RSA NETWITNESS® PLATFORM

NetWitness UEBA User Guide

for RSA NetWitness® Platform 11.3

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July 2019

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Introduction

RSA NetWitness UEBA (User and Entity Behavior Analytics) is an advanced analytics solution for discovering, investigating, and monitoring risky behaviors across all users and entities in your network environment. NetWitness UEBA is used for:

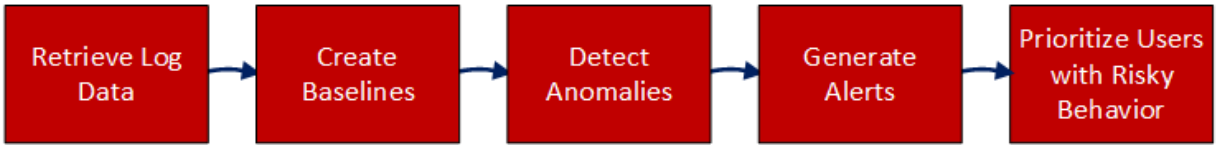
- Detecting malicious and rogue users
- Pinpointing high-risk behaviors
- Discovering attacks
- Investigating emerging security threats
- Identify potential attacker activity

NetWitness UEBA leverages existing data in NetWitness Platform logs and empowers enterprise SOC and analysts with the insights and investigative capabilities to mitigate cyber threats.

This guide is designed for Analysts and SOC Managers, and provides information and instructions for using all NetWitness UEBA functions and capabilities. It describes key investigation methodologies, the main system capabilities, common use cases, and step-by-step instructions for recommended workflow strategies.

How NetWitness UEBA Works

NetWitness UEBA uses analytics to detect anomalies in log data and derives behavioral results from them. There are five basic steps to this process, as shown in the following diagram:



The following table provides a brief description of each of these steps.

Step	Description	More Information
1. Retrieve Log Data	NetWitness UEBA retrieves log data from the NetWitness Platform Database (NWDB) and uses the data to create analytic results.	See Retrieve Log Data
2. Create Baselines	Baselines are derived from detailed analysis of normal user behavior, and are used as a basis for comparison to user behavior over time.	See Create Baselines

Step	Description	More Information
3. Detect Anomalies	An anomaly is a deviation from a user's normal baseline behavior. NetWitness UEBA performs a statistical analysis to compare each new activity to the baseline. User activities that deviate from expected baseline values are scored accordingly to reflect the severity of the deviation.	See Detect Anomalies
4. Generate Alerts	All the anomalies found in step 3 are grouped into hourly batches. Each batch is scored based on the uniqueness of its indicators. If the indicator composition is unique compared to a user's historic hourly batch compositions, it is likely that this batch will be transformed into an alert.	See Generate Alerts
5. Prioritize Users with Risky Behavior	NetWitness UEBA prioritizes the potential risk from a user by using a simplified additive scoring formula. Each alert is assigned a severity that increases a user's score by a predefined number of points. Users with high scores either have multiple alerts associated with them, or have alerts of high levels of severity associated with them.	See Prioritize Users with Risky Behavior

Retrieve Log Data

The NetWitness UEBA server connects to the Broker or Concentrator service to retrieve log data from Concentrators. You can use the Broker service that is available on the NetWitness Platform Admin server if you do not have an exclusive Broker in your deployment. During NetWitness UEBA installation, the administrator specifies the IP address of the Broker service.

For more information, see the "(Optional) Task 2 - Install NetWitness UEBA" topic in the *NetWitness Platform 11.3 Physical Host Installation Guide*.

Create Baselines

NetWitness UEBA uses machine learning to analyze multiple aspects of a user’s actions within a stream of log data and gradually builds a multi-dimensional baseline of typical behavior for each user. For example, the baseline can include information about the hours in which a user typically logs on.

Behavioral baselines are also created on a global level to describe common activities observed throughout the network. If a working hour was abnormal for a user, but is not abnormal for the organization, the false-positive reduction algorithms decreases the impact on the alert score.

Models are updated frequently and are constantly improving as time goes on.

Note: NetWitness UEBA requires 28 days of historical log data to create a proper baseline for all the users in your network. However, RSA recommends that you configure NetWitness UEBA to start baselining your data two months prior to your deployment date <today-60days>. The first 28 days will be used for model training and will not be scored. The remaining 32 days are leveraged to improve and update the model, and are also scored to provide initial value.

Note: For version 11.2 or later, there is limited support for environments with multiple domains. Distinct username values, that are registered under different domains, will be normalized, and then combined into one modeled entity. As a result, different users, who share the same username in different domains, will wrongfully be attributed to a single normalized entity.

Detect Anomalies

After establishing a behavioral baseline for all the users in your environment, each incoming event is compared to the baseline, and is given a score to determine if the new behavior is abnormal, and particularly, if it is a strong deviation from the baseline. For example, if a user's normal working hours are 9:00 AM to 5:00 PM, a new activity at 6:00 PM or 7:00 PM is not a strong deviation, and is probably not scored as an anomaly. However, an authentication at midnight is a strong deviation and is scored as an anomaly.

If anomalies are detected, they are turned into Indicators of Compromise, described as Indicators in the UI. NetWitness UEBA uses indicators to define validated anomalous activity, such as suspicious user logons, brute-force password attacks, unusual user changes and abnormal file access. Indicators either represent anomalies found in a single event or multiple events batched over time.

Generate Alerts

All the anomalies that are found are grouped into username and hourly batches. Each batch is scored based on the uniqueness of the composition of its indicators. If a composition is unique compared to the user's history, it is likely that this batch will be transformed into an alert, and the anomalies into indicators. A high-scored batch of anomalies becomes an alert that contains validated indicators of compromise.

For example, one abnormal activity by itself, even if it happens hundreds of times a day in a large corporate environment, does not necessarily reflect an account compromise. However, an abnormal behavior that occurs with a lot of other abnormal behaviors could indicate that the account is compromised. These three behaviors occurring together may indicate that additional analysis is required.

- Authentication from an abnormal computer
- Multiple authentication attempts identified in a short time frame
- Multiple files have been deleted by this user from the corporate file share

Note: The NetWitness UEBA user interface can initially appear as empty because alerts are not generated until the baselines are established. If there is no historical audit data when NetWitness UEBA is enabled, the system starts generating the baselines from the time it is deployed, and require 28 full days to elapse before beginning to generate new alerts. If historical audit data is processed when NetWitness UEBA is enabled, alerts appear after the historical data has been processed, usually within two to four days.

Prioritize Users with Risky Behavior

User scores are a primary tool for incident prioritization. The user score is based on a simple additive calculation of the user's alerts. Alerts and analyst feedback are the only factors in the user score calculation, with the impact on the scores determined by their levels of severity.

A unified color code is used for user and alert scores:

Severity	Color	Score
Critical	Red	+20
High	Orange	+15
Medium	Yellow	+10
Low	Green	+1

Supported Sources

NetWitness UEBA natively supports the following data sources:

- Windows Active Directory
- Windows Logon and Authentication Activity
- Windows File Servers
- NetWitness Endpoint Process
- NetWitness Endpoint Registry
- RSA SecurID Token
- RedHat Linux

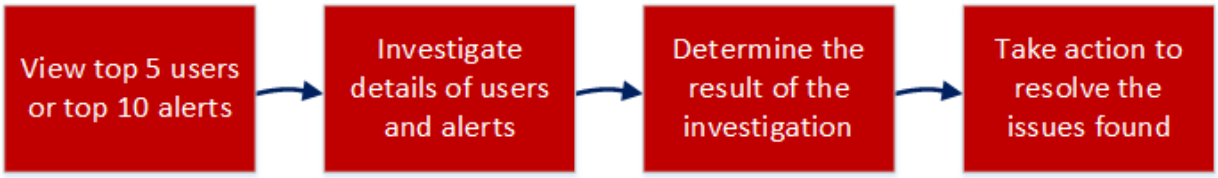
Recommended Workflows

To use NetWitness UEBA most effectively, there are two workflows; Detection workflow and Forensic workflow, that you can follow.

Detection Workflow

The detection workflow allows you to gain an overview of the health of your environment, and then focus on investigating the top high-risk users and alerts that are displayed in the Overview tab.

The following flowchart illustrates the steps you can follow to begin detecting suspicious behavior in your environment.



The following table describes each step in the workflow.

Step	Description	Instructions
View top five users or top 10 alerts	In the Overview tab, note the users with the riskiest behaviors and the top most critical alerts.	Investigate High-Risk Users and Investigate Top Alerts
Investigate details of users and alerts	Drill into detailed information about risky user behaviors and critical alerts to try to determine the cause of these actions and how to resolve them.	Investigate High-Risk Users and Investigate Events
Determine the result of the investigation	Analyze the summary information provided in the user interface from the previous steps and identify areas to focus on to resolve the issues you found.	Identify High-Risk Users and Investigate Events

Step	Description	Instructions
Take action to resolve the issues found	Target specific user behaviors and events to address, and use the results of this investigation to improve and sharpen future investigations.	Take Action on High-Risk Users

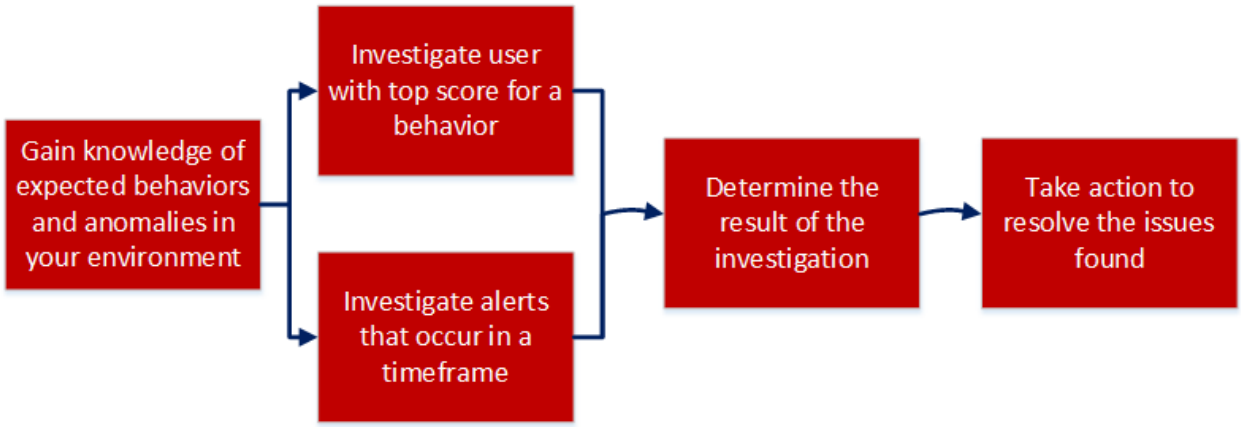
Forensic Workflow

The forensic workflow is recommended when you have gained an understanding of the typical user behaviors and anomalies in your environment, and helps you focus on specific forensic information that is based on a user behavior, or a specific timeframe in which suspicious events occurred.

Using forensics information, analysts may determine the actions and behaviors that the attacker is likely to attempt using the following questions:

- What fundamental techniques and behaviors are common across all intrusions?
- What evidence do these techniques leave behind?
- What do attackers do?
- What are normal behaviors of my accounts and entities?
- Which are my sensitive machines and where are they located?

The following flowchart illustrates how to perform your investigation on forensic information that is based on a specific user behavior, or a specific timeframe in which suspicious events occurred.



The following table describes each step in the workflow.

Step	Description	Instructions
Gain knowledge of expected behaviors and anomalies in your environment	Establish a baseline of normal behaviors, expected anomalies, and unexpected anomalies, so that you can focus on anomalies that are significant for your environment.	Retrieve Log Data, Detect Anomalies, and Generate Alerts.
Investigate an user with top score for a specific behavior	Select a user with a high score for a specific behavior and gather detailed information.	Investigate High-Risk Users and Investigate Events.
Investigate alerts that occur in a specific timeframe	Determine a timeframe of interest, and in the Alerts tab, select that timeframe to see detailed information about alerts that occurred during that time period.	Investigate Events

Step	Description	Instructions
Determine the result of the investigation	Based on your knowledge of expected user behavior, focus on the indicators that are displayed during the specified time period and determine if the anomalies that were discovered need to be resolved.	Investigate Events and Identify High-Risk Users
Take action to resolve the issues found	Target specific user behaviors and events to address, and use the results of this investigation to improve and sharpen future investigations.	Take Action on High-Risk Users

Access NetWitness UEBA

Note: To access the NetWitness UEBA service and Users tab, you must be assigned to either the UEBA_Analyst role or Administrators role. For information about how to assign these roles, see the "How Role-Based Access Control Works" topic in the *System Security and User Maintenance Guide*. You must also ensure that you have proper NetWitness UEBA licensing configured. For information about NetWitness UEBA licensing, see the "User and Entity Behavior Analytics License" topic in the *Licensing Management Guide*.

To access NetWitness UEBA, log into NetWitness Platform and go to **INVESTIGATE** > **Users**. The Users view, which contains all the NetWitness UEBA features, is displayed.

NetWitness UEBA Indicators

The following tables list indicators that display when potentially malicious activity is detected.

Windows File Servers

Indicator	Alert Type	Description
Abnormal File Access Time	Non-Standard Hours	A user has accessed a file at an abnormal time.
Abnormal File Access Permission Change	Mass Permission Changes	A user changed multiple share permissions.
Abnormal File Access Event	Abnormal File Access	A user has accessed a file abnormally.
Multiple File Access Permission Changes	Mass Permission Changes	A user changed multiple file share permissions.
Multiple File Access Events	Snooping User	A user changed multiple file share permissions.
Multiple Failed File Access Events	Snooping User	A user failed multiple times to access a file.
Multiple File Open Events	Snooping User	A user opened multiple files.
Multiple Folder Open Events	Snooping User	A user opened multiple folders.
Multiple File Delete Events	Abnormal File Access	A user deleted multiple files.

Active Directory

Indicator	Alert Type	Description
Abnormal Active Directory Change Time	Non-Standard Hours	A user made Active Directory changes at an abnormal time.
Abnormal Active Directory Change	Abnormal AD Changes	An abnormal change to an Active Directory attribute was made.
Multiple Group Membership Changes	Mass Changes to Groups	A user successfully made multiple changes to groups.
Multiple Account Management Changes	Abnormal AD Changes	A user successfully made multiple Active Directory changes.

Indicator	Alert Type	Description
Multiple User Account Management Changes	Abnormal AD Changes	A user successfully made multiple sensitive Active Directory changes.
Multiple Failed Account Management Changes	Abnormal AD Changes	A user failed to make multiple Active Directory changes.
Admin Password Changed	Admin Password Change	An admin's password was changed.
User Account Enabled	Sensitive User Status Changes	A user's account was enabled.
User Account Disabled	Sensitive User Status Changes	A user's account was disabled.
User Account Unlocked	Sensitive User Status Changes	A user's account was unlocked.
User Account Type Changed	Sensitive User Status Changes	A user's type was changed.
User Account Locked	Sensitive User Status Changes	A user's account was locked.
User Password Changed	Sensitive User Status Changes	A user's password was changed.

Logon Activity

Indicator	Alert Type	Description
Abnormal Remote Computer	Abnormal Computer Access	A user has accessed an abnormal remote computer.
Abnormal Logon Time	Non-Standard Hours	A user logged on at an abnormal time.
Abnormal Computer	User Login to Abnormal Host	A user attempted to access an abnormal computer.
Multiple Successful Authentications	Multiple Logons by User	A user logged on multiple times.
Multiple Failed Authentications	Multiple Failed Logons	A user failed multiple authentication attempts.
Logged onto Multiple Computers	User Logged into Multiple Hosts	A user attempted to log on from multiple computers.

Note: A Logon Activity indicator is also triggered in case of an abnormal SecurID related activity.

Process

Indicator	Alert Type	Description
Abnormal process injected into LSASS	Credential Dumping	An abnormal process injected into the LSASS process.
Abnormal reconnaissance tool executed	Discovery & Reconnaissance	An abnormal process is executed.
Abnormal process executed a Scripting Tool	PowerShell & Scripting	An abnormal process executed a scripting tool.
Abnormal Application Triggered by Scripting Tool	PowerShell & Scripting	An abnormal process is triggered by a scripting tool.
Abnormal Process Opened by Scripting Tool	PowerShell & Scripting	An abnormal process is opened by a scripting tool.
Abnormal process injects into Windows process	PowerShell & Scripting	An abnormal process is injected into a known windows process .
Multiple Distinct Reconnaissance Tools Executed	Discovery & Reconnaissance	Multiple reconnaissance tools are executed in an hour.
Multiple Reconnaissance Tool Activities Executed	Discovery & Reconnaissance	Multiple reconnaissance tool activities are executed in an hour.
Process Executed Multiple Times by a Reconnaissance Tool	Discovery & Reconnaissance	A reconnaissance tool executed a process multiple times.

Registry

Indicator	Alert Type	Description
Abnormal Process Modified a Service Key registry	Registry Run Keys	An abnormal process modified a service key registry.

NetWitness UEBA Use Cases for Windows Logs

NetWitness UEBA focuses on providing advanced detection capabilities to guard enterprises from insider threats. These could either be compromised trusted users of the network, or alternatively, a malicious external attacker taking advantage of credentials acquired by using advanced account takeover techniques.

Identity theft typically begins with the theft of credentials, which are then used to obtain unauthorized access to resources and to gain control over the network. Attackers may also exploit compromised non-admin users to obtain access to resources for which they have administrative rights, and then escalate those privileges.

An attacker who uses stolen credentials may trigger suspicious network events while accessing resources. Detecting illicit credential use is possible, but requires that you separate attacker activity from the high volume of legitimate events. NetWitness UEBA helps you separate possibly malicious activity from the otherwise abnormal, but not risky, user actions.

The following use cases define certain risk types, and the corresponding system capabilities used for their detection. You can review the use cases, represented by their Alert Type and Description, to gain an initial understanding of the related risky behavior of each. Using NetWitness UEBA, you can then drill down into the indicators that reflect the possibly risky user activities to learn more. For more information about NetWitness UEBA-supported indicators, see NetWitness UEBA Indicators.

Alert Type	Description
Mass Changes to Groups	An abnormal number of changes have been made to groups. Investigate which elements have been changed, and decide if the changes were legitimate or possibly the result of risky or malicious behavior. This activity is usually associated with the **Multiple Group Membership Changes** indicator.
Elevated Privileges Granted	Elevated account privileges have been delegated to a user. Attackers often use regular user accounts, granting them elevated privileges, to exploit the network. Investigate the user that received the elevated privileges, and decide if these changes were legitimate or possibly the result of risky or malicious behavior. This activity is usually associated with the **Nested Member Added to Critical Enterprise Group** and **Member Added to Critical Enterprise Group** indicators.
Multiple Failed Logons	In traditional password cracking attempts, the attacker tries to obtain a password through guesswork or by employing other low-tech methods to gain initial access. The attacker risks getting caught or being locked out by explicitly attempting to authenticate; but with some prior knowledge of the victim's password history, may be able to successfully authenticate. Look for additional abnormal indications that the account owner is not the one attempting to access this account. This activity is usually associated with the **Multiple Failed Authentications** indicator.

Alert Type	Description
User Logins to Multiple AD Sites	Domain controllers store credential password hashes for all accounts on the domain, so they are high-value targets for attackers. Domain controllers that are not stringently updated and secured are susceptible to attack and compromise, which could leave the domain vulnerable. User privileges on multiple domains could indicate that a parent domain has been compromised. Determine if user access to and from multiple sites is legitimate or is an indication of a potential compromise. This activity is usually associated with the **Logged into Multiple Domains** indicator.
User Login to Abnormal Host	Attackers often need to reacquire credentials and perform other sensitive activities, like using remote access. Tracing the access chain backwards may lead to the discovery of other computers involved in possibly risky activity. If an attacker's presence is limited to a single compromised host or to many compromised hosts, that activity can be associated with the **Abnormal Computer** indicator.
Data Exfiltration	Data exfiltration is the unauthorized copying, transfer, or retrieval of data from a computer or server. Data exfiltration is a malicious activity performed through various techniques, typically by cyber criminals over the Internet or other network. This activity can be associated with the **Excessive Number of File Rename Events**, **Excessive Number of Files Moved from File System**, and **Excessive Number of Files Moved to File System** indicators.
Mass File Rename	Ransomware is a type of malware that encrypts desktop and system files, making them inaccessible. Some ransomware, for example, Locky, encrypts and renames files as part of their initial execution. Use this indication of mass-file-renaming to determine if your file system has been infected with ransomware. This activity can be associated with the **Multiple File Rename Events** indicator.
Snooping User	Snooping is unauthorized access to another person's or company's data. Snooping can be as simple as the casual observance of an e-mail on another's computer, or watching what someone else is typing. More sophisticated snooping uses software programs to remotely monitor activity on a computer or network device. This activity can be associated with the **Multiple File Access Events**, **Multiple Failed File Access Events**, **Multiple File Open Events**, and **Multiple Folder Open Events** indicators.
Multiple Logons by User	All authentication activity, malicious or not, appears as normal logons. Therefore, administrators should monitor unexpected authorized activity. The key is that attackers use these stolen credentials for unauthorized access, which may provide an opportunity for detection. When an account is being used for unusual activities, for example, authenticating an unusual amount of times, the account may have been compromised. This activity can be associated with the **Multiple Successful Authentications** indicator.

Alert Type	Description
User Logged into Multiple Hosts	Attackers typically need to reacquire credentials periodically. This is because their keychain of stolen credentials naturally degrades over time, due to password changes and resets. Therefore, attackers frequently maintain a foothold in the compromised organization by installing backdoors and maintaining credentials from many computers in the environment. This activity can be associated with the **Logged onto Multiple Computers** indicator.
Admin Password Change	Shared long-term secrets, for example, privileged account passwords, are frequently used to access anything from print servers to domain controllers. To contain attackers that seek to leverage these accounts, pay close attention to password changes by admins, and ensure they have been made by trusted parties and have no additional abnormal behavior associated with them. This activity can be associated with the **Admin Password Change** indicator.
Mass Permission Changes	Some credential theft techniques, for example, Pass-the-Hash, use an iterative, two-stage process. First, an attacker obtains elevated read-write permission to privileged areas of volatile memory and file systems, which are typically accessible only to system-level processes on at least one computer. Second, the attacker attempts to increase access to other computers on the network. Investigate if abnormal permission changes have taken place on the file systems to ensure that they were not compromised by an attacker. This activity can be associated with the **Multiple File Access Permission Changes**, **Multiple Failed File Access Permission Changes**, and **Abnormal File Access Permission Change** indicators.
Abnormal AD Changes	If an attacker gains highly-privileged access to an Active Directory domain or domain controller, that access can be leveraged to access, control, or even destroy the entire forest. If a single domain controller is compromised and an attacker modifies the AD database, those modifications replicate to every other domain controller in the domain, and depending on the partition in which the modifications are made, the forest as well. Investigate abnormal changes conducted by admins and non-admins in AD to determine if they represent a possible true compromise to the domain. This activity can be associated with the **Abnormal Active Directory Change**, **Multiple Account Management Changes**, **Multiple User Account Management Changes**, and **Multiple Failed Account Management Changes** indicators.

