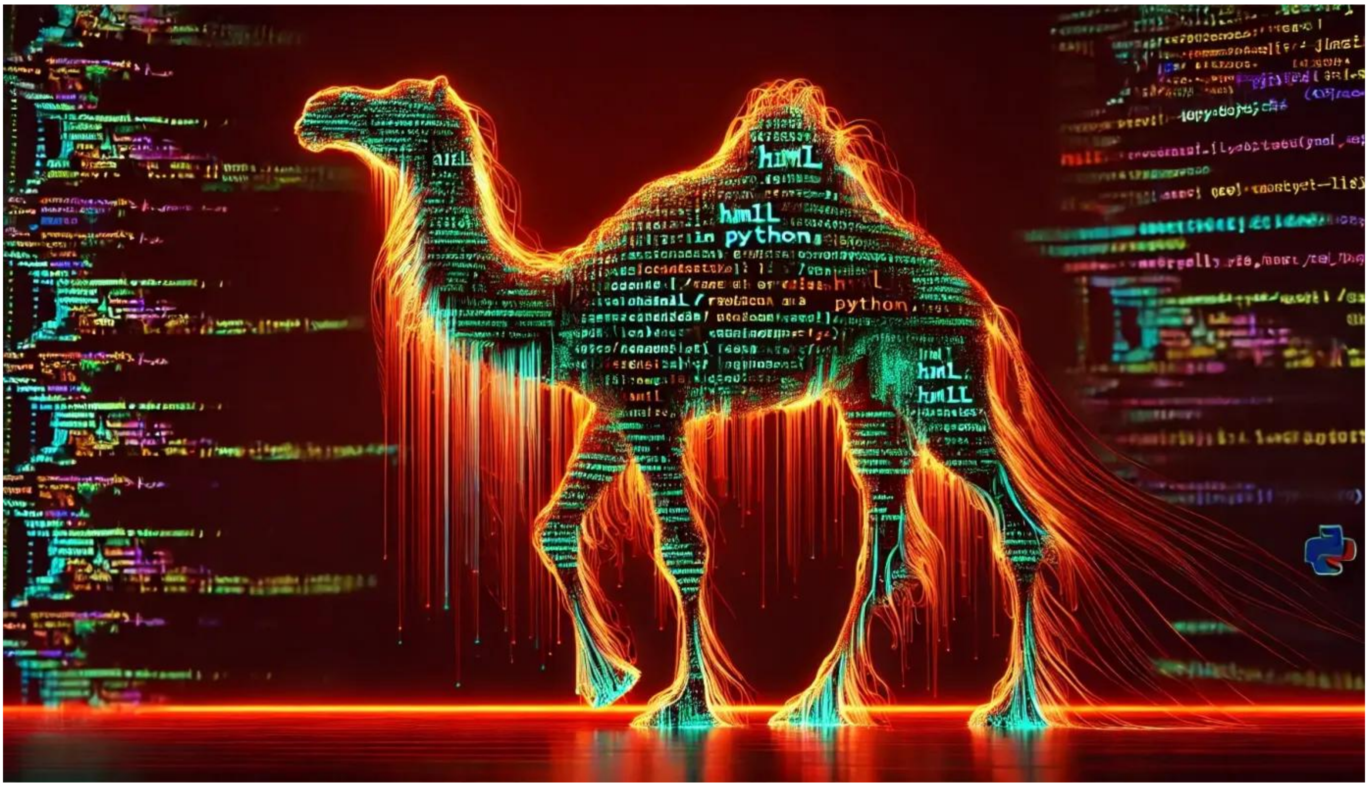
Unmasking UNK_CraftyCamel: A Threat Intelligence Perspective



By Mario Rojas, Senior Security Researcher.

Executive Summary

A recent Proofpoint investigation uncovered a highly sophisticated, multistage cyber espionage operation targeting key sectors in the **United Arab Emirates**. The actor, tracked by Proofpoint as **UNK_CraftyCamel**, executed a meticulously-crafted campaign against a limited number of high-value organsations with interests in **aviation, satellite communications, and transportation infrastructure.**

This operation underscores the growing complexity of targeted attacks leveraging advanced social engineering and multi-format obfuscation techniques.

