Oracle Warehouse Management Cloud

REST API Guide

Release 20C

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Part Number: F31364-03

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Preface

Oracle® Warehouse Management Cloud REST API Guide, Release 20C

Part No. F31364-03

This guide describes in detail how to configure and use Oracle Warehouse Management (WMS) Cloud. All functionality unless specifically noted is available in Oracle Warehouse Management Enterprise Edition Cloud. Please direct any functionality questions to *My Oracle Support*.

Change History

Date	Document Revision	Summary of Changes
7/31/2020	-03	Revised Pallet Entity topic.
7/29/2020	-02	Added PATCH verb for Pallet Entity to Updating a Resource (PATCH) section.
6/26/2020	-01	Updates for 20C. Added Delink Serial Numbers, Get Inventory History, and Get Next Pick APIs to Supported Entity Operations.

Using Applications

Additional Resources

- **Community:** Use *Oracle Cloud Customer Connect* to get information from experts at Oracle, the partner community, and other users.
- **Guides and Videos:** Go to the *Oracle Help Center* to find guides and videos.
- **Training:** Take courses on Oracle Cloud from *Oracle University*.

Conventions

The following table explains the text conventions used in this guide.

Convention	Meaning
boldface	Boldface type indicates user interface elements, navigation paths, or values you enter or select.
`monospace`	Monospace type indicates file, folder, and directory names, code examples, commands, and URLs.
>	Greater than symbol separates elements in a navigation path.

Contacting Oracle

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1 Overview

End User License Agreement

This guide is intended for REST API software developers with customers or system implementors. While the content includes a reasonable overview of REST concepts, the assumption is that the audience understands REST, HTTP communication, response codes, and related topics.

Restful Web Services

Representational State Transfer (REST) is a web standards-based architecture utilizing the HTTP protocol for data communication. RESTful web services are a light weight, scalable, and maintainable way to allow web-based system-to-system communication, irrespective of the respective application platforms (interoperability).

RESTful web services use HTTP methods in combination with a Universal Resource Identifier (URI) to implement the REST architecture. For reference, a URL is a type of URI. This combination allows consumers to interact with application data via a set of controlled, stateless, and idempotent methods.

OCWMS has had REST API's prior to update 18C, however they were not designed to provide fine grained access. These legacy API's continue to be available. Once all the functionality provided by these API's are incorporated into the newer APIs, the legacy ones will be retired with sufficient notice. The new APIs also adhere to RESTful practices better and simplify some of the data encoding requirements.

HTTP Requests

RESTful web services are built on top of the HTTP protocol, which carries some important implications. First, each request is stateless. This means that each request is independent of any other requests and the request itself must contain all relevant data to fulfill the request. Second, certain types of requests should be idempotent; making identical requests should yield the same result on the server. This is a safety measure that also provides consistency. For example, when reading data the same request should always yield the same result assuming the resource's state on the server has not changed between requests.

HTTP Methods

The APIs may utilize the following five HTTP methods in order to provide users with Create-Read-Update-Delete (CRUD) functionality. Note that not all APIs support all methods.

GET

Return a read-only representation of the selected resource(s) in the response body.

HEAD

Read-only check for resource existence and/or modification. Does not return a response body.

POST

Create resources or submit data to be processed by a resource operation.

PATCH

Modify existing resource(s).

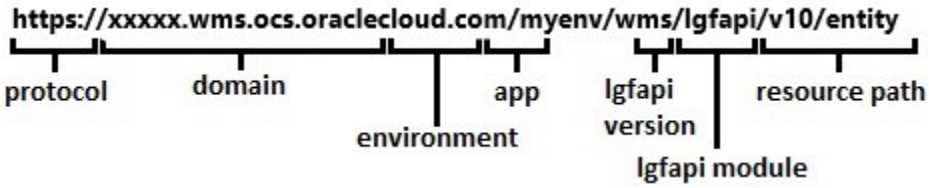
DELETE

Remove/deactivate existing resource.

URI Format

The lgfapi URI structure is broken down into several components.

In general, lgfapi URIs following the following schema:



The first portion of the URI (protocol, domain, environment, and app) is consistent with the URL of the environment's UI accessed via a web browser. The remaining pieces after "lgfapi" are specific to the lgfapi and designate the version and path to any child modules and/or resources.

Versioning

Lgfapi requires a version number in all URIs. The format is "v#', starting with "v9" as the first release. New versions are created only for major releases of the OCMWS application, not for minor versions. For example, the release of OCWMS 9.0.0 included the lgfapi v9 release, but there will not be a new lgfapi version number with the release of OCWMS 9.0.1. However, the APIs will continue to be updated with new features and improvements along with the minor releases of OCWMS.

The purpose of version control is to give customers some ability to remain on their current integrations until they can complete any changes required to handle the newest lgfapi version. It is strongly encouraged that all customers use the latest version of lgfapi. Version control is a tool to assist with upgrades and testing, it is not meant to be used in production for extended periods of time. The previous versions of lgfapi will unavoidably become out of sync with newer versions of OCWMS, and eventually will no longer be compatible. Oracle will not make changes to previous versions of lgfapi in order to maintain expired functionality or compatibility. Therefore, it is always in the best interest to use the latest version. New API versions are planned approximately once a year. Older API versions will be supported approximately one year after a newer one is released.

lgfapi Modules

Lgfapi contains modules that can be utilized by customers. These are groupings of functionality that may have their own formats and requirements. For example, lgfapi's "entity" module is designed to allow customers to examine and interact with OCWMS business resources from outside the application.

Resource Path

The final component to the URI is the resource path. This may take many different forms depending on the HTTP method and any module-specific requirements.

Optional Trailing Slashes

A trailing slash at the end of and lgfapi URIs is optional and does not affect functionality.

Login and Authentication

Since each HTTP request is stateless, every request requires information to authenticate the user.

Lgfapi supports several types of user authentication:

- BasicAuth – Classic username and password.
- OAuth2 – A token based authorization framework.

Application Permissions

Making a request to lgfapi not only requires user authorization, but also one or more of the CRUD application-level permission to access the supported HTTP methods. These are configurable in the user's group-level permissions.

- "lgfapi_read_access" – GET, HEAD
- "lgfapi_create_access" – POST

  > **Note:** this access is also required in order to run resource operations.

- "lgfapi_update_access" – PATCH
- "lgfapi_delete_access" – DELETE

It's recommended to create dedicated user(s) with appropriate lgfapi permissions and different facility/company eligibility to protect the integrity of your data. For instance, it is safe to give users read access but may not be appropriate to grant them permission to create or modify data.

The legacy API permission, "can_run_ws_stage_interface", has been replaced by the new permission, "lgfapi_update_access". This permission now applies to both lgfapi and the legacy APIs. For legacy API's, this is the singular permission required to access all APIs. For lgfapi, this is one of several new permissions used to control user access.

Data Input Methodology

Lgfapi allows for transmission of data in one of two ways, based on the HTTP method being used.

GET/HEAD

These read-only HTTP methods allow the user to pass additional information about the request in the URI. This data is sent as key-value pairs and starts with a question mark (“?”) at the end of the main URI. This section of the URI is known as the “query string”. Each key-value pair is known as a “parameter”. It is used to provide additional information to the resource. Parameters are delimited by an equals sign (“=”), and multiple parameters are delimited by an ampersand (“&”). The order of the parameters does not matter.

URL Encoding

In general, URIs only allow ASCII values, however there are specific cases like with internationalized domain names (IDN) where non-ASCII characters may be used in the domain name. For the purposes of communicating data using query string parameters in lgfapi, you cannot directly send non-ASCII (unsafe) characters. Also, some characters like spaces, “=”, and “&” have a specific meaning when sent in the query string section of the URI and are reserved. In order to handle unsafe characters and to distinguish between data and reserved characters that have special meaning in a URI, the URI must be “URL Encoded”. This encoding replaces non-ACII and reserved characters parameter data with ASCII equivalents. This is also known as “Percent Encoding” since each unsafe character is replaced with a value starting with percent sign (“%”). All parameter values should be URL encoded to ensure correct transmission.

For example, the query string: “foo=Mañana” is URL encoded as “foo= %20Ma%C3%B1ana”. A URI cannot have a space so that is encoded to the value “%20”. The Spanish letter “ñ” is not a valid ASCII value and is encoded as “%C3%B1”. Once the data reaches the server, it is decoded back to the original characters. The key portion of each parameter is determined by the application and therefore will never contain unsafe characters.

See *https://www.w3schools.com/tags/ref_urlencode.asp* for more information.

It is possible to repeat the same parameter within the query string. However, lgfapi will only observe the final occurrence of the parameter in order to obtain a value. For example, given the query string “?code=A&code=B”, the interpreted value of the “code” parameter will be “B”. The “A” value is discarded. There is no use case for transmitting repeated parameters as the desired result is achieved through other module-specific query string mechanisms.

POST

A POST request is used to pass data to the server similar to pressing a “Submit” button on a web page to submit form data to the server. In the context of lgfapi, when making a POST request, the user is passing data to either create a resource or invoke a resource operation, such as cancelling an order. Unlike GET and HEAD requests, POST allows for text data to be passed in the free-form body of the request. Request body data must be in a supported format (JSON or XML) and follow the required structure of the API being invoked.

Content-Type HTTP Header

This HTTP header is required when using a method like POST, PATCH, and DELETE that allow transmitting data in the body of the request. It describes the data format so it can be correctly parsed server-side. Lgfapi supports JSON and XML input and therefore requires one of the two content-type values:

- application/json
- application/xml

The Content-Type “application/x-www-form-urlencoded” is not supported in lgfapi, but is still required for legacy OCWMS APIs.

Content Encoding

By default, lgfapi will use UTF-8 to decode the request body as this handles the majority of characters for languages supported in OCWMS. However, for situations where customers choose to use a different encoding, it can be specified in the Content-Type header's optional "charset" parameter:

Content-Type: application/json; charset=latin-1

Lgfapi will use the provided charset to decode the request body data. It is up to the customer to ensure that their data is properly encoded using the desired charset before transmission to lgfapi. Failure to do so may result in incorrect characters or an inability to process the request.

It is also important to note that this only applies to the encoding of the request body and does not apply to the encoding used in any response body data from lgfapi.

Request Body Data – Repeated Keys

Lgfapi does not restrict users from repeating data in the request body for a single request. Rather, it will use only the final occurrence in the body when processing the request.

For example, if one were to send a request with the key "code" multiple times in the same request body:

{

"code": "A",

"code": "B"

}

The value used to process the request will be "B". "A" is ignored and is never used. There is no lgfapi use case for needing to pass repeating data in the same request.

Request Body List Formatting

JSON and XML data follow language standards except for the case of lists of items in XML. This is a unique concern for XML since there is no standard methodology for how to handle lists whereas JSON supports lists by default.

XML Lists

A list of items in XML is represented by the wrapper tag, followed by a wrapper for each item's value with the special tag name "list-item". For example, representing a list of serial numbers under the wrapper "serial_nbr_list", in JSON is represent as:

{

"serial_nbr_list": [

"SN1",

"SN2"

]

}

The equivalent XML list would be represented as the following. Note the use of “list-item” for each entry in the list to allow for correct parsing.

<serial_nbr_list>

<list-item>SN1</list-item>

<list-item>SN2</list-item>

</serial_nbr_list>

2 HTTP Response

Status Codes

Every valid HTTP request receives a response that is comprised of three main components:

- A 3-digit response status code that gives information about the success or failure of the request, the returned content, and other information specific to the request.

(2) The response header(s), which vary by request. These headers contain metadata information about the request, the response, the response data, and/or attributes of the server.

(3) The response body where free-form text information can be returned to the requester in either JSON (default) or XML format and in a standard defined by the application. This is where application-specific data pertaining to representation, success, and errors is returned to the requester.

Comprehensive list of HTTP status codes: *https://www.w3.org/Protocols/rfc2616/rfc2616-sec10.html*

Lgfapi uses many of the available HTTP response status codes to convey success or failure of the request back to the user. All response status codes fall into 1 of 4 categories:

1xx – Informational

2xx – Success

3xx – Redirection

4xx – Failure

The following is a list of commonly used response status codes for lgfapi:

Status Code	Status Message	HTTP Method	Description
200	Ok	HEAD, GET, POST	GET - The request was successful. HEAD - The resource exists. POST - Resource exists and/or has been modified.
201	Created	POST	Resource successfully created.
204	No Content	POST	The request was successful, but no content is being returned in the response body.
304	Not Modified	HEAD	The resource has not been updated since the target date-time.
400	Bad Request	HEAD, GET, POST	Invalid data or request structure.
401	Unauthorized	HEAD, GET, POST	Invalid login credentials.
403	Forbidden	HEAD, GET, POST	User lacks permission.

Status Code	Status Message	HTTP Method	Description
404	Not Found	HEAD, GET, POST	The resource does not exist.
405	Method Not Allowed	-	HTTP method is not supported for the requested resource.
409	Conflict	HEAD, GET, POST	Record Changed - The resource was modified by a concurrent operation before the request could be fulfilled. Try again.
500	Server Error	HEAD, GET, POST	An unhandled error occurred or the application was unable to formulate a valid response. Please contact support and provide any returned error information.

Response Formats

Lgfapi supports JSON (default) and XML formats for data returned in the body of the response. This applies to all HTTP methods that return a response body.

The requester is able to specify the response format in several ways:

1. Making a request without specifying the response format will result in the default JSON format.
2. Using the reserved “format” query string parameter in the URI when making a request.

You can set the format to XML by adding “format=xml” to the query string portion of the request (the key-value pair data after the “?”). This is in addition to any other query string parameters also in the URI:

.../resource/?format=json

.../resource/?format=xml

Note – “format” is one of the few query string parameters you can use with HTTP methods like POST, which typically require all data to be in the body of the request.

- Using the file-extension dot-notation in the URI when making a request.

Very similar to the example above, you can also request the format using dot notation like you would when giving a file the extension “.xml” or “.json”:

.../resource/.json

.../resource.xml (optional trailing slash)

This can also be combined with a query string:

.../resource/.xml?key1=value1&key2=value2

Response Data Encoding

When a response body is returned, the raw JSON or XML data will always be encoded using UTF-8. There is no way to configure or specify the response body's encoding. This is done to ensure that the response content can always be correctly rendered. A request body using a different encoding is allowed because the requester is able to control the contents being sent to lgfapi. However, the output data may contain characters outside of the encoding used for the request, if for example a consistent character set has not been used throughout the application. UTF-8 covers the full change of characters supported by OCWMS and is therefore the default, and generally preferred, encoding.

Response Data Formats

In general, the HTTP response body can take on any number of different formats and styles. For lgfapi, several dedicated conventions have been adopted to give uniformity and consistency to the handling of both successful and erroneous requests.

Error Response

A standardized error format is returned in the body of the response whenever there is an error while fulfilling the request. This is accompanied by the response status code, which provides additional insight.

The standard error response is comprised of 4 components:

- Reference – A unique string used as reference for the request and error. This should be provided in support requests to help more quickly identify the information pertaining to the request in question.
- Code – A generic classification pertaining to the error message.
- Message – An error message related to the code.
- Details – Optional. Either a list or key-value map (dictionary) of more detailed information pertaining to the error(s). For example, this may give a more detailed list of error messages or could be a map of field name(s) to error(s).

Example JSON Error Response Body:

{

"reference": "25b414f0-7a1d-4f35-ac3c-0ec9886cf37a",

"code": "VALIDATION_ERROR",

"message": "Invalid input.",

"details": {

"reason_code": "Invalid Reason code"

}

}

Example XML Error Response Body:

<?xml version="1.0" encoding="utf-8"?>

<error>

<reference>25b414f0-7a1d-4f35-ac3c-0ec9886cf37a</reference>

<code>VALIDATION_ERROR</code>

<message>Invalid input.</message>

<details>

<reason_code>Invalid Reason code</reason_code>

</details>

</error>

Unhandled Errors

It is possible that the application is unable to convey the nature of the problem back to the requester. In these scenarios, the server will respond with a 500 (“Server Error”) status code and an accompanying message.

