# TEAM46 (TAXOFF) EXPLOITS GOOGLE CHROME ZERO-DAY (CVE-2025-2783) IN HIGHLY TARGETED PHISHING CAMPAIGN

## Vairav Security News Report

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## EXECUTIVE SUMMARY

The APT group **Team46**, also operating under the alias **TaxOff**, has launched a highly sophisticated phishing campaign leveraging **CVE-2025-2783**, a Google Chrome zero-day vulnerability that enables **sandbox escape**. The attack, uncovered by Positive Technologies Expert Security Center (PT ESC), employs advanced delivery and evasion mechanisms, including **multi-layered malware loaders**, decoy emails, and obfuscated PowerShell chains. Analysis of infrastructure and TTPs confirms that Team46 and TaxOff are the same threat group. The campaign has been active since at least **September 2024**, with targets across high-profile forums and digital services.

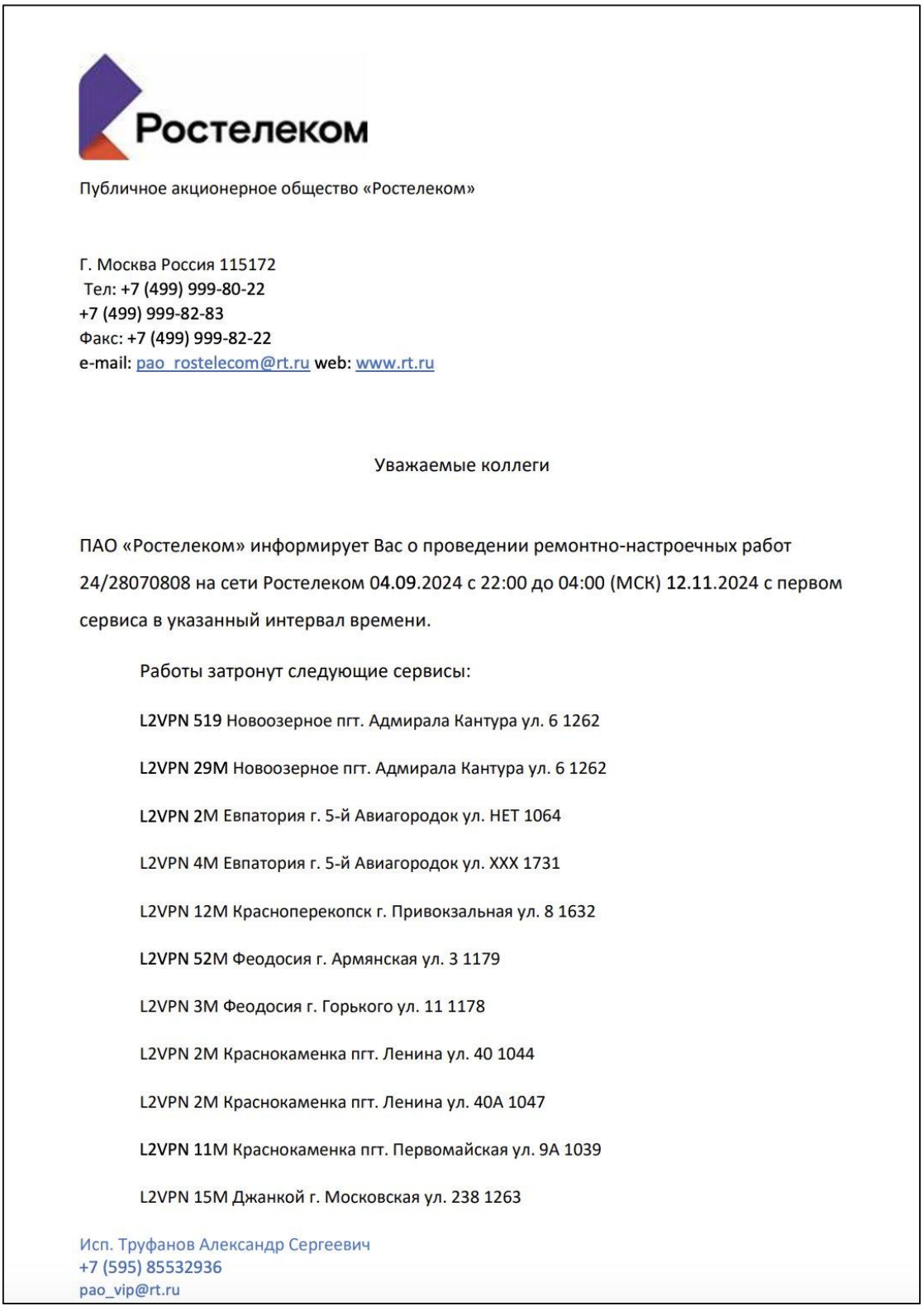
## CAMPAIGN DETAILS

The campaign begins with **phishing emails** disguised as invitations to events like the **Primakov Readings** and the "Security of the Union State" forum. When victims click the embedded links, it triggers a **one-click Chrome exploit** (CVE-2025-2783), automatically bypassing the browser's sandbox and delivering the **Trinper backdoor**.

The Trinper malware is a **multi-stage, obfuscated loader** that:

- Derives decryption keys using **firmware UUIDs**, **process paths**, and **modified ChaCha20** algorithms.
- Aborts or stalls if executed outside predefined processes or environments (anti-analysis features).
- Communicates via **named pipes** and **mimicry C2 domains** (e.g., common-rdp-front.global.ssl.fastly.net).

The payload chain uses **LOLBins** (e.g., rdpclip.exe, AdobeARM.exe) and disguised files (e.g., PDFs or updater executables). Reconnaissance tools like dirlist.exe, ProcessList.exe, and ScreenShot.exe are also deployed post-infection, all written in **.NET**.



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Уважаемые коллеги

ПАО «Ростелеком» информирует Вас о проведении ремонтно-настроечных работ 24/28070808 на сети Ростелеком 04.09.2024 с 22:00 до 04:00 (МСК) 12.11.2024 с первом сервиса в указанный интервал времени.

Работы затронут следующие сервисы:

L2VPN 519 Новоозерное пгт. Адмирала Кантура ул. 6 1262

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L2VPN 2M Евпатория г. 5-й Авиагородок ул. НЕТ 1064

L2VPN 4M Евпатория г. 5-й Авиагородок ул. XXX 1731

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L2VPN 2M Краснокаменка пгт. Ленина ул. 40А 1047

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*Figure 1: Decoy document used in the September 2024 attack*

