

NetWitness[®] Platform XDR

Version 12.3.0.0

UEBA Configuration Guide

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Introduction

NetWitness® UEBA configuration is designed for analysts to perform analytics for leveraged data collected from netwitness logs and networks to perform UEBA analytics.

Note: Mixed mode is not supported for UEBA in NetWitness Platform. The NetWitness server, and UEBA must all be installed and configured on the same NetWitness Platform version.

UEBA Supported Sources by Schema

Authentication Schema

- Windows Logon and Authentication Activity in Version 11.2 - Supported Event IDs: 4624, 4625, 4769, 4648 (device.type=winevent_snare|winevent_nic)
- RSA SecurID Token in Version 11.3.1 - device.type = 'rsaacesrv' ec.activity = 'Logon'
- RedHat Linux in Version 11.3.1- device.type = 'rhlinux'
- Windows Remote Management in Version 11.3.2 - Supported Event IDs: 4624,4625,4769,4648 (device.type=windows)
- VPN Logs and in Version 11.5 - event.type = 'vpn' ec.activity = 'logon'

Note: NetWitness has tested and verified the functionality of Juniper VPN under the Authentication schema of UEBA. For any VPN to be considered under the Authentication module, the following metadata must be present in the respective VPN vendor's logs:
(event.type = 'vpn' && country.src exists && user.src exists && ec.activity = 'logon')

- Azure AD Logs in Version 11.5 - device.type = 'microsoft_azure_signin_events'

Note: Make sure you have configured the Azure Monitor plugin in your deployment. This enables UEBA to run a query for Azure AD log events for monitoring purposes in the correct format. For more information on how to configure the Azure Monitor plugin, see the *Azure Monitor Event Source Configuration Guide*.

File Schema

- Windows File Servers in Version 11.2 - Supported Event IDs: 4663,4660,4670,5145 (device.type=winevent_snare|winevent_nic)
- device.type=windows in Version 11.3.1

Active Directory Schema

- Windows Active Directory in Version 11.2 - Supported Event IDs:
4741,4742,4733,4734,4740,4794,5376,5377,5136,4764,4743,4739,4727,4728,4754,4756,4757,4758,4720,4722,4723,4724,4725,4726,4738,4767,4717,4729,4730,4731,4732 (device.type=winevent_snare|winevent_nic)
- device.type=windows in Version 11.3.1

Endpoint Process Schema

- Endpoint Process in Version 11.3 - Category = 'Process Event'

Endpoint Registry Schema

- Endpoint Registry in Version 11.3 - Category = 'Registry Event'

Packet Schema

- TLS in Version 11.4 - Service 443 (direction='outbound')

Note: The TLS Packet requires adding the hunting package and enabling the JA3 features as described in [Add required features for UEBA Packets Schema](#).

UEBA Configuration

This topic provides the high-level tasks required to configure UEBA.

IMPORTANT: Changing the UEBA start-date or the UEBA processed schemas requires a re-run of the UEBA system as well as cleanup of the UEBA databases. In order to avoid deleting the information in the UI, you can use the `reset_presidio.py` script as described in [reset-presidio script](#), it will keep the data in the UI (e.g. Alerts, Indicators, Entities and Scores).

Note: To configure a single UEBA server, see "Task 3. Install and Configure NetWitness UEBA" under Installation Tasks topic in the *UEBA Standalone Installation Guide*.

Configure Multiple UEBA Servers

NetWitness Platform XDR now supports installing multiple servers of UEBA in your environment.

Before using this feature, ensure that you meet the following requirements:

The multiple UEBA deployments are independent, with one supporting Logs & Endpoint models and the other dedicated exclusively to Network (TLS) models. Customers with a different use case will need to contact the [NetWitness Customer Support](#) team.

Multi-UEBA can be used for the following scenario:

- Multi-UEBA can only be used if there is no need for correlation between the data consumed by both UEBA servers, such as one server for Logs and Endpoint and one server for Network.

IMPORTANT: NetWitness recommends that you configure Authentication, File, Active Directory, Process, and Registry schemas on one UEBA server and TLS schema on another UEBA server for better data processing.

Prerequisites

Ensure that the NetWitness Platform XDR and Hosts (UEBA) are in version 12.3 or later.

Procedure

1. Follow the install instructions for installing multiple UEBA servers. For example, UEBA-Server-1 and UEBA-Server-2. For more information, see "Task 3. Install and Configure NetWitness UEBA" under Installation Tasks topic in the *UEBA Standalone Installation Guide*.

Note: You can configure multiple UEBA servers in your environment. NetWitness has installed and verified up to three UEBA servers.

2. Follow the `ueba-server-config` script to set up data schemas on the installed UEBA server 1 and UEBA server 2. For more information, see [ueba-server-config script](#).

Best Practices to Add and Remove Schemas for Multiple UEBA Servers

If you are planning to install multiple UEBA servers in your environment. Consider that you have all six schemas configured in the 12.2 or an earlier version of the UEBA server.

NetWitness recommends that the TLS schema (Network data) must be configured on the new UEBA Server first, and then the existing UEBA server containing all schemas must be reset and re-configured with the five schemas Authentication, File, Active Directory, Process, and Registry (Logs and Endpoint data). For more information on configuration, see [ueba-server-config script](#). You need to reset the start date as well and ensure you set the start date one month back from the current date. For more information, see [reset-presidio script](#).

ueba-server-config script

The `ueba-server-config` script is usually used to configure and run the UEBA component after the deployment. Also, it can be used to update the UEBA configuration during run time.

IMPORTANT: If you change the start-time or the processing schemas, you must re-run UEBA. All script arguments (except the boolean arguments) are mandatory and must be filled.

For more information on the script parameters, see the *NetWitness Standalone Installation Guide for Version 12.3*.

To run the script use the following command `/opt/rsa/saTools/bin/ueba-server-config --help`

Argument	Variable	Description
-u	<user>	User name of the credentials for the Broker or Concentrator instance that you are using as a data source.
-p	<password>	<p>Password of the credentials for the Broker or Concentrator instance that you are using as a data source. The following special characters are supported in a password.</p> <pre>!"#\$%&()*+,-:;<=>?@[\\]^_`{ }</pre> <p>If you want to include a special character or special characters, you must delimit the password with an apostrophe sign, for example:</p> <pre>sh /opt/rsa/saTools/bin/ueba-server-config -u brokeruser -p '! "UHfz?@ExMn#\$' -h 10.64.153.104 -t 2018-08-01T00:00:00Z -s 'AUTHENTICATION FILE ACTIVE_DIRECTORY TLS PROCESS REGISTRY' -o broker -v</pre>
-h	<host>	IP address of the Broker or Concentrator used as the data source. Currently, only one data source is supported.
-o	<type>	Data source host type (broker or concentrator).

Argument	Variable	Description
-t	<startTime>	Historical start time as of which you start collecting data from the data source in YYYY-MM-DDTHH-MM-SSZ format (for example, 2018-08-15T00:00:00Z). Note: The script interprets the time you enter as UTC (Coordinated Universal Time) and it does not adjust the time to your local time zone.
-s	<schemas>	Array of data schemas. If you want to specify multiple schemas, use a space to separate each schema (for example, AUTHENTICATION FILE ACTIVE_DIRECTORY PROCESS REGISTRY TLS).
-v		verbose mode.
-e	<argument>	Boolean Argument. This enables the UEBA indicator forwarder to Respond. Note: If your NetWitness deployment includes an active Respond server, you can transfer NetWitness UEBA indicators to the Respond server and create incidents by enabling the indicator forwarder, from this data. For more information on how to enable the NetWitness UEBA incidents aggregation, see Enable User Entity Behavior Analytics Incident Rule .

Note: The TLS packet requires adding the hunting package and enabling the JA3 features. For more information, see [Add Features for UEBA Packet Schema](#).

reset-presidio script

IMPORTANT: The `reset_presidio.py` script deletes the UEBA back-end databases and can also delete the front-end database that is present in the UI.

The `reset_presidio.py` script is used to re-run the UEBA system as well as to update the UEBA start-date and the processing schemas easily without having to provide all the other parameters required by the `ueba-server-config` script. This script re-runs the UEBA while it deletes the backed data (models, aggregations, etc.). To delete the front-end data (UI entities and alerts, etc.) use the `clean` option. If you don't specify a date, the script will set the default start date, a 28 days earlier than the current date. NetWitness recommends that the UEBA start date is set to 28 days earlier than the current date. For UEBA systems that intend to process TLS data, you must verify that the start date is set to no later than 14 days earlier than the current date.

Note: UEBA requires to process 28 days of data before the alerts can be created.

