



2024

# State of Malware

From malware to threats, a comprehensive defense guide

# Contents



1. <u>Why you need a guide</u> .....	3
2. <u>Lessons learned from 2023</u> .....	4
3. <u>Big game ransomware</u> .....	5
4. <u>Malvertising</u> .....	9
5. <u>Zero-day ransomware</u> .....	13
6. <u>Living Off The Land</u> .....	17
7. <u>Android banking trojans</u> .....	20
8. <u>New Mac malware tactics</u> .....	24
9. <u>How to prepare</u> .....	27
10. <u>Introducing ThreatDown Bundles</u> .....	28

# 1. Why you need a guide

## From malware to threats

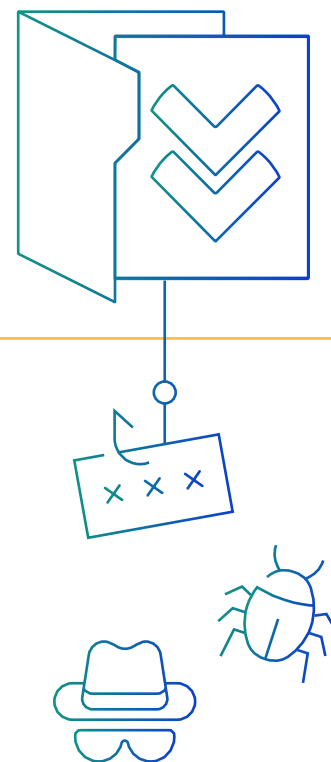
Cybercrime is a thriving and highly organized business—a multi-billion-dollar mirror to the legal economy it feeds off. Its ecosystem supports supply chains, and specialized organizations like access brokers and malicious software vendors. It has brand names, PR stunts, HR departments, incentive schemes, and employees of the month.

And like law abiding businesses, it has settled on a collection of tools that work. Sit at a regular desktop computer in the USA or Europe and you'll see software that would have been familiar 15 years ago such as Microsoft Windows, Office, and a web browser.

Cybercrime has info stealers, phishing, and ransomware. Like Windows and Office, they are mature and effective, and for years the latest iterations have only offered marginal improvements on their predecessors. As a result, innovation in cybercrime has increasingly shifted to tactics.

Malware is as dangerous as ever, but when it's used it's one link in an attack chain of multiple different threats. IT and security teams now face "Living off the land" attacks, active adversaries, zero-day exploits, compromised accounts, social engineering and a range of other threats that don't meet the traditional definition of malware.

Cybersecurity must evolve to meet the new threat landscape. Effective cyber-defence requires skilled and experienced security professionals identifying and investigating anomalous activity whenever it occurs, day or night, backed by sophisticated security software equipped to take down not just malware, but cyberthreats of every stripe.



### About this report

To reflect the shift from malware to threats we have evolved our State of Malware report once again. We asked our experts what resource constrained IT teams should pay attention to in the year ahead. They have chosen six threats that illustrate some of the most serious cybercrime tactics we've seen on Windows, Mac, and Android. It is not an exhaustive list, but if you are equipped to handle these then you are well placed to deal with anything the cybercrime ecosystem can throw at you.

## 2. Lessons learned from 2023

### Key developments

As we enter 2024, ransomware remains the most significant cyberthreat facing the education sector. Awash with money, the ransomware ecosystem surged in 2023 and continued to evolve its tactics.

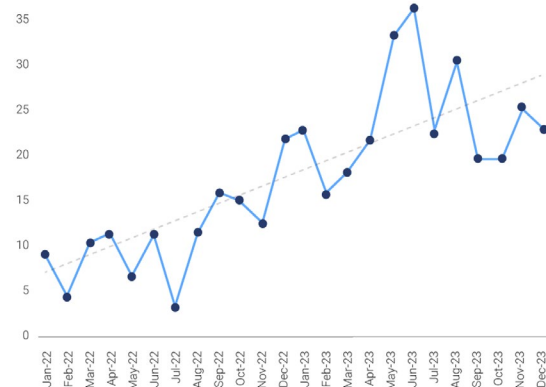
2023 was the worst ransomware year on record for education: according to original ThreatDown research, the sector witnessed a staggering 70% surge in attacks in the past year, increasing from 129 incidents in 2022 to 265 in 2023.

Although the attacks were carried out by several ransomware gangs, two in particular were responsible for the lion's share of 2023 attacks (50%)—LockBit and Rhysida (a rebrand of Vice Society). The data also shows that, while ransomware attacks against education are a global phenomenon, the US (with 80% of known attacks) and the UK (with 12%) were the most frequently attacked countries between January 2023 and December 2023.

Breaking down attacks by K-12 versus higher education we find that 43% of all ransomware in education attacks in 2023 targeted higher education and 36% of attacks targeted K-12.

Some of the most high-profile attacks on universities and K-12 in 2023 include an attack against Western Michigan University, which caused a 13-day service disruption, and against the Minneapolis School District, which resulted in over 300,000 files leaked and a \$1 million ransom.

Ransomware attacks on Education



When we compare K-12 ransomware attacks in 2022 vs 2023, the picture only gets bleaker: Ransomware attacks on K-12 increased 92% between 2022 and 2023. For higher education, the increase was 70%.

While ransomware remains the biggest threat to education in 2024, the evolution of other cyberthreats over the last year, including malvertising and new mac malware requires school districts and universities to also evolve their defenses. The following chapters explain the most consequential cyberthreats, and what advice, techniques, and technology are needed to protect students, faculty and the learning environment.

### 3. Big game ransomware

Since its emergence in 2018, “big game” ransomware has been the most serious cyberthreat to educational institutions all around the world. Big game attacks extort vast ransoms from organizations by holding their data hostage—either with encryption, the threat of damaging data leaks, or both.

Sadly, the big game ransomware problem significantly worsened in 2023 with the number of known attacks increasing by 68%. The average ransom payment [soared to \\$740,000](#) in the first quarter of the year according to Coveware, a ransomware incident response firm that also claims that total ransom payments in 2023 will approach a billion dollars.



**65%**

The number of known ransomware attacks increased 65% in 2023.



**45%**

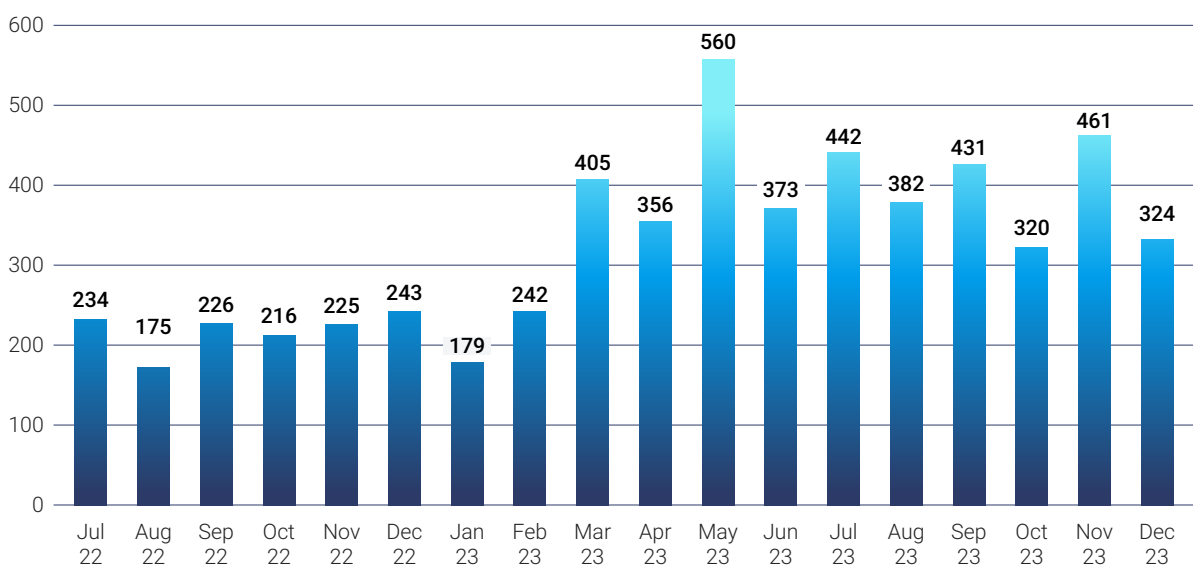
The US accounted for almost half of all ransomware attacks in 2023.

