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EXAMINING NORTH KOREA'S PURSUIT OF CRYPTOCURRENCIES

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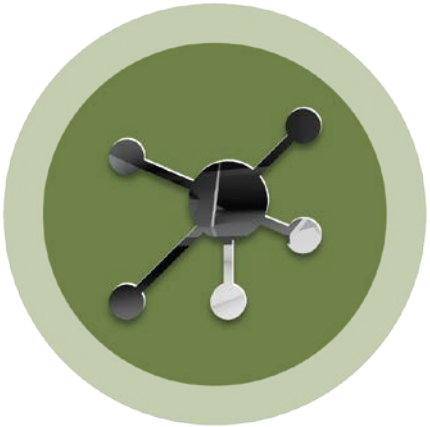
Overview

- Background on TEMP.Hermit Threat Activity
- Pivoting to Cyber Crime
- South Korea Cryptocurrency Exchange Targeting
- Further activity
- Impact
- Takeaways & Outlook



History of TEMP.Hermit

- Closely aligns with Lazarus Group
- Since 2013: targets of interest to the North Korean state
- Government victims in the United States, South Korea; energy sector
- TTPs: Spearphishing, SWCs, usage of wiper malware
- Separate from APT37 (Reaper)

Hermit pivots to cyber crime

- Since at least 2016 has also targeted financial organizations for monetary gain (MACKTRUCK, NESTEGG)
- Initially traditional finance targets, SWIFT fraud
- Late 2016: injects on financial regulatory orgs' webpages

Office 39

- Public reporting on Office 39 details involvement in multiple avenues of illicit financial activity
  - Counterfeiting
  - Smuggling
  - Running hostels and restaurants abroad.

Early indications of cryptocurrency interest

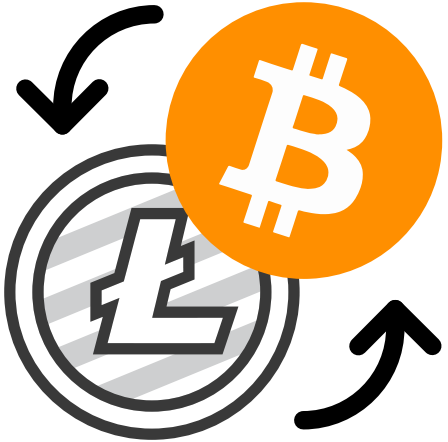
- February 2017: strategic watering hole compromise of cryptocurrency news website
- WannaCry (May 2017)
  - BTC ransoms exchanged for more anonymous cryptocurrency Monero

South Korean Cryptocurrency Trading Metrics

- South Korean exchanges experienced some of the highest volume in Asia after China closed exchanges in 2017.
- Hundreds of billions of won traded daily
- One in five South Koreans invest in cryptocurrencies
- Until recently, little to no KYC

Cryptocurrency Exchanges: Prime Targets

- Centralized pools of liquidity, “hot wallets” an attractive target.
- Great for trading cryptocurrencies, not recommended for securely storing coins.
- Can’t reverse transactions on an immutable ledger
- Puts increased onus of security on the user



TIMELINE

- April 22nd – Wallets on South Korean cryptocurrency exchange Yapizon are compromised
- April 26 – The United States announces a strategy of increased economic sanctions against North Korea.
- Early May – Spearphishing against South Korean Exchange #1 begins.
- Late May – South Korean Exchange #2 (Bithumb) targeted and later compromised via spearphish.
- Early June – More suspected North Korean activity believed to be targeting cryptocurrency service providers in South Korea.
- Early July – South Korean Exchange #3 targeted via spear phishing to personal account.

Tactic, Techniques, and Procedures (TTPs)

- Spearphishing personal email accounts of employees
- Used lures related to tax information, job postings, and employee resumes
- PEACHPIT, MANUSCRYPT, and other malware used

◈ 이 력 서

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학력사항	재학기간	학교명		전공	학점	졸업여부
	~2008	영락	고등학교	인문		O
	2009.03~2013.02	숭실	대학교	사회과학 행정정보관리	4.15/4.5	O

경력사항	근무기간	회사명 / 부서	직위	담당 업무	퇴사사유
	2016.03 ~2017.10	(주)삼림 회계관리부	사원	회계관리 및 사무관리	회사 사유
	2014.05~2016.02	한국전지공업협동조합 회계관리부	주임/계장	회계관리 및 사무관리	발전 가능성
	2013.10~2014.03	웅휘디자인뱅크 디자인실	사원	컴퓨터 그래픽	회사 이전
	전체경력 (00년 00개월) 허업규칙상 이력서를 허위 기재한 것은 해고사유에 해당됩니다.				

가족관계	부(V)모(V)	신체사항	신장 158cm	병역	군필여부	필 미필 면제 특례
	(3)녀 중 (1)째		체중 57kg		복무기간	~
	기혼의 경우 자녀 ( )남 ( )녀		혈액형 B형		군별/계급/병과	
			종교 : 무교		면제사유	

◈ 수행프로젝트 및 경력사항

Cashing Out

- TEMP.Hermit actors likely had multiple avenues to cash out
  - Cash out for won on another SK exchange
  - OTC trades
  - Exchange for other currencies

Other reporting

- South Korean government confirms hacks of multiple exchanges
- Reports of mining and cryptojacking
- North Korean university sponsors blockchain course
- UK-based cryptocurrency firm reports being spearphished

Targeting identification

- TEMP.Hermit cryptocurrency lure used to spearphish electronics manufacturer in South Korea
- Coinspace spearphishing
  - Suggestive of opportunistic targeting

Assessing the Impact

- If this activity is to evade international sanctions, how successful has it been?
- North Korea's 2016 GDP in real terms stood at 32.0 trillion won ($28.50 billion)
- Timeline matters when it comes to cashing out

Assessing the Impact, cont.

- **Yapizon exchange** (aka Youbit, Yapian) (2017): 4000 bitcoins stolen according to KISA
- **Bithumb exchange** (2017): ~$7 million USD stolen at the time according to South Korean government officials.
- **WannaCry ransomware** (2017): ~52.2 bitcoins acquired, later converted to Monero

Takeaways

- Traditional financial sector targeting has continued
- Continued price decline in cryptocurrency market may reduce some of this activity
- Indications of some interest in cryptomining malware (Monero especially)

Takeaways, cont.

- TTPs that TEMP.Hermit adopts in targeting the cryptocurrency sector will give insight into how their capabilities and skills are evolving
- Targeting personal email accounts highlights how an organization's attack surface extends beyond its networks.

Outlook: What next?

- What will be the impact of thawing diplomatic relations on North Korean cyber operations?
  - Cyber espionage?
  - Destructive activity?
  - Cyber crime?

QUESTIONS?