PRAETORIAN

DATA SHEET

IoT Penetration Testing

Comprehensive security assessment of your IoT ecosystem, from backend systems and business processes to hardware and mobile devices.

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Key Benefits

- **Assess IoT Ecosystem:** Evaluate the complete ecosystem from backend systems and business processes to hardware and mobile devices
- **Identify Security Risks:** Discover risks associated with design, implementation, and manufacturing
- **Receive Solutions:** Get actionable remediation guidance to mitigate identified vulnerabilities

Your Challenge

Your organization's products transmit data over the Internet, and severe vulnerabilities can arise anywhere along the transmission flow from the hardware itself to backend systems or other data aggregation points.

> **You need assurance** that your data and that of your clients is as secure as possible every step along the way, and that your products meet any applicable industry regulatory requirements.

Capabilities Overview

Praetorian's Internet of Things practice follows data flows that begin at hardware devices and terminate in a backend cloud environment, potentially transiting mobile devices, WiFi access points, or cellular gateways along the way.

We can orient an assessment around an established industry or government standard—such as OWASP ISVS, the IIC Industrial IoT Security Framework, or FDA requirements—or create a customized threat model for the device in question. Either way, our team uses a creative approach to identify attack paths to critical assets.

- **Hardware Security Core:** Use exemplar hardware to simulate usage conditions and tap into debugging, network, or wireless interfaces
- **Optional Backend Attacks:** Test data in transit and at rest in backend cloud environments
- **Optional Destructive Testing:** Perform chip-level analysis for more thorough hardware exploitation
- **Expertise:** Deep knowledge of IoT PaaS, cloud IoT registries, and asynchronous messaging systems

Service Offerings

DESIGN ADVISORY

- Threat Modeling
- Secure Design Advisory
- Program Maturity Analysis

SECURITY TESTING

- Hardware Penetration Testing
- Firmware Analysis & Reverse Engineering
- Wireless Protocol Analysis
- Network Traffic Analysis

COMPLIANCE ASSESSMENTS

- CVE "CBOM" Analysis
- Primary Controls Verification
- Supply Chain Security Review

Why Praetorian

At Praetorian, we provide a timely, tailored, and thorough assessment of your product's cybersecurity from the backend to the user interface and everywhere in between.

We have industry-specific experience involving medical devices, automotive security, ICS/SCADA, carrier-grade network appliances, and home automation. You can rely on us to emulate attackers to provide you with an offensive perspective, and provide direct, actionable feedback on what we find.

Who Needs This Service

- **Device manufacturers:** Companies that design or manufacture connected devices or firmware
- **Device users:** Organizations deploying connected devices as part of their critical infrastructure
- **PaaS providers:** Companies that develop IoT infrastructure for use by device manufacturers

Deliverables

At the completion of the engagement, Praetorian experts provide the following:

Executive Summary

Concise explanation of engagement goals, significant findings, business impacts, and strategic recommendations. Letter of attestation available upon request.

Engagement Outbrief

Similar to the executive summary, presented to the audience of your choosing for interactive discussion.

Technical Findings Report

Detailed description of issues and the methodology used to identify them, as well as an impact assessment for each finding.

About Praetorian

Praetorian is an offensive security engineering company whose mission is to make the digital world safer and more secure. Through expertise and engineering, Praetorian helps today's leading organizations solve complex cybersecurity problems across critical enterprise assets and product portfolios.

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Ready to Secure Your IoT Devices?

Contact us today to discuss your IoT Penetration Testing needs and discover how Praetorian can help you identify and remediate vulnerabilities across your connected device ecosystem.