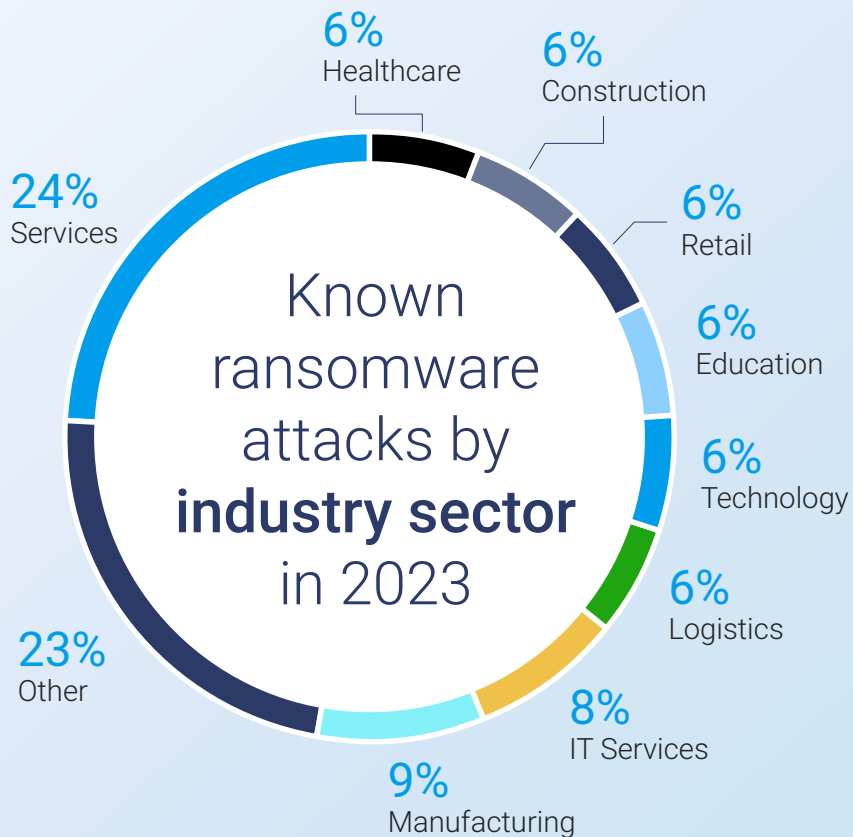
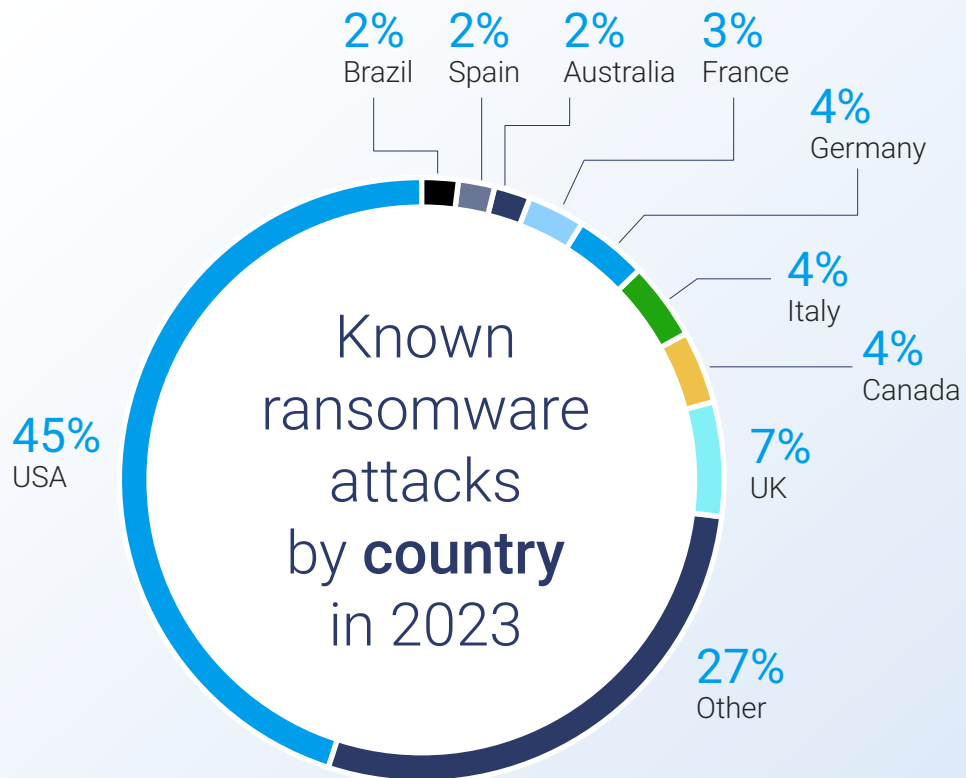


**\$80M**

The largest known ransomware demand in 2023 was LockBit’s [\\$80 million demand of Royal Mail](#).

#### Known ransomware attacks by month







Ransomware attacks can take weeks to prepare as criminal hackers breach a target, make themselves administrators, explore their environment, steal data, and then spread their ransomware to every corner of the network. When the attack is finally triggered it happens when the victim is least able to respond: Overnight, at the weekend, or during a holiday. Representatives from the target and the ransomware gang then negotiate in a dark web chat for days or even weeks.

Big game attacks can be enormously lucrative, but they are labor intensive. The criminal underground’s answer to big game ransomware’s inherent scalability problem is Ransomware-as-a-Service (RaaS), a type of ransomware that often sees three different types of criminal organizations coordinating for a single attack.

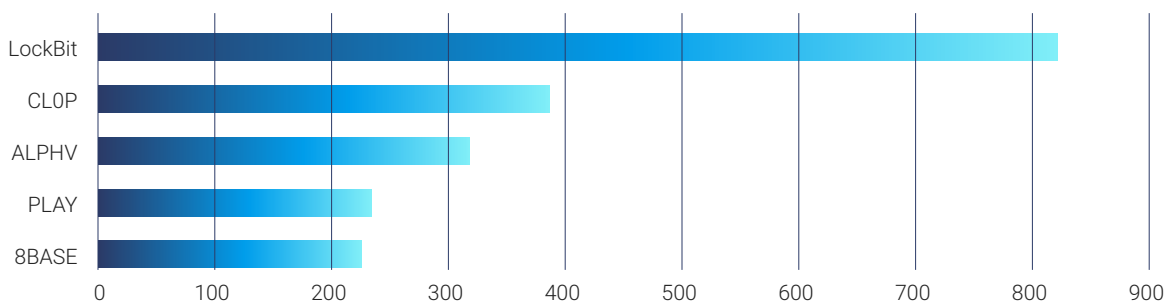
First, criminal gangs that specialize in gaining a foothold inside company networks will breach a business. These malicious groups, called Initial Access Brokers (IABs), rely on a variety of tactics to break into companies, such as phishing,

trojan horses, password spraying, and exploiting vulnerabilities in internet-facing infrastructure. Instead of using the access they gain to attack targets, IABs sell it to ransomware “affiliates.”

Affiliates are criminal gangs that carry out ransomware attacks. Instead of writing their own ransomware, affiliates purchase it from a RaaS vendor like LockBit, ALPHV, or Play.

RaaS vendors sell everything you need to carry out a ransomware attack: The encrypting ransomware itself, access to a dark web leak site to hold and leak stolen data, and a means to negotiate with the victim. Affiliates pay for these services with a share of the ransoms they extort. Leaks from inside the Conti ransomware gang show that these groups can grow quite large and have many of the trappings of a regular company. Conti had 60 employees, an HR department, performance reviews, and even an “employee of the month.”

### Top 5 “big game” ransomware groups in 2023

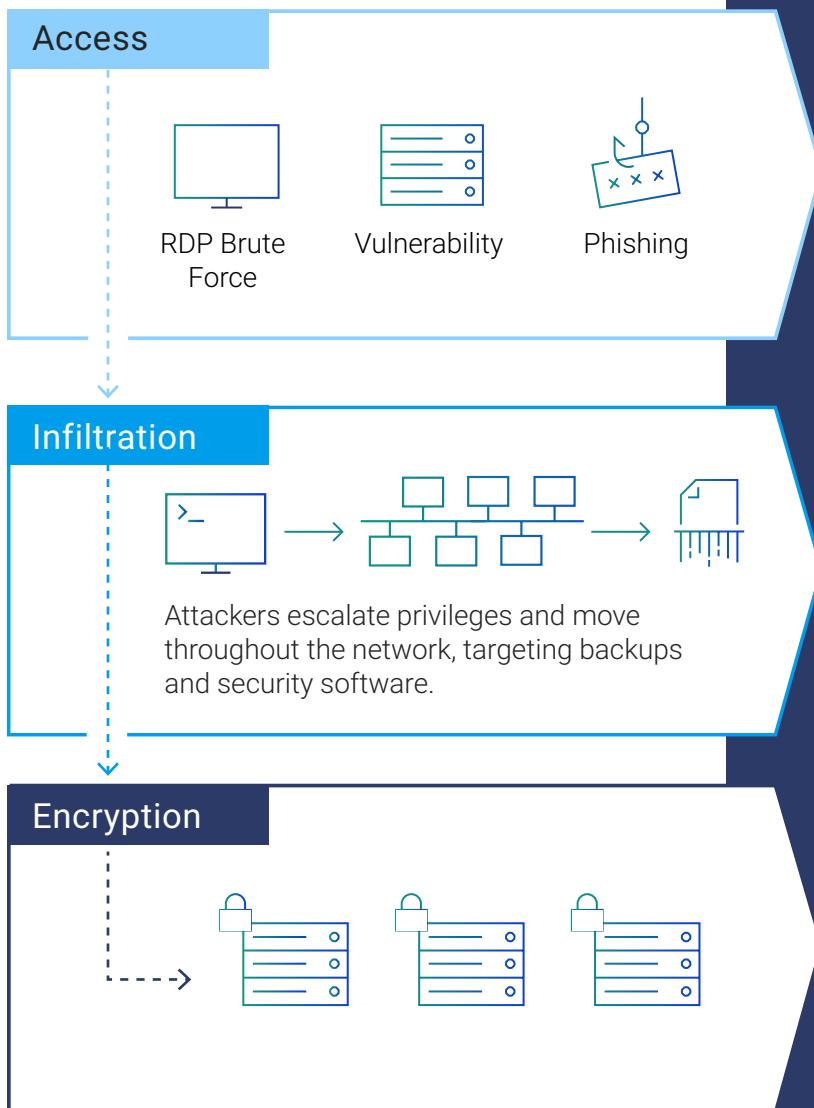


LockBit remains the most widely used RaaS, but its competitors are closing the gap.

The most widely used RaaS is LockBit, which accounted for more than twice as many attacks as its nearest competitor in 2023. However, while the total number of LockBit attacks increased year-on-year, its share of attacks decreased from 31% in 2022 to 22% in 2023, as its competitors closed the gap up—another worrying sign of ransomware’s resurgence.

The big game ransomware threat is getting worse, and the gangs who do it are determined, experienced, and well resourced. Defending against big game ransomware requires an integrated approach to security that includes a best-in-class security stack allied with skilled threat hunters and incident responders.

### Big game ransomware attack phases



### Protection with ThreatDown

Brute Force Protection, [Vulnerability Assessment](#), [Patch Management](#), Anti-Exploit Protection and [Website Content Filtering](#) stop different forms of access.

[Managed Detection & Response \(MDR\)](#) identifies attackers hidden inside your network before they launch ransomware; Next-gen AV, App Block, and Anti-Exploit Protection deny attackers access to their tools; Website Content Filtering blocks attackers’ access to command-and-control servers.

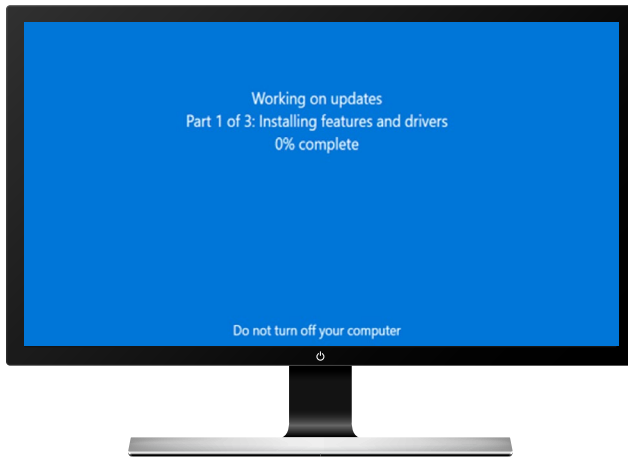
[Endpoint Detection & Response \(EDR\)](#) stops ransomware; Ransomware Rollback recovers encrypted files; Incident Response gives you peace of mind after an attack.