- If you choose a start date that is less than 28 days before the current date, for example 10 days earlier from the current date, you will have to wait for another 18 days from the current date to see alerts in your UEBA system (if created).
- If you choose a start date that is greater than 27 days, it's recommended to delete the front-end database as well (use the `-c`) to avoid duplicate alerts.

To run the script, load the Airflow virtual environment variables as follows:

1. `source /etc/sysconfig/airflow`
2. `source $AIRFLOW_VENV/bin/activate`
3. `OWB_ALLOW_NON_FIPS=on python /var/netwitness/presidio/airflow/venv/lib/python2.7/site-packages/presidio_workflows-1.0-py2.7.egg/presidio/utils/airflow/reset_presidio.py --help`
4. `deactivate`

Argument	Variable	Description
-h, --help		Script Help
-c, --clean	<argument>	Clean any existing data in Elasticsearch DB (as Alerts, Indicators, Entities, etc), all data will be deleted form the UEBA UI
-s	<schema>	Reconfigure the UEBA engine array of schemas (e.g. [AUTHENTICATION FILE ACTIVE_DIRECTORY PROCESS REGISTRY TLS])
-d	<date>	Reconfigure the UEBA engine to start from midnight UTC of this date. If not set, by default reset the start date to 27 days before the current system day, at midnight UTC, to avoid duplicate alerts in the UEBA UI, in case you didn't cleaned the elasticsearch data (-c) (e.g. 2010-12-31)

Please refer to the above table for the required arguments to pass along with the reset command. For more information, refer to the example command below.

For example, `OWB_ALLOW_NON_FIPS=on python /var/netwitness/presidio/airflow/venv/lib/python2.7/site-packages/presidio_workflows-1.0-py2.7.egg/presidio/utils/airflow/reset_presidio.py -c -d 2023-11-16 -s AUTHENTICATION ACTIVE_DIRECTORY FILE PROCESS REGISTRY TLS`

Add a Schema without Rerunning the UEBA

Note: Adding a schema without rerunning the UEBA system is supported on NetWitness NetWitness Platform 11.5.1 and later.

To add a new UEBA schema without rerunning the UEBA system, run the following command on the UEBA host.

```
curl -X PATCH http://localhost:8881/configuration -H 'content-type: application/json' -d '{"operations": [{"op": "add", "path": "/dataPipeline/schemas/-", "value": "<SCHEMA>"}]}'
```

Where <SCHEMA> string can be replaced with any one of the following schemas:

- AUTHENTICATION
- FILE
- ACTIVE_DIRECTORY

- PROCESS
- REGISTRY
- TLS

UEBA Indicator Forwarder

Note: The UEBA Indicator Forwarder is supported by the UEBA from version 11.3 and later. If your NetWitness environment includes an active respond server, you can transfer the UEBA indicators to the respond server and to the correlation server in order to create Incidents. For more information, see [Enable User Entity Behavior Analytics Incident Rule](#).

Run the following command to activate the UEBA Indicator Forwarder:

```
curl -X PATCH http://localhost:8881/configuration -H 'content-type: application/json' -d '{"operations": [{"op": "replace", "path": "/outputForwarding/enableForwarding", "value": true}]}'
```

To deactivate the UEBA indicator forwarder, change the “value”:true at the request body to be “value”:false.

Update Data Source Details

In order to update the details of the data source you must use the `ueba-server-config` script. For more information, see [ueba-server-config script](#).

Note: From 12.3 version or later, if you change the data source using the [ueba-server-config script](#), UEBA will use the previously configured start date by default. To change the UEBA start date, use the [reset-presidio script](#).


The data sources details are:

- Data Source type (Broker / Concentrator).
- Data Source username.
- Data Source password.
- Data Source host.

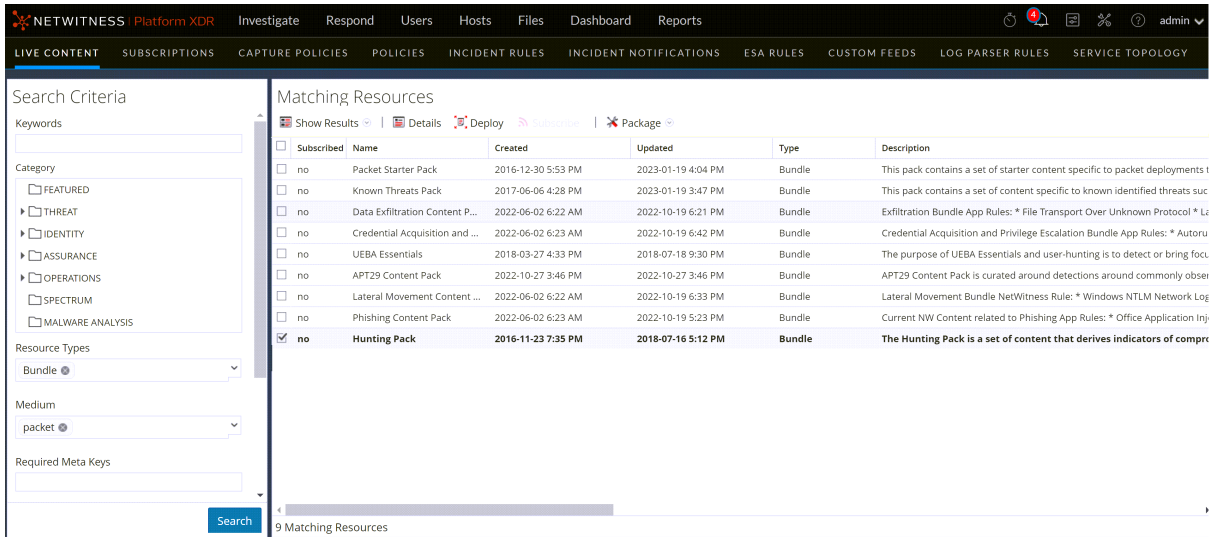
Add Features for UEBA Packet Schema

Add the Hunting Pack:

In NetWitness Platform XDR, add the hunting pack or verify it’s available:

1. Log in to NetWitness Platform XDR.
2. Navigate to  (Admin) and select **Admin Server**.

3. Click  and select **Configure > Live Content**.



The screenshot shows the NetWitness Platform XDR interface. The top navigation bar includes 'NETWITNESS Platform XDR', 'Investigate', 'Respond', 'Users', 'Hosts', 'Files', 'Dashboard', and 'Reports'. Below this is a secondary navigation bar with 'LIVE CONTENT' selected, along with other options like 'SUBSCRIPTIONS', 'CAPTURE POLICIES', 'POLICIES', 'INCIDENT RULES', 'INCIDENT NOTIFICATIONS', 'ESA RULES', 'CUSTOM FEEDS', 'LOG PARSER RULES', and 'SERVICE TOPOLOGY'. The main content area is split into two panels. The left panel, 'Search Criteria', has a 'Keywords' field, a 'Category' tree view with options like THREAT, IDENTITY, ASSURANCE, OPERATIONS, SPECTRUM, and MALWARE ANALYSIS, a 'Resource Types' dropdown set to 'Bundle', a 'Medium' dropdown set to 'packet', and a 'Required Meta Keys' field. The right panel, 'Matching Resources', shows a table of 9 resources. The 'Hunting Pack' resource is selected, and the 'Deploy' button is highlighted. The table columns are 'Subscribed', 'Name', 'Created', 'Updated', 'Type', and 'Description'.

