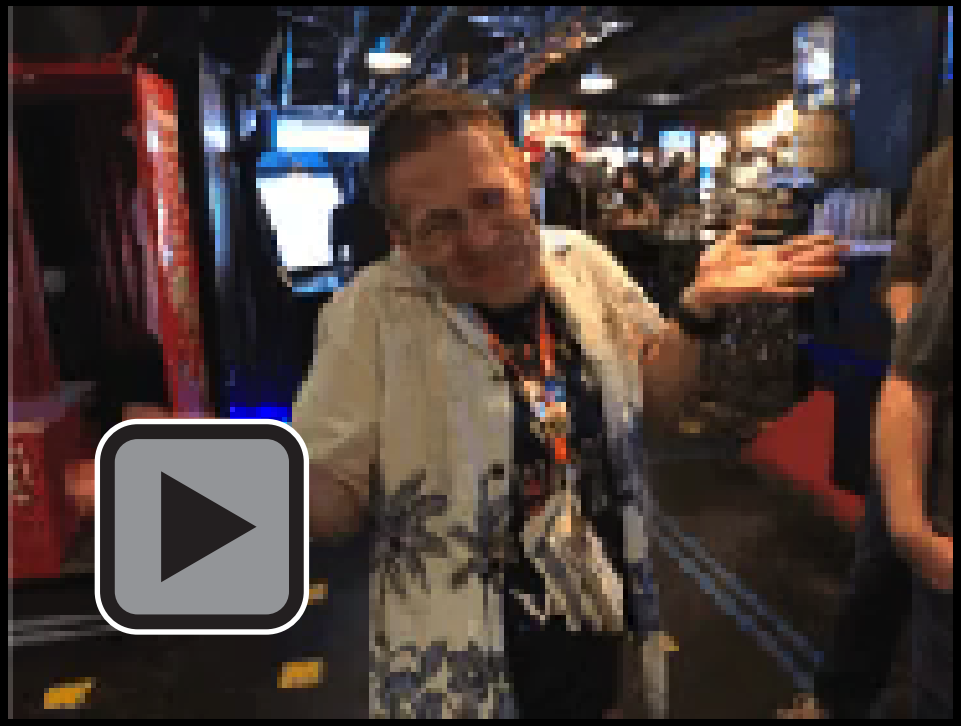
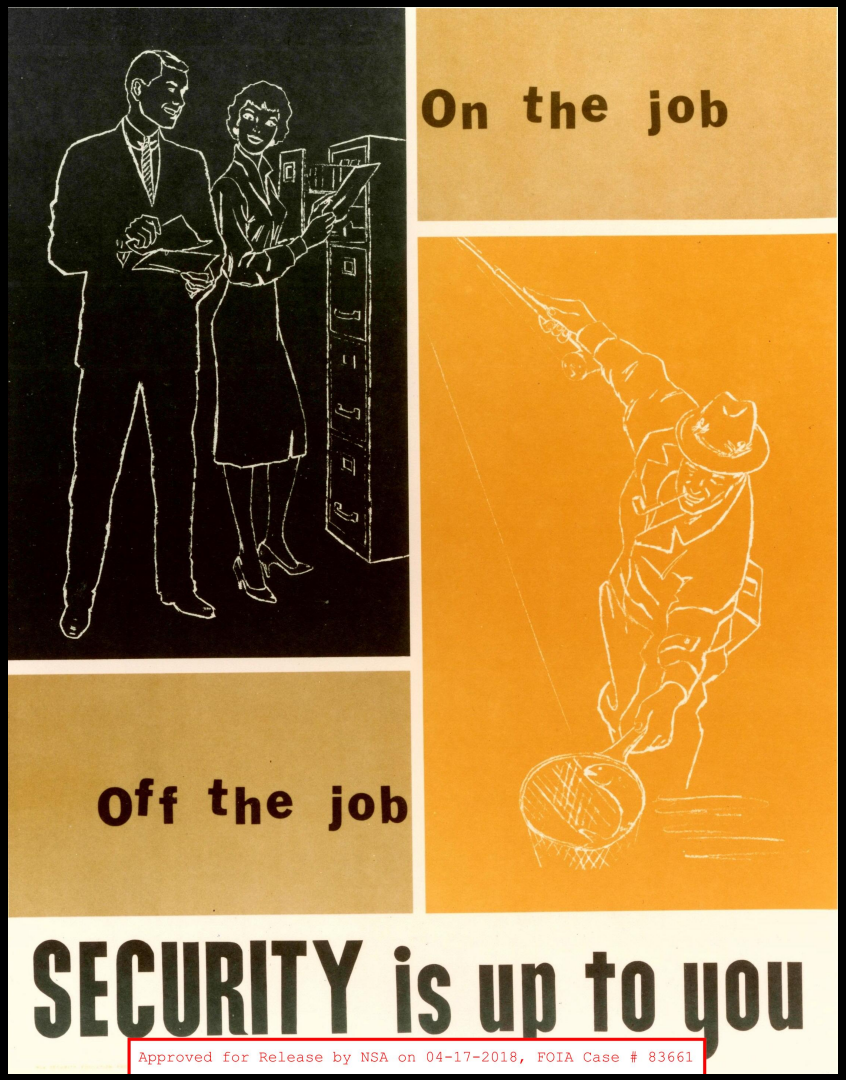
- Export Controlled Data
- National Security Interest (NSI)

