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April 2024

# What's new?

Welcome to the recurring Veritas REDLab newsletter that provides you with the latest updates on the Veritas REDLab initiative.

The Veritas REDLab is a fully isolated security testing facility, hosted and managed by Veritas, to research and study ransomware and malware. The Veritas REDLab stress tests our solutions to ensure that our products are hardened against attacks, protecting both the backup data and administrative interfaces. This helps drive a deeper understanding of how to secure your data protection processes and data and provide meaningful and actionable insights to both security teams and data protection teams when anomalies are detected. This ensures that the data is safe, protected, and that you can be confident in the cyber resilience that Veritas solutions offer.

## Here are few of the ransomware families and their behavioral patterns that were studied in the REDLab:

| Name | Ransomware family | Behavioral pattern |
|---|---|---|
| Trigona | Trigona ransomware family | MSSQL vulnerability, Splashtop remote access, Ransomware, Crypto Virus, Files locker |
| WannaCry 3.0 | WannaCryptor ransomware family | Indicator Removal, EternalBlue, SMB protocol, System Information Discovery, File and Directory Permissions Modification |



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# REDLab findings:

- **Trigona (attack on NetBackup client):**
    - **Family**: Trigona ransomware family | **Behavior pattern**: MSSQL vulnerability, Splashtop remote access, Ransomware, Crypto Virus, Files locker
    - **Know Me:** Trigona is ransomware that encrypts files and appends the "._locked" extension to filenames. It adds the "how_to_decrypt.hta" file that opens a ransom note. An example of how Trigona renames files: it renames "1.jpg" to "1.jpg._locked", "2.png" to "2.png._locked", and so forth. It embeds the encrypted decryption key, the campaign ID, and the victim ID in the encrypted files and utilizes AES algorithm for encryption. A few additional parameters are embedded in each locked file.
    - **Attack Pattern:** After the attack, this ransomware encrypted the user data. A system anomaly was generated, which detected ransomware file extension issue with respect to a file.

- **WannaCry 3.0 (attack on NetBackup client):**
    - **Family:** WannaCryptor ransomware family| **Behavior pattern**: Indicator Removal, EternalBlue, SMB protocol, System Information Discovery, File and Directory Permissions Modification
    - **Know Me:** WannaCry 3.0 is a new variant of the WannaCry ransomware. It is based on the open-source Crypter (Python) ransomware. Malware within the ransomware category is designed to encrypt data and demand payment for its decryption. It encrypted files and appended their filenames with a ".wncry" extension (which is also used by the real WannaCry). For example, a file originally named "1.jpg" appeared as "1.jpg.wncry", "2.png" as "2.png.wncry", etc. Additionally, the program deleted Volume Shadow Copies. Afterward, WannaCry 3.0 changed the desktop wallpaper and created a pop-up window; both contained ransom notes.
    - **Attack Pattern:** After the attack, this ransomware encrypted the user data. A system anomaly was generated, which detected ransomware file extension issue with respect to a file.

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# Impact of attacks on NetBackup by the given ransomware families

The following observations are noted when a targeted ransomware attack is carried out on a NetBackup client:

- Data on NetBackup client is encrypted the data that can be in the form of document files such as pdf, doc, excel or text files. After the ransomware attack, an extension is added to the encrypted file.
- In case of WannaCry ransomware, it renamed all the encrypted files with extension as "<file_name>.WNCRY " after the attack.

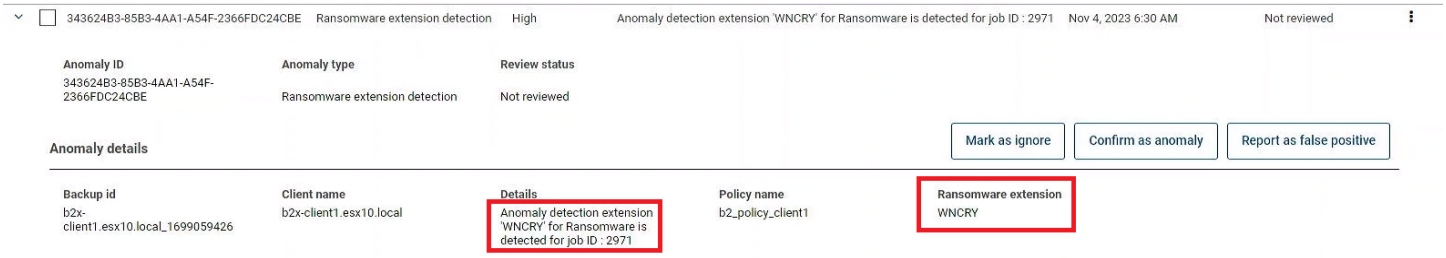
# Recommended solution:

## Data on NetBackup client is encrypted after the attack:

Ransomware file extension-based anomaly detection is a feature in NetBackup 10.3 and later that detects anomalies during the backup process based on certain pre-defined well known ransomware file extensions.