Subscribed	Name	Created	Updated	Type	Description
<input type="checkbox"/>	Packet Starter Pack	2016-12-30 5:53 PM	2023-01-19 4:04 PM	Bundle	This pack contains a set of starter content specific to packet deployments t
<input type="checkbox"/>	Known Threats Pack	2017-06-06 4:28 PM	2023-01-19 3:47 PM	Bundle	This pack contains a set of content specific to known identified threats suc
<input type="checkbox"/>	Data Exfiltration Content P...	2022-06-02 6:22 AM	2022-10-19 6:21 PM	Bundle	Exfiltration Bundle App Rules: * File Transport Over Unknown Protocol * L
<input type="checkbox"/>	Credential Acquisition and ...	2022-06-02 6:23 AM	2022-10-19 6:42 PM	Bundle	Credential Acquisition and Privilege Escalation Bundle App Rules: * Aтору
<input type="checkbox"/>	UEBA Essentials	2018-03-27 4:33 PM	2018-07-18 9:30 PM	Bundle	The purpose of UEBA Essentials and user-hunting is to detect or bring focu
<input type="checkbox"/>	APT29 Content Pack	2022-10-27 3:46 PM	2022-10-27 3:46 PM	Bundle	APT29 Content Pack is curated around detections around commonly obser
<input type="checkbox"/>	Lateral Movement Content ...	2022-06-02 6:22 AM	2022-10-19 6:33 PM	Bundle	Lateral Movement Bundle NetWitness Rule: * Windows NTLM Network Log
<input type="checkbox"/>	Phishing Content Pack	2022-06-02 6:23 AM	2022-10-19 5:23 PM	Bundle	Current NW Content related to Phishing App Rules: * Office Application Inj
<input checked="" type="checkbox"/>	Hunting Pack	2016-11-23 7:35 PM	2018-07-16 5:12 PM	Bundle	The Hunting Pack is a set of content that derives indicators of compr

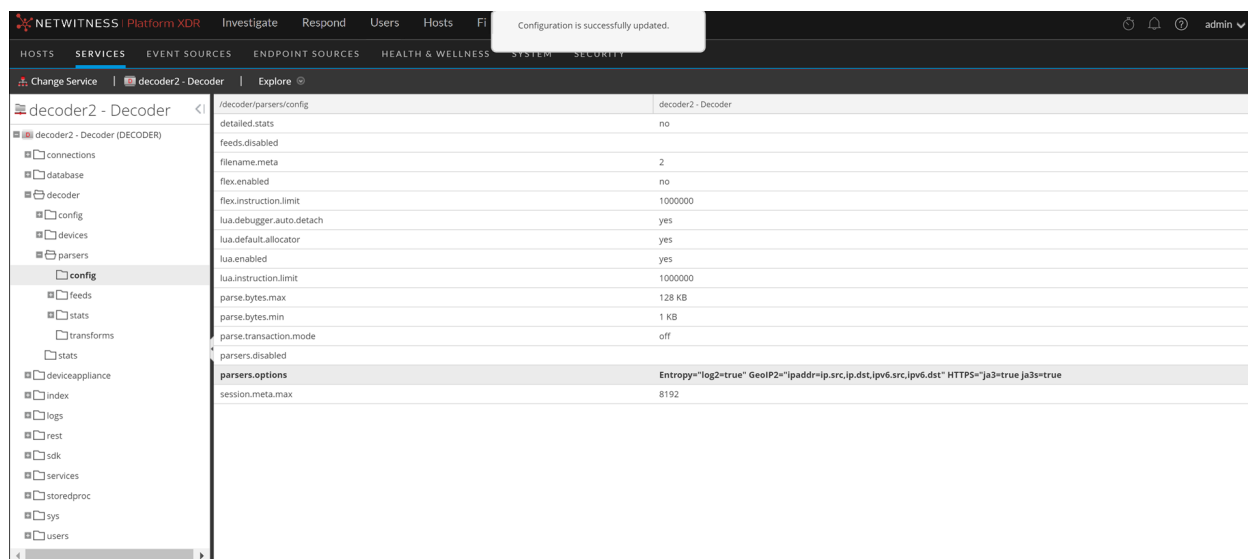
4. On the left menu, select the following:
 - a. Bundle under Resources Type.
 - b. Packet under Medium
5. Click **Search**.
A list of matching resources is displayed.
6. Select **Hunting Pack** from the list and click **Deploy**.
The hunting pack is added.

Add JA3 and JA3s:

The JA3 and JA3s fields are supported by the Network Decoder in 11.3.1 and later. Verify that your Network Decoder is upgraded to one of these versions.

To add JA3 and Ja3s:


1. Log in to NetWitness Platform XDR.
2. Go to  (Admin) > **Services** and select Decoder.
3. Navigate to `/decoder/parsers/config/parsers.options`.
4. Add `HTTPS="ja3=true ja3s=true`.

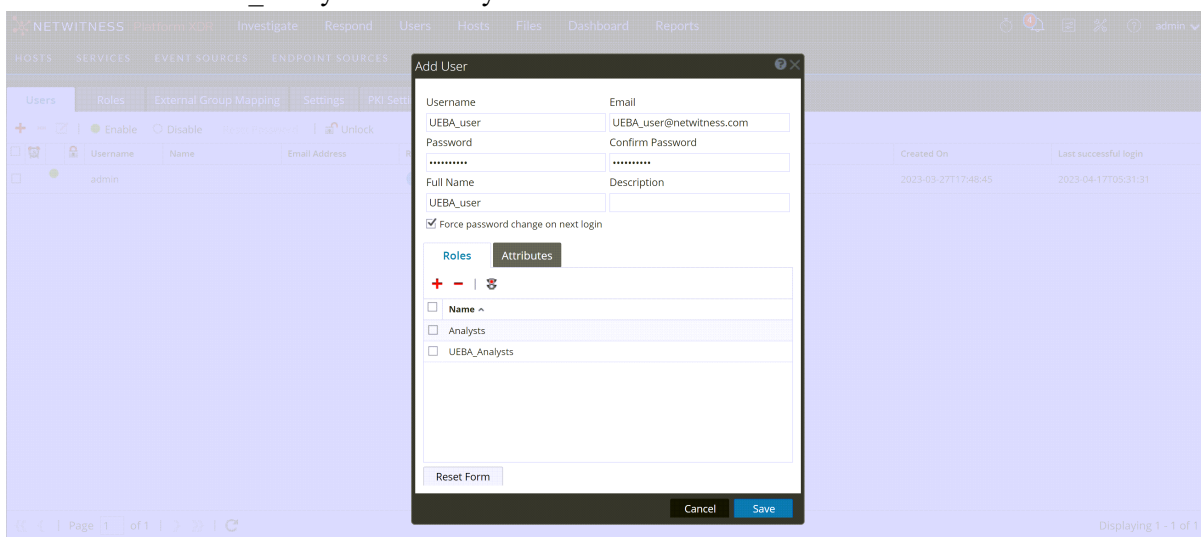


The JA3 and JA3s fields are configured.

Assign User Access to UEBA

To create a user with privileges to access the UEBA pages (Users tab) on the Netwitness UI do the following:


1. Navigate to  (Admin) > **Security**.
2. Create a new UEBA_Analysts and Analysts user roles.

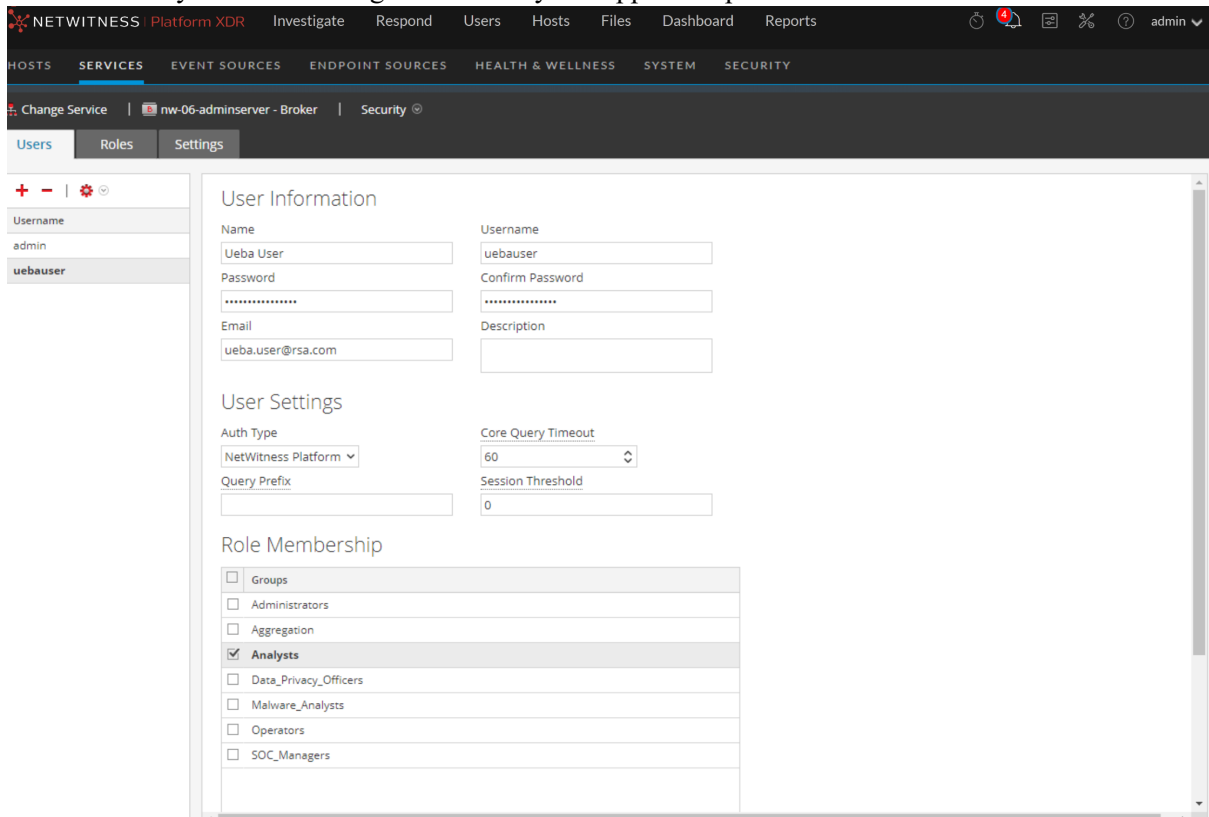


For more information, see the "Manage Users with Roles and Permissions" topic in the *System Security and User Management Guide*.

