

Integration Guide

Integrating Amazon ECR

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Abstract

This guide provides instructions to configure/retrieve the Amazon Elastic Container Registry (ECR) events using Amazon CloudTrail and Amazon EventBridge. After EventTracker is configured to collect and parse these logs then the dashboards and reports can be configured to monitor the Amazon ECR events.

Audience

This guide is intended for use by all EventTracker users responsible for investigating and managing network and cloud security. This guide assumes that you have EventTracker access and understanding of networking technologies and Amazon Web Services.



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1. Overview

Amazon Web Services (AWS) is a collection of remote computing services (also called web services) that together make up a cloud computing platform, offered over the internet by Amazon.com.

Amazon CloudTrail is enabled on your AWS account when you create it. When an activity occurs in your AWS account, that activity is recorded in a CloudTrail event. With CloudTrail, you can get the history of the AWS API calls for your account, including the API calls made via the AWS Management Console, AWS SDKs, command-line tools, and higher-level AWS services (such as AWS CloudFormation). Amazon EC2 and Amazon VPC are the e.g., of few services which are integrated with CloudTrail, i.e., CloudTrail captures the API calls made on behalf of Amazon EC2 and Amazon VPC.

EventTracker collects the events delivered to CloudTrail and filters them out to get some critical event types for creating reports, dashboards, and alerts. These are considered as Knowledge Packs and help to reduce the effort to manually login to the AWS account and figuring what events are supposed to be critical. The events collected by EventTracker will include services like Amazon EC2 and Amazon VPC.

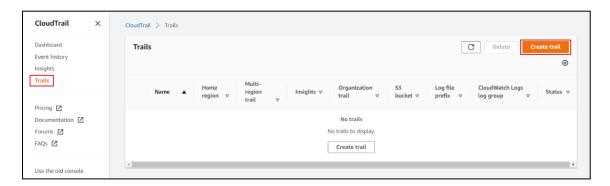
2. Prerequisites

- The user must have root-level access to the AWS console.
- EventTracker syslog VCP port should be NAT with public IP Address.

3. Integrating AWS CloudTrail with EventTracker

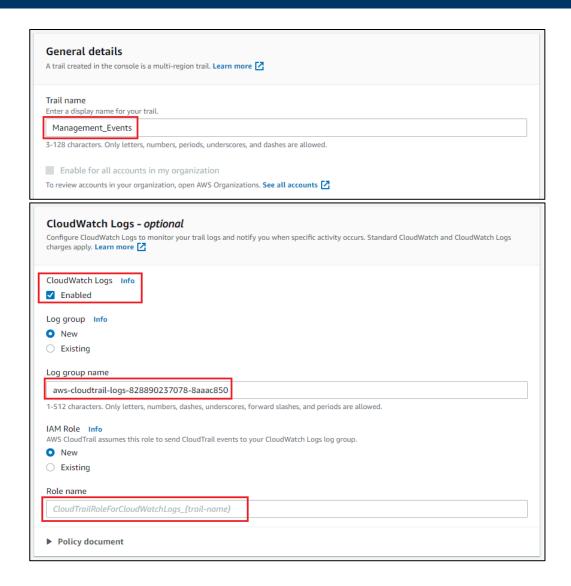
3.1 Enabling CloudTrail Logging

- 1. Login to AWS CloudTrail.
- 2. Navigate to the **Trails** section and click the **Create trail** button.

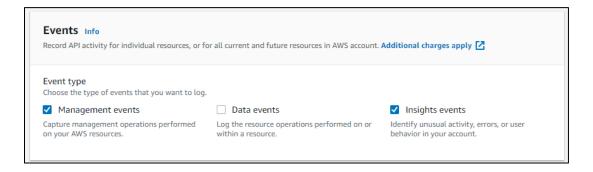


3. Provide the **Trail name** and enable **CloudWatch Logs.**





- 4. Provide the Log group name and Role name.
- 5. Click **Next** and select the **Management events** and **Insights events** in the Event type.



6. Click **Next** and review the setting and click **Create trail.**



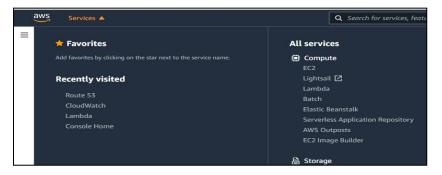


It starts sending the CloudTrail logs to CloudWatch.

For forwarding the CloudTrail logs to EventTracker. You need to create a subscription filter for the log group which you have created in step 4. Follow the below instruction for integrating CloudWatch with EventTracker.