Alert Type	Description
Sensitive User Status Changes	A domain or enterprise administrator account has the default ability to exercise control over all resources in a domain, regardless of whether it operates with malicious or benign intent. This control includes the ability to create and change accounts; read, write, or delete data; install or alter applications; and erase operating systems. Some of these activities trigger organically as part of the account's natural life cycle. Investigate these security sensitive user account changes, and determine if it has been compromised. This activity can be associated with the **User Account Enabled**, **User Account Disabled**, **User Account Unlocked**, **User Account Type Changed**, **User Account Locked**, **User Password Never Expires Option Changed**, **User Password Changed by Non-Owner**, and **User Password Change** indicators.
Abnormal File Access	Monitor for abnormal file access to prevent improper access to confidential files and theft of sensitive data. By selectively monitoring file views, modifications and deletions, you can detect possibly unauthorized changes to sensitive files, whether caused by an attack or a change management error. This activity can be associated with the **Abnormal File Access Event** and **Multiple File Delete Events** indicators.
Non-Standard Hours	All authentication activity, malicious or not, appears as normal logons. Therefore, administrators should monitor unexpected authorized activity. The key is that attackers use these stolen credentials for unauthorized access, which may provide an opportunity for detection. When an account is being used for unusual activities, for example, authenticating an unusual number of times, the account may have been compromised. Use the indication of an abnormal activity time to determine if the account has been taken over by an external actor. This activity can be associated with the **Abnormal File Access Time**, **Abnormal Active Directory Change Time**, and **Abnormal Logon Time** indicators.
Credential Dumping	Credential dumping is the process of obtaining account login and password information, normally in the form of a hash or a clear text password, from the operating system and software. Credentials can then be used to perform Lateral Movement and access restricted information.
Discovery & Reconnaissance	Discovery consists of techniques that allow the adversary to gain knowledge about the system and internal network. When Attackers gain access to a new system, they must orient themselves to what they now have control of and what benefits operating from that system give to their current objective or overall goals during the intrusion. The operating system provides many native tools that aid in this post-compromise information-gathering phase.

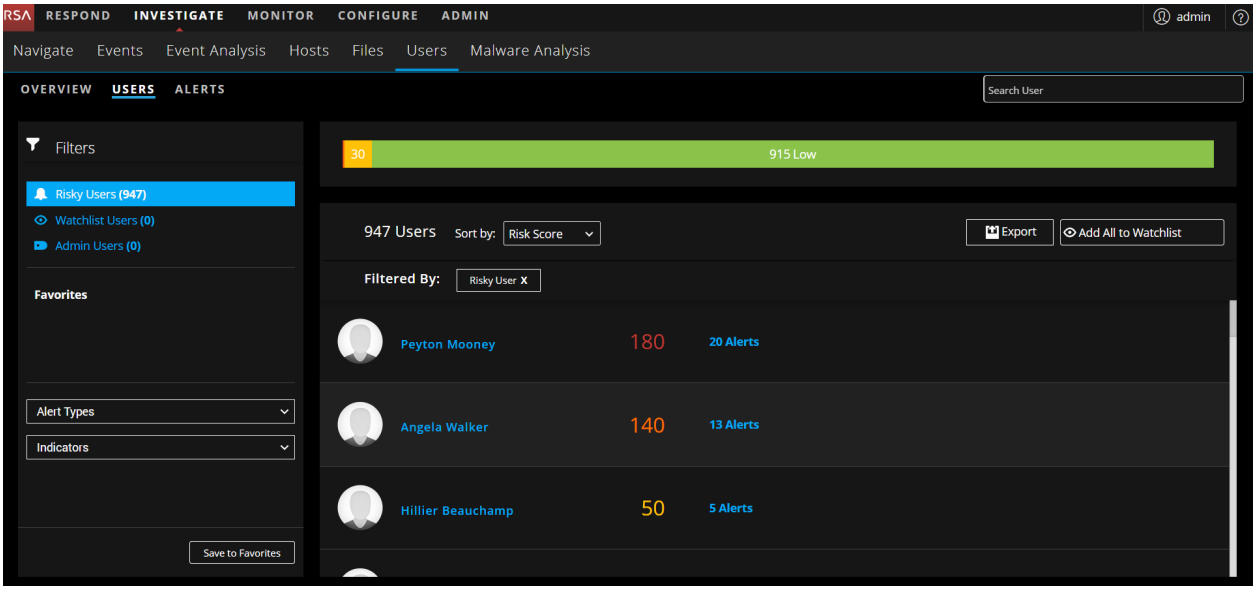
Alert Type	Description
PowerShell & Scripting	PowerShell is a powerful interactive command-line interface and scripting environment included in the Windows operating system. Attackers can use PowerShell to perform a number of actions, including discovery of information and execution of code. Examples include the Start-Process cmdlet which can be used to run an executable and the Invoke-Command cmdlet which runs a command locally or on a remote computer.
Registry Run Keys & Start Folder	Adding an entry to the "run keys" in the Registry or startup folder will cause the program referenced to be executed when a user logs in. The program will be executed under the context of the user and will have the account's associated permissions level. Attackers can use these configuration locations to execute malware, such as remote access tools, to maintain persistence through system reboots. Attackers may also use Masquerading to make the Registry entries look as if they are associated with legitimate programs.

Investigate High-Risk Users

A user score is built based on the alert score and the alert severity. Using the user score, you can identify users that require immediate attention, perform deeper investigation, and take required action. You can identify high-risk users from either the **Overview** tab or the **Users** tab.

The following figure is an example of top five high-risk users in the **Overview** tab.

The following figure is an example of all the risky users in your environment in the **Users** tab.



The following is a high-level process to investigate high-risk users in your environment.

1. Identify high-risk users. You can identify high-risk users using the following ways:
   - The **Overview** tab shows the top five risky users in your environment. From the listed users identify the users with a critical severity or user score more than 100.
   - The **User** tab shows all the risky users in your environment, sorted by risk score. Identify how many users are marked Critical, High and Medium or based on the forensic investigation, identify malicious user behavior and build use-case driven target user lists using behavioral filters. Additionally, you can also use different types of filters (Risky, Admin, or Watchlist) to identify targeted group of high-risk users.

   Note: The investigation should mostly focus on Critical, High and Medium severities. Low scoring users are not typically worth much investigation.

   Hover over the number of alerts associated with the risky users to quickly see what the alerts are and determine if there is a good mix.

   For more information, see the Identify High-Risk Users topic.
2. In the **User Profile** view, investigate the alerts and indicators of the user.
   a. Review the list of alerts associated with the user and the alert score for each alert, sorted by severity.
   b. Expand the alert names to identify a threat narrative. The strongest contributing indicator determines the alert's name that suggests why this hour is flagged.
   c. Use the alert flow timeline to understand the abnormal activities.
   d. Review each indicator associated with the alert to see the details about the indicator, including the timeline in which the anomaly occurred. Also, you can further investigate the incident using external resources such as SIEM, network forensics, directly reaching out to the user or a managing director and so on.

   For more information, see the Begin an Investigation of High-Risk Users topic.
3. On completion of the investigation, you can record your observation as follows:
   a. Specify if an alert is not a risk.
   b. Save the behavioral profile for the use case found in your environment.
   c. If you want to keep a track of user activity, you can add users to the watchlist, and watch user profile.

   For more information, see the Take Action on High-Risk Users topic.

Identify High-Risk Users

You can identify high-risk user in your environment in the following ways:

- View top five high-risk users
- View all the high-risk users

- View users of a specific group
- View users based on forensic investigation

View Top Five Risky Users

In the **Overview** tab, you can view the list of top five high-risk users in your environment along with the user score.

To view the top five risky users:

Log into **NetWitness Platform** and go to **INVESTIGATE** > **Users**.
The Overview tab is displayed with the high-risk users displayed in the High Risk Users panel.

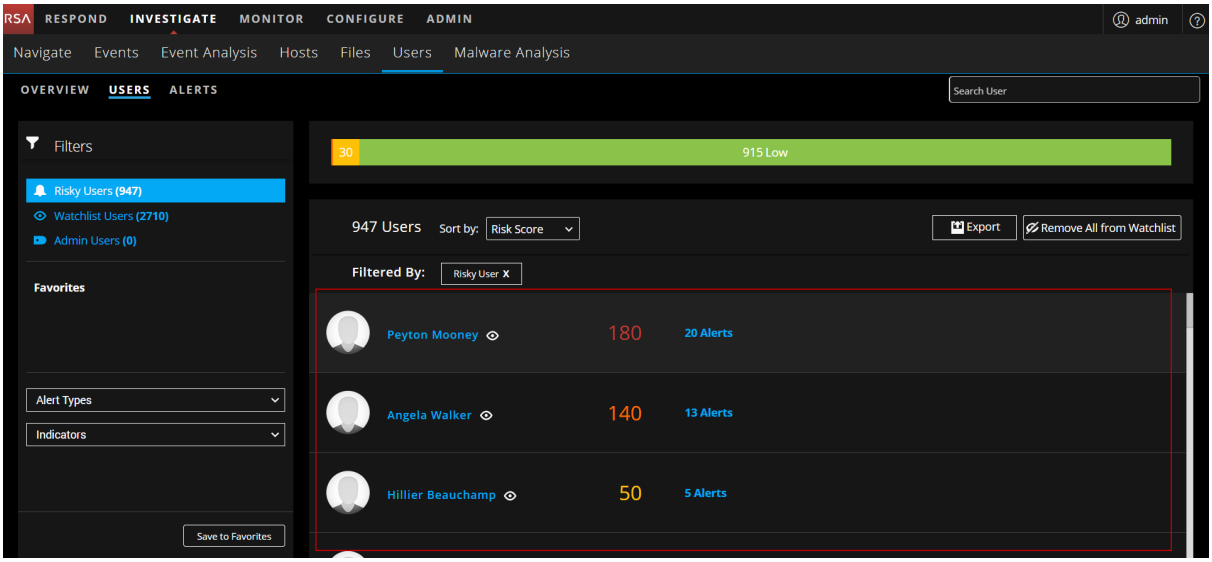
View All High-Risk Users

In the **Users** tab, you can view the list of all the high risk users in your environment along with the user score and total number of alerts associated with the users.

To view all high-risk users:

1. Log into **NetWitness Platform** and go to **INVESTIGATE** > **Users**.
   The Overview tab is displayed.

2. Click **Users** tab.
   The list of all high-risk users is displayed.

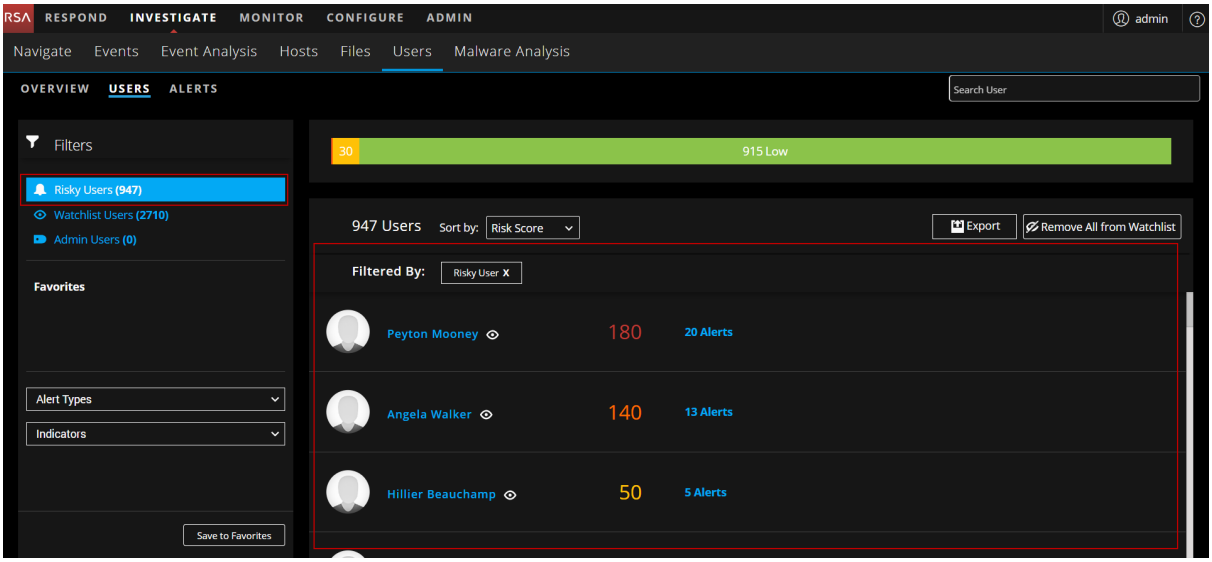


View Users of Specific Group

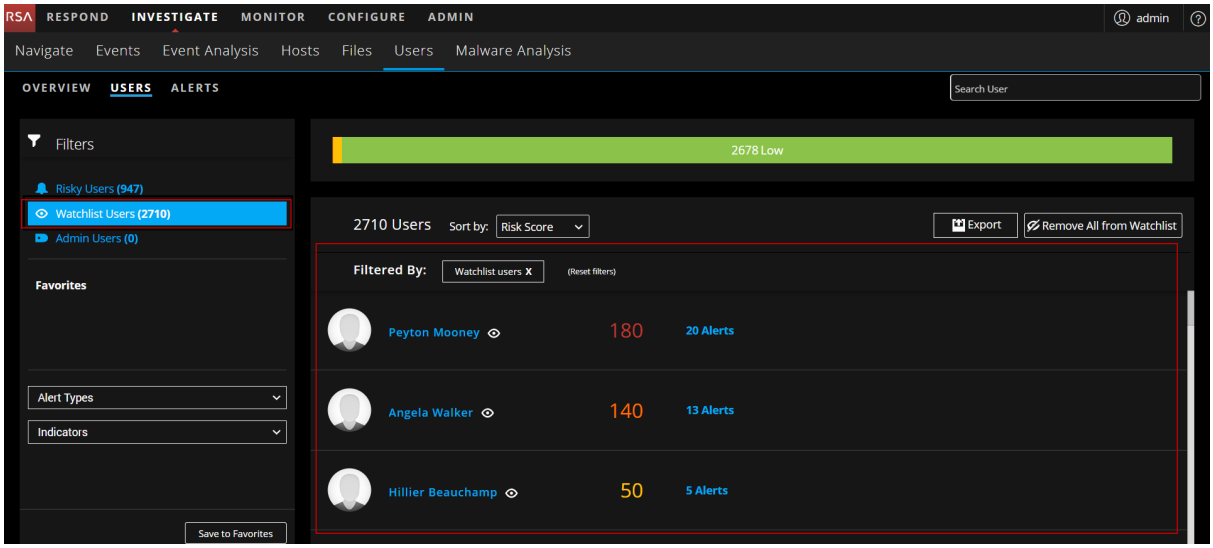
In the **Users** tab, you can use different types of filters to identify targeted group of high-risk users.

To view users of specific group:

1. Log into **NetWitness Platform** and go to **INVESTIGATE** > **Users**.
   The Overview tab is displayed.
2. Click the **Users** tab.
3. In the **Filters** panel, do any of the following:
   - **Risky Users**: To view all the risky users in your environment, select **Risky Users**. By default, risky users along with their user score are displayed.



- **Watchlist Users**: To view the list of users that you added to the watchlist to monitor for specific changes, select **Watchlist Users**.



- **Admin Users**: To view all users who are marked as admin in the events, select **Admin Users**.

Note: You can view users of one or more group by selecting one or more filters. For example, if you want to view the list of admin users who are risky users, select the **Admin Users** and **Risky Users** filters.

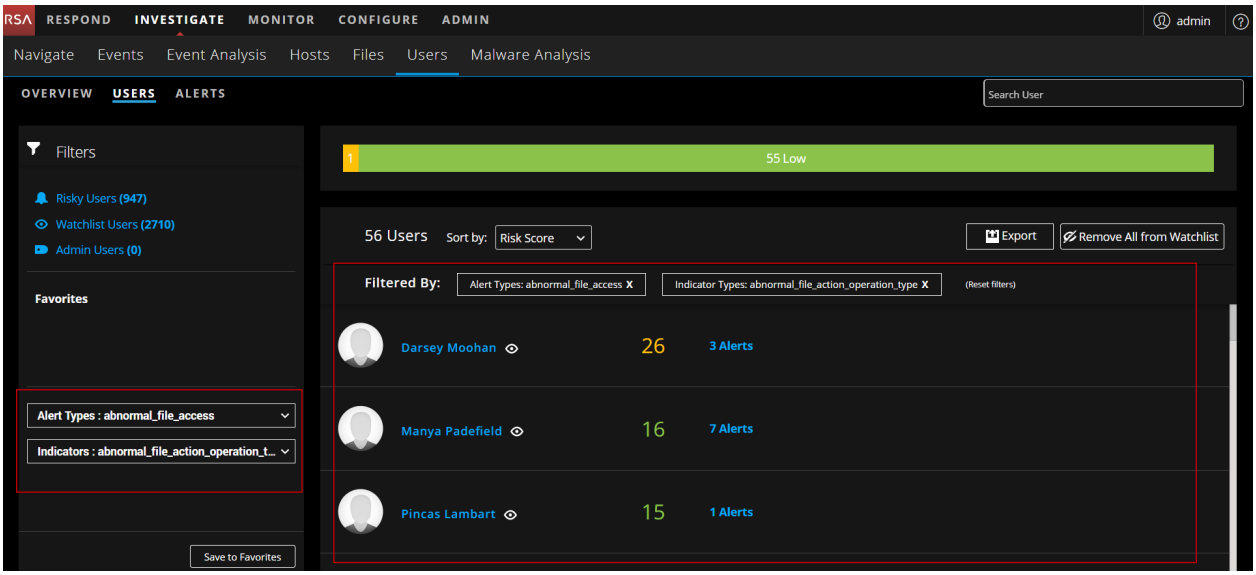
View Users Based on Forensic Investigation

In the **Users** tab, you can use Alert Types and Indicators which are behavioral filters to view high-risk users based on forensic investigation. For more information on forensic investigation, see *Forensic Workflow* in the Introduction topic.

To view users based on specific forensic investigation:

1. Log into **NetWitness Platform** and go to **INVESTIGATE** > **Users**.
   The Overview tab is displayed.
2. Click **Users** tab.
3. To create a behavioral filter using alert types, select one or more alerts in the **Alert Types** drop-down list.
4. To create a behavioral filter using indicators, select one or more indicators in the **Indicators** drop-down list.

Note: You can select combination of one or more alert types and indicators to create a behavioral filter based on your requirement. For example, to monitor abnormal access to confidential files and theft of sensitive data, you can create a behavioral filter with Alert Types = **Abnormal File Access** and Indicators = **Abnormal File Action Operation Type**.



You save these behavioral filters as favorites for future investigation.

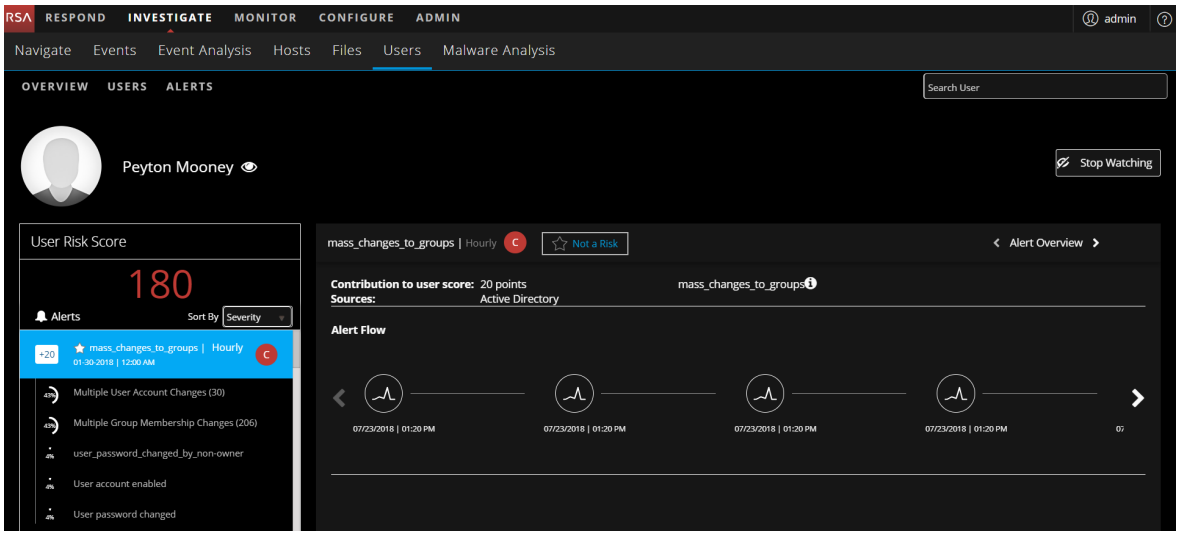
Begin an Investigation of High-Risk Users

After identifying the high-risk users, you can begin the investigation of high-risk users.

To investigate high-risk users:

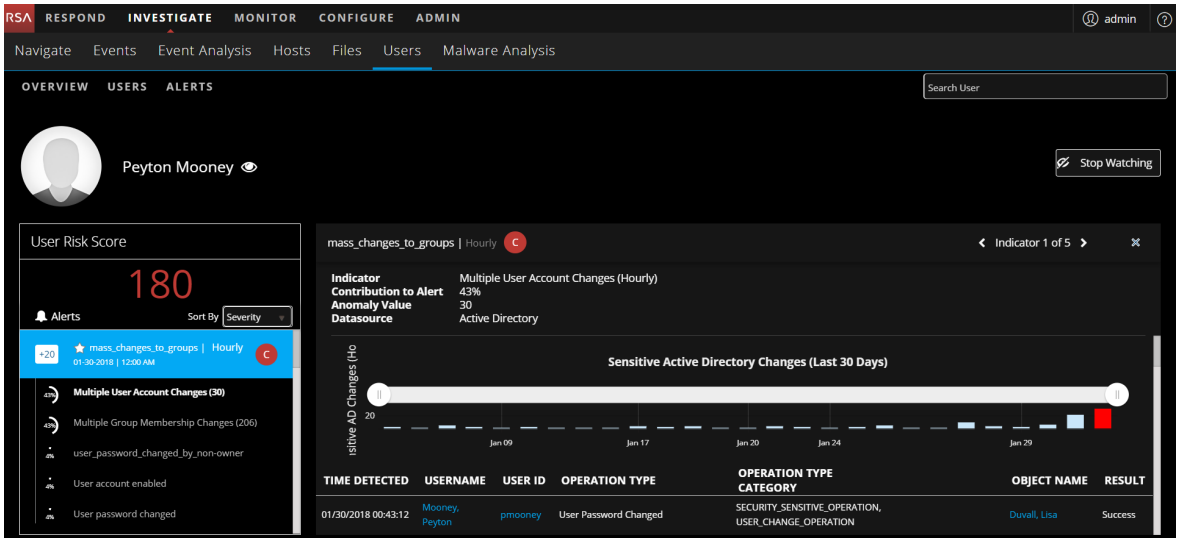
1. Log into **NetWitness Platform** and go to **INVESTIGATE** > **Users**. Do any of the following:
   a. In the **Overview** tab, in the **High Risk Users** panel, select a user you want to investigate and click on either the username or the user score.
   b. In the **USERS** tab, select the user you want to investigate and click on the username. The User Profile view is displayed.
2. To investigate the alerts of the user, click the alert name in the **User Risk Score** panel. The following information is displayed:
   - The alert name
   - The timeframe of the alert (Hourly or Daily)
   - The severity level icon
   - The contribution to the user score value (for example, +20)
   - The data sources for the alert (for example, Logon)
     The middle panel is the Alert Flow panel. This panel provides a timeline of events that are related to the formation of the alert. The timeline of events can help to determine if the alert is an actual

risk.