# 4. Malvertising

The use of malicious advertising (malvertising) to spread malware isn't new, but in 2023 it underwent a resurgence that threatened both educational institutions and home users. The surge likely came because of a late (but needed) effort by Microsoft to block macros in documents downloaded from the Internet—one of cybercrime's most bankable malware delivery techniques. With this malware pathway now removed, cybercriminals innovated elsewhere.

Malvertising often uses social engineering techniques to install malware. Cybercriminals create Google Search ads mimicking popular brands, which lead to highly realistic, replica web pages where users are scammed or tricked into downloading malware.



**A malvertising site masquerades as a Windows system update.**

Although Google and other ad vendors battled with malvertisers all through 2023, the threat actors remained one step ahead, able to consistently bypass ad verification checks all year.

Malvertising that targets home users may mimic popular brands like Amazon, software utilities like PDF converters, or popular subjects such as cryptocurrency investments. Educational institutions can be targeted with ads for popular software downloads for remote learning such as Zoom. In 2023, criminals also targeted IT staff with fake versions of tools like Advanced IP Scanner.

## Amazon was the most impersonated brand in 2023.

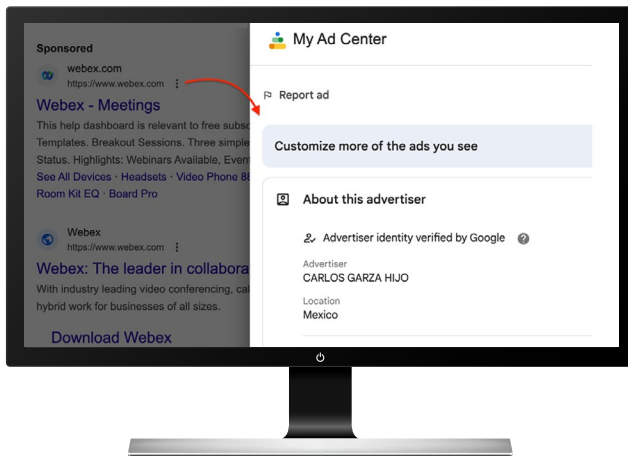
The ads and the websites are highly realistic, and generally far harder to spot than malicious emails. Malvertising also uses sophisticated fingerprinting code that tries to determine if a visitor is a bot, such as the Google Search crawler, or a security researcher, ensuring that only potential victims see the fake pages—which allows them to go undetected for longer.

### Top five most impersonated brands

1	Amazon
2	Rufus
3	Weebly
4	NotePad++
5	TradingView

But while malicious pages are rapidly identified and taken down, they are easily replaced, and it is rare for the underlying infrastructure to be disrupted. With their malware delivery chain unaffected, malicious actors were free to focus on increasing the sophistication of their decoy pages and malware payloads in 2023.

Malware payloads vary with each campaign but infostealer malware such as IcedID, Aurora Stealer, and BatLoader is common. These programs steal credentials from users' browsers or computers, sowing the seeds for ransomware attacks.



The only clue this Webex ad is fake lies in the information about the advertiser.

**Top five most frequently discovered malware**

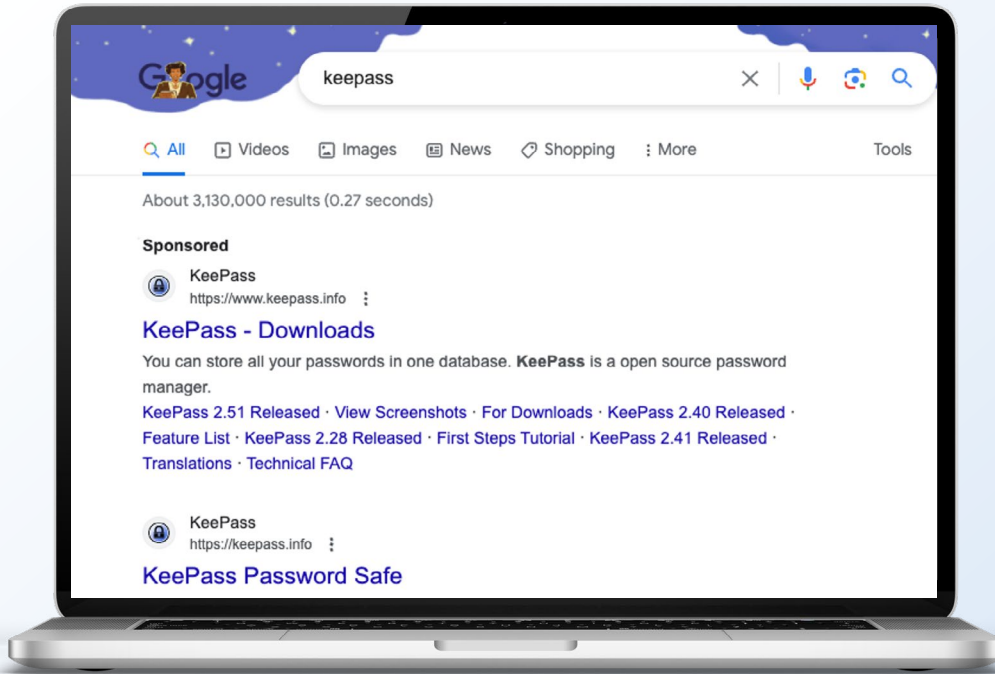
1	Aurora Stealer
2	Vidar
3	Redline Stealer
4	BatLoader
5	IcedID

For example, the Royal ransomware group has used AnyDesk as a malvertising lure for BatLoader, which was used to drop a Cobalt Strike Beacon as a precursor to a ransomware attack.

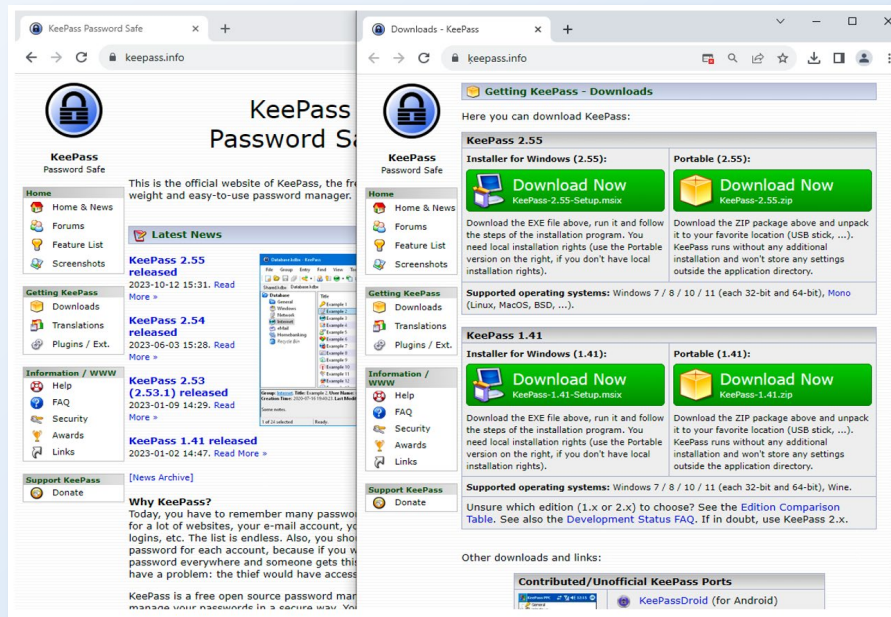
For criminals, malvertising has several advantages over malicious email attachments. Users are much less aware of it and are rarely trained to spot it. And even if they are, the strictly controlled format of search ads gives users very little to scrutinize. Search ads can also be targeted at specific search terms, geographies, and demographics, ensuring that targets only see campaigns that are likely to appeal to them.

**Top five most abused hosts**

1	Dropbox
2	Discord
3	4sync
4	GitLab
5	Google



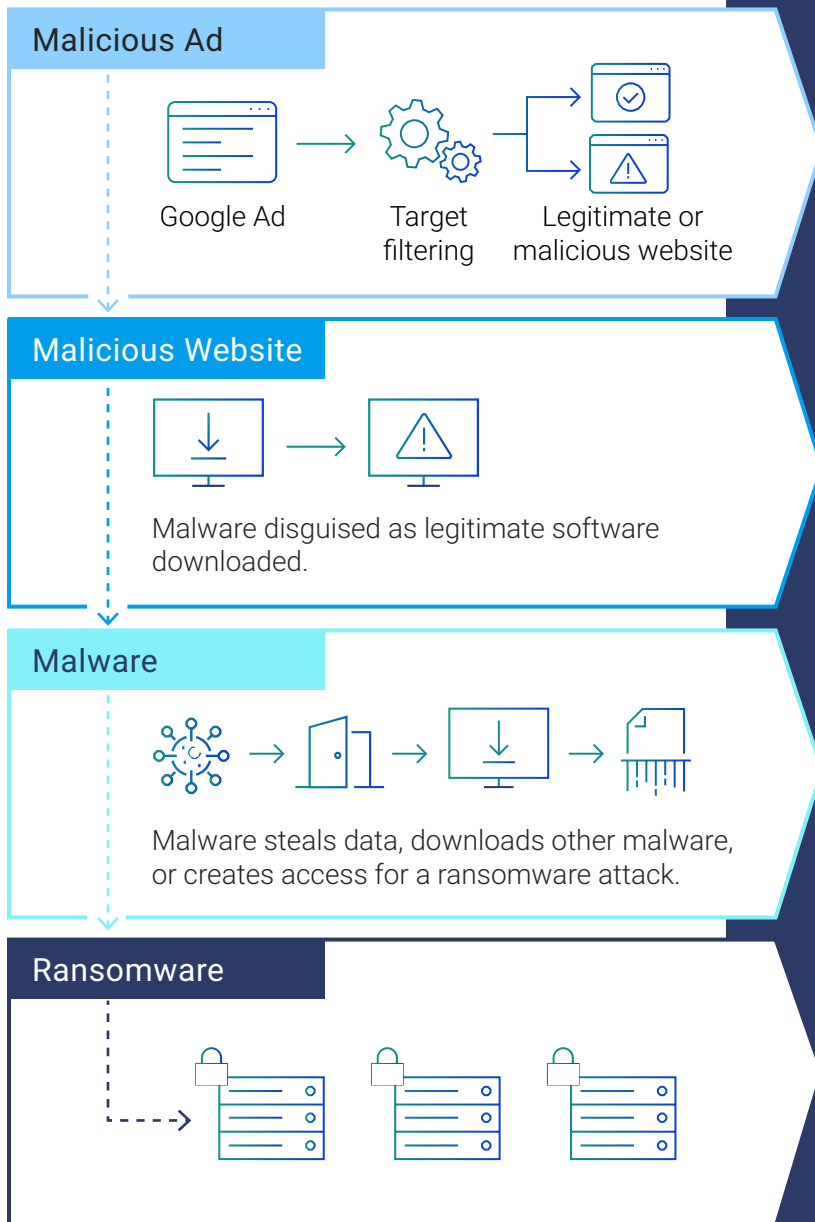
A malicious ad for the KeePass password manager appears as a legitimate ad.



