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Threat Level

Red

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THREAT ADVISORY

ATTACK REPORT

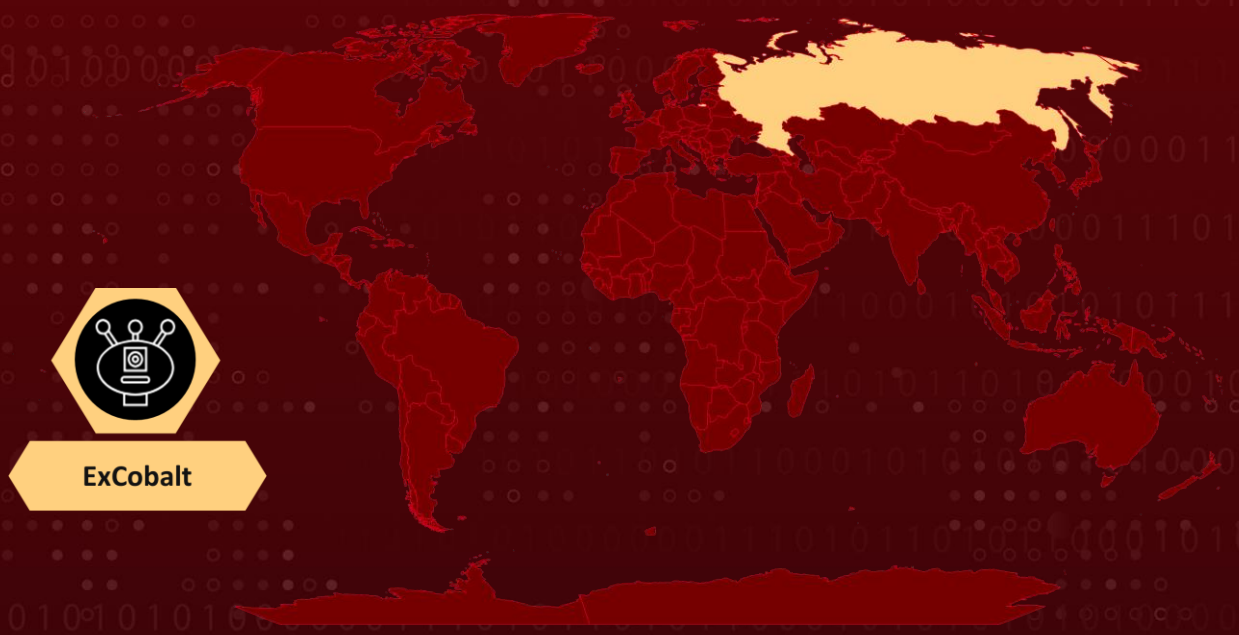
ExCobalt's GoRed the Silent Infiltrator of Russian Sectors

Date of Publication	Admiralty Code	TA Number
June 25, 2024	A1	TA2024244

Summary

Threat Actor: ExCobalt
Malware: GoRed Backdoor
Attack Region: Russia
Targeted Industries: Metallurgy, Telecommunications, Mining, Information Technology, Government, Software development
Attack: ExCobalt, a cyber espionage-focused threat actor, has been targeting Russian organizations using an advanced Golang-based backdoor called GoRed. This cybercriminal group comprises several former members of the notorious Cobalt gang.

Attack Regions



CVEs

CVE	NAME	AFFECTED PRODUCT	ZERO-DAY	CISA KEV	PATCH
CVE-2022-2586	Linux Kernel Use-After-Free Vulnerability	Linux kernel	✗	✓	✓

CVE	NAME	AFFECTED PRODUCT	ZERO-DAY	CISA KEV	PATCH
CVE-2021-3156	Baron Samedit (Sudo Heap-Based Buffer Overflow Vulnerability)	Sudo before 1.9.5p2	✗	✓	✓
CVE-2021-4034	Pwnkit (Red Hat Polkit Out-of-Bounds Read and Write Vulnerability)	Red Hat Polkit	✗	✓	✓
CVE-2019-13272	Linux Kernel Improper Privilege Management Vulnerability	Linux kernel before 5.1.17	✗	✓	✓
CVE-2022-27228	Bitrix Arbitrary Code Execution Vulnerability	Bitrix before 21.0.100	✗	✗	✓
CVE-2021-44228	Log4shell (Apache Log4j2 Remote Code Execution Vulnerability)	Apache Log4j2	✓	✓	✓
CVE-2021-40438	Apache HTTP Server-Side Request Forgery	Apache HTTP Server 2.4.48 and earlier	✗	✓	✓
CVE-2023-3519	Citrix NetScaler ADC and NetScaler Gateway Code Injection Vulnerability	Citrix NetScaler ADC and NetScaler Gateway	✓	✓	✓
CVE-2019-12725	Zeroshell Remote Command Execution Vulnerability	Zeroshell 3.9.0	✗	✗	✓
CVE-2022-40691	Moxa Information Disclosure Vulnerability	Moxa SDS-3008: 2.1	✗	✗	✓

Attack Details

#1

ExCobalt, a cyber espionage-focused threat actor, has been infiltrating Russian organizations using an advanced Golang-based backdoor known as GoRed. This group includes several former members of the notorious Cobalt gang and has likely been active since at least 2016. In 2022, ExCobalt incorporated one of Cobalt's hallmark tools, CobInt, into its operations.

