



Capacity API

January 19, 2022

Contents

- Welcome to the Capacity API..... 2**
- Resources..... 4**
 - List by maprule.....4
 - List by maprule and scope..... 7
 - List by mapname.....10
 - List by mapname and scope..... 13
- Errors..... 17**
 - Error responses.....17
 - HTTP status codes.....19

Welcome to the Capacity API

The Capacity API (CAPI) works with the Adaptive Media Delivery product to provide visibility into the available streaming capacity of the Akamai network.

This API provides you with available capacity or headroom at different levels of quality, it breaks the information down by geography and Autonomous System Number ("geo:ASN").

For example, you could use it to determine the quality of the streaming experience per geo:ASN, for the following parameters:


- **You have a group of 1,000 streaming users.** You'd set a group size here to limit the scope of the capacity estimation.
- **The video profile is 1080p, streaming at 7 Mbps.**
- **The profile will be allocated to Akamai during the next five minutes.**

Who should use this API?

This API is for teams and developers who implement Akamai products for their organization. You need to have a working knowledge of your application and how the configurable objects interact. Use this API to dynamically assign the Akamai CDN or a URL to your streaming users and get capacity information for a particular geo:ASN.

Prerequisites

There are a few prerequisites you need to meet before using this API.

- Ensure that your contract includes the `AdaptiveMediaDelivery::CapacityAPI_Trial` engineering product:
 1. Access [Control Center](#).
 2. Select  > **Show all services** (at the bottom).
 3. Under INTERNAL LINKS at the bottom, select **Advanced search**.
 4. Click the search field, and select **in:Accounts** then select **by:Engineering product**.
 5. Type **AdaptiveMediaDelivery** and look for the `AdaptiveMediaDelivery::CapacityAPI_Trial` entry:
 - **If you see it.** You're ready to go.
 - **If you don't see it.** Reach out to your Akamai account team for help getting it added to your contract.
- Review [Create authentication credentials](#). You use the Identity and Access Management tool in Control Center to set up access for any Akamai API, as well as gather some information you'll need:
 - Set up client tokens for access. Akamai. These tokens appear as custom hostnames that look like this: `https://akzz-XXXXXXXXXXXXXXXXXX-XXXXXXXXXXXXXXXXXX.luna.akamaiapis.net`.

- Verify you have the API service named **Media Capacity API Application (Media-CAPI)** in the Identity and Access Management tool, and its access level is set to **READ-ONLY**.

Concepts

These describe the individual objects you act on when using this API.

- **maprule**. This describes a unique geographic region maintained by Akamai. Each is assigned a unique name and a unique, numeric `mapruleID`. The `maprules` collection in a response contains the performant capacity `score` and `headroom_gbps` associated with a given `maprule` for U.S. geographic region ("geo").
- **scope**. A scope is applied to a call to limit response output to a specific geographic area. A scope can be either the U.S. or any country or continent geo.
- **mapname**. This is the unique name that Akamai has assigned to the geographic edge map that has been associated with your edge hostname. Client requests for your content are resolved to this edge hostname and Akamai edge servers within this edge map are used to access your content.

Rate limiting

The Capacity API imposes a rate-limiting constraint of one request per minute. If you exceed that, you'll get a 429-error response. Consider this especially when calling successive operations as part of a loop. These response headers provide rate limit information:

- `X-RateLimit-Limit`: 1 request per minute.
- `X-RateLimit-Remaining`: Number of remaining requests allowed during the current rate limit period.
- `X-RateLimit-Next`: Indicates when the client may issue another request after having exhausted the number of allowed requests for the current rate limit time period. Date and time is represented as RFC339 (ISO 8601) standard format. For example: `2018-05-11T07:04:40.004Z`.

Once `X-RateLimit-Remaining` becomes 0, you get a 429 error the next time you make an API call. If you don't make any more API calls after you receive a 429 error, `X-RateLimit-Remaining` gradually increases and becomes equal to `X-RateLimit-Limit`.

Resources

The Capacity API (CAPI) provides capabilities to view capacity information in a particular geo:ASN.

Additional notes

Data Refresh

- Data updates occur approximately every five minutes, but can occur in less than two minutes.
- Your traffic changes can take between 10 and 20 minutes to fully propagate through the system. After this, that data can be included in a CAPI response. Akamai's internal data processing cycles can also impact this.
- You can validate the freshness of data from the "reportTime" header in the response body.