The real KeePass website (left) side-by-side with a malvertising site (right)

Malvertising is surging as criminals look for alternatives to macros for delivering malware like trojan horses, info stealers, and ransomware. Defending against malvertising requires effective website content filtering to stop the websites that distribute the malware, and a best-in-class security stack as a backstop to prevent attacks from escalating.

### Malvertising attack phases



### Protection with ThreatDown

[Website Content Filtering](#) blocks malvertising sites, [Next-gen AV](#) stops malware.

[Managed Detection & Response \(MDR\)](#) identifies and investigates suspicious behavior on your network; [Website Content Filtering](#) blocks attackers' access to command-and-control servers.

[Endpoint Detection & Response \(EDR\)](#) stops ransomware; [Ransomware Rollback](#) recovers encrypted files; [Incident Response](#) gives you peace of mind after an attack.

## 5. Zero-day ransomware

Big game ransomware is the most serious cyberthreat facing businesses today because of its destabilizing potential and devastating severity. Coupled with this existential threat, however, is a seemingly benign attack count that reveals big game ransomware’s scaling problem. Limited because it is so reliant on human labor, attacks and negotiations can take weeks to conclude, and more attacks require more people. As a result, many potential targets are passed over.

But in 2023, the CL0P ransomware gang broke the scalability barrier and shook the security world with a series of short, automated campaigns, hitting hundreds of unsuspecting targets simultaneously with attacks based on zero-day exploits.

The repeated use of zero-days signaled a new level of sophistication for a ransomware gang, and within just a few weeks of activity, CL0P

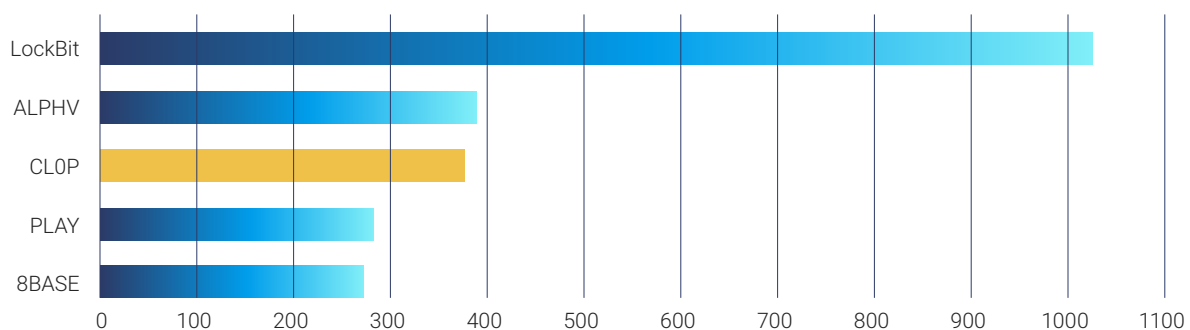
made itself the third most active “big game” ransomware of 2023, outstripping rivals that were active in every month of the year.

The use of zero-day vulnerabilities left many organizations and educational institutions unable to protect themselves with security patches and traditional malware detection techniques.

Significantly, the attacks did not rely on encryption. In both campaigns, the CL0P gang stole victims’ data and threatened to leak it if a ransom wasn’t forthcoming—no ransomware deployment necessary.

Between January 18 – 31, CL0P launched an automated attack on businesses running Fortra’s GoAnywhere MFT secure file transfer tool. The gang used a zero-day vulnerability

### Top 5 ransomware groups in 2023 by known attacks



CL0P was the third most active gang despite being dormant for most of the year.

to create unauthorized accounts in victims' environments, which were used to steal files and install malicious tools. Details of 100 or so victims that didn't pay a ransom began appearing on the CL0P data leak site in March.

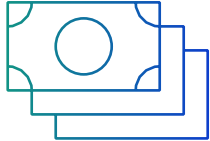
Not long after, the gang returned with an even bigger campaign based on a zero-day in Progress MOVEit Transfer software. The vulnerability was used to install a web shell, which in turn was used to steal files from the software's database.

Exploitation began on May 27, and Progress Software alerted its customers to the existence of the vulnerability on May 31. A week later, CL0P claimed responsibility for the attacks.

The smash and grab nature of the attacks meant the stolen data was not as carefully selected or sensitive as it might have been in a manual attack, leading to many victims refusing to pay a ransom. However, ransomware incident response firm Coveware believes the group managed to compensate by demanding much higher

**\$100M**

It's estimated that CL0P extorted between \$75M – \$100M with its MOVEit Transfer zero-day campaign.



than average ransoms, earning itself [as much as \\$100 million](#) from this one campaign.

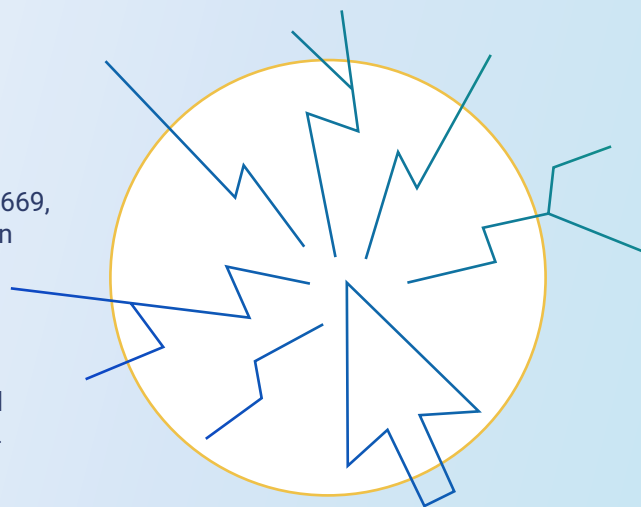
The result is that, going into 2024, CL0P has a fortune to reinvest in buying or discovering new zero-days, and it has shown that ransomware can scale beyond its established boundaries. It is hard to imagine that other ransomware groups won't try to replicate these tactics in 2024.

### CVE-2023-0669

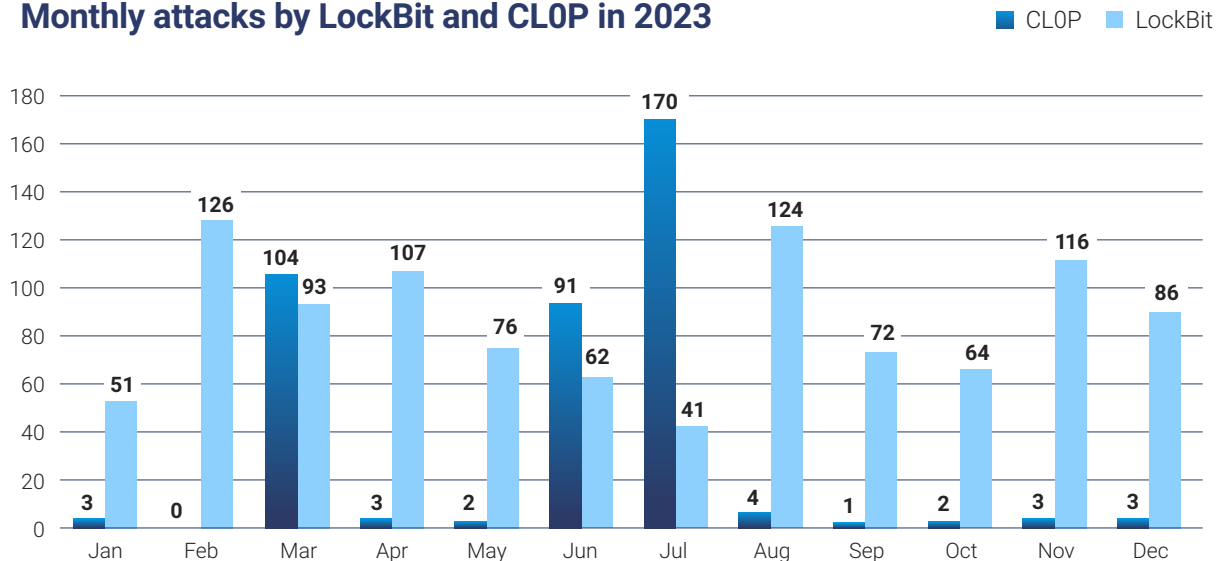
CL0P's first campaign exploited CVE-2023-0669, a previously unknown remote code execution vulnerability in GoAnywhere MFT.

### CVE-2023-34362

CL0P's most successful campaign exploited CVE-2023-34362, a previously unknown SQL injection vulnerability in MOVEit Transfer.



## Monthly attacks by LockBit and CLOP in 2023



LockBit was active in every month of the year, but CLOP became one of its main rivals with just a few weeks of attacks.

## Statement on CLOP Website

CLOP hit so many companies it had to issue this statement on its website to streamline negotiations with hundreds of victims.