Resource Representations

Representations are by default paginated unless a specific resource is being requested. Pagination allows the response data to be served in chunks (pages) to keep payload sizes manageable.

Pagination

A paginated result set is returned when multiple representations may exist in the result set that exceed a preset size. This breaks the result set into chunks (pages), each with its own page number. The page size is determined by the requesting user’s configuration of the field “Rows per Page”. This is the same field used to set the number of results per UI page returned. It has an allowed range of 10 to 125 results per page.

Pagination Mode

Two modes of pagination are supported that offer different advantages and disadvantages depending on the user requirements. The default mode is “paged”, but users may specify the type of pagination by using the “page_mode” query string parameter in the URI. The two types are “paged” and “sequenced”.

Mode: Paged

This is the default mode for result sets (*.../resource/?page_mode=paged*). This will break the data into chunks (pages) and return one page per request. This will additionally return metadata such as the total count of results and the total number of pages.

Each page of the result set is given a pagination header:

- result_count – The total number of results across all pages.
- page_count – The total number of pages.

- page_nbr – The current page number.
- next_page – Hyperlink to the next page (if available).
- previous_page – Hyperlink to the previous page (if available).
- results – The result set list for the page.

A specific page number for a paginated result set is requested in the URI's query string using the parameter "page". For example, to request the data for page 3 of a result set, one would add *.../resource/?page=3*. You will also see these automatically added in the hyperlinks generated for "next_page" and "previous_page".

An example of a paginated JSON response:

{

"result_count": 1,

"page_count": 1,

"page_nbr": 1,

"next_page": null,

"previous_page": null,

"results": [

{

"id": 0,

...

},

]

}

An example of a paginated XML response:

<?xml version="1.0" encoding="utf-8"?>

<entity_name>

<result_count>1</result_count>

<page_count>1</page_count>

<page_nbr>1</page_nbr>

<next_page></next_page>

<previous_page></previous_page>

<results>

<list-item>

<id>0</id>

...

</list-item>

</results>

</entity_name>

Mode: Sequenced

The sequenced mode (*.../resource/?page_mode=sequenced*) is similar to the Paged mode, except for a few important details. This mode is recommended for system to system integration where superfluous information and intuitive/human-readable values are not necessary.

Each page of the result set is given a header that conveys extra information to the user and makes it easier to navigate between pages:

- next_page – Hyperlink to the next page (if available).
- previous_page – Hyperlink to the previous page (if available).
- results – The result set list for the page.

First, you'll notice that the pagination header does not have the total result count or total page count. This is because sequenced pagination doesn't know either of these values, and doesn't want to. Instead, each page is generated on the fly in an effort to improve performance, which means less work than paged mode where the total counts are fetched up front. Determining total count can be expensive when you have a large result set.

With sequenced, you also sacrifice some human readability and functionality as the "page" query string parameter is replaced by a system-generated "cursor" as well as the hyperlinks will not be as intuitive to understand. Since in this mode the total result set is not known, only what's rendered per page, there is no way to report the total number of pages or label each with a specific page number. A cursor identifier is generated for each page instead of a page number:

.../resource/?cursor=cD0xNDAw&page_mode=sequenced

Non-Paginated Responses

There are a few scenarios where a request will return data in the body of the response for a specific object, so pagination is not needed.

The first is for a GET retrieve style request where the "id" value of the resource is known and is requested in the URI (*.../resource/{id}/*).

The second is when creating a single resource using a POST request. The response will be a non-paginated representation for only the new resource.

3 Entity Module

Supported Entities

The lgfapi entity module is used to access and modify OCWMS application data. It exposes specific methodologies for identifying subsets of data and obtaining their representations as well as allowing for the creation of certain resources. The entities supported and corresponding functionality will continue to be expanded through subsequent releases.

The entity module has a documenting feature that can be accessed via a GET request to the top-level (root) URL (*.../lgfapi/v10/entity/*). This will return a sorted list of supported entities for the given lgfapi version and an accompanying base URL.

Each entity represents an object or combination of objects within OCWMS that is accessible via lgfapi. However, not all entities support all HTTP methods. Furthermore, these entities may share characteristics with their respective counterparts in other areas of the OCWMS application, but as a whole should be considered independent of other application functionality.

Entity Metadata

It is possible to obtain additional information for each entity by making a GET request to the "describe" entity operation (*.../lgfapi/v10/entity/{entity_name}/describe/*). This will return metadata that can be used to further your understanding of the entity. See "Entity Operations" section for more details.

Input Data Types

Lgfapi supports user input depending on the HTTP method:

- GET/HEAD
  - Query string parameters
- POST
  - Request body data
    - The format must be JSON or XML
  - The "format" query sting parameter alone is supported to specify the desired format for the response.

Although the input formats may be type ambiguous, the input value is cast to the appropriate type as defined in the entity's field metadata. Some fields have naming conventions that are outlined below. The following types are supported for user input:

String/Text

Query String: .../?field=abc123

JSON: {“field”: “abc123”}

XML: <field>abc1234</field>

Integer

Query String: .../?field=123

JSON: {“field”: 123}

XML: <field>123</field>

Numeric/Decimal

Query String: .../?field=1.234

JSON: {“field”: 1.234}

XML: <field>1.234</field>

Boolean

Except for a few specific cases, all True/False Boolean field names end with “_flg”.

The input value for all formats should be either “true” or “false”.

Query String: .../?field_flg=true

JSON: {“field_flg”: true}

XML: <field_flg>true</field_flg>

Temporal (Date/Time)

All date, time, and date-time fields require the iso-8601 format: YYYY-mm-ddTHH:MM:SS.ffffff

Note that the microsecond component “f” is optional. Using January 30th, 2018 at 6:30pm as an example:

Date

Field names for date-only fields typically end with “_date”.

Query String: .../?field_date=2018-01-30

JSON: {“field_date”: “2018-01-30”}

XML: <field_date>2018-01-30</field_date>

Time

Field names for time-only fields typically end with “_time”.

Query String: .../?field_time=18:30:00

JSON: {“field_time”: “18:30:00”}

XML: <field_time>18:30:00</field_time>

Date-time

Field names for date-time fields typically end with “_ts”.

All Date-time objects are assumed to be in the time zone of the user's facility context. In other words, it should be the date/time you would expect to see if viewed by the user in the UI.

Query String: .../?field_ts=2018-01-30T18:30:00

JSON: {"field_ts": "2018-01-3030T18:30:00"}}

XML: <field_ts>2018-01-3030T18:30:00</field_ts>

Relational

Relational fields are when one resource has a link to another resource. These fields always end in "_id" and by default, are integer values. They are unique when filtering, in that you can use the double-underscore ("__") notation to reference a related resource's fields, or even nested related resources. This is covered in more detail in the Resource Result Set Filtering section.

Query String: .../?field_id=1

JSON: {"field_id": 1}

XML: <field_id>1</field_id>

Resource Result Set Filtering

Lgfapi offers the ability to apply filters to GET and HEAD requests in order to narrow down the final result set. This is done by adding query string filter parameters to the URI. Furthermore, lgfapi supports several built-in lookup functions to assist in common filtering tasks.

It is important to note that all entity data is automatically filtered by the user's eligible facilities and companies. This prevents users from being able to access and/or change data outside of their assigned scope that same way that data is isolated in the UI or RF features. The difference with lgfapi is that users may access data from multiple eligible facilities and companies in a single request. In the UI and RF, this typically requires manually changing the user's context.

The most basic format for a filter uses simply the exact operator ("="): *.../?field=value*

This can be chained to apply multiple filters: *.../?field1=value1&field2=value2*

Lgfapi uses double underscore ("__") notation in order to join multiple fields or functions in the query string filters. The double underscore is used to distinguish the field names when filtering on a related resource's attributes or when applying a lookup function.

Applying a lookup function: *.../?field__lookup=value*

Filtering on a related resource: *.../?relation_id__related_field=value*

Applying a lookup function on a related resource: *.../?relation_id__related_field__lookup=value*

These are discussed in detail in the following sections.

Supported Lookup Functions

The following lookup functions are provided by lgfapi. Note that any match function with a corresponding "i" function means that function is case-insensitive. For example, "exact" is used to match exactly on a value, as does "iexact" except that the latter ignores upper/lower case.

Arithmetic Lookups

gt – Greater than

Example: Filtering sales order detail(s) for only those with an ordered quantity.

.../order_dtl/?ord_qty__gt=0

- gte – Greater than or equal to

Example: Filtering sales order detail(s) for only those with an ordered quantity.

.../order_dtl/?ord_qty__gte=1

- lt – Less than

Example: Filtering sales order detail(s) for only those with ordered quantity below 10.

.../order_dtl/?ord_qty__lt=10

- lte – Less than or equal to

Example: Filtering sales order detail(s) for those with ordered quantity at or below 10.

.../order_dtl/?ord_qty__lte=10

Text Match Lookups

- contains/icontains – Text contains substring

Example: Filtering sales order(s) for orders with “FOO” in the order_nbr field.

.../order_hdr/?order_nbr__contains=FOO

Example: Same as previous example, but ignore case.

.../order_hdr/?order_nbr__icontains=FOO

- exact/iexact – Text exactly matches

Example: Match sales order(s) exactly on the order number.

.../order_hdr/?order_nbr__exact=ORDER001

> **Note:** “Exact” is not typically needed. The above filter condition does not require the exact lookup since this is automatically implied by the exact operator (“=”).

The query string can be simplified to:

.../order_hdr/?order_nbr=ORDER001

“iexact”, on the other hand, is a useful tool when you need to do an exact match, but ignore letter casing:

.../order_hdr/?order_nbr__iexact=OrDeR001

- startwith/istartswith – Text starts with

Example: Filtering sales order(s) for only those whose order_nbr starts with “ORD”:

.../order_hdr/?order_nbr__startswith=ORD

- endswith/iendswith – Text ends with

Example: Filtering sales order(s) for only those whose order_nbr ends with “001”:

.../order_hdr/?order_nbr__endswith=001

Temporal (Date/Time) Lookups

The following temporal functions may only be used on date, time, and/or date-time data. Consider the “order_hdr” entity’s “order_shipped_ts” date-time field with a value “2018-09-17T20:30:59”:

- year – Match on a date’s year (date or date-time).

.../order_hdr/?order_shipped_ts__year=2018

- month – Match on a date’s month (date or date-time).

.../order_hdr/?order_shipped_ts__month=09

- week_day – Match on a date’s day of the week (date or date-time).

Takes an integer value representing the day of week from 1 (Sunday) to 7 (Saturday).

.../order_hdr/?order_shipped_ts__week_day=2

- day – Match on a date’s day (date or date-time).

.../order_hdr/?order_shipped_ts__day=17

- hour – Match on a date’s hour (time or date-time).

Assumes a 24-hour clock.

.../order_hdr/?order_shipped_ts__hour=20

- minute – Match on the time’s minutes (time or date-time).

.../order_hdr/?order_shipped_ts__minute=30

You can also apply other lookup and arithmetic functions to temporal fields:

- Date Range

For example, if we have a date-time field where we want to search for resources that have a value within a range, it is possible to chain two temporal filters together to search within a set date range:

.../order_hdr/?order_shipped_ts__gte=2018-09-01T00:00:00&order_shipped_ts__lt=2018-10-01T00:00:00

Or, it is possible to use the “range” lookup function:

.../order_hdr/?order_shipped_ts__range=2018-09-01T00:00:00,2018-10-01T00:00:00

However, since in this example we don’t have any specific time data, this could have also been accomplished more easily using the “month” lookup:

.../order_hdr/?order_shipped_ts__month=09

There may be multiple different ways to arrive at the same result when filtering. It is always desirable to be as specific as possible to minimize the result set and improve efficiency.

Additional Lookups

- isnull – Boolean; Is the field's value null?

This lookup is used to test if a field is null. This is a useful lookup as it can be used on any type of field to test for null.

Example: Filtering sales order(s) for only those where the shipped timestamp is null:

.../order_hdr/?order_shipped_ts__isnull=true

This is important because it allows you to make this test for any field type. If, for example, you tried to filter on the field's value directly (*.../order_hdr/?order_shipped_ts=null)*, you would receive an error that "null" is not a valid date. Since the field is of type date-time, it is expecting a temporal value and is interpreting "null" as the input.

- in – Filter by values in a list

This lookup function allows for filtering by a group of values. These values may be a mix of different types, but the type(s) should be consistent with the type of the field being filtered. The input is a comma-delimited list with no spaces between entries in the list.

Example: Filter order_hdr by specific status id values:

.../order_hdr/?status_id__in=10,30,90

Or, it can be applied for filtering on a specific set of sales order numbers:

.../order_hdr/?order_nbr__in=ORDER001,ORDER002,ORDER003

It is also possible to use an "in" lookup with a single value to effectively function the same as an exact operator ("="). The two following examples are equivalent in that they will return the same result set:

.../order_hdr/?order_nbr=ORDER001

.../order_hdr/?order_nbr__in=ORDER001

The difference is that an "in" lookup in inherently slower because of the way the filter is built and applied when filtering the data. If you have a single value to match on, it is recommended to use "=" instead of "in".

- range – Filter for resources with value within an inclusive range.

Numeric range

.../order_hdr/?status_id__range=10,90

Date range

.../order_hdr/?order_shipped_ts__range=2018-09-01T00:00:00,2018-10-01T00:00:00

Relational Resource Filtering

It is possible to filter on any related field for the given entity. All related field names end with "_id" and are integers by default.

For example, the simplest and fastest performing related resource filter is to search directly on the resource's id. An "id" is the unique value assigned to every resource. Using the "order_hdr" field, "facility_id", we could filter specifically for order belong to the facility with id "1":

.../order_hdr/?facility_id=1

Adding the "company_id" field is a very common thing to do, in order to filter resources by facility and company (assuming the company's id is also "1"):

.../order_hdr/?facility_id=1&company_id=1

But what if we wanted to filter by the value of a field belonging to the related resource. For example, what if we knew the facility and company codes, but didn't yet know their respective "id" values. It is possible to filter on the related resource's fields using double-underscore ("__") notation.

Assuming facility with id=1 has a code "FAC1" and company with id=1 has a code "COM1":

.../order_hdr/?facility_id__code=FAC1&company_id__code=COM1

This is not as efficient as using just the "id" of the related resources since lgfapi will need to do an additional lookup for each related resource to filter on their respective "code" fields. It is recommended to cache client-side the "id" values of commonly used, static entities (like facility and company) in order to improve performance in high-throughput systems.

It is also possible to filter multiple levels deep with related resources. For example, in order to filter on the order's facility's parent company, we could further chain the facility field, "parent_company_id", as it is a related resource of "facility_id" and of entity type "company":

.../order_hdr/?facility_id__parent_company_id=1

Again, you can also search on a related field:

.../order_hdr/?facility_id__parent_company_id__code=COM1

This is a handy and powerful tool for looking up resource sets based on related data. However, it is important to remember that as the relational filter depth increases, the performance may decrease as well since there is more work to be done to lookup related resource(s). Client-side caching and other performance methodologies are discussed in their own section.

Chaining Multiple Filters

It is possible to chain multiple filters on the same field. Each condition is just another key-value pair where the field is consistent. For example, if we wanted to filter the order_hdr entity to return those whose order_nbr starts with "ABC" and additionally contains the word "TEST", we would write it as:

.../order_hdr/?order_nbr__startswith=ABC&order_nbr__contains=TEST

It is possible to chain together any number of different field and lookup combinations to arrive at your desired result set. However, it is important to note that the more filters applied, the more the performance may degrade. Therefore, it is always preferred to be as specific as possible when using filtering.

