



DataStream API v1

Reports on real-time application activity, with aggregated metrics on complete request or response cycles and origin response times.

Learn more:

- [DataStream](#)
- Download this API's [RAML and JSON schema descriptors](#).

Overview

DataStream is a reporting API service that provides real-time access to application activity data, including aggregated metrics on complete request and response cycles and origin response times.

DataStream's aggregated metrics provide real-time insight to help you define the end-user experience on your application. It simplifies web application monitoring for applications deployed to cloud hosting providers and those that leverage third-party services.

This API offers a programmatic alternative to many of the features available in [Akamai Control Center](#).

DataStream 1 is an End of Sale (EOS) product and will discontinue on on May 31, 2022. See the [DataStream 1 Migration Guidance](#) for details on DataStream 2 and how to migrate.

Who should use this API

Use this API service if you want to monitor all transactions delivered through the Akamai platform and send the transaction log data to one or more destinations.

Get started

To configure this API for the first time:

- Review [Get Started with APIs](#) for details on how to set up client tokens to access any Akamai API. These tokens appear as custom hostnames that look like this:
`https://akzz-XXXXXXXXXXXXXXXX-XXXXXXXXXXXXXXXX.luna.akamaiapis.net.`
- To enable this API, choose the API service named **DataStream**, and set the access level to **READ-ONLY**.

How to use this API

For every transaction coming through the Platform, Akamai stores and aggregates your logs. After that, this data is available to you for 12 hours.

Compare. You can test your new code or CDN configuration on production. Gather near real-time data to measure the impact of your changes on the CDN's efficiency and usage, without taking a risk of a bad use experience or downtime.

Monitor. You can ingest near real-time data into your log analytics platform and build your own dashboards and alerts to spot any issues or service disruptions.

Benchmark. You can access past data on your CDN's health, efficiency, and usage for analyzing and benchmarking. You can also develop your own solutions to store historical data.

Diagnose. You can receive pre-aggregated metrics over a specific window of time. Use this option to easily switch between aggregated and raw data views for diagnostics or root cause analysis.

Hypermedia

This API provides hypermedia link members to help the client to navigate paginated data. This example within a `metadata` object shows the set of `links` to navigate back and forth within the results, to go to the `first` or `last` page, or to access the current page

```
{
  "metadata": {
    "streamId": "007",
    "page": 0,
    "pageCount": 93,
    "perPage": 1,
    "totalNumRecords": 93,
    "links": [
      {
        "self": "/datastream-pull-api/v1/streams/007/raw-logs/?start=2017-10-23T08:30:00Z&end=2017-10-24T08:30:00Z&page=0&size=1",
        "first": "/datastream-pull-api/v1/streams/007/raw-logs/?start=2017-10-23T08:30:00Z&end=2017-10-24T08:30:00Z&page=0&size=1",
        "next": "/datastream-pull-api/v1/streams/007/raw-logs/?start=2017-10-23T08:30:00Z&end=2017-10-24T08:30:00Z&page=1&size=1",
        "last": "/datastream-pull-api/v1/streams/007/raw-logs/?start=2017-10-23T08:30:00Z&end=2017-10-24T08:30:00Z&page=92&size=1"
      }
    ]
  }
}
```

Resources

This section provides details on each API operation.

This API provides two different types of report:

- **Aggregate Logs.** Based on your raw server logs, you can gather responses aggregated for the given aggregate dimension for a specified time frame. For example, you can report how many success requests in the 200 range there have been every 15 minutes.
- **Raw Logs.** Lets you gather raw server log data for a specified start and end time. The result for a particular time frame is split into separate pages with a specific number (size) of records on each page .

API summary

Download the [RAML descriptors](#) for this API.

Operation	Method	Endpoint
Report raw logs	GET	/datastream-pull-api/v1/streams/{streamId}/raw-logs{?start,end,page,size}
Report aggregate logs	GET	/datastream-pull-api/v1/streams/{streamId}/aggregate-logs{?start,end,aggregateMetric,page,size}

Report raw logs

Reports raw log data for the specified time range.

Request

Parameters

Response

GET /datastream-pull-api/v1/streams/{streamId}/raw-logs{?start,end,page,size}

Sample: /datastream-pull-api/v1/streams/272/raw-logs?start=2017-10-23T08%3A30%3A00Z&end=2017-10-23T09%3A30%3A00Z&page=1&size=100

Report aggregate logs

Reports aggregated log metric data for the specified aggregate dimension and time range.