WE HAVE INFORMATION ON HUNDREDS OF COMPANIES SO OUR DISCUSSION WILL WORK VERY SIMPLE

**STEP 1 - IF WE DO NOT HEAR FROM YOU UNTIL JUNE 14 2023 WE WILL POST YOUR NAME ON THIS PAGE**

**STEP 2 - IF YOU RECEIVE CHAT URL GO THERE AND INTRODUCE YOU**

**STEP 3 - OUR TEAM WILL PROVIDE 10% PROOF OF DATA WE HAVE AND PRICE TO DELETE**

**STEP 4 - YOU MAY ASK FOR 2-3 FILES RANDOM AS PROOF WE ARE NOT LYING**

**STEP 5 - YOU HAVE 3 DAY TO DISCUSS PRICE AND IF NO AGREEMENT YOU CUSTOM PAGE WILL BE CREATED**

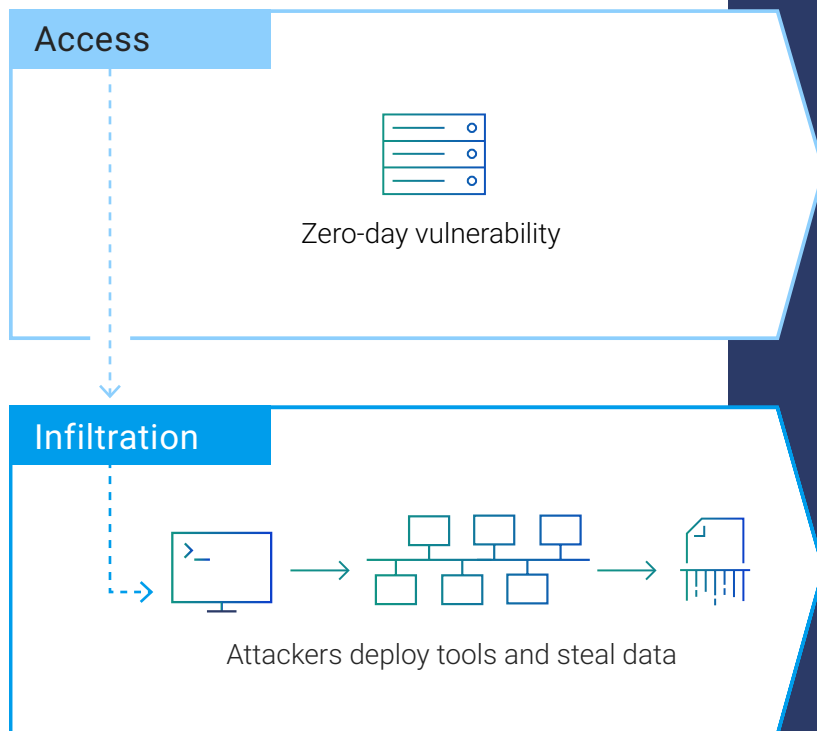
**STEP 6 - AFTER 7 DAYS ALL YOU DATA WILL START TO BE PUBLICATION**

**STEP 7 - YOU CHAT WILL CLOSE AFTER 10 NOT PRODUCTIVE DAY AND DATA WILL BE PUBLISH**



Zero-day ransomware is an emerging threat that poses a serious danger to your business. It relies on unknown vulnerabilities, making it difficult to detect. Defending against zero-day ransomware requires an integrated approach to security that includes a best-in-class security stack allied with skilled threat hunters who can find and investigate suspicious activity on your network.

### Zero-day ransomware attack phases



### Protection with ThreatDown

[Vulnerability Assessment](#) and [Patch Management](#), ensure systems are protected quickly once a patch is available.

[Managed Detection & Response \(MDR\)](#) identifies and investigates suspicious behavior on your network; [Website Content Filtering](#) blocks attackers' access to command-and-control servers; [Next-gen AV](#) stops malicious backdoors.

## 6. Living Off The Land

Living Off The Land (LOTL) is a covert cyberattack technique in which criminals carry out malicious activities using legitimate IT administration tools like Powershell, PsExec, or Windows Management Instrumentation (WMI).

Because even the malicious use of these tools can resemble normal network activity to the untrained eye, LOTL attacks are extremely difficult for IT teams to detect.

Ransomware gangs like LockBit, ALPHV, and Royal use LOTL techniques to work unnoticed as they set up attacks inside corporate networks, elevating privileges, executing commands, downloading scripts, moving laterally, stealing data, and deploying ransomware.

For example, LockBit ransomware affiliates have used PowerShell to download malicious code from Google Sheets, and the Windows Task Scheduler to run malicious VBScripts. ALPHV affiliates have used the Windows Task Scheduler as well, to configure malicious Group Policy Objects (GPOs). The Royal ransomware group has used the Windows Volume Shadow Copy service to delete Windows snapshot backups and hinder recovery efforts.

The appeal of LOTL attacks spreads far within cybercrime. Data theft gangs and Advanced Persistent Threat (APT) groups may never run any malware at all and can use LOTL

techniques to stay undetected for years, while cybercriminals of all kinds are happy to use remote access tools like RDP, and AnyDesk because they provide enormous amounts of control without looking out of place.

To defend against LOTL attacks, IT and security teams need a detailed understanding of their environment so they can spot anomalies, such as unfamiliar administration tools (or familiar tools in unfamiliar hands), strange data usage patterns, or uncharacteristic working hours.

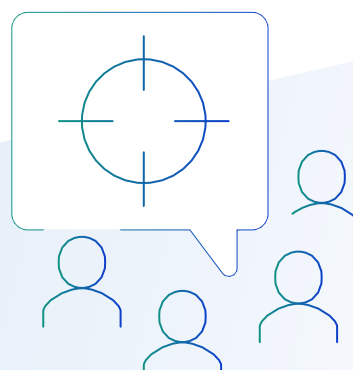
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“For effective detection of LOTL attacks, understanding the environment is paramount. Armed with this baseline, security analysts can identify anomalies or outliers which might not be inherently malicious but are uncommon for the environment.”

**Hiep Hinh**

Principal MDR Analyst, Malwarebytesa

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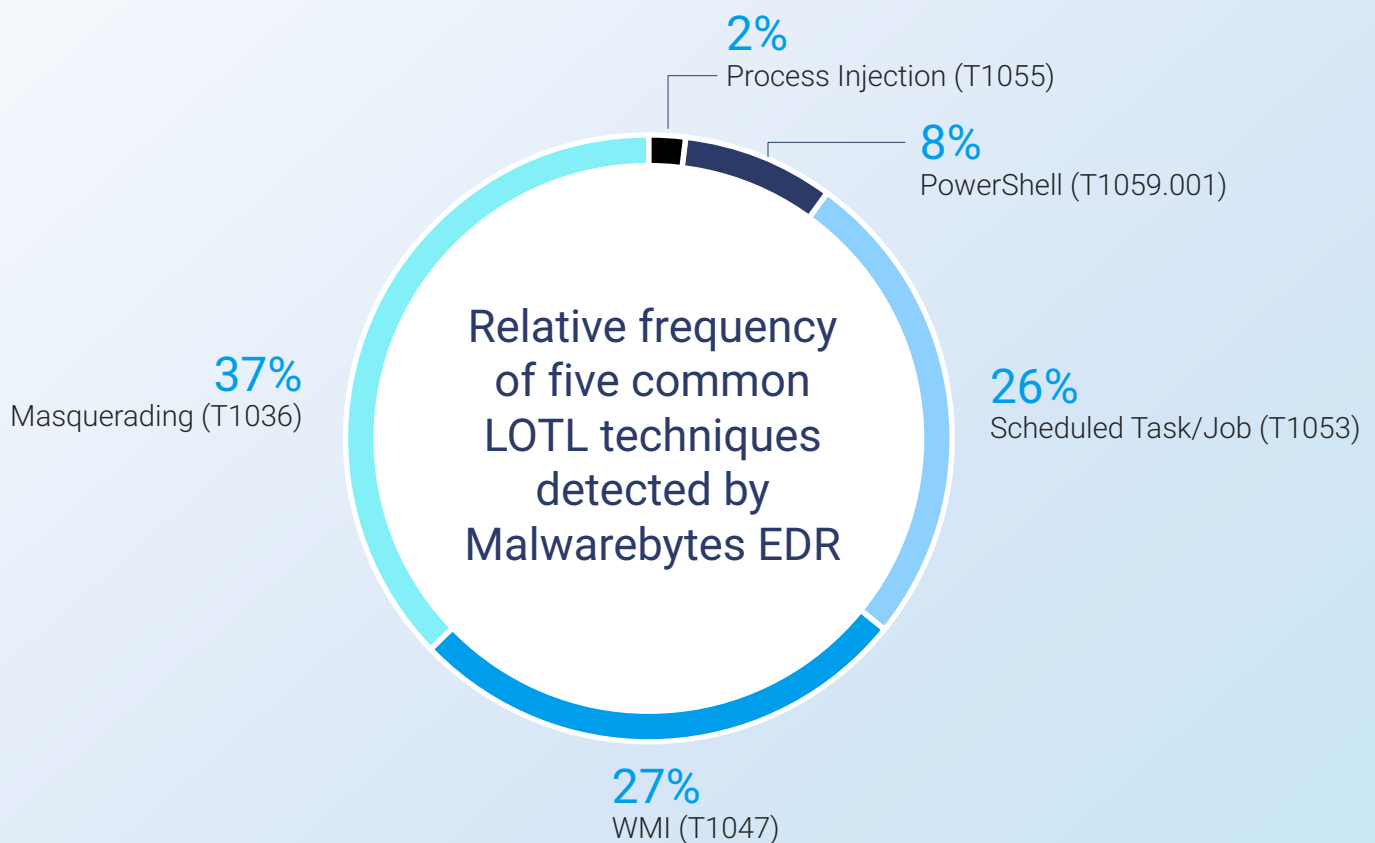


## Defending against LOTL attacks

- **Use MDR** so that expert human analysts are monitoring your endpoints 24/7 for unusual patterns, signs of compromise, or connections.
- **Use threat intelligence feeds** to fine tune monitoring to spot the latest attack techniques and indicators of compromise.
- **Implement advanced monitoring tools** that focus on detecting unusual user or system behavior.
- **Limit access to commonly abused tools** to just the users who need them, monitor their usage, and use security policies to restrict potentially harmful actions.