#2 ExCobalt has targeted a range of sectors, including metallurgy, telecommunications, mining, information technology, and government. They gain initial access by exploiting previously compromised contractors and conducting supply chain attacks, thereby infecting components used in the development of the target company's legitimate software.

#3 The GoRed backdoor, which has undergone numerous iterations, is a sophisticated tool that enables operators to execute commands, obtain credentials, and gather detailed information about active processes, network interfaces, and file systems. The collected data is then exfiltrated to attacker-controlled infrastructure.

#4 In their campaigns, ExCobalt has also employed tools such as Metasploit, Mimikatz, ProcDump, and SMBExec to execute commands on infected hosts, along with Linux privilege escalation exploits. ExCobalt's adaptability and versatility are demonstrated by its use of modified standard utilities to enhance its arsenal.

Recommendations

- **Implement Code Signing:** Use code signing for all software components to ensure their integrity and authenticity.
- **Regularly Rotate Credentials:** Frequently update passwords and credentials, especially for privileged accounts.
- **Adopt a Zero-Trust Security Model:** Implement a zero-trust approach to minimize risks and ensure secure access control.
- **Implement Network Segmentation:** Segment your network to limit the lateral movement of attackers and protect sensitive data. Deploy Intrusion Detection Systems (IDS), and Intrusion Prevention Systems (IPS) solutions to monitor and respond to suspicious activities.
- **Monitoring and Logging:** Implement robust monitoring and logging mechanisms to detect suspicious activity or unauthorized access to your accounts. Regularly review access logs and audit trails for unusual patterns or login locations.
- **Vulnerability Management:** This involves regularly assessing and updating software to address known vulnerabilities. Maintain an inventory of software versions and security patches, and evaluate the security practices of third-party vendors, especially for critical applications and services.

Potential MITRE ATT&CK TTPs

TA0001 Initial Access	TA0002 Execution	TA0003 Persistence	TA0004 Privilege Escalation
TA0005 Defense Evasion	TA0006 Credential Access	TA0007 Discovery	TA0008 Lateral Movement
TA0009 Collection	TA0010 Exfiltration	TA0011 Command and Control	TA0040 Impact
TA0043 Reconnaissance	TA0042 Resource Development	T1595.002 Vulnerability Scanning	T1583.001 Domains
T1583.002 DNS Server	T1587.003 Digital Certificates	T1199 Trusted Relationship	T1195.001 Compromise Software Dependencies and Development Tools
T1059.003 Windows Command Shell	T1059.004 Unix Shell	T1059.006 Python	T1106 Native API
T1053.003 Cron	T1505.003 Web Shell	T1136.001 Local Account	T1068 Exploitation for Privilege Escalation
T1140 Deobfuscate/Decode Files or Information	T1027.002 Software Packing	T1027 Obfuscated Files or Information	T1601.001 Patch System Image
T1070.004 File Deletion	T1003.008 /etc/passwd and /etc/shadow	T1003.001 LSASS Memory	T1082 System Information Discovery
T1614.001 System Language Discovery	T1033 System Owner/User Discovery	T1087.001 Local Account	T1083 File and Directory Discovery
T1046 Network Service Discovery	T1057 Process Discovery	T1021.004 SSH	T1021.002 SMB/Windows Admin Shares

T1021.001 Remote Desktop Protocol	**T1563.001** SSH Hijacking	**T1560.001** Archive via Utility	**T1560.002** Archive via Library
T1074 Data Staged	**T1071.001** Web Protocols	**T1132.001** Standard Encoding	**T1071.004** DNS
T1572 Protocol Tunneling	**T1132.002** Non-Standard Encoding	**T1573.001** Symmetric Cryptography	**T1090.001** Internal Proxy
T1095 Non-Application Layer Protocol	**T1041** Exfiltration Over C2 Channel	**T1048.001** Exfiltration Over Symmetric Encrypted Non-C2 Protocol	**T1020** Automated Exfiltration
T1567 Exfiltration Over Web Service	**T1485** Data Destruction	**T1486** Data Encrypted for Impact	