3. To investigate the indicators associated with an alert of a user, in the **User Risk Score** panel, select an alert and then select an indicator. The following information is displayed:
   - The indicator name and a description of the indicator type
   - Contribution to Alert
   - The anomaly values
   - The data source of the events found in the indicator

   The central panel display changes depending on which indicator is selected.



Take Action on High-Risk Users

After investigation, you can take action on the risky users to reduce or prevent further damage caused by malicious attackers in your organization. You can take any of the following actions:

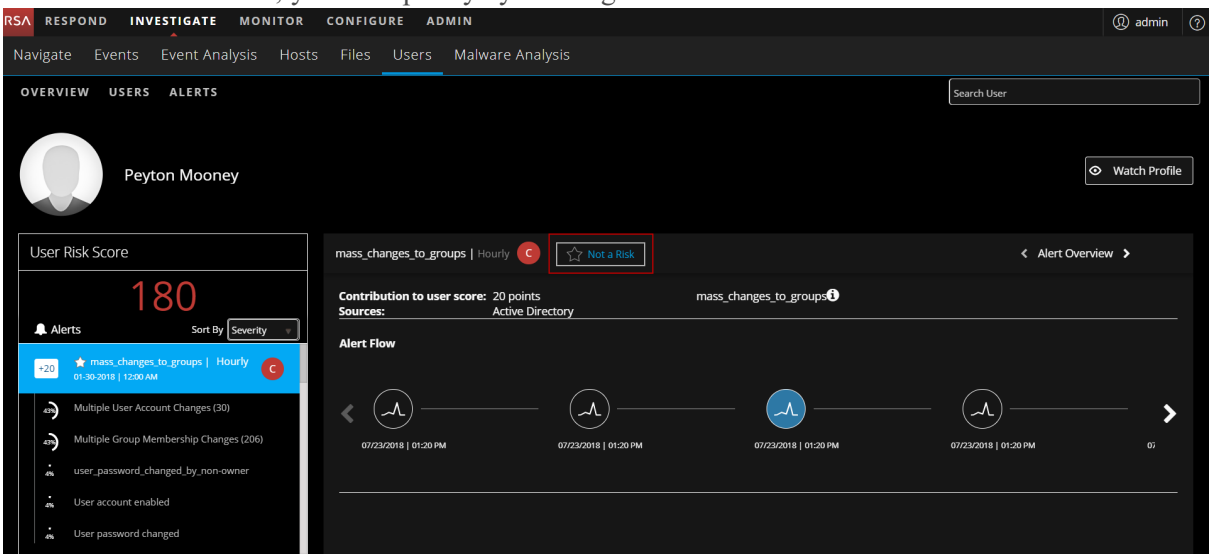
- Specify if the alert is not risky
- Save the behavioral profile for the use case found in your environment
- Add users to the watchlist, and the watch user profile, if you want to keep a track of the user activity

Specify that an alert is not risky.

If and alert is not a risk, you can mark it so that the user score for the user is automatically reduced.

To specify if the alert is not risky:

1. Log into **NetWitness Platform** and go to **INVESTIGATE** > **Users**.
2. Take action on the users from any of the following tabs:
   a. In the **Overview** tab, in the **High Risk Users** panel, select a user and click either on the username or on the user score.
   b. In the **Users** tab, select a user and click on the username.
   The User Profile view is displayed.
3. If the alert is not a risk, you can specify by clicking **Not a Risk** .



When an alert is marked as **Not a Risk**, the user score is reduced automatically.

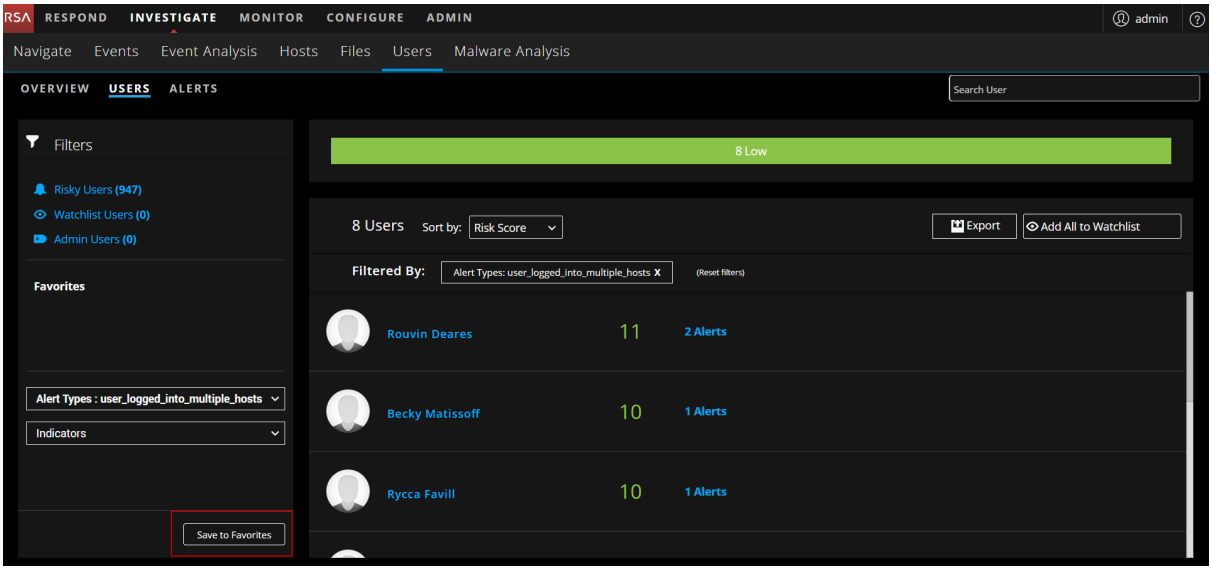
Save Behavioral Profile

The combination of the alert types and indicators you select during the forensics investigation is a behavioral profile. You can save the behavioral profile, so you can monitor this use case in future.

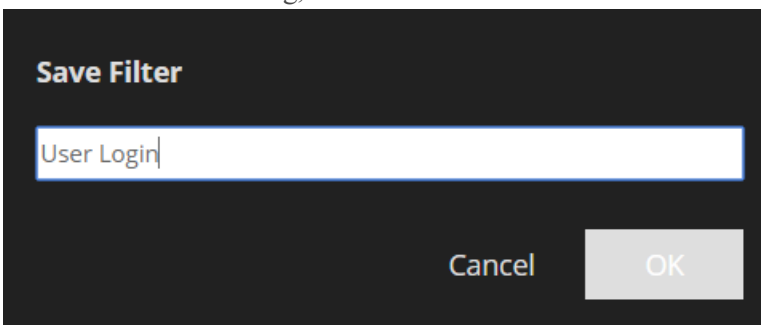
For example, if your organization is attacked and the attackers penetrated by brute forcing user accounts, you can select filters using the brute force alert type. This can be saved as favorite. You can proactively monitor for future brute force attempts. To do so, you can click the favorite to see if new users were subjected to this type of attack.

To save a behavioral profile:

1. Log into **NetWitness Platform** and go to **INVESTIGATE** > **Users**.
   The Overview tab is displayed.
2. Click the **Users** tab.
3. In the **Filters** panel, select the alert in the **Alert Type** drop-down and Indicators in the **Indicators** drop-down.
4. Click **Save to Favorites**.



5. In the **Save Filter** dialog, enter the name of the filter and click **Ok**.



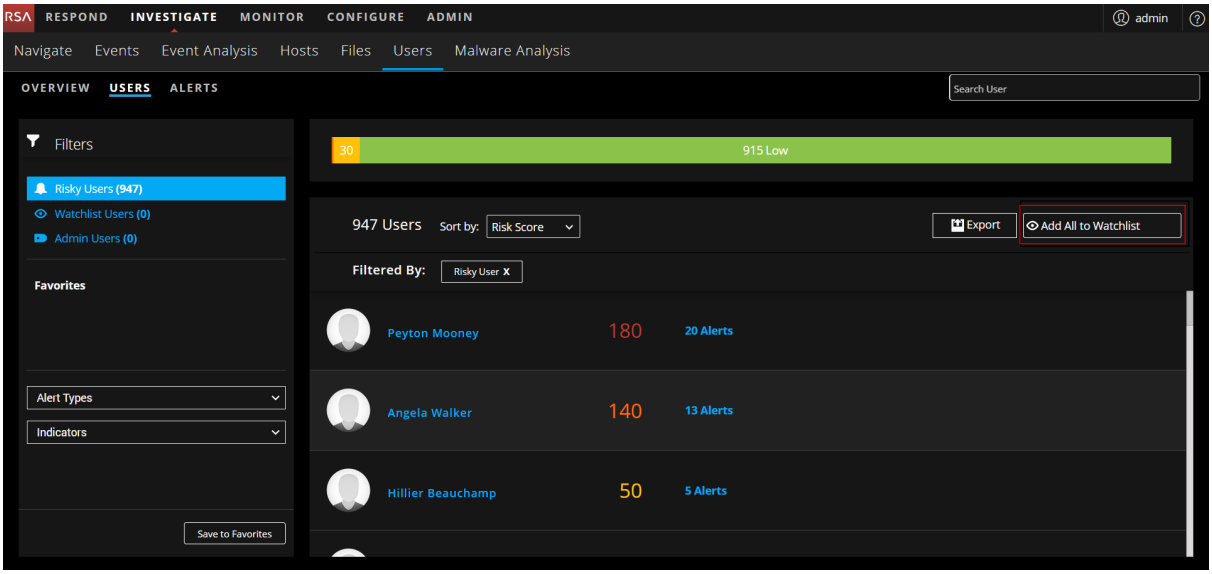
The behavioral profile is saved and displayed in the Favorites panel. You can click on the profile in the Favorites to monitor the users.

Add All Users to the Watchlist

If you want to keep track of users with recent activity but do not want to follow up with an immediate investigation, you can add the users to the watchlist and revisit over time to see if the risk score is elevated.

To add all users to the watchlist:

1. Log into **NetWitness Platform** and go to **INVESTIGATE** > **Users**.
   The Overview tab is displayed.
2. Select the **Users** tab.
3. Select the users of specific categories using filters.
4. Click **Add All to Watchlist**.



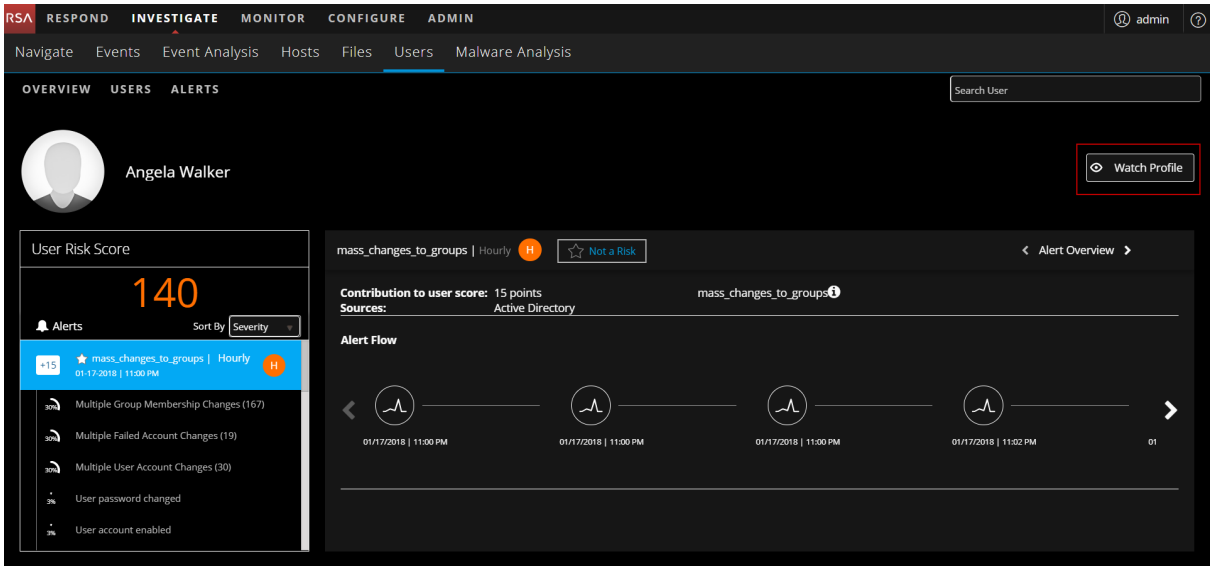
The list of users are added to the watchlist.

Watch Profile

The watch user profile is a list of users that you want to monitor for potential threats. The watch user profile marks a user so that the users can be quickly referenced on the dashboard. This is essentially a bookmark to monitor suspicious users.

To watch user profile:

1. Log into **NetWitness Platform** and go to **INVESTIGATE** > **Users**. Do any of the following:
   a. In the **Overview** tab, under **High Risk Users** panel, select a user and click on either the username or the user score.
   b. In the **Users** tab, select a user and click the username.
   The User Profile view is displayed.
2. Click **Watch Profile** in the upper right corner of the User Profile.



The user is added to the watchlist.

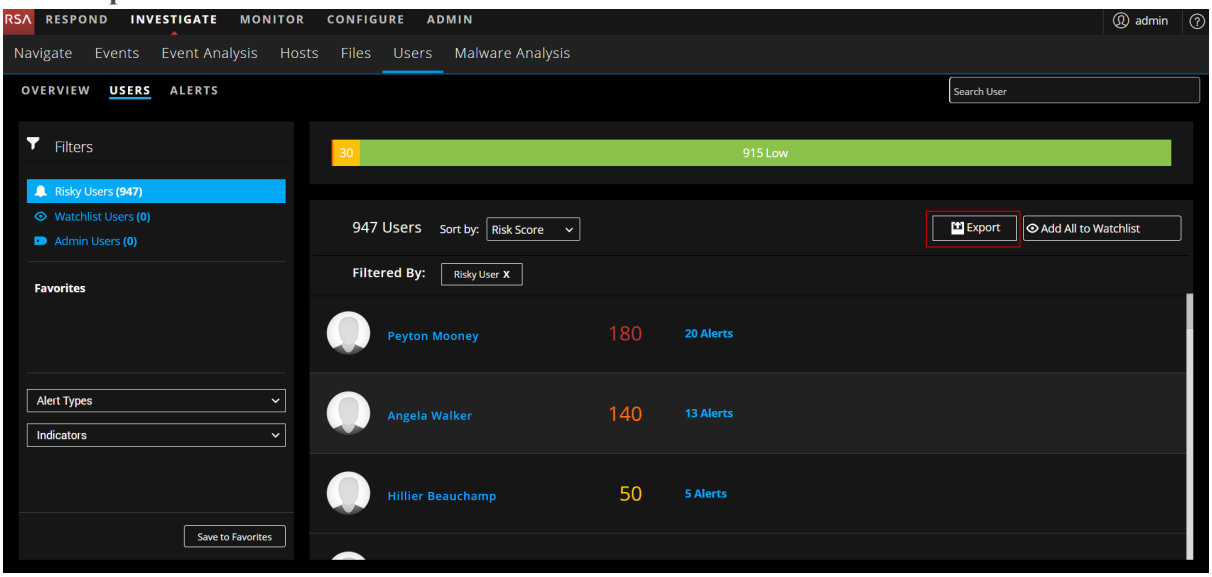
Export a list of High-Risk Users

You can export a list of all users and their scores in a .csv file format. You can use this information to compare with other data analysis tools like tableau, powerbi, and zeppelin.

To export a list of high-risk users:

1. Go to **INVESTIGATE** > **Users**.
   The Overview tab is displayed.
2. Select the **Users** tab.

3. Click **Export**.



The list of all users and the associated user score is downloaded in the .csv file format.

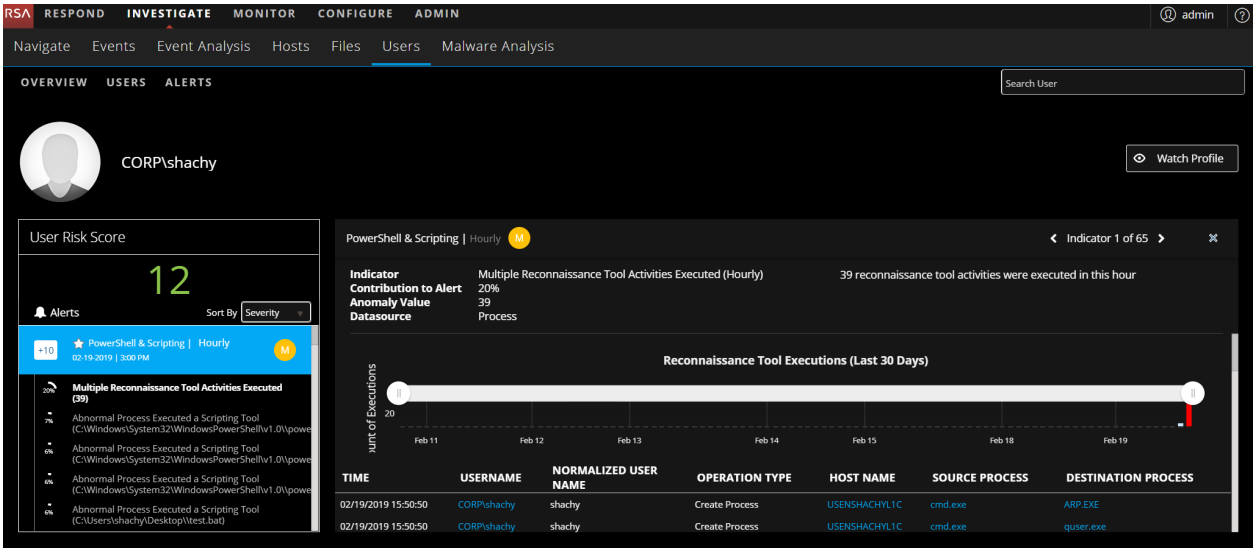
Investigate Top Alerts

Anomalies that are found as incoming events are compared to the baseline and compiled into hourly alerts. Relatively strong deviations from the baseline, together with a unique a composition of anomalies, are more likely to get a higher alert score.

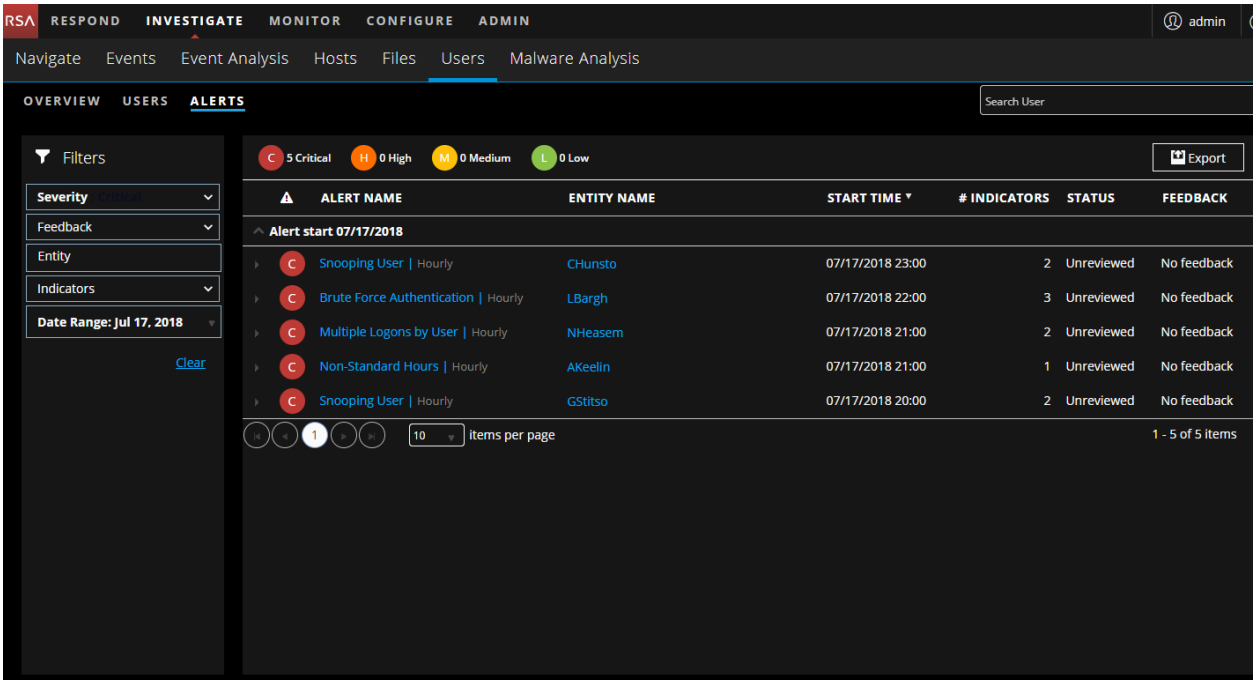
You can quickly view the most critical alerts in your environment, and start investigating them from either the OVERVIEW tab or the ALERTS tab. The following figure is an example of Top Alerts in the OVERVIEW tab. The alerts are listed in order of severity and the number of users who generate the alerts.

To investigate an alert on this page, click an alert in the **Top Alerts** section to see details about the alert.