Request

Parameters

Response

GET /datastream-pull-api/v1/streams/{streamId}/aggregate-logs{?start,end,aggregateMetric,page,size}

Sample: /datastream-pull-api/v1/streams/272/aggregate-logs?start=2017-10-23T08%3A30%3A00Z&end=2017-10-23T09%3A30%3A00Z&aggregateMetric=2xx%2C3xx&page=1&size=100

Data

This section describes the data model for the DataStream API.

Report

Contains aggregated metrics from the raw server logs for the specified time frame and dimensions.

Download schema: [agg_data_schema.json](#), [_raw_data_schema.json](#)

Sample raw log report:

```
{
  "numRecords": 3,
  "metadata": {
    "page": 0,
    "pageCount": 1,
    "perPage": 1000,
    "streamId": "5101",
    "totalNumRecords": 3,
    "links": [
      {
        "first": "/datastream-pull-api/v1/streams/5101/raw-logs?start=2020-06-03T20%3A40%3A00Z&end=2020-06-03T20%3A50%3A00Z&page=0&size=1000",
        "last": "/datastream-pull-api/v1/streams/5101/raw-logs?start=2020-06-03T20%3A40%3A00Z&end=2020-06-03T20%3A50%3A00Z&page=0&size=1000",
        "self": "/datastream-pull-api/v1/streams/5101/raw-logs?start=2020-06-03T20%3A40%3A00Z&end=2020-06-03T20%3A50%3A00Z&page=0&size=1000"
      }
    ]
  }
}
```

Sample aggregate log report:

```
{
  "numRecords": 5,
  "metadata": {
    "aggregateMetrics": "[1xx,2xx,3xx,4xx,5xx,1xx_dist,2xx_dist,3xx_dist,4xx_dist,5xx_dist,edgeResponseTime,originResponseTime,requestsPerSecond,bytesPerSecond,numCacheHit,numCacheMiss,offloadRate]",
    "page": 0,
    "pageCount": 1,
    "perPage": 1000,
    "streamId": "1116",
    "totalNumRecords": 5,
    "links": [
      {
        "first": "/datastream-pull-api/v1/streams/1116/aggregate-logs?start=2020-05-29T17%3A00%3A00Z&end=2020-05-29T17%3A05%3A00Z&page=0&size=1000",
        "last": "/datastream-pull-api/v1/streams/1116/aggregate-logs?start=2020-05-29T17%3A00%3A00Z&end=2020-05-29T17%3A05%3A00Z&page=0&size=1000",
      }
    ]
  }
}
```

Report members

Member	Type	Agg.	Raw	Description
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Report: Contains aggregated metrics from the raw server logs for the specified time frame

Member	Type	Agg.	Raw	Description
data	<u>Report.data[]</u>	✓	✓	Contains the time frame and total
metadata	<u>Report.metadata</u>	✓	✓	Contains details about the range frame and interval, and aggregate resulting report and provides hyp results.
Report.data[]: Contains the time frame and total count for the aggregateMetric result set				
1xx	Integer	○	✗	The count of 1xx error codes for t
2xx	Integer	○	✗	The count of 2xx error codes for t
3xx	Integer	○	✗	The count of 3xx error codes for t
4xx	Integer	○	✗	The count of 4xx error codes for t
5xx	Integer	○	✗	The count of 5xx error codes for t
bytesPerSecond	Number	○	✗	The average number of bytesPer
cache	<u>Report.data[].cache</u>	✗	○	The cache data for the stream's d
cp	String	✗	✓	Identifies the content provider (C reported on.
edgeResponseTime	Number	○	✗	The average of edgeResponseTim
endTime	String	✓	✗	An ISO 8601 timestamp that indic
geo	<u>Report.data[].geo</u>	✗	○	Contains the geographic data of t
guid	String	✗	✓	A globally unique identifier (GUID
id	Integer	✗	✓	Identifies the stream.
message	<u>Report.data[].message</u>	✗	○	Contains the message exchange c