Create an Analysts Role

In order to fetch data from the data source (Broker / Concentrator), you need to create a user using the Analysts role in the data source service.

1. Navigate to the security tab at the data source service page.
2. Go to the  (Admin) > **Services** > **Security**.
3. Create an analyst user and assign it to the any of supported special characters.



The screenshot shows the NetWitness Platform XDR interface. The top navigation bar includes 'NETWITNESS Platform XDR', 'Investigate', 'Respond', 'Users', 'Hosts', 'Files', 'Dashboard', and 'Reports'. The main navigation bar has 'HOSTS', 'SERVICES', 'EVENT SOURCES', 'ENDPOINT SOURCES', 'HEALTH & WELLNESS', 'SYSTEM', and 'SECURITY'. The 'SECURITY' tab is active, and the 'Users' sub-tab is selected. The 'Users' list on the left shows 'admin' and 'uebauser'. The 'uebauser' user is selected, and the 'User Information' form is displayed. The form fields are as follows:

User Information	
Name	ueba User
Username	uebauser
Password
Confirm Password
Email	ueba.user@rsa.com
Description	

User Settings	
Auth Type	NetWitness Platform
Core Query Timeout	60
Query Prefix	
Session Threshold	0


Role Membership	
<input type="checkbox"/>	Groups
<input type="checkbox"/>	Administrators
<input type="checkbox"/>	Aggregation
<input checked="" type="checkbox"/>	Analysts
<input type="checkbox"/>	Data_Privacy_Officers
<input type="checkbox"/>	Malware_Analysts
<input type="checkbox"/>	Operators
<input type="checkbox"/>	SOC_Managers

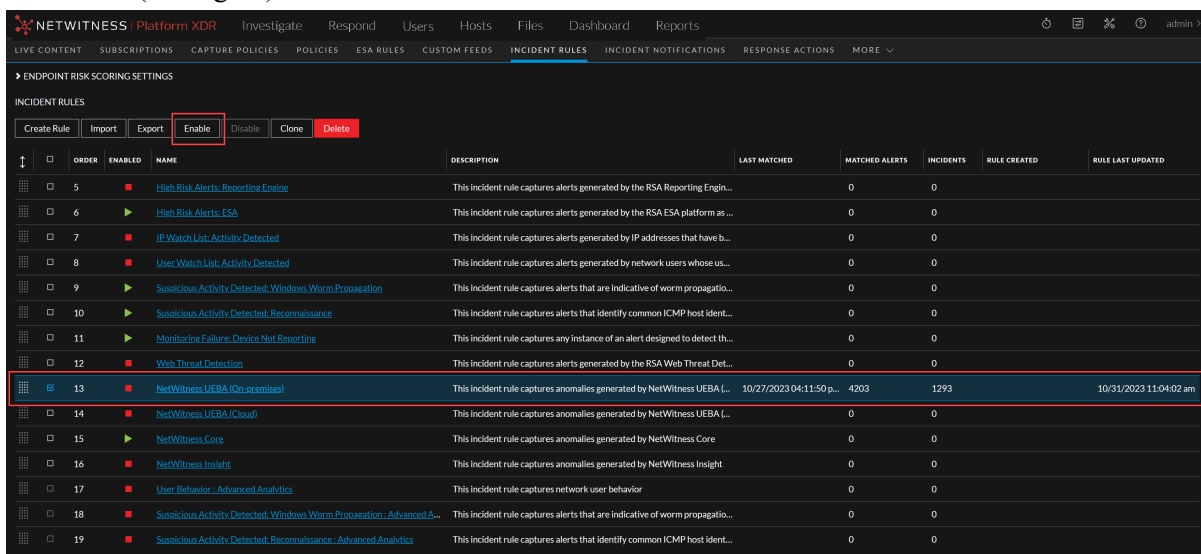
Enable User Entity Behavior Analytics Incident Rule

In order to aggregate the UEBA indicators under Incident rule, follow the instructions below:

Enable the UEBA Forwarding process as described in [Enable UEBA Indicator Forwarder](#).

Note: By default, the NetWitness UEBA (On-premises) rules are disabled in your environment. You can enable them to generate the incident IDs for the alerts and customize the NetWitness UEBA (On-premises) rules settings.

1. Go to  (Configure) > **Incident Rules**.



2. Select the **NetWitness UEBA (On-premises)** rule and click **Enable**.
A confirmation pop-up is displayed.
3. Click **OK**.

Enable or Disable Modeled Behaviors for Users

The UEBA Modeled Behaviors functionality is enabled by default from version 11.5.1.

To disable perform the following:

1. SSH to the UEBA server.

Edit and add the parameter `entity.profile.enabled=false` in the file `/etc/netwitness/presidio/configserver/configurations/presidio-uiconf.properties`.

2. Run the command to restart the `presidio-ui`.

```
systemctl restart presidio-ui
```

Note: To enable, remove the parameter `entity.profile.enabled=false` from the file and restart the `presidio-ui` using the step 2.

Once you have enabled or disabled the Modeled Behaviors, you can verify from NetWitness Platform XDR UI.

To verify, perform the following:

- a. Log into NetWitness Platform and click **Users**.
- b. In the **Overview** tab, under **Top Risky Users** panel, click on a username.

- c. Click the **Modeled Behaviors** tab.
For more information, see "View Modeled Behaviors" topic in the *UEBA User Guide for NetWitness Platform XDR 12.3*.

Removal of Packetbeat Service

From the 12.3 version or later, the Packbeat service has been removed from UEBA to improve memory usage and performance. This allows other services in UEBA to utilize the resources more efficiently, reducing the load on the system.

Learning Period Per Scale

Learning Period Per Scale for 12.3

Note: The displayed numbers are with the following enhancement enabled. Ensure that you enable the configuration in the `application.properties` file to improve the processing time. For more information, see **The TLS model is taking too long to complete tasks** section in the [Troubleshooting UEBA Configurations](#).

Physical Machine (SERIES 6 ESA (DELL R640) SPECIFICATIONS)

Supported Scale	Existing NetWitness customer (historical data available)	Learning Period Alerts will be generated when the learning period is complete
100,000 users with 30 million Log and Endpoint events + 60 million Network events per day	Yes	Fresh Installation of 12.3 Up to 10 days with 28 days of historical data
	Yes	Upgrade from 11.7.x, 12.1.x, 12.2.x to 12.3 UEBA reset is not required. <ul style="list-style-type: none"> • If learning period is already completed, data will be processed for alert generation immediately. • If learning period is completed only for N days, then it will take 28-N days to complete the learning period before generating alerts.

Supported Scale	Existing NetWitness customer (historical data available)	Learning Period Alerts will be generated when the learning period is complete
100,000 users with 30 million Log and Endpoint events + 60 million Network events per day	Yes	<p>Upgrade from 11.7.x, 12.1.x, 12.2.x to 12.3 with schemas updated (Addition or removal of schemas configured on UEBA)</p> <p>UEBA reset is required.</p> <p>Historical data is available for N days:</p> <ul style="list-style-type: none"> • N > 28 days: Up to 10 days with 28 days of historical data. • N < 28 days: It will take 28-N days to complete the learning period before generating alerts. <p>Historical data is not available</p> <p>28 days to complete the learning period before generating alerts.</p>
100,000 users with 30 million Log and Endpoint events + 60 million Network events per day	No	<p>Fresh installation of 12.3</p> <p>28 days to complete the learning period before generating alerts.</p>

Virtual Machine

CPU	Memory	Reserved Memory Allocation	Disk Requirements for /var/netwitness Partition	Read IOPS	Write IOPS
32 cores	128GB	64GB	<ul style="list-style-type: none"> • Storage: 1.5 TB • Provisioning: Thick 	500	500

IMPORTANT: The /var/netwitness partition must be mounted on a **1.5 TB** Thick-provisioned disk for storage usage.