This report provides an **intelligence-driven analysis** of the campaign, its implications for **enterprise security leaders and intelligence teams**, and key defensive strategies to mitigate the risks posed by this emerging threat.

Threat Actor Profile and Strategic Context

UNK_CraftyCamel: An Emerging State-Aligned Espionage Threat

The operational footprint of UNK_CraftyCamel aligns with espionage-motivated activity. The use of a **compromised** Indian electronics company **email account** to distribute malicious payloads indicates a deliberate effort to exploit trusted relationships within targeted industries. The highly selective targeting and tailored malware development suggest an actor with significant **technical capability and intelligence objectives**.

The geopolitical context further strengthens this hypothesis. The UAE's strategic position in **global aviation, critical infrastructure, and defence alliances** makes it an attractive target for state-sponsored cyber espionage operations. This campaign signals an intent to infiltrate and establish persistent access within organisations handling sensitive geopolitical or defence-related information.

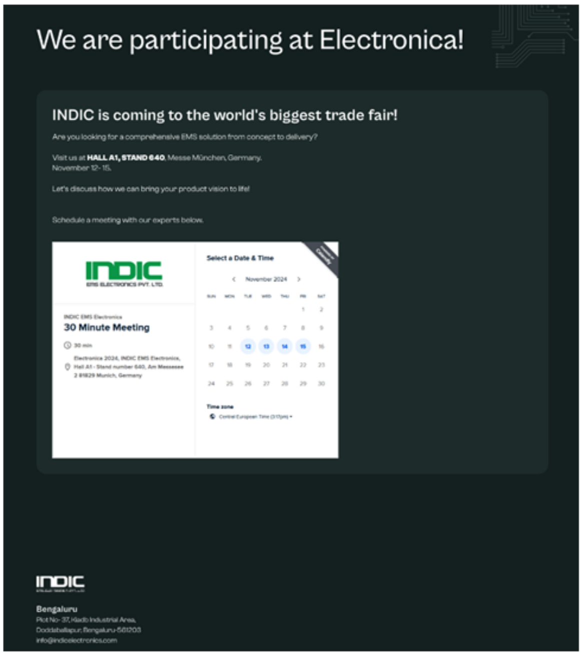
Technical Analysis of the Attack Chain

Delivery and Infection Chain Analysis

In late October 2024, UNK_CraftyCamel actor leveraged access to a **compromised email account, belonging to the Indian electronics company INDIC Electronics,** to send malicious email messages. These emails contained URLs pointing to an actor-controlled domain, **indicelectronics[.]net**, designed to mimic the legitimate INDIC Electronics domain.

The URLs linked to **https://indicelectronics[.]net/or/1/OrderList.zip**, which downloaded a ZIP archive. At first glance, the archive contained an **XLS file and two PDF files**, but Proofpoint's analysis revealed:

- The **XLS file was actually an LNK file** using a double extension.
- The **PDF files were polyglots:** one had a PDF file appended with an HTA script, and the other contained an embedded ZIP archive.



We are participating at Electronica!

INDIC is coming to the world's biggest trade fair!

Are you looking for a comprehensive EMS solution from concept to delivery?

Visit us at **HALL A1, STAND 640**, Messe München, Germany.
November 12- 15.

Let's discuss how we can bring your product vision to life!

Schedule a meeting with our experts below.