3.2 Implementing EventTracker Lambda function

1. Click the Services and select Lambda.

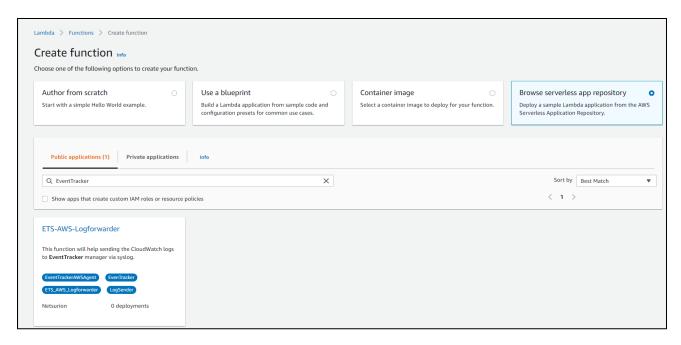


2. In the **Navigation** pane choose **Functions**, then click the **Create function**.

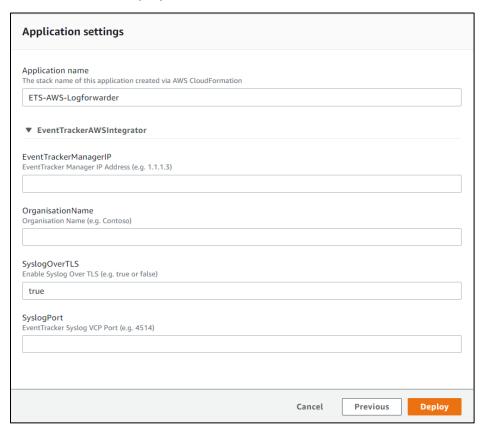


- 3. Select Browse serverless app repository.
- 4. Search **EventTracker** in public applications. You will get the **ETS-AWS-Logforwarder** in results.





5. Fill in the details and click **Deploy**.



- 6. Enter the EventTracker Public Manager IP address.
- 7. Enable syslog over TLS as True or False.
- 8. Enter the syslog port.
- 9. After you click **Deploy**, a function is created.



3.3 Creating Subscription filters for CloudWatch

- 1. Click the Services and select CloudWatch.
- 2. In the navigation pane, choose the **Log group**.
- 3. Click the **Log group** provided while creating **CloudTrail**.
- 4. Go to the **Subscription filter**.



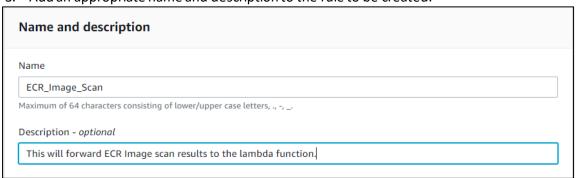
- 5. Click the Create Lambda subscription filter.
- 6. Under the lambda function, select the lambda function (created after deploying the application) created from the dropdown.
- 7. Enter subscription filter name, i.e., CloudTrailTrigger.
- 8. Click Start streaming.

3.4 Creating Rules in Amazon EventBridge

- 1. Click the services and select EventBridge.
- 2. In the navigation pane select Rules, click the Create Rule.



3. Add an appropriate name and description to the rule to be created.

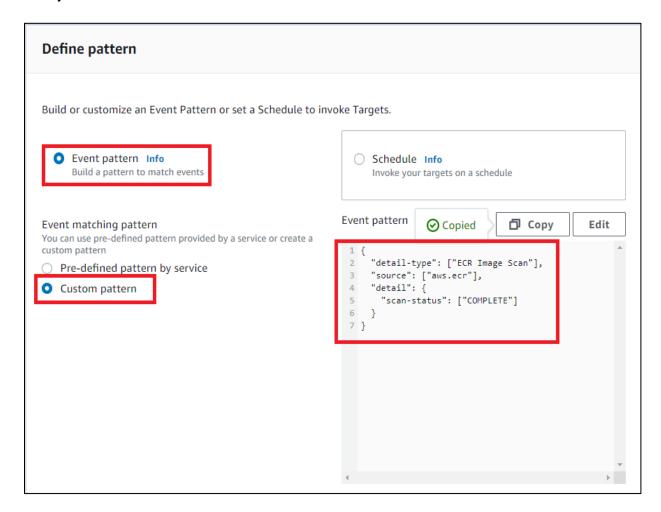


4. Under the **Define pattern** section select the **Event pattern** and **Custom pattern** options. Enter the following Event pattern below:

{

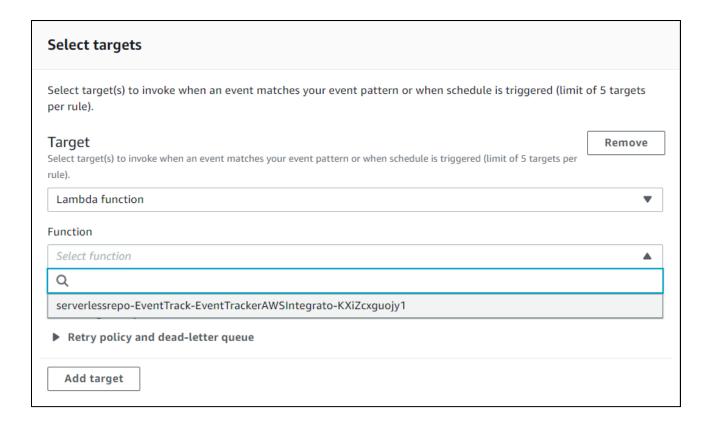


```
"detail-type": ["ECR Image Scan"],
"source": ["aws.ecr"],
"detail": {
    "scan-status": ["COMPLETE"]
    }
}
```