Note: NetWitness recommends you to deploy UEBA on a virtual host, only if your log collection volume is low. If you have a moderate to high log collection volume, NetWitness recommends you to deploy UEBA on the physical host as described in the "NetWitness UEBA Host Hardware Specifications" topic of the *Physical Host Installation Guide*. Contact NetWitness Customer Support (<https://community.netwitness.com/t5/support-information/how-to-contact-netwitness-support/ta-p/563897>) for advice on choosing which host, virtual or physical, to use for UEBA.

Supported Scale	Existing NetWitness customer (historical data available)	Learning Period Alerts will be generated when the learning period is complete
100,000 users with 30 million Log and Endpoint events + 20 million Network events per day	Yes	Fresh Installation of 12.3 Up to 8 days with 28 days of historical data
	Yes	Upgrade from 11.7.x, 12.1.x, 12.2.x to 12.3 UEBA reset is not required. <ul style="list-style-type: none"> If learning period is already completed, data will be processed for alert generation immediately. If learning period is completed only for N days, then it will take 28-N days to complete the learning period before generating alerts .
	Yes	Upgrade from 11.7.x, 12.1.x, 12.2.x to 12.3 with schemas updated (Addition or removal of schemas configured on UEBA) UEBA reset is required. <p>Historical data is available for N days:</p> <ul style="list-style-type: none"> N > 28 days: Up to 8 days with 28 days of historical data. N < 28 days: It will take 28-N days to complete the learning period before generating alerts. <p>Historical data is not available 28 days to complete the learning period before generating alerts.</p>
100,000 users with 30 million Log and Endpoint events + 20 million Network events per day	No	Fresh installation of 12.3 28 days to complete the learning period before generating alerts.

Note: Network events per day refers to number of events consumed by UEBA per day.

Learning Period Per Scale for 12.3 Multiple UEBA Servers

Physical Machine (SERIES 6 ESA (DELL R640) SPECIFICATIONS)

Note: There are two UEBA servers, one is configured with Log and Endpoint data, while the other is configured with Network (TLS) data.

Supported Scale	Existing NetWitness customer (historical data available)	Learning Period Alerts will be generated when the learning period is complete
<p>UEBA Server 1: 100,000 users with 100 million Log and Endpoint events per day</p> <p>UEBA Server 2: 100 million Network events per day</p>	<p>Yes</p> <p>Yes</p>	<p>Fresh Installation of 12.3 Up to 10 days with 28 days of historical data</p> <div style="border: 1px solid green; padding: 5px; margin-top: 10px;"> <p>Note: An additional UEBA server must be installed to configure TLS schema on a separate UEBA server. For example, if you are planning to upgrade from 11.7.1: Before upgrade: UEBA Server 1 is configured with Log, Endpoint, and TLS data. After upgrade:</p> <ul style="list-style-type: none"> • Add another UEBA Server 2 and configure it with TLS schema. • Reconfigure UEBA Server 1 with only Log and Endpoint data followed by UEBA reset. <p>For more information, see Best Practices to Add and Remove Schemas for Multiple UEBA Servers.</p> </div> <p>Upgrade from 11.7.x, 12.1.x, 12.2.x to 12.3 with schemas updated (Addition or removal of schemas configured on UEBA) UEBA reset is required.</p>

Supported Scale	Existing NetWitness customer (historical data available)	Learning Period Alerts will be generated when the learning period is complete
<p>UEBA Server 1: 100,000 users with 100 million Log and Endpoint events per day</p> <p>UEBA Server 2: 100 million Network events per day</p>	Yes	<p>Historical data is available for N days:</p> <ul style="list-style-type: none"> • N > 28 days: Up to 10 days with 28 days of historical data. • N < 28 days: It will take 28-N days to complete the learning period before generating alerts. <p>Historical data is not available 28 days to complete the learning period before generating alerts.</p>
<p>UEBA Server 1: 100,000 users with 100 million Log and Endpoint events per day</p> <p>UEBA Server 2: 100 million Network events per day</p>	No	<p>Fresh installation of 12.3 28 days to complete the learning period before generating alerts.</p>

Learning Period Per Scale (from 11.5.1 version to 12.2.0.1)

Note: For all supported scales, when historical data is not available, the learning period is 28 days.

Physical Machine

SERIES 5 (DELL R630) SPECIFICATIONS

Supported Scale for existing NetWitness customers (historical data is available)	Learning Period Alerts will be generated when the learning period is complete
<p>Logs and Endpoint data for 100,000 users with 30 million events per day + 20 million network events per day.</p>	<p>11.5.1 Installation Up to 4 days with 28 days of historical data.</p> <p>11.5.1 Upgrade from 11.4.x No learning period.</p> <ul style="list-style-type: none"> • UEBA rerun is not required. <p>11.5.1 Upgrade from 11.3.x or prior versions Up to 4 days with 28 days of historical data.</p> <ul style="list-style-type: none"> • UEBA rerun is required. <p>11.5.1 Upgrade with schema removal Up to 4 days with 28 days of historical data.</p> <ul style="list-style-type: none"> • UEBA rerun is required
<p>Logs and Endpoint data for 100,000 users with 30 million events per day + 60 million network events per day.</p>	<p>11.5.1 Installation Up to 14 days with 14 days of historical data.</p> <p>11.5.1 Upgrade from 11.4.x No learning period.</p> <ul style="list-style-type: none"> • UEBA rerun is not required. <p>11.5.1 Upgrade from 11.3.x or prior versions Up to 14 days with 14 days of historical data.</p> <ul style="list-style-type: none"> • UEBA rerun is required. <div data-bbox="784 1285 1421 1402" style="border: 1px solid green; padding: 5px;"> <p>Note: This scenario is impacted by ASOC-101686 known issue. For more information, see <i>NetWitness Release Notes for 11.5</i>.</p> </div> <p>11.5.1 Upgrade with schema removal Up to 14 days with 14 days of historical data.</p> <ul style="list-style-type: none"> • UEBA rerun is required. <div data-bbox="784 1577 1421 1694" style="border: 1px solid green; padding: 5px;"> <p>Note: This scenario is impacted by ASOC-101686 known issue. For more information, see <i>NetWitness Release Notes for 11.5</i>.</p> </div>

Virtual Machine

If there is not historical data, then the learning period will be 28 days.

CPU	Memory	Read IOPS	Write IOPS
16 cores	64GB	500	500

Note: NetWitness recommends you to deploy UEBA on a virtual host, only if your log collection volume is low. If you have a moderate to high log collection volume, NetWitness recommends you to deploy UEBA on the physical host as described in the " NetWitness UEBA Host Hardware Specifications" topic of the *Physical Host Installation Guide*. Contact Customer Support (<https://community.netwitness.com/t5/support-information/how-to-contact-netwitness-support/ta-p/563897>) for advice on choosing which host, virtual or physical, to use for UEBA.

Supported Scale for existing NetWitness customers (historical data is available)	Learning Period Alerts will be generated when the learning period is complete
Logs and Endpoint data for up to 100,000 users with 30 million events per day (no network data).	<p>11.5.1 Installation Up to 4 days with 28 days of historical data.</p> <p>11.5.1 Upgrade from 11.4.x No learning period.</p> <ul style="list-style-type: none"> • UEBA rerun is not required. <p>11.5.1 Upgrade from 11.3.x or prior versions Up to 4 days with 28 days of historical data.</p> <ul style="list-style-type: none"> • UEBA rerun is required. <p>11.5.1 Upgrade with schema removal Up to 4 days with 28 days of historical data.</p> <ul style="list-style-type: none"> • UEBA rerun is required

Supported Scale for existing NetWitness customers (historical data is available)	Learning Period Alerts will be generated when the learning period is complete
<p>Logs and Endpoint data for up to 100,000 users with 30 million events per day + 20 million network events per day.</p>	<p>11.5.1 Installation Up to 14 days with 14 days of historical data.</p> <p>11.5.1 Upgrade from 11.4.x No learning period.</p> <ul style="list-style-type: none"> • UEBA rerun is not required. <p>11.5.1 Upgrade from 11.3.x or prior versions Up to 14 days with 14 days of historical data.</p> <ul style="list-style-type: none"> • UEBA rerun is required. <div data-bbox="800 793 1421 909" style="border: 1px solid green; padding: 5px;"> <p>Note: This scenario is impacted by ASOC-101686 known issue. For more information, see <i>NetWitness Release Notes for 11.5</i>.</p> </div> <p>11.5.1 Upgrade with schema removal Up to 14 days with 14 days of historical data.</p> <ul style="list-style-type: none"> • UEBA rerun is required. <div data-bbox="800 1087 1421 1203" style="border: 1px solid green; padding: 5px;"> <p>Note: This scenario is impacted by ASOC-101686 known issue. For more information, see <i>NetWitness Release Notes for 11.5</i>.</p> </div>

Note: Network events per day refers to number of events consumed by UEBA per day. To determine the scale of network events for existing customers, see [Troubleshooting UEBA Configurations](#).