INDIC EMS Electronics
30 Minute Meeting
30 min
Electronica 2024, INDIC EMS Electronics, Hall A1 - Stand number 640, Am Messesee 2 81829 Munich, Germany

Select a Date & Time

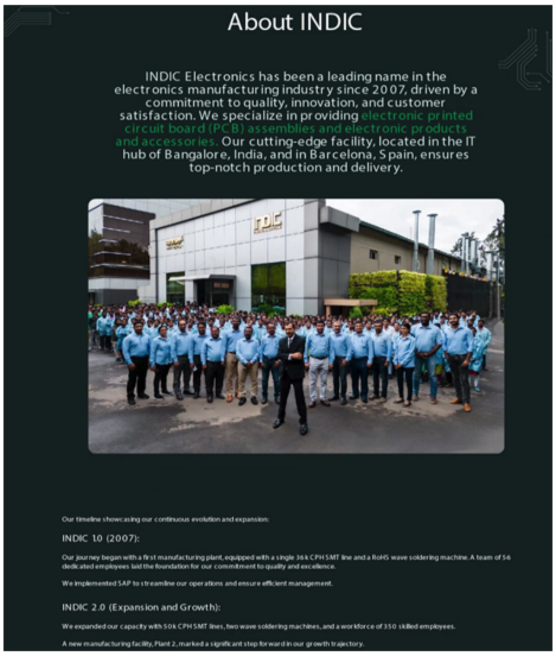
November 2024

SUN	MON	TUE	WED	THU	FRI	SAT
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Time zone
Central European Time (3:17pm)

Bengaluru
Plot No- 37, Kiadb Industrial Area,
Doddaballapur, Bengaluru-561203
info@indicelectronics.com

electronica-2024.pdf



About INDIC

INDIC Electronics has been a leading name in the electronics manufacturing industry since 2007, driven by a commitment to quality, innovation, and customer satisfaction. We specialize in providing electronic printed circuit board (PCB) assemblies and electronic products and accessories. Our cutting-edge facility, located in the IT hub of Bangalore, India, and in Barcelona, Spain, ensures top-notch production and delivery.

Our timeline showcasing our continuous evolution and expansion:

INDIC 1.0 (2007):

Our journey began with a first manufacturing plant, equipped with a single 36k CPH SMT line and a RoHS wave soldering machine. A team of 56 dedicated employees laid the foundation for our commitment to quality and excellence.

We implemented SAP to streamline our operations and ensure efficient management.

INDIC 2.0 (Expansion and Growth):

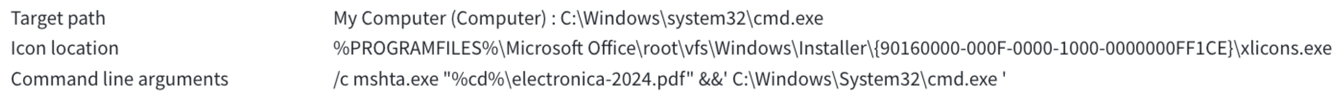
We expanded our capacity with 50k CPH SMT lines, two wave soldering machines, and a workforce of 350 skilled employees.

A new manufacturing facility, Plant 2, marked a significant step forward in our growth trajectory.

about-indic.pdf

Polyglot Files and Execution Techniques

Polyglot files are crafted to be interpreted as multiple different formats depending on the application reading them. This technique exploits **format-specific quirks and overlapping headers**, making detection more challenging. The LNK file launched **cmd[.]exe**, which in turn used **mshta[.]exe** to execute the **PDF/HTA polyglot file**.



Target path	My Computer (Computer) : C:\Windows\system32\cmd.exe
Icon location	%PROGRAMFILES%\Microsoft Office\root\vfs\Windows\Installer\{90160000-000F-0000-1000-0000000FF1CE}\xlicons.exe
Command line arguments	/c mshta.exe "%cd%\electronica-2024.pdf" &&' C:\Windows\System32\cmd.exe '

Source: VirusTotal

Execution Chain:

- **LNK file execution →** Launches cmd.exe
- **cmd.exe triggers mshta.exe →** Executes **HTA script** inside the polyglot PDF
- **HTA script writes a URL file** to the Windows Registry (persistence)
- **The URL file is launched,** downloading and executing Hyper-Info[.]exe
- **Hyper-Info[.]exe** searches for sosano.jpg (embedded in the ZIP polyglot)
- **sosano.jpg** is XOR-decoded into Sosano backdoor (DLL)

Mitigation Strategy:

- Monitor execution of LNK files from unzipped directories.
- Detect unusual mshta.exe behaviour triggering external script execution.
- Deploy behavioural analytics to identify execution anomalies in Registry modifications.
- Leverage digital risk protection solutions like Discovery to monitor for compromised credentials, which were key in enabling this attack.