Indicators of Compromise (IOCs)

TYPE	VALUE
File Name	coll.exe c.upx bb.exe coll.exe revsh.exe Scada.Connect.Win.ConnectionImpl.dll check.zip gsn_x86_64-alpine.tar.gz xlswifi xlswired 3156.zip bitrix.zip get_wp-commentin.txt lock.zip w.txt y.txt
MD5	6ea3feb1888ce02e3d0d2857b5ef71c4, 64db61efc8acf370b91110b6f93d4dce, 63f6de3c86de55172b147b947f29c808, d3cd9d9bad6450e8fd4fd2e972639c69,

TYPE	VALUE
MD5	cad5cb82baccd1f28e381e5c924f204a, 6f6e7fe49a8d5696f389e202d3b8c7e2, b5dc9a67f76fa18784b51fd3c5b9607c, caf68b393d56548074b9434564cb0625, b747c05888caf380edf6b2baab142272, 0385b0f83dbfc99c243ff066e3fe3cb2, 7dc1e49f1664af70d85d31af70f29071, fc3b7f47958f6c1c6a93a2f2f970734c, c02bee46d6a7a46f54e6abe003fec897, ad5c0363e7e28c69007f891fbc3dd030, b3a07b9f99f8d36bda871b63d55afb01, c1f3f6efb9ef18268eb3b841065e6554, e210c26d26a1395d9bc1de21fe1b2975, 376531d8a3a19016aa64d80dec23d980, fcc1ad58da960c5780a66fcc24c6c2fa, 489fbca25049e5fab9dca10541e33214, a5fa43f822b6dd88298371232d49c597, d08bef69aee69d91b8cd0315175f665c, 89ae36448f1922870f1a09c29f17c775, 46eb5fa7c75cc29d89f3e48be26bbd46, 848faa5839487c4331cb2a1146811f23, 0cda2ee10f5b8e9a241ef3e7e352752d, 2cad1092a2828a33df2156a3a97d7cf1, a2ff5b0bc0782560090574c992ccf995, d3064fe5d8a402b26099fcdbaeaedef1, fbb3f02b37b10bde868fed9d7b750fd8, 9b6122f1b4f6513c22b50ef05e881f38, bc421b337fc639749528f2e756239269, 76cc921e5b26a0720db213479bff1ea2, 3500760bc3e69102e01d256637f5f4a8, b7735e157273a013f26515f0c969b093, 166a248f264fbf11998c86e8b384e47a, 4a04baf3c65581bcd14fbaf58aa6860b, 83b8aa078be2a0a5ca0ebf1968989a4b, b7db832b2598c83b7b077ce603a3ff73, 415d091f42fc62e8dfb6f8bb5ce641c5, eda9ca5f9405b5e2d004a4ba5c0dcd16, eda9ca5f9405b5e2d004a4ba5c0dcd16, d215a54c581ab62079389c852d9ef84f, Ffc418b222c08f3071ff53cde4acb22e
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TYPE	VALUE
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SHA256	67b7a8fad28dcc40c0889e5c4e40aef9348441c64bba74bd6db885d88ce6d246, f43c99ef85166774ed47cad96c70b8273aa82c313e55bb08d9c74e2b3f59b000, f91c9fd27bf0e3a7e82998721946ee70735ec46ee672ca80e3062aa2d5195447,

TYPE	VALUE
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TYPE	VALUE
SHA256	37affeab7fb06a052413e9cc9272ea9cb2fd160fd204b506620d4303b06298c4, 6262558adf132ae3c67d6f241c7abd62f987ce2881d459a66332234971e49e95, c738d594d09c651109c4422acbecad23a461bab6cd4eafc41546f036816533a0, c0cd580d83f4171b34b956d0c29dbc8fcafba8889594d85d471c14d7cf33be79, 22ab2abda59edc1b6ba733fc140ab0c6b0c503b726a377a2e2ee6e6c95644aae, 211a73ab3fb49957277a2efb50ad3140673b65df577961a58c3c9c90791e961e, 1b96adc3c129e7e41f7c67f0d56dc05d6cdee31f69ff85f27e6a90270cfefdcf, bc159721bbe192f9c5cd24d3e9356a28f5b0c6b182de9fecf0b0ac28035f566a, 1807c7a44da958f15e4dcb77cab78e92eeb96b3ace91d6923c2022d646d5593c, a5e61987676b7aed2c6d6d32c657f9351c2daa7c36365db20713dd42a03b1504, 86bd9caab7526f2cd7e468d692ee2bac571465d25eb0619a10b0b46ae9a5b8e2, 91136b3145a52b66a3f5edd7d8a8d06698666300f24861074df1308491f50ba5, 895988088f25c89295f1a17f222a4553eafb2137b115f2ad4a0a25d273eb6521, a6dfef8616959969c06b65685e39929630f2819e6d5920498cdb1e89185ab7cd, 20927a1fc3441668264673d77c81652818a630f3b2055545b0e0938c523827c3, a9b1a99729860c004fbef463958871956cbb3c8e365383042978c260012055bd, a9b1a99729860c004fbef463958871956cbb3c8e365383042978c260012055bd, 7e8bde3e34fbf9b99b7915e12de42f6b806153e44b6aaf68b172db50e18e3b9e, ac0906ff674c555e102f076100d0c12ea4a4aa7d74cc15f67c4038a84100f4cf, 8fe0ba1cb68225ab9a2cb11c1419f52adb03898c5f11d2221ba9765843443d24
IPv4	135[.]125[.]107[.]221, 188[.]127[.]225[.]231, 193[.]37[.]71[.]75, 45[.]146[.]7[.]16, 45[.]146[.]7[.]26,