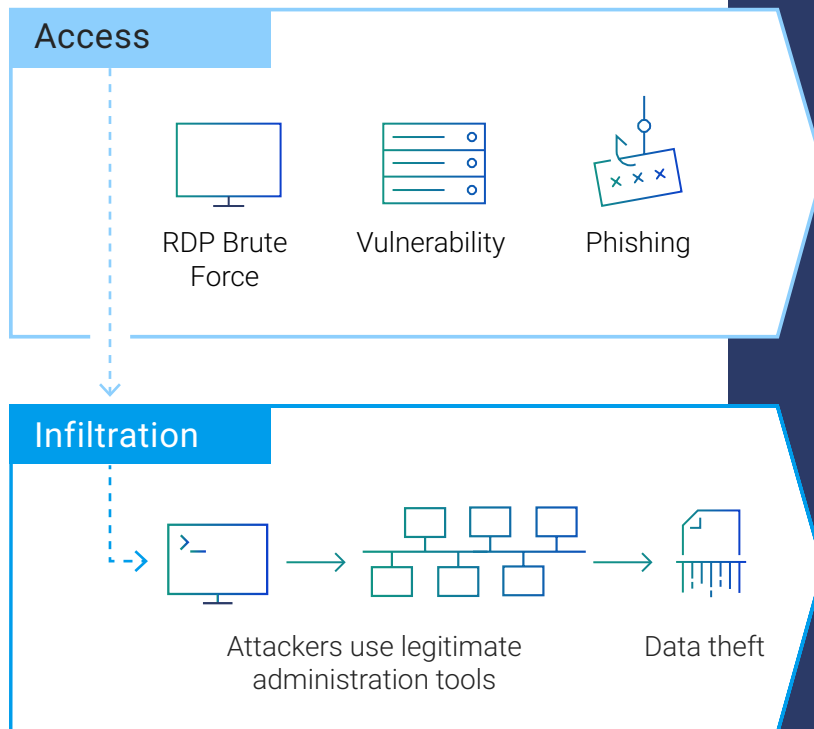
Attackers love remote desktop software. To make LOTL attacks more difficult, disable RDP and block any remote desktop tools your company does not normally use, such as Anydesk, Dameware Mini remote, and Splashtop.

In one example of a LOTL attack stopped by the Malwarebytes MDR team, cybercriminals used a chain of legitimate tools in an attempt to avoid detection. They used wscript to execute a Windows Script File (WSF), which ran a PowerShell script, which downloaded malicious files that were finally executed via rundll32.



Cybercriminals who live off the land use legitimate IT administration tools instead of malware, making them extremely difficult to detect. Defending against Living Off The Land attacks relies on skilled threat hunters using best-in-class EDR to find and investigate suspicious activity on your network.

### Living Off The Land attack phases



### Protection with ThreatDown

Brute Force Protection, [Vulnerability Assessment](#), [Patch Management](#), Anti-Exploit Protection and [Website Content Filtering](#) stop different forms of access.

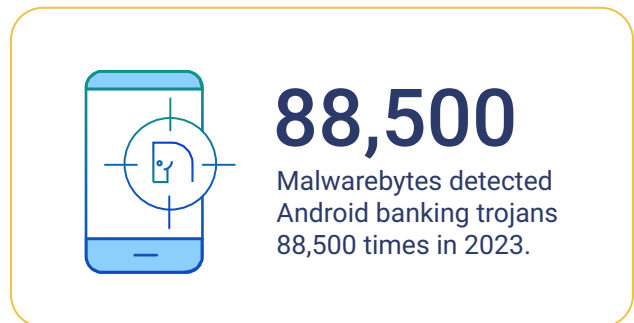
[Managed Detection & Response \(MDR\)](#) identifies and investigates suspicious behavior on your network; App Block denies attackers access to their tools; Website Content Filtering blocks attackers' access to command-and-control servers.

## 7. Android banking trojans

Banking trojans are one of the most serious threats facing Android devices. Sophisticated and stealthy, they combine clever technical and social engineering tactics to fool users and evade Google Play’s protections so they can steal money straight out of your bank accounts.

Banking trojans come disguised as regular apps like QR code scanners, fitness trackers, or even copies of popular applications like Instagram. Once installed, the apps may test their environment to ensure they’re on a genuine device and not in a researcher’s lab. Tests can include looking for a SIM card or making sure they’re not running on a rooted device or in an emulator. If the banking trojan’s conditions are met, it deploys a second, malicious app.

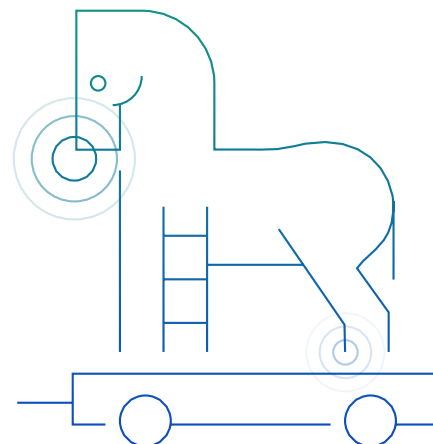
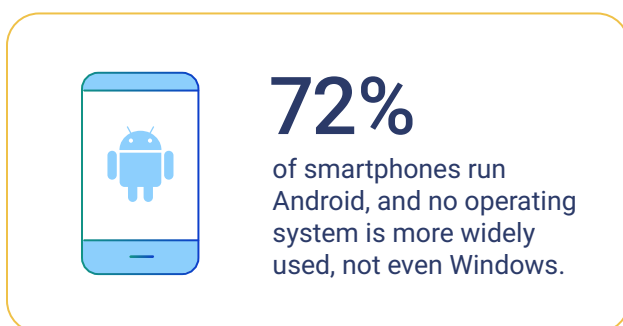
The malware may check if they are running on a rooted device or in an emulated environment, if there is a SIM card, and make other environmental checks in order to avoid reverse engineering. Or the malware may sleep for a while and then download malicious code with an update trying to avoid Google Play Protect’s security checks.



Some do this by downloading the app from an external server. To circumvent network-based detection systems, they may use a legitimate hosting platform such as Discord’s Content Delivery Network (CDN).

Others trojans are “droppers” that already have the second app inside them. Third-party services like Zombinder use a sophisticated binding mechanism to hide a malicious payload inside a benign host application.

The malicious app is surreptitiously installed on the target device, typically hiding itself with a blank icon and a blank entry when a user tries to read through the app’s info.

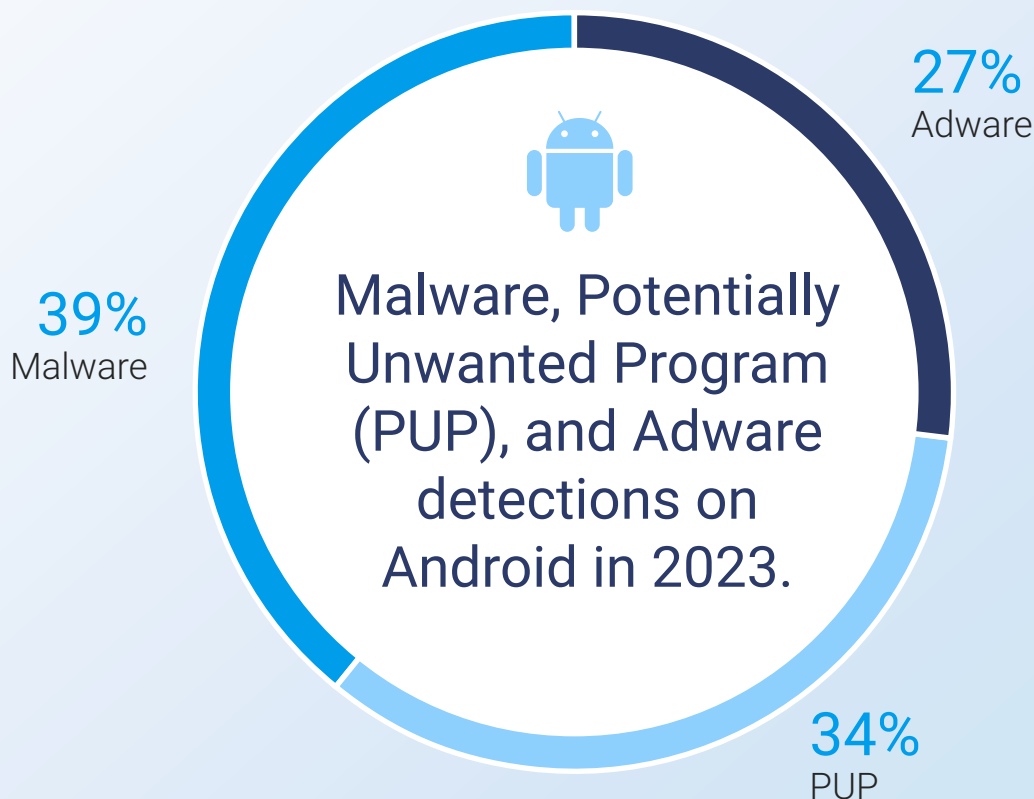


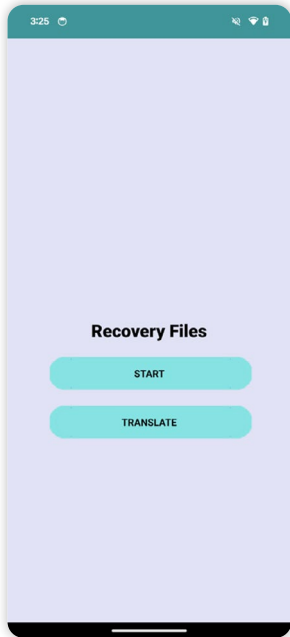
Once installed, the malicious app prompts the user to grant accessibility services under the guise of enhancing application functionality. This allows it to monitor other apps and overlay them with fraudulent interface layers. The overlays capture personally identifiable information (PII), such as passwords.

The app also implements a stealthy interception mechanism to capture Multi-Factor Authentication (MFA) tokens from SMS messages, without alerting the user.

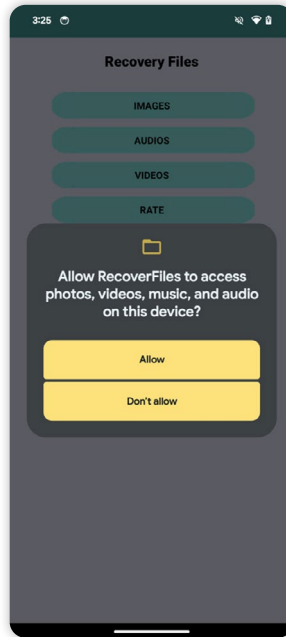
Once it has accessibility permissions, the malware initializes its Automated Transfer System (ATS) framework, a complex set of scripts and commands designed to perform automated banking transactions without user intervention.

The ATS framework uses the harvested credentials to initiate unauthorized money transfers to accounts held by the attacker. This mimics real user behavior to bypass fraud detection systems.





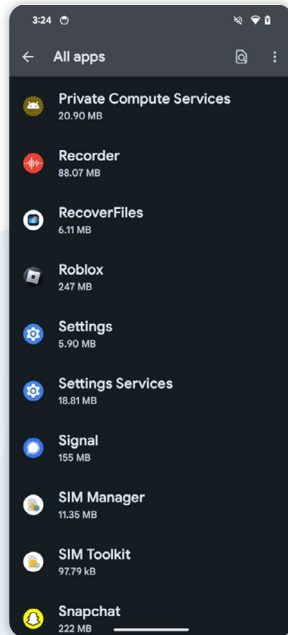
The startup screen of a banking trojan hidden inside a file recovery app.