Resource Representations (GET)

Within the lgfapi entity module, JSON or XML resource representation(s) of entity(s) may be obtained through a GET request. A GET request is made for a specific entity in the format:

.../lgfapi/v10/entity/{entity_name}/

By default, each request is filtered by the requesting user's eligible facility(s) and company(s). It is possible to add additional filter conditions in the URI query string in order to arrive at the data required. If, after filtering, no data is found, a 404 – Not Found error will be returned in the standard lgfapi response.

Furthermore, there are two conventions for how to request resource representation(s) – "list" and "retrieve". For the following examples, the "company" entity will be used.

List

A list request is used to fetch one or more object representations of an entity. The result set is based on the default facility/company context filters and any optional filter parameters provided in the URI. The default results set is comprised of all resources for the given entity that are eligible to the requesting user. Since the result set may be of an arbitrarily size, a paginated data set is always returned.

The representation for all eligible objects can be requested by not providing the query string portion of the URI:

.../lgfapi/v10/company/

Query string filter parameters may optionally be used to further narrow down the data set. For example, to filter additionally by company code "ABC", we would add the following:

.../lgfapi/v10/company/?code=ABC

Retrieve

A retrieve request is used to fetch a single resource by its integer "id" value. This is the most performant way to get a representation for a single resource where the "id" is known. The result set is not paginated. The "id" value is specified in the URI after the entity name:

.../lgfapi/v10/company/{id}/

For example, if we had previously looked up the company with code "ABC" and found its "id" value to be 1, we could retrieve its representation in the future by making a GET request to the URI:

.../lgfapi/v10/company/1/

Note that since the lookup is for a specific resource, no filters are allowed in the query string. It is permitted to pass in allowed non-filter reserved parameters like "format" and "fields". However, any pagination related query string parameters like "page_mode" are not supported since the returned representation is not paginated.

> **Note:** *.../lgfapi/v10/company/?id=1* is still considered a "list" style request and is paginated.

Last-Modified HTTP Header

If the requested resource exists and the data is temporally tracked, the Last-Modified HTTP header will be returned. This is the date-time that the resource was last updated. It is in iso-8601 format in the requesting user's time zone. This can be cached client-side and used in conjunction with HEAD requests as an efficient way to check for resource modification.

Resource Representation Data Conventions

For both list and retrieve GET requests, the “format” query string parameter can be passed in order to convey the desired response format as “json” (default) or “xml”.

Hyperlink-Related Resource Representations

All resources use hyperlinked representations for related resource fields. These are the fields whose name ends with “_id”. They represent another entity resource that can generate its own representation using the hyperlink provided. Lgfapi uses hyperlinked relationships to allow for users to crawl to the intended data sets. This allows for the preservation of RESTful principals as well as to keep the data interchange sizes manageable.

All related field representations contain three pieces of information:

1. “id” – The integer id value of the related resource
2. “key” – A string identifier for the related resource
3. “url” – A crawl-able retrieve style hyperlink to the related resource
    - Both “id” and “key” are always provided. However, the value for “url” may be blank if the related resource it not one of the supported entities. In this case, it is not possible to build a hyperlink to the resource as it does not support generating its own representations.

For example, when getting a representation for the “company” entity where the company is of type Regular, the related field “company_type_id” would be represented like the following JSON string:

{

…

“company_type_id”: {

“id”: 1,

“key”: “R”,

“url”: “https://…/wms/lgfapi/v10/entity/company_type/1”

},

…

}

Or, if the desired format is XML:

<company>

…

<company_type_id>

<id>1</id>

<key>R</key>

<url>https://.../wms/lgfapi/v10/entity/company_type/1</url>

</company_type_id>

...

</company>

The only exception for the related field representation format is for status_id related fields. These fields are always represented as only the related resource's integer "id" value. It is possible to get a representation for any status-based entity by making a retrieve request. The only difference is that due to the volume of status fields on various entities, the integer value is used to reduce payload size.

For example, the "order_hdr" entity has the related field "status_id" for the entity "order_status". It is represented on the "order_hdr" as just the "id" value:

{

...

"status_id": 10,

...

}

However, it is possible to get a representation of the status by making the request:

GET https://.../wms/lgfapi/v10/order_status/10

Important

There are many related resource fields that are optional. If there is no linked resource, the field's value will be "null" if using JSON or an empty tag if using XML. For more information, reference the entity's field metadata for the "required" attribute.

Related Data Sets

The related resources previously discussed all link to a single resource. However, it is possible that the current resource has a list many other linked resources of the same type. A good example is a sales order header that has one or more child details. As a convenience and additionally for guidance/performance reasons, many entity representations have additional hyperlinked relations to these data sets. These field names always end in "_set".

Continuing the sales order header example, the order details set could be represented as the following in an order_hdr retrieve representation. Assume there are two detail line items and the "id" value of the order_hdr entity is "123".

GET https://.../wms/lgfapi/v10/entity/order_hdr/123

{

"id": 123,

...

"order_dtl_set": {

"result_count": 2,

"url": "https://.../wms/lgfapi/v10/entity/order_dtl/?order_id=123"

},

...

}

It's important to note that unlike the "_id" related resources which have a retrieve style hyperlink to the specific resource, "_set" related representations use list style with query string filters in order to return a paginated list of 1 to n resource representations. Also, instead of giving the "id" and "key", the related count is returned.

If no related resources are found for the set, the value will be "null" for JSON representations and an empty tag for XML.

Field Selection

GET requests for the lgfapi entities support the "fields" query string parameters. It takes a comma-delimited list of field names for the entity and returns only those fields in the representation.

For example, to return only the "id" and "code" for all eligible companies using a list style request with no filters:

GET https://.../wms/lgfapi/v10/entity/company?fields=id,code

The "fields" parameter can be combined with filter parameters and other parameters with special meaning, like "format". Here is a more complex example if one wanted to search for all eligible companies of type regular and return only the "id" and "company" for each company entity found, in XML format:

GET https://.../wms/lgfapi/v10/entity/company?fields=id,code&format=xml&company_type_id=1

This can also be applied to retrieve style request for a specific resource:

GET https://.../wms/lgfapi/v10/entity/company/1?fields=id,code

This is an important tool when performance is of concern. If it is known ahead of time that only specific field values are required, narrowing the returned data set using the "fields" parameter can greatly reduce the overall payload size and remove the need for unnecessary field and/or relation lookups.

Ordering

By default, no ordering is applied to list style GET requests that can return 0 or more representations. This is done for performance considerations as applying ordering to any request may degrade performance, especially in the case of larger data sets.

It is possible to specify an order-by clause for list style requests using the "ordering" query string parameter. It accepts a comma-delimited list of field names by ordering priority.

For example, one could request all eligible companies and order by the type and then the code:

GET https://.../wms/lgfapi/v10/entity/company/?ordering=company_type_id,code

By default, fields are ordering ascending. To order by descending value, add a dash ("-") before the field name in the ordering list. This can be applied to order first by company type ascending and then company code descending:

GET https://.../wms/lgfapi/v10/entity/company/?ordering=company_type_id,-code

Just like any other query string parameter, it may be chained with other parameters and filters.

Resource Existence and Modification (HEAD)

HTTP requests for lgfapi entities using the HEAD method are an efficient way to determine if a resource or list of resource(s) exists. Additionally, it is possible to determine if a specific resource has been modified since a target date-time. The HEAD method does not return any data in the body of the response. The only data returned is the response status code and any HTTP headers. Because HEAD requests do not have to know specifics about each resource and build a representation (like in a GET request), minimum data is transmitted and the server-side determinations can be optimized.

HEAD requests accept both retrieve and list style URI that same as a GET request. This can be used to check for the existence of a specific resource or filter for the existence of potentially many resources in a list.

"If-Modified-Since" HTTP Request Header

Entity HEAD requests allow for the requester to optionally pass the "If-Modified-Since" HTTP header in the request. This is only permitted for retrieve style requests when querying for a specific resource by id in the URL. The header's value is the target date-time in iso-8601 format in the appropriate time zone. When provided, the value will be compared to the resource's last modification time to determine if it has been modified since the header's date-time. If the resource exists, and it has been modified, a 200 - Ok status code is returned. If it exists but has not been modified, a 304 – Not Modified status code is returned.

Not that if the entity does not support mod time tracking, the header is ignored and a 200 – Ok response code is returned meaning only that the resource exists.

The "If-Modified-Since" request header is typically used in conjunction with the "Last-Modified" response header that is returned with every retrieve style GET request for those entities that track mod timestamps. For example, a common scenario might start with a retrieve style GET request being made for a resource. The value of the "Last-Modified" response header is saved client-side for that resource. Sometime later, the client wants to check if the resource has been updated. A HEAD request can be made to determine if the resource has been modified since the original GET request by passing the last mod timestamp in the "If-Modified-Since" request header.

In scenarios where the updated resource representation is not needed, a HEAD request is much more efficient than a GET request. Or, it may be used to determine if a more expensive GET request is subsequently called to fetch the updated resource representation. It is also common to use HEAD request modification checks as a trigger mechanism for down-steam operations.

Response Statuses

The HTTP response status will be one of the following and vary depending on the outcome and if checking for existence or existence and modification of one or more resources. Note that this is not the full list of all possible response

statuses. Rather, the following statuses are directly tied to this HTTP method's functionality within lgfapi. For example, one can still receive a 401 status code if not providing valid user authentication credentials.

- 200 - Ok

When checking for only existence, a 200 status code response means that the resource(s) exist. When additionally checking for modification, this status code confirms that the specific resource exists and has been modified.

- 304 – Not Modified

Only applicable when checking for modification of a specific resource using the 'If-Modified-Since' header. This status means that the resource exists but has not been modified since the input target date-time.

- 400 - Bad Request

For HEAD requests, it is possible to receive this status when using the 'If-Modified-Since' header with an invalid date-time value or format. This may also be returned if other invalid data is found, such as invalid query sting filters.

- 404 - Not Found

No resource(s) were found based on the input provided. This may mean that either the resource(s) do not exist, or they do exist but the requesting user is not eligible for any of the resources.

For example, use a retrieve style request to check for the existence of a company entity with id=1:

HEAD https://.../wms/lgfapi/v10/entity/company/1

Or, it can be applied to a list style request with filters:

HEAD https://.../wms/lgfapi/v10/entity/company?code=ABC

Creating a Resource (POST)

Lgfapi allows for the creating and linking of a limited number of entity resources using an HTTP POST request. The new resource's initial data set is passed in the body of the request, in the structure and formats outlined below. The requesting user must have the "lgfapi_create_access" permission. Also, the requesting user must be eligible for the facility/company context of the data being created.

Example request to create an IBLPN:

POST .../wms/lgfapi/v10/entity/iblpn/

Input Data

Data passed in the body of any POST request to the entity module requires the follow structure and data conventions.

Data Structure

Data is input in the request body in one of two sections:

- Fields – Initial field data. The "fields" section is used to pass in the initial field data required by the entity. Optional fields have a default and should be omitted from the "fields" data if you with the default to be applied. Lgfapi will attempt to use any data passed in the request body over the field default.

- Options – Additional/miscellaneous data. The “options” section is used to pass in extraneous data not directly required by the entity. A common example is the need to pass in a reason code when creating certain entities for the purposes of tracking against writing inventory history records.

JSON Example

{

“fields”: {

“string_field”: “ABC”,

“decimal_field”: 1.234

},

“options”: {

“reason_code: “RC”

},

}

XML Example

<request>

<fields>

<string_field>ABC</string_field>

<decimal_field>1.234</decimal_field>

</fields>

<options>

<reason_code>RC</reason_code>

</options>

</request>

Dates/Times

Temporal data must be iso-8601 format.

Related Resources

Relational fields (denoted by a field name ending in “_id”) require the integer “id” value of the target resource. This can be obtained by making a GET request to the corresponding entity with appropriate filters.

Assuming that you already know the corresponding fields each have an “id” value of 1; when creating a new resource with the required related fields “facility_id” and “company_id”, the JSON POST request body is modeled as:

{

“fields”: {

“facility_id”: 1,

“company_id”: 1

}

}

If a related field is optional and not required as part of the initial resource creation, the field should be omitted to apply the default value.

Response Statuses

A non-paginated representation of the new resource will be returned in the body of the HTTP response in the desired format.

200 – Ok

A lookup was done and it was determined that the resource already exists. No new resource was created. Instead, the body of the response contains a representation of the existing resource. This is only applicable to certain entities.

- 201 - Created

The resource was successfully created.

- 400 - Bad Request

The request was invalid. This could be due to data validation failures, permission errors, or other missing requirements of the operation.

Validations

Field and object-level validations are applied before the new resource is created. Any errors will be returned the response body in the standard format. All related resources must be within the facility/company context of the resource being created. Meaning, users cannot link the new resource to any resources outside of its facility and/or company. For example, it is not possible to link an IBLPN to a pallet where the pallet is for a different facility or company than the IBLPN.

Nested Related Objects

Some entities, such as “inventory”, allow for the creation and association of some related objects within the request to create the inventory object. This allows for the creation of multiple related objects using a single API call instead of multiple requests.

The currently supported related objects are “batch_number” and “inventory_attribute”. Instead of passing in the “id” value of the related objects as the field definition’s value, you may alternatively insert a nested object representation.

If the nested object does not exist, it will be created. If it does exist, no creation for that object takes place but in both cases it will be associated to the inventory object being created.

For example, when making a POST request to create an inventory object, it is valid to associate an existing batch using its “id” value:

{

“batch_number_id”: 1,

…

}

It is also possible to send a nested representation of the batch object which will functionally act as “get or create”. The nested object must still pass all of the same validations as if it were being created independently and its “id” value passed in:

{

“batch_number_id”: {

“batch_nbr”: “BATCH001”,

“item_id”: 1,

“expiry_date”: “2019-01-01”

},

…

}

Supported Entities

- inventory_attribute
  - Functions as get-or-create based on the provided attributes for the given facility and company combination.
- batch_number
  - Function as get-or-create based on the batch number for the given facility and company combination.
- iblpn
  - Creates an inbound container with no inventory.
- inventory
  - Creates inventory in either an iblpn or an active location.
  - Requires “reason_code” option for inventory history tracking.
  - Success results in inventory history adjustment(s) being generated.
  - Supports nested “batch_number” and “inventory_attribute” object creation.
- inventory_lock

Create an inventory lock that can applied to containers and locations.

Updating a Resource (PATCH)

Lgfapi allows you to update specific fields on a limited number of entity resources using an HTTP PATCH request. Only the desired changes are to be passed in the body of the request using the "fields" section (very similar to a create resource (POST) request). The requesting user must have the "lgfapi_update_access" permission and must be eligible for the facility/company context of the data being modified. Successful modification will additionally update the object's "mod_ts" and "mod_user" fields.

The entities and fields that may be modified are limited at this time, with a few exceptions, to custom ("cust") fields, where supported. These fields are for "pass through" data that generally has no functional significance.

Updates are restricted to a single object per request and the "id" of the target object is required as part of the resource URL.

The following is an example URL to update a sales order:

PATCH .../wms/lgfapi/v10/entity/order_hdr/123/

Input Data

Data passed in the body of any PATCH request to the entity module requires the following structure and data conventions.

- Fields –Field data with target value for update.

The "fields" section is used to pass in the fields to update and the desired value. Any omitted fields will be unchanged.

JSON example of updating the values of multiple "cust" fields:

{

"fields": {

"cust_field_1": "A",

"cust_decimal_2: 1.234

}

}

Response Statuses

A non-paginated representation of the updated resource will be returned in the body of the HTTP response in the desired format.