Capacity Data

- If the information required to calculate capacity data for a particular ASN is not fully available, the API omits that ASN from the response.
- Any headroom reported is shared capacity.

List by maprule

Get the performant capacity score and headroom for a given maprule.

Command format

GET /media-capi/v1/maprules/{mapruleId}

Sample: /media-capi/v1/maprules/2619

Steps

1. Contact your account representative to get your unique `mapruleId`.
2. Make a **GET** request to `/media-capi/v1/maprules/{mapruleId}`.

Parameters

Parameter	Type	Sample	Description
URL path parameters			
<code>mapruleId</code>	Integer	2619	The unique identifier that Akamai has assigned to your configuration.

Response body

Status 200 application/json

Object type: Maprules

```
{
  "capacity": {
    "US": {
      "dma": {
        "500": {
          "asn": {
            "209": {
              "headroom_gbps": 380.812,
              "score": 100
            }
          }
        },
        "502": {
          "asn": {
            "11351": {
              "headroom_gbps": 1597.81,
              "score": 100
            }
          }
        }
      }
    }
  },
  "header": {
    "groupSize": 1000,
    "reportTime": "2019-12-12T14:55:17",
    "mapruleID": 2619
  }
}
```

Response members

Member	Type	Required	Description
capacity: The capacity object contains a geo. Each geo lists its dma and associated asn. Each asn will display its headroom_gbps and score.			
scopesIdentifier	String	X	Two-letter country code. ISO 3166-1 alpha-2 code.
dma	Integer	X	This is the Nielsen 'Designated Market Area Region'. This applies to responses for the United States geo, and it includes the headroom_gbps and score values for each ASN in a DMA.
asn	Number	X	Autonomous System Number. The response includes score and headroom_gbps for

Member	Type	Required	Description
			relevant ASNs for the DMA or Country.
headroom_gbps	Number	<i>x</i>	Headroom capacity shows you what's available for the ASN, in Gbps. It can't be reserved because it's shared between anyone using the ASN.
score	Number [0..100]	<i>x</i>	This is the performant capacity score. This is an attempt to define the quality that might be possible for a subset of new traffic looking to consume the available headroom_gbps. The score calculation considers the groupSize (this defines the subset) and uses a bit rate suitable for delivering 1080p video when deriving the value from 1 to 100. As a simple example, a score of 100 with a groupSize of 1,000 suggests that the next 1,000 users will be able to experience a broadcast quality 1080p stream.
header: The header array contains these objects: groupSize, mapruleID, and reportTime.			
groupSize	Number	o	This is the expected user count. Performant capacity is calculated using this value. Default: 1000
reportTime	String	<i>x</i>	This is the time that the API generated the capacity report. (It indicates the freshness of the report.)
mapruleID	Number	✓	This is a numeric identifier that represents your

Member	Type	Required	Description
			mapped hostnames. Contact your account representative to obtain the mapruleIDs associated with your account.

List by maprule and scope

Get the performant capacity score and headroom for a given map rule and an associated scope.

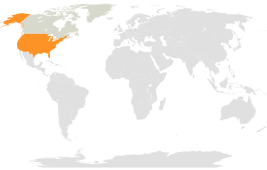
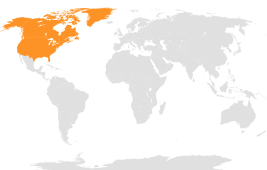
Command format


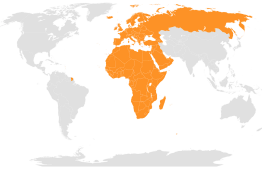

GET /media-capi/v1/maprules/{mapruleId}/scopes/{scopesIdentifier}

Sample: /media-capi/v1/maprules/2619/scopes/NL

Steps

1. Contact your account representative to get your unique `mapruleId`.
2. Identify the geographic scope you want to use for the `scopesIdentifier`. You have two options:
 - **Individual country.** You can use any of the [ISO 3166-1 alpha-2 codes](#) to include a specific country.
 - **Larger regions.** Use any of these scopes to include a larger geographic area:

Scope	Visualization	Region	Description
US		United States	Grouped by DMA, then ASN. Default: US
NA		Northern America, (including the United States overall for up-to the top 50 ASN's)	Grouped by Country, then ASN.
LATAM		Latin America and the Caribbean	Grouped by Country, then ASN.

Scope	Visualization	Region	Description
			
EMEA		Europe, Africa, and Western Asia	Grouped by Country, then ASN.
APAC		Central Asia, Eastern Asia, South-eastern Asia, Southern Asia, Oceania	Grouped by Country, then ASN.