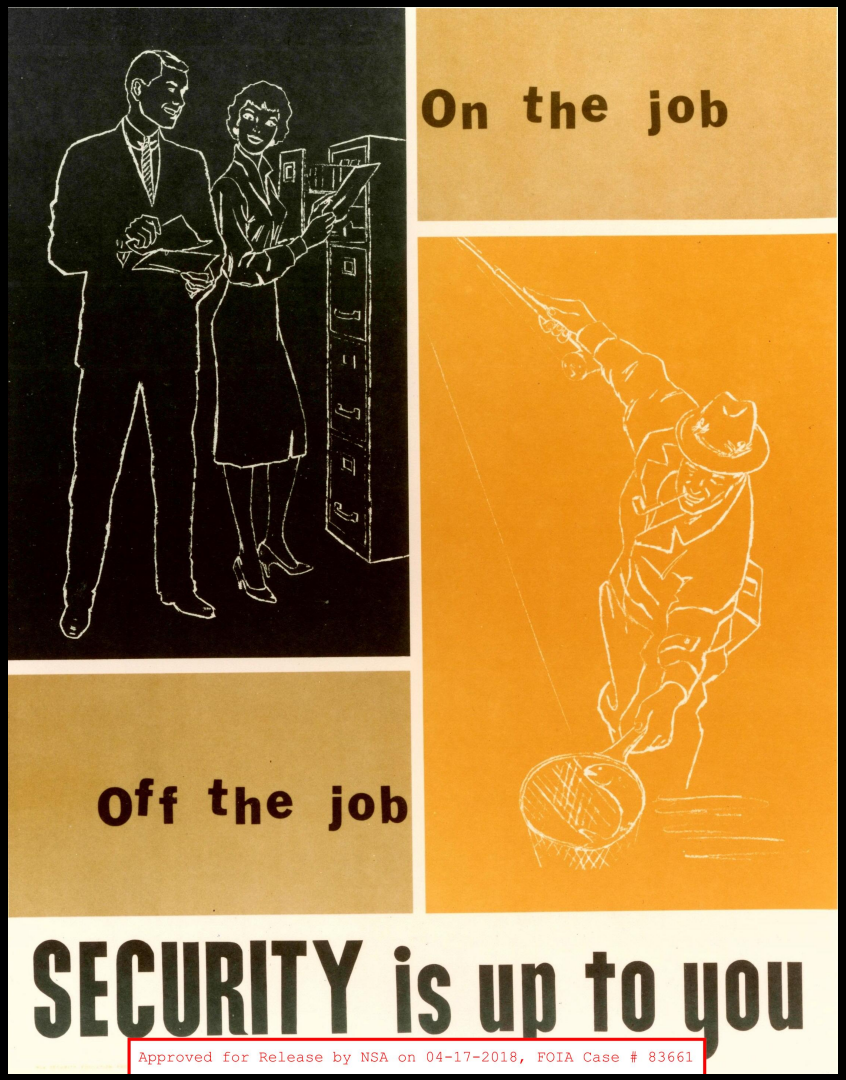


Know Your Assets



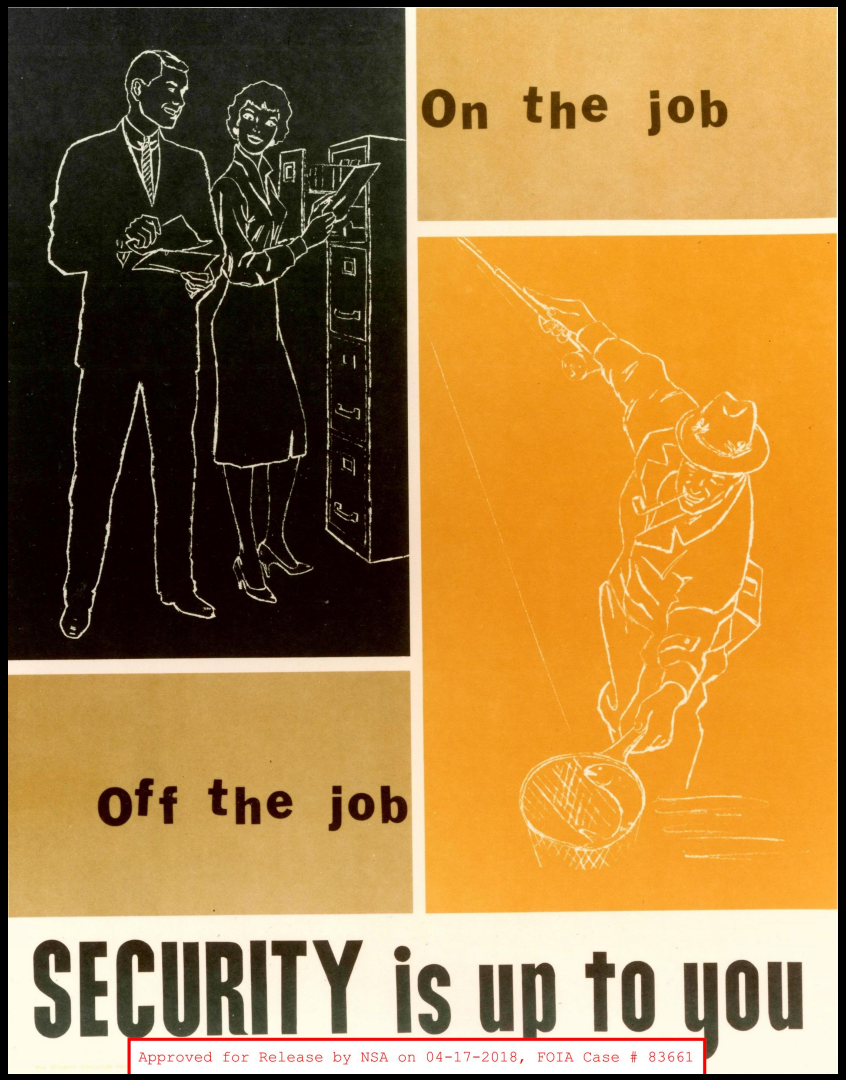
Know Your Assets

- You can't protect what you don't know you have



Know Your Assets

- You can't protect what you don't know you have
- Know your assets intimately



Defense-in-Depth

Defense-in-Depth

- Strategy of protection using a series of defensive mechanisms such that if one mechanism fails, another will already be in place to thwart an attack.

Minimize the Attack Surface

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- The sum of all paths for data/commands into and out of the application

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- Plus all of the code that protects those paths

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- Plus all of the code that protects those paths
- Plus all of the data used in the application
- Plus all of the code that protects this data

What is “Attack Surface”?

