



Two Exploited Zero-Day Vulnerabilities in Microsoft

CRITICALITY



19/03/2023

Recommendations



Prevention



Detection



Remediation



Response



MITRE ATT&CK

Summary

Microsoft has patched two vulnerabilities that are actively being exploited in the wild. The company highly recommends all customers install the latest updates.



Threat Details

Microsoft has released a security update to address two exploited vulnerabilities affecting Outlook mailbox and Windows SmartScreen the cloud-based antimalware.

- CVE-2023-23397 is a critical Outlook zero-day vulnerability that allows lateral movement, privilege escalation without user interaction, and modifying Outlook mailbox folder permissions which permit email exfiltration of specific accounts. For the exploit, malicious Outlook notes and tasks are sent to steal NTLM hashes through NTLM negotiation requests by forcing the targets' devices to authenticate to attacker-controlled SMB shares. Furthermore, this vulnerability was observed being used by a Russian hacking group aka APT28, STRONTIUM, Sednit, Sofacy, and Fancy Bear to target European organizations.
- CVE-2023-24880 is a Windows SmartScreen zero-day vulnerability that allows deploying undetected ransomware aka Magniber. For the exploit, malicious MSI files are signed with specially crafted Authenticode signature, this invalid signature is sufficient to fool SmartScreen and prevent Mark-of-the-Web (MotW) security alerts from appearing. The Mark of the Web (MOTW) is a security feature implemented by Microsoft to prevent the downloading or opening of malicious files and attachments.



Recommendations



Prevention

- **Appendix A** contains the recommendations to prevent such attacks.

References

Gatlan, S. (2023, March 14). *Microsoft fixes Outlook zero-day used by Russian hackers since April 2022*. Retrieved from BleepingComputer:
<https://www.bleepingcomputer.com/news/microsoft/microsoft-fixes-outlook-zero-day-used-by-russian-hackers-since-april-2022/>

Gatlan, S. (2023, March 14). *Microsoft fixes Windows zero-day exploited in ransomware attacks*. Retrieved from BleepingComputer:
<https://www.bleepingcomputer.com/news/security/microsoft-fixes-windows-zero-day-exploited-in-ransomware-attacks/>



Contact Us

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Appendix A – Prevention

The National Cyber Security Center recommends all the entities to apply the latest supported update.

- If immediate patching is not possible, adding users to the Protected Users group in Active Directory and blocking outbound SMB (TCP port 445) mitigate the impact of CVE-2023-23397.

The affected products:

CVE-2023-23397:

- Microsoft Outlook (excluded Outlook for Android, iOS, or macOS).

CVE-2023-24880:

- Microsoft SmartScreen.



Appendix B – Best Practices

Bahrain National CERT team recommends organizations to implement the following best security practices.

- Backup daily important new/changed data, software and configuration settings, store disconnected data retained for at least three months. Test restoration initially, annually, and when IT infrastructure changes.
- Patch operating systems. Patch/mitigate computers (including network devices) with 'extreme risk' vulnerabilities within 48 hours. Use the latest operating system version. Don't use unsupported versions.
- Patch applications e.g. Flash, web browsers, Microsoft Office, Java and PDF viewers. Patch/mitigate computers with 'extreme risk' vulnerabilities within 48 hours. Use the latest version of applications.
- Restrict administrative privileges to operating systems and applications based on user role. Regularly reassess the need for privileges. Don't use privileged accounts to read emails or to browse the web.
- Configure Microsoft Office macro settings to block macros from the Internet, and only allow vetted macros either in 'trusted locations' with limited write access or digitally signed with a trusted certificate.
http://www.asd.gov.au/publications/protect/Microsoft_Office_Macro_Security.pdf
- Whitelist applications of approved/trusted programs to prevent execution of unapproved/malicious programs including .exe, DLL, scripts (e.g. Windows Script Host, PowerShell and HTA) and installers.
- Harden user application. Configure web browsers to block Flash (ideally uninstall it), ads and Java on the Internet. Disable unneeded features in Microsoft Office (e.g. OLE), web browsers and PDF viewers.
- Activate multi-factor authentication for VPNs, Outlook Web Access (OWA), RDP, SSH and other remote access for all users when they perform a privileged action or access an important (sensitive or high-availability) data repository.
- Implement CIS Critical Security Controls while prioritizing the implementation of the top 5 CIS Controls. (<https://www.cisecurity.org/critical-controls.cfm>)
- Implement strategies to mitigate cyber security incidents. (<http://www.asd.gov.au/infosec/mitigationstrategies.htm>)

CERT.bh recommends organizations to implement the following strategies to detect and respond to cyber security incidents:

- Use network-based intrusion detection/prevention system using signatures and heuristics to identify anomalous traffic both internally and crossing network perimeter boundaries.
- Use The host-based intrusion detection/prevention system to identify anomalous behaviour during program execution e.g. process injection, keystroke logging, driver loading and persistence mechanisms.
- Use endpoint detection and response software on all computers to centrally log systems' behaviour and facilitate incident response. Microsoft's free SysMon tool is an entry level option.



- Enhance visibility through PowerShell logging to provide investigators a detection mechanism for malicious activity and a historical record of how PowerShell was used on systems.
https://www.fireeye.com/blog/threat-research/2016/02/greater_visibility.html
- Hunt to discover incidents using threat intelligence consisting of analyzed threat data with indicators of compromise and mitigating threats based on behaviour patterns.
- Capture network traffic to and from internal systems that store important data or are considered critical assets, and network traffic traversing the network perimeter, to assist with incident detection and analysis.
- Detect and response to incidents continuously with automated immediate analysis of centralised time-synchronised logs of permitted and denied: computer events, authentication, file access, network activity.
- Refer to MITRE Corporation which provides a public repository that includes a model and framework for describing the actions attackers may take while operating within an enterprise network. These details can aid organizations in detecting attacker activities.
 - https://attack.mitre.org/wiki/Main_Page
 - https://car.mitre.org/wiki/Full_Analytic_List
 - <https://car.mitre.org/caret/#/>



Appendix C – TLP Definitions

RED

For the eyes and ears of individual recipients only, no further disclosure. Sources may use TLP:RED when information cannot be effectively acted upon without significant risk for the privacy, reputation, or operations of the organizations involved. Recipients may therefore not share TLP:RED information with anyone else. In the context of a meeting, for example, TLP:RED information is limited to those present at the meeting.

AMBER

Limited disclosure, recipients can only spread this on a need-to-know basis within their organization and its clients. Note that **TLP:AMBER+STRICT** restricts sharing to the organization only. Sources may use TLP:AMBER when information requires support to be effectively acted upon, yet carries risk to privacy, reputation, or operations if shared outside of the organizations involved. Recipients may share TLP:AMBER information with members of their own organization and its clients, but only on a need-to-know basis to protect their organization and its clients and prevent further harm. Note: if the source wants to restrict sharing to the organization only, they must specify TLP:AMBER+STRICT.

GREEN

Limited disclosure, recipients can spread this within their community. Sources may use TLP:GREEN when information is useful to increase awareness within their wider community. Recipients may share TLP:GREEN information with peers and partner organizations within their community, but not via publicly accessible channels. TLP:GREEN information may not be shared outside of the community. Note: when “community” is not defined, assume the cybersecurity/defense community.

CLEAR

Recipients can spread this to the world, there is no limit on disclosure. Sources may use TLP:CLEAR when information carries minimal or no foreseeable risk of misuse, in accordance with applicable rules and procedures for public release. Subject to standard copyright rules, TLP:CLEAR information may be shared without restriction