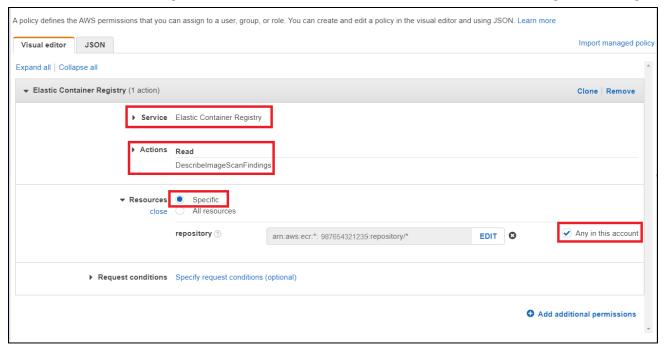
- 5. Under the **Select event bus** section, select "AWS default event bus" and make sure "Enable the rule on the selected event bus" is Active.
- 6. Under the **Select targets section** choose the lambda function and select the EventTracker lambda function as the target and click the **Add target**.





3.5 Attaching a policy to the Lambda function

- 1. Click the services and select IAM.
- 2. In the IAM navigation pane, select **Policies**, and further click the **Create Policy**.
- 3. Under the Visual editor tab, select Service as "Elastic Container Registry".
- 4. Under Actions, go to the Read section and select the checkbox for DescribeImageScanFindings.

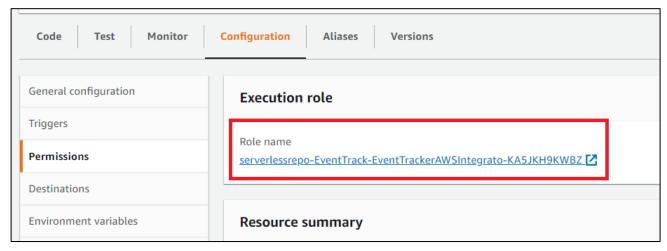




- 5. Under Resources, select the Specific radio button and the Any in this account checkbox.
- 6. Provide a suitable name and description to the policy and click the **Create policy**.
- 7. Once done, cross-check the policy created by doing a search in the policy page with the name with which it was created.

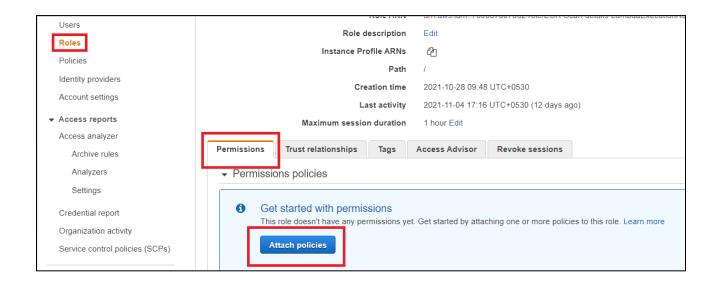


8. Go to the EventTracker lambda function in AWS Lambda, choose **Permissions** in the **Configuration** tab, and click the **Role** name, which will open the corresponding IAM page related to it.



9. Click the Attach policies in the permissions tab under Roles.





10. Type the name of the policy created in the previous steps, click the checkbox for it, and click the **Attach policy**, which will provide the **describe imagescan finding** permission to the EventTracker lambda function.



4. System Extraction

- 1. Login to the **EventTracker Manager**.
- 2. Navigate to Admin > Manager > syslog/Virtual Collection Point.
- 3. Hover over the gear icon for getting the **Extract Id** option. Click the **Extract device Id** for extracting the system name using the below regexs:
- 4. Fill in the following details:

(For Vulnerability scan)

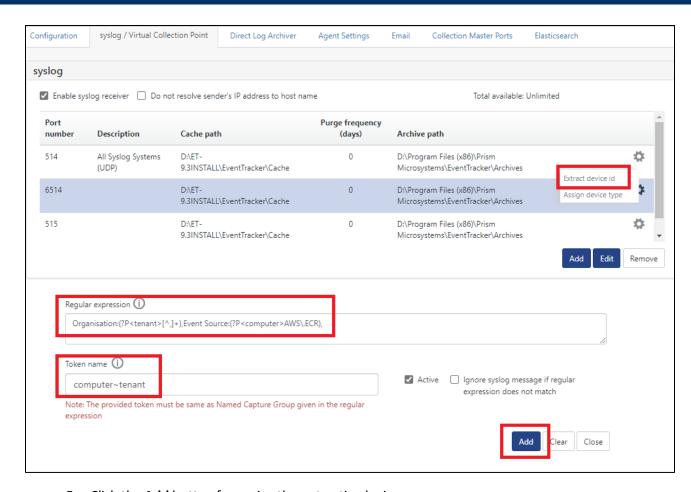
Regular expression: Organisation:(?P<tenant>[^,]+),Event Source:(?P<computer>AWS\.ECR), **Token Name:** computer~tenant

(For CloudTrail logs)

Regular expression: Organisation:(?P<Tenant>[^,]+).*?"eventSource":"(?P<Computer>[^"]+)

Token Name: computer~tenant





5. Click the Add button for saving the extraction logic.

5. EventTracker Knowledge Pack

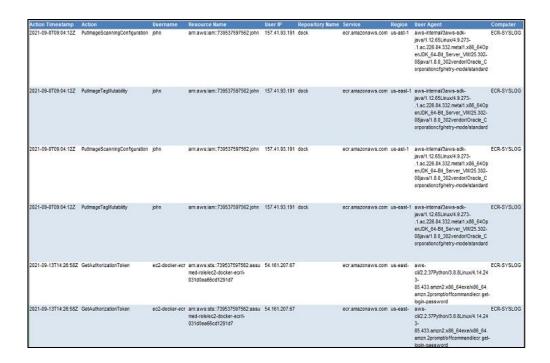
Once the logs are received by EventTracker, the Knowledge Packs can be configured into EventTracker.