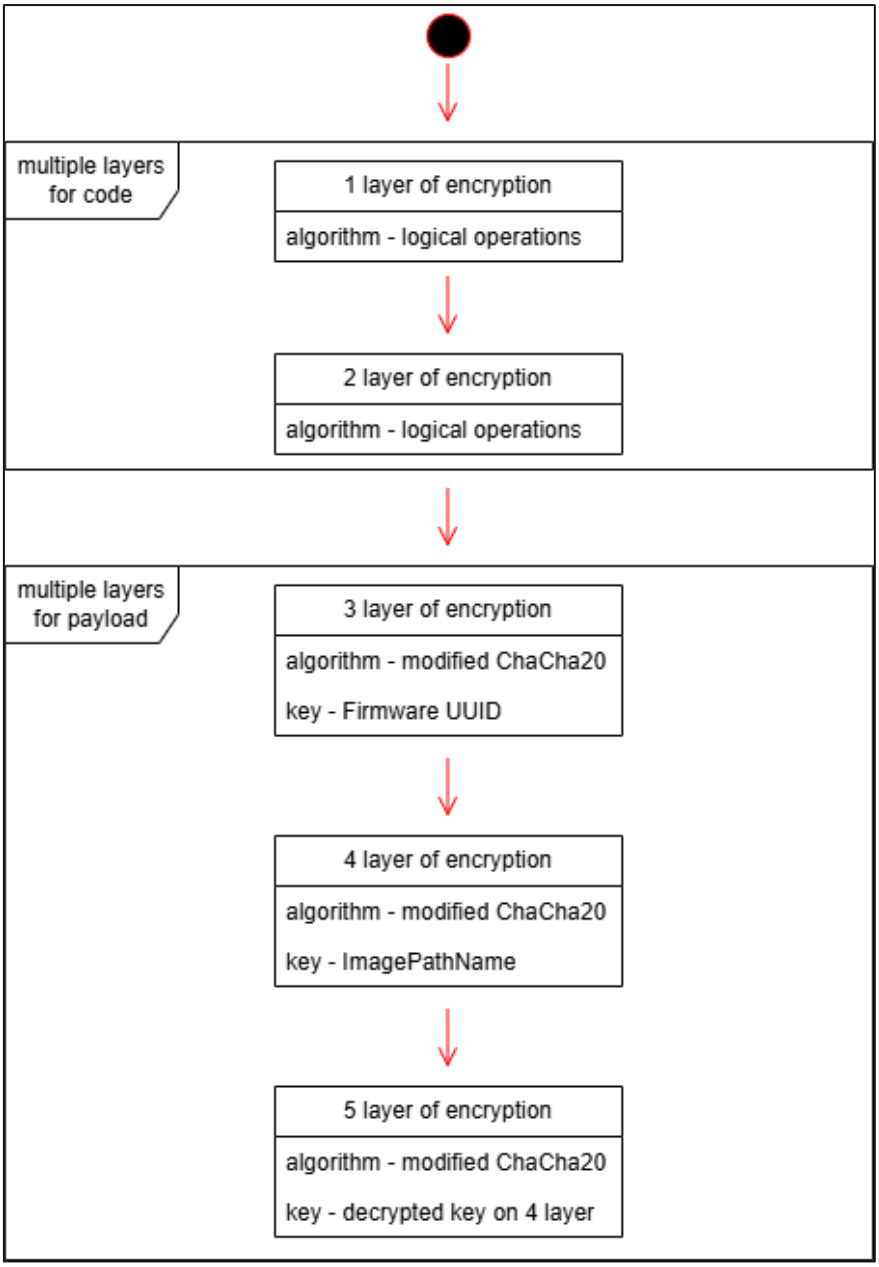


*Figure 2: Layers of encryption*

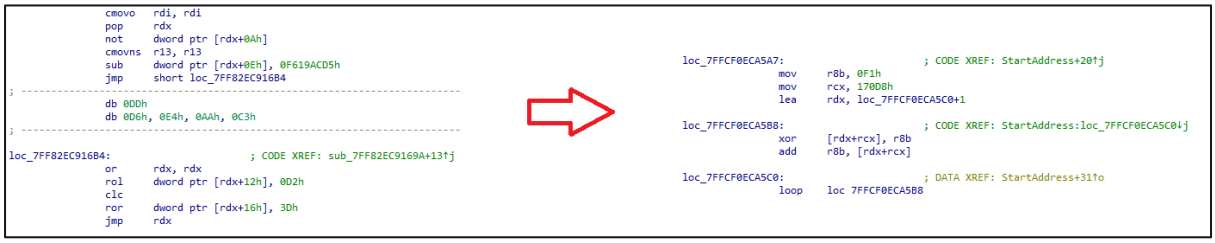


*Figure 3: Decryption of the first and second layers*

## THREAT ACTOR PROFILE

| Threat Actor Profile: Team46 | |
|---|---|
| **Aliases** | Team46, TaxOff |
| **Type** | Advanced Persistent Threat (APT) |
| **Target Sectors** | Government entities**,** Defense organizations**,** Diplomacy, and international policy institutions. |
| **Activity Timeline** | At least since February 2024 – Ongoing |
| **Motivation** | Espionage, intelligence gathering |
| **Target Regions** | Primarily Russia, potentially broader Eurasia region |
| **Delivery Mechanism** | Phishing emails with malicious archive/shortcut links or decoy documents. |

## CVE DETAILS

**CVE-2025-2783: Chrome sandbox escape vulnerability**

**Description:** A vulnerability in the Mojo component of Google Chrome for Windows, before version 134.0.6998.177, allowed a remote attacker to escape the browser sandbox by leveraging a malicious file. This issue occurred due to using an incorrect handle under certain unspecified conditions.