Member	Type	Agg.	Raw	Description
netPerf	<u>Report.data[].netPerf</u>	X	○	The network performance data of
network	<u>Report.data[].network</u>	X	○	The network data of the stream's
numCacheHit	Integer	○	X	The total number of requests that time interval.
numCacheMiss	Integer	○	X	The total number of requests that time interval.
offloadRate	Number	○	X	The percentage value of cache hit this time interval.
originResponseTime	Number	○	X	The average of originResponseT
processedTime	Number	X	✓	The time when an edge server fin epoch timestamp. This value indic specified by the start and end pi
reqHdr	<u>Report.data[].reqHdr</u>	X	○	Identifies the request header.
reqid	String	X	✓	The request identifier used for trc
requestsPerSecond	Number	○	X	The average number of requests
respHdr	<u>Report.data[].respHdr</u>	X	○	Identifies the response header.
start	Number	X	✓	The time the request begins on a timestamp.
startTime	String	✓	X	An ISO 8601 timestamp that indic

Member	Type	Agg.	Raw	Description
type	String	X	✓	Identifies the type of response. By
waf	<u>Report.data[].waf</u>	X	○	The Web Application Firewall (WAF)
Report.data[].cache: The cache data for the stream's data set.				
cacheable	Enumeration	X	○	Whether the object was cacheable or not. The server determined that the object was cacheable.
cacheH	String	X	○	Categorizes the bytes served to the client. It provides data in this format: {peer_server}/{parent_server}. For example, 5096/5096/0/0/0.
cacheHit	Enumeration	X	○	Whether the requested object was served from the cache. String values are possible: 1 to indicate that the object was served from the cache, or 0 to indicate that it was not.
cacheStats	String	X	○	Logs the bytes served entirely from the cache. Format: {bytes_from_cache}/{total_bytes_served}. For example, 5000/10000.
cacheStatus	Enumeration	X	○	Specifies whether a request was served by a type that provided the object. The values are: 0 to indicate that the content was non-cacheable, 1 to indicate that the object was served by the server, 2 to indicate that the object was served by the parent edge server, 3 to indicate that the object was served by the edge server to indicate that the object was served by the edge server had a code status other than 200, or 4 to indicate that the object was served by the edge server.
Report.data[].geo: Contains the geographic data of the stream's data set.				
area	String	X	○	The area code that the requesting IP address is in.
city	String	X	○	The city that the requesting IP address is in.
country	String	X	○	The country that the requesting IP address is in. It's US.
lat	String	X	○	The client's latitude.

Member	Type	Agg.	Raw	Description
long	String	X	○	The client's longitude.
region	String	X	○	The state that the requesting IP a
zip	String	X	○	The zip code that the requesting
Report.data[].message: Contains the message exchange data of the stream's data set.				
bytes	String	X	○	The content bytes served in the c
cliIP	String	X	○	The IP address of the requesting c
fwdHost	String	X	○	The hostname of the forward orig
proto	Enumeration	X	○	The protocol of the transaction be
protoVer	Enumeration	X	○	The version of the protocol, eithe
queryStr	String	X	○	The query string in the client's UR
reqHost	String	X	○	The host header value of the inco
reqMethod	String	X	○	The HTTP method the incoming c
reqPath	String	X	○	The path used by the URL reques parameters. / indicates an empty
reqPort	String	X	○	The port number of the incoming
respCT	String	X	○	The value of the Content-Type he text/html.
respLen	String	X	○	The value of the Content-Length
status	String	X	○	The HTTP response status sent to
UA	String	X	○	The value of the User-Agent head
Report.data[].netPerf: The network performance data of the stream's data set.				
asnum	String	X	○	The Autonomous Systems Numbe

Member	Type	Agg.	Raw	Description
clientRTT	Integer	X	○	The round-trip time in milliseconds and back again to the starting point.
downloadStatus	Enumeration	X	○	The overall download status of an object. The available values are: FIRST to specify whether the edge server responded, LAST to specify whether the edge server responded, and ABORTED to specify whether the client aborted the download.
downloadTime	String	X	○	The number of milliseconds from when the edge server starts to respond to when it sends the last byte, not when the client receives the last byte.
edgeIP	String	X	○	The IP address of the edge server that served the object.
errCdF29	String	X	○	Identifies an error while forwarding the object to the edge server.
errCdR14	String	X	○	Identifies an error while serving the object to the client.
lastByte	String	X	○	The last byte of the object served to the client. By default, it's 1.
midMileLatency	Integer	X	○	The time in milliseconds for the Akamai network to receive the request and respond to the edge server.
netOriginLatency	Integer	X	○	The time in milliseconds from when the edge server receives the request to when that's closest to the data center to respond from the data center.