- 200 – Ok

The resource was successfully updated.

- 400 - Bad Request

The request was invalid. This could be due to data validation failures, permission errors, or other missing or incomplete requirements.

ib_shipment

Field	Type	Description
cust_date_1	Date	
cust_date_2	Date	
cust_date_3	Date	
cust_date_4	Date	
cust_date_5	Date	
cust_decimal_1	Decimal	
cust_decimal_2	Decimal	
cust_decimal_3	Decimal	
cust_decimal_4	Decimal	
cust_decimal_5	Decimal	
cust_field_1	String	
cust_field_2	String	
cust_field_3	String	
cust_field_4	String	
cust_field_5	String	
cust_long_text_1	String	
cust_long_text_2	String	
cust_long_text_3	String	
cust_number_1	Integer	
cust_number_2	Integer	
cust_number_3	Integer	
cust_number_4	Integer	
cust_number_5	Integer	

cust_short_text_1	String	
cust_short_text_2	String	
cust_short_text_3	String	
cust_short_text_4	String	
cust_short_text_5	String	
cust_short_text_6	String	
cust_short_text_7	String	
cust_short_text_8	String	
cust_short_text_9	String	
cust_short_text_10	String	
cust_short_text_11	String	
cust_short_text_12	String	

ib_shipment_dtl

Field	Type	Description
cust_date_1	Date	
cust_date_2	Date	
cust_date_3	Date	
cust_date_4	Date	
cust_date_5	Date	
cust_decimal_1	Decimal	
cust_decimal_2	Decimal	
cust_decimal_3	Decimal	
cust_decimal_4	Decimal	
cust_decimal_5	Decimal	
cust_field_1	String	

Field	Type	Description
cust_field_2	String	
cust_field_3	String	
cust_field_4	String	
cust_field_5	String	
cust_long_text_1	String	
cust_long_text_2	String	
cust_long_text_3	String	
cust_number_1	Integer	
cust_number_2	Integer	
cust_number_3	Integer	
cust_number_4	Integer	
cust_number_5	Integer	
cust_short_text_1	String	
cust_short_text_2	String	
cust_short_text_3	String	
cust_short_text_4	String	
cust_short_text_5	String	
cust_short_text_6	String	
cust_short_text_7	String	
cust_short_text_8	String	
cust_short_text_9	String	
cust_short_text_10	String	
cust_short_text_11	String	
cust_short_text_12	String	

item_characteristics

Field	Type	Description
cust_attr_1	String	
cust_attr_2	String	

load

Field	Type	Description
cust_field_1	String	
cust_field_2	String	
cust_field_3	String	
cust_field_4	String	
cust_field_5	String	
cust_field_6	String	
cust_field_7	String	
cust_field_8	String	
cust_field_9	String	
cust_field_10	String	

location

Field	Type	Description
cust_field_1	String	
cust_field_2	String	
cust_field_3	String	

cust_field_4	String	
cust_field_5	String	

order_hdr

Field	Type	Description
cust_date_1	Date	
cust_date_2	Date	
cust_date_3	Date	
cust_date_4	Date	
cust_date_5	Date	
cust_decimal_1	Decimal	
cust_decimal_2	Decimal	
cust_decimal_3	Decimal	
cust_decimal_4	Decimal	
cust_decimal_5	Decimal	
cust_field_1	String	
cust_field_2	String	
cust_field_3	String	
cust_field_4	String	
cust_field_5	String	
cust_long_text_1	String	
cust_long_text_2	String	
cust_long_text_3	String	
cust_number_1	Integer	
cust_number_2	Integer	
cust_number_3	Integer	

Field	Type	Description
cust_number_4	Integer	
cust_number_5	Integer	
cust_short_text_1	String	
cust_short_text_2	String	
cust_short_text_3	String	
cust_short_text_4	String	
cust_short_text_5	String	
cust_short_text_6	String	
cust_short_text_7	String	
cust_short_text_8	String	
cust_short_text_9	String	
cust_short_text_10	String	
cust_short_text_11	String	
cust_short_text_12	String	
externally_planned_load_flg	Boolean	• Only valid if the order is less than Shipped status. • When updating the flag to false, any externally_planned_load_nbr values set on the corresponding order details will be removed.
stop_ship_flag	Boolean	• Update the stop_ship_flag on the order header if API call made is successful. • Allowed order statuses for setting the stop_ship_flag to true: Created, Partially Allocated, Allocated, In-Picking, Picked, In-Packing, Packed, Loaded. If order status is shipped or cancelled, then respond with error. • If order status is shipped or cancelled, then respond with error, other statuses should be ok.

order_dtl

Field	Type	Description
cust_date_1	Date	
cust_date_2	Date	
cust_date_3	Date	
cust_date_4	Date	
cust_date_5	Date	
cust_decimal_1	Decimal	
cust_decimal_2	Decimal	
cust_decimal_3	Decimal	
cust_decimal_4	Decimal	
cust_decimal_5	Decimal	
cust_field_1	String	
cust_field_2	String	
cust_field_3	String	
cust_field_4	String	
cust_field_5	String	
cust_long_text_1	String	
cust_long_text_2	String	
cust_long_text_3	String	
cust_number_1	Integer	
cust_number_2	Integer	
cust_number_3	Integer	
cust_number_4	Integer	
cust_number_5	Integer	
cust_short_text_1	String	

Field	Type	Description
cust_short_text_2	String	
cust_short_text_3	String	
cust_short_text_4	String	
cust_short_text_5	String	
cust_short_text_6	String	
cust_short_text_7	String	
cust_short_text_8	String	
cust_short_text_9	String	
cust_short_text_10	String	
cust_short_text_11	String	
cust_short_text_12	String	

purchase_order_hdr

Field	Type	Description
cust_field_1	String	
cust_field_2	String	
cust_field_3	String	
cust_field_4	String	
cust_field_5	String	

purchase_order_dtl

Field	Type	Description
cust_field_1	String	
cust_field_2	String	

cust_field_3	String	
cust_field_4	String	
cust_field_5	String	
stop_recv_flg	boolean	

work_order_hdr

Field	Type	Description
cust_field_1	String	
cust_field_2	String	
cust_field_3	String	
cust_field_4	String	
cust_field_5	String	

work_order_kit

Field	Type	Description
cust_field_1	String	
cust_field_2	String	
cust_field_3	String	
cust_field_4	String	
cust_field_5	String	

Pallet

In order to provide the key to identify the Pallet and update the Weight and Volume fields. a **PATCH** verb for the **Pallet** entity is available.

```
PATCH .../wms/lgfapi/entity/pallet/id/
```

where id = id of the pallet, which can be obtained using GET method

The following is a JSON sample of the request body:

```
{
"fields":
{
"lpn_type_id": "123",
"length": "45",
"width": "50.8",
"height": "70",
"actual_weight": "180"
}
}
```

You can update the following fields using the patch method:

Field	Type	Description
lpn_type_id	String	
length	String	
width	String	
height	String	
actual_weight	String	

Entity Operations (GET/POST)

Many entities offer specialized operations in order to assist users in more complicated, or performance intensive operations. These operations can act on one or more resources and may affect entities beyond the one(s) targeted in the request. The URLs may follow a “list” or “retrieve” styles:

Format for an entity operation URL evocable for a specific resource by “id”:

.../wms/lgfapi/v10/entity/{entity_name}/{id}/{operation_name}/

Format for a “bulk” entity operation URL evocable for potentially multiple resources:

.../wms/lgfapi/v10/entity/{entity_name}/{operation_name}/

Entity operations are invoked in the same manner as previously discussed for GET and POST requests. Each operation has its own URL tied to the entity. Entity operations that use a GET request are still for obtaining a representation in the response body and do not modify data. Entity operations that use POST requests trigger an action or series of actions on the entity that can change resource state.

Response Status

Entity operations follow the response statuses previously discussed for GET and POST request, with one addition:

- 204 – No Content

This HTTP response status is returned when the request was successfully fulfilled, but there is no additional content to return to the requester. Users should interpret this as success and expect the response body to be empty.

Bulk Operations

Entities may also support “bulk” operation that allow the same operation to be run on one or more resources within a single request. There are several key differences and additional options that apply to bulk operations.

Parameter Data Filtering

Since bulk operations are capable of acting on one or more objects in a single request, the request body’s “parameter” data is required. This data is a series of one or more filter conditions that will be applied to identify the target list of objects. Each operation may have its own allowed set of filter conditions that can be applied. This may include allowing users to filter on related objects and using complex lookups such as “in” by the same double underscore (“__”) notation as in a GET request’s filters.

> **Note:** all data is still automatically filtered by the user’s eligible facilities and companies and that the user is not permitted to run bulk operations on objects outside their allowed scope.

In general, all bulk operations allow for the filtering of objects by “id”. For example, a JSON request body’s parameters section for filtering on multiple object id’s would be:

{

“paramters”: {

“id__in”: [1, 2, 3]

}

}

Filtering on facility code and company code could be achieved by doing the following (assuming the entity and operation allow it):

{

“paramters”: {

“facility_id__code”: “FAC1”,

“company_id__code”: “COM1”

}

}

The maximum number of objects that may be acted upon in a single request is dictated by the requesting user's "Rows per Page" attribute. This is configurable per user but also applies in other areas of the application such as how many objects are returned per page in an lgfapi GET request, or in the UI when refreshing a page's data grid.

Commit Frequency

All bulk operations are provided this additional "options" integer input parameter (default = 0). This parameter allows the requester to dictate at what frequency the changes are applied to each resource or group of resources being processed.

The default value of 0 specifies that no updates are committed unless all resources are processed successfully (all or nothing). All changes are rolled back on the first error, and only the first error is reported back to the user using the stand response.

A value of 1 indicates that the changes should be committed per resource successfully processed. Any error will only cause a failure and roll back of changes for the specific resource that failed. All errors will be accumulated and returned in the standardized bulk response format (see below).

Although a value > 1 is permitted, it is not advised that customers use this unless instructed to do so by support. This is typically only used for more advanced or larger data processing scenarios and for certain performance considerations.

Response Status and Content

When the commit frequency is 0, the bulk operations will give the standard error response format as previously documented, if any error is found. However, a different response status and standardized format is provided on total success or when the commit frequency value is > 0:

A 200 – OK response is returned for bulk operations along with a standardized bulk response having the following attributes:

- record_count – Total number of resources processed in the request.
- success_count – Number of successfully processed resources.
- failure_count – Number of unsuccessfully processed resources.
- details – A nested dictionary (key/value map) that provides additional details for any resources that failed during the processing of the operation.
    - The key to identify each resource and it's failure is by default the resource's unique "id" value. However, a different identifying key may be returned per operation, as documented.
    - If no details are provided, the value will be null.

The following is a JSON example where 2 objects were processed, but one (having id=123) failed:

{

"record_count": 2,

"success_count": 1,

"failure_count": 1,

"details": {

123: “Invalid status.”

}

}

4 Supported Entity Operations

Inventory

Link Serial Numbers

POST .../wms/lgfapi/v10/entity/inventory/{id}/link_serial_nbrs/

This operation is used to link one or more serial numbers to a single inventory record. The “id” value of the target inventory record is required in the URI.

Category	Parameter	Type	Required	Default	Description
options	serial_nbr_list	Array of Strings	X		A list of serial number strings to be linked to the target inventory record.

Bulk Update Inventory Attributes

POST .../wms/lgfapi/v10/entity/inventory/bulk_update_inventory_attributes/

This operation is used to update the inventory attributes of one or more inventory objects. Inventory in a Received or Located IBLPN and inventory in an active location may be modified. Inventory history adjustment records will be written for each inventory record successfully modified.

The attributes individually are not necessarily required, but in total at least one attribute must be provided to indicate a change. Additionally, an attribute value may or may not be required as dictated by other configuration such as the corresponding item’s attribute requirements or the location allowing mixing of attributes. Furthermore, the inventory cannot be or have been allocated.

An empty string is a valid value to indicate removing the value from the corresponding attribute. Any attribute that is omitted from the request data will retain its current value.

The “parameters” section of the request body is required in addition to the “options” section outlined below. Only the “id” parameter filter is valid. It may be used as “id__in” with an array of values.

Category	Parameter	Type	Required	Default	Description
options	invn_attr_a	String	C		Target attribute value.
options	invn_attr_b	String	C		Target attribute value.
options	invn_attr_c	String	C		Target attribute value.
options	invn_attr_d	String	C		Target attribute value.
options	invn_attr_e	String	C		Target attribute value.

Category	Parameter	Type	Required	Default	Description
options	invn_attr_f	String	C		Target attribute value.
options	invn_attr_g	String	C		Target attribute value.
options	invn_attr_h	String	C		Target attribute value.
options	invn_attr_i	String	C		Target attribute value.
options	invn_attr_j	String	C		Target attribute value.
options	invn_attr_k	String	C		Target attribute value.
options	invn_attr_l	String	C		Target attribute value.
options	invn_attr_m	String	C		Target attribute value.
options	invn_attr_n	String	C		Target attribute value.
options	invn_attr_o	String	C		Target attribute value.
options	commit_frequency	Integer		1	0 = Roll back on first error. 1 = Commit per object.

Delink Serial Numbers

The **Delink Serial Numbers** API allows users to delink a list of serial numbers from an existing inventory in order for the system to write appropriate serial number records.

> **Note:** Every serial number that is delinked from the targeted inventory should have corresponding serial Number History records. The Serial Number History UI should display the serial number with delinked action codes for IBLPN, OBLPN, and Active inventories.

You can delink a serial number using the following POST request:

POST .../{version}/entity/inventory/{id}/delink_serial_nbrs/

Additional details for this API include:

- The delinking is successful for IBLPN and OBLPNs when the 'SERIAL_NUMBER_TRACKING_LEVEL' company parameter is set to 2.
- The delinking is successful for only OBLPNs when the 'SERIAL_NUMBER_TRACKING_LEVEL' company parameter is set to 1.
- The delink process is successful if the targeted inventory is non-decimal tracked.
- The system returns an error message if the targeted inventory is not linked with any serial number.
- The delink process is unsuccessful if the inventory associated with any LPN is either in Consumed, Shipped, Delivered, Cancelled, or Lost status.
- The corresponding serial number history for delinking is recorded in the SerialNbrHistoryView UI screen for serial numbers that are delinked from IBLPNs/OBLPNs/Active inventories.

Sample Data format JSON

```
{
    "options" : {
        "serial_nbr_list": [
            "SN1",
            "SN2",
            "SN3"
        ]
    }
}
```

XML

```
<request>
<options>
<serial_nbr_list>
<list-item>SN1</list-item>
<list-item>SN2</list-item>
<list-item>SN3</list-item>
</serial_nbr_list>
</options>
</request>
```

Get Inventory History

The **Inventory History** API allows you to query inventory histories for default Companies and Facilities configured for the user. Previously, inventory history was not supported or exposed as an entity in lgfapi. Now, users can fetch the inventory history as an entity since it has been exposed to the lgfapi.

You can get inventory history details with paginated results using the following GET request:

```
GET...../entity/inventory_history
To fetch non-paginated result by specific 'ID':
GET...../entity/inventory_history/{id}
```

To fetch paginated result by query string parameters:

```
GET...../entity/inventory_history?key1=value1&key2=value2
```

To check for object existence or modification:

- `HEAD .../entity/inventory_history?key1=value1&key2=value2`
- `HEAD .../entity/inventory_history/{id}`

Query String Parameters

Since inventory history is a large table, to avoid performance issues, certain combinations of query string fields are required when querying using query parameters. One of the following combinations must be used (in addition to any other field):

- company_code, facility_code, group_nbr
- company_code, facility_code, history_activity_id, status_id

- company_code, facility_code, history_activity_id, item_code
- company_code, facility_code, history_activity_id, item_alternate_code
- company_code, facility_code, history_activity_id, container_nbr

Describe Entity

GET .../wms/lgfapi/v10/entity/{entity_name}/describe/

The describe operation is unique in that it is common and can be used on any entity. It returns a formatted representation of the entity's metadata including any filterable "parameters" and all field definitions. This is the primary tool for obtaining details about a specific entity.

