COULD YOUR BUSINESS SURVIVE A CRYPTOR?

Learn how to guard against crypto-ransomware

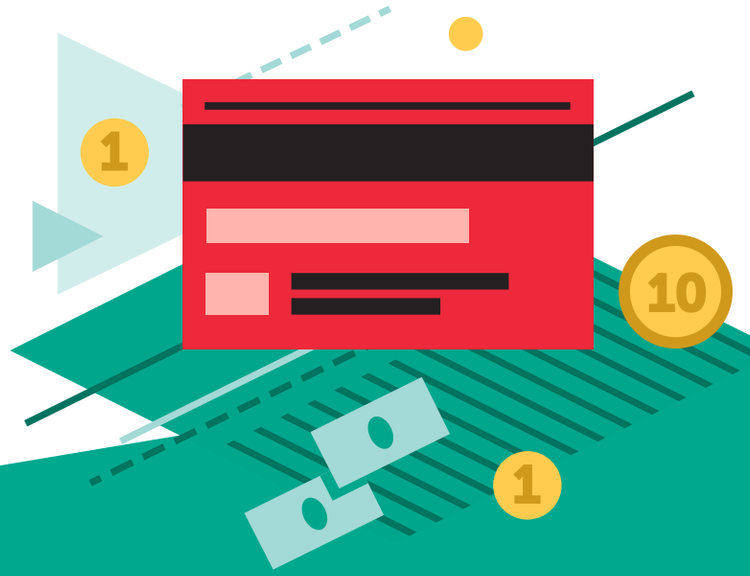
usa.kaspersky.com/business-security

WHAT IS RANSOMWARE?

The days of simple malware developed by mischief-seeking amateurs are long gone. Organized crime lies behind much of today's malware. And the focus is on making money.

As its name suggests, ransomware is a specific type of malware that tries to extract a ransom payment in exchange for unblocking access to an asset that belongs to the victim.

In the case of crypto-ransomware–or cryptors–the 'kidnapped' assets are the files and data that are stored on the infected device. The cryptor encrypts the victim's data into an unreadable form, and the data can only be decrypted by using the necessary decryption key. But that key is only released by the criminal after the victim has paid the ransom demand.



A cryptor will often display a dialogue box that states the encryption has been carried out as a result of an illegal act by the victim. Often the message will claim to be from the police or FBI.

CRYPTOR ATTACKS: DOING DAMAGE TO BOTH CONSUMERS AND BUSINESSES

Whereas consumers are typically faced with ransom demands of $300 to $500, cybercriminals demand much higher ransom charges for businesses where data is a highly valuable commodity.

If one of your devices is infected, the attacker will normally give you 48 to 72 hours to pay the ransom. If you don't pay within the deadline, the price for decryption is likely to increase. After a second deadline passes and the payment is still not made, it's likely that the decryption key will be deleted. At that point it may be impossible to recover your files in a readable form.

Even if you do pay the ransom, there's no guarantee your data will be unencrypted. Some cryptors contain software bugs that may cause them to malfunction–so the decryption process fails. In other cases, the ransomware variant simply does not have decryption functionality. Instead, the criminals simply intend to take the victims' money.

40% of CryptoLocker victims agreed to pay the ransom, according to a February 2014 survey by the University of Kent's Interdisciplinary Research Center.

"A modern cryptor will often perform a number of additional actions that prevent the recovery of encrypted data–including deleting or encrypting Shadow Copies used for storing System Restore Points and regular Windows backups."

– **Andrey Pozhogin**, Cybersecurity Expert, Kaspersky Lab

KASPERSKY SOLUTION

System Watcher, our crypto-malware countermeasure subsystem that negates the consequences of crypto-attacks by making local, protected backup copies of user data files as soon as they are opened by a suspicious program

HIGH COSTS FOR BUSINESSES: WHY THE RANSOM PAYMENT IS JUST THE BEGINNING

Despite criminals often demanding bigger payments from business victims, the ransom may only represent a small portion of the overall costs to the business. The inconvenience of the attack can result in much larger financial losses.

