

Tactics, Techniques, and Procedures of Indicted APT40 Actors Associated with China's MSS Hainan State Security Department | CISA

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This Joint Cybersecurity Advisory was written by the Federal Bureau of Investigation (FBI) and the Cybersecurity and Infrastructure Security Agency (CISA) to provide information on a Chinese Advanced Persistent Threat (APT) group known in open-source reporting as APT40. This advisory provides APT40's tactics, techniques, and procedures (TTPs) and indicators of compromise (IOCs) to help cybersecurity practitioners identify and remediate APT40 intrusions and established footholds.

APT40—aka BRONZE MOHAWK, FEVERDREAM, G0065, Gadolinium, GreenCrash, Helsing, Kryptonite Panda, Leviathan, MUDCARP, Periscope, Temp.Periscope, and Temp.Jumper—is located in Haikou, Hainan Province, People's Republic of China (PRC), and has been active since at least 2009. APT40 has targeted governmental organizations, companies, and universities in a wide range of industries—including biomedical, robotics, and maritime research—across the United States, Canada, Europe, the Middle East, and the South China Sea area, as well as industries included in China's Belt and Road Initiative.

On July 19, 2021, the U.S. Department of Justice (DOJ) unsealed an indictment against four APT40 cyber actors for their illicit computer network exploitation (CNE) activities via front company Hainan Xiandun Technology Development Company (Hainan Xiandun). Hainan Xiandun employee Wu Shurong cooperated with and carried out orders from PRC Ministry of State Security (MSS) Hainan State Security Department (HSSD) intelligence officers Ding Xiaoyang, Zhu Yunmin, and Cheng Qingmin to conduct CNE. Wu's CNE activities resulted in the theft of trade secrets, intellectual property, and other high-value information from companies and organizations in the United States and abroad, as well as from multiple foreign governments. These MSS-affiliated actors targeted victims in the following industries: academia, aerospace/aviation, biomedical, defense industrial base, education, government, healthcare, manufacturing, maritime, research institutes, and transportation (rail and shipping).

[Click here](#) for indicators of compromise (IOCs) in STIX format. **Note:** to uncover malicious activity, incident responders search for IOCs in network- and host-based artifacts and assess the results—eliminating false positives during the assessment. For example, some MD5 IOCs in the [STIX file](#) identify legitimate tools—such as Putty, cmd.exe, svchost.exe, etc.—as indicators of compromise. Although the tools themselves are not malicious, APT40 attackers placed and used them from non-standard folders on victim systems during computer intrusion activity. If a legitimate tool is identified by an incident responder, then the location of the tool should be assessed to eliminate false positives or to uncover malicious activity. See [Technical Approaches to Uncovering and Remediating Malicious Activity](#) for more incident handling guidance.

This Joint Cybersecurity Advisory uses the MITRE ATT&CK® framework, version 9. See the [ATT&CK for Enterprise](#) framework for all referenced threat actor tactics and techniques.

APT40 [[G0065](#)] has used a variety of tactics and techniques and a large library of custom and open-source malware—much of which is shared with multiple other suspected Chinese groups—to establish initial access via user and administrator credentials, enable lateral movement once inside the network, and locate high value assets in order to exfiltrate data. Table 1 provides details on these tactics and techniques. **Note:** see the appendix for a list of the domains, file names, and malware MD5 hash values used to facilitate this activity.

Proper network defense-in-depth and adherence to information security best practices can assist in mitigating the threat and reducing the risk. The following guidance may assist organizations in developing network defense procedures.

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