**Impact:** Remote Code Execution outside the sandbox

**CVSS Score:** 8.3 (High)

**Affected Product:** Google Chrome (latest versions as of March 2025)

**Exploit Vector:** Phishing link → malicious site → automatic payload drops

## NOTABLE CAMPAIGNS

**March 2025 - Chrome 0-Day Campaign**

- **Exploit Used**: CVE-2025-2783 (Chrome sandbox escape)
- **Delivery: P**hishing email disguised as an invitation to the *Primakov Readings* forum
- **Payload:** Trinper backdoor via PowerShell script
- **Infrastructure:** ms-appdata-query.global.ssl.fastly.net, fake forum site hosting exploit
- **Key Indicators:** Edge User-Agent for decoys, obfuscated PowerShell scripts, use of system UUID in decryption

**October 2024 - "Union State Security" Campaign**

- **Lure:** Conference invitation decoy
- **Phishing URL:** https://mil-by[.]info/#/i?id=[REDACTED]
- **Execution:** PowerShell downloading DLL-hijacking payload targeting rdpclip.exe and replacing winsta.dll
- **Final Payload:** Trinper

**September 2024 - Rostelecom Campaign**

- **Lure:** Maintenance alert from Rostelecom
- **Payload:** AdobeARM.exe (Trinper loader variant)
- **Style Clues:** Random fake phone numbers, matching Team46 pattern
- **PowerShell Delivery:** Download of scan_3824.pdf and a second-stage payload from a C2 domain

**February 2024 - Early Team46 Campaign**

- **Indicators:** infosecteam.info, similar PowerShell script format
- **Similarities:** Use of obfuscation, BLAKE2b hashes, and decoy PDFs

## IMPACTS

- **Zero-Click Malware Deployment:** Exploitation of Google Chrome zero-day (CVE-2025-2783) enables automatic malware installation upon clicking a phishing link, requiring no further user action, boosting infection success, especially among high-value targets.
- **Targeted Government & Defense Entities:** The campaign targets individuals tied to government and defense, using phishing emails disguised as official conference invitations, indicating a likely espionage objective.
- **Persistent Surveillance with .NET Tools:** Following infection, custom .NET tools (e.g., dirlist.exe, ProcessList.exe, ScreenShot.exe) are used for reconnaissance and data collection, maintaining covert system monitoring via named pipes.
- **Evasion of Sandbox Analysis:** The Trinper loader incorporates anti-analysis checks using environment-specific identifiers (firmware UUIDs, ImagePathName). In unapproved environments (e.g., sandboxes), it triggers an infinite decryption loop to avoid detection.

## MITRE ATT&CK TECHNIQUES

| Tactics | Techniques (ID) |
|---|---|
| Resource Development | Obtain Capabilities (T1588)<br>• Exploits (T1588.005) |
| Initial Access | Phishing (T1566)<br>• Spearphishing Link (T1566.002) |
| Execution | Command and Scripting Interpreter (T1059)<br>• PowerShell (T1059.001)<br>Native API (T1106)<br>User Execution (T1204)<br>• Malicious Link (T1204.001)<br>• Malicious File (T1204.002) |
| Privilege Escalation | Process Injection (T1055) |
| Defense Evasion | Obfuscated Files or Information (T1027)<br>Process Injection (T1055)<br>• Process Hollowing (T1055.012)<br>Indicator Removal (T1070)<br>• File Deletion (T1070.004)<br>• Clear Persistence (T1070.009)<br>Execution Guardrails (T1480)<br>• Environmental Keying (T1480.001)<br>Virtualization/Sandbox Evasion (T1497)<br>• System Checks (T1497.001)<br>Impair Defenses (T1562)<br>• Disable or Modify Tools (T1562.001)<br>Debugger Evasion (T1622) |