The following Knowledge Packs are available in EventTracker to support the services based on the CloudTrail logs:

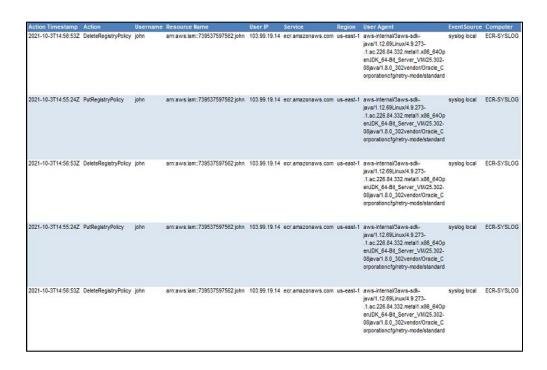
5.1 Flex Reports

 Amazon ECR – Repository-related activities – This report contains relevant information related to the repositories in Amazon ECR.





 Amazon ECR – Registry-related activities – This report contains relevant information related to the registries in Amazon ECR.





 Amazon ECR - Vulnerability scan – This report shows relevant details related to the vulnerability scans performed by AWS when an image is pushed to an ECR repository.

Scan Time	AWS Account	Repository Name	Image HASH	CVE Name	Severity	Description	Reference
11/10/2021 13:28:21	956046285005	si-team-dev	sha256:2eacc821a631f2c80c9406 0753453d7f9d6b37ffedffdf248bb82 bbba8a88c8		HIGH	SQLite3 from 3.6.0 to and including 3.27.2 is vulnerable to heap out-of-bound read in the rtreenode() function when handling invalid rtree tables.	tracker.debian.org/tracker/CVE- 2019-8457
11/10/2021 13:28:21	\$56046285005	si-team-dev	sha256.2eacc821a631f2c80c9406 0753453c7f9d637ffedffdf248bb82 bbba8a88c8		HIGH	The mailoc implementation in the GNU C Library (aka glibc or fibc6), from version 2.24 to 2.26 on powerpc, and only in version 2.26 to 1386, did not properly handle malloc calls with arguments close to SIZE_MAX and could return a pointer to a heap region that is smaller than requested, eventually leading to heap corruption.	https://secunity- tracker.debian.org/tracker/CVE- 2018-6551
11/10/2021 13:28:21	\$56046285005	si-team-dev	sha256:2eacc821a631f2c80c9406 0753453cf7f9d6b37ffedffdf248bb82 bbba8a88c8		HIGH	libpng before 1.6.32 does not properly check the length of chunks against the user limit.	https://security- tracker.debian.org/tracker/CVE- 2017-12652
11/10/2021 13:28:21	956046285005	si-team-dev	sha256:2eacc821a631f2c80c9406 0753453d7f9d6b37ffedffdf248bb82 bbba8a88c8		HIGH	runuser in util-linux allows local users to escape to the parent session via a crafted TIOCSTI ioctl call, which pushes characters to the terminal's input buffer.	
11/10/2021 13:28:21	- \$56046285005	si-team-dev	sha256.2eacd821a631f2c80c9406 0753453c4796637ffedffdf248bb82 bbba8a88c8		нісн	The zend_string_extend function in Zendzend_string h in PHP through 7.1.5 does not prevent changes to string objects that result in a negative length, which allows remote attackers to cause a denial of service (application crash) or possibly have unspecified other impact by leveraging a scripts use of .= with a long string.	tracker.debian.org/tracker/CVE-
11/10/2021 13:28:21	956046285005	si-team-dev	sha256:2eacc821a631f2c80c9406 0753453d7f9d6b37ffedffdf248bb82 bbba8a88c8		HIGH	An integer overflow in the implementation of the posix_memalign in memalign functions in the GNU C Library (aka glibc or libc6) 2.26 and earlier could	https://security- tracker.debian.org/tracker/CVE- 2018-6485

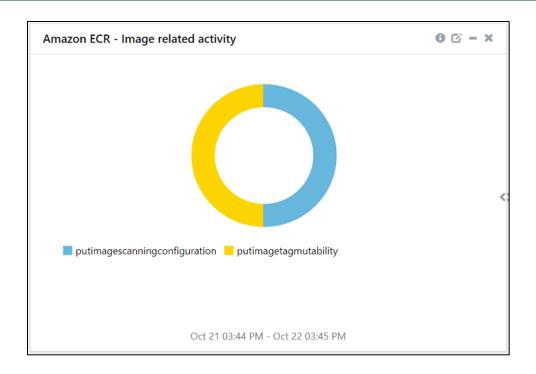
5.2 Alerts

- Amazon ECR: Forced repository deletion detected This alert is triggered when an ECR repository is deleted which has images present in it.
- Amazon ECR: High priority lifecycle policy added This alert is triggered when a high priority lifecycle policy is added to a repository which may override the existing policies.
- Amazon ECR: Image scan disabled This alert is triggered when an image scanning is changed from enabled to disabled for an ECR repository.
- Amazon ECR: Image tag overwrite enabled This alert is triggered when an image tagging is changed from immutable to mutable, which disables the image overwrite protection.
- Amazon ECR: Registry policy changes detected This alert is triggered when changes in the critical registry policies are detected.
- Amazon ECR: Repository policy changes detected This alert is triggered when changes in the critical repository policies are detected.