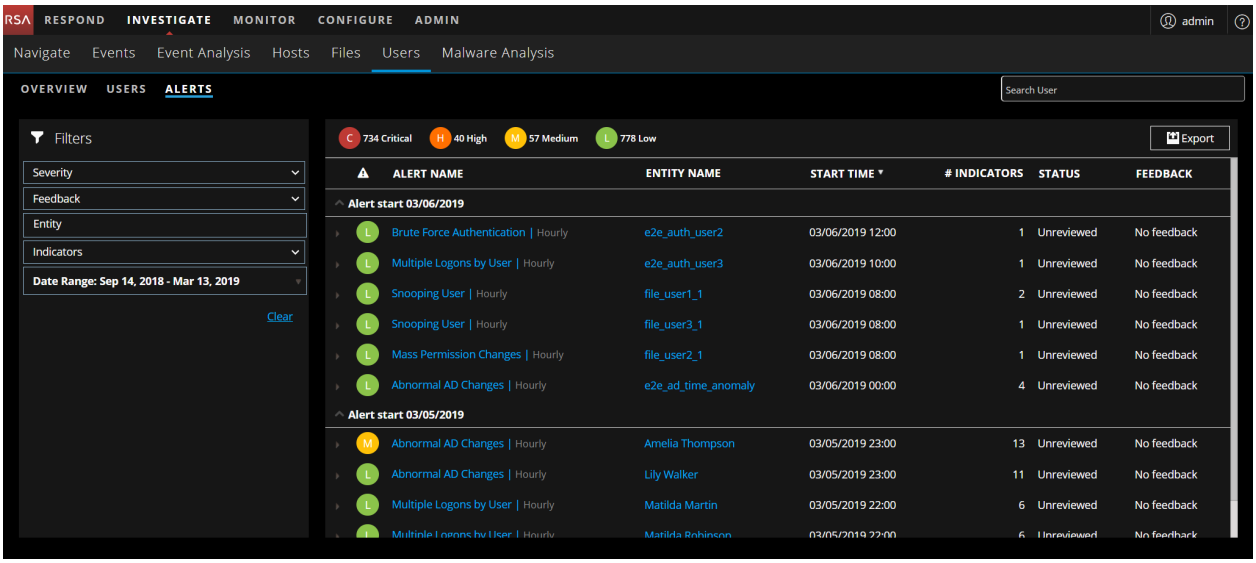
The following figure shows details about the event that caused the alert, and the timeframe in which it occurred.



From the Alerts Severity panel at the bottom of the Overview tab, you can click on a bar in the graph to review top alerts in the ALERTS tab. The following figure shows the top alerts listed in the Alerts tab.



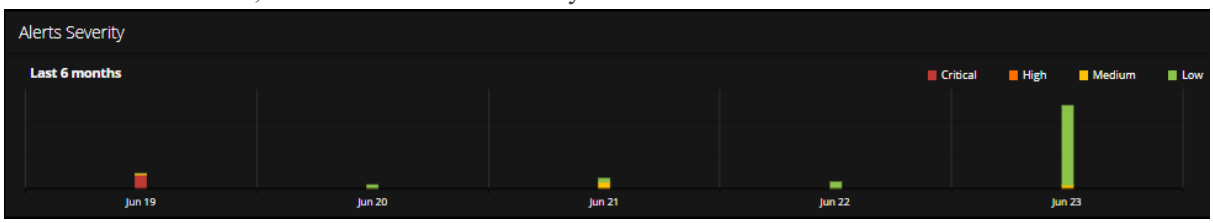
Investigating alerts is particularly useful when you want to focus on a timeframe in which you believe your systems were compromised. You can view forensic information based on a timeframe and gather detailed information about events that occurred during that time in the Alerts tab.



Begin an Investigation of Critical Alerts

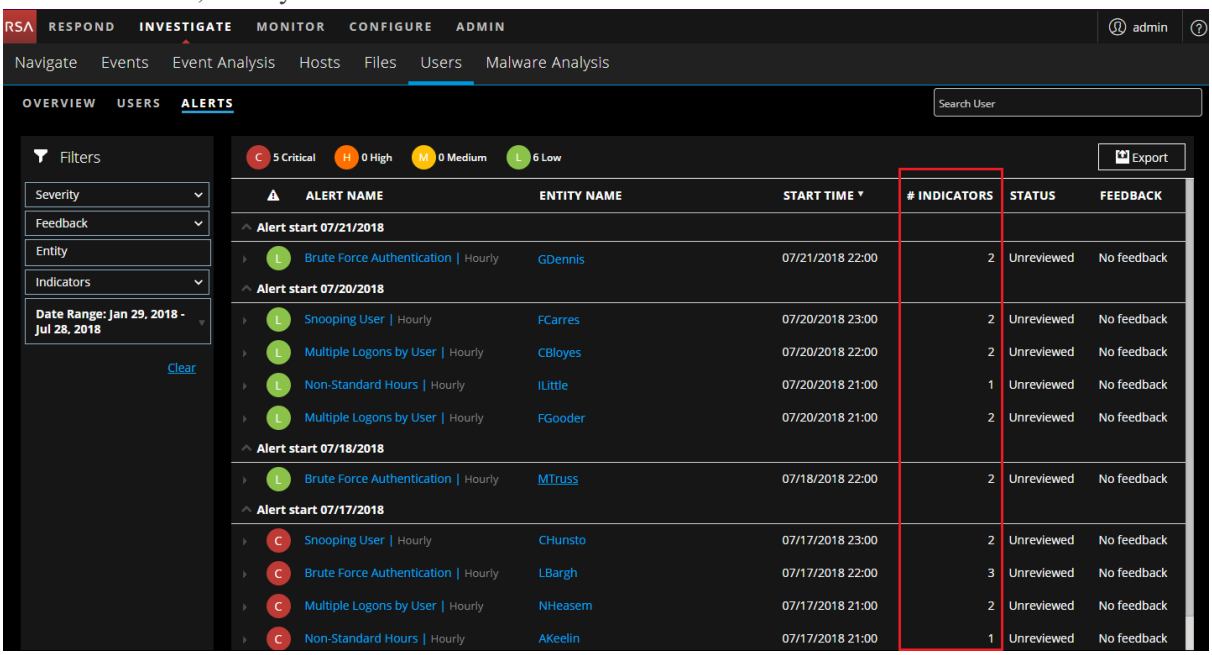
You can begin your investigation of critical alerts in the following ways:

1. On the Overview tab, look at the Alerts Severity.



   Is there an even distribution of alerts or are there a few days when there was a noticeable spike? A spike could indicate something suspicious like malware. Make a note of those days so you can inspect the alerts (the bar from the chart links directly to the alerts for that specific day).

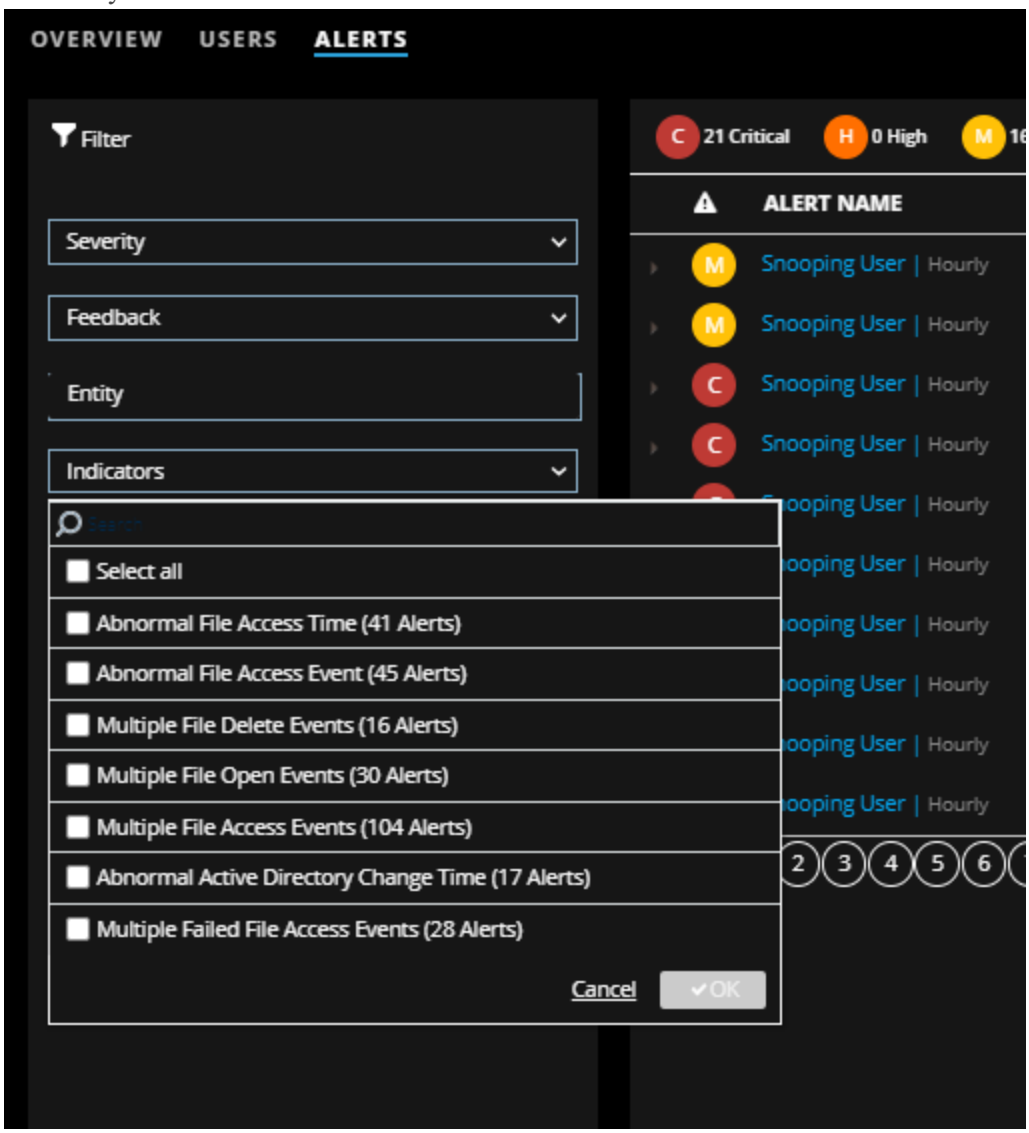
2. In the Alerts tab, sort by the number of indicators:



Ensure that the alerts that aggregated the most number of indicators show at the top of the list. Similar to identifying the users with the highest number of alerts, more indicators help illustrate a more interesting story and provide you with a more solid timeline that you can follow.

3. Expand the top alerts in the list:
   - Look for alerts that have varied data sources. These show a broader pattern of behavior.
   - Look for a variety of different indicators.
   - Look for indicators with high numeric values, specifically for high values that are not indicative of activity that a human can perform manually (for example, a user accessed 8,000 files).
4. Look for unique Windows event types that users do not typically change as these can indicate suspicious administrative activity.

5. Search by indicators:



The list shows the number of alerts raised that contain each indicator.

- Look for the top volume indicators; filter by an indicator and review by user to find users who experienced the highest number of these indicators.
- In general, you can ignore time-based alerts (for example, Abnormal Logon Time) as these are very common. However, they provide good context when combined with higher interest indicators.

6. Drill into more detail:
   - Leverage alert names to begin establishing a threat narrative. Use the fact that the strongest contributing indicator usually determines the alert's name to begin explaining why this user is flagged.
   - Use the timeline to layout the activities found and try to understand what could explain the observed behaviors.

- Follow up by reviewing each indicator anddemonstrating how supporting information, in the form of graphs and events, can help analysts verify an incident. Suggest possible next stages of investigation using external resources (for example, SIEM, network forensics, and directly reaching out to the user or a managing director).
- Conclude the investigation by prompting for feedback and leaving a comment.

7. Take action to address threats determined by your investigation of alerts. For more information, see Take Action on High-Risk Users.

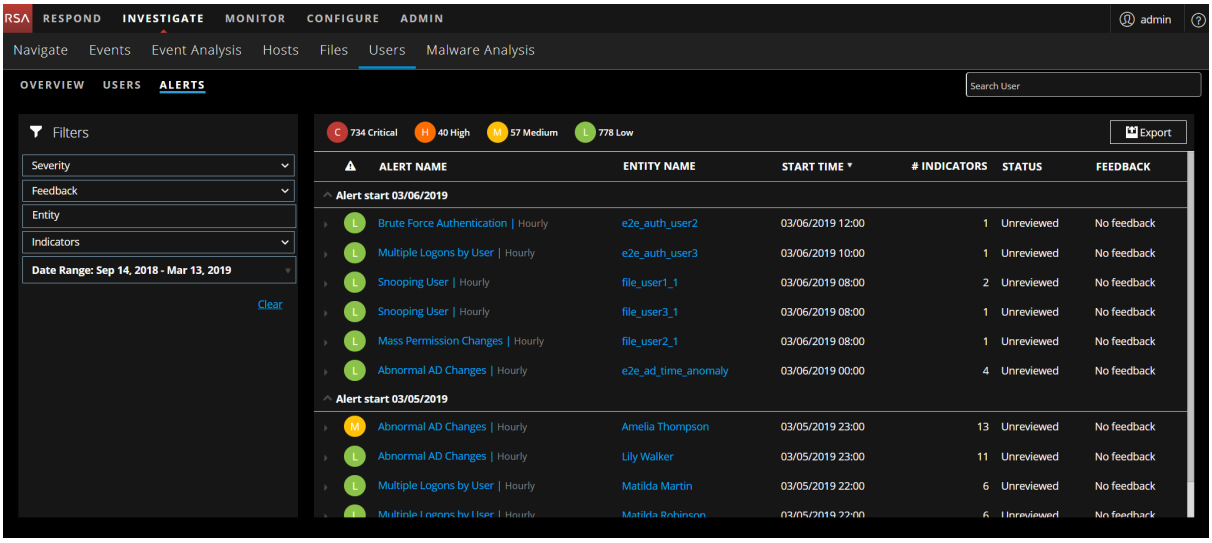
The following topics explain various ways to investigate alerts.

- Filter Alerts
- Investigate Events
- Manage Top Alerts
- View NetWitness UEBA Metrics in Health and Wellness

Filter Alerts

You can filter the alerts displayed in the Alerts tab by severity, feedback, entity, indicators, and date range.

1. Log into NetWitness Platform and go to **INVESTIGATE** > **Users** > **Alerts**. The Alerts tab is displayed.



2. To filter by severity, click **Severity** in the **Alert Filter** panel, select one or more options, and then click **OK**. The options are Select all, Critical, High, Medium, and Low.
3. To filter by feedback, click the down arrow under **Feedback**, select one or more options, and then click **OK**. The options are Select all, No feedback, and Not a risk.
4. To filter by entity, type a user name or the name of an entity in the **Entity** field.

5. To filter by date range, click the **Date Range** down arrow under , select an option, and then click **OK**. The options are Last week, Last month, and Select Range.

The alerts are displayed in the right pane according to the filter you selected. To clear filters, in the left pane, click **Clear**.

Investigate Events

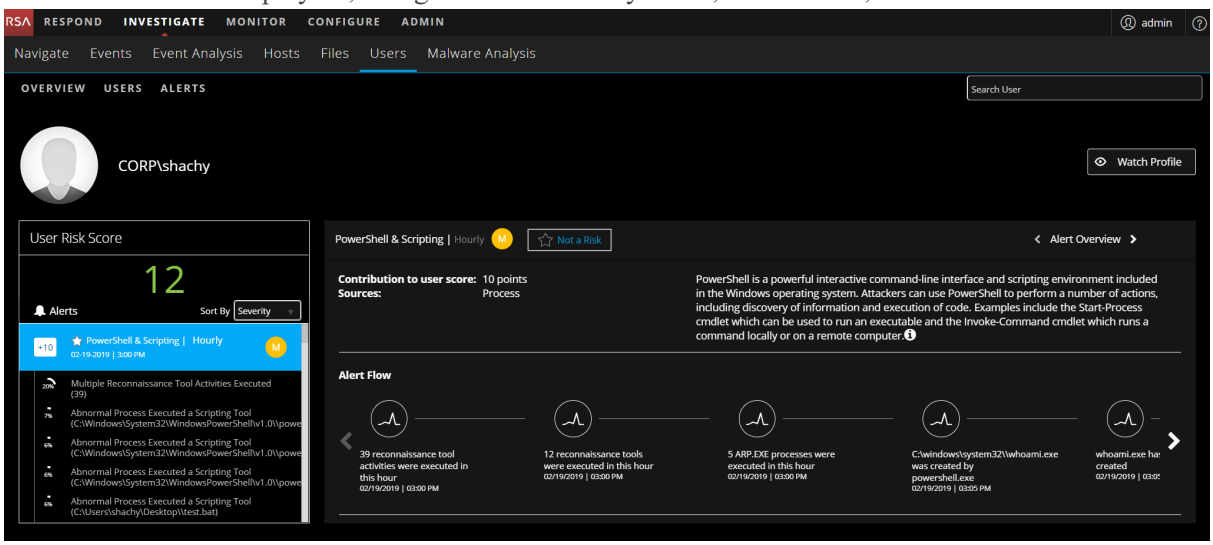
You can view all the alerts and indicator associated with a users in the User Profile view.

In the events table you can find all the events contributed to the specific indicator for the specific user. You can further investigate on events by clicking on Username that enable Pivot to Investigate > Events. In the Events view, you can see the list of events that occurred on that day for the specific user. By default the time range is set to one day. You can change the time range.

In addition you can pivot to Host Details view and can have deeper insight about that host. And, pivot to Analyze process view for detailed investigation on the process for that event for that week as the time range is set to seven days. By default the time range is set to seven day. You can change the time range.

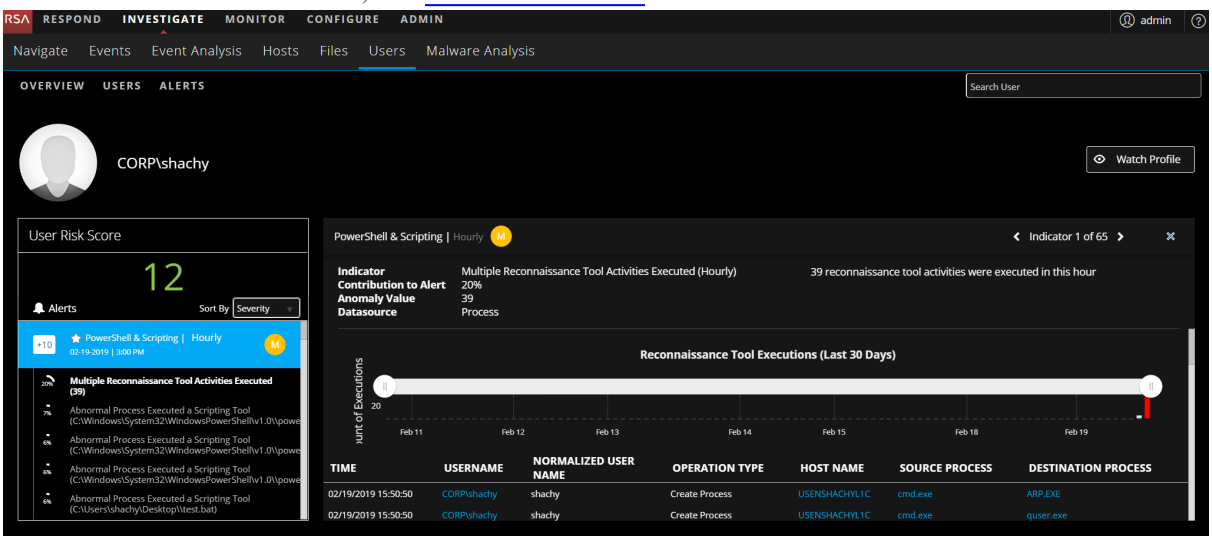
To view the events:

1. Log into NetWitness Platform and go to **INVESTIGATE** > **Users** > **ALERTS**.
2. Under **ALERT NAME**, click an alert name.
   The indicators are displayed , along with the anomaly value, data source, and start time.



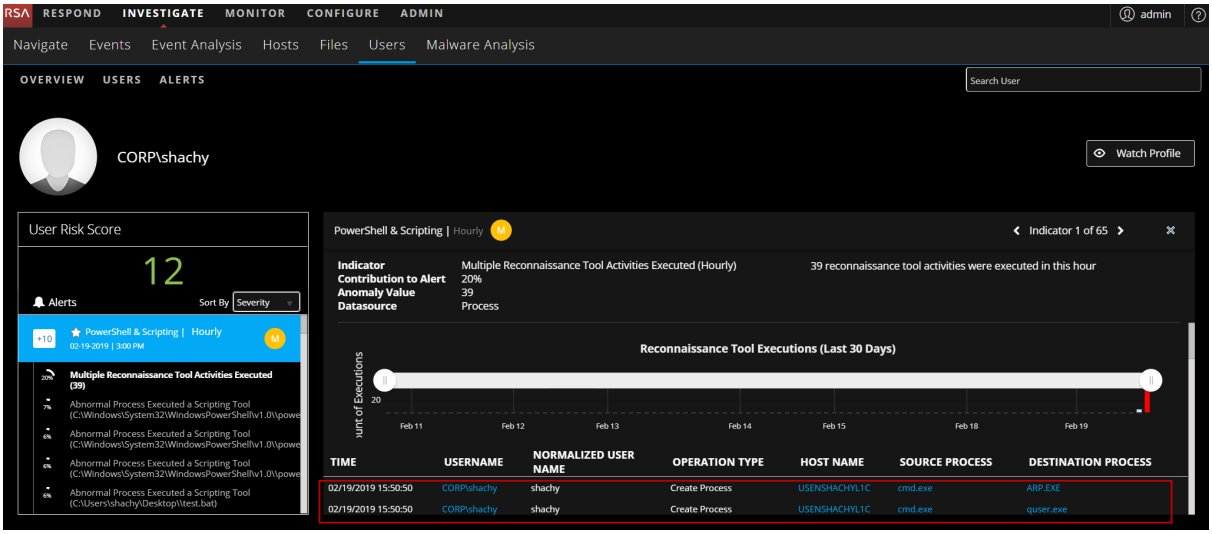
3. Under **Alert Flow**, click on the graph icon.
   A graph is displayed that shows details about a specific indicator, including the timeline in which the anomaly occurred and the user associated with the indicator. The following figure shows an example of a graph. The type of graph can vary, depending on the type of analysis performed by NetWitness

UEBA. For more information , see User Profile View.



To pivot to the Events view:

1. Go to **INVESTIGATE** > **Users**, and select an alert or a user.
2. Under **User Risk Score**, select an alert name.
   Indicators are displayed under the alert.
3. Select an indicator of interest.
   Values that can be used to pivot are highlighted in light blue at the bottom of the panel.



4. In the Events table, click the username highlighted in blue.
   The Events view is displayed.

For information about investigating items of interest in the Events view, see "Investigating Raw Events in the Events View" in the *NetWitness Investigate User Guide*.

To pivot to the Hosts Details view:

If you have NetWitness Endpoint installed, you can pivot to Hosts Details view for detailed information of the host.

1. Go to **INVESTIGATE** > **Users**, and select an alert or a user.
2. Under **User Risk Score**, select an alert name.
   Indicators are displayed under the alert.
3. Select an indicator of interest. Details about the indicator are displayed in the right panel.
4. In the events table, click the events related to the host.
   The Host Details view is displayed.

For information about investigating items of interest in the Hosts view, see "Investigating Hosts" topic in the *NetWitness Endpoint User Guide*.

To pivot to the Analyze Process view:

If you have NetWitness Endpoint installed, you can pivot to Analyze Process view for detailed information about the process.

1. Go to **INVESTIGATE** > **Users**, and select an alert or a user.
2. Under **User Risk Score**, select an alert name. Indicators are displayed under the alert.
3. Select an indicator of interest. Details about the indicator are displayed in the right panel.
4. In the Events table, click the events related to the process.
   The Analyze process view is displayed.

