



APPLIED RESEARCH

Relentless Pursuit of Security

Optiv's elite researchers and scientists within its Applied Research practice have helped secure financial, retail, healthcare, technology and government assets of all types around the globe. We attract and retain the best, most rigorously tested talent in the security industry. We then combine that talent with accountability, a strong culture of integrity and leading practices that help ensure consistent quality in our approach. Working across teams and drawing expertise from the entire security spectrum, we continually push the boundaries of what is possible to address complex, emerging problems in the security space. If it consumes electricity, **we can break it, explain it and then secure it.**

As part of Optiv's engaging approach to addressing enterprise security needs, we specialize in **product and service security**, and **custom projects and research** designed to solve your most difficult and unique challenges.

Optiv's Applied Research works with clients as their adjunct product and service security arm, an extension of their design and development team. As products and services are being developed, Optiv can validate the security of the design. When you're done securely developing your product or service, including code reviews and penetration testing, Optiv's Applied Research scientists will provide that final set of security eyes. Our research scientists will design and prove sophisticated malicious attacks, and then help the development team secure against them.

RECENT NOTABLE ACCOMPLISHMENTS:

- › First team to create a successful remote exploit targeted at a metering device using radio frequency (RF)
- › Demonstrated methods to remotely compromise an implanted medical device using a modem
- › Created a code execution in ARM's TrustZone environment
- › Demonstrated a method to compromise satellite modems simultaneously and remotely
- › Presented the technical keynote at Infiltrate 2015



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Optiv is regularly engaged to provide the following services to our clients:

- › Hardware or software product security research
- › Third-party product security research
- › Hardware device security research
- › Software reverse engineering
- › Targeted vulnerability research
- › Applied cryptography
- › Unmanaged source code audit
- › Custom tool development
- › Fault injection testing development and instrumentation
- › Product/system design review



CLIENT SUCCESSES:



- › Our researchers crafted an attack that could **terminate several hundred thousand implanted heart defibrillator patients remotely** over the internet in just a few clicks.



- › Worked with a leading cellular phone service provider to **devise attacks and related mitigation strategies for flaws that allow consumers to unlock mobile phones**, thereby circumventing hardware security protections.



- › **Uncovered new remotely and locally exploitable vulnerabilities in a point of sale (POS) system**, allowing our researchers to access three-week-old credit card swipe data from a previously Payment Application Data Security Standard (PA-DSS) certified system.



- › **Found ways that subjects under investigation could detect and successfully target forensic software** from a leading forensics software vendor.



- › **Devised an attack against an embedded secure voice conferencing system deployed in a high stakes environments** utilizing remotely exploitable vulnerabilities.



- › Designed an attack against a widely deployed satellite based network communication system using **remotely exploitable vulnerabilities discovered in custom built network hardware**.



- › Proved how hardware and software based vulnerabilities in **smart utility meters could enable tampering and allow attackers to penetrate the surrounding infrastructure**.



- › **Uncovered new hardware and software based flaws that would allow intruders to bypass intelligent door locks** built for the consumer market.



- › **Circumvented security protections on an industrial climate control system**, allowing researchers to upload new software that they could use to further their access into the internal environment.



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Optiv is the largest holistic pure-play cyber security solutions provider in North America. The company's diverse and talented employees are committed to helping businesses, governments and educational institutions plan, build and run successful security programs through the right combination of products, services and solutions related to security program strategy, enterprise risk and consulting, threat and vulnerability management, enterprise incident management, security architecture and implementation, training, identity and access management, and managed security. Created in 2015 as a result of the Accuvant and FishNet Security merger, Optiv is a Blackstone (NYSE: BX) portfolio company that has served more than 12,000 clients of various sizes across multiple industries, offers an extensive geographic footprint, and has premium partnerships with more than 300 of the leading security product manufacturers. For more information, please visit www.optiv.com.

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