Response components:

- parameters – A list of fields that can be used for filtering of the entity.
- fields – Field definitions and metadata for the entity.
  - type – The field data type
  - allow_blank – String fields only. Is an empty string value permitted?
  - max_length – String fields only. Max string length permitted.
  - required – Does the field require data.
  - default – If the fields is not required, the default value when no value is provided.

Location

These topics give descriptions for APIs that complete actions related to location in the Warehouse.

Related Topics

- update_active_inventory

update_active_inventory

The update_active_inventory API allows you to adjust the inventory quantity in an active location for a specific item. Only a single location and item may be updated per request.

> **Note:** This is a new API meant to replace the existing legacy `update_active_inventory `API. The legacy API will eventually be retired so no further enhancements will be made to it. New functionality will instead be added to this API as part of the lgfapi suite.

Regardless of the method used to identify the location, the following input is valid:

Category	Name	Type	Required	Description
options	item_barcode	String	C	Item identifier.
options	item_code	String	C	Item identifier.
options	item_alternate_code	String	C	Item identifier.
options	adjustment_qty	Numeric	C	Non-zero adjustment quantity.
options	actual_qty	Numeric	C	Non-negative final quantity.
options	batch_nbr	String	N	Batch tied to target inventory.
options	expiry_date	Date	N	Expiration date tied to target inventory.
options	invn_attr_X	String	N	Attributes A-O tied to the inventory.
options	reason_code	String	Y	Recorded on inventory history.
options	transaction_ref_nbr	String	N	Recorded on inventory history.
options	locn_capacity_check_flg	Boolean	N	Validate locations max units and volume?
options	company_id	Integer	N	Item's company.
options	company_code	String	N	Item's company's code.

- Only one of `item_barcode`, `item_code`, or `item_alternate_code` is allowed.
- Only one of `actual_qty` or `adjustment_qty` is allowed.
- If positive change in quantity:
  - The provided `batch_nbr` will be created if it does not exist.
- Only one of `company_id` or `company_code` is allowed.
  - Although not required by the API, the company context may be necessary if there is ambiguity when identifying the item to adjust. This is common in 3PL scenarios where the same identifying information may be present for different items across companies for which the user is eligible.

Location Lookup by ID

```
POST
 .../entity/location/{id}/update_active_inventory/
```

The caller knows the unique `id` value of the active location, which is added to the request URL. No additional `parameters` data is required from the request body.

Location Lookup by Filters

```
POST .../entity/location/update_active_inventory/
```

Category	Name	Type	Required	Description
parameters	barcode	String	Y	Location's barcode.
parameters	facility_id	Integer	N	Location's facility.

- Only a single location may be updated per request.
  - The `__in `lookup is not supported for `barcode`.
- `facility_id `supports string lookup by `code `using the double-underscore notation:
  - facility_id__code

Example Request Body:

```
{
    "parameters": {
        "facility_id__code": "FAC-1",
        "barcode": "LOCN1"
    },
    "options": {
        "item_barcode": "ITEM1234",
        "adjustment_qty": -10,
        "batch_nbr": "BATCH1234",
        "expiry_date": "2020-01-02",
        "invn_attr_a": "A",
        "invn_attr_b": "B",
        "reason_code": "RC",
        "transaction_ref_nbr": "TX123457890",
        "company_code": "COM-1"
    }
}
```

Item

These topics give descriptions for APIs that complete actions related to items in the Warehouse.

Related Topics

- Image Upload

Image Upload

The image_upload API allows you to update an image either by Item ID or Item by Filter.

Assumptions

- Only one item may be updated per request.
- An error will be returned if no items are found.
- An error will be returned if more than one item is found.

Item by ID

```
POST .../entity/item/{id}/image_upload/
```

Item by Filters

```
POST .../entity/item/image_upload/
```

Supported Item Filter Attributes

The "parameters" section of the request body supports item filters when using this URL style.

- company_id (Required)
  - This additionally allows filtering on company code: "company_id__code"
- barcode
- part_a
- part_b
- part_c
- part_d
- part_e
- part_f
- item_alternate_code

Example Request Body Parameters

```
{
    "parameters": {
        "company_id__code": "COM1",
        "barcode": "ABC123"
    }
}
```

Request Image Data

Regardless of which URL is used, the image data is passed in the request body's "options" section in the "image_data" key. Data is required to be base64 encoded.

Example Request body options:

```
{
```

```
    "options": {
        "image_data": "ABC123"
    }
}
```

Trailer

These topics give descriptions for APIs that complete actions related to trailers and the Warehouse.

Related Topics

- First Available
- locate_to_yard
- remove_from_yard

First Available

The first_available API allows you to identify yard locations with available capacity. After fetching this API, you will get the first yard location with capacity based on the yard location putaway sequence. If the putaway sequence is not configured, the fetch will display according to the yard location pick sequence. After you get the location, you can use the locate to yard API to update the trailer location to the yard.

Identify yard location by capacity:

```
GET
 .../entity/location/yard/first_available
```

Request

The following are the Query String Filters for this API:

Name	Required	Type	Default	Description
facility_id		String		Facility context by id.
facility_id__code		String		Facility context by code.

- Only one of "facility_id" or "facility_id__code" is allowed per request.
- If no additional context is provided, the user's default facility/company will be used.

Example Requests

```
GET
 .../entity/location/yard/first_available?facility_id=1
```

The following is an example GET request for facility ID:

```
GET
 .../entity/location/yard/first_available?facility_id=1
```

The following is an example GET request for facility ID code:

GET .../entity/location/yard/first_available?facility_id_code=STRAJB01

locate_to_yard

The locate_to_yard API allows the caller to update a trailer's location to or within the yard.

Regardless of the method used to identify the trailer, the following input is valid:

Category	Name	Type	Required	Description
options	location_barcode	String	Y	Barcode of yard location.

Trailer Lookup by ID

```
POST
 .../entity/trailer/{id}/locate_to_yard/
```

The caller knows the unique `id` value of the trailer, which is added to the request URL. No additional `parameters` data is required from the request body.

Example Request Body:

```
{
    "options": {
        "location_barcode": "LOCN-1"
    }
}
```

Trailer Lookup by Filters

```
POST .../entity/trailer/locate_to_yard/
```

Category	Name	Type	Required	Description
parameters	trailer_nbr	String	Y	Trailer number to be moved.
parameters	company_id	Integer	N	Trailer's company.

- Only a single trailer may be moved per request.
  - The `__in` lookup is not supported for `trailer_nbr`.
- `company_id` additionally supports string lookup by `code` using the double-underscore notation:

- company_id__code

Example Request Body:

```
{
    "options": {
        "location_barcode": "LOCN-1"
    },
    "parameters": {
        "facility_id": 1,
        "company_id__code": "COM-1",
        "trailer_nbr": "TRLR-1"
    }
}
```

remove_from_yard

The **remove_from_yard** API allows the caller to release a trailer from its current yard location.

Trailer Lookup by ID

```
POST .../entity/trailer/{id}/remove_from_yard/
```

The caller knows the unique `id` value of the trailer, which is added to the request URL. No additional `parameters` data is required from the request body.

Trailer Lookup by Filters

```
POST .../entity/trailer/remove_from_yard/
```

Category	Name	Type	Required	Description
parameters	trailer_nbr	String	Y	Trailer number to be removed.
parameters	facility_id	Integer	N	Trailer's facility.
parameters	company_id	Integer	N	Trailer's company.

- Only a single trailer may be moved per request.
  - The `__in` lookup is not supported for `trailer_nbr`.
- `facility_id` and `company_id` both additionally support string lookup by `code` using the double-underscore notation:
  - facility_id__code
  - company_id__code

Example Request Body:

```
{
    "parameters": {
        "facility_id": 1,
        "company_id__code": "COM-1",
        "trailer_nbr": "TRLR-1"
    }
}
```

Load

These topics give descriptions for APIs that complete actions related to Loads in the Warehouse.

Related Topics

- check_in
- check_out
- Ship Load

check_in

The check_in API allows the caller to check-in an inbound or outbound load to a dock door.

Regardless of the method used to identify the load, the following input is valid:

Category	Name	Type	Required	Description
options	dock_nbr	String	Y	Dock door for check-in.

Load Lookup by ID

```
POST .../entity/load/{id}/check_in/
```

The caller knows the unique `id` value of the trailer, which is added to the request URL. No additional `parameters` data is required from the request body.

Example Request Body:

```
{
    "options": {
        "dock_nbr": "DOCK-1"
    }
}
```

Load Lookup by Filters

```
POST .../entity/load/check_in/
```

Category	Name	Type	Required	Description
parameters	load_nbr	String	Y	Load for check-in.
parameters	facility_id	Integer	N	Load's facility.
parameters	company_id	Integer	N	Load's company.

- Only a single load may be moved per request.
  - The `__in` lookup is not supported for `load_nbr`.
- `facility_id` and `company_id` both additionally support string lookup by `code` using the double-underscore notation:
  - facility_id__code
  - company_id__code

Example Request Body:

```
{
    "parameters": {
        "facility_id__code": "FAC-1",
        "company_id__code": "COM-1",
        "load_nbr": "LOAD-1"
    },
    "options": {
        "dock_nbr": "DOCK-1"
    }
}
```

check_out

The **check_out** API allows the caller to check-out an inbound or outbound load from a dock door.

Load Lookup by ID

```
POST .../entity/load/{id}/check_out/
```

The caller knows the unique `id` value of the trailer, which is added to the request URL. No additional `parameters` data is required from the request body.

Load Lookup by Filters

```
POST .../entity/load/check_out/
```

Category	Name	Type	Required	Description
parameters	load_nbr	String	Y	Load for check-in.
parameters	facility_id	Integer	N	Load's facility.

parameters	company_id	Integer	N	Load's company.

- Only a single load may be moved per request.
  - The `__in `lookup is not supported for `load_nbr`.
- `facility_id `and `company_id `both additionally support string lookup by `code `using the double-underscore notation:
  - facility_id__code
  - company_id__code

Example Request Body:

```
{
    "parameters": {
        "facility_id__code": "FAC-1",
        "company_id__code": "COM-1",
        "load_nbr": "LOAD-1"
    }
}
```

Ship Load

The **Ship Load** API allows you to ship a load by uploading the load via ID or filter.

Category	Name	Required	Type	Description
parameters	load_nbr	X	string	Load for shipping
parameters	facility_id		Integer	Facility context by id
parameters	facility_id__code		string	Facility context by code
parameters	company_id		Integer	Company context by id
parameters	company_id__code		string	Company context by code

Load Lookup by ID

```
POST .../entity/load/{id}/ship/
```

- No additional `parameters `data in the request body is required.

Load Lookup by Filters

```
POST .../entity/load/ship/
```

Example Request Body:

```
{
  "parameters": {
      "facility_id__code": "FAC-1",
      "company_id__code": "COM-1",
      "load_nbr": "LOAD-1"
   }
}
```

This API includes the following features:

- Supports the ship load transaction for a load that is in the Loaded/ Loading Started /Checked Out status.
- An error is displayed if the load is in a "Cancelled", "Ship Load In Progress", or "Shipped" status.
- The shipload transaction can be performed either by providing the id or code for the company/facility along with the load number.
- A Ship Load confirmation file is generated after the load is shipped.

Once a load is shipped via the Ship Load API, the following applies to Inventory History Transaction (IHT) records:

- Inventory history **IHT -3 '3 - Container Shipped'** is written with respect to each container present on the load.
- For shipped loads with OBLPNs associated with asset inventory history, **IHT- 58 '58 - Asset Shipped'** is written with respect to each OBLPN associated with an asset.
- Inventory history **IHT- 60 '60 - Load Shipped File'** is written for the outbound Load shipped.

The **Ship Load** API supports the following validations:

Ship Load API supports Order type with "Single Order on multiple Loads':

- If "Single Order on multiple Loads" is set to "Do not Allow" in the order type, the system displays the error message: "Load has Order/s marked to Prevent one order on different loads with Error."
- When an order is in Packed status but only some of the packed OBLPNs are loaded.
- When an order is in Packed status but some OBLPNs are loaded to different loads.
- For OBLPNs with pending audit if the Company parameter "ALLOW_LOAD_SHIP_WITH_AUDIT_PENDING" is set to no.

Company Parameter REQD_FIELDS_FOR_SHIPPING is defined:

- When the required fields configured for the parameter 'REQD_FIELDS_FOR_SHIPPING ' are not defined for the targeted load.
- When one of the container item on the load is serial number tracked and the number of serial numbers allocated do not match with the count of serial numbers present in the container.

Serial Number Validations

- If company parameter ALLOW_LOAD_SHIP_WITH_AUDIT_PENDING = False and company parameter SERIAL_NUMBER_TRACKING_LEVEL is 1 or 2
- If company parameter SERIAL_NUMBER_TRACKING_LEVEL is 0 or Non serial tracked items exist and company parameter ALLOW_LOAD_SHIP_WITH_AUDIT_PENDING = False
- This API will not show you any warning message like the UI or RF, and it will proceed with the Ship Load transaction.
- The Ship Load API does not generate multiple outbound files.

Container

These topics give descriptions for APIs that complete actions related to containers in the Warehouse.

The “iblpn” and “oblpn” entities are derived from the “container” entity and have access to all of the following entity operations, in addition to their own.

Related Topics

- Get Sales Orders
- Lock Container
- Bulk Lock Container
- Unlock Container
- Palletize Container
- Depalletize Inbound / Outbound LPN

Get Sales Orders

GET .../wms/lgfapi/v10/entity/container/{id}/orders/

Returns a paginated representation of “order_hdr” entities for all sales order(s) allocated against the inbound or outbound container.

Lock Container

POST .../wms/lgfapi/v10/entity/container/{id}/lock/

Apply one or more inventory locks to the target inbound or outbound container.

Category	Parameter	Type	Required	Default	Description
options	lock_code_list	Array of Strings	X		Inventory lock code(s) to be applied.

Bulk Lock Container

POST .../wms/lgfapi/v10/entity/container/bulk_lock/

Apply one or more inventory locks to one or more inbound or outbound container(s).

The “parameters” section of the request body is required in addition to the “options” section outlined below. Only the “id” parameter filter is valid. It may be used as “id__in” with an array of values.

Category	Parameter	Type	Required	Default	Description
options	lock_code_list	Array of Strings	X		Inventory lock(s) to be applied.
options	commit_frequency	Integer		1	0 = Roll back on first error. 1 = Commit per object.

Unlock Container

POST .../wms/lgfapi/v10/entity/container/{id}/unlock/

Remove one or more inventory locks to the target inbound or outbound container.

Category	Parameter	Type	Required	Description
options	lock_code_list	Array of Strings	X	Inventory lock code(s) to be removed.

Bulk Unlock Container

POST .../wms/lgfapi/v10/entity/container/bulk_unlock/

Remove one or more inventory locks from one or more inbound or outbound container(s).

The “parameters” section of the request body is required in addition to the “options” section outlined below. Only the “id” parameter filter is valid. It may be used as “id__in” with an array of values.

Category	Parameter	Type	Required	Default	Description
options	lock_code_list	Array of Strings	X		Inventory lock(s) to be removed.
options	commit_frequency	Integer		1	0 = Roll back on first error.

					1 = Commit per object.

Palletize Container

POST .../entity/container/{id}/palletize/

Allows you to palletize an Inbound or Outbound LPN.

