

Identifying audit log events performed by an access token

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You can identify the actions performed by a specific token in your enterprise.

About token data in the audit log for an enterprise

Your enterprise's audit log contains an event for each action that a user or integration performs. If the action occurred outside of GitHub's web UI, the event's data will show details about how the user or integration authenticated.

If you learn that a token was compromised, you can understand the actions taken by the compromised token by searching the audit log for all events associated with that token.

Token data appears in the audit log for the following authentication methods.

- Personal access token
- OAuth token
- GitHub Apps (authentication as an app installation or on behalf of a user)
- Deploy key
- SSH key

Note: Display of token data for SSH keys and deploy keys in the audit log is in public beta and subject to change.

Token data in audit log events

The following data about token use appears in the audit log to help you understand how the user or integration authenticated.

Information	Description
hashed_token	SHA-256 hash of the token used for authentication.
programmatic_access_type	Type of authentication used.
token_scopes	If applicable, the scopes for the token.

Identifying events associated with a token

To identify events associated with a specific token, you can use the UI or REST API. To identify Git events, you'll need to export the events from the audit log. To identify any events, you will need to know the SHA-256 hash of the token first.

- [Generating a SHA-256 hash value for a token](#)
- [Searching on GitHub](#)
- [Searching with the REST API](#)
- [Identifying Git events](#)

Generating a SHA-256 hash value for a token

If you only have a raw token value, you'll need to generate a SHA-256 hash before you can search for the token.

For MacOS and Linux, you can use `echo -n TOKEN | openssl dgst -sha256 -binary | base64`, replacing TOKEN with the token value.

For Powershell, you can use the following script to return a SHA-256 hash for a given string.

```
Shell 

Param (
    [Parameter(Mandatory=$true)]
    [string]
    $ClearString
)

$hasher = [System.Security.Cryptography.HashAlgorithm]::Create('sha256')
$hash = $hasher.ComputeHash([System.Text.Encoding]::UTF8.GetBytes($ClearString))

$hashString = [System.BitConverter]::ToString($hash)
$hashString.Replace('-', '')
```

Searching on GitHub

While searching the audit log on GitHub, include `hashed_token:"VALUE"` in your search query, replacing `VALUE` with the SHA-256 hash of the token.

Note: Make sure to wrap the hashed token value in quotation marks.

Searches using GitHub do not return Git events.

Searching with the REST API

Before you can search for a token using the REST API, after you generate a SHA-256 hash, you also need to URI-escape the hash. Most major programming languages provide a utility for URI escaping. For example, [encodeURIComponent\(\)](#) encodes a string for JavaScript.

Then, include `hashed_token:"VALUE"` in your search phrase, replacing VALUE with the URI-escaped hash.

Searches using the REST API do not return Git events.

For example, if the name of the enterprise account is `octo-corp`, the following curl command would search @octo-corp's audit log for all events that are associated with the

token whose URI-encoded SHA-256 hash is
EH4L8o6PfCqipALbL%2BQT62lyqUtnI7ql0SPbkaQnjv8 .

```
curl --header "Accept: application/vnd.github+json" --header "Authorization:
Bearer YOUR-TOKEN" --header "X-GitHub-API-Version:2022-11-28"
'https://api.github.com/enterprises/octo-corp/audit-log?
phrase=hashed_token:"EH4L8o6PfCqipALbL%2BQT62lyqUtnI7ql0SPbkaQnjv8" '
```

Identifying Git events

You can identify Git events authenticated with a specific token. When you export Git event data from the audit log, fields with details about authentication appear in the output. For more information, see "[Exporting audit log activity for your enterprise](#)."

Note: Display of token data for Git events in the audit log is in public beta and subject to change.

Further reading

- "[Using the audit log API for your enterprise](#)"
- "[Identifying audit log events performed by an access token](#)"

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