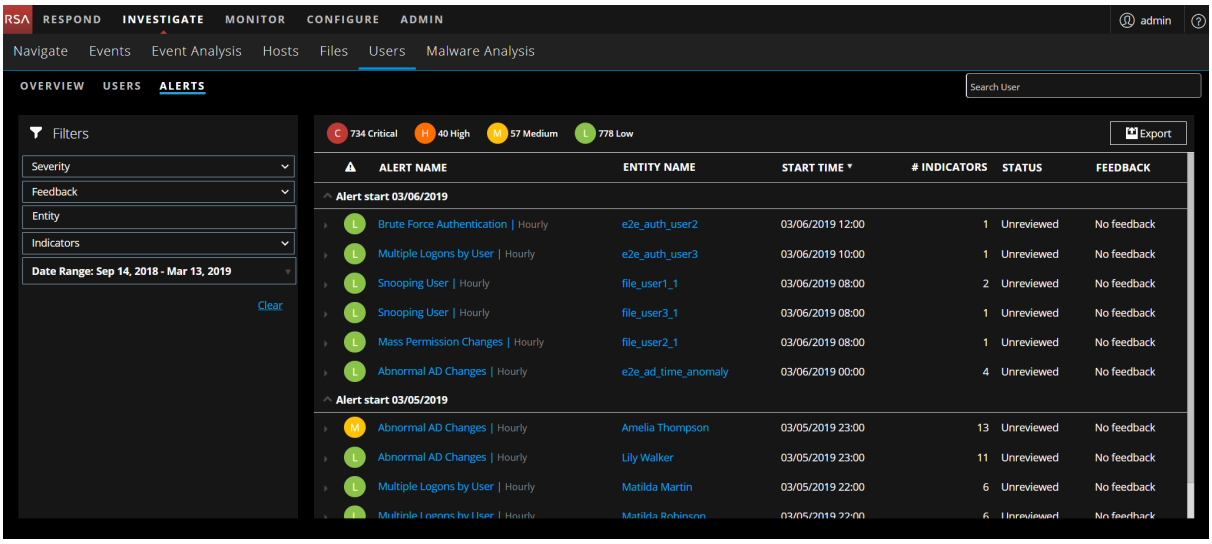
For more information, see "Investigating a Process" topic in the *NetWitness Endpoint User Guide*.

Manage Top Alerts

You can export a list of all alerts to a .csv file format. An analyst can use this information to compare the data from other sources in other data analysis tools like tableau, powerbi, and zeppelin.

To export alert data to a .csv file:

1. Log into NetWitness Platform and go to **INVESTIGATE** > **Users** > **ALERTS**.
   The Alerts tab is displayed.


RSA
RESPOND
INVESTIGATE
MONITOR
CONFIGURE
ADMIN
admin
Navigate
Events
Event Analysis
Hosts
Files
Users
Malware Analysis
OVERVIEW
USERS
ALERTS
Search User
Filters
Severity
Feedback
Entity
Indicators
Date Range: Sep 14, 2018 - Mar 13, 2019
Clear
734 Critical
40 High
57 Medium
778 Low
Export
ALERT NAME
ENTITY NAME
START TIME
INDICATORS
STATUS
FEEDBACK
Alert start 03/06/2019
Brute Force Authentication | Hourly
e2e_auth_user2
03/06/2019 12:00
1
Unreviewed
No feedback
Multiple Logons by User | Hourly
e2e_auth_user3
03/06/2019 10:00
1
Unreviewed
No feedback
Snooping User | Hourly
file_user1_1
03/06/2019 08:00
2
Unreviewed
No feedback
Snooping User | Hourly
file_user3_1
03/06/2019 08:00
1
Unreviewed
No feedback
Mass Permission Changes | Hourly
file_user2_1
03/06/2019 08:00
1
Unreviewed
No feedback
Abnormal AD Changes | Hourly
e2e_ad_time_anomaly
03/06/2019 00:00
4
Unreviewed
No feedback
Alert start 03/05/2019
Abnormal AD Changes | Hourly
Amelia Thompson
03/05/2019 23:00
13
Unreviewed
No feedback
Abnormal AD Changes | Hourly
Lily Walker
03/05/2019 23:00
11
Unreviewed
No feedback
Multiple Logons by User | Hourly
Matilda Martin
03/05/2019 22:00
6
Unreviewed
No feedback

2. At the top right, click **Export**.
   All the alert data is downloaded in a .csv file format. Here is an example of the exported alert data in .csv format:

	A	B	C	D	E	F	G
1	Alert Name	Entity Name	Start Time	# of Indica	Status	Feedback	Severity
2	Brute Force Authenticati	e2e_auth_user2	Mar 06 20	1	Reviewed	No Feedback	Low
3	Multiple Logons by User	e2e_auth_user3	Mar 06 20	1	Reviewed	No Feedback	Low
4	Snooping User (Hourly)	file_user1_1	Mar 06 20	2	Reviewed	No Feedback	Low
5	Snooping User (Hourly)	file_user3_1	Mar 06 20	1	Reviewed	No Feedback	Low
6	Mass Permission Change	file_user2_1	Mar 06 20	1	Reviewed	No Feedback	Low
7	Abnormal AD Changes (H	e2e_ad_time_anor	Mar 06 20	4	Reviewed	No Feedback	Low
8	Abnormal AD Changes (H	Amelia Thompson	Mar 05 20	13	Reviewed	No Feedback	Medium
9	Abnormal AD Changes (H	Lily Walker	Mar 05 20	11	Reviewed	No Feedback	Low
10	Multiple Logons by User	Matilda Martin	Mar 05 20	6	Reviewed	No Feedback	Low
11	Multiple Logons by User	Matilda Robinson	Mar 05 20	6	Reviewed	No Feedback	Low

View NetWitness UEBA Metrics in Health and Wellness

RSA NetWitness UEBA sends metrics to the System Stats Browser tab in **ADMIN** > **Health & Wellness**. Along with basic system usage information, metrics that are specific to NetWitness UEBA users, alerts, and events are provided.

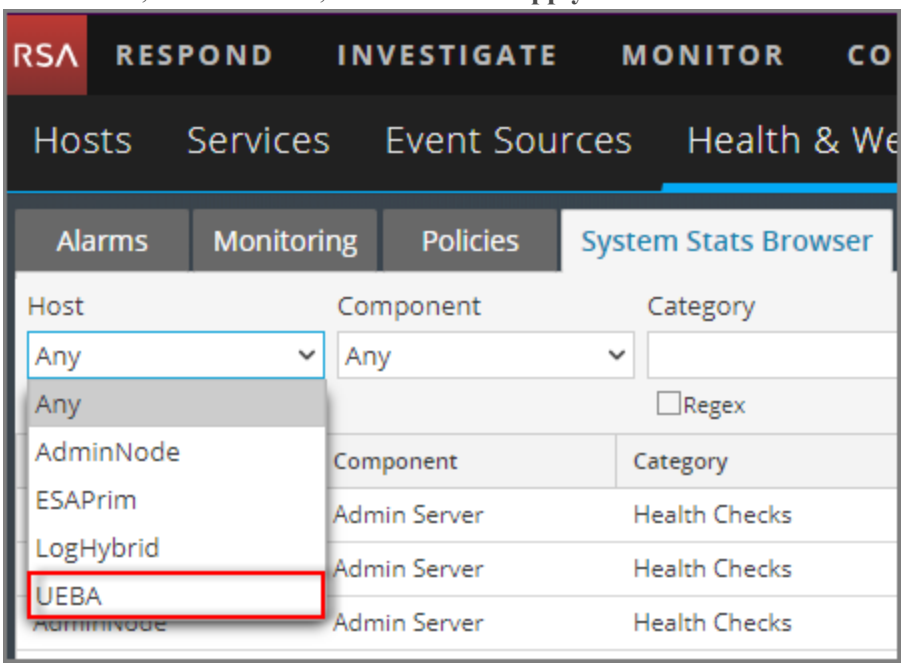
Analysts can use these metrics in the following ways:

- Confirm that the currently procured license is in compliance with their license agreements, and by how much per day.
- Determine if the system is functioning as required.
- Actively monitor new events.
- Monitor the creation of new indicators and alerts.

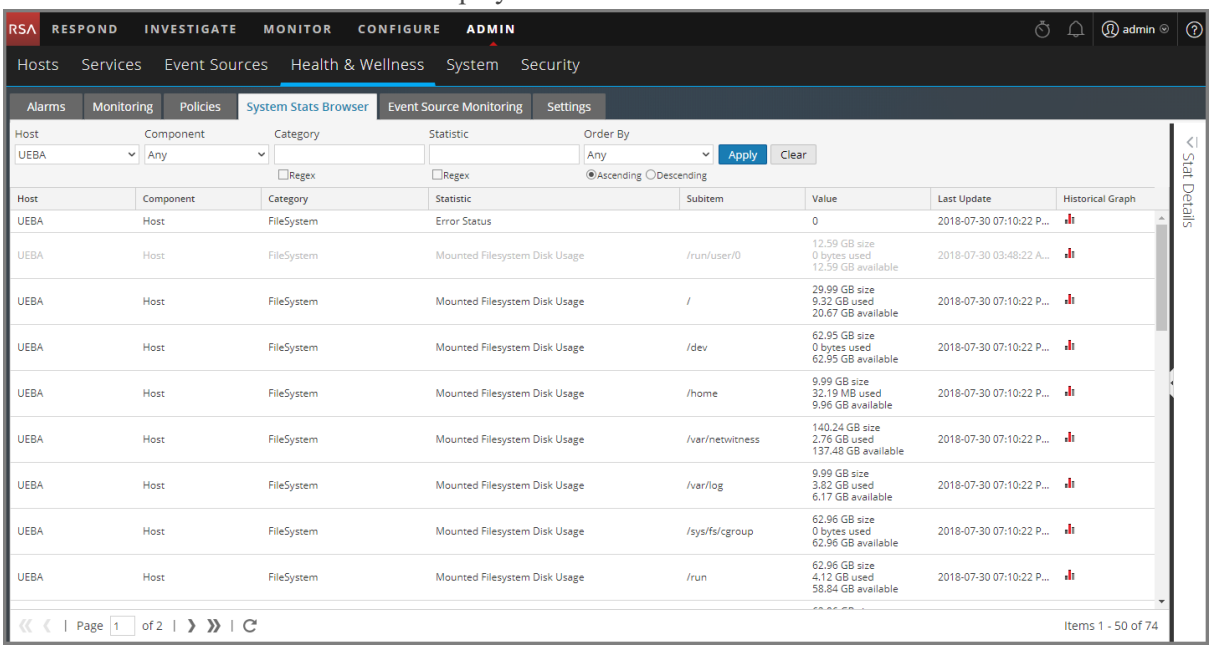
If these critical metrics are reported as "0", it may indicate a system malfunction.

To view NetWitness UEBA metrics in the System Stats Browser in Health & Wellness:

1. Log in to NetWitness Platform and go to **ADMIN** > **Health & Wellness**.
2. Click the System Stats Browser tab.
   The System Stats Browser is displayed.
3. Under Host, select **UEBA**, and then click **Apply**.



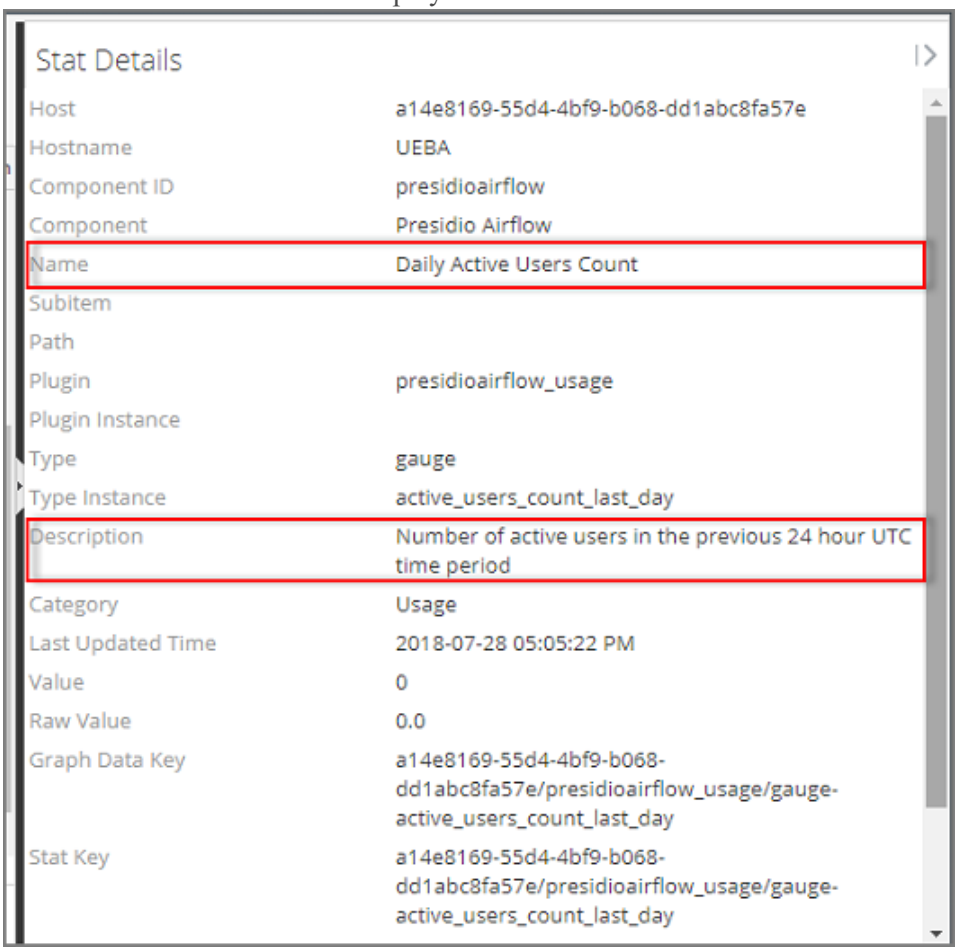
Results for NetWitness UEBA are displayed.



Host	Component	Category	Statistic	Subitem	Value	Last Update	Historical Graph
UEBA	Host	FileSystem	Error Status		0	2018-07-30 07:10:22 P...	
UEBA	Host	FileSystem	Mounted Filesystem Disk Usage	/run/user/0	12.59 GB size 0 bytes used 12.59 GB available	2018-07-30 03:48:22 A...	
UEBA	Host	FileSystem	Mounted Filesystem Disk Usage	/	29.99 GB size 9.32 GB used 20.67 GB available	2018-07-30 07:10:22 P...	
UEBA	Host	FileSystem	Mounted Filesystem Disk Usage	/dev	62.95 GB size 0 bytes used 62.95 GB available	2018-07-30 07:10:22 P...	
UEBA	Host	FileSystem	Mounted Filesystem Disk Usage	/home	9.99 GB size 32.19 MB used 9.96 GB available	2018-07-30 07:10:22 P...	
UEBA	Host	FileSystem	Mounted Filesystem Disk Usage	/var/netwitness	140.24 GB size 2.76 GB used 137.48 GB available	2018-07-30 07:10:22 P...	
UEBA	Host	FileSystem	Mounted Filesystem Disk Usage	/var/log	9.99 GB size 3.82 GB used 6.17 GB available	2018-07-30 07:10:22 P...	
UEBA	Host	FileSystem	Mounted Filesystem Disk Usage	/sys/fs/cgroup	62.96 GB size 0 bytes used 62.96 GB available	2018-07-30 07:10:22 P...	
UEBA	Host	FileSystem	Mounted Filesystem Disk Usage	/run	62.96 GB size 4.12 GB used 58.84 GB available	2018-07-30 07:10:22 P...	

4. To view details for a statistic, click **Stat Details**.

Details about the statistic are displayed.



The **Name** and **Description** fields provide a summary of the metrics that are displayed.

For more information about Health & Wellness and the System Stats Browser tab, see "Monitor System Statistics" in the *System Maintenance Guide*. Go to the Master Table of Contents to find all NetWitness Platform Logs & Network 11.x documents.

Monitor Health and Wellness of UEBA

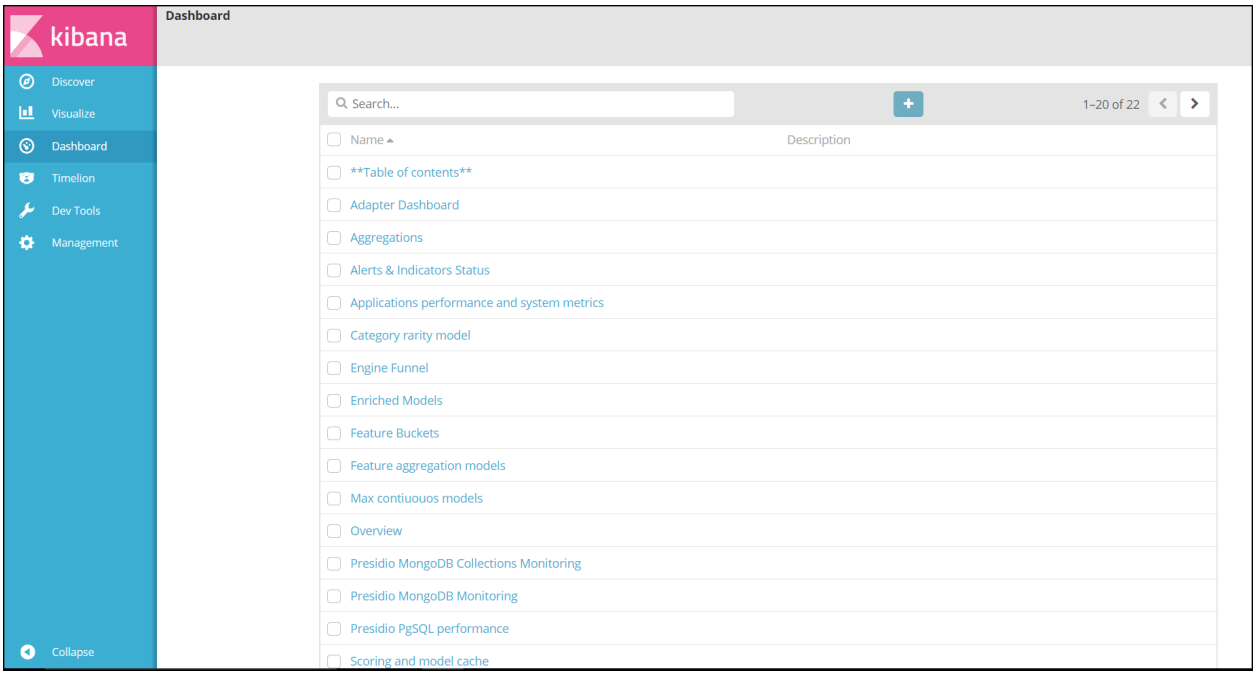
You can view the status of UEBA host in the INVESTIGATE > **Users** > **Overview** tab.

The UEBA system should generate at least 1 alert weekly. If the system stops generating the alerts for a period of 7 days or more, advanced monitoring is required to monitor statistics about the total number of events versus successful events, total number of alerts generated and so on.

Advanced monitoring is enabled through a third-party tools prepackaged in NetWitness Platform: Kibana and Airflow.

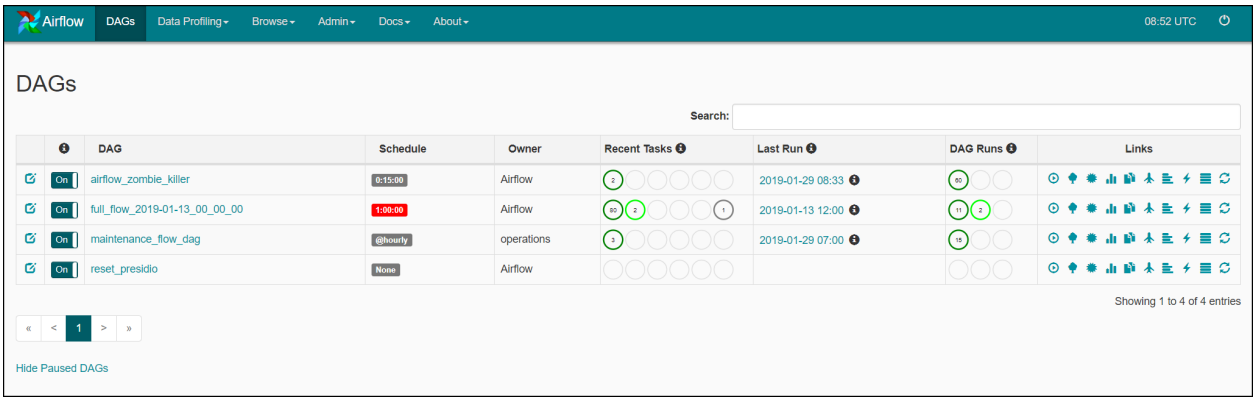
Access Kibana

To access kibana, go to *https://<UEBA_host>/kibana/app/kibana#/*, and enter user name and password. The Dashboard view is displayed.



Access Airflow

To access Airflow, go to *https://<UEBA_host>/admin/*, and enter user name and password. The DAGs view is displayed.



Note: The Kibana and Airflow webserver User Interface password is the same as the deploy_admin password. Make sure that you record this password and store it in a safe location.