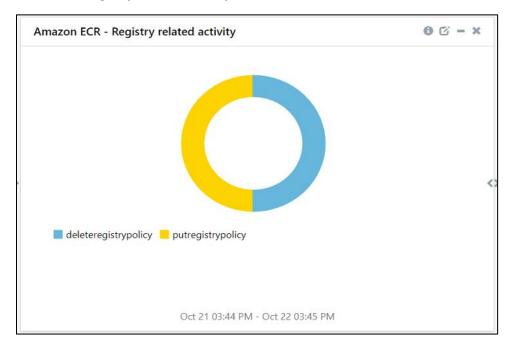
5.3 Dashboards

Amazon ECR – Image related Activity



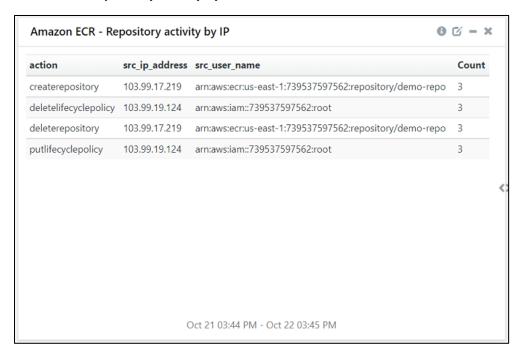


Amazon ECR – Registry related Activity

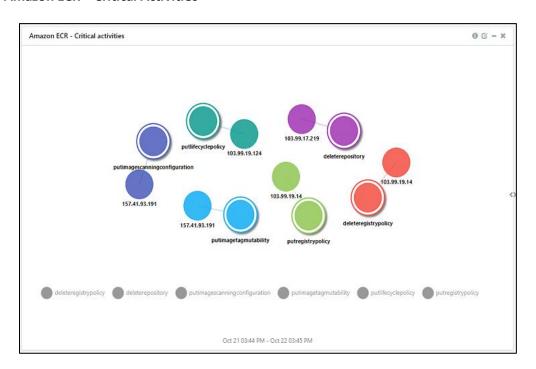




Amazon ECR – Repository activity by IP Address

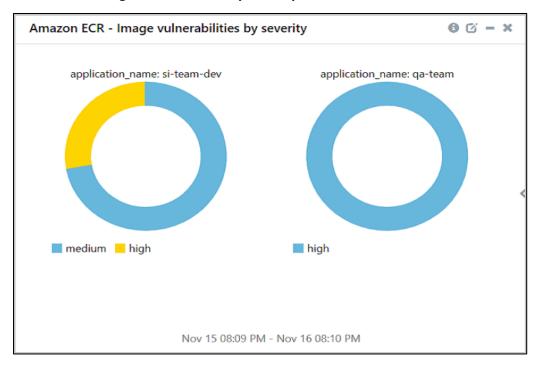


Amazon ECR – Critical Activities

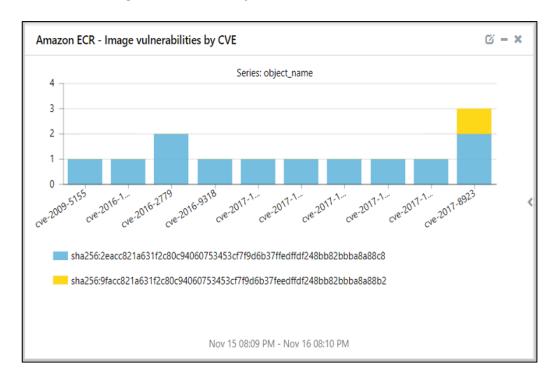




Amazon ECR – Image vulnerabilities by Severity

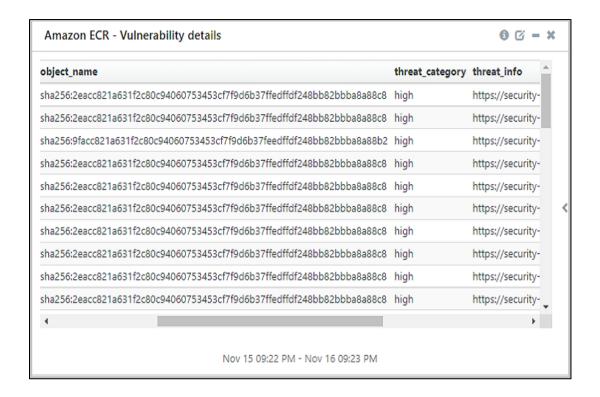


Amazon ECR – Image vulnerabilities by CVE





Amazon ECR – Vulnerability Details

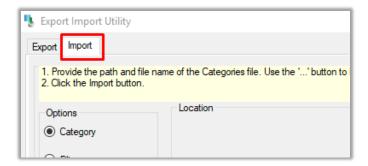


6. Importing Amazon ECR Knowledge Pack into EventTracker

NOTE: Import the Knowledge Pack items in the following sequence:

- Categories
- Alerts
- Token Values
- Knowledge Objects
- Flex Reports
- Dashboards
- 1. Launch the EventTracker Control Panel.
- 2. Double click Export-Import Utility.