Learning Period Per Scale for 11.5

Physical Machine

SERIES 5 (DELL R630) SPECIFICATIONS

Supported Scale	Existing NetWitness customer (historical data available)	Learning Period Alerts will be generated when the learning period is complete
Logs and Endpoint data for 100,000 users with 30 million events per day + 20 million network events per day.	Yes	11.5 Installation Up to 4 days with 28 days of historical data.
	Yes	11.5 Upgrade from 11.4.x with no schema changes No learning period. <ul style="list-style-type: none"> • UEBA rerun is not required.
	Yes	11.5 Upgrade from 11.3.x or prior versions with no schema changes Up to 4 days with 28 days of historical data. <ul style="list-style-type: none"> • UEBA rerun is required.
	Yes	11.5 Upgrade with schema changes Up to 4 days with 28 days of historical data. <ul style="list-style-type: none"> • UEBA rerun is required

Supported Scale	Existing NetWitness customer (historical data available)	Learning Period Alerts will be generated when the learning period is complete
Logs and Endpoint data for 100,000 users with 30 million events per day + 60 million network events per day.	Yes	11.5 Installation Up to 14 days with 14 days of historical data.
	Yes	11.5 Upgrade from 11.4.x with no schema changes No learning period. <ul style="list-style-type: none"> • UEBA rerun is not required.
	Yes	11.5 Upgrade from 11.3.x or prior versions with no schema changes Up to 14 days with 14 days of historical data. <ul style="list-style-type: none"> • UEBA rerun is required. <div data-bbox="927 1062 1421 1207" style="border: 1px solid green; padding: 5px; margin-top: 10px;"> Note: This scenario is impacted by ASOC-101686 known issue. For more information, see <i>NetWitness Release Notes for 11.5</i>. </div>
	Yes	11.5 Upgrade with schema changes Up to 14 days with 14 days of historical data. <ul style="list-style-type: none"> • UEBA rerun is required. <div data-bbox="927 1415 1421 1560" style="border: 1px solid green; padding: 5px; margin-top: 10px;"> Note: This scenario is impacted by ASOC-101686 known issue. For more information, see <i>NetWitness Release Notes for 11.5</i>. </div>
Logs and Endpoint data for up to 100,000 users with 30 million events per day + 60 million network events per day.	No	11.5 Installation 28 days

Virtual Machine

CPU	Memory	Read IOPS	Write IOPS
16 cores	64GB	500	500

Note: NetWitness recommends you to deploy UEBA on a virtual host, only if your log collection volume is low. If you have a moderate to high log collection volume, NetWitness recommends you to deploy UEBA on the physical host as described in the "NetWitness UEBA Host Hardware Specifications" topic of the *Physical Host Installation Guide*. Contact Customer Support (<https://community.netwitness.com/t5/support-information/how-to-contact-netwitness-support/ta-p/563897>) for advice on choosing which host, virtual or physical, to use for UEBA.

Supported Scale	Existing NetWitness customer (historical data available)	Learning Period Alerts will be generated when the learning period is complete
Logs and Endpoint data for up to 100,000 users with 30 million events per day (no network data).	Yes	11.5 Installation Up to 4 days with 28 days of historical data.
	Yes	11.5 Upgrade from 11.4.x with no schema changes No learning period. <ul style="list-style-type: none"> • UEBA rerun is not required.
	Yes	11.5 Upgrade from 11.3.x or prior versions with no schema changes Up to 4 days with 28 days of historical data. <ul style="list-style-type: none"> • UEBA rerun is required.
	Yes	11.5 Upgrade with schema changes Up to 4 days with 28 days of historical data. <ul style="list-style-type: none"> • UEBA rerun is required

Supported Scale	Existing NetWitness customer (historical data available)	Learning Period Alerts will be generated when the learning period is complete
<p>Logs and Endpoint data for up to 100,000 users with 30 million events per day + 20 million network events per day.</p>	Yes	<p>11.5 Installation Up to 14 days with 14 days of historical data.</p>
		<p>11.5 Upgrade from 11.4.x with no schema changes No learning period.</p> <ul style="list-style-type: none"> • UEBA rerun is not required.
		<p>11.5 Upgrade from 11.3.x or prior versions with no schema changes Up to 14 days with 14 days of historical data.</p> <ul style="list-style-type: none"> • UEBA rerun is required. <div data-bbox="927 1087 1422 1236" style="border: 1px solid green; padding: 5px;"> <p>Note: This scenario is impacted by ASOC-101686 known issue. For more information, see <i>NetWitness Release Notes for 11.5</i>.</p> </div>
<p>Logs and Endpoint data for up to 100,000 users with 30 million events per day + 20 million network events per day.</p>		<p>11.5 Upgrade with schema changes Up to 14 days with 14 days of historical data.</p> <ul style="list-style-type: none"> • UEBA rerun is required. <div data-bbox="927 1444 1422 1593" style="border: 1px solid green; padding: 5px;"> <p>Note: This scenario is impacted by ASOC-101686 known issue. For more information, see <i>NetWitness Release Notes for 11.5</i>.</p> </div>
	No	<p>11.5 Installation 28 days</p>

Note: Network events per day refers to number of events consumed by UEBA per day. To determine the scale of network events for existing customers, see [Troubleshooting UEBA Configurations](#).

Troubleshooting UEBA Configurations

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

Task Failure Issues in Airflow

Problem	The <code>userId_output_entities</code> task fails when the username contains a backslash.
Cause	When events with usernames containing a backslash character is passed through UEBA, then the <code>userId_output_entities</code> task fails.
Solution	<p>To resolve this issue contact the customer success to obtain the relevant files and execute the following steps:</p> <ul style="list-style-type: none"> • Stop airflow-scheduler service. • Remove all MongoDB documents in the "aggr", "accm" and "input" collections that contains <code>context.userId</code> with hashtag. These documents can be located using the <code>FindCollecionsContainsBackslash.js</code> script. • Replace the <code>/var/netwitness/presidio/flume/conf/adapter/transformers/authentication.json</code> file with the updated <code>authentication.json</code> file. • Restart the airflow-scheduler service. • Validate that the next run of the <code>userId_output_entities</code> task is completed successfully.

Problem	The <code>AUTHENTICATION_userId_build_feature_historical_data</code> task fails when the username contains a hashtag.
Cause	When events with usernames containing a hashtag character is passed through UEBA, then the <code>AUTHENTICATION_userId_build_feature_historical_data</code> task fails.
Solution	<p>To resolve these issue contact the customer success to obtain the relevant files and execute the following steps:</p> <ul style="list-style-type: none"> • Stop airflow-scheduler service. • Remove all MongoDB documents in the "aggr", "accm" and "input" collections that contains <code>context.userId</code> with hashtag. These documents can be located using the <code>FindCollecionsContainsHashtagContextUserId.js</code> script. • Replace the <code>/var/netwitness/presidio/flume/conf/adapter/transformers/authentication.json</code> file with the updated <code>authentication.json</code> file. • Restart the airflow-scheduler service.

- Validate that the next run of `AUTHENTICATION_userId_build_feature_historical_data` task is completed successfully.