Principle of Least Privilege

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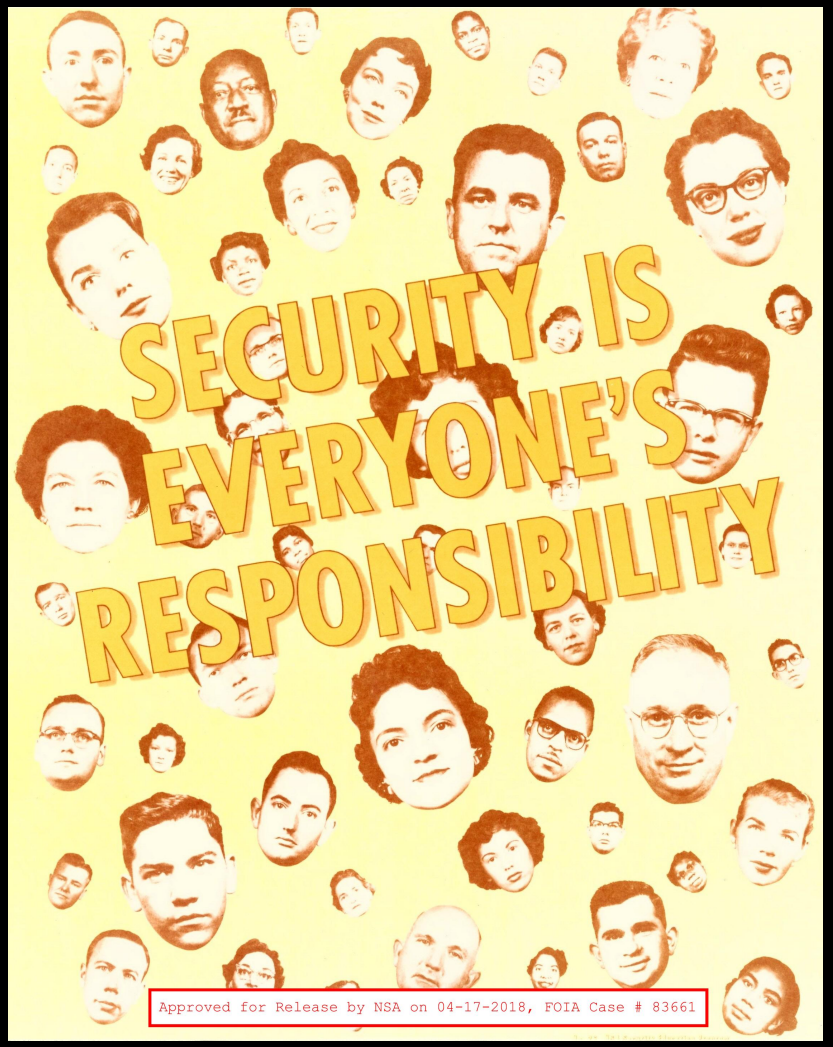
- Grant necessary permissions required to perform the intended activities
- For a limited time
- But with the *minimum* rights required for the task(s)
- Removing permissions when no longer needed