3. Make a GET request to `/media-capi/v1/maprules/{mapruleId}/scopes/{scopesIdentifier}`.

Parameters

Parameter	Type	Sample	Description
URL path parameters			
<code>mapruleId</code>	Integer	2619	This is a numeric identifier that represents your mapped hostnames. Contact your account representative to obtain the mapruleIDs associated with your account.
<code>scopesIdentifier</code>	String	NL	This identifies the capacity estimates for a particular maprule ID and a scope (geo).

Response body

Status 200 `application/json`

Object type: Maprules

Response body:

```
{
  "header": {
    "groupSize": 1000,
    "reportTime": "2019-12-12T14:55:17",
    "mapruleID": 2619
  },
  "capacity": {
    "NL": {
      "asn": {
        "174": {
          "score": 17,
          "headroom_gbps": 0.688261
        }
      }
    }
  }
}
```

Response members

Member	Type	Required	Description
header: The header array contains these objects: groupSize, mapruleID, and reportTime.			
groupSize	Number	✗	This is the expected user count. Performant capacity is calculated using this value. Default: 1000
reportTime	String	✗	This is the time that the API generated the capacity report. (It indicates the freshness of the report.)
mapruleID	Number	✓	This is a numeric identifier that represents your mapped hostnames. Contact your account representative to obtain the mapruleIDs associated with your account.
capacity: The capacity object contains a geo. Each geo lists its dma and associated asn. Each asn will display its headroom_gbps and score.			
scopesIdentifier	String	✓	Two-letter country code. ISO 3166-1 alpha-2 code.
asn	Number	✗	Autonomous System Number. The response

Member	Type	Required	Description
			includes <code>score</code> and <code>headroom_gbps</code> for relevant ASNs for the DMA or Country.
<code>score</code>	Number [0..100]	X	This is the performant capacity score. This is an attempt to define the quality that might be possible for a subset of new traffic looking to consume the available <code>headroom_gbps</code> . The score calculation considers the <code>groupSize</code> (this defines the subset) and uses a bit rate suitable for delivering 1080p video when deriving the value from 1 to 100. As a simple example, a score of 100 with a <code>groupSize</code> of 1,000 suggests that the next 1,000 users will be able to experience a broadcast quality 1080p stream.
<code>headroom_gbps</code>	Number	X	Headroom capacity shows you what's available for the ASN, in Gbps. It can't be reserved because it's shared between anyone using the ASN.

List by mapname

Get the performant capacity score and headroom for a given mapname. "Performant" describes a case where these values could be considered "good enough," or at least exceed expectations.

Command format

GET /media-capi/v1/maps/{mapnameIdentifier}

Sample: /media-capi/v1/maps/a%3Bdscr.akamai.net

Steps

1. Obtain your `mapnameIdentifier` with the Edge Hostnames API where it's available as `map`. Steps to obtain your `mapname` from edge hostname are outlined in the [Edge Hostnames API v1](#) documentation.
2. URL encode the `mapnameIdentifier`.
3. Make a GET request to `/media-capi/v1/maps/{mapnameIdentifier}`.

Parameters

Parameter	Type	Sample	Description
URL path parameters			
<code>mapnameIdentifier</code>	String	<code>a;dscr.akamai.net</code>	This is the correlation between your edge hostname and the IP address that the hostname resolves to.

Response body

Status 200 `application/json`

Object type: Maps

```
{
  "capacity": {
    "US": {
      "dma": {
        "500": {
          "asn": {
            "209": {
              "headroom_gbps": 380.812,
              "score": 100
            }
          }
        },
        "502": {
          "asn": {
            "11351": {
              "headroom_gbps": 1597.81,
              "score": 100
            }
          }
        }
      }
    }
  },
  "header": {
    "groupSize": 1000,
    "reportTime": "2019-12-12T14:55:17",
    "mapruleID": 2619
  }
}
```