Imagine losing access to all of your sales records, customer files, accounting data, product information and design data. How would your business cope? And if it could cope, how much revenue would you lose while your team is trying to get everything back on track?

In today's 'information age', any temporary loss of data can totally disrupt business-critical processes, leading to:

- Lost sales
- Reduced productivity
- Significant costs for system recovery

However, the permanent loss of data can have much more severe consequences:

- Permanently damaging the company's competitive position
- Reducing sales revenues over the long term
- Preventing ongoing access to intellectual property and design data

This can put the entire business in jeopardy.

TOP TIP

If your business is attacked, beware of false remedies promoted on the Internet. These may only add to your problems.

1. Often, they don't work and just take more money from the victim.
2. Some "remedies" can even download additional malware onto the victim's network.

THERE ARE MORE CRYPTOR ATTACKS THAN EVER BEFORE

In the first six months of 2015, the number of crypto-attacks equalled the volume experienced in the whole of 2014.

Source: Kaspersky Security Network

Here are just a few examples of recent cryptors:

CoinVault–uses 256-bit AES to encrypt victims' files

CryptoLocker–has infected tens of thousands of machines and generated millions of dollars for criminals

CryptoWall–often doubles the ransom demand, if payment is not made within the initial time period

TorLocker–encrypts data and uses the Tor network to contact the criminals that launched the attack

Despite the increase in ransomware attacks, a recent survey found that only 40% of companies consider ransomware to be a serious danger.

Obviously, this attitude is a security weakness that can be exploited by cybercriminals.

Source: Kaspersky Lab Global IT Risks Survey 2015

HOW A CRYPTOR ATTACKS

Like most other types of malware, there are many ways in which a cryptor can find its way onto computers and other devices.

However, two of the most common ways are:

Phishing spam: where the victim receives an email that contains an infected attachment or includes a link to a phishing website.

Water holing: whereby visiting a legitimate website that is popular with a specific type of user or job role can result in the employee's device becoming infected. In these cases of 'Drive-By' infection, the website will have already been infected with malware that is ready to exploit vulnerabilities on visitors' devices.

WHAT THEY ATTACK

It's worth remembering that a cryptor can attack a wide range of devices, including:

- PCs
- Mac computers
- Android tablets and smartphones
- Virtual desktop infrastructure (VDI)

Furthermore, if the device under attack is also attached to a network drive, then shared corporate files can also be compromised. The shared files are likely to be encrypted also, regardless of which operating system the file server is running under.

No matter what device is being attacked, administrator rights are not required in order for the cryptors to carry out their most malicious actions.

TODAY'S CRYPTORS ARE MORE DANGEROUS

THE FIRST CRYPTORS

When the first cryptors were unleashed, it was often possible to reverse their effects.

Sometimes the decryption key was actually hidden within the infected device. Fixing it was just a matter of finding the key and unlocking the data.

For some other attacks, security experts could reverse engineer the malware and find ways to decrypt the data.

CRYPTORS HAVE EVOLVED

Today's cybercriminals are no longer making basic errors. They're using much more complex techniques that can be extremely difficult to reverse. Even in cases where reverse engineering is possible, it is unlikely that the decryption key can be found on the attacked device.

ONE DEVICE DECRYPTION

The majority of cryptors now generate a unique decryption key for each attacked device. So, even if you do gain access to one decryption key, it won't help you decrypt files on other devices.

These encryption techniques are increasingly sophisticated and make it virtually impossible to decrypt the data. They include:

- Combined RSA/AES method that allows high data encryption speed—using the AES algorithm—and later encrypts the AES key with the powerful RSA algorithm

- Elliptic curves algorithms that enable even deeper levels of encryption while retaining the speed

COVERING THEIR TRACKS

The cybercriminals that launch cryptors are also devoting more resourses to frustrating the efforts of law enforcement agencies, so it's getting harder to track down and close modern crypto-operations:

- Payment is typically requested in Bitcoin or other digital currencies, so that the payment trail is not easy to trace
- Use of anonymizing mechanisms–such as the Tor network–make it virtually impossible to trace the location of the criminals

HOW TO PROTECT YOUR BUSINESS

When it comes to dealing with the risk of a cryptor attack, you have two choices:

1. Hope you're not attacked. But with the increasing number of cryptors, that's not really a viable option.
2. Follow some easily applied rules to keep your data safe and your business operations up and running.