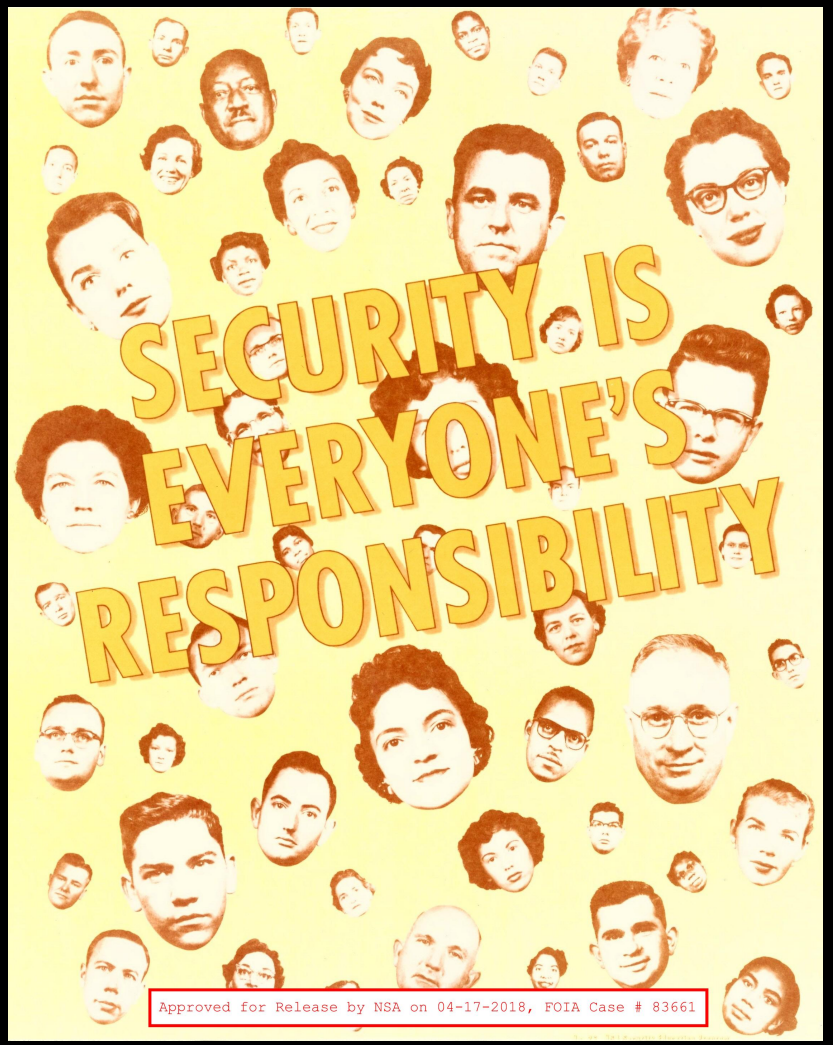
Be Paranoid

Ok, How About: “Be Skeptical”



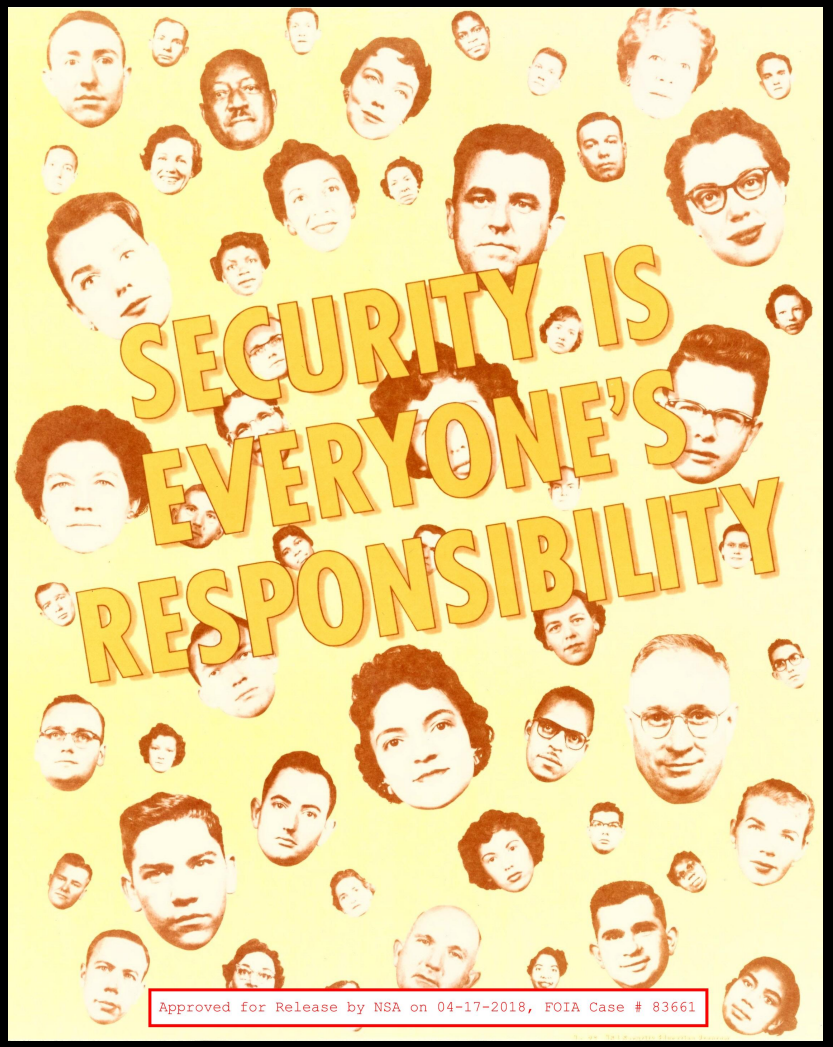
Ok, How About: “Be Skeptical”

- *Treat all third party code/ data as tainted and hostile*



Ok, How About: “Be Skeptical”

- *Treat all third party code/ data as tainted and hostile*
- Humans remain the weakest link in the InfoSec armor



Security is a continual process; you're never "finished"

Your Challenge

Always be thinking in terms of how you can reduce risk

Paul Gilzow

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  - https://profiles.wordpress.org/gilzow
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