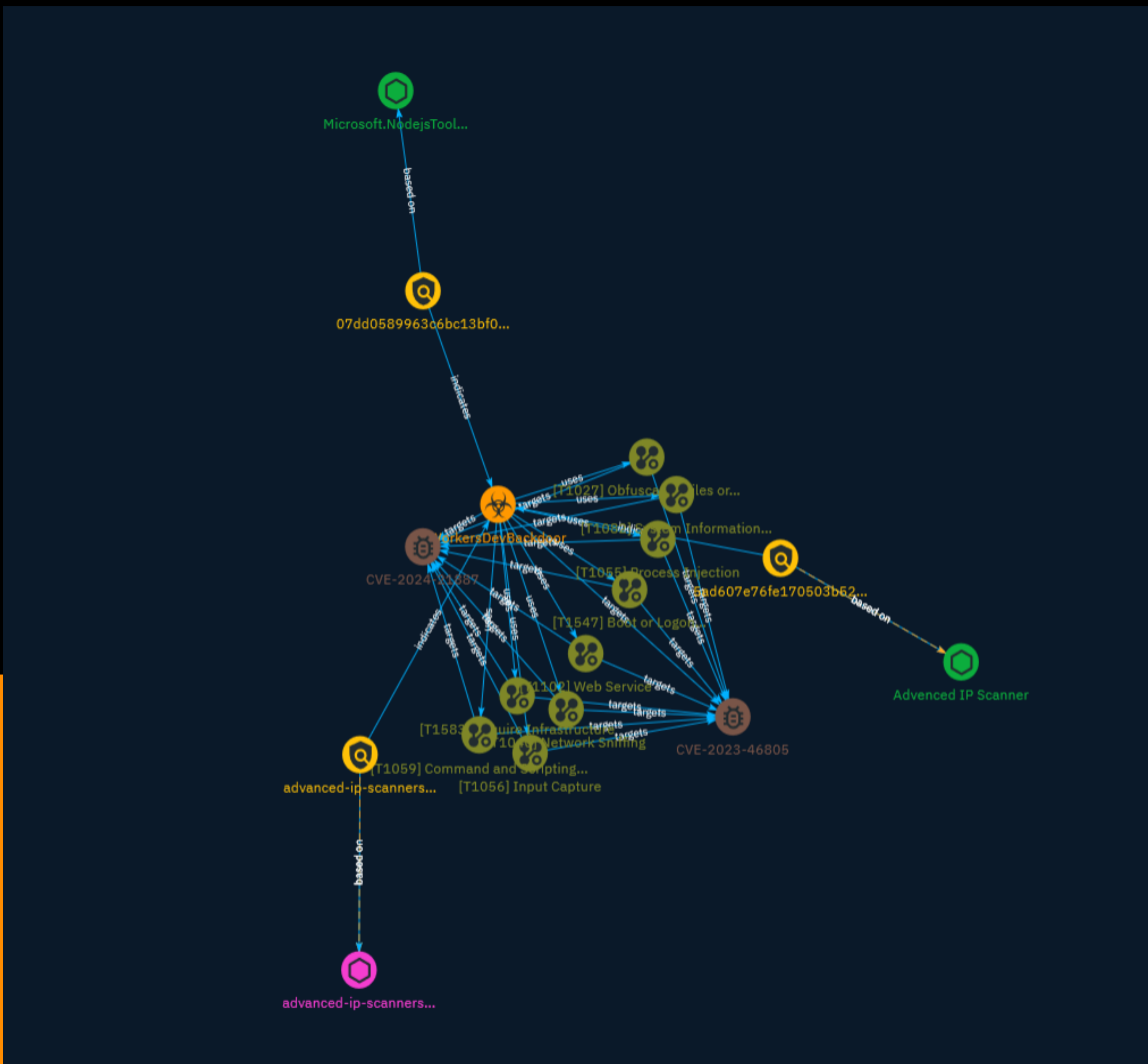
Jan 17 2024

NETMANAGEIT

Intelligence Report

WorkersDevBackdoor Delivered via Malvertising



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Overview

Description

In November 2023, eSentire's Threat Response Unit (TRU) detected WorkersDevBackdoor malware impacting a customer in business services industry. This malware spreads through malicious online ads, tricking users into downloading it by mimicking legitimate software. Once installed, it secretly collects sensitive information and provides backdoor access to the infected system.