EDUCATE YOUR USERS

People are often the most vulnerable element in any business. Teach your employees about IT security basics, including:

- Awareness of phishing and spear-phishing risks
- The security implications of opening any email attachment that looks suspicious–even if it appears to be from a trusted source

REGULARLY BACK UP DATA AND VERIFY THE RESTORABILITY OF YOUR BACKUPS

Almost all businesses will already have data backup policies. However, it's essential that you back up your data onto an offline backup subsystem–instead of just copying files to another 'live' system on your corporate network. Otherwise, a cryptor will be able to encrypt your backup files.

Establish a 'backup and disconnect' policy–so you're not just copying data onto a permanently connected file server.

PROTECT ALL DEVICES AND SYSTEMS

Because cryptors don't just attack PCs, you'll also need to ensure your security software can protect your Mac computers, virtual machines and Android mobile devices.
It's also worth ensuring you have sufficient protection installed on your email system.

DEPLOY AND MAINTAIN SECURITY SOFTWARE

As with all malware prevention, your watchword should be 'update early and update often' so you:

- **Update all applications and operating systems**–to eliminate newly discovered vulnerabilities
- **Update the security application and its anti-malware database**–to ensure you benefit from the latest protection

Try to select a security solution that includes tools that let you:

- **Manage the use of the Internet**–for example, according to job role
- **Control access to corporate data**–again, according to job or department
- **Manage the application start-up and privilege control**–using Application Control technologies that help you block or permit programs

"Cybercriminals are becoming more and more skilled at developing ransomware that can operate without being noticed, and they have many tools and techniques at their disposal to ensure that the ransomware isn't discovered by the victim."

– **Andrey Pozhogin**, Cybersecurity Expert, Kaspersky Lab

GET AWARD-WINNING SECURITY

Kaspersky Lab products deliver multi-layered security solutions that defend your business against known, unknown and advanced threats, including cryptors.

We deliver updates for our security agent and anti-malware database much more frequently than most other security vendors can achieve. In addition, Kaspersky Endpoint Security for Business includes proactive, heuristic and behavioral techniques as well as cloud-assisted technologies for an extremely rapid response to new threats.

Many of our products also offer a whole host of additional security tools and technologies.[1]

SYSTEM WATCHER[2] INCLUDING CRYPTO-MALWARE COUNTERMEASURES TECHNOLOGY

System Watcher monitors the behavior of all programs running on your systems–and compares each program's behavior with models of typical malware behavior.

If any suspicious behavior is detected, System Watcher will automatically quarantine the program. Because System Watcher keeps a dynamic log of the operating system, registry and more, it helps enable the roll back of malicious actions that were implemented before the malware was identified.

In addition, System Watcher constantly monitors access to some types of files–including Microsoft Office documents–and temporarily stores copies if any of these files are modified or deleted. If System Watcher detects that it was a suspicious process–such as a cryptor–that was accessing the files, the temporary 'backups' can be used to revert the files to their unencrypted form. Although the temporary backups generated by System Watcher are not intended as a replacement for running a full data backup strategy, they can be valuable in helping you to guard against the effects of a cryptor attack.

Working in conjunction with System Watcher, Application Privilege Control also enables administrators to limit the critical system resources that applications are permitted to access, including low-level disk access to the disk.

VULNERABILITY ASSESSMENT AND PATCH MANAGEMENT[3]

Vulnerabilities–or bugs–within any of the applications and operating systems running on your devices can provide entry points for malware attacks, including cryptors.

Our automated Vulnerability Assessment and Patch Management tools can scan your systems, identify known vulnerabilities and help you to distribute the necessary patches and updates so that known security vulnerabilities can be eliminated.