Problem	The task <code>output_forwarding_task</code> fails in Airflow UI for <code>userId_hourly_ueba_flow</code> DAG due to Elasticsearch 'too many clauses' exception.
Cause	The <code>output_forwarding_task</code> task in the <code>userId_hourly_ueba_flow</code> DAG fails in the Airflow UI. The failure is caused by an Elasticsearch exception with the following message: <code>"caused_by":{"type":"too_many_clauses","reason":"maxClauseCount is set to 1024"}</code> . The <code>too_many_clauses</code> error occurs when the number of clauses in an Elasticsearch query exceeds the maximum limit set by the system. In this case, the maximum number of clauses was set to 1024. The <code>output_forwarding_task</code> exceeded this limit, which caused the failure.
Solution	<p>To increase the max clause count value, execute the following steps:</p> <ol style="list-style-type: none"> 1. SSH to UEBA server. 2. Open the <code>/etc/elasticsearch/elasticsearch.yml</code> file. 3. Update the max clause count parameter value: <pre>indices.query.bool.max_clause_count: 1500</pre> 4. Restart the elasticsearch service using the following command: <pre>systemctl restart elasticsearch</pre> <p>Note: After restarting, the task may fail and will be automatically retried.</p>


Problem	The TLS model is taking too long to complete tasks.
Cause	If the <code>TLS_raw_model_task</code> and <code>TLS_aggr_model</code> tasks take more than 20 hours to process the data.
Solution	<p>You need to enable the configuration in <code>application.properties</code> file to improve the processing time by executing the following steps.</p> <ol style="list-style-type: none"> 1. SSH to UEBA server. 2. Navigate to the following path: <pre>/etc/netwitness/presidio/configserver/configurations/application.properties</pre> 3. Add or update the following configuration: <pre>presidio.adc.enable.short.time.range=true</pre> <p>Note: This is only applicable to the 12.3 version.</p>

MongoDB I/O Operations Slowness Issue

Problem	Increased execution time for DAGs with Mongo I/O Operations.
Cause	Some of the DAGs in the system experienced increased execution time due to slow MongoDB Input/Output (I/O) operations.
Solution	<p>To increase the MongoDB cache size in the MongoDB config file, execute the following steps:</p> <ol style="list-style-type: none"> 1. SSH to UEBA server. 2. Open the <code>/etc/mongod.conf</code> file. 3. Update the <code>internalQueryMaxBlockingSortMemoryUsageBytes</code> value to 1GB (1053554432 bytes). <pre>internalQueryMaxBlockingSortMemoryUsageBytes: 1053554432</pre> 4. Restart the Mongod service using the following command: <pre>systemctl restart mongod</pre> <p>Note: After restarting, the task may fail and will be automatically retried.</p>

User Interface Inaccessible

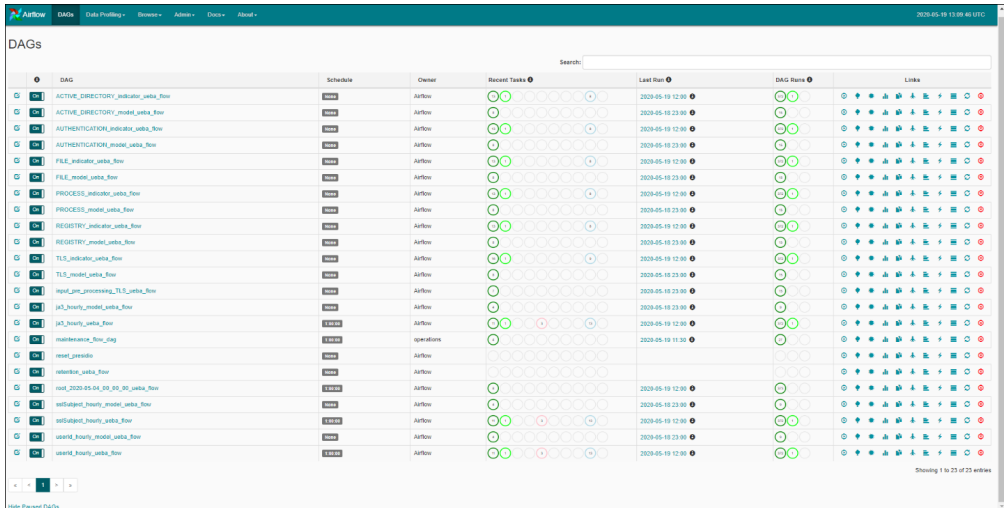
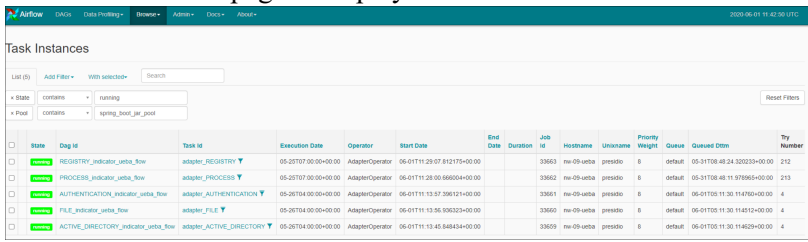
Problem	The User Interface is not accessible.
Cause	You have more than one NetWitness UEBA service existing in your NetWitness deployment and you can only have NetWitness UEBA service in your deployment.
Solution	<p>Complete the following steps to remove the extra NetWitness UEBA service.</p> <ol style="list-style-type: none"> 1. SSH to NW Server and run the following commands to query the list of installed NetWitness UEBA services. <pre># orchestration-cli-client --list-services grep presidio-airflow ... Service: ID=7e682892-b913-4dee-ac84-ca2438e522bf, NAME=presidio-airflow, HOST=xxx.xxx.xxx.xxx:null, TLS=true ... Service: ID=3ba35fbe-7220-4e26-a2ad-9e14ab5e9e15, NAME=presidio-airflow, HOST=xxx.xxx.xxx.xxx:null, TLS=true</pre> 2. From the list of services, determine which instance of the <code>presidio-airflow</code> service should be removed (by looking at the host addresses).

	<p>3. Run the following command to remove the extra service from Orchestration (use the matching service ID from the list of services):</p> <pre># orchestration-cli-client --remove-service --id <ID-for-presidio-airflow-form-previous-output></pre> <div style="border: 1px solid green; padding: 5px; margin: 10px 0;"> <p>Note: Run the following command to update NW Server to restore NGINX:</p> <pre># orchestration-cli-client --update-admin-node</pre> </div> <p>4. Log in to NetWitness, go to  (Admin) > Hosts, and remove the extra NetWitness UEBA host.</p>
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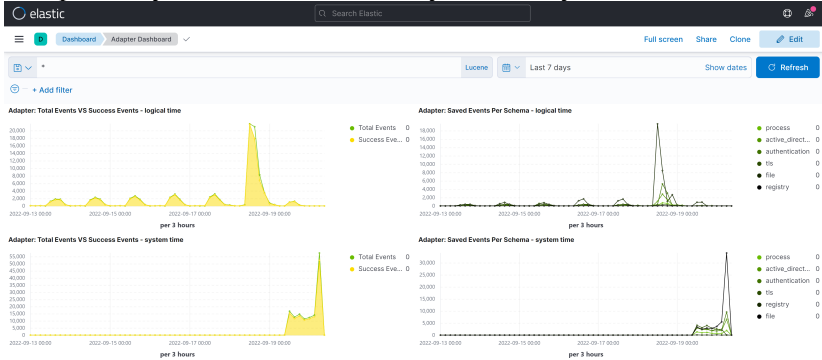
Get UEBA Configuration Parameters

Issue	<p>How to get UEBA configuration parameters?</p> <p>In order to get the UEBA configuration main parameters, run the <code>curl http://localhost:8888/application-default.properties</code> command from the UEBA machine.</p> <pre>[root@UEBA ~]# curl http://localhost:8888/application-default.properties dataPipeline.schemas: AUTHENTICATION,FILE,ACTIVE_DIRECTORY,PROCESS,REGISTRY,TLS dataPipeline.startTime: 2022-11-05T08:00:00Z elasticsearch.clustername: elasticsearch elasticsearch.host: localhost elasticsearch.port: 9200 enable_metrics.export: true entity_batch.size: 1000 entity_score.alert.contribution.critical: 10 entity_score.alert.contribution.high: 15 entity_score.alert.contribution.low: 5 entity_score.alert.contribution.medium: 10 events.store.page.size: 1000 indicators.store.page.size: 1000 mongo.db.name: presidio mongo.db.password: 514pGvIV5CH0kiI5Hhbat+dsafdsfdfsdfsdfsdfsdfsdfsdfsdfsdfs/X3YSHh mongo.db.user: presidio mongo.host.name: localhost mongo.host.port: 27020 mongo.map.dollar.replacement: #dir# mongo.map.dot.replacement: #dot# monitoring.fixed.rate: 5000 outputForwarding.enableForwarding: true presidio.execute.ttl.cleanup: false severity.critical: 10 severity.high: 15 severity.mid: 5 spring.autoconfigure.exclude: org.springframework.boot.autoconfigure.data.elasticsearch.ElasticsearchDataAutoConfiguration,org.springframework.boot.autoconfigure.jdbc.DataSourceAutoConfiguration,org.springframework.boot.autoconfigure.mongo.MongoAutoConfiguration uiIntegration.adminServer: nr-node-zero uiIntegration.brokerId: 36873fb-579a-47f3-becc-85a5a54b34e</pre>
Explanation	<p>The main parameters which will be returned are the following:</p> <ul style="list-style-type: none"> • <code>uiIntegration.brokerId</code>: The Service ID of the NW data source (Broker / Concentrator) • <code>dataPipeline.schemas</code>: List of schemas processed by the UEBA • <code>dataPipeline.startTime</code>: The date the UEBA started consuming data from the NW data source • <code>outputForwarding.enableForwarding</code>: The UEBA Forwarder status
Resolution	<p>See the resolution for these statistics in the Troubleshooting UEBA Configurations section.</p>