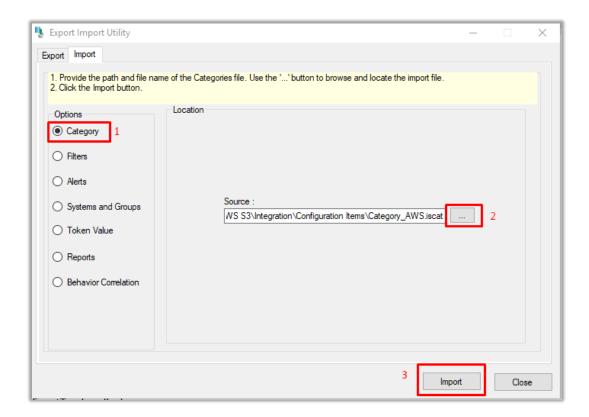


3. Click the Import tab.

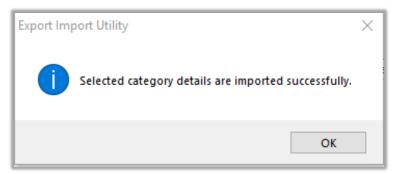
6.1 Categories

- 1. Click the **Category** option, and then click the Browse button
- 2. Navigate to the location having a file with the extension ".iscat" and then click Import.





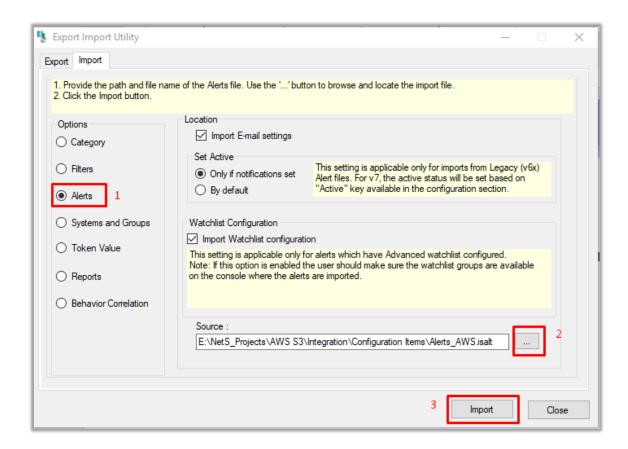
3. EventTracker displays a success message:



6.2 Alerts

- 1. Click the **Alert** option, and then click the Browse button
- 2. Navigate to the location having a file with the extension ".isalt" and then click Import.





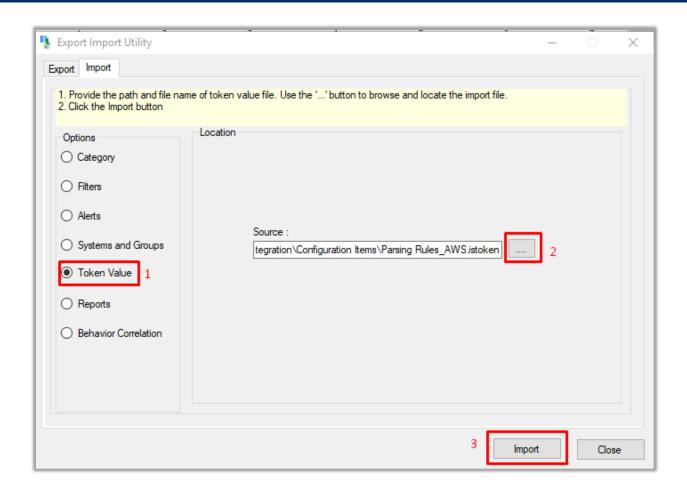
3. EventTracker displays a success message.



6.3 Token Values

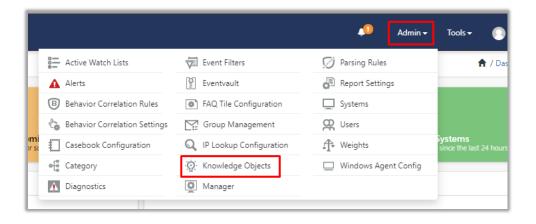
- 1. In the EventTracker Control Panel, select **Export/ Import utility** and select the **Import tab**. Click the **Reports** option and choose **New (*.istoken)**.
- 2. Navigate to the location having a file with the extension ".istoken" and then click Import.