The “parameters” section of the request body is required in addition to the “options” section outlined below. Only the “id” parameter filter is valid. It may be used as “id__in” with an array of values.

Category	Name	Required	Type	Description
parameters	Container_nbr	X	String	IB or OB LPN to be linked. “_in” lookup is not supported.
parameters	Facility_id		Integer	Container’s facility
Parameters	Company_id		Integer	Container’s company

Example

```
{
    "parameters": {
        "facility_id": 1,
        "company_id": 1,
        "container_nbr": "LPN-1"
    }
}
```

- Both `facility_id` and `company_id` also support filtering on `code` as well.

Category	Name	Required	Type	Description
parameters	Facility_id		string	Container’s facility
Parameters	Company_id		string	Container’s company

{

"parameters": {

"facility_id__code": "FAC-1",

"company_id__code": "COM-1",

"container_nbr": "OBLPN-1"

}

}

Functional Request Data

Category	Name	Required	Type	Default	Description
options	pallet_nbr	X	string		Pallet number to be used for palletizing IB or OBLPN's.
options	pallet_position		string		Position of Inbound or OBLPN during palletization.
options	allow_mix_pa_types_flg		boolean	False	whether to allow mixing of LPN's with different PA types on a single pallet.
options	allow_mix_dest_shipto		string		valid values to be passed are • Validate Ship To • Validate Destination • Validate Ship To and Destination • Ignore Ship To and Destination

{

"options": {

"pallet_nbr": "PLT001",

"pallet_position": "01",

"allow_mix_pa_types_flg": false

"allow_mix_dest_shipto": Ignore Ship To and Destination

}

}

Depalletize Inbound / Outbound LPN

Pick-Pack

These topics give descriptions for APIs that complete actions related to picking and packing in the Warehouse.

Related Topics

- Pick Confirm
- Close LPN
- Wave Complete

Pick Confirm

The Pick Confirm API allows you to perform cubed or non cubed picking.

> **Note:** This is a new API meant to replace the existing legacy `pick_confirm `API. The legacy API will eventually be retired so no further enhancements will be made to it. New functionality will instead be added to this API as part of the lgfapi suite.

This API supports features of the legacy API including the following new parameters:

- **mhe_mode_flg** - true/false; default true
- **async_flg** - true/false; default true
- **short_flg** - true/false; default false
- Replaces using the legacy "action_code" = "SHORT".

Pick Confirm API can be called using the following POST request:

```
POST ..lgfapi/v10/pick_pack/pick_confirm/
```

Request Parameters

Pick List

These represent the parameters required for a single pick/short:

Name	Required	Type	Default	Description
facility_id		Integer		Facility context by id.
facility_id__code		String		Facility context by code.
company_id		Integer		Company context by id.
company_id___code		String		Company context by code.
wave_nbr	X	String		Associated wave.
order_nbr	X	String		Associated sales order.
item_alternate_code	C	String		Item identifier.

item_barcode	C	String		Item identifier.
qty	X	Number	0	Quantity to be acted upon.
batch_nbr		String		Inventory batch/lot.
uom_qty		Number		Filter on Case or Pack quantity when searching for allocations.
allocation_uom		String		"UNITS", "PACKS", or "CASES".
reason_code		String		Reason for short.
pick_location	C	String		From location.
from_container_nbr	C	String		From container.
to_container_nbr	C	String		LPN inventory is packed into. Not required for short.
update_inventory_on_short_flg		Boolean	False	Also short source inventory on pick short?
close_container_status		String	"packed"	Final OBLPN status: "picked" or "packed".
short_on_close_flg		Boolean	False	Should any remaining unpacked quantity shorted?
mhe_system_code	C	String		MHE system.
short_flg		Boolean	False	Is this a short?

Validations

- Facility must be in user's eligible facilities and not be ambiguous.
- Possible if there is a Store and a DC with the same code.
- Company must be in user's eligible companies.
- If facility or company context is not included in the input parameters, user defaults are used.
- User cannot pass both "facility_id" and "facility_id__code" in the same request.
- User cannot pass both "company_id" and "company_id__code" in the same request.
- "mhe_system_code" is required if "mhe_mode_flg" is True.
- Only one of "item_alternate_code" or "item_barcode" is allowed.
- Only one of "pick_location" or "from_container_nbr" is allowed.
- "to_container_nbr" is required for "pick" operation, but is not required for "short".

Request-Level Flags

Name	Required	Type	Default	Description

mhe_mode_flg		Boolean	True	When true, enforce that "mhe_system_code" is provided.
async_flg		Boolean	True	Run API asynchronously?

The following is an example JSON request:

{
"mhe_mode_flg": false,
"async_flg": false,
"pick_list": [{
"facility_id__code": "FAC",
"company_id": 1,
"wave_nbr": "WAVE001",
"order_nbr": "ORDER001",
"item_barcode": "ITEM1234",
"qty": 10,
"from_container_nbr": "IBLPN0001",
"to_container_nbr": "OBLPN0001",
"short_flg": false
}]
}

The following is an example XML request:

<request>
<mhe_mode_flg>false</mhe_mode_flg>
<async_flg>false</async_flg>
<pick_list>
<list-item>
<facility_id__code>FAC</facility_id__code>
<company_id>1</company_id>
<wave_nbr>WAVE001</wave_nbr>
<order_nbr>ORDER001</order_nbr>
<item_barcode>ITEM1234</item_barcode>
<qty>10</qty>

<from_container_nbr>IBLPN0001</from_container_nbr>

<to_container_nbr>OBLPN0001</to_container_nbr>

<short_flg>false</short_flg>

</list-item>

</pick_list>

</request>

Close LPN

The close_lpn API allows you to close an LPN during picking/packing. This API replaces the legacy pick confirm API when the action code is closed. While performing pick and pack operations (either non cubed active picking or cubed picking), the Close action code indicates to WMS that the Outbound LPN being picked needs to be closed.

> **Note:** This is a new API meant to replace the existing legacy `close_lpn `API. The legacy API will eventually be retired so no further enhancements will be made to it. New functionality will instead be added to this API as part of the lgfapi suite.

This API supports features of the legacy API including the following new parameter:

- **async_flg** - true/false; default true

Close LPN API can be called using the following POST request:

```
POST ..lgfapi/v10/pick_pack/close_lpn/
```

Request Parameters

The following table provides details about the query string parameters:

Name	Required	Type	Default	Description
facility_id		Integer		Facility context by id.
facility_id__code		String		Facility context by code.
company_id		Integer		Company context by id.
company_id__code		String		Company context by code.
to_container_nbr	X	String		To OBLPN.
close_container_status		String	"packed"	Final OBLPN status: "picked" or "packed".
short_on_close_flg		Boolean	False	Should any remaining unpacked quantity shorted?
update_inventory_on_short_flg		Boolean	False	Also short source inventory on pick short?

reason_code		String		Reason for short.
async_flg		Boolean	True	Run API asynchronously?

The following is an example JSON request:

{

"facility_id__code": "FAC",

"company_id": 1,

"to_container_nbr": "OBLPN001",

"close_container_status": "picked",

"short_on_close_flg": true,

"async_flg": true

}

Wave Complete

The Wave Complete API replaces the legacy API when the action code is Complete. This is an indicator to inform WMS that all picks are completed for that wave, and there are no more picks outstanding.

> **Note:** This is a new API meant to replace the existing legacy `close_lpn `API. The legacy API will eventually be retired so no further enhancements will be made to it. New functionality will instead be added to this API as part of the lgfapi suite.

This API supports features of the legacy API including the following new parameter:

- **async_flg** - true/false; default true
  - When false:
    - Instead of submitting a celery task at the end for later processing, it should be immediately processed and a response returned.
    - On success, return a 204 - "No Content" HTTP response status with no response body.
    - When true: Return HTTP response status 202 - "Accepted" with no response body.
      - Signals that we received the request and it was successfully submitted for processing.

The Wave Complete API can be called using the following POST request:

```
POST ..lgfapi/v10/pick_pack/wave_complete/
```

The following table provides details about the query string parameters:

Name	Required	Type	Default	Description
facility_id		Integer		Facility context by id.
facility_id__code		String		Facility context by code.

company_id		Integer		Company context by id.
company_id___code		String		Company context by code.
wave_nbr	X	String		Associated wave.
update_inventory_on_short_flg		Boolean	False	Also short source inventory on pick short?
close_container_status		String	"packed"	Final OBLPN status: "picked" or "packed".
reason_code		String		Reason for short.
mhe_system_code		String		MHE system.
async_flg		Boolean	True	Run API asynchronously?

The following is an example JSON request JSON:

{

"facility_id__code": "FAC",

"company_id": 1,

"wave_nbr": "WAVE001",

"update_inventory_on_short_flg": true,

"async_flg" true

}

Get Next Pick

The Get Next Pick REST API allows you to pick inventory based on the location pick sequence during picking from the Oracle WMS Cloud Mobile App or an external system using WMS APIs. This API follows the same underlying logic used in the text based Mobile RF picking transaction.

> **Note:** The Oracle WMS Cloud Mobile App is one example of where this API will be leveraged. However, this API can be used in other scenarios.

The Get Next Pick API should give one pick from allocation records based on the location pick sequence when there are multiple allocation records that exist for a given Order/OBLPN.

The following is a sample GET request for Get Next Pick:

- GET .../entity/allocation/get_next_pick

Sample request for get next pick based on OBLPN:

- GET .../entity/allocation/get_next_pick?container_nbr=

Sample request for get next pick based on Order Number:

- GET .../entity/allocation/get_next_pick?order_nbr=

Get Reponse:

- Get next pick should give information associated with the inventory that is getting picked including:
  - **Order Number** : Order number against which the inventory is getting picked
  - **Destination Facility**: For Store Order Destination facility associated with the order
  - **Customer Name:** For Customer Order Customer name associated with the order
  - **IBLPN**: IBLPN number from which the inventory that needs to picked
  - **OBLPN**: OBLPN number in which the respective inventory is getting picked
  - **Location**: Location from which the inventory is getting picked (Active/ Reserve)
  - **Item Code** : Respective Item Code
  - **Item Alternate Code**: Respective Alternate Item Code
  - **Inventory Attributes (A-O)** : Attributes associated with the inventory.
  - **Batch Number**: Batch number associated with the inventory.
  - **Expiry Date**: Expiry date associated with the inventory.
  - **Quantity** : Pending quantity that needs to be picked for respective allocation record (Allocated Qty - Packed Qty)

Task

These topics give descriptions for APIs that complete actions related to tasks in the Warehouse.

Related Topics

- Next Task

Next Task

The next_task API allows you to determine the next task via an API operation.

You can search for the next task using the following GET request:

```
GET .../entity/task/next_task
```

The following table provides details about the query string parameters:

Name	Required	Type	Default	Description
facility_id		Integer		Facility context by id.
facility_id__code		String		Facility context by code.
location_barcode		String		User's current location.
task_type		String		Required task type.
ordering_rule		String		Order tasks by rule name.

Facility ID/Facility Code

- If a value isn't provided, the user's default facility context will be used.
- Task look up is done relative to the user's facility and eligible company contexts.

Location Barcode

- If provided, search for task within the same location area (if available) and/or pick sequence (if available).

Task Type

- If provided, search for task only of the given type.

Ordering Rule

- If provided, order the found tasks by the corresponding field(s) and return the top result.
- The value accepted by the API is that of the Task Ordering Rule's description.

The following is an example GET request using location barcode:

```
GET .../entity/task/next_task?
location_barcode=MY_LOCN_BRCD&task_type=MY_TASK_TYPE&ordering_rule=MY_RULE
```

IBLPN

These topics give descriptions for APIs that complete actions related to IBLPNs in the Warehouse.

The “iblpn” entity is derived from the “container” entity and therefore also has access to all of its entity operations, in addition to the following:

Related Topics

- direct_consume
- modify_item_qty

direct_consume

POST .../wms/lgfapi/v10/entity/iblpn/{id}/direct_consume/

Category	Parameter	Type	Required	Default	Description
options	reason_code	String	X		Used for inventory history tracking.

Consume a Received or Located IBLPN and update its inventory to zero. This will write IBLPN consumed inventory history records.

direct_consume

The `options`parameters, `transaction_ref_nbr`, may now be passed in the request body. This parameters will be added to any CNTR_CONSUMED inventory history records created as part of the API’s execution. The inventory history field `ref_code_3`will now be set as “TRN”. The value of `ref_value_3`will be that of `transaction_ref_nbr`or an empty string.

Category	Name	Type	Required	Description
options	transaction_ref_nbr	String	N	Max length of 250 characters.

Example Request Body:

```
{
    "options": {
        "reason_code": "IT",
        "transaction_ref_nbr": "TX12345"
}
}
```

Composite Create

POST .../wms/lgfapi/v10/entity/iblpn/composite_create/

This operation allows for the creation of a Received or Located IBLPN along with one or more inventory records in a single request. Furthermore, it allows for the creating and/or association of the inventory's corresponding batch and inventory attribute, where applicable. This API follows all of the same validations and extended actions, such as writing inventory history, as the standalone create (POST) APIs for each entity, but brings them together in a single API.

Furthermore, this API takes advantage of allowing for the input of nested data, such as batch and inventory attribute, which will allow for those objects to be created or retrieved if they already exist. The use of the related objects "id" value is still permitted as well. All objects must have the same facility and company context as the IBLPN being created, and must still pass all standard user eligibility validations.

This API also has unique data structure requirements that mimic those of the individual entity's create (POST) field inputs. It also allows for the definition of a global context where "facility_id" and "company_id" may be defined at the top level of the data and inherited by each object, if not defined on the object.

Category	Parameter	Type	Required	Default	Description
fields	facility_id	Integer	C		"id" value of Facility. Not required if defined on the IBLPN or per object.
fields	company_id	Integer	C		"id" value of Company. Not required if defined on the IBLPN or per object.
fields	iblpn	Dictionary	X		Field value definitions for the IBLPN being created. These are the same as if using a standalone POST request for creating an IBLPN.
fields	inventory	Array	X		A list of one or more inventory objects to be

					created and associated with the given IBLPN.
options	reason_code	String	X		Used for inventory history tracking.

The following is an example of JSON request data where the facility/company context is defined at the top level and using the “id” values of “batch_number_id” and “invn_attr_id” to associate those objects that already exist. The defined top-level facility and company will be applied to the iblpn and inventory objects being created. The existing batch and inventory attribute objects being associated to the inventory must be of the same context.

> **Note:** even though “inventory” does not have a “company_id” field, the company is determined from the associated item’s company and must also pass validations.

```
{
"fields": {
"facility_id": 1,
"company_id": 1,
"iblpn": {
"container_nbr": "IBLPN000001",
"status_id": 30,
"curr_location_id": 28536
},
"inventory": [
{
"item_id": 1,
"curr_qty": 1.2345,
"batch_number_id": 1,
"invn_attr_id": 1
}
]
},
"options": {
"reason_code": "IT"
}
}
```

The following is an example of JSON request data where the facility/company context is defined per object and using the “id” values of “batch_number_id” and “invn_attr_id” to associate those objects that already exist. Also demonstrates creating multiple inventory records for different item/batch/attribute combinations in a single IBLPN:

{

"fields": {

"iblpn": {

"facility_id": 1,

"company_id": 1,

"container_nbr": "IBLPN000002",

"status_id": 10

},

"inventory": [

{

"facility_id": 1,

"item_id": 1,

"curr_qty": 1.2345,

"batch_number_id": 1,

"invn_attr_id": 1

},

{

"facility_id": 1,

"item_id": 2,

"curr_qty": 10,

"batch_number_id": 2,

"invn_attr_id": 2

}

]

},

"options": {

"reason_code": "IT"

}

}

The following is an example of JSON request data where the facility/company context is defined at the top level and the “id” values of “batch_number_id” and “invn_attr_id” have been replaced with nested objects to create and associate those objects, which may or may not already exist:

{

"fields": {

"facility_id": 1,

"company_id": 1,

"iblpn": {

"container_nbr": "IBLPN000003",

"status_id": 10

},

"inventory": [

{

"item_id": 3,

"curr_qty": 1,

"batch_number_id": {

“batch_nbr”: “BATCH001”,

“item_id”: 3,

“expiry_data”: “2019-01-01”

},

"invn_attr_id": {

“invn_attr_a”: “A”,

“invn_attr_b”: “B”,

“invn_attr_c”: “C”

}

}

]

},

"options": {

"reason_code": "IT"

}

}

modify_item_qty

The IBLPN **modify_item_qty** API allows the caller to adjust item inventory in a “Received” or “Located” IBLPN. You can only update a single IBLPN and item per request.