Sosano Backdoor

According to Proofpoint, the Sosano backdoor is a DLL written in Golang and designed to evade analysis through excessive code bloating. Despite being 12MB in size, it contains only a limited set of malicious functions, while embedding unnecessary Golang packages to complicate reverse engineering.

Sosano’s Key Capabilities

Upon execution, Sosano:

- **Sleeps for a random time** using system time as a seed (evades sandbox analysis).
- **Attempts to connect to its C2 server (bokhoreshonline[.]com)**.
- **Sends periodic HTTP GET requests to await commands**.
- **Executes attacker-provided commands,** including:
  - sosano → Get current directory/change working directory.
  - yangom → List contents of current directory.
  - monday → Download and load additional payload.
  - raian → Delete/remove a directory.

  - lunna → Execute a shell command.

Mitigation Strategy:

- **Monitor** outbound HTTP traffic for periodic **C2 beaconing patterns.**
- Implement SSL/TLS decryption and anomaly detection.
- Deploy DNS security solutions like DNS Firewall to detect and block C2 communications.

Indicators of Compromise (IoCs)

Malicious Domains and C2 Infrastructure

Indicator	Type
indicelectronics[.]net	Domain
bokhoreshonline[.]com	Domain
46.30.190[.]96	IPv4
104.238.57[.]61	IPv4

File Hashes

Indicator	Hash
OrderList.zip	336d9501129129b917b23c60b01b56608a444b0fbe1f2fdea5d5beb4070f1f14
OrderList.xlsx.lnk	394d76104dc34c9b453b5adaf06c58de8f648343659c0e0512dd6e88def04de3
electronica-2024.pdf	e692ff3b23bec757f967e3a612f8d26e45a87509a74f55de90833a0d04226626
Hyper-Info[.]exe	0c2ba2d13d1c0f3995fc5f6c59962cee2eb41eb7bdbba4f6b45cba315fd56327
Sosano DLL	0ad1251be48e25b7bc6f61b408e42838bf5336c1a68b0d60786b8610b82bd94c

Recommendations for Mitigation and Risk Reduction

- Proactive Threat Hunting and Intelligence Integration
  - Monitor LNK files executing from unzipped directories.

    - Analyse HTA execution via mshta.exe for abnormal process behaviours.
    - Implement digital risk protection solutions like Discovery to continuously monitor for compromised credentials that may be used in similar targeted attacks
- Strengthening Email Security Posture
    - Deploy advanced email filtering solutions capable of detecting polyglot file anomalies.
    - Enforce Multi-Factor Authentication (MFA) for all email accounts to prevent credential-based takeover attempts.
    - Leverage Discovery to monitor email security posture by analysing DMARC, DKIM, and SPF records, ensuring proper authentication configurations to prevent spoofing and unauthorised email use.
- Enhancing Network Security Controls
    - Implement zero-trust architecture (ZTA) with strict access segmentation.
    - Deploy network anomaly detection for encrypted outbound traffic to flag suspicious HTTPS C2 channels.
    - Utilise DNS security solutions like DNS Firewall to detect and block connections to malicious domains used in C2 communication.

Conclusion:

The emergence of **UNK_CraftyCamel** represents a clear shift towards highly customised, multistage attacks leveraging file format manipulation, LOLBins, and covert C2 channels. This campaign is not just a technical challenge but a strategic risk that necessitates cross-disciplinary intelligence collaboration.

For **CISOs, Directors, and Security Decision-Makers,** this underscores the importance of:

- **Proactive intelligence sharing** between industry peers and government bodies.
- **Investing in adversary emulation exercises** to validate detection and response capabilities.
- **Aligning cybersecurity priorities with business risk mitigation**, ensuring that executive teams understand the impact of targeted cyber espionage.

In an era where **attack sophistication outpaces traditional defences,** organisations must evolve towards **intelligence-led security strategies** to stay ahead.

Remember, there’s always more intelligence to uncover.