Response members

Member	Type	Required	Description
capacity: The capacity object contains a scopesIdentifier. Each scopesIdentifier lists its dma and associated asn. Each asn will display its headroom_gbps and score.			
scopesIdentifier	String	X	Two-letter country code. ISO 3166-1 alpha-2 code.
dma	Integer	X	This is the Nielsen 'Designated Market Area Region'. This applies to responses for the United States geo, and it includes the headroom_gbps and score values for each ASN in a DMA.
asn	Number	X	Autonomous System Number. The response includes score and headroom_gbps for relevant ASNs for the DMA or Country.
headroom_gbps	Number	X	Headroom capacity shows you what's available for the ASN, in Gbps. It can't be reserved because it's shared between anyone using the ASN.
score	Number [0..100]	X	This is the performant capacity score. This is an attempt to define the quality that might be possible for a subset of new traffic looking to consume the available headroom_gbps. The score calculation considers the groupSize (this defines the subset) and uses a bit rate suitable for delivering 1080p video when deriving the value from 1 to 100. As a simple example, a score of 100 with a groupSize of 1,000 suggests that

Member	Type	Required	Description
			the next 1,000 users will be able to experience a broadcast quality 1080p stream.
header: The header array contains these objects: <code>groupSize</code> , <code>mapruleID</code> , and <code>reportTime</code> .			
<code>groupSize</code>	Number	o	This is the expected user count. Performant capacity is calculated using this value. Default: 1000
<code>reportTime</code>	String	x	This is the time that the API generated the capacity report. (It indicates the freshness of the report.)
<code>mapruleID</code>	Number	x	This is a numeric identifier that represents your mapped hostnames. Contact your account representative to obtain the <code>mapruleIDs</code> associated with your account.

List by mapname and scope

Get the performant capacity score and headroom for a given mapname and associated scope.

Command format

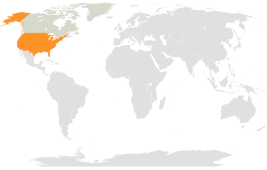
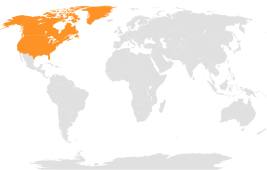



GET `/media-capi/v1/maps/{mapnameIdentifier}/scopes/{scopesIdentifier}`

Sample: `/media-capi/v1/maps/a%3Bdscr.akamai.net/scopes/NL`

Steps

1. Obtain your `mapnameIdentifier` with the Edge Hostnames API where it's available as `map`. Steps to obtain your mapname from an edge hostname are outlined in the [Edge Hostnames API v1](#) documentation.
2. URL encode the `mapnameIdentifier`.
3. Make a GET request to `/media-capi/v1/maps/{mapnameIdentifier}/scopes/{scopesIdentifier}`.
4. Identify the geographic scope you want to use for the `scopesIdentifier`. You have two options:

- **Individual country.** You can use any of the [ISO 3166-1 alpha-2 codes](#) to include a specific country.
- **Larger regions.** Use any of these scopes to include a larger geographic area:

Scope	Visualization	Region	Description
US		United States	Grouped by DMA, then ASN. Default: US
NA		Northern America, (including the United States overall for up-to the top 50 ASN's)	Grouped by Country, then ASN.
LATAM		Latin America and the Caribbean	Grouped by Country, then ASN.
EMEA		Europe, Africa, and Western Asia	Grouped by Country, then ASN.
APAC		Central Asia, Eastern Asia, South-eastern Asia, Southern Asia, Oceania	Grouped by Country, then ASN.

Parameters

Parameter	Type	Sample	Description
URL path parameters			

Parameter	Type	Sample	Description
mapnameIdentifier	String	a;dscr.akamai.net	This is the correlation between your edge hostname and the IP address that the hostname resolves to.
scopesIdentifier	String	NL	Identifies the capacity estimates for a specific mapname and a scope (geo).

Response body

Status 200 application/json

Object type: Maps

```
{
  "header": {
    "groupSize": 1000,
    "reportTime": "2019-12-12T14:55:17",
    "mapruleID": 2619
  },
  "capacity": {
    "NL": {
      "asn": {
        "174": {
          "score": 17,
          "headroom_gbps": 0.688261
        }
      }
    }
  }
}
```

Response members

Member	Type	Required	Description
header: The header array contains these objects: groupSize, mapruleID, and reportTime.			
groupSize	Number	X	This is the expected user count. Performant capacity is calculated using this value. Default: 1000
reportTime	String	X	This is the time that the API generated the capacity report. (It indicates the freshness of the report.)
mapruleID	Number	X	This is a numeric identifier that