Confidence

This value represents the confidence in the correctness of the data contained within this report.

15 / 100

Content

N/A

Attack-Pattern

Name
Boot or Logon Autostart Execution
ID
T1547
Description
Adversaries may configure system settings to automatically execute a program during system boot or logon to maintain persistence or gain higher-level privileges on compromised systems. Operating systems may have mechanisms for automatically running a program on system boot or account logon.(Citation: Microsoft Run Key)(Citation: MSDN Authentication Packages)(Citation: Microsoft TimeProvider)(Citation: Cylance Reg Persistence Sept 2013)(Citation: Linux Kernel Programming) These mechanisms may include automatically executing programs that are placed in specially designated directories or are referenced by repositories that store configuration information, such as the Windows Registry. An adversary may achieve the same goal by modifying or extending features of the kernel. Since some boot or logon autostart programs run with higher privileges, an adversary may leverage these to elevate privileges.
Name
Input Capture
ID
T1056

Description
Adversaries may use methods of capturing user input to obtain credentials or collect information. During normal system usage, users often provide credentials to various different locations, such as login pages/portals or system dialog boxes. Input capture mechanisms may be transparent to the user (e.g. [Credential API Hooking](https://attack.mitre.org/techniques/T1056/004)) or rely on deceiving the user into providing input into what they believe to be a genuine service (e.g. [Web Portal Capture](https://attack.mitre.org/techniques/T1056/003)).

Name
Process Injection

ID
T1055

Description
Adversaries may inject code into processes in order to evade process-based defenses as well as possibly elevate privileges. Process injection is a method of executing arbitrary code in the address space of a separate live process. Running code in the context of another process may allow access to the process's memory, system/network resources, and possibly elevated privileges. Execution via process injection may also evade detection from security products since the execution is masked under a legitimate process. There are many different ways to inject code into a process, many of which abuse legitimate functionalities. These implementations exist for every major OS but are typically platform specific. More sophisticated samples may perform multiple process injections to segment modules and further evade detection, utilizing named pipes or other inter-process communication (IPC) mechanisms as a communication channel.

Name
Network Sniffing

ID

T1040

Description

Adversaries may sniff network traffic to capture information about an environment, including authentication material passed over the network. Network sniffing refers to using the network interface on a system to monitor or capture information sent over a wired or wireless connection. An adversary may place a network interface into promiscuous mode to passively access data in transit over the network, or use span ports to capture a larger amount of data. Data captured via this technique may include user credentials, especially those sent over an insecure, unencrypted protocol. Techniques for name service resolution poisoning, such as [LLMNR/NBT-NS Poisoning and SMB Relay](https://attack.mitre.org/techniques/T1557/001), can also be used to capture credentials to websites, proxies, and internal systems by redirecting traffic to an adversary. Network sniffing may also reveal configuration details, such as running services, version numbers, and other network characteristics (e.g. IP addresses, hostnames, VLAN IDs) necessary for subsequent Lateral Movement and/or Defense Evasion activities. In cloud-based environments, adversaries may still be able to use traffic mirroring services to sniff network traffic from virtual machines. For example, AWS Traffic Mirroring, GCP Packet Mirroring, and Azure vTap allow users to define specified instances to collect traffic from and specified targets to send collected traffic to.(Citation: AWS Traffic Mirroring)(Citation: GCP Packet Mirroring)(Citation: Azure Virtual Network TAP) Often, much of this traffic will be in cleartext due to the use of TLS termination at the load balancer level to reduce the strain of encrypting and decrypting traffic.(Citation: Rhino Security Labs AWS VPC Traffic Mirroring)(Citation: SpecterOps AWS Traffic Mirroring) The adversary can then use exfiltration techniques such as Transfer Data to Cloud Account in order to access the sniffed traffic.(Citation: Rhino Security Labs AWS VPC Traffic Mirroring) On network devices, adversaries may perform network captures using [Network Device CLI](https://attack.mitre.org/techniques/T1059/008) commands such as `monitor capture`.(Citation: US-CERT-TA18-106A)(Citation: capture_embedded_packet_on_software)