Regardless of the method used to identify the IBLPN, the following input is valid:

Category	Name	Type	Required	Description
options	item_barcode	String	C	Item identifier.
options	item_alternate_code	String	C	Item identifier.
options	adjustment_qty	Numeric	Y	Non-zero adjustment quantity.
options	batch_nbr	String	N	Batch tied to target inventory.
options	expiry_date	Date	N	Expiration date tied to target inventory.
options	invn_attr_X	String	N	Attributes A-O tied to the inventory.
options	reason_code	String	Y	Recorded on inventory history.
options	transaction_ref_nbr	String	N	Recorded on inventory history.

- Only one of `item_barcode` or `item_alternate_code` is allowed.
- IBLPN inventory matching is restrictive and does not support wildcard searches:
  - If no `batch_nbr` is provided, only match IBLPN inventory without a batch.
  - If no `expiry_date` is provided, only match IBLPN inventory without expiration.
  - If no `invn_attr_X` value is provided for A-O, it will be treated as blank.

IBLPN Lookup by ID

```
POST
 .../entity/iblpn/{id}/modify_item_qty/
```

Caller knows the unique `id` value of the IBLPN, which is added to the request URL. No additional `parameters` data is required from the request body.

IBLPN Lookup by Filters

```
POST .../entity/iblpn/modify_item_qty/
```

Category	Name	Type	Required	Description
parameters	container_nbr	String	Y	IBLPN to be adjusted.
parameters	facility_id	Integer	N	IBLPN's facility.
parameters	company_id	Integer	N	IBLPN's company.

- Only a single IBLPN may be moved per request.
  - The `__in `lookup is not supported for `container_nbr`.
- `facility_id `and `company_id `both additionally support string lookup by `code `using the double-underscore notation:
  - facility_id__code
  - company_id__code

Example Request Body:

```
{
    "parameters": {
        "facility_id__code": "FAC-1",
        "company_id ": 2,
        "container_nbr": "IBLPN1234"
    },
    "options": {
        "item_barcode": "ITEM1234",
        "adjustment_qty": -10,
        "batch_nbr": "BATCH1234",
        "expiry_date": "2020-01-02",
        "invn_attr_a": "A",
        "invn_attr_b": "B",
        "reason_code": "RC",
        "transaction_ref_nbr": "TX123457890"
    }
}
```

OBLPN

The "oblpn" entity is derived from the "container" entity and therefore also has access to all of its entity operations, in addition to the following.

mark_delivered

POST .../wms/lgfapi/v10/entity/oblpn/{id}/mark_delivered/

Updates a Shipped OBLPN to Delivered status and writes container delivered inventory history.

create_from_iblpn

The OBLPN **create_from_iblpn** API allows you to create an OBLPN in Outbound Ready status and allocate inventory from a designated IBLPN in a single request. Additionally allows the caller to trigger packing of the OBLPN.

```
POST .../entity/oblpn/create_from_iblpn/
```

Assumptions

1. All allocation data must have the same facility and company context as the OBLPN.
    - Allocations may be for multiple sales orders from multiple IBLPNs for different items as long as the facility/company context is consistent with the created OBLPN.
2. Sales order status will be recalculated on success.
3. IBLPN status will be recalculated on success.
4. Inventory history is only written if the OBLPN is packed.

Request Body Data

The request body data utilizes the 3 categories in the following ways:

1. `fields` – The initial data required to create the OBLPN.
2. `parameters` – List of data defining allocations.
3. `options` – Additional functional data.

OBLPN Fields Data

The OBLPN's initial data is defined in the `fields` section of the request under the `oblpn` key. This is similar to the request body data requirements when creating an LPN directly through the entity's create mechanism.

Supported fields:

Name	Type	Required	Description
facility_id	Integer	Y	OBLPN's facility.
company_id	Integer	Y	OBLPN's company.
container_nbr	String	Y	OBLPN's container number.
curr_location_id	Integer	N	OBLPN's location.
lpn_type_id	Integer	N	Associated LPN Type.
length	Numeric	N	OBLPN's length dimension.
width	Numeric	N	OBLPN's width dimension.

height	Numeric	N	OBLPN's height dimension.

- If providing `lpn_type_id`- `length`, `width`, and `height`are not valid.

Example Request Body:

```
"fields": {
    "oblpn": {
        "facility_id": 1,
        "company_id": 1,
        "container_nbr": "OBLPN-1",
        "lpn_type_id": 5
    }
}
```

Allocation Parameters Data

Allocation data is defined in the `parameters`section of the request in the `allocations`key. The data is a list of objects, each linking one sales order detail to one IBLPN for the given inventory and quantity. An order detail or IBLPN may be referenced across multiple allocation definitions within the same request. Each of the following allocation scenarios is supported:

- Single order detail from single IBLPN.
- Single order detail from multiple IBLPNs.
- Multiple order details from single IBLPN.
- Multiple order details from multiple IBLPNs.

Category	Name	Type	Required	Description
allocations	order_nbr	String	Y	Sales order identifier.
allocations	iblpn_nbr	String	Y	IBLPN identifier.
allocations	qty	Numeric	Y	Non-zero quantity to allocate.
allocations	order_dtl	Object	Y	Nested object identifying the sales order detail.

- Sales order status must be less than "Packed".
- IBLPN status must be "Received", "Located", or "Partially Allocated" and have the necessary available unallocated quantity.

The nested `order_dtl`object requires one of two definitions in order to identify the sales order detail.

Identify Sales Order Detail by Sequence Number

If the order detail's unique sequence number is known to the user, this may be provided in the request and is the only piece of data necessary to identify the correct detail for the given sales order number.

Category	Name	Type	Required	Description
order_dtl	seq_nbr	Integer	C	Sales order detail's unique sequence number.

Example Request Body:

```
"parameters": {
    "allocations": [
        {
            "order_nbr": "ORDER-1",
            "order_dtl": {
                "seq_nbr": 1
            },
            "iblpn_nbr": "IBLPN-1",
            "qty": 1
        }
    ]
}
```

Identify Sales Order Detail by Attributes

The sales order detail may also be identified by its attributes. At least one of the following pieces of information is required. If more than one order detail is identified, an error will be returned. Additionally, this is a restrictive search in that any omitted data will not be treated as a wildcard.

- If no `batch_nbr` is provided, only match order detail(s) without a batch.
- If no `invn_attr_X` value is provided for A-O, it will be treated as blank.

Category	Name	Type	Required	Description
order_dtl	item_barcode	String	C	Item identifier.
order_dtl	item_alternate_code	String	C	Item identifier.
order_dtl	batch_nbr	String	N	Batch identifier.
order_dtl	invn_attr_X	String	N	Attributes A-O tied to the order detail.

Example Request Body:

```
"parameters": {
    "allocations": [
        {
            "order_nbr": "ORDER-2",
            "order_dtl": {
                "item_barcode": "ITEM2",
                "batch_nbr": "BATCH-1",
```

```
                "invn_attr_a": "A",
                "invn_attr_b": "B"
            },
            "iblpn_nbr": "IBLPN-2",
            "qty": 2
        }
    ]
}
```

Additional Options Data

Functional request data in the `options`section:

Category	Name	Type	Required	Description
options	pack_flg	Boolean	N	Pack the OBLPN? (Default = False)

- OBLPN will be routed regardless of the `pack_flg`value.
- If `pack_flg`= True:
  - OBLPN will be updated to “Packed” status.
  - The created allocations will be completed.
  - The sales order detail(s) will be updated.
  - OBLPN’s final weight and volume will be calculated.
  - Inventory history will be written.

Example Request Body:

```
"options": {
    "pack_flg": true
}
```

Full Request Body Example:

The following example would create a packed OBLPN allocated from two different IBLPNs for the same order.

```
{
    "fields": {
        "oblpn": {
            "facility_id": 1,
            "company_id": 1,
            "container_nbr": "OBLPN-1"
        }
    },
    "parameters": {
```

```
        "allocations": [
            {
                "order_nbr": "ORDER-1",
                "order_dtl": {
                    "seq_nbr": 1
                },
                "iblpn_nbr": "IBLPN-1",
                "qty": 2
            },
            {
                "order_nbr": "ORDER-1",
                "order_dtl": {
                    "item_barcode": "ITEM-1",
                    "batch_nbr": "BATCH-1",
                    "invn_attr_a": "A",
                    "invn_attr_o": "O"
                },
                "iblpn_nbr": "IBLPN-2",
                "qty": 5.52
            }
        ]
    },
    "options": {
        "pack_flg": true
    }
}
```

Link OBLPN with asset

POST .../wms/lgfapi/v10/entity/oblpn/{id}/link_asset

links asset (reusable tote) to oblpn.

Assumptions

- Only one OBLPN may be linked to one asset per request.
- OBLPN must be within user's eligible facilities/companies.

Request Body Data

The request body data utilizes the 3 categories in the following ways:

1. `parameters`– allows user to identify the specific oblpn

2. `options`– Additional functional data.

Parameters

Category	Name	Type	Required	Description
Parameters	container_nbr	String	Y	OBLPN to be linked. "__in" lookup is not supported
Parameters	facility_id	Integer		Container's facility.
Parameters	company_id	Integer		Container's company.

Example Request Body:

```
{
    "parameters": {
        "facility_id": 1,
        "company_id": 1,
        "container_nbr": "OBLPN-1"
    }
}
```

Note: Both facility id and company id also support filtering on “code”.

Additional Options Data

Functional request data in the `options`section:

Category	Name	Type	Required	Description
options	asset_nbr	String	Y	Asset to be linked. May be created as part of this API.
options	asset_seal_nbr	String		Optionally tracked seal number.
Options	replace_container_nbr_ with_asset_flg	boolean		Rename OBLPN to match asset upon linking?
options	validate_lpn_type_flg	boolean		Validate the LPN type of the OBLPN with the LPN type of the asset

```
{
    "options": {
        "asset_nbr": "ASSET-01",
        "asset_seal_nbr": "SEAL-001",
        "replace_container_nbr_with_asset_flg": true
        "validate_lpn_type_flg": true
```

```
    }
}
```

- If the Asset already exists in the system, then it will be made "In Use" status and update the Asset OBLPN field with the corresponding OBLPN, Destination field with the OBLPN destination of the linked OBLPN and Seal Nbr field with corresponding seal nbr passed in the API
- If Original OBLPN is renamed while interfacing (i.e. when "replace_container_nbr_with_asset"= true), system will update the following:
  - Populate OBLPN field with the Asset Nbr,
  - Destination field with the OBLPN destination
  - Seal Nbr field with corresponding seal nbr passed in the API
- OBLPN type in the Asset table will not get updated with the OBLPN type of the OBLPN
- If the Asset interfaced is new, then a new record is created in the Asset UI with the status "In Use" with corresponding OBLPN, Seal and destination.
- If the Original OBLPN is renamed with Asset nbr while interfacing (i.e. when "replace_container_nbr_with_asset"= true), system updates the OBLPN field with the Asset Nbr, Destination field with the Original OBLPN's destination and Seal Nbr field with corresponding seal nbr passed in the interface
- If the OBLPN is already linked to an asset and another Asset Nbr is passed in the interface for linking with OBLPN, the original asset number needs to be updated back to status "In-warehouse" while the new asset number is updated back to status "In-use".
- In case if the OBLPN is already linked to an asset/seal and another seal nbr is passed in the API, then update the seal nbr field with the corresponding seal.
- If the Asset interfaced in the API is new to the system, then a new record is created in the Asset table
- The fields "asset_nbr" and "asset_seal_nbr" is updated with corresponding data in the oblpn.
- If Original OBLPN is replaced with Asset Nbr while interfacing (i.e. when "replace_container_nbr_with_asset"= true), system should update the Container table as mentioned below:
  - LPN Nbr is updated with the Asset Nbr
  - Asset Nbr and Asset Seal Nbr is updated with the corresponding value passed in the API
  - OBLPN Type field is not updated with the OBLPN type of the Asset
  - "Ref OBLPN Nbr" field is updated with original OBLPN Nbr
- The following Inventory History records are created:
  - IHT 57 - Asset Received – This record is not written if the Asset interfaced in the API is new to the system
  - IHT 31- OB Container Modified is written if the OBLPN is renamed with Asset Nbr while linking.

Pallet

These topics give descriptions for APIs that complete actions related to Pallets in the Warehouse.

Related Topics

- Sort LPN
- Sort LPN Close Pallet

Sort LPN

The Sort LPN API allows you to sort an LPN to a Pallet in a sort location mimicking what the RF Inbound Sorting process does. The RF modules include: RF Sort LPN, and RF Inbound Sort Location.

You can sort an LPN to a pallet in a sort location with the following POST request:

```
POST .../entity/pallet/sort_lpn/
```

The following table provides details about the Input Parameters/Filters used to identify the target pallet:

Name	Required	Type	Default	Description
facility_id		integer		Facility context by id.
facility_id__code		string		Facility context by code.
company_id		integer		Company context by id.
company_id___code		string		Company context by code.
pallet_nbr	X	string		Target sort pallet.

- The pallet will be created if it doesn't exist.
- The requesting user's default facility/company context will be assumed if overrides are not provided.

Functional Options

Name	Required	Type	Default	Description
container_nbr	X	string		LPN being sorted to pallet.
sort_zone	X	string		Destination sort zone.
sort_location_barcode	X	string		Destination sort location.
sort_to_inventory		string	"pallet-call-directed-putaway"	Sort method.
allow_received_status_flg		boolean	False	Allow sorting of IBLPN in Received status.
allow_picked_status_flg		boolean	False	Allow sorting of OBLPNs in Picked status.

- Default valid LPN statuses:
- Located
- Allocated

- Packed

The following is an example body for Sort LPN to Pallet:

```
{
    "parameters": {
        "facility_id": 1,
        "company_id__code": "FOO",
        "pallet_nbr": "PALLET001"
    },
    "options": {
        "container_nbr": "LPN001",
        "sort_zone": "ZONE01",
        "sort_location_barcode": "BRCD001",
        "sort_to_inventory": "pallet-call-directed-putaway"
    }
}
```

Response Status

- 204 - No content
- Operation successfully completed.
- 400 - Validation error
- 500 - Internal server error

Sort LPN Close Pallet

The Sort LPN/Close Pallet API is used as part of the inbound sorting process which groups LPNs to pallets in sort locations. This API mimics the RF IB Sort LPN module which calls the Sort LPN Close IB Pallet back end entry point with parameters.

You can Sort LPNs and Close Pallet with the following POST requests:

```
POST .../entity/pallet/close_inbound_sorting/
POST .../entity/pallet/{id}/close_inbound_sorting/
```

The following table provides details about the Input Parameters/Filters used to identify the target pallet:

Name	Required	Type	Default	Description
facility_id		integer		Facility context by id.
facility_id__code		string		Facility context by code.
company_id		integer		Company context by id.

Name	Required	Type	Default	Description
company_id___code		string		Company context by code.
pallet_nbr	X	string		Target sort pallet.

