2016 THREAT ENVIRONMENT

UNRESTRAINED ADVERSARIES POINT WAY TO MORE DIVERSE THREAT LANDSCAPE

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Presented by Christopher Porter, Senior Threat Intelligence Analyst, to the Information Security and Privacy Advisory Board
Key Findings

• The lack of effective cyber deterrence has emboldened Advanced Persistent Threat (APT) groups.

• Sophisticated groups do not rely on zero days—they can turn the operating system against itself.

• Commoditization of cybercrime has spread APT-like threats worldwide.

• Threat groups are figuring out the formula for causing critical infrastructure outages.

• Threat to mobile likely to rise precipitously following FBI case against Apple.

• Intelligence sharing—information in context—is necessary to improve protection against cyber threats.
Game Theory for State-Sponsors of Cyber Attacks Now Favors Offense Rather Than Restraint

• Over the past year, public discussion of cyber attacks has turned to how major destructive attacks have gone unpunished and the difficulties of confident attribution.

• State sponsors of hacking worldwide probably now assess that they can conduct even destructive operations without provoking physical or significant economic responses from their targets.

• APTs are continuing their operations even after detection and attribution.
Dangerous Theory in Practice: APT29

- Cybercrime-style phishing emails
- Western national governments and foreign policy entities, media organizations, defense and government contractors, and higher education institutions.
- Targeting geopolitical information related to Ukraine conflict
- Operations and development occur in Moscow time
Dangerous Theory in Practice: APT29, continued

• Email links to legitimate, compromised websites

• Real voicemails used as lures

• Escalates privileges using built-in and publicly available Windows administration tools without writing to disk.

• Malicious commands run as scheduled tasks.

• Threats like APT29 must be actively hunted for to discover them; passive, network-edge detection will not work.
• APT29 operators operated with a full understanding that investigations were underway and defenders were watching.

• Repeated exposure and indicator sharing did not even slow them down.

• APT29 learned of an upcoming remediation event and obtained fresh password dumps in order to acquire the latest passwords.

• Lesson learned: importance of out-of-band emergency security line.
The Digital Underworld is Flat: Cybercrime Market Matures

• Offensive tool vendors—“legitimate” and underground—give even small nations and criminal groups the purchasing power to keep up a steady supply of zero days.

• Hackers can threaten anyone from anywhere… (driving prices down and threats up)

• ...but geography still matters. Cybercriminals in Latin America, Middle East, and Eastern Europe often operate with impunity in the absence of laws and enforcement capability.
“But Cybercriminals Are Not APTs: What’s the Worst That Could Happen?”

• **False Flag Attacks** - Criminal groups have APT-like capabilities and go after similar targets. Both know that defenders will have a hard time telling them apart. *Large-scale cybercrime must be reduced to even begin addressing APT incentives.*

• **Targeting the Executive** – Attacking leadership at home or on mobile devices as an entry vector to organization or for digital blackmail. *Cyber is often tactically “symmetric” even when it is strategically asymmetric.*

• **Consequences Spiral** – Ransomware designed for profit disables far more than threat actors intend (or not), resulting in loss of physical infrastructure operation or life. *Operational savvy, not cyber skill, is “limiting reagent” for ICS attacks. These incidents enable criminals and APTs alike to learn what works.*
Precedents Being Set are Worsening Threats to Mobile

• FireEye tracks 15 different Chinese APTs that conduct computer network operations against telecommunications companies worldwide.

• Two Chinese APTs, APT1 and APT5, have targeted mobile operators’ intellectual property, including code.

• Several Russian groups already exploit jailbroken iOS.

• Celebrity photo-scandal actors relied on “law enforcement-only” tool and brute force password-guessing.

• China as of 1 January requires companies operating there to provide technical assistance “to avert and investigate terrorist activities.”

• FireEye tracks 9 Chinese APTs that target NGOs, ethnic and religious minorities, and related news outlets that would probably fall under this law.
Intelligence Sharing—Not Information Sharing—Key to Improving Public-Private Cyber Defense Partnerships

- APT29 exposed more than a dozen times over 18 months, with no demonstrable effect on their operational tempo.

- Indicators may be necessary, but they are not sufficient.

- Best groups will leave indicators behind to dazzle technology-only solutions and mislead non-expert investigators.

- APTs are also informed when information is broadly shared.

- Indicators combined with context, like plans and intentions or attribution, can help private sector prioritize engagements, identify unique activity, and provide more valuable information back to public sector.
Questions?

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