A typical ransomware attacks the data and encrypts it. After the file encryption, it renames the files with a specific extension such as .lockbit. During a backup operation, NetBackup checks all the file extensions, compares them with the ransomware file extension list, and generates an anomaly if there is a match.

The following screenshot shows the data from REDLab :




Feedbacks and more information around Ransomware file extension solution can be found in Technical Blog



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# NetBackup feature overview

## Veritas Client Health System Anomaly Detection:

Veritas Client Health system anomaly detects unusual network communication behaviour between NetBackup primary servers and clients. It checks the health of certificates that are deployed on the NetBackup client and starts the anomaly detection process.

When the anomaly is detected, the Client Health system anomaly creates a critical audit event that indicates failed communication with the NetBackup client. This audit event generates an alert and reports the affected client name to NetBackup IT Analytics or the SIEM/XDR platform.

- ### Configuring Client Health System Anomaly:

  To configure the Client Health System Anomaly in your NetBackup environment, you need to follow the below steps:

  1. Sign into the NetBackup web UI.
  2. On the left, click Detection and reporting > Anomaly detection.
  3. On the top right, click Anomaly detection settings > System anomaly detection configuration.
  4. On the System anomaly detection configuration screen, configure the following System anomaly detection settings:
     a. Select the “Detect clients that are offline with suspicious error codes” check box to generate an anomaly alert when NetBackup detects that a client is offline under suspicious circumstances.



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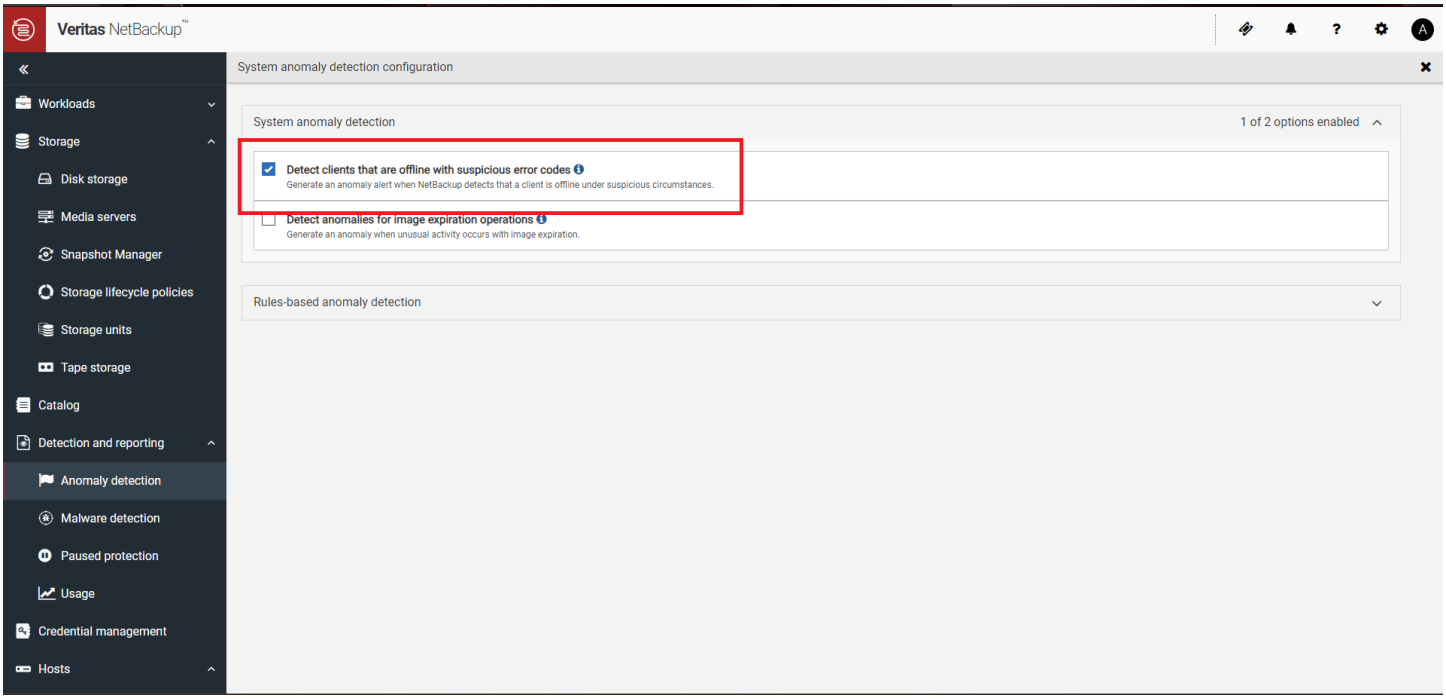