AUTOMATIC EXPLOIT PREVENTION (AEP)[4]

Our AEP technology also helps to stop malware exploiting vulnerabilities within applications and operating systems. It specifically monitors the most frequently targeted applications–including Adobe Reader, Internet Explorer, Microsoft Office and Java–to provide a powerful, additional layer of security.

Security experts are sometimes able to find a vulnerability within a cryptor–and then exploit the vulnerability to help victims recover their files.

Kaspersky Lab recently partnered with the National High Tech Crime Unit (NHTCU) of the Netherlands Police to create a repository of decryption keys and a decryption application for victims of CoinVault.

1. Security features vary for different types of system / platform. For full details, please see www.kaspersky.com/business
2. System Watcher is available in Kaspersky Endpoint Security for Business (Select, Advanced and Total) and KSV|Light Agent. Windows Workstation Operating Systems only, server platforms are not supported. Not Available for Mac and Android devices
3. Vulnerability Assessment and Patch Management are included in Kaspersky Total Security for Business, Kaspersky Endpoint Security for Business Advanced and Kaspersky Systems Management
4. AEP is part of System Watcher functionality

Kaspersky Lab's innovative security products and technologies win more awards than other security vendors' offerings.

In 2014, our products achieved first place in 51 out of 93 independent tests and reviews

Kaspersky Lab | 2014
#1 in 51 independent tests

*usa.kaspersky.com/awards

APPLICATION CONTROL AND WHITELISTING

Flexible Application Control tools, plus Dynamic Whitelisting, include a number of categories that allow for flexible start-up control. In addition, you can also have privilege control that allows you to limit access to specific data on a computer for restricted applications–while still allowing them to start.

In addition to blocking blacklisted programs, you may choose to implement Default Deny policy for some of your workstations and servers so that only applications that are on your whitelist are allowed to run. And that means cryptors will automatically be blocked.

WEB CONTROL

Easy-to-use tools give you the flexibility to set up Internet access policies and monitor Internet usage, according to your own specifications. You can prohibit, allow or audit users' activity on individual web sites or any number of categories, such as social networks, games or gambling sites. So, there is less likelihood of users visiting a website that has been infected with a cryptor.

ANTI-PHISHING

Our cloud-assisted anti-phishing engine helps to prevent your employees becoming victims of phishing and spearphishing campaigns that can lead to cryptor infections.

EMAIL SYSTEM SECURITY

Kaspersky Security for Mail Server scans incoming, outgoing and stored mail on Microsoft Exchange, Linux Mail and Lotus Domino mail servers.

Our advanced, cloud-assisted anti-spam engine and anti-phishing engine help you to eliminate distractions and protect against cryptors and other threats.

HELPING YOU PROTECT ALL YOUR ENDPOINTS[1]...AND MORE

We have solutions for protecting a wide range of endpoints:

- PCs
- Mac computers
- File servers
- Mobile phones and tablets
- Virtual servers
- Virtual Desktops Infrastructure (VDI)

Plus security for Internet gateways and collaboration servers.

1. Security features vary for different types of system / platform. For full details, please see www.kaspersky.com/business

TRY KASPERSKY LAB

Discover how Kaspersky Lab's premium security can protect your business from malware and cybercrime with a no-obligation trial. Register today to download full product versions and evaluate how successfully they protect your IT infrastructure, endpoints and confidential business data.

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ABOUT KASPERSKY LAB

Kaspersky Lab is one of the world's fastest-growing cybersecurity companies and the largest that is privately-owned. The company is ranked among the world's top four vendors of security solutions for endpoint users (IDC, 2014). Since 1997, Kaspersky Lab has been an innovator in cybersecurity and provides effective digital security solutions and threat intelligence for large enterprises, SMBs and consumers. Kaspersky Lab is an international company, operating in almost 200 countries and territories across the globe, providing protection for over 400 million users worldwide. Learn more at usa.kaspersky.com.

Contact Kaspersky Lab today to learn more about Kaspersky Endpoint Security for Business and our other IT security solutions and services:
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