`Report.data[].network`: The network data of the stream's data set.

bw	String	X	○	Specifies the bandwidth usage.
nw	String	X	○	Identifies the network.
nwType	String	X	○	Identifies the network type.
proxy	String	X	○	The type of a proxy or browser. For example, "MSIE" for Internet Explorer or "Mozilla" for Firefox.
throughput	String	X	○	Identifies the average amount of data transferred per second.

`Report.data[].reqHdr`: Identifies the request header.

Member	Type	Agg.	Raw	Description
accEnc	String	X	○	A URL-encoded, comma-separated list of compression methods, such as gzip, deflate.
accLang	String	X	○	A URL-encoded, comma-separated list of languages, such as en-us, en-gb. 8 translates to 8-bit.
auth	String	X	○	Provides credentials for HTTP authentication.
cookie	String	X	○	Lists the HTTP cookie previously sent by the client.
DNT	String	X	○	Requests a web application to disclose its version of the X-Do-Not-Track header. The value of this field.
expect	String	X	○	Indicates that the client requires the server to understand or is unable to comply with the request. Appropriate error status such as 416.
ifMatch	String	X	○	Only performs an action if the client's request matches the server's response.
ifMod	String	X	○	Returns a 304 (Not Modified) status if the item cached is old or new.
ifNone	String	X	○	Returns a 304 (Not Modified) status if the item cached is identical to the current version.
ifRange	String	X	○	Either sends the client any missing parts of the requested resource or sends the entire resource if it has not changed since the last request.
ifUnmod	String	X	○	Only sends the response if the entity has not been modified since the last request.
range	String	X	○	Requests a specific part of an entity. The byte range starts with the first byte of the entity.
referer	String	X	○	Specifies the resource of the request that referred the client to the current resource.
reqCacheCtl	String	X	○	Specifies caching rules for the response.
reqConn	String	X	○	A URL-encoded representation of the connection is to remain open for the duration of the request.
reqContMD5	String	X	○	Checks the integrity of the message received by the client.

Member	Type	Agg.	Raw	Description
reqTime	String	X	○	The time of the incoming client's request.
reqVia	String	X	○	Informs the client of any proxies that the request has passed through.
te	String	X	○	Includes the transfer encodings that the client supports.
upgrade	String	X	○	Allows the client to specify additional headers that it supports.
xFrwdFor	String	X	○	Identifies the originating IP address of the client, or the HTTP proxy or load balancer.
xReqWith	String	X	○	Identifies Ajax requests.
Report.data[].respHdr: Identifies the response header.				
accRange	String	X	○	The content bytes served in the current response.
age	String	X	○	The time in seconds that the object has been in the cache.
allow	String	X	○	Lists the supported HTTP methods.
allowOrigin	String	X	○	Indicates whether the response can be shared with other domains.
contDisp	String	X	○	Specifies how to display content, such as inline or block.
contEnc	String	X	○	Indicates compression of the message body.
contLang	String	X	○	Lists the languages for the intended audience.
contRange	String	X	○	Specifies where a partial body can be retrieved.
date	String	X	○	A URL-encoded representation of the date and time of the message.
eTag	String	X	○	Identifies the version of a specific resource.
expires	String	X	○	The timestamp specifying when the response expires.
lastMod	String	X	○	The timestamp specifying when the resource was last modified.
link	String	X	○	Links to a resource that contains additional information.

Member	Type	Agg.	Raw	Description
p3p	String	X	○	The Privacy Preferences Project (P3P) information collected about requests.
respCacheCtl	String	X	○	Specifies the caching rules for the response.
respConn	String	X	○	Controls whether the network connection finishes.
respContMD5	String	X	○	Checks the integrity of the message.
respVia	String	X	○	Indicates the protocols used to serve the requesting client.
retry	String	X	○	Indicates the number of seconds to wait before a new request.
server	String	X	○	Provides information about the server that served the request.
setCookie	String	X	○	Allows sending cookies with the response.
trailer	String	X	○	The header that enables the use of trailers.
transEnc	String	X	○	The Transfer-Encoding header that indicates the encoding of the response.
vary	String	X	○	Lists the headers that specify when the response may vary without any additional validation.
warning	String	X	○	Provides information about transfer errors.
wwwAuth	String	X	○	Contains challenge information for authentication responses.
xPwredBy	String	X	○	Lists the type of technology the web page was generated by.
Report.data[].waf: The Web Application Firewall (WAF) data for the stream's data set.				
anomScr	String	X	○	A list of comma-delimited anomaly scores: 1=1, 2=15, 3=0, 4=0, 5=0, 6=0, 7=0, 8=0, 9=0, 10=0, 11=0, 12=0, 13=: -5-5-5, 14=: XSS-AM