| Tactics | Techniques (ID) |
|---|---|
| Credential Access | Input Capture (T1056)<br>• Keylogging (T1056.001)<br>Steal or Forge Kerberos Tickets (T1558)<br>• Kerberoasting (T1558.003)<br>• AS-REP Roasting (T1558.004)<br>Steal or Forge Authentication Certificates (T1649) |
| Discovery | Process Discovery (T1057)<br>File and Directory Discovery (T1083)<br>System Owner/User Discovery (T1033) |
| Collection | Input Capture (T1056)<br>• Keylogging (T1056.001)<br>Clipboard Data (T1115) |
| Command and control | Application Layer Protocol (T1071)<br>Proxy (T1090)<br>• Domain Fronting (T1090.004)<br>Data Encoding (T1132)<br>• Standard Encoding (T1132.001)<br>Protocol Tunneling (T1572)<br>Encrypted Channel (T1573)<br>• Symmetric (T1573.001)<br>• Asymmetric (T1573.002)<br>Remote Access Software (T1219) |
| Exfiltration | Exfiltration Over C2 Channel (T1041) |

## INDICATORS OF COMPROMISE (IOCs)

| File Hashes |
|---|
| *2e39800df1cafbebfa22b437744d80f1b38111b471fa3eb42f2214a5ac7e1f13* |
| *f062681125a93a364618da3126c42b6e7c8f27910e954a7b8afd72455ddce328* |
| *b159534cd3bf2fa350edf18969ea4b07cb3cded49c40d927bac19ff390589504* |
| *ab42a3c6ff062147fa7bbf527f7b0b106c1514872bd1a90c8868423fa0485038* |
| *f15d8c58d8edb2ec17d35fe9d65062a767067760896eb425fc0de0d4536cc666* |
| *d622119cd68ad24f3498c54136242776d69ffe1f6b382a984616a667849c08b2* |
| *99786a04acc05254dd35b511c4b3af34c88251f926c4ef91c215a9fce6ba8f96* |
| *fde9725923e15ca4f790c0ad4766fe7d60e6e3dae75ea8ccf04ff42f2458b4b1* |
| *7975d287b07454b68455dd7e052eb741b5bf81712596ea00ddda2b103a99d037* |
| *185cdfd1eeef2a4063e5134653c53058f91050de8c9234740a7ddd215a2aeaed* |
| *2997647affa42eff41a27c5db54b126087a36f789c8cfc66d24a21fe7212badc* |

| ***IP Address*** |
|---|
| *185.81.114.15* |

| ***Domains*** | |
|---|---|
| *mil-by.info* | *2025primakovreadings.info* |
| *primakovreadings.info* | *primakovreadings2025.info* |

| ***URLs*** | |
|---|---|
| *ads-stream-api-v2.global.ssl.fastly.net* | *common-rdp-front.global.ssl.fastly.net* |
| *fast-telemetry-api.global.ssl.fastly.net* | *front-static-api.global.ssl.fastly.net* |
| *browser-time-stats.global.ssl.fastly.net* | *main-front-api.global.ssl.fastly.net* |
| *rdp-query-api.global.ssl.fastly.net* | *ms-appdata-fonts.global.ssl.fastly.net* |
| *rdp-statistics-api.global.ssl.fastly.net* | *ms-appdata-main.global.ssl.fastly.net* |
| *clip-rdp-api.global.ssl.fastly.net* | *ms-appdata-query.global.ssl.fastly.net* |
| *rdp-api-front.global.ssl.fastly.net* | |

## RECOMMENDATIONS

1. **Patch Chrome Immediately**

   Apply updates as soon as Google releases patches for CVE-2025-2783. Disable JavaScript and limit browser extension permissions where feasible.

2. **Monitor PowerShell Behavior**

   Implement PowerShell logging and monitor for suspicious, encoded, or LOLBin-related execution patterns.

3. **DNS and Network Monitoring**

   Block or alert on outbound traffic to known C2 domains (e.g., *.fastly.net) and named pipe communication patterns indicative of Trinper activity.

4. **Harden Endpoint Detection**

   Enable EDR solutions capable of behavior-based detection, especially those that track memory injections, UUID-based decryptors, or .NET tool usage.

5. **Phishing Awareness**

   Train employees to identify lures tied to political or event-related themes. Warn against clicking on unsolicited invitations or downloading unknown PDFs.

## REFERENCES

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https://nvd.nist.gov/vuln/detail/CVE-2025-2783

https://chromereleases.googleblog.com/2025/03/stable-channel-update-for-desktop_25.html

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