- **Viewing anomaly generated due to Client Health System Anomaly**

Suppose there is an attack where ransomware encrypts the user data as well as system files. In this case a Client Health System Anomaly that detects unusual behavior with respect to offline clients and a critical notification is generated.

You can view the critical notification generated by clicking on the bell icon (top right corner), after logging into the NetBackup web UI:



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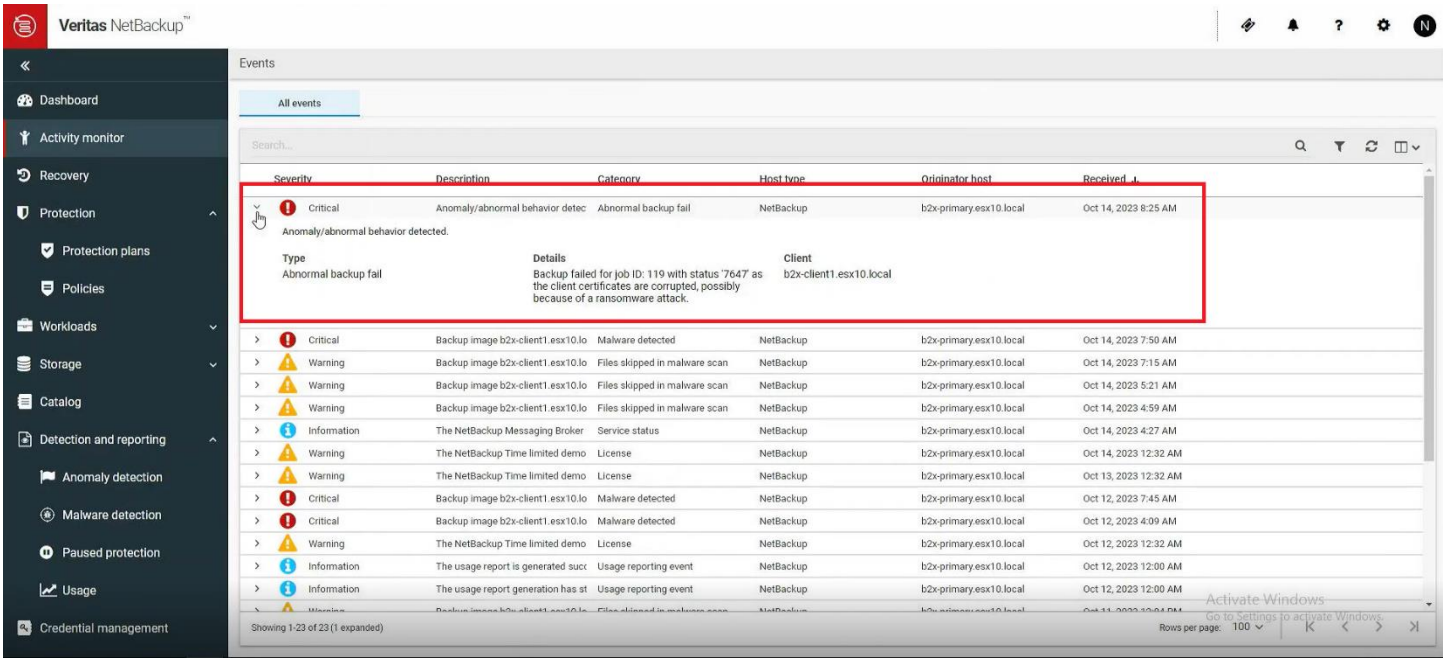


To get detailed information about the above anomaly notification generated:

1. Sign into the NetBackup web UI.
2. On the left, click Detection and reporting > Anomaly detection.
3. Under Anomaly Detection, click on System anomalies.
4. On the System anomalies page, by clicking on the drop-down option you can view the details of the Client Health Anomaly generated.



