VEEAM

Ransomware: A modern threat to modern data

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Technology continues to grow, changing how enterprises conduct business and how people live their lives. Now, think about the data that drives that change. It's essential data is always available. It's important for the person doing their banking on their phone, for the person shopping online, and the person using GPS while driving to their destination. We are more dependent on data than ever before. So, you can imagine how devastating it would be for someone to hold that data for ransom.

Ransomware is one of the most serious and prevalent threats to modern data. When fundamental operations are disrupted, businesses find their hands tied and their capabilities lost to customers. According to a recent report from Cyber Security Ventures, an organization fell victim to ransomware every 14 seconds in 2019, and it's expected to be every 11 seconds in 2021. The ransom amount has increased too. In mid-2018, the average ransomware payment was $41,198. By late-2019, that price more than doubled to $84,166.

If you haven't been taking ransomware seriously, you should.

What is ransomware?

Ransomware is a maliciously-created malware that finds and encrypts an organization's files and storage. Through entry points like phishing emails, users can unintentionally allow this attack into their organization.

Cybercriminals use this malware to extort money from the organization. Once data has been compromised, companies are given the option to pay a usually high ransom to unencrypt the data or rely on backup to restore. However, many ransomware attacks also seek out all production and backup files and documents. By encrypting those too, the attack leaves the organization no choice but to meet the cybercriminals' demands.

While there are many variations of ransomware today, the three main ones most organizations come across are:

Ryuk

First discovered in August 2018, Ryuk immediately turned heads after disrupting operations of a major US-based newspaper publisher. While it was eventually quarantined, Ryuk reinfected and spread onto connected systems in the network because the security patches failed to hold when tech teams brought the servers back. Detections of Ryuk increased by more than 500% in Q1 2019 over the previous quarter; by Q4 2019, detections were up another 43%.

Phobos

Phobos ransomware appeared in the beginning of 2019. It has been noted that this new strain of ransomware is strongly based on the previously-known Dharma (aka CrySIS) family and was probably distributed by the same group as Dharma. Phobos is one of the ransomware types distributed via hacked Remote Desktop (RDP) connections. Hacked RDP servers are a cheap commodity on the underground market, and can make for an attractive and cost-efficient dissemination vector for threat groups.

Sodinokibi

Sodinokibi is a Ransomware as a Service (RaaS) threat model that first appeared in May 2019. Sodinokibi has shown to be nearly as much of a threat as Ryuk, with high spikes of detections that outweigh what we've seen with other business-focused ransomware families in 2019, such as Phobos. Since its introduction, Sodinokibi detections have increased by 820%, a foreboding number as we look ahead.

The real cost of ransomware

Ransomware is no longer a question of *if*, but *when*.

$67,000
average cost per hour of downtime (USD)

50%
persentage of new data not fully protected

$84,166
average recovery cost per attack (USD)

93%
organizations attacked every year

These are some scary figures, and organizations have a right to be worried. Data growth is exploding, and by 2023, 60% of the new data created will require some level of protection, but only half will have it. This feels like we're on a path to destruction, however, with the right ransomware investments, organizations can feel confident that, even if attacked, they can respond with little or no cost (or availability issues) to the business.

96%
of Veeam customers cut their average ransomware recovery costs under $5,000

76%
of Veeam customers have to spend NOTHING AT ALL

Ready for the fight

If you want to win a ransomware battle, here are three strategies you can use to make sure you have the resiliency you need: Education, implementation and remediation

Education: Education is paramount to ransomware prevention. Whether it is assessing the phishing risk of an organization, removing the most common attack vectors, or keeping systems and software up to date, taking these steps is essential. There are two major targets from an education perspective: IT staff and organizational users. It's important to work with both groups since threats can be introduced quickly through these audiences quite accidentally. RDP and software updates, which are activities IT frequently engage in, are primary opportunities for a ransomware attack. Also, phishing through direct email remains the #1 source of most ransomware attacks. Through greater education to these audiences on best protection practices, ransomware threat can be significantly lowered.

Implementation: Regarding ransomware resiliency, implementing a backup solution is a lot like going through a compliance audit. A product is not necessarily compliant or non-compliant to a standard. Rather, compliance is completely dictated on how the product is implemented and audited. When it comes to a ransomware incident, resiliency is completely based on how the backup solution is implemented, the behavior of threat and the course of remediation.