Kibana

Kibana is an open source analytics and visualization platform. You can monitor the health of UEBA through various dashboards:

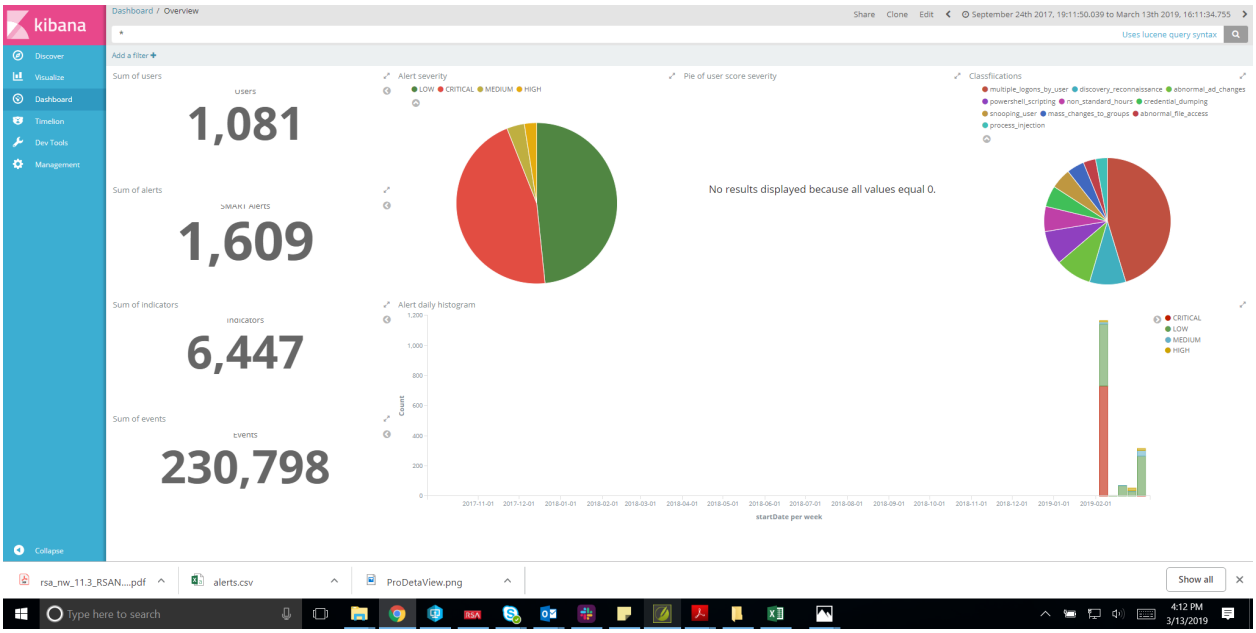
Overview Dashboard

The **Overview** dashboard provides the statistics over the analytics about the users, alerts and indicators such as:

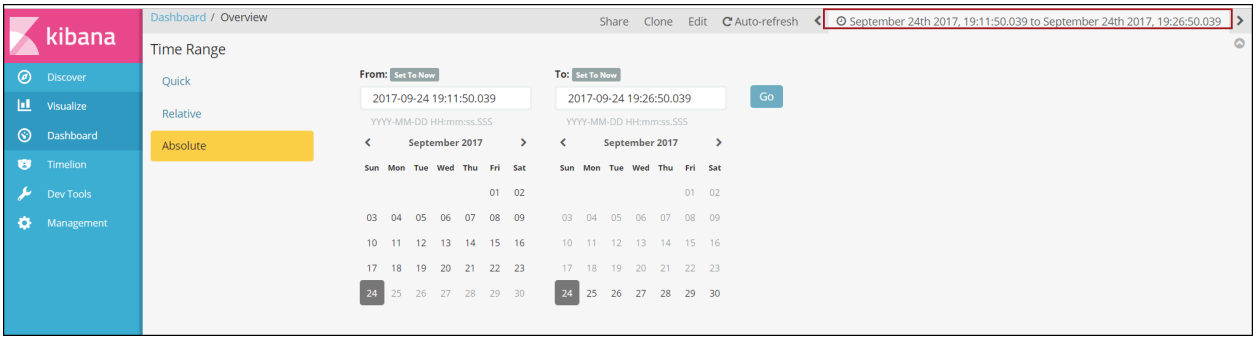
- The alerts type that are generated, and the alert severity distribution with the severity types (Low, Medium, High, Critical)
- Total number of active users and how many alerts are generated for those users
- The number of indicators and events processed
- The pie chart for user score severity and distribution for the alerts classification
- Alert daily histogram, which is the total number of alert per each severity triggered over time

To access the overview dashboard:

1. Log into Kibana, click **Dashboards** > **Overview**.
   The Overview dashboard is displayed.



2. Adjust the time range on the top right corner of the page based on your requirement to view the statistics.



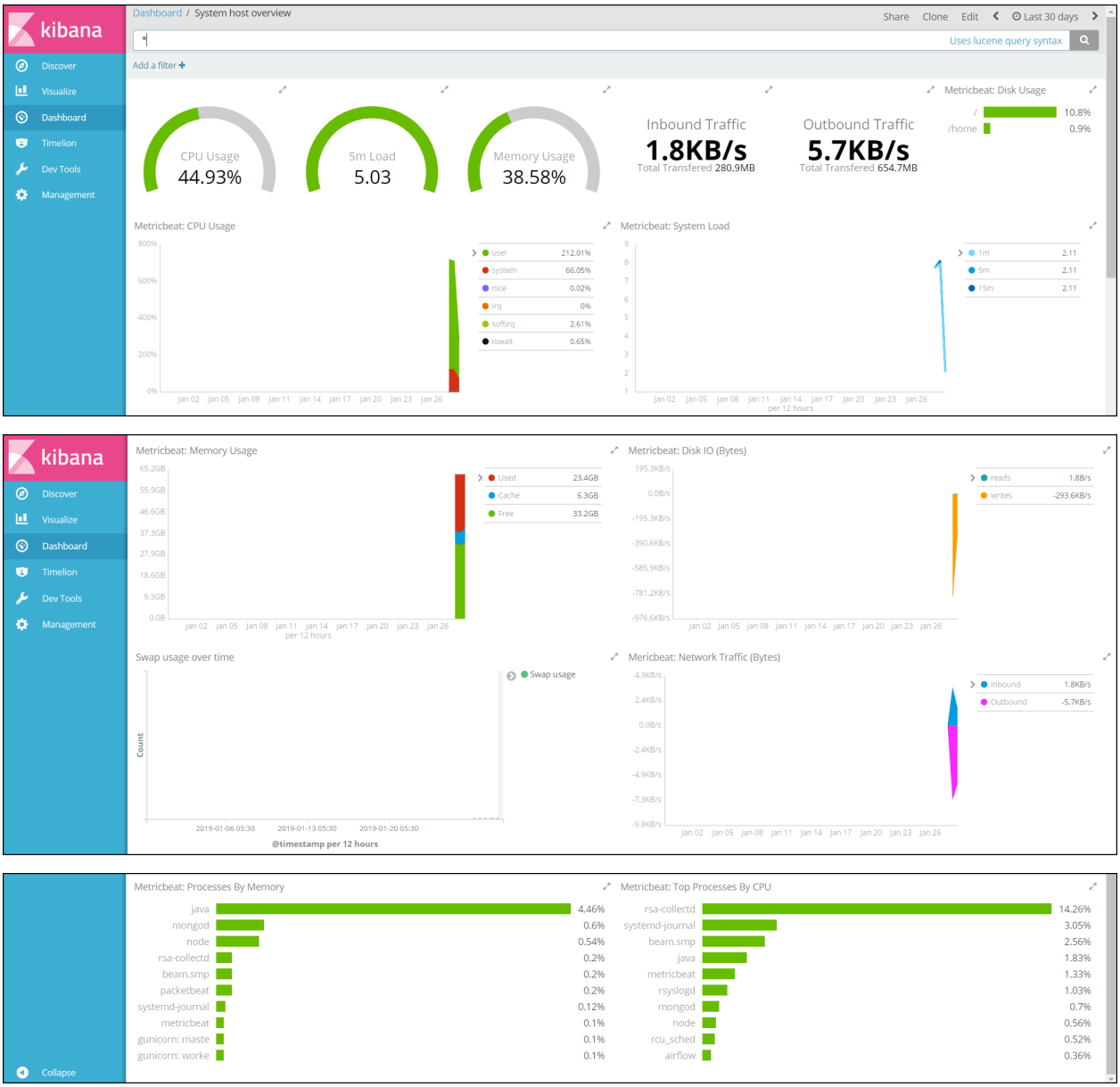
System Host overview

The System Host overview dashboard monitors the performance and health of UEBA host such as:

- CPU usage
- Memory consumption, and network.
- Process consuming CPU and Memory, for example MongoDB.
- Statistics over the disk usage.
- Inbound data is the amount of data transferred by user to view the UEBA UI.
- Outbound data is the amount of data fetched by UEBA from Broker or Concentrator.

To access System Host overview dashboard

1. Go to Kibana, click **Dashboards** > **System host overview**.
   The System host overview dashboard is displayed.



2. Adjust the time range on the top right corner of the page based on your requirement to view the statistics.

Note: During historical load the system works in high parallelism. Due to that IO, CPU and Memory is in high utilization. The pace would be 30 logical days in 4 wall clock time. Once the UEBA server is online the resource utilization reduces.

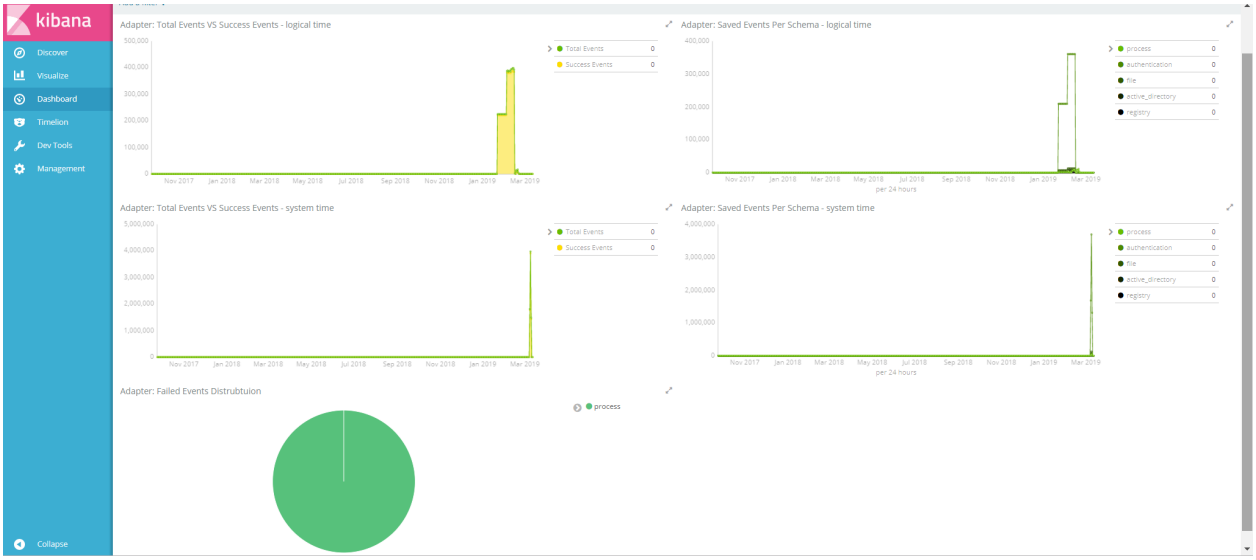
Adapter Dashboard

The **Adapter** dashboard is used to monitor the following:

- The failed events distribution
- Total number of events versus successful events
- Saved events per schema

To access the adapter dashboard system Time

1. Log into Kibana, click **Dashboards** > **Adapter**.
   The Adapter Dashboard is displayed.



2. Adjust the time range on the top right corner of the page based on your requirement to view the statistics.

Support Dashboard Logical Time

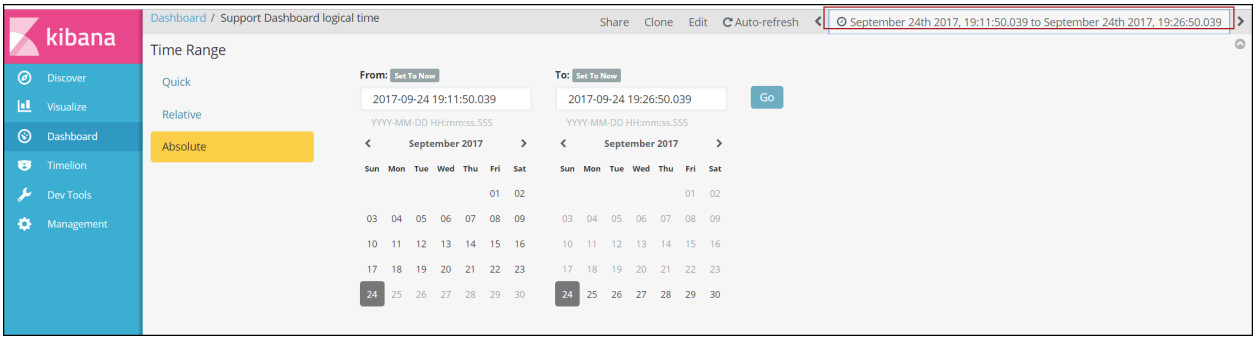
The **Support Dashboard Logical Time** provides the capability to detect the events processed time which is different form the system time such as:

- The amount of filtered events over time per schema
- The total number of alerts generated
- The alert types distribution
- The events that are related to an alert

To access support dashboard logical time:

1. Log into Kibana, click **Dashboards** > **Support Dashboard Logical Time**.
   The Support Dashboard logical time is displayed.

2. Adjust the time range on the top right corner of the page based on your requirement to view the statistics.



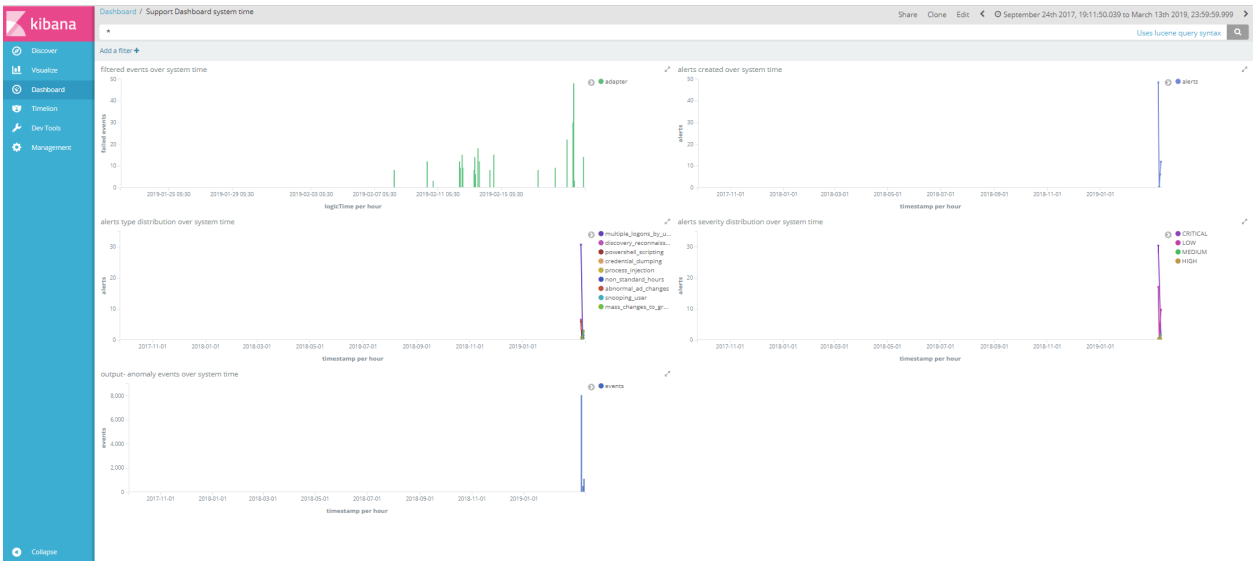
Support Dashboard System Time

The support dashboard system time allows you to monitor the system time when the events are processed.

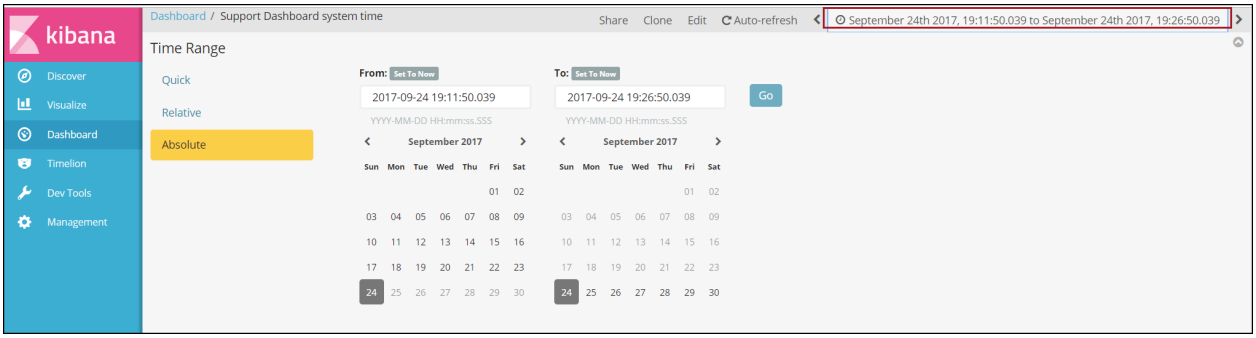
- The amount of filtered events over time per schema
- The total number of alerts generated
- The alert types distribution
- The events that are related to an alert

To access support dashboard system Time:

1. Log into Kibana, click **Dashboards** > **Support Dashboard system Time**.



2. Adjust the time range on the top right corner of the page to view the statistics.

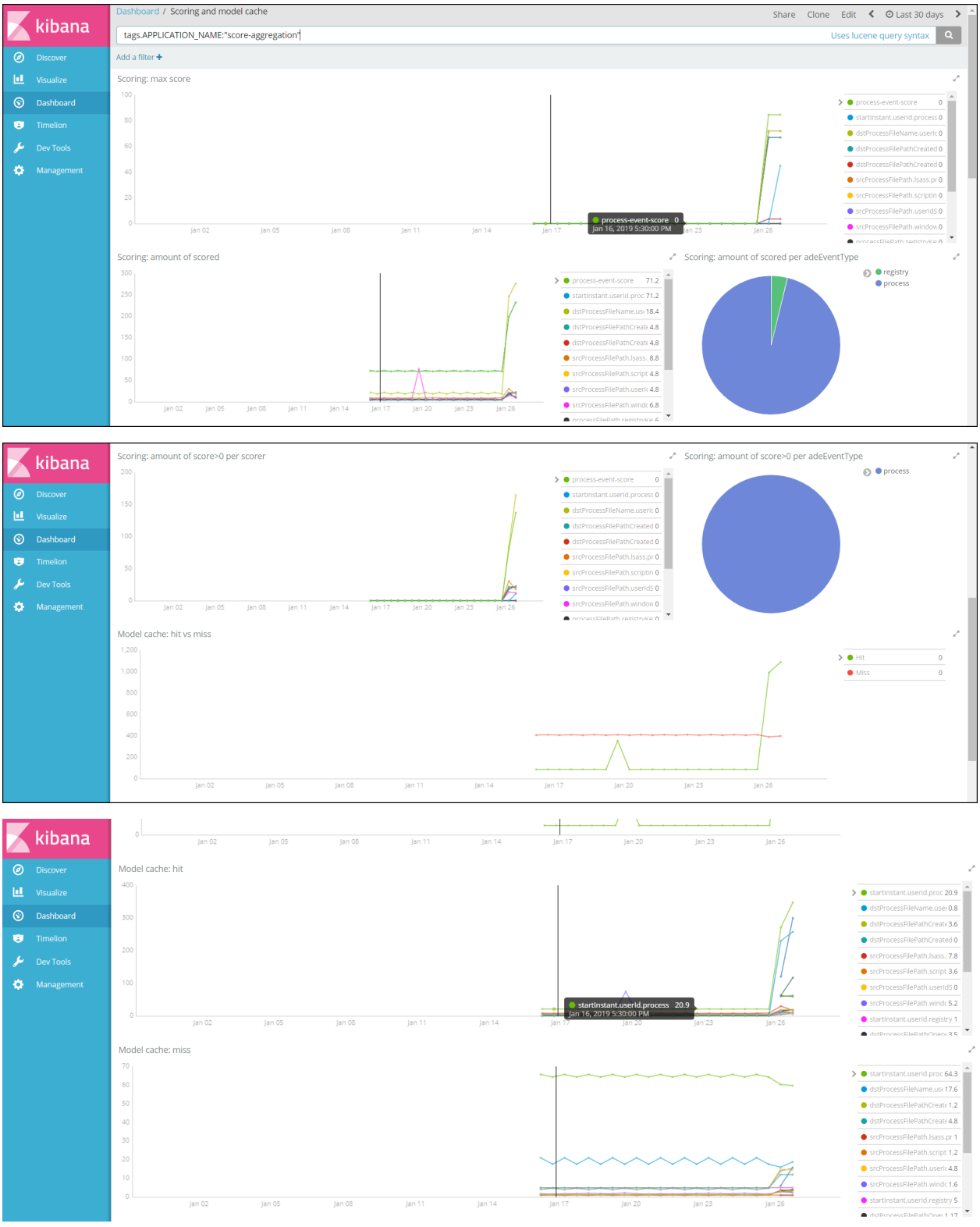


Scoring and Model Cache

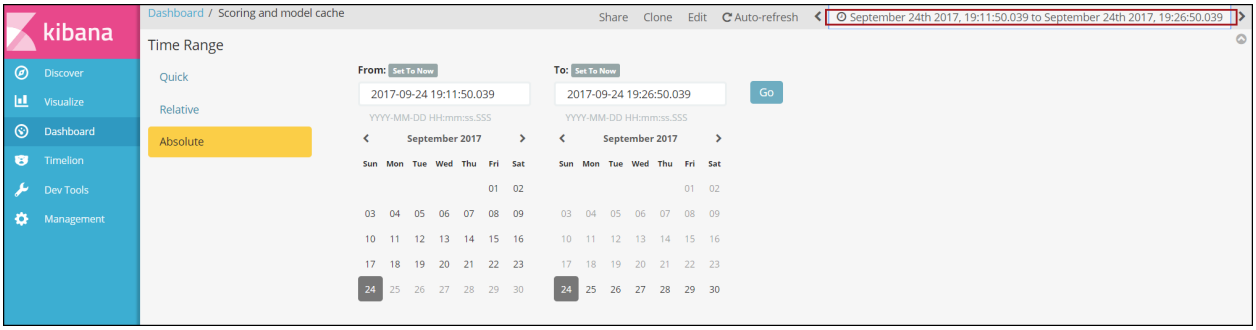
The Scoring and Model cache dashboard provides the capability to view the events being scored.

To access scoring and model cache dashboard:

1. Log into Kibana, click **Dashboards** > **Scoring and Model Cache**.
   The Scoring and model cache dashboard is displayed.


kibana
Discover
Visualize
Dashboard
Timelion
Dev Tools
Management
Dashboard / Scoring and model cache
Share
Clone
Edit
Last 30 days
tags.APPLICATION_NAME:"score-aggregation"
Uses lucene query syntax
Add a filter
Scoring: max score
process-event-score 0
Jan 16, 2019 5:30:00 PM
Scoring: amount of scored
Scoring: amount of scored per adeEventType
registry
process
Scoring: amount of score>0 per scorer
Scoring: amount of score>0 per adeEventType
Model cache: hit vs miss
Hit
Miss
Model cache: hit
startInstant.userId.process 20.9
Jan 16, 2019 5:30:00 PM
Model cache: miss

2. Adjust the time range on the top right corner of the page to view the statistics.



Airflow

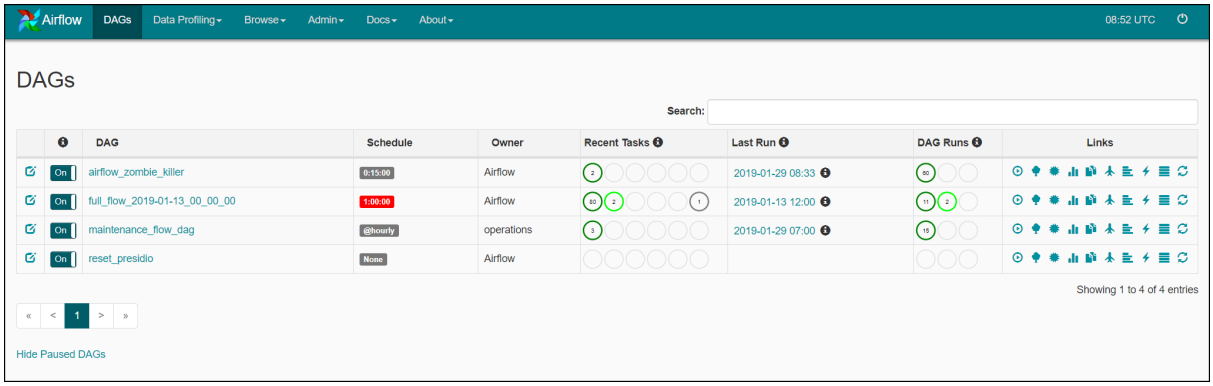
Airflow is a tool for describing, executing, and monitoring the UEBA tasks. In Airflow, a DAG is a collection of all the tasks you want to run, organized in a way that reflects their relationships and dependencies.