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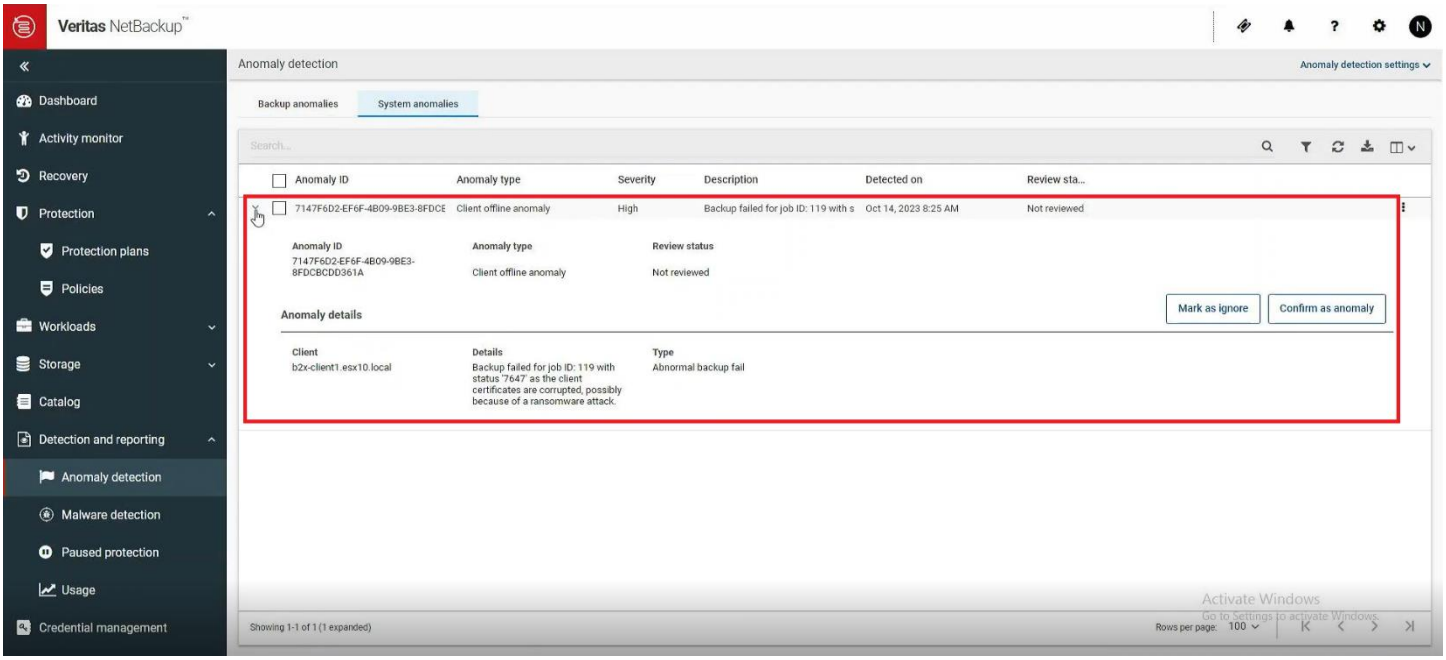


- **Disabling Client Health System Anomaly:**

In case the user wants to disable this functionality (not recommended), you can follow the below steps:

1. Sign into the NetBackup web UI.
2. On the left, click Detection and reporting > Anomaly detection.
3. On the top right, click Anomaly detection settings > System anomaly detection configuration.
4. On the System anomaly detection configuration screen, configure the following system anomaly detection settings:
    a. Clear the “Detect clients that are offline with suspicious error codes” check box.



