Collect custom records

Published: 2021-09-04

You can customize the type of record details you generate and store on a recordstore by writing a trigger. We recommend that you also create a record format to control how the records display in the ExtraHop system.

Before you begin

- These instructions assume some familiarity with ExtraHop Triggers.
- If you are connected to a Google BigQuery recordstore, there is a custom records field limit of 300.

In the following example, you will learn how to only store records for HTTP transactions that results in a 404 status code. First, we will write a trigger to collect information from the built-in HTTP record type. Then, we will assign the trigger to a web server. Finally, we will create a record format to display selected record fields in the table view for our record query results.

Write and assign a trigger

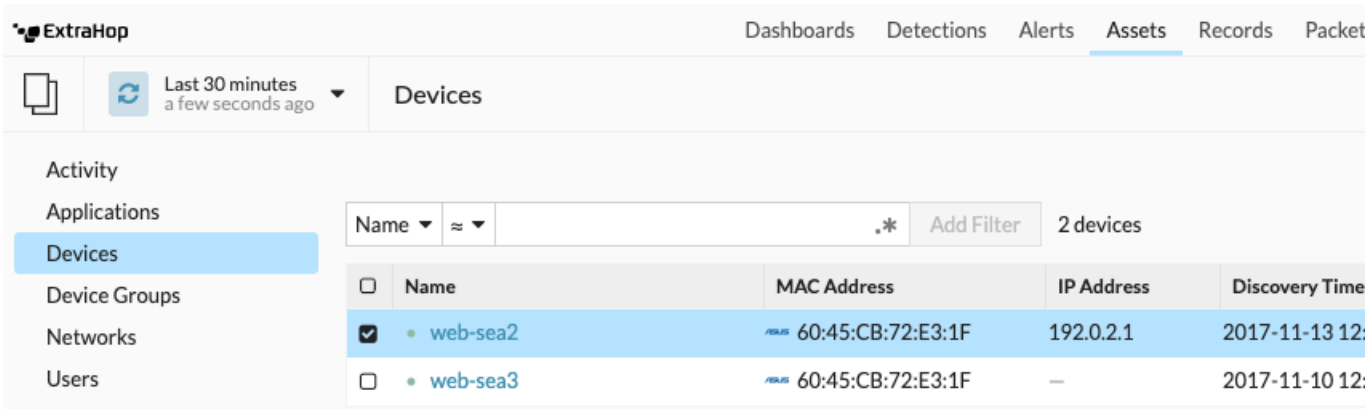
Note that the trigger must be created on each Discover appliance that you want to collect these types of records from.

1. Log in to the ExtraHop system through `https://<extrahop-hostname-or-IP-address>`.
2. Click the System Settings icon, and then click **Triggers**.
3. Click **Create**.
4. In the Create Trigger pane, complete your information, similar to the following example:
   - **Name:** `HTTP 404 Errors`
   - **Description:** `Track 404 errors on primary web server.`
   - **Enable debug log:** Select the checkbox to enable debugging.
   - **Events:** `HTTP_RESPONSE`
5. Click the **Editor** tab to write the trigger specifications.

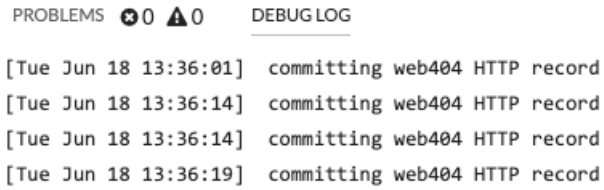
   The following figure shows an example configuration that only collects records when a 404 status code is detected. We also set a name (`web404`) for these types of records to identify them in a record query and added identifying information for debugging.

```
1  if (HTTP.statusCode === 404) {
2      commitRecord("web404", HTTP.record);
3      debug("committing web404 HTTP record");
4  }
```

   In the next steps, assign the trigger to a device or device group for which you want to monitor 404 status codes.
6. Click **Assets** from the top menu.
7. Click **Devices** and then click the **Active Devices** chart.
8. Select the checkbox for a device from the list. For our example, we will select a web server called `web2-sea`.
9. Click the Assign Triggers icon, select the trigger you created in the previous steps, and then click **Assign Triggers**. In the following figure, we have selected our web server, `web2-sea`.