Member	Type	Required	Description
			represents your mapped hostnames. Contact your account representative to obtain the mapruleIDs associated with your account.
capacity: The capacity object contains a scopesIdentifier. Each scopesIdentifier lists its dma and associated asn. Each asn will display its headroom_gbps and score.			
scopesIdentifier	String	X	Two-letter country code. ISO 3166-1 alpha-2 code.
asn	Number	X	Autonomous System Number. The response includes score and headroom_gbps for relevant ASNs for the DMA or Country.
score	Number [0..100]	X	This is the performant capacity score. This is an attempt to define the quality that might be possible for a subset of new traffic looking to consume the available headroom_gbps. The score calculation considers the groupSize (this defines the subset) and uses a bit rate suitable for delivering 1080p video when deriving the value from 1 to 100. As a simple example, a score of 100 with a groupSize of 1,000 suggests that the next 1,000 users will be able to experience a broadcast quality 1080p stream.
headroom_gbps	Number	X	Headroom capacity shows you what's available for the ASN, in Gbps. It can't be reserved because it's shared between anyone using the ASN.

Errors

This section provides details for the API's common set of response codes.

It lists the API's range of response status codes for both error and success cases.

Error responses

The Capacity API responds with HTTP problem error objects that provide details useful for debugging.

The response revealed is contingent on a number of factors, including the type operation you're performing and the specific error.

1. List by maprule

1.1 Authentication Failure
Description : The credentials sent in the Authorization Request Header is not valid. More details regarding this available in API usage and Authentication section.
Response Code, Response Message : 403 Forbidden
Description : The credentials sent in the Authorization Request Header is not valid. More details regarding this available in API usage and Authentication section.
1.2 Unauthorized Maprule
Description : The Maprule ID sent in the URL is not authorized for access to the API user's Account ID.
URL Example : /media-capi/v1/maprules/9111
Response Code, Response Message : 401 Unauthorized
Response Headers : - Content-Type: text/html
Response Body : <html><body>Unauthorized.</body></html>\n
1.3 Incorrect URL
Description : Request URL is incorrect.
URL Example : /media-capi/v1/maprule/9330 Note that the URL in the example is maprule, the expected element is maprules.
Response Code, Response Message : 404 Not Found
Response Headers : - Content-Type: text/html
Response Body: <h1>Not Found</h1><p>The requested URL /media-capi/v1/maprule/9330 was not found on this server.</p>
1.4 Internal Server Error
Description : The server has not received any data or encountered an internal error. This issue may be due to a transient network issue or failure on the server and is considered rare. Your API client should retry after 5 seconds.
Response Code, Response Message : 500 Internal Server Error.

1.4 Internal Server Error
Response Headers : - Content-Type: text/html
Response Body: <html><body>Internal Error. Data unavailable.</body></html>\n

2. List by maprule and scope

2.1 Authentication Failure
Description: The credentials sent in the Authorization Request Header is not valid. More details regarding this available in the API usage and Authentication section.
Response Code, Response Message : 403 Forbidden

2.2 Unauthorized Maprule
Description : The Maprule ID sent in the URL is not authorized for access to the API user's Account ID.
URL Example: /media-capi/v1/maprules/9111
Response Code, Response Message: 401 Unauthorized
Response Headers: - Content-Type: text/html
Response Body: <html><body>Unauthorized.</body></html>\n

2.3 Incorrect URL
Description : Request URL is incorrect.
URL Example: /media-capi/v1/maprule/9330/scopes/NA Note that the URL in the example is maprule, the expected element is maprules.
Response Code, Response Message: 404 Not Found
Response Headers: - Content-Type: text/html
Response Body: <h1>Not Found</h1><p>The requested URL /media-capi/v1/maprule/9330 was not found on this server.</p>

2.4 Internal Server Error
Description : The server has not received any data or encountered an internal error. This issue may be due to a transient network issue or failure on the server and is considered rare. Your API client should retry after 5 seconds.
Response Code, Response Message: 500 Internal Server Error
Response Headers: - Content-Type: text/html
Response Body : <html><body>Internal Error. Data unavailable.</body></html>\n

2.5 Invalid Scope
Description : The scope mentioned in the URL is not one of the following values US,NA,LATAM,EMEA,APAC or the country codes listed in ISO 3166-1 alpha-2 codes .
URL Example: /media-capi/v1/maprules/9330/scopes/AAAA
Response Code, Response Message: 404 Not Found
Response Headers: - Content-Type: text/html

2.5 Invalid Scope
Response Body: <html><body>Scope not found.</body></html>\n

HTTP status codes

The API produces the following set of HTTP status codes for both success and failure scenarios:

Code	Description
200	The operation was successful.
401	Unauthorized.
403	Access is forbidden.
404	Not Found.
500	Internal Server Error.