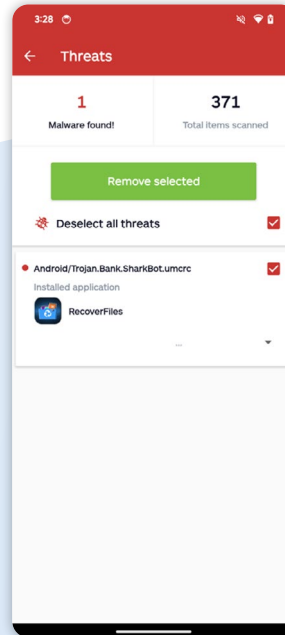
The app asks for permission to access files, to map and talk to other apps, and to send payments via Google Play.



It has no icon after installation.



However, the app can be seen in the app list.

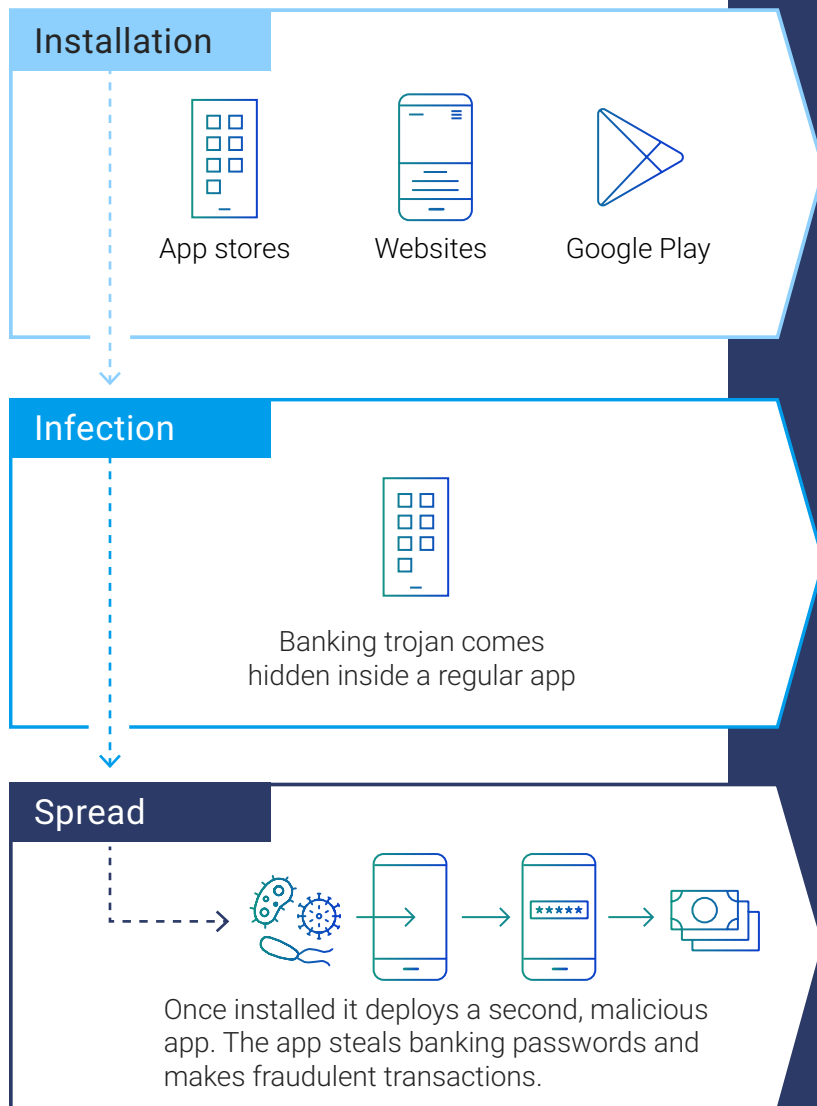


Malwarebytes detects the app as the SharkBot banking trojan.



Banking Trojans are sophisticated and stealthy threats that come disguised as fully functioning regular apps. They copy your banking passwords and use them to quietly steal money straight from your accounts. Defending against Banking Trojans requires best-in-class mobile protection that can detect and remove malware from Android devices.

### Banking trojan attack phases



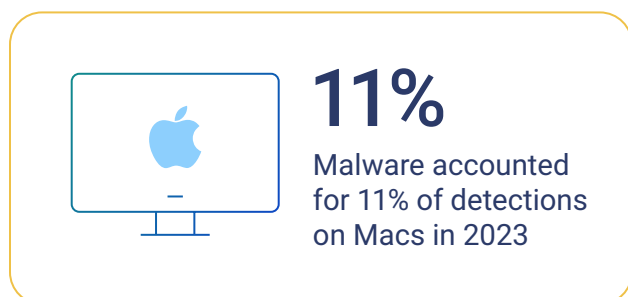
### Protection with ThreatDown

Mobile Security detects and removes banking trojans and other Android malware.

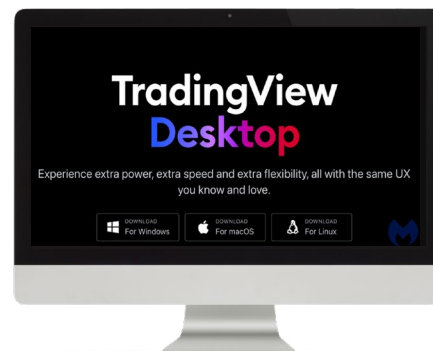
## 8. New Mac malware tactics

Contrary to outdated beliefs, malware has always existed for Macs. It's just that the type of detections that most frequently plague Macs are different. Instead of cybercriminals leaning most heavily on ransomware, bad actors generally favor aggressive, unwanted adware for making money on the platform. In 2023, Mac malware adopted a number of tactics that reminded us there is no intrinsic "Apple magic" that stops the malicious tools and tactics that work on Windows machines from working just as well on Macs.

Cybercrime follows the money, and Windows home computers—and networks of Windows business machines—have historically been a much bigger, more connected, and more lucrative target for cybercrime. However, there is every reason to think this is changing. Demand for Macs has grown despite declining PC sales, and Apple's macOS, in its many forms, now represents a [31% share](#) of US desktop operating systems, while a quarter of businesses run Macs at least somewhere on their networks.



There are signs that criminals are taking note, adapting to the platform's increasing popularity by including Mac options in their attack chains and enabling attacks to target both Windows and Mac users at the same time.



### A malvertising site delivers malware downloads for Windows, Mac, and Linux.

In September, Malwarebytes discovered a cybercriminal campaign [spreading Atomic Stealer](#) (AMOS) malware to Mac users through malicious ads purporting to sell the financial market tracking app TradingView.

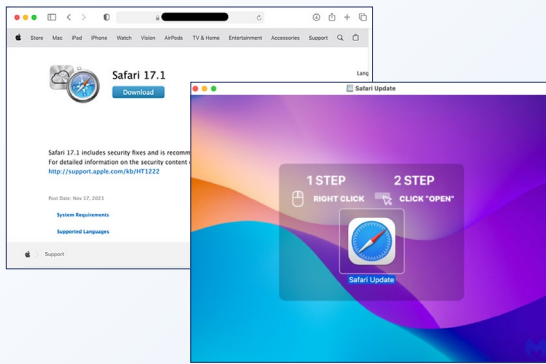
The malicious ad directed victims to an authentic-looking, branded TradingView decoy site with separate download buttons for Windows, Mac, and Linux. Windows and Linux users got the NetSupport Remote Access Trojan, while Mac users got Atomic Stealer.

AMOS is an info stealer for Mac that can harvest passwords, browser data, cookies, files, and cryptocurrency. Cybercrime campaigns that utilize AMOS can control the info stealer via a web-based administration console that is sold "as-a-service" (similar to legitimate cloud applications) for \$1,000 per month.

In November, the ClearFake fake browser update chain was also [discovered distributing AMOS](#). ClearFake uses compromised websites to trick users into downloading malware disguised as a browser security update.

The campaign infrastructure determines what browser the victim is using to ensure they see an appropriately branded update. Fake browser updates typically target Windows users and the appearance of Safari-themed pages spreading malware for macOS is a new development.

The incremental cost of adding a macOS option to an established Windows malware distribution chain is low. If Macs continue to buck the trend for declining PC sales in 2024, targeting the platform will become an increasingly easy choice for cybercriminal businesses to make.

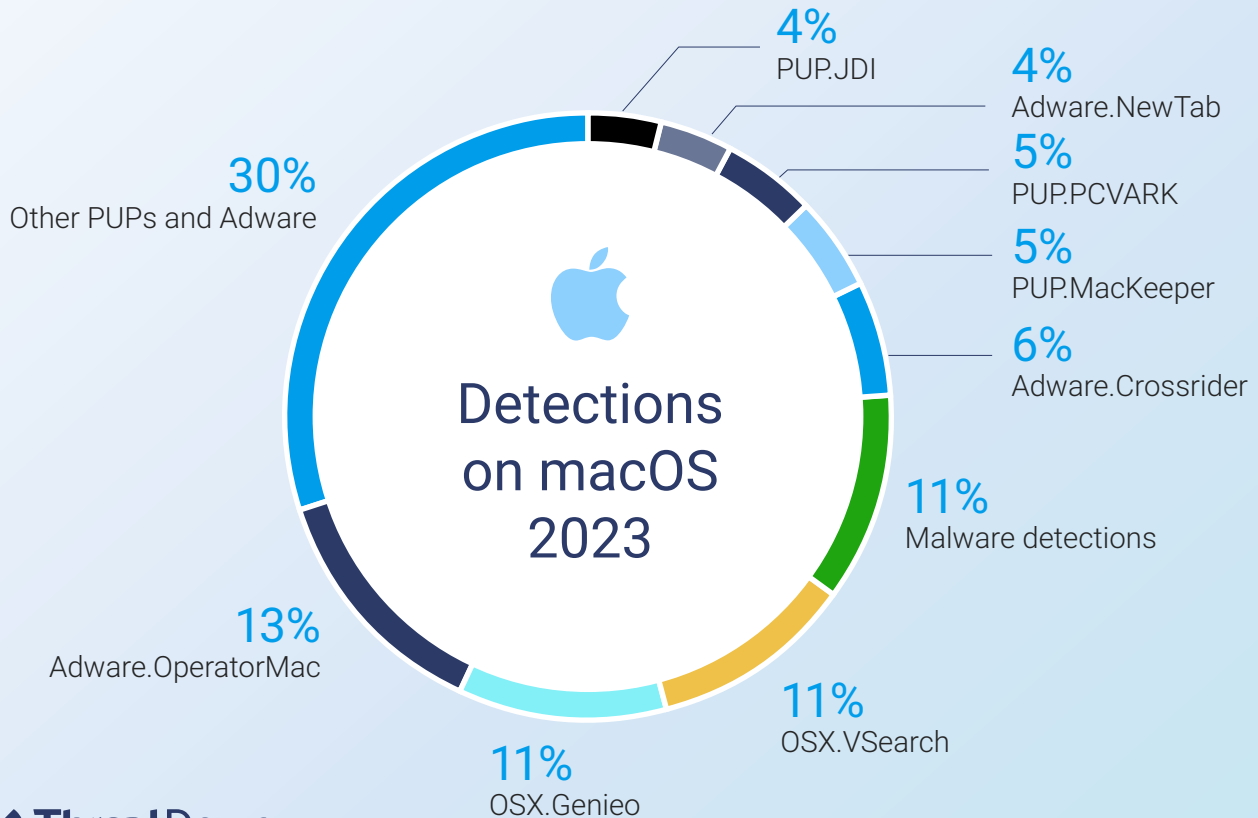


A fake Safari update mimics the official Apple website and is even available in different languages.