You can monitor the scheduled task by seeing how many tasks are successful, failed, or currently running. See the detailed information about the tasks and the logs.

There are several DAGs and each DAG is a workflow. The Full flow DAG is the main flow for the UEBA service.

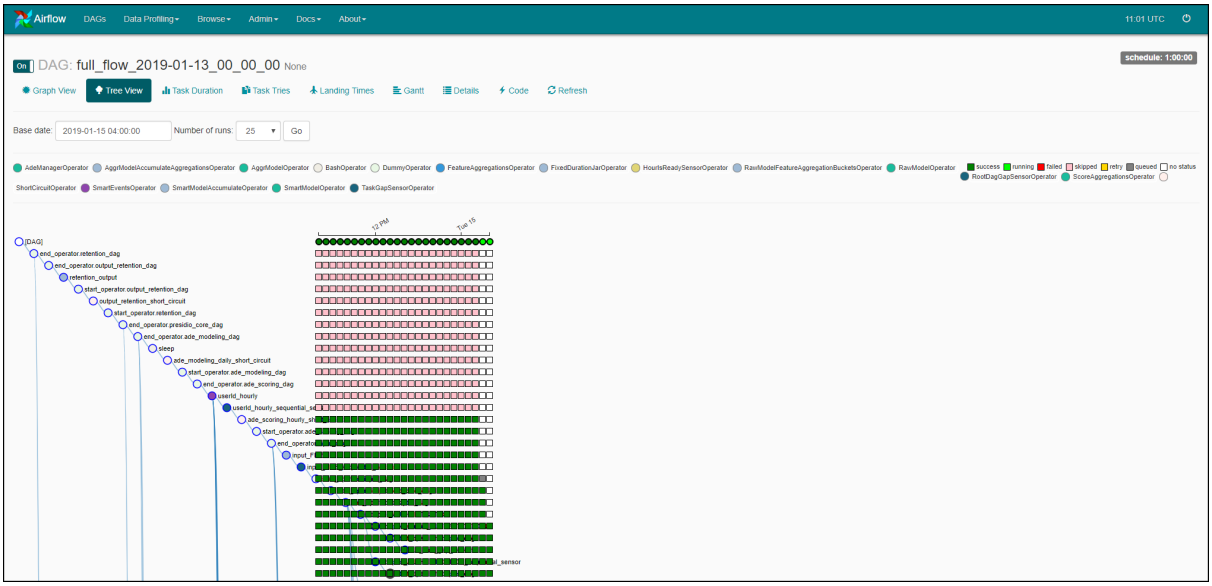
To monitor the UEBA service tasks, perform the following:

1. Log into **Airflow**.
   The DAGs view is displayed.

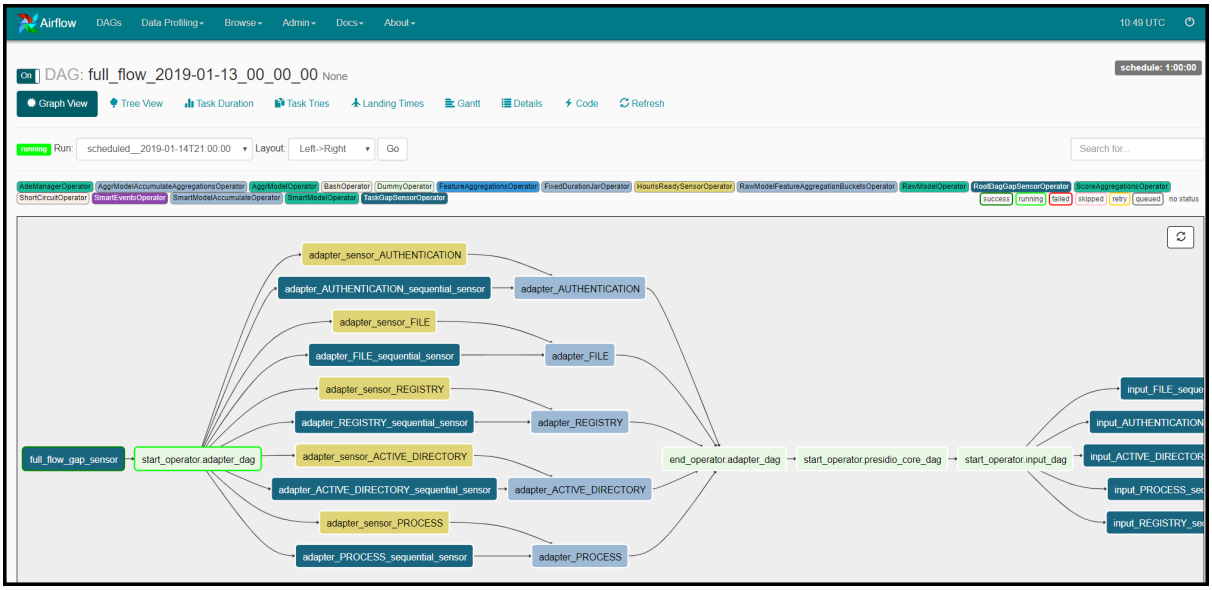


2. In the **DAG Runs** section, see the status of the tasks. For example, how many tasks are successful, failed or currently running.

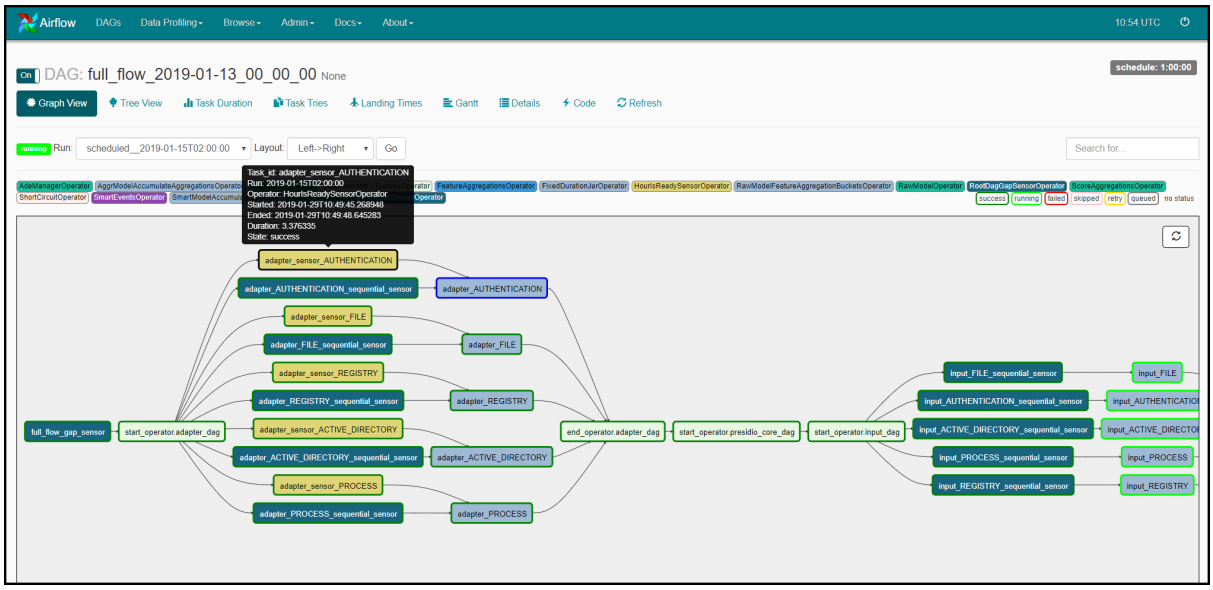
3. To view the different tasks associated with the full flow, in the full flow DAG, click **Tree view**. The Tree view of the full flow DAG is displayed.



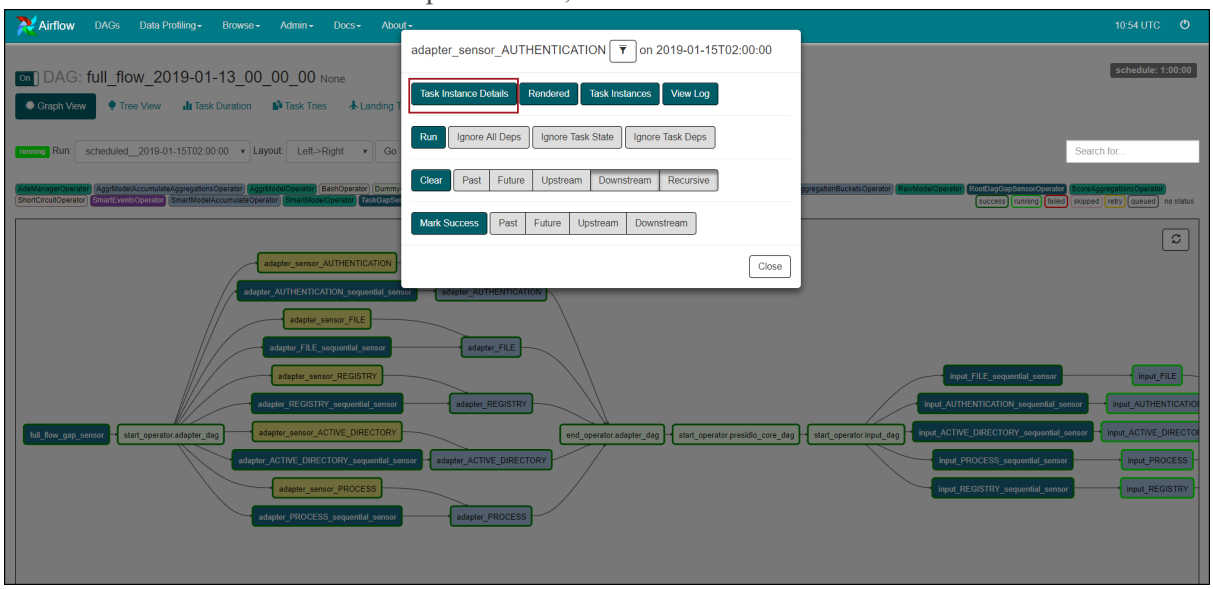
4. To view the DAG's dependencies and the current status of a specific task, in the full flow DAG, click **Graph view**.



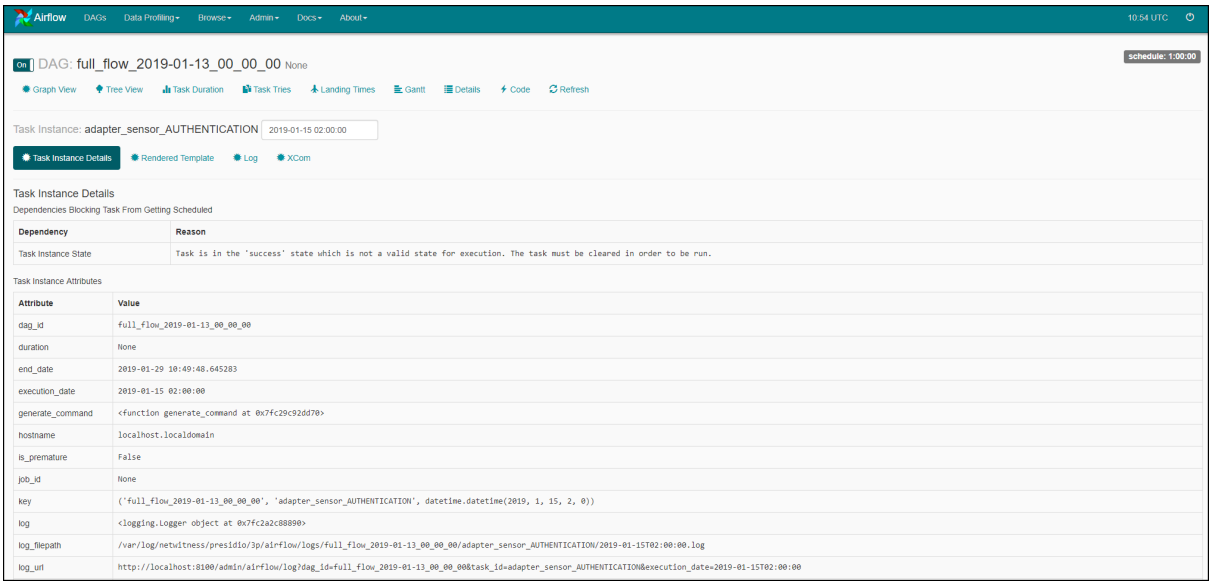
In the **Graph** view hoverover the task to see the status of the specific task.



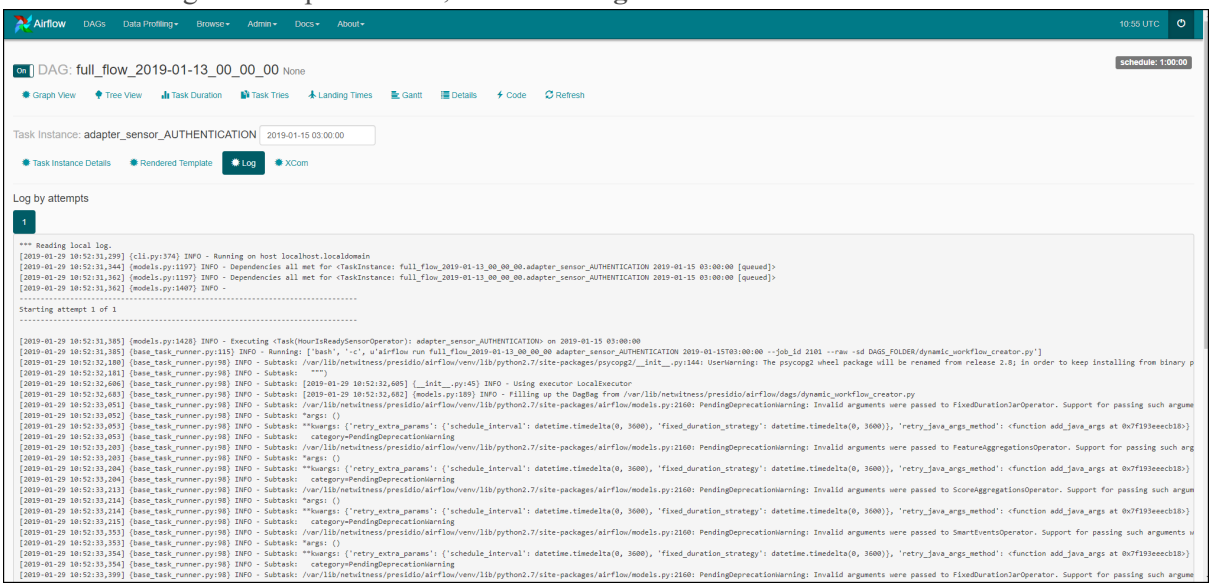
For detailed information about the specific task, click **Task** and click **Task Instance Details.**



The Task Instance Details view is displayed.



To view the logs of the specific task, click **view log**.



Reference

This section provides information about the RSA NetWitness UEBA user interface.

Overview Tab

The **Overview** tab provides an initial view into the recent and most important user activities in the environment. Each panel shows either prioritized incidents for investigation or consolidated metrics reflecting potential risks to the enterprise.

Workflow

What do you want to do?

User Role	I want to ...	Documentation
UEBA Analyst	View top five high-risk users*.	Identify High-Risk Users
UEBA Analyst	View risky users, watchlist users and admin users*.	Identify High-Risk Users
UEBA Analyst	View user based on alert type and indicator.	Identify High-Risk Users
UEBA Analyst	Investigate alerts in my environment.	Investigate Top Alerts
UEBA Analyst	Begin an investigation of critical alerts.	Investigate Top Alerts
UEBA Analyst	Sort alerts to focus my investigation.	Filter Alerts
UEBA Analyst	Investigate threat indicators.	Investigate Events
UEBA Analyst	Export alert data	Manage Top Alerts

*You can complete the tasks here.

Related Topics

- Begin an Investigation of High-Risk Users
- Investigate Top Alerts
- Filter Alerts
- Manage Top Alerts

Quick Look

The following figure shows the Overview tab.

To access this view, go to **INVESTIGATE** > **Users**.

The Overview tab consists of the following panels:

1. High Risk Users panel
2. Top Alerts panel
3. All Users panel
4. Alerts Severity panel

High Risk Users Panel

The High Risk Users panel lists the top five high-risk user along with the user score.

The following table describes the high risk users panel elements.

Name	Description
Username	The name of the user.

Name	Description
User Score	The user score of the user, with the color indicating the severity of the score. red indicates critical, orange represents a high risk, yellow indicates a medium risk, and green represents a low risk.

Top Alerts Panel

The Top Alerts panel displays a list of alerts for the associated user, severity, alert creation date, and number of indicators. The list consists of the top ten alerts in the last 7 days.

The following table describes the top alerts panel elements.

Name	Description
Severity Icon	The alert severity icon. The options are Critical, High, Medium, or Low.
Alert Name	The name of the alert.
Alert Creation Date	The date when an alert is generated.
Number of Indicators	The number of indicators associated with the alert.

All Users Panel

The All Users panel displays the number of users in each of the NetWitness UEBA predefined groups.

The following table describes all users panel elements.

Group	Description
Risky	All users with a risk score greater than 0.
Watched	All users who are currently flagged as Watched.
Admin	All users who have been previously tagged as Admin.

Alerts Severity Panel

The Alert Severity panel graphically displays the number of alerts, by severity level generated during the last year.

The following table describes alert severity panel elements.

Name	Description
Last year	The number of alerts generated during last year.

Name	Description
Severity level	The severity is color coded, where red indicates a Critical alert, orange represents a High risk alert, yellow indicates a Medium risk alert, and green represents a Low risk alert. For example: 

Users Tab

The **Users** tab is a proactive threat hunting console. You can use behavioral filters to build use case driven target lists, and to continuously monitor the environment for specific risky behavior patterns.

Workflow

What do you want to do?

User Role	I want to ...	Documentation
UEBA Analyst	View high-risk users*.	Identify High-Risk Users
UEBA Analyst	View user based on alert type and indicator*.	Identify High-Risk Users
UEBA Analyst	Begin an investigation of high-risk users.	Begin an Investigation of High-Risk Users
UEBA Analyst	Take action on high-risk users*.	Take Action on High-Risk Users
UEBA Analyst	Export high-risk users*.	Export a list of High-Risk Users
UEBA Analyst	Begin an investigation of critical alerts.	Investigate Top Alerts
UEBA Analyst	Investigate threat indicators.	Investigate Events

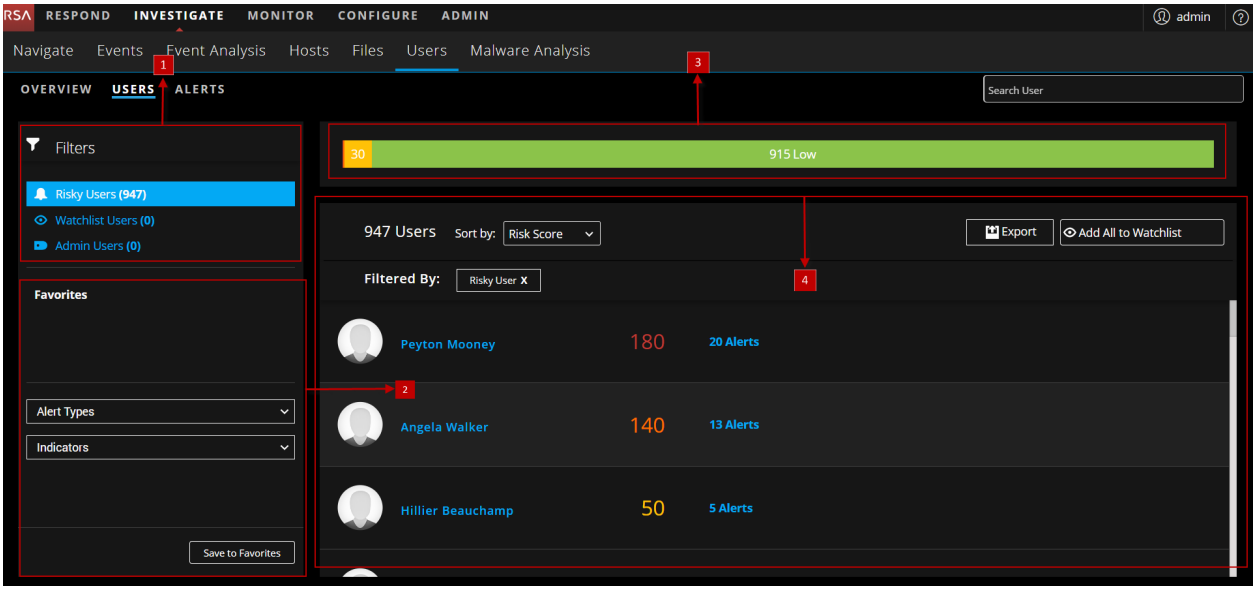
*You can complete the tasks here.

Related Topics

- Begin an Investigation of High-Risk Users
- Investigate Top Alerts
- Filter Alerts
- Investigate Events
- Export a list of High-Risk Users

Quick Look

The following figure shows the Users tab.



To access this view:

1. Go to **INVESTIGATE** > **Users**.

   The Overview tab is displayed.

2. Click **Users**.

The Users tab consists of the following panels:

1	Filters panel
2	Favorites panel
3	Risk Indicator panel
4	User List panel

Filters Panel Filters

The Filters panel lists three pre-defined filters, with the number of users associated with each in parentheses.

The following table describes the filter types.

Filter Type	Description
Risky Users	All users with a risk score greater than 0.
Watchlist Users	All users who are currently flagged as Watched.
Admin Users	All users who have been previously tagged as Admin.

Favorites Panel

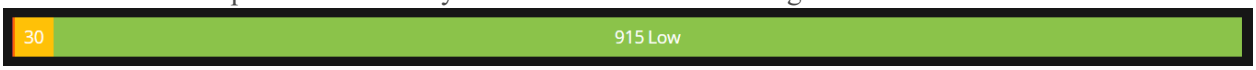
The Favorites panel displays the list of behavioral profiles that are saved as favorites.

The following table describes the behavioral profile filters types.