TYPE	VALUE
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Patch Details

Implement updates by transitioning to the most recent releases. It's important to recognize that support for the Zeroshell project concluded in April 2021 following the release of version 3.9.5.

Links:

https://lore.kernel.org/netfilter-devel/20220809170148.164591-1-cascardo@canonical.com/T/#t

https://www.sudo.ws/releases/stable/#1.9.5p2

https://bugzilla.redhat.com/show_bug.cgi?id=2025869

https://cdn.kernel.org/pub/linux/kernel/v5.x/ChangeLog-5.1.17

https://helpdesk.bitrix24.com/open/15536776/

https://logging.apache.org/log4j/2.x/security.html

https://httpd.apache.org/security/vulnerabilities_24.html

https://support.citrix.com/article/CTX561482/citrix-adc-and-citrix-gateway-security-bulletin-for-cve20233519-cve20233466-cve20233467

https://www.moxa.com/en/support/product-support/security-advisory/sds-3008-series-multiple-web-vulnerabilities

References

https://www.ptsecurity.com/ww-en/analytics/pt-esc-threat-intelligence/excobalt-gored-the-hidden-tunnel-technique/

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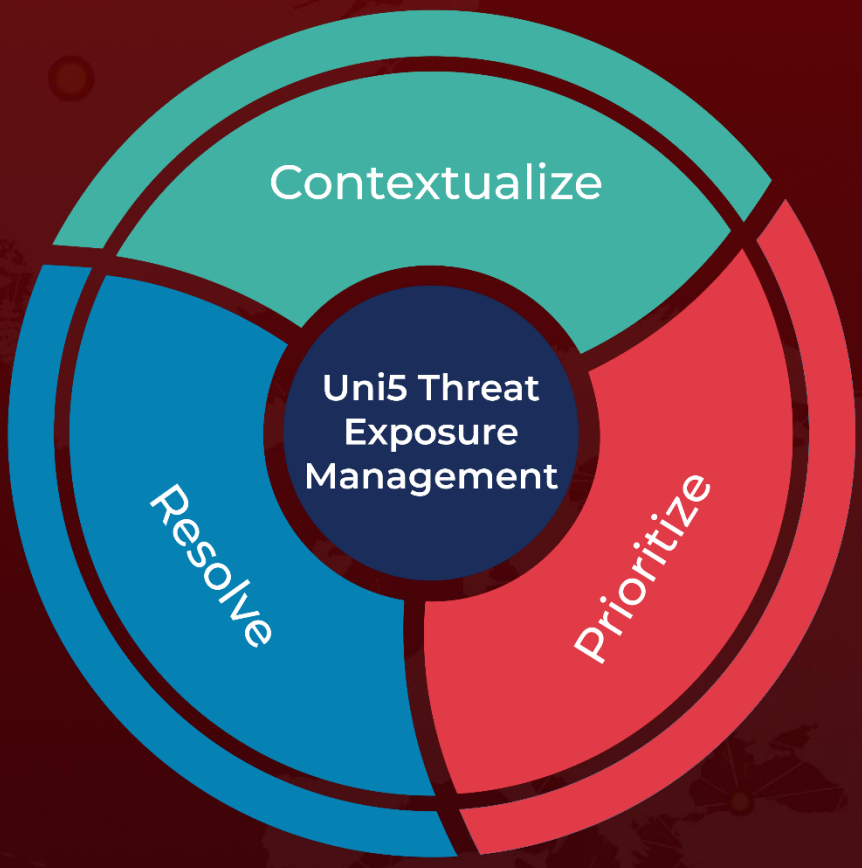

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