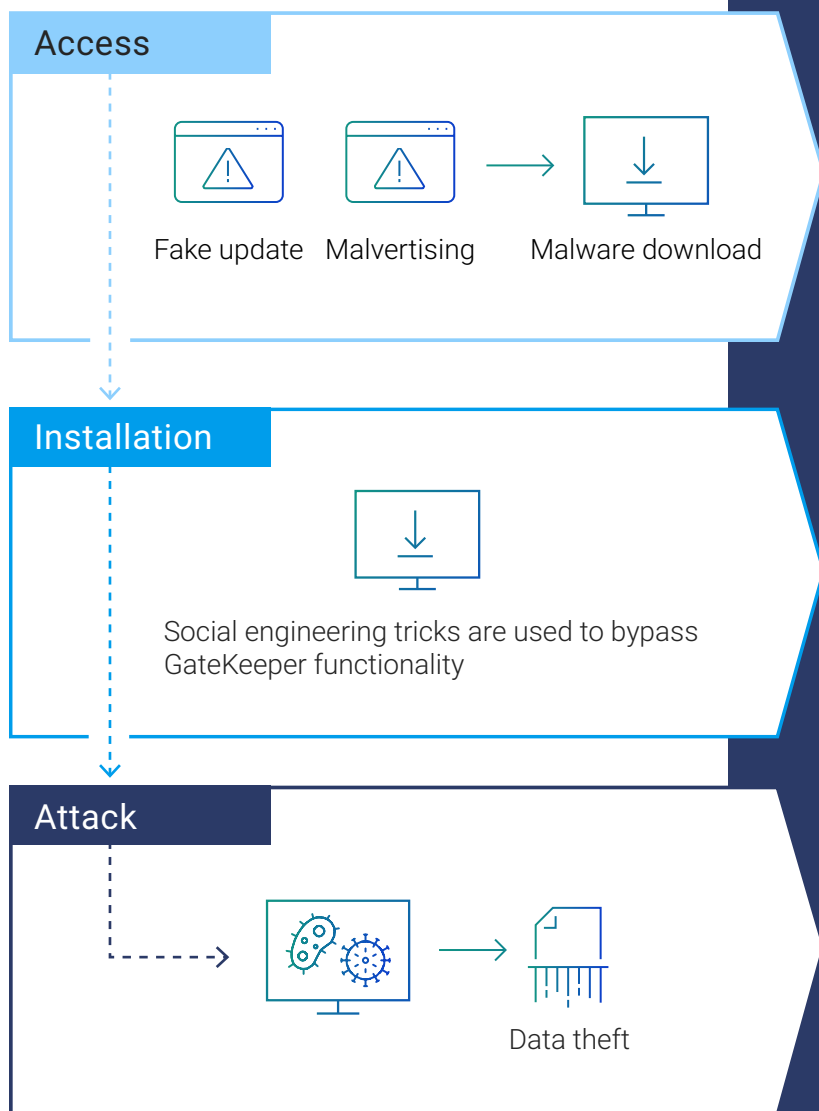
**LOCKBIT 3.0**

In April, researchers stumbled upon a [Mac version of LockBit](#), the world's most dangerous ransomware. Although the tool was experimental, the LockBit ransomware group said its Mac ransomware was "actively being developed."



As Macs become more popular, cybercriminals are adding Mac options like Atomic Stealer to their malvertising and fake browser updates campaigns. Defending against Mac malware requires a Next-gen AV capable of detecting Mac malware.

### Atomic Stealer attack phases



### Protection with ThreatDown

[Website Content Filtering](#) can block sites used for malvertising and fake updates.

[Next-gen AV](#) can stop Mac malware.

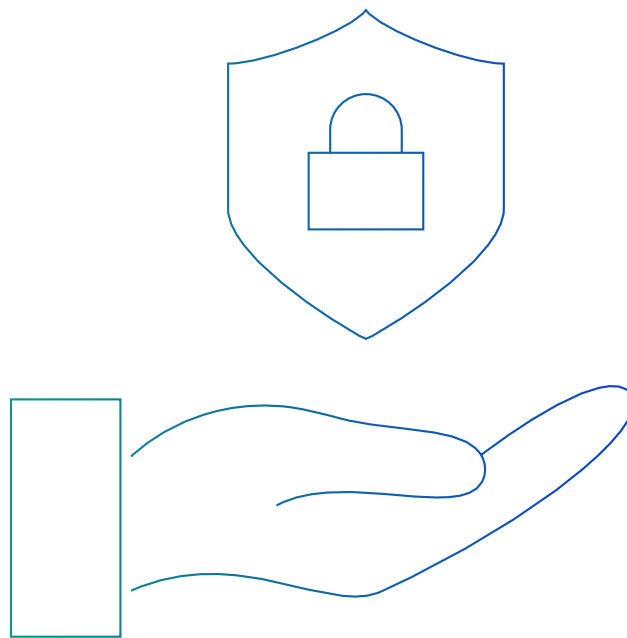
## 9. How to prepare

As we progress into 2024, the reality is that the tight budgets of many educational institutions forcing them to struggle with outdated equipment and limited staff. It's safe to say that threat actors see education an easy target for all types of attacks, especially ransomware and malvertising.

Not only are ransomware attacks increasing for all sectors in general, but we're witnessing the rise of 'niche' groups such as Vice Society/Rhysida that disproportionately attack educational

institutions. Unfortunately, unless one of these two factors change, there's good reason to believe the increasing trend will only continue in 2024.

No matter the size of your educational institution, in 2024 your success in pairing state of the art security software with skilled security staff will be a deciding factor in your ability to take down the most serious cyberthreats.



# 10. Introducing ThreatDown Bundles

ThreatDown addresses today’s evolving cybersecurity challenges with Malwarebytes award-winning technologies and services that offer protection across the entire attack cycle: from attack surface reduction; to prevention, detection, and response; and full remediation

## ThreatDown Core

**Core** delivers comprehensive prevention against malware, zero-day threats, and more. **Core** includes award-winning technologies that appreciably simplify endpoint protection management

## ThreatDown Advanced

**Advanced** delivers superior protection in a single, easy-to-use solution at a price that makes sense. Purpose-built for organizations with small security teams with limited resources, **Advanced** includes award-winning technologies that appreciably simplify endpoint protection management.

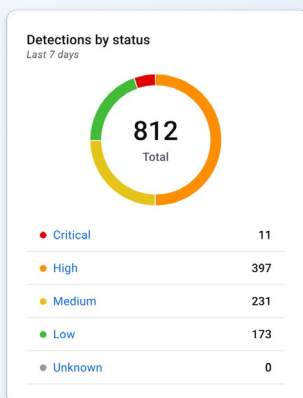
## ThreatDown Elite

**Elite** delivers comprehensive protection in a single solution that offers unparalleled ease of use at a price that makes sense. Purpose-built for organizations with small (to non-existent) security teams that lack the resources to address all security alerts, **Elite** includes award-winning technologies and 24x7x365 expert-managed monitoring and response

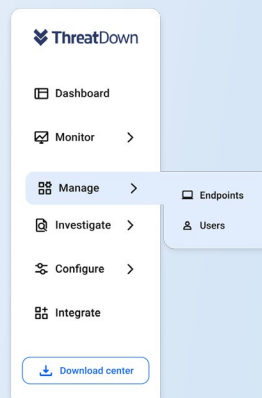
## ThreatDown Ultimate

**Ultimate** delivers the most comprehensive protection across the attack cycle from superior attack surface reduction to fully-managed 24x7x365 prevention, detection, response, and full remediation.

### Take threats down.



### Take complexity down.



### Take costs down.

- Elite**
- ✓ Incident response
  - ✓ Next-gen AV
  - ✓ Device control
  - ✓ Block unwanted applications
  - ✓ Vulnerability Assessment
  - ✓ Ransomware Rollback
  - ✓ Endpoint Detection & Response
  - ✓ Patch Management
  - ✓ Managed Threat Hunting
  - ✓ Managed Detection & Response
- Optional add-ons:**
- ⊗ Elite for Servers
  - ⊗ Mobile Security

## We get it - security is hard. Security products shouldn't be.

See the capabilities in each ThreatDown Bundle to address the six critical cyberthreats.

What you get	Core	Advanced	Elite	Ultimate
Incident response	✓	✓	✓	✓
Next-gen AV	✓	✓	✓	✓
Device control	✓	✓	✓	✓
Block unwarranted applications	✓	✓	✓	✓
Vulnerability Assessment	✓	✓	✓	✓
Ransomware Rollback		✓	✓	✓
Endpoint Detection & Response		✓	✓	✓
Patch Management		✓	✓	✓
Managed Threat Hunting		✓	✓	✓
Managed Detection & Response			✓	✓
Website Content Filtering				✓
Add-Ons	✓	✓	✓	✓

### Try ThreatDown Bundles today!

Let us take care of your endpoint security. Deploy the solution that delivers superior defense, easiest to use management, and the best value for your security investment.

[Get started](#)





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