As an important part of ransomware resiliency, implementing your backup infrastructure is a critical step. Implementation recommendations for ransomware resiliency include:

- Protection of the backup server and components
- Implementing capabilities for ransomware detection
- Ultra-resilient backup storage and the 3-2-1 Rule
- Multiple recovery techniques configuration
- Endpoint protection
- NAS protection
- Encryption of backup data
- Orchestrated recoveries of backups and replicas

Remediation: Despite all the education and implementation techniques that are employed to be resilient against ransomware, organizations should be prepared to remediate a threat if introduced. At Veeam we have agreed upon the approach to remediating ransomware as:

- Do not pay the ransom
- The only option is to restore data

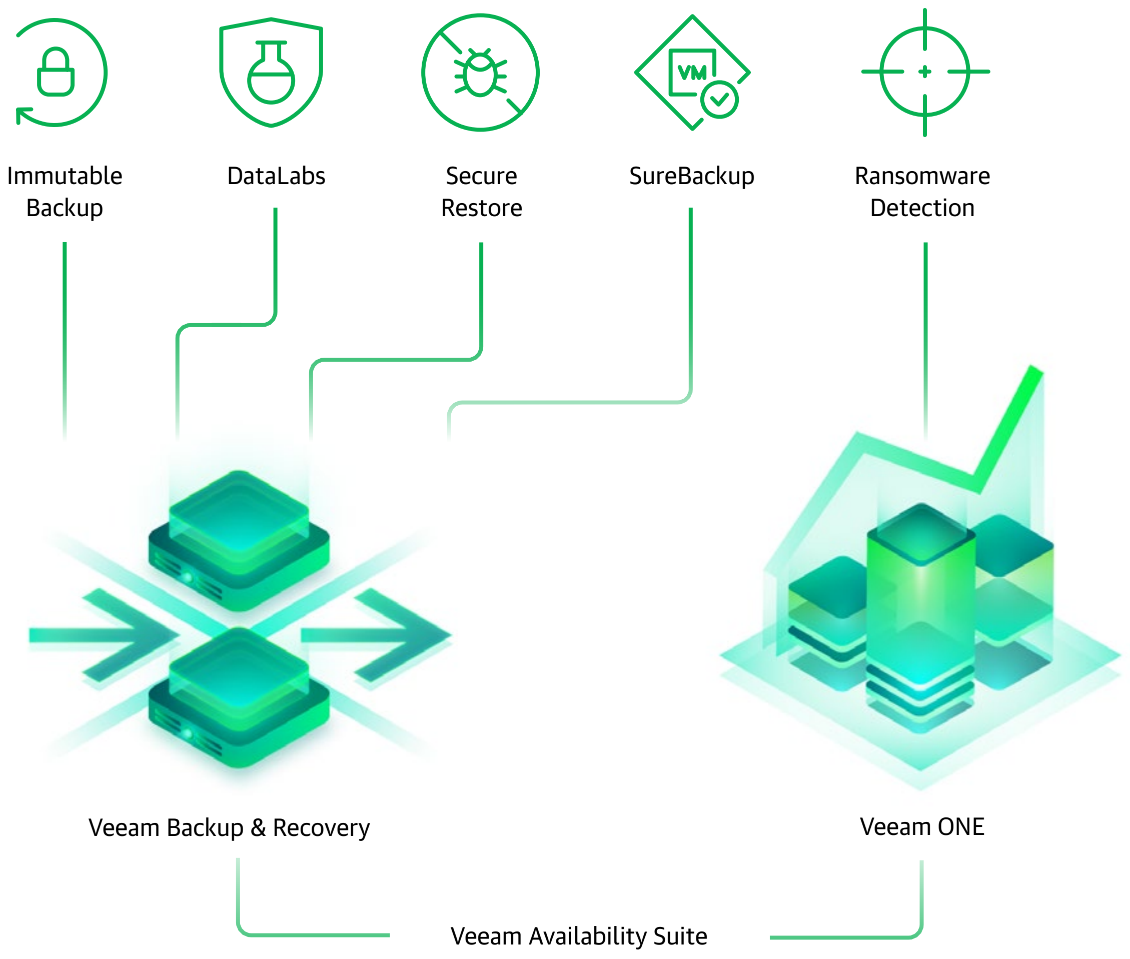
With the recommendations previously outlined, organizations should be prepared to have layers of resiliency to defend against a ransomware incident. What organizations may not have thought about is specifically what to do when a threat is discovered. When a ransomware attack occurs, look to follow a strong remediation plan, including:

- **Support:** Tap into your backup vendor support organization. For example, Veeam has specific operations to guide customers through data restores in ransomware incidents.
- **Communication:** In disasters of any type, communication becomes one of the first challenges to achieve. Have a plan for how to communicate to the right individuals out-of-band.
- **Experts:** Have a list of security, incident response, identity management, (etc.) experts that are ready to be contacted if needed. They can be within the organization or external experts.
- **Chain of decision:** One of the hardest parts of recovering from a disaster is decision authority. Who makes the call to restore, to fail over, etc.? Have business discussions about this beforehand.
- **Ready to restore checks:** When the conditions are right to restore, implement additional safety checks before putting systems on the network again.
- **Restore process and options:** Depending on the situation, maybe a whole VM recovery is best. Possibly a file-level recovery makes sense.
- **Restore safety:** Trigger an antivirus scan of the backup image or file before the restore completes. Use the latest antivirus and malware definitions and perhaps an additional tool to ensure a threat is not reintroduced.
- **Force password resets:** Users don’t like this, but implement a sweeping forced change of passwords.