Name

Acquire Infrastructure

ID

T1583

Description
Adversaries may buy, lease, or rent infrastructure that can be used during targeting. A wide variety of infrastructure exists for hosting and orchestrating adversary operations. Infrastructure solutions include physical or cloud servers, domains, and third-party web services.(Citation: TrendmicroHideoutsLease) Additionally, botnets are available for rent or purchase. Use of these infrastructure solutions allows adversaries to stage, launch, and execute operations. Solutions may help adversary operations blend in with traffic that is seen as normal, such as contacting third-party web services or acquiring infrastructure to support [Proxy](https://attack.mitre.org/techniques/T1090), including from residential proxy services.(Citation: amnesty_nso_pegasus)(Citation: FBI Proxies Credential Stuffing)(Citation: Mandiant APT29 Microsoft 365 2022) Depending on the implementation, adversaries may use infrastructure that makes it difficult to physically tie back to them as well as utilize infrastructure that can be rapidly provisioned, modified, and shut down.

Name
Obfuscated Files or Information

ID
T1027

Description
Adversaries may attempt to make an executable or file difficult to discover or analyze by encrypting, encoding, or otherwise obfuscating its contents on the system or in transit. This is common behavior that can be used across different platforms and the network to evade defenses. Payloads may be compressed, archived, or encrypted in order to avoid detection. These payloads may be used during Initial Access or later to mitigate detection. Sometimes a user's action may be required to open and [Deobfuscate/Decode Files or Information](https://attack.mitre.org/techniques/T1140) for [User Execution](https://attack.mitre.org/techniques/T1204). The user may also be required to input a password to open a password protected compressed/encrypted file that was provided by the adversary. (Citation: Volexity PowerDuke November 2016) Adversaries may also use compressed or archived scripts, such as JavaScript. Portions of files can also be encoded to hide the plain-text strings that would otherwise help defenders with discovery. (Citation: Linux/Cdorked.A We Live Security Analysis) Payloads may also be split into separate, seemingly benign files that only reveal malicious functionality when reassembled. (Citation: Carbon Black Obfuscation Sept 2016) Adversaries may also abuse [Command Obfuscation](https://

attack.mitre.org/techniques/T1027/010) to obscure commands executed from payloads or directly via [Command and Scripting Interpreter](https://attack.mitre.org/techniques/T1059). Environment variables, aliases, characters, and other platform/language specific semantics can be used to evade signature based detections and application control mechanisms. (Citation: FireEye Obfuscation June 2017) (Citation: FireEye Revoke-Obfuscation July 2017)(Citation: PaloAlto EncodedCommand March 2017)

Name
Command and Scripting Interpreter

ID
T1059

Description
Adversaries may abuse command and script interpreters to execute commands, scripts, or binaries. These interfaces and languages provide ways of interacting with computer systems and are a common feature across many different platforms. Most systems come with some built-in command-line interface and scripting capabilities, for example, macOS and Linux distributions include some flavor of [Unix Shell](https://attack.mitre.org/techniques/T1059/004) while Windows installations include the [Windows Command Shell](https://attack.mitre.org/techniques/T1059/003) and [PowerShell](https://attack.mitre.org/techniques/T1059/001). There are also cross-platform interpreters such as [Python](https://attack.mitre.org/techniques/T1059/006), as well as those commonly associated with client applications such as [JavaScript](https://attack.mitre.org/techniques/T1059/007) and [Visual Basic](https://attack.mitre.org/techniques/T1059/005). Adversaries may abuse these technologies in various ways as a means of executing arbitrary commands. Commands and scripts can be embedded in [Initial Access](https://attack.mitre.org/tactics/TA0001) payloads delivered to victims as lure documents or as secondary payloads downloaded from an existing C2. Adversaries may also execute commands through interactive terminals/shells, as well as utilize various [Remote Services](https://attack.mitre.org/techniques/T1021) in order to achieve remote Execution. (Citation: Powershell Remote Commands)(Citation: Cisco IOS Software Integrity Assurance - Command History)(Citation: Remote Shell Execution in Python)

Name

Web Service

ID

T1102

Description

Adversaries may use an existing, legitimate external Web service as a means for relaying data to/from a compromised system. Popular websites and social media acting as a mechanism for C2 may give a significant amount of cover due to the likelihood that hosts within a network are already communicating with them prior to a compromise. Using common services, such as those offered by Google or Twitter, makes it easier for adversaries to hide in expected noise. Web service providers commonly use SSL/TLS encryption, giving adversaries an added level of protection. Use of Web services may also protect back-end C2 infrastructure from discovery through malware binary analysis while also enabling operational resiliency (since this infrastructure may be dynamically changed).