After assigning the trigger, return to the **System Settings > Trigger** page and select the trigger you created. First, make sure your device has activity. Then, click the **Debug Log** tab to see if the trigger is committing your records. For the following example, we intentionally visited unavailable web pages to generate 404 errors.



Query for your custom record type

1. Click **Records** from the top menu.
2. In the left pane, click the **Record Type** drop- down. Your newly created record type should appear in italics at the top of the list.
3. Select the record type and then click out of the menu. For our example, we will select `web404`, as displayed in the figure below.

4. Click the Verbose View icon.
5. Click **Fields** and then click **Select All**.
   All of the information collected from the trigger about these records is shown in the query results.

Create a custom record format to display your record results in a table

Record formats are the recommended way to display your records with only the fields you want to see. Without a custom record format, the fields for your custom record will not appear in any selectable lists, such as the Group By list.

The quickest way to create a custom record format is to copy and paste the schema on read from a built-in record format into a new record format. If you have multiple Discover appliances, you need to create the custom record format on each appliance where the record results are viewed.

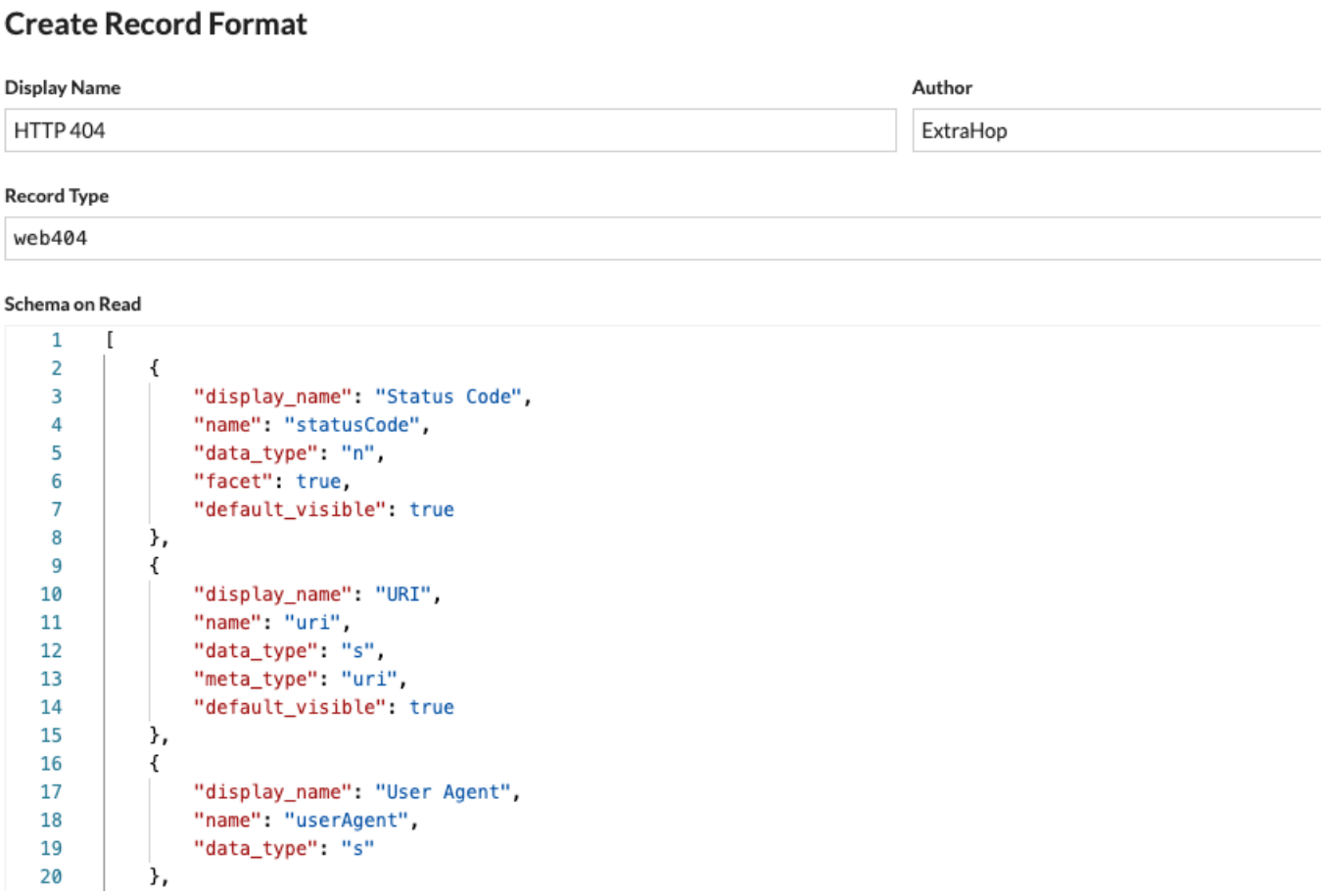
1. Log in to the ExtraHop system through `https://<extrahop-hostname-or-IP-address>`.
2. Click the System Settings icon and then click **Record Formats**.
3. Click on the type of record you want to copy. For our example, we will copy the HTTP record format.
4. Copy the contents in the text box below Schema on Read.
5. Click **New Record Format**.
6. Complete the following fields:

   • **Display Name:** Type a unique name for your record format.

   • **Author:** Identify the author for the record format.

   • **Record Type:** Type the same record type ID you created in the trigger. In our example, this value is `web404`.

   • **Schema on Read:** Paste the copied contents from step 4 into the text box. Edit the box to delete any unwanted fields. For our example in the figure below, we only kept the following fields: Client, Server, Method, Status Code, URI, and Processing Time.



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   All of the information collected from the trigger about these records is shown in the query results.

Record format settings

The Record Format Settings page displays a list of all built-in and custom record formats that are available on your local ExtraHop Discover or Command appliance. If you need to create a custom record format, we recommend that you begin by copy and paste the schema on read information from a built-in record format. Advanced users might want to create a custom record format with their own field-value pairs, and should apply the reference material provided in this section.

Record formats consist of the following settings:

Display Name

The name displayed for the record format in the Web UI. If there is no record format for the record, the record type is displayed.

Author

(Optional) The author of the record format. All built-in record formats display `ExtraHop` as the author.

Record Type

A unique alphanumeric name that identifies the type of information contained in the associated record format. The record type links the record format with the records that are sent to the Explore appliance. Built-in record formats have a record type that begins with a tilde (~). Custom record formats cannot have a record type that begins with a tilde (~).

Schema on Read

A JSON-formatted array with at least one object, which consists of a field name and value pair. Each object describes a field in the record and each object must have a unique combination of name and data type for that record format. You can create the following objects for a custom record format:

name

The name of the field.

display_name

The display name for the field. If the `display_name` field is empty, the `name` field is displayed.

description

(Optional) Descriptive information about the record format. This field is limited to the Record Format Settings page and is not displayed in any record query.

default_visible

(Optional) If set to `true`, this field displays in the Web UI as a column heading by default in table view.

facet

(Optional) If set to `true`, facets for this field display in the Web UI. Facets are a short list of the most common values for the field that can be clicked to add a filter.

data_type

The abbreviation that identifies the type of data stored in this field. The following data types are supported:

Data Type	Abbreviation	Description
application	`app`	ExtraHop application ID (string)
boolean	`b`	Boolean value
device	`dev`	ExtraHop device ID (string)
flow interface	`fint`	Flow interface ID
flow network	`fnet`	Flow network ID
IPv4	`addr4`	An IPv4 address in dotted-quad format. Greater or less than filters are supported.
IPv6	`addr6`	An IPv6 address. Only string-oriented filters are supported.
number	`n`	Number (integer or floating point)
string	`s`	Generic string

meta_type

The sub-classification of the data type that further determines how the information is displayed in the Web UI. The following meta-types are supported for each of the associated data types:

Data Type	Meta Type
String	• `domain` • `uri` • `user`
Number	• `bytes` • `count` • `expiration` • `milliseconds`

Data Type	Meta Type
	• packets • timestamp