Filters	Description
Alert Types	Any of the existing alert types that describe the supported distinct use cases (Brute Force Attempt, Snooping User, Abnormal AD Change, Data Exfiltration).
Indicators	Any of the existing behavioral features modeled by NetWitness UEBA. This filter can also be used to target only alerts from a specific data source or application.

Risk Indicator panel

The Risk indicator provides a severity-based breakdown of the target users.



The following table describes the risk indicator panel elements.

Color	Severity
Red	Critical
Orange	High
Yellow	Medium
Green	Low

User List Panel

The User List panel displays the list of all the users in your environment along with the user score and number of alerts associated with the user.

The following table describes the User List panel elements.

User Data	Description
Username	The name of the user.
Score	The user score of the user.
Number of alerts	The total number of alerts generated for the user.
Sort by	The Sort by drop-down menu allows you to select the sorting method for the list. The options are: Risk Score, Name, Alerts.
Export	Export a list of all users and their scores in a .csv file format.
Add All to Watchlist	Adds all users in the filtered view to the watchlist.
Search User	Searches for a user name that you typed, allow you to select it from the list that is displayed matching your entry.

Alerts Tab

The Alerts tab displays details about all the alerts in your environment. You can view forensic information about suspicious activity in your environment that is based on a specific timeframe.

Workflow

What do you want to do?

User Role	I want to ...	Documentation
UEBA Analyst	Investigate alerts in my environment*.	Investigate Top Alerts
UEBA Analyst	Sort alerts to focus my investigation*.	Filter Alerts

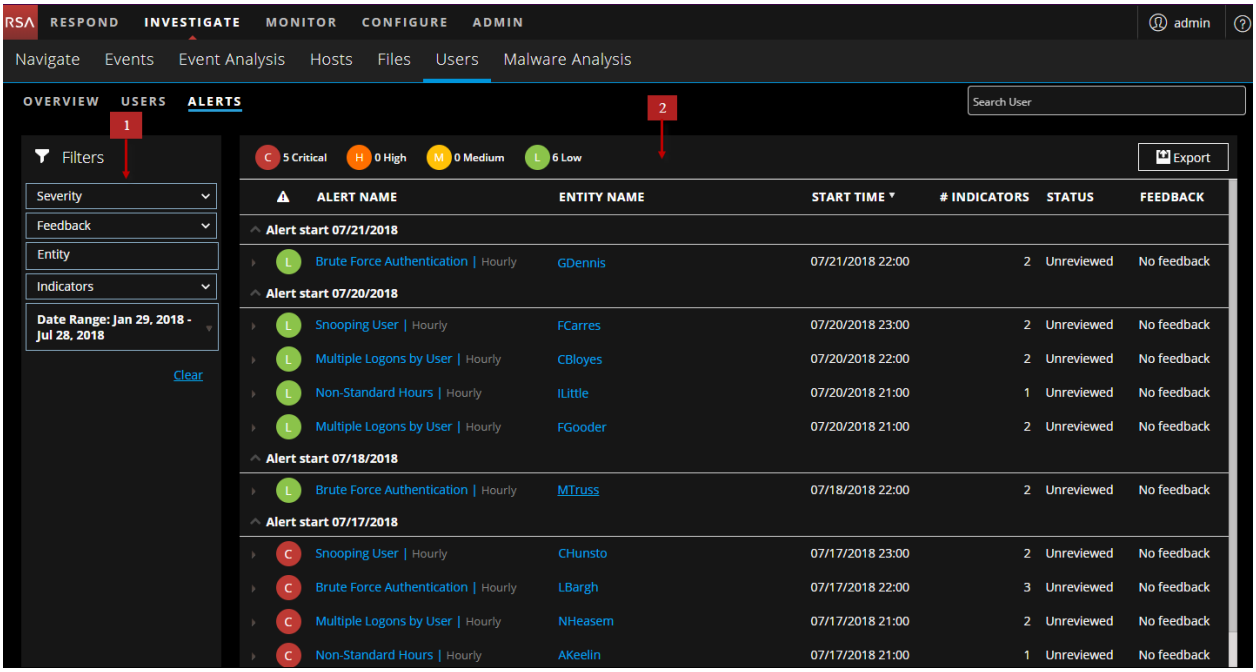
User Role	I want to ...	Documentation
UEBA Analyst	Investigate incidents based on threat indicators*.	Investigate Events
UEBA Analyst	Share alert data in spreadsheet format.	Manage Top Alerts

*You can complete the tasks here.

Related Topics

- Investigate Top Alerts
- Filter Alerts
- Investigate Events
- Manage Top Alerts

Quick Look



To access this view:

1. Go to **INVESTIGATE** > **Users**.

   The Overview tab is displayed.

2. Click **Alerts**.

The Alerts tab consists of the following panels:

1 Filters panel
2 Alerts panel

Filters Panel

Use the filters panel to refine your investigation of alerts. The filters are automatically applied as you make your selections. You can clear all currently set filters by clicking **Clear**.

The following table describes the filters types.

Filter Name	Description	Options
Severity	Filters the list of alerts to include alerts for one or more severity levels.	Critical, High, Medium, or Low.
Feedback	Filters the list of alerts to include alerts for one or more feedback types.	Select All, No Feedback, or Not a Risk.
Entity	Filters the list of alerts to include only alerts for a specific user name.	Not Applicable.
Indicators	Filters the list of alerts to include alerts for one or more indicators.	Examples of indicators are: • Active Directory - Abnormal Logon Time • Authentication - Logged onto Multiple Computers • Multiple File Access Failures
Date Range	Filters the list of alerts to include alerts created during a specific time range.	Last Week, Last Month, or a specified range

Alerts Panel

The Alerts panel displays the following information for each alert:

- Severity Icon: An icon next to the alert name that indicates the severity level of the alert
- Alert Name: The name of the alert and the alert timeframe
- Entity Name: The name of the entity (user account) that generated the alert
- Start Time: The date and time when this alert was first detected
- # Indicators: The number of unique behavior anomalies (indicators) associated with the alert
- Status: Indicates if the alert has been marked as Unreviewed or Not A Risk
- Feedback: Indicates if a feedback value has been assigned for the alert

At the beginning of each alert line is an icon that expands the alert to display additional details. When you expand, the following fields are displayed:

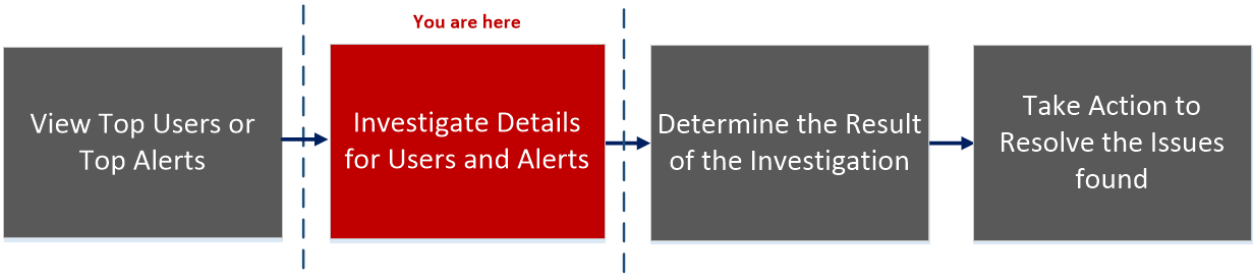
- Indicator Name – The name of each unique indicator that is associated with the alert
- Anomaly Value – The indicator's value, representing the deviation amount or value as it differs from the user's normal behavior
- Data Source – The type of data where the indicator was found
- Start Time – The date and time when this indicator was first detected
- # Events – The number of events in the indicator

The data that is currently displayed in the central pane can be exported to a .csv file by clicking Export at the top right of the pane.

User Profile View

The **User Profile** view provides detailed information about all the alerts and related indicators of a user.

Workflow



What do you want to do?

User Role	I want to ...	Documentation
UEBA Analyst	View high-risk users*	Identify High-Risk Users
UEBA Analyst	Begin an investigation of high-risk users*	Begin an Investigation of High-Risk Users
UEBA Analyst	Take action on high-risk users.	Take Action on High-Risk Users
UEBA Analyst	Export high-risk users.	Export a list of High-Risk Users
UEBA Analyst	Begin an investigation of critical alerts*	Investigate Top Alerts
UEBA Analyst	Investigate threat indicators.	Investigate Events

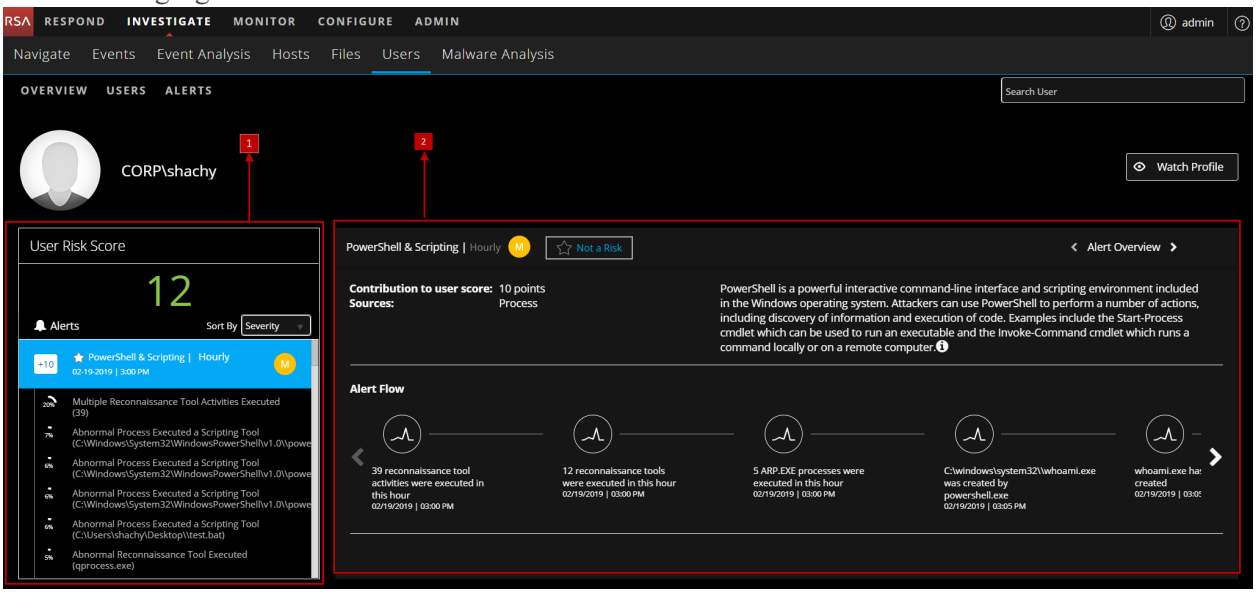
*You can complete the tasks here.

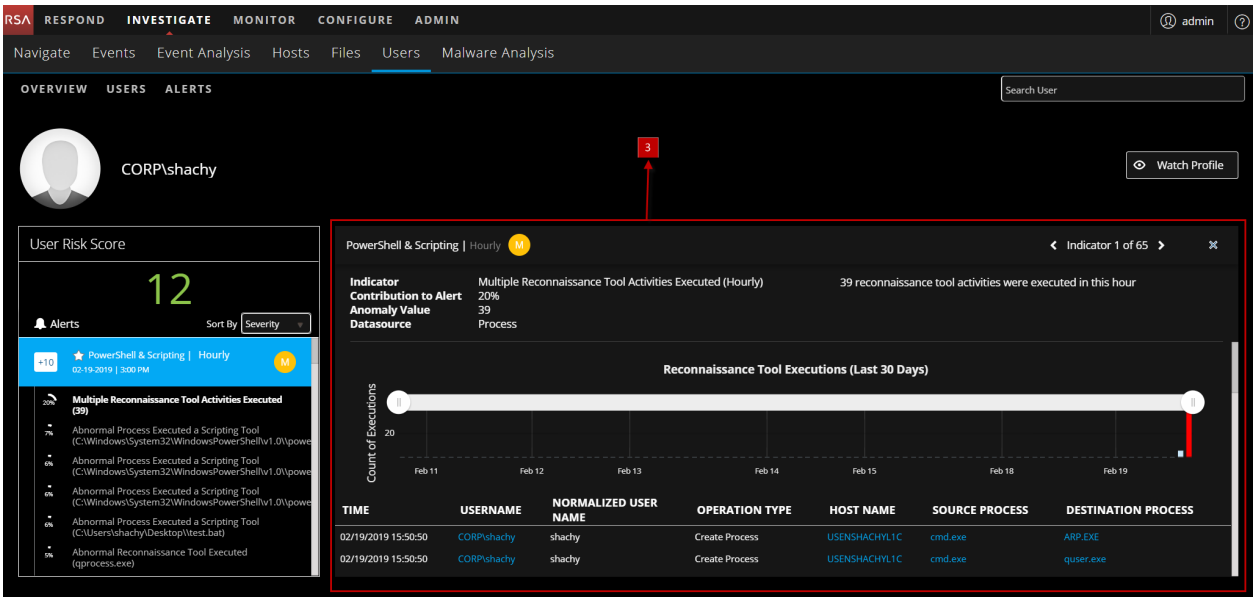
Related Topics

- Begin an Investigation of High-Risk Users
- Investigate Top Alerts
- Filter Alerts
- Investigate Events
- Export a list of High-Risk Users

Quick Look

The following figure shows the User Profile view.





To access this view:

1. Go to **INVESTIGATE** > **Users**. Do any of the following:
   a. In the **OVERVIEW** tab, under **High Risk Users** panel, select a user and click on either the username or the user score.
   b. In the **USERS** tab, select a user and click on the username.
   c. In the **ALERTS** tab, select an alert name or an entity name.

The Users Profile consist of the following panels:

1 User Risk Score panel
2 Alerts Flow panel
3 Indicator panel

User Risk Score Panel

The User Risk Score panel contains the following information:

Name	Description
User Score	The user score of the user highlighted based on the severity.
Alerts	The following information is displayed: • The alert names • The severity level icon • The start date and time for the alert • The timeframe of the alert (Hourly or Daily) • The risk score of the alert (+20) • A list of alert indicator names and the number of times the indicator events occurred.
Sort by	The alerts are sorted based on Severity and Date. By default, it is sorted by severity.

Alert Flow Panel

The Alert Flow panel displays the following information:

Name	Description
Alert name	The name of the alert.
Timeframe	The timeframe of the alert (Hourly or Daily).
Severity level	The severity of the alert.

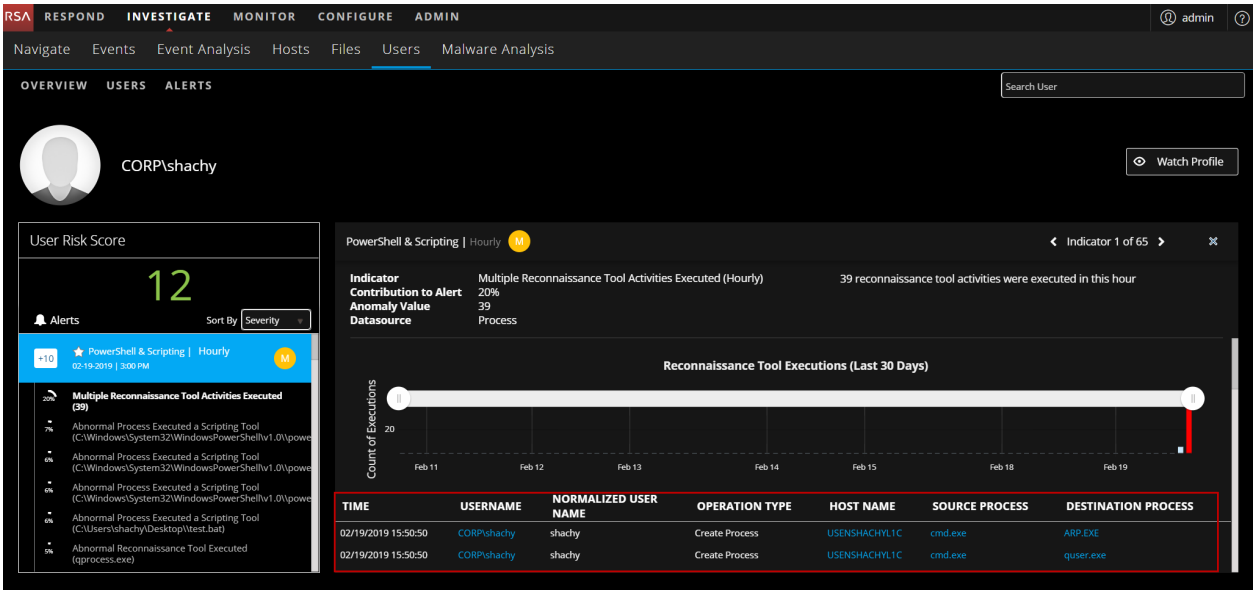
Name	Description
Contribution to the user score	The contribution to the user score value. (For example, +20)
Sources	The data sources for the alert. (For example, Active Directory)
Timeline graph	The timeline of events that are related to the formation of the alert.

Indicator Panel

Click on a graph icon in the Alert Flow panel to open the Indicator panel. The following table describes the indicator panel elements:

Name	Description
Indicator	The name of the indicator with timeframe of the indicator in parentheses. For example, Multiple Group Membership Changes (Hourly).
Contribution to Alert	The alert contribution percentage.
Anomaly Value	The anomaly value.
Datasource	The datasource from where the alert is triggered.

In the Indicator panel the events table list events specific to the data sources.



- **Common**

The following tables list events specific to all the data sources.

Event Name	Description
Username	The name of user for whom an indicator is triggered.
Normalized user name	The name of user for whom an indicator is triggered.
Time	The date and time when an event is triggered.
Result	The status of the action performed by the user.
Operation Type	The action performed by the user. For example, Member Added To Group.

- **Windows File Servers**

The following tables list events specific to Windows file servers.

Event Name	Description
Source Folder Path	Absolute folder path of a file for which an event is triggered.
Source File Path	Absolute file path for which an event is triggered.

- **Active Directory**

The following tables list event specific to Active Directory.

Event Name	Description
Object Name	Object name defined in the Active Directory.

- **Logon Activity**

The following tables list events specific to Logon Activity.

Event Name	Description
Computer	Host name from where an event is triggered.

- **Process**

The following tables list events specific to Process.

Event Name	Description
Machine Name	Name of the host from where this event is triggered for the user.
Source Process	Process triggered by the event
Destination Process	Process triggered by source process.

- **Registry**

The following tables list events specific to Registry.

Event Name	Description
Machine Name	Name of the host from where this event is triggered for the user.
Process Directory	Absolute directory path of the process for which an event is triggered.
Process File Name	Process file name for which an event is triggered.
Registry Key Group	Type of registry key.
Registry Key	Registry key path.
Registry Value Name	Registry value name that is created or modified.
Operation Type	The action performed by the user. For example, Member Added To Group.

Troubleshooting UEBA

This section provides information about possible issues when using NetWitness UEBA.

UEBA policy Issue

Issue	After you create a rule under UEBA policy, duplicate values are displayed in the Statistics drop-down.

Solution	To remove the duplicate values perform the following:
	1. Log in to MongoDB using following command:mongo admin -u deploy_ admin -p {Enter the password}
	2. Run the following command on MongoDB
	`use sms;`
	`db.getCollection('sms_statdefinition').find({componentId :"presidioairflow"})`
	`db.getCollection('sms_statdefinition').deleteMany ({componentId :"presidioairflow"})`

Troubleshoot using Kibana

Issue	After you deploy NetWitness UEBA, the connection between the NetWitness Platform and NetWitness UEBA is successful but there are very few or no events in the **Investigate** > **Users** tab. 1. Log in to **Kibana**. 2. Go to **Table of Content** > **Dashboards** > **Adapter Dashboard**. 3. Adjust the **Time Range** on the top right corner of the page and review the following: • If the new events are flowing. • In the **Saved Events Per Schema** graph, see the number of successful events per schema per hour. • In the **Total Events vs. Success Events** graph, see the total number of events and number of successful events. The number of successful events should be more every hour. For example, in an environment with 1000 users or more, there should be thousands of authentication and file access events and more than 10 Active Directory events. If there are very few events, there is likely an issue with Windows auditing.
Solution	You must identify the missing events and reconfigure the Windows auditing. 1. Log into **NetWitness Platform** and go to **INVESTIGATE** > **Navigate**. 2. Filter by **devide.type= device.type "winevent_snare"** or **"winevent_nic"**.

	3. Review the events using **reference.id** meta key to identify the missing events. 4. Reconfigure the Windows auditing. For more information, see **NetWitness UEBA Windows Audit Policy** topic.

Issue	The historical load is complete and the events are coming from Adapter dashboard but no alerts are displayed in the **Investigate** > **Users** tab.
Solution	1. Go to **Kibana** > **Table of content** > **Scoring and model cache**. 2. Adjust the **Time Range** on the top right corner of the page, and see if the events are being scored.

Issue	The historical load is complete but no alerts are displayed in the **Investigate** > **Users** tab.
Solution	1. Go to **Kibana** > **Dashboard** > **Overview**. 2. Adjust the **Time Range** on the top right corner of the page, to see how many users are analyzed and if any anomalies are found.

Troubleshoot using Airflow

Issue	After you deploy UEBA and if there are no events displayed in the **Kibana** > **Table of content** > **Adapter** dashboard and the Airflow already processed the hours but there are no events. This is due to some communication issue.
Solution	You must check the logs and resolve the issue. 1. Login to **Airflow**. 2. Go to **Admin** > **REST API Plugin**. 3. In the **Failed Tasks Logs**, click **execute**. A zip file is downloaded. 4. Unzip the file and open the log file to view and resolve the error. 5. In the **DAGs** > **reset_presidio**, click **Trigger Dag**. This deletes all the data and compute all the alert from the beginning. **Note:** During initial installation, if the hours are processed successfully but there is no events, you must click reset_presidio after fixing the data in the Broker. Do not reset if there are alerts.

Appendix: NetWitness UEBA Windows Audit Policy

In order to achieve the maximum benefit from RSA NetWitness UEBA, RSA recommends that you implement the Windows audit policies described here.

For a base set of policies to audit, refer to the "Windows Server 2016, Windows Server 2012 R2, Windows Server 2012, Windows Server 2008 R2, and Windows Server 2008 Audit Settings Recommendations" section of this article from Microsoft: Audit Policy Recommendations.

The policies under "Stronger Recommendation" are required, as well as the following policies, to ensure that all of the required Authentication and Active Directory events are audited:

- Audit Detailed File Share
- Audit File Share
- Audit File System

RSA recommends that you enable auditing for both success and failures.

The following Windows events must be audited:

For the Authentication models:

4624	4625	4769

For the AD models:

4670	4717	4720	4722	4723	4724	4725	4726
4727	4728	4729	4730	4731	4732	4733	4734
4735	4737	4738	4739	4740	4741	4742	4743
4754	4755	4756	4757	4758	4764	4767	4794
5136	5376	5377					

For File Access Models:

4660	4663	4670	5145

Revision History

Revision	Date	Description	Author
0.1	12-Mar-19	Final Draft	IDD