By properly following these steps, companies can learn where threats lurk, how to build a resilient IT environment and how to secure safe restores. Trying to play catch up with your protection during a ransomware attack will be a disaster. These preventive measures are the best way to fight ransomware and avoid data loss, financial loss, business reputation damage and more.

Veeam ransomware capabilities

Veeam prides itself on being in the front lines, fighting the good fight against ransomware. Veeam offers transparent and actionable strategies on how to educate employees, rotate backup copies across several locations, and leverage cloud options for making your backups practically immutable.



Protecting backup data from attack

Air-gapped or "immutable" backups offer a powerful technique for being resilient against ransomware and other threats. Enabling a replica of your backup, stored out of reach from cyberattacks, utilizing controls that ensure deletions or changes cannot happen without strict multi-level approvals. Veeam's Scale-out Backup Repository™ (SOBR), partnered with Capacity Tier (also known as Cloud Tier), enables an easy-to-use capability that writes backup data into object storage either on Microsoft Azure, Amazon Web Services (AWS), IBM Cloud or any platform that supports object store. Using AWS S3 or select S3-compatible storage, you also get access to Object Lock, enabling backup data to be stored as an immutable backup.

Detecting ransomware

Detecting a ransomware attack in its initial stages can be difficult. Veeam ONE™ provides the ability to monitor your environment closely and be aware of any suspicious or abnormal activity. By analyzing CPU usage, datastore write rate and network transmit rate, Veeam ONE can help identify if there are higher than normal amounts of activity on a particular machine. When the alarm is triggered, this immediately notifies you to inspect the machine, look at the resource counters and determine for yourself whether the activity is normal. If it's not, this is a good indicator that more steps should be taken to determine if ransomware is the culprit.

Ensuring ransomware-free backups

Viruses can be undetected and dormant in your current systems, ready to pounce. Use the power of your backup to root out ransomware threats before they attack. At all stages of backup and recovery, you want to be protected. Keep ransomware out for good with an automated step to scan the backup for malware, delivering confidence for future restorations. Veeam SureBackup® provides immediate notice that a system may not be recoverable due to an undetected ransomware or malware threat.

Restoring guaranteed virus-free workloads

What happens if your backups have an undetected virus? Viruses can be undetected and lay dormant in older backups. Make sure you can protect yourself. Secure Restore enables a complete anti-virus scan of your backups when restoring. Having access to the latest virus definitions helps safeguard against previously unknown viruses, providing greater confidence that dormant threats won't be reintroduced back into the environment.

Testing your workloads securely

Unsure of a current workload? Suspect that it may be infected? Restore them into a fully secured and isolated environment to test. Tap into the power of Veeam DataLabs™ to restore data, workloads and applications into a fully isolated virtual sandbox environment. Test for cyberthreats and other issues while performing potential remediation activities — without impacting any production systems.

Resources

The ransomware threat is real, and if you're ready to prepare your organization, then Veeam can help. Start today with an easy 12-question gap assessment to identify areas of ransomware threat, and then download the Ransomware Preparation Kit to get started today.

Assess your ransomware threat

Download the Ransomware Preparation Kit

[I] Steve Morgan, Global Ransomware Damage Costs Predicted To Reach $20 Billion (USD) By 2021, Cybercrime Magazine, October 2019.

[II] Coveware, Ransomware Costs Double in Q4 as Ryuk, Sodinokibi Proliferate, Report on Q4 2019.

[III] Malware Labs. 2020 State of Malware Report. February 2020.

[IV] Malwarebytes Labs. A deep dive into Phobos ransomware. July 2019.

[Vi] Malware Labs. 2020 State of Malware Report. February 2020.

About Veeam Software

Veeam® is the leader in Backup solutions that deliver Cloud Data Management™. Veeam provides a single platform for modernizing backup, accelerating hybrid cloud, and securing data. With 375,000+ customers worldwide, including 82% of the Fortune 500 and 67% of the Global 2,000, Veeam customer-satisfaction scores are the highest in the industry at 3.5x the average. Veeam's 100-percent channel ecosystem includes global partners, as well as HPE, NetApp, Cisco and Lenovo as exclusive resellers. Veeam has offices in more than 30 countries.To learn more, visit https://www.veeam.com or follow Veeam on Twitter @veeam.

Cloud Data

Backup for what's next

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