Check UEBA Progress Status using Airflow

Issue	<p>How to check UEBA progress status using Airflow?</p>
Resolution	<p>1. Navigate to- <a href="https://<UEBA-host-name>/admin">https://<UEBA-host-name>/admin. Enter the admin username and the deploy-admin password. The following image is of the Airflow home page that shows the system is working as expected.</p> 
	<p>2. Make sure that no red or yellow circles appear in the main page:</p> <ul style="list-style-type: none"> • red circle indicates that a task has failed. • yellow circle indicates that a task has failed and is “awaiting” for a retry. If a “failed” or “up-for-retry” task appears, investigate what is the root cause of the problem. <p>3. Make sure the system continues to run.</p> <p>4. Tap the Browse button and select Task Instance.</p> <p>5. Add the following filters: State = running and Pool = spring_boot_jar_pool. The Task Instance page is displayed.</p>  <p>The Execution Date column shows the current time window for each running task. Make sure the execution date is greater than the UEBA start-date and that new tasks have an updated date are added to the table.</p>

Check if data is received on the UEBA by Kibana

Issue	<p>How to check if data is received on the UEBA by Kibana:</p>
Explanation	<p>Navigate to- <a href="https://<UEBA-host-name>/kibana">https://<UEBA-host-name>/kibana. Enter the admin username and password: To check that the data is flowing to the UEBA go to the Adapter Dashboard: Tap the Dashboard tab in the left menu Tap Adapter Dashboard at the right menu Select the relevant time range at the top bar The charts on this dashboard will present you the data that already fetched by the UEBA.</p> 

Scaling Limitation Issue

When installed on a Virtual Machine, UEBA can process up to 20 million network events per day. Based on this limitation, you may encounter the following issues.

Issue	<p>How to determine the scale of network events currently available, to know if it exceeds the UEBA limitation.</p>
Solution	<p>To know the network data limit, perform the following :</p> <ul style="list-style-type: none"> • Run the query on the Broker or Concentrator that connects to UEBA using NetWitness UI: <pre>service=443 && direction='outbound' && analysis.service!='quic' && ip.src exists && ip.dst exists && tcp.srcport!=443</pre> <p>Calculate the total number of events for the selected days (including weekdays with standard workload). If the average is above 20 million per day then it indicates that UEBA's supported scale is exceeded.</p>

Issue	<p>Can UEBA for Packets be used if UEBA's supported scale is exceeded?</p>
Solution	<p>You must create or choose a Broker that is connected to a subset of Concentrators that does not exceed the supported limit.</p> <p>To know the network data limit, perform the following :</p> <ul style="list-style-type: none"> • Run the query on the Concentrator that connects to UEBA using NetWitness

	<p>UI:</p> <pre>service=443 && direction='outbound' && analysis.service!='quic' && ip.src exists && ip.dst exists && tcp.srcport!=443</pre> <p>Calculate the total number of events for the selected days (including weekdays with standard workload). If the average is above 20 million per day then it indicates that UEBA's supported scale is exceeded.</p>
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Note: The Broker must query all the available and needed data needed such as logs, endpoint and network (packets). UEBA packets models are based on the whole environment. Hence, make sure that the data parsed from the subset of Concentrators is consistent.

UEBA Policy Issue

Issue	<p>After you create a rule under UEBA policy, duplicate values are displayed in the Statistics drop-down.</p>
Solution	<p>To remove the duplicate values, perform the following:</p> <ol style="list-style-type: none"> 1. Log in to MongoDB using following command:<code>mongo admin -u deploy_admin -p {Enter the password}</code> 2. Run the following command on MongoDB: <pre>use sms; db.getCollection('sms_statdefinition').find({componentId : "presidioairflow"}) db.getCollection('sms_statdefinition').deleteMany ({componentId : "presidioairflow"})</pre>

Troubleshoot Using Kibana

Issue	<p>After you deploy NetWitness UEBA, the connection between the NetWitness and NetWitness UEBA is successful but there are very few or no events in the Users > OVERVIEW tab.</p> <ol style="list-style-type: none"> 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: <ul style="list-style-type: none"> • 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
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	<p>every hour.</p> <p>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.</p>
Solution	<p>You must identify the missing events and reconfigure the Windows auditing.</p> <ol style="list-style-type: none"> 1. Go to INVESTIGATE > Navigate. 2. Filter by device.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	<p>The historical load is complete and the events are coming from Adapter dashboard but no alerts are displayed in the Users > OVERVIEW tab.</p>
Solution	<ol style="list-style-type: none"> 1. Go to Kibana > Table of content > Scoring and model cache. 2. Adjust the Time Range from the top-right corner of the page, and see if the events are scored.

Issue	<p>The historical load is complete but no alerts are displayed in the Users tab.</p>
Solution	<ol style="list-style-type: none"> 1. Go to Kibana > Dashboard > Overview. 2. Adjust the Time Range from the top-right corner of the page, and see how many users are analyzed and if any anomalies are found.

Troubleshoot Using Airflow

Issue	<p>After you start running the UEBA it is not possible to remove a data source during the run process else the process stops.</p>
Solution	<p>You must either continue the process till it completes or remove the required data source from UEBA and rerun the process.</p>

Issue	<p>After you deploy UEBA and if there are no events displayed in the Kibana > Table of content > Adapter dashboard and Airflow has already processed the hours but there are no events. This is due to some communication issue.</p>
Solution	<p>You must check the logs and resolve the issue.</p> <ol style="list-style-type: none"> 1. Log in 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 are no events, you must click reset_presidio after fixing the data in the Broker. Do not reset if there are alerts.

Troubleshoot Using Elasticsearch Migration Tool

Issue

If you upgrade the UEBA host from 12.0 and older versions to 12.3 without performing Elasticsearch data backup (using the Elasticsearch migration tool), the data such as Users, Entities, Alerts, and Indicators will be lost.

Note: This is not applicable if you are upgrading the UEBA host from 12.1, 12.2 to 12.3.

Solution

If you fail to perform Elasticsearch data backup and lose all the data after upgrading the UEBA host from 12.0 or older versions to 12.2, follow these steps to recover the lost data.

1. Go to `/var/netwitness/` after upgrading the UEBA host to 12.3.
2. Copy `backup-elasticsearch-xxxx` (mandatory) and `backup-elasticsearch-recover-xxxx` (If it is available) directories to `/var/netwitness/` in your UEBA lab (on version 12.0 or older versions).

Note:

- If you do not have a UEBA lab setup for version 12.0 or older versions, contact NetWitness.
- NetWitness requires your permission to copy the directories to `/var/netwitness/` in NetWitness UEBA lab for recovering the lost data.

3. Rename the `backup-elasticsearch-xxxx` directory as `elasticsearch`. Run the following command.

```
cd /var/netwitness
rm -r elasticsearch
mv backup-elasticsearch-xxxx elasticsearch
chown -R elasticsearch:elasticsearch elasticsearch
systemctl start elasticsearch
```

4. Rename the `backup-elasticsearch-recover-xxxx` directory as `elasticsearch-recover`. Run the following command.

IMPORTANT: If `backup-elasticsearch-recover-xxxx` directory is not available, do not run the below command.

```
cd /var/netwitness
rm -r elasticsearch-recover
mv backup-elasticsearch-recover-xxxx elasticsearch
chown -R root:elasticsearch elasticsearch-recover
systemctl start elasticsearch
```

5. Restart the Elasticsearch 5.5.0. Run the following command.

```
systemctl restart elasticsearch.service
```

6. Follow the steps provided in the Elasticsearch migration tool guide to export Elasticsearch presidio data. For more information, see the *Upgrade Preparation Tasks* section in the [NetWitness Upgrade guide for 12.3](#).

Note: `ueba_es_migration_tool` (Elasticsearch migration tool) allows you to migrate presidio Elasticsearch data from Elasticsearch version 5.5.0 to 7.17.6 while upgrading the UEBA host to 12.3 from 12.0 and older versions. This tool contains `elk-migration-script.sh` script file and `presidio-elk-migration-1.0.0.jar` file and it can be downloaded from [UEBA Elasticsearch Migration Tool](#).

7. Once the Elasticsearch presidio data Export operation is completed, copy the backup directories to your UEBA host.
8. **Import** Elasticsearch presidio data. For more information, see *Post Upgrade Tasks* topic in the [NetWitness Upgrade guide for 12.3](#).