Name

System Information Discovery

ID

T1082

Description

An adversary may attempt to get detailed information about the operating system and hardware, including version, patches, hotfixes, service packs, and architecture. Adversaries may use the information from [System Information Discovery](https://attack.mitre.org/techniques/T1082) during automated discovery to shape follow-on behaviors, including whether or not the adversary fully infects the target and/or attempts specific actions. Tools such as [Systeminfo](https://attack.mitre.org/software/S0096) can be used to gather detailed system information. If running with privileged access, a breakdown of system data can be gathered through the `systemsetup` configuration tool on macOS. As an example, adversaries with user-level access can execute the `df -aH` command to obtain currently mounted disks and associated freely available space. Adversaries may also leverage a [Network Device CLI](https://attack.mitre.org/techniques/T1059/008) on network devices to gather detailed system information (e.g. `show version`).(Citation: US-CERT-TA18-106A) [System Information Discovery](https://attack.mitre.org/techniques/T1082) combined with information gathered from other forms of discovery and reconnaissance can drive payload development and concealment.(Citation: OSX.FairyTale)(Citation: 20 macOS Common Tools and Techniques) Infrastructure as a Service (IaaS) cloud providers such as AWS, GCP, and Azure allow access to instance and virtual machine information via APIs. Successful authenticated API calls can return data such as the operating system platform and status of a particular instance or the model view of a virtual machine.(Citation: Amazon Describe Instance)(Citation: Google Instances Resource)(Citation: Microsoft Virutal Machine API)

Indicator

Name
advanced-ip-scanners.net
Description
- **Unsafe:** False - **Server:** N/A - **Domain Rank:** 0 - **DNS Valid:** True - **Parking:** False - **Spamming:** False - **Malware:** False - **Phishing:** False - **Suspicious:** True - **Adult:** False - **Category:** N/A - **Domain Age:** {'human': '7 months ago', 'timestamp': 1686139412, 'iso': '2023-06-07T08:03:32-04:00'} - **IPQS: Domain:** advanced-ip-scanners.net - **IPQS: IP Address:** 172.67.180.60
Pattern Type
stix
Pattern
[domain-name:value = 'advanced-ip-scanners.net']

Name
07dd0589963c6bc13bf016f1e32de249e7016dbbb356f19379bdc778d9c0bd5e
Description
SHA256 of 1b1ec901b4f4374d361d4839d0e53523

Pattern Type
stix

Pattern
[file:hashes.'SHA-256' = '07dd0589963c6bc13bf016f1e32de249e7016dbbb356f19379bdc778d9c0bd5e']

Name
5ad607e76fe170503b522526ef6df6569e0b4c21b7a9ee4a0b92d306cd955ac4

Description
Created by VirusTotal connector as the positive count was >= 10

Pattern Type
stix

Pattern
[file:hashes.'SHA-256' = '5ad607e76fe170503b522526ef6df6569e0b4c21b7a9ee4a0b92d306cd955ac4']

Malware

Name
WorkersDevBackdoor

Vulnerability

Name
CVE-2023-46805
Description
Ivanti Connect Secure (ICS, formerly known as Pulse Connect Secure) and Ivanti Policy Secure gateways contain an authentication bypass vulnerability in the web component that allows an attacker to access restricted resources by bypassing control checks. This vulnerability can be leveraged in conjunction with CVE-2024-21887, a command injection vulnerability.
Name
CVE-2024-21887
Description
Ivanti Connect Secure (ICS, formerly known as Pulse Connect Secure) and Ivanti Policy Secure contain a command injection vulnerability in the web components of these products, which can allow an authenticated administrator to send crafted requests to execute code on affected appliances. This vulnerability can be leveraged in conjunction with CVE-2023-46805, an authenticated bypass issue.

Domain-Name

Value
advanced-ip-scanners.net

StixFile

Value
5ad607e76fe170503b522526ef6df6569e0b4c21b7a9ee4a0b92d306cd955ac4
07dd0589963c6bc13bf016f1e32de249e7016dbbb356f19379bdc778d9c0bd5e

External References

- https://www.esentire.com/blog/workersdevbackdoor-delivered-via-malvertising
- https://otx.alienvault.com/pulse/65a50838a416d4a7f488d1a8