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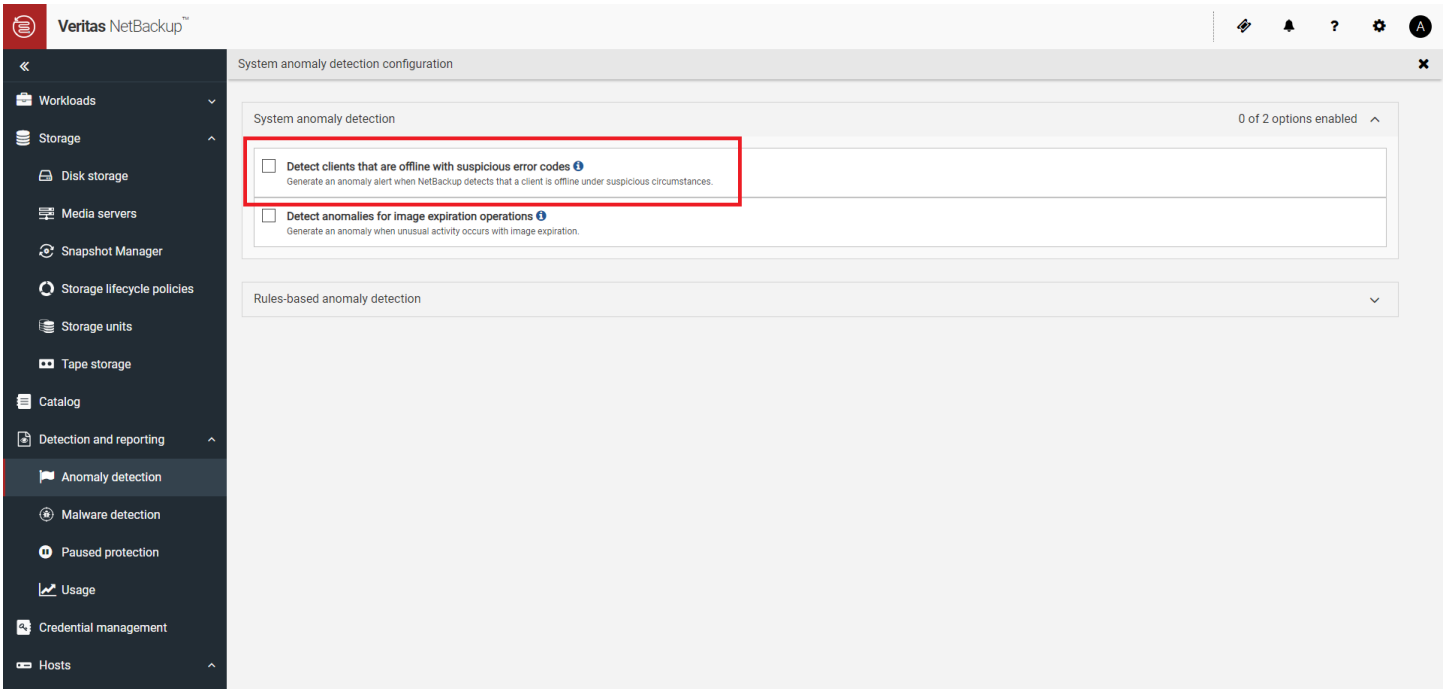


More information about Anomaly Detection can be found in the NetBackup™ Security and Encryption Guide



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# Research references:

- https://www.cisa.gov – Threat intelligence data and most pressing issues that CISA tracks, and notifications issued by government organizations.
- https://www.virustotal.com – Intelligence data, ransomware, or malware samples, discover threat commonalities and track new variants of surveilled malware families.
- https://www.hybrid-analysis.com – Malware analysis service for the community that detects and analyzes unknown threats using a unique Hybrid Analysis technology.
- https://www.enigmasoftware.com/ - PC security alerts & news and Advanced Analytics
- https://www.cyborgsecurity.com/ - Provides a library of expertly crafted constantly updated threat hunting news and content.
- https://unit42.paloaltonetworks.com/ - Research blogs and Analysis of strains
- https://www.cert-in.org.in/ - Collection, forecast, and alerts of cyber security incidents.
- https://www.pcrisk.com/ - Latest digital threats and malware infections
- https://www.blackfog.com – Get monthly news around attacks and details of impacted organizations.
- https://www.bleepingcomputer.com – Daily news of recent activities carried out by ransomware gangs and methods used to infiltrate enterprises.
- https://www.truesec.com/ - Blogs and IOC's
- https://vox.veritas.com/ - VOX (Veritas Open eXchange) – Technical Blog
- https://www.sentinelone.com – Analytics data from various security vendors and insights around behavior pattens for each ransomware family
- https://decoded.avast.io/ - Latest threat research, ransomware analysis and IOC's



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