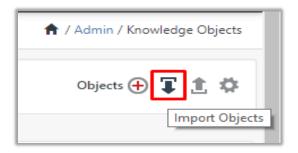
6.4 Knowledge Objects

1. Click **Knowledge Objects** under the **Admin** option in the EventTracker page.



2. Click the **Import Object** icon.





3. A pop-up box will appear, click **Browse**, and navigate to the file path with the extension ".etko" button.



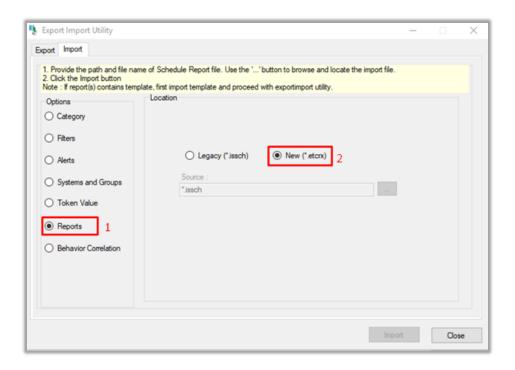
4. A list of available Knowledge Objects will appear. Select the relevant files and click Import.



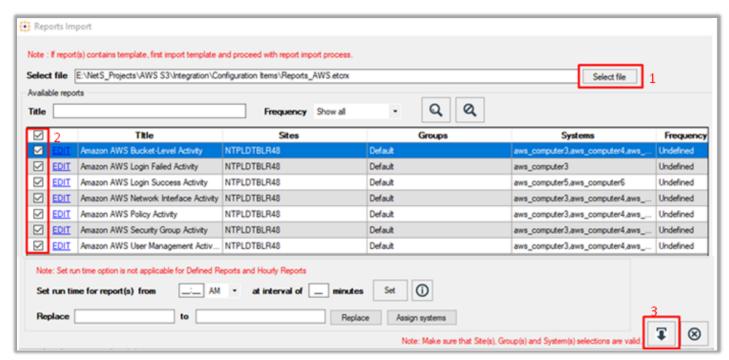
6.5 Flex Reports

1. In the EventTracker Control Panel, select **Export/ Import utility** and select the **Import tab**. Click the **Reports** option and choose "**New (*.etcrx)**".



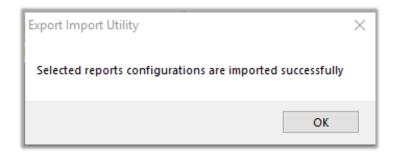


- 2. After you have selected the "New (*.etcrx)", a new pop-up window will appear. Click the Select File button and navigate to the file path with a file having the extension ".etcrx".
- 3. Select all the relevant files and then click the **Import** button.



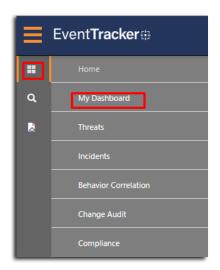
4. EventTracker displays a success message:





6.6 Dashboards

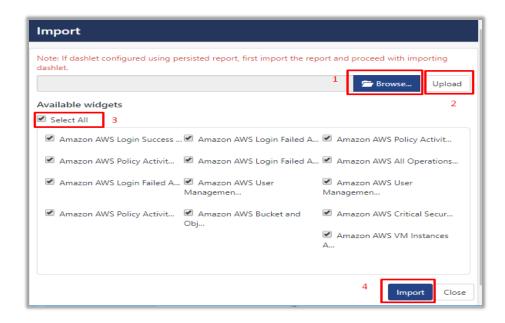
- 1. Login to **EventTracker**.
- 2. Navigate to **Dashboard** → **My Dashboard**.
- 3. In My Dashboard, click Import Button.



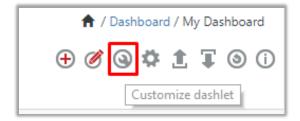


- 4. Select the **Browse** button and navigate to the file path where the dashboard file is saved and click the **Upload** button.
- 5. After completed, choose **Select All** and click **Import**.

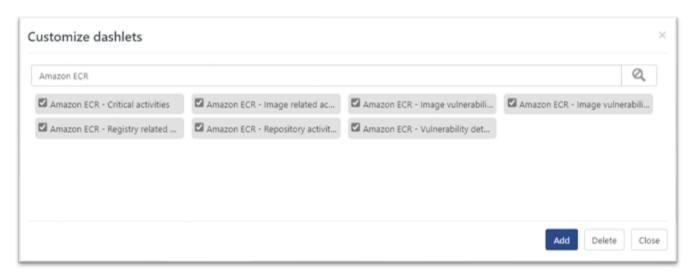




6. Click the **Customize dashlet** button as shown below:



7. Search for **Amazon ECR** in the Search bar and then select the Amazon ECR dashlets and then click the **Add** button.

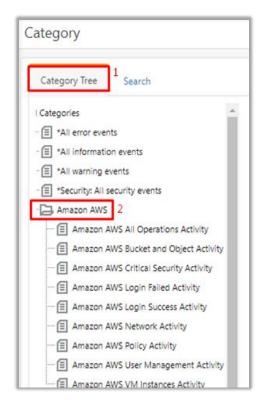




7. Verifying Amazon ECR Knowledge Pack in EventTracker

7.1 Categories

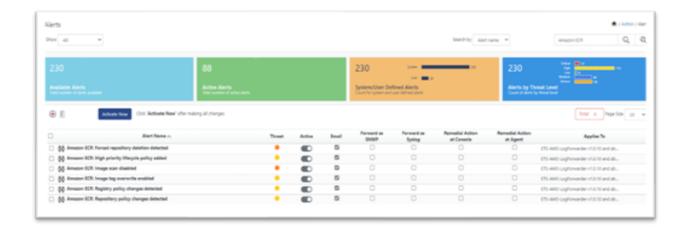
- 1. Login to EventTracker.
- 2. Click the Admin dropdown, and then click Categories.
- 3. In the **Category Tree** to view the imported categories, scroll down and expand the **Amazon AWS** group folder to view the imported categories:



7.2 Alerts

- 1. In the EventTracker web interface, click the Admin dropdown, and then click Alerts.
- 2. In the search box enter **Amazon ECR** and then click the **Search** button.
- 3. EventTracker displays all the alerts related to Amazon ECR.





