

Data Standards Body Technical Working Group

Decision 022 - Paging

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Context

A common scenario for APIs that return multiple records is to implement pagination to ensure the number of results being returned is manageable. This decision proposal puts forward a common approach to paging that would be applicable to all APIs that return an arbitrary number of records.

Decision To Be Made

Determine the standard paging model for the API standards.

Feedback Provided

The original proposal and the associated feedback can be found at:

<https://github.com/ConsumerDataStandardsAustralia/open-banking/issues/22>

Feedback on this proposal was supportive of the original proposal with some minor additions and amendments that have been accommodated in the final decision below.

Decision For Approval

The approach for pagination for the API standards is outlined in the sections below.

Conventions

In this proposal the key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” are to be interpreted as described in [RFC 2119](#).

When Paging Must Be Supported

Each API end point that can return multiple records will stipulate whether pagination is supported for the end point or not. For end points that will return less than a reasonably sized page of results in the majority of circumstances support for paging may not be included.

Note that the use of paging for an end point does not require or preclude the use of filtering query parameters. It is expected that filtering and paging will be applied independently of each other.

Query Parameters

The consumer will stipulate pagination requirements on the request using query parameters.

When paging is supported the consumer **MAY** provide the following query parameters:

- **page** – the page number being requested (with the first page being 1)
- **pageSize** – the number of records to return in each page

If the query parameters are not provided the following defaults will be assumed:

- **page** – a default of 1 (the first page) will be assumed
- **pageSize** – a default of 25 will be assumed

Response Fields

In addition to the data requested a provider **MUST** also provide the following additional information in the response payload:

- In the **links** object the following fields are to be provided:
 - **first**
A URI to request the first page. This field **MUST** be present.
 - **last**
A URI to request the last page. This field **MUST** be present unless there is only one page in the set.

- **prev**
A URI to the previous page. This field **MUST** be present unless the current page is the first page.
- **next**
A URI to the next page. This field **MUST** be present unless the current page is the final page.
- In the **meta** object the following fields are to be provided:
 - **totalRecords**
The total number of records in the set. This field **MUST** be present.
 - **totalPages**
The total number of pages in the set. This field **MUST** be present.

For each of these fields the page size specified in the request should be assumed when calculating values.

Additional Rules

Pagination will be governed by the following additional rules:

- Providers are not expected to implement pagination with transaction isolation. The underlying data-set may change between two subsequent requests. This may result in situations where the same transaction is returned on more than one page.
- A maximum page size of 1000 records is assumed for all end points (unless otherwise stipulated in the end point definition). If a page size greater than this maximum is requested then a HTTP status of *422 Unprocessable Entity* should be returned.