Member	Type	Agg.	Raw	Description
denyActions	String	X	○	A list of semicolon-delimited action values indicating that the rule denied requests. See About rules .
denyData	String	X	○	A list of colon-delimited user data strings within a selector that triggered a rule.
denyMsg	Object	X	○	A list of semicolon-delimited messages. For example, Cross-site Scripting Attack. See About rules .
denyRules	String	X	○	A list of colon-delimited rule identifiers. For example, 950004;950910;950002.
denySlrs	String	X	○	A list of semicolon-delimited selector locations of the request or response. For example, HTTP header. For example, ARGS:.
pAction	String	X	○	The resulting action for a slow PC.
policy	String	X	○	The identifier of the firewall policy.
pRate	Integer	X	○	The recorded rate in bytes per second.
riskGroups	String	X	○	A list of colon-delimited risk group identifiers. For example, :SQL-INJECTION-ANOMALY. See About WAF rules .
riskScores	String	X	○	Risk scores for the triggered rules. For example, risk group, each rule's score is hypertext.
riskTuples	String	X	○	Identifiers of the rules triggered by a request. For example, colon-delimited risk group, multiple risk groups. For example, :-950001-950901:-958001-958001.
ver	String	X	○	The version of a WAF data set. Current version is 1.0.
warnActions	String	X	○	A list of semicolon-delimited action values indicating that the rule logged requests. See About rules .

Member	Type	Agg.	Raw	Description
warnData	String	X	○	The user data of the triggered warn selector that triggered the rule. For example, <code>950004;950910;950911</code> .
warnMsg	String	X	○	A list of semicolon-delimited messages. For example, <code>Cross-site Scripting Attack</code> . See About rules .
warnRules	String	X	○	A list of a semicolon-delimited identifiers. For example, <code>950004;950910;950911</code> .
warnSlrs	String	X	○	A list of semicolon-delimited selectors. For example, <code>WEB_ATTACK/XSS;WEB_ATTACK/HTTP_HEADER_INJECTION</code> .
warnTags	String	X	○	The tags of the triggered warnRules. For example, <code>OWAS</code> .

`Report.metadata`: Contains details about the range of the requested data, such as the stream metrics. It also shows the number of items in the resulting report and provides hypermedia links.

aggregateMetrics	String	✓	X	Shows the value of the request's aggregate metrics across different aggregate dimensions such as <code>originResponseTime</code> , <code>requestsPerSecond</code> , <code>numCacheMiss</code> and <code>offloadRate</code> .
links	Report.metadata.links[]	✓	✓	Contains hypermedia links for paging of the aggregateMetrics.
page	Integer	✓	✓	Specifies the page number of the aggregateMetrics.
pageCount	Integer	✓	✓	Specifies the number of pages in the aggregateMetrics.
perPage	Integer	✓	✓	Specifies the number of records per page in the aggregateMetrics.
streamId	String	✓	✓	Identifies the stream.
totalNumRecords	Integer	✓	✓	Specifies the total number of records in the aggregateMetrics.

`Report.metadata.links[]`: Contains hypermedia links for paging of the aggregateMetrics.

Member	Type	Agg.	Raw	Description
first	String	✓	✓	Specifies the paging link for the first page.
last	String	✓	✓	Specifies the paging link for the last page.
next	String	○	○	Specifies the paging link for the next page.
previous	String	○	○	Specifies the paging link for the previous page.
self	String	✓	✓	Specifies the paging link for the current page.

Errors

This section provides details on the data object that reflects the API's common response to error cases, and lists the API's range of response status codes for both error and success cases.

Error responses

If an error case occurs, this API responds with JSON objects that follow the [HTTP Problem Details](#) standard. This example shows a typical error response object:

```
{
  "timestamp": "timestamp of err API call",
  "status": "the status code",
  "error": "description of error",
  "exception": "Name of exception",
  "message": "detailed desc of error",
  "path": " the API uri path"
}
```

HTTP status codes

This section lists the full range of response codes the API may produce.

Code	Description
<u>200</u>	The operation was successful.
<u>204</u>	No content for the specified query parameters.

Code	Description
<u>400</u>	Bad request or incorrect query parameters.
<u>401</u>	Authentication failure.
<u>500</u>	Internal server error.
<u>503</u>	Service unavailable.

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