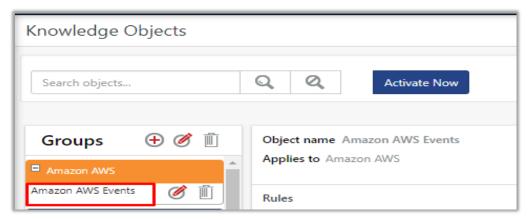
7.3 Token Values

- 1. In the **EventTracker** web interface, click the **Admin** dropdown, and then click **Parsing Rules**.
- 2. In the **Parsing Rules** tab, click the **Amazon AWS** group folder to view the imported Token Values.



7.4 Knowledge Objects

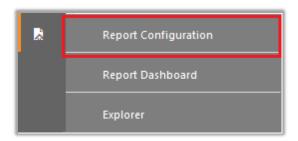
- 1. In the EventTracker web interface, click the Admin dropdown, and then click Knowledge Objects.
- 2. In the **Knowledge Object** tree, expand the **Amazon AWS Events and Amazon ECR Scan** group folders to view the imported Knowledge Objects.



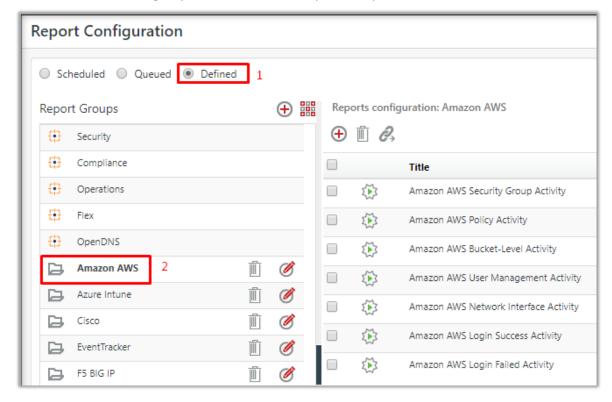


7.5 Flex Reports

1. In the **EventTracker** web interface, click the **Reports** menu, and then select the **Report Configuration**.



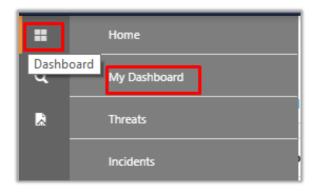
- 2. In the **Reports Configuration** pane, select the **Defined** option.
- 3. Click the **Amazon AWS** group folder to view the imported reports.



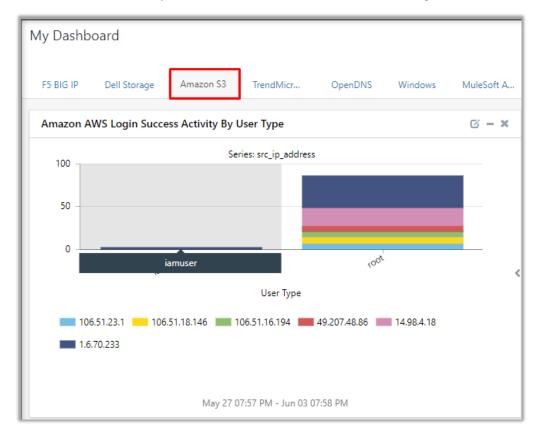
7.6 Dashboards

1. In the EventTracker web interface, click the **Home** Button and select **My Dashboard**.





2. In the **Amazon AWS** dashboard, you should now be able to view the following screen.





About Netsurion

Flexibility and security within the IT environment are two of the most important factors driving business today. Netsurion's cybersecurity platforms enable companies to deliver on both. Netsurion's approach of combining purpose-built technology and an ISO-certified security operations center gives customers the ultimate flexibility to adapt and grow, all while maintaining a secure environment.

Netsurion's <u>EventTracker</u> cyber threat protection platform provides SIEM, endpoint protection, vulnerability scanning, intrusion detection and more; all delivered as a managed or co-managed service.

Netsurion's <u>BranchSDO</u> delivers purpose-built technology with optional levels of managed services to multilocation businesses that optimize network security, agility, resilience, and compliance for branch locations. Whether you need technology with a guiding hand or a complete outsourcing solution, Netsurion has the model to help drive your business forward. To learn more visit <u>netsurion.com</u> or follow us on <u>Twitter</u> or <u>LinkedIn</u>. Netsurion is #23 among <u>MSSP Alert's 2021 Top 250 MSSPs</u>.

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EventTracker Essentials SOC: 877-333-1433 (Option 4) EventTracker Software Support: 877-333-1433 (Option 5)

https://www.netsurion.com/eventtracker-support