- The pallet will be created if it doesn't exist.
- The requesting user's default facility/company context will be assumed if overrides are not provided.

The following table details the functional options:

Name	Required	Type	Default	Description
create_replen_task_flg		boolean	True	Generate a replenishment task on close?
task_type_description		string		Required type description for generated replen task. Valid when create_replen_task_flg = True.

Default valid LPN statuses:

- Located
- Allocated
- Packed

The following is an example body for Create Replenishment Task Flag:

```
{
    "parameters": {
        "facility_id": 1,
        "company_id__code": "FOO",
        "pallet_nbr": "PALLET001"
    },
    "options": {
        "create_replen_task_flg": true,
        "task_type_description": "My Task Type"
    }
}
```

Response

Response Status:

- 204 - No content
  - Operation successfully completed.
- 400 - Validation error
- 500 - Internal server error

Replenishment

These topics give descriptions for APIs that complete actions related to Replenishment in the Warehouse.

Related Topics

- Replenish to Active

Replenish to Active

The replenish_to_active API allows you to complete an open replenishment task for an active location.

You can replenish to active with the following POST request:

```
POST .../lgfapi/v10/replenishment/replenish_to_active/
```

Parameters

The following table provides details about the Input Parameters/Filters:

Name	Required	Type	Default	Description
facility_id		integer		Facility context by id.
facility_id__code		string		Facility context by code.
company_id		integer		Company context by id.
company_id___code		string		Company context by code.

- Used if the replenishment is in a context other than the requesting user's default.
- The requesting user's default facility/company context will be assumed if values are not provided.
- Either "facility_id" or "facility_id__code" may be used, but not both.
- Either "company_id" or "company_id___code" may be used, but not both.

The following table details the functional options:

Name	Required	Type	Default	Description
task_id	C	integer		"id" of task to be completed.
task_id__task_nbr	C	string		Business key for task to be completed.
replen_location_id	C	integer		"id" of active location to be replenished.

Name	Required	Type	Default	Description
replen_location_id__barcode	C	string		Barcode of active location to be replenished
qty		decimal	Allocation Qty	Quantity to replenish.

- Either "task_id" or "task_id__task_nbr" is required.
- Either "replen_location_id" or "replen_location_id__barcode" is required.
- If 'qty' is not provided, the full allocation quantity of the associated allocation will be used.
  - If 'qty' is provided, it must be greater than 0.

The following is an example body for Replenish Location ID Barcode:

```
{
    "facility_id" 1,
    "company_id__code": "COMPANY",
    "task_id": 1,
    "replen_location_id__barcode": "LOCN1"
}
```

Sales Order Header

These topics give descriptions for APIs that complete actions related to Sales Orders in the Warehouse.

Related Topics
- Get IBLPN(s)
- GET OBLPN(s)
- Bulk Lock
- Bulk Unlock

Get IBLPN(s)

GET .../wms/lgfapi/v10/entity/order_hdr/{id}/iblpns/

Returns a paginated representation of all IBLPN(s) allocated to the sales order.

GET OBLPN(s)

GET .../wms/lgfapi/v10/entity/order_hdr/{id}/oblpns/

Returns a paginated representation of all OBLPN(s) allocated to the sales order.

Bulk Lock

POST .../wms/lgfapi/v10/entity/order_hdr/bulk_lock/

This operation is used to apply, and optionally create, an order lock to one or more orders.

The number of orders that can be modified by this operation in a single requests is configured by the value of the requesting user's "Rows per Page" attribute.

The "parameters" section of the request body is required in addition to the "options" section outlined below. One or more parameters are used to determine the order(s) for which the operation will be applied. The allowed filter parameters are:

- 'id'
- 'order_nbr'
- 'facility_id'
- 'company_id'
- 'erp_source_hdr_ref'
- 'erp_source_system_ref'
- 'orderdtl__erp_source_line_ref'
- 'orderdtl__erp_source_shipment_ref'
- 'orderdtl__ship_request_line'

Category	Parameter	Type	Required	Default Value	Description
options	lock_code	String	X		Order lock to be applied.
options	lock_description	String		Value of lock_code	Description of order lock. Only used when creating a new order lock.
options	comments	String		""	Additional info for the order's applied lock.
options	allow_allocate_flg	Boolean		False	Order lock attribute. Only used when creating a new order lock.
options	autocreate_lock_flg	Boolean		False	When true, the order lock will be created in addition to be applied, if it does not already exist.
options	commit_frequency	Integer		0	0 = Roll back on first error. 1 = Commit per object.

Bulk Unlock

POST .../wms/lgfapi/v10/entity/order_hdr/bulk_unlock/

This operation is used to remove an order lock from one or more orders.

The “parameters” section of the request body is required in addition to the “options” section outlined below. One or more parameters are used to determine the order(s) for which the operation will be applied. The allowed filter parameters are:

- 'id'
- 'order_nbr'
- 'facility_id'
- 'company_id'
- 'erp_source_hdr_ref'
- 'erp_source_system_ref'
- 'orderdtl__erp_source_line_ref'
- 'orderdtl__erp_source_shipment_ref'
- 'orderdtl__ship_request_line'

Category	Parameter		Type	Required	Default Value	Description
options	lock_code		String	X		Order lock to be removed.
options	commit_frequency		Integer		0	0 = Roll back on first error. 1 = Commit per object.

Print

These topics give descriptions for APIs that complete actions related to Printing in the Warehouse.

Related Topics

- Print Shipping Label
- Print LPN Label
- Print Pallet Label

Print Shipping Label

GET.../wms/lgfapi/v10/print/label/shipping/?label_designer_code=foo

Returns the ZPL representation of the label

POST .../wms/lgfapi/v10/print/label/shipping

Submits the label for printing

The “parameters” section of the request body is required in addition to the “options” section outlined below. One or more parameters are used to determine the order(s) for which the operation will be applied.

Category	Name	Type	Required	GET Request	POST Request	Comments
options	label_designer_code	string	X	X	X	Label designer template to be printed
options	printer_name	string			X	Default's to cwuser.default_label_printer.
options	label_count	integer			X	Number of labels to print. Must be greater than 0. Default = 1.

API Filters

Functions like a bulk operation for identifying one or more IBLPN(s) to be printed: id Including "in" lookup

- facility_id
- company_id
- container_nbr
- Including "in" lookup

Example Query String for GET

```
GET.../wms/lgfapi/v10/print/label/shipping/?
label_designer_code=foo&facility_id__code=FAC1&company_id__code=COM1&container_nbr=IBLPN1
```

Example Request Body for POST

```
{
    "parameters": {
        "facility_id__code": "FAC1",
        "company_id__code": "COM1",
        "container_nbr": "IBLPN1"
```

```
    },
    "options": {
        "label_designer_code": "label_1",
        "printer_name": "PRINTER1",
        "label_count": 1
    }
}
```

Response Body Data

On success, a 200 - OK status is returned.

The standardized bulk response body is returned. This will have aggregate information for all IBLPN(s) processed as well as the counts and any details.

For a GET request, the ZPL data bill be base64 encoded in the "data" section.

```
{
    "record_count": 2,
    "success_count": 1,
    "failure_count": 1,
    "data": {
        "IBLPN_1": "VGhpcyBpcyBaUEwgY29kZQ=="
    },
    "details": {
        "IBLPN_2": "Some error message."
    }
}
```

Print LPN Label

GET.../wms/lgfapi/v10/print/label/ib_container/?label_designer_code=foo

Returns the ZPL representation of the label.

POST
.../wms/lgfapi/v10/print/label/ib_container

Submits the label for printing.The “parameters” section of the request body is required in addition to the “options” section outlined below. One or more parameters are used to determine the order(s) for which the operation will be applied.

Category	Name	Type	Required	GET Request	POST Request	Comments
options	label_designer_code	string	X	X	X	Label designer template to be printed

Category	Name	Type	Required	GET Request	POST Request	Comments
options	printer_name	string			X	Default's to cwuser.default_label_printer.
options	label_count	integer			X	Number of labels to print. Must be greater than 0. Default = 1.

API Filters

- Functions like a bulk operation for identifying one or more IBLPN(s) to be printed:
  - id
    - Including "in" lookup
  - facility_id
  - company_id
  - container_nbr
    - Including "in" lookup

Example Query String for GET

GET.../wms/lgfapi/v10/print/label/ib_container/?label_designer_code=foo&facility_id__code=FAC1&company_id__code=COM1&container_nbr=LPN1

Example Request Body for POST

```
{
    "parameters": {
        "facility_id__code": "FAC1",
        "company_id__code": "COM1",
        "container_nbr": "OBLPN1"
    },
    "options": {
        "label_designer_code": "label_1",
        "printer_name": "PRINTER1"
    }
}
```

Response Body Data

On success, a 200 - OK status is returned

For a GET request, the ZPL data bill be base64 encoded in the "data" section.

```
{
    "record_count": 2,
    "success_count": 1,
    "failure_count": 1,
    "data": {
```

```
        "IBLPN_1": "VGhpcyBpcyBaUEwgY29kZQ=="
    },
    "details": {
        "IBLPN_2": "Some error message."
    }
}
```

Print Pallet Label

GET.../wms/lgfapi/v10/print/label/pallet/?label_designer_code=foo

Returns the ZPL representation of the label

POST .../wms/lgfapi/v10/print/label/pallet

Submits the label for printing

The “parameters” section of the request body is required in addition to the “options” section outlined below. One or more parameters are used to determine the order(s) for which the operation will be applied.

Category	Name	Type	Required	GET Request	POST Request	Comments
options	label_designer_code	string	X	X	X	Label designer template to be printed
options	printer_name	string			X	Default's to cwuser.default_label_printer.
options	label_count	integer			X	Number of labels to print. Must be greater than 0. Default = 1.

API Filters

- Functions like a bulk operation for identifying one or more IBLPN(s) to be printed:
  - id
    - Including "in" lookup
  - facility_id
  - company_id
  - container_nbr
    - Including "in" lookup

Example Query String for GET

```
GET.../wms/lgfapi/v10/print/label/pallet/?
label_designer_code=foo&facility_id__code=FAC1&company_id__code=COM1&pallet_nbr=pallet1
```

Example Request Body for POST

```
{
```

```
    "parameters": {
        "facility_id__code": "FAC1",
        "company_id__code": "COM1",
        "pallet_nbr": "pallet1"
    },
    "options": {
        "label_designer_code": "label_1",
        "printer_name": "PRINTER1"
    }
}
```

Response Body Data

On success, a 200 - OK status is returned

For a GET request, the ZPL data bill be base64 encoded in the "data" section.

```
{
    "success_count": 1,
    "failure_count":0,
    "data": {
        "OBLPN_1": "VGhpcyBpcyBaUEwgY29kZQ=="
    }
}
```

Report

These topics give descriptions for APIs that complete actions related to Reporting in the Warehouse.

Related Topics

- Custom Inventory Summary

Custom Inventory Summary

Allows you to execute the custom inventory summary report for only a single item per request. This request returns the result set as a file attached to the response.

If output format is pipe-delimited, use the following:

GET.../report/custom_inventory_summary/?facility_id__code=FAC1&company_id__code=COM1&item_code=ITEM1

If output format is XML use the following:

GET.../report/custom_inventory_summary.xml?
item_code=<item_code>&company_id=<company_id>&facility_id=<facility_id>

The “parameters” section of the request body is required in

Parameter	Type	Required	Default	Description
facility_id	integer	C		Required facility context.
facility_id__code	string	C		Required facility context.
company_id	integer	C		Required company context.
company_id__code	string	C		Required company context.
item_code	string	X		Specific item for the report.
write_header_line_flg	boolean		False	Include the header line with field names?

- Either `facility_id` or `facility_id__code` is required
- Either `company_id` or company_id__code `is required

Company Parameter

```
POST
 .../entity/company_parm
```

This operation is used to add single or multiple company parameters.

If you have a new facility and you want to copy the same Company Parameters from your current facility, you can first GET the list by querying the company_parm entity, then POST the applicable data to this operation for the target facility.

```
Example body
 request
```

{

"fields": {

"company_id": 1,

"parm_key": "TEST_PARM_001",

"parm_value": "test"

}

}

Facility Parameter

```
POST
```

```
.../entity/facility_parm
```

This operation is used to add single or multiple facility parameters.

If you have a new facility and you want to copy the same facility parameters from your current facility, you can first GET the list by querying the facility_parm entity, then POST the applicable data to this operation for the target facility.

Example body request

{

"fields": {

"facility_id": 1,

"prog_key": "FACILITY_PARM",

"parm_key": "TEST_PARM_001",

"parm_value": "test"

}

}

Location Size Type

```
POST
.../entity/location_size_type
```

This operation is used to add single or multiple location size types.

If you have a new facility and you want to copy the same location size type from your current facility, you can first GET the list by querying the location_size_type entity, then POST the applicable data to this operation for the target facility.

Example body request

{

"fields": {

"company_id": 1,

"size_type": "TEST_SIZE_001",

"description": "Test Size 001"

}

}

Putaway Priority

This operation allows you to determine the **order** in which Putaway Types are triggered for putaway.

POST .../entity/putaway_priority

If you have a new facility and you want to copy the same Putaway Priority rules from your current facility, you can first GET the list by querying the putaway_priority entity, then POST the applicable data to this operation for the target facility.

Example body request:

{

"fields": {

"facility_id": 1,

"priority": 1,

"putaway_type_id": 256860,

"putaway_method_id": 1,

"putaway_search_mode_id": 0,

"locn_type_id": 3,

"locn_size_type_id": 0,

"replenishment_zone_id": 35995,

"consider_fefo_flg": false,

"radius": 1,

"radial_increment": 1

}

}

Putaway Type

POST .../entity/putaway_type

This operation is used to add single or multiple putaway type.

If you have a new facility and you want to copy the same putaway type from your current facility, you can first GET the list by querying the putaway_type entity, then POST the applicable data to this operation for the target facility.

Example body

request:

{
"fields": {
"company_id": 1,
"pa_type": "TEST_PA_001",
"description": "Test PA 001",
"pallet_position_required_flg": false,
"depalletize_on_putaway_flg": false
}
}

Putaway Type Calculation Rule

POST .../entity/putaway_type_calc_rule

This operation is used to add single or multiple putaway type cal rules.

If you have a new facility and you want to copy the same putaway type cal rule from your current facility, you can first GET the list by querying the putaway_type_cal entity, then POST the applicable data to this operation for the target facility.

Example body request:

{
"fields": {
"facility_id": 1,
"company_id": 1,
"description": "TEST-001",
"priority": 1,
"final_putaway_type_id": 256860,
"sql_selection_id": 76886,
"enabled_flg": true
}
}

Replenishment Zone

POST .../entity/replenishment_zone

This operation is used to add one or more replenishment zones.

If you have a new facility and you want to copy the same replenishment zones from your current facility, you can first GET the list by querying the replenishment_zone entity, then POST the applicable data to this operation for the target facility.

Example body request

{

"fields": {

"facility_id": 1,

"code": "TEST_RZ_001",

"description": "Test RZ 001"

}

}

SQL Selection (Rule Tree)

POST .../entity/sql_selection

This entity is unique in that the API will allow the user to create the entire rule tree in a single request instead of needing the create and link each parent/child object individually (it can still be done this way if the user chooses to do so). This is accomplished using the `children `list field. This is an abstract field that does not exists on the object itself, but rather defines the `parent_id `link, which will be handled by the API automatically.

To illustrate a complex example, the following request body could be used to create this rule structure as seen from the UI:

Example body request

{

"fields": {

"facility_id": 1,

"sql_operator_id": 2,

"children": [

{

"column_name_id": 107,

"sql_operator_id": 5,

"column_value": "B"

},

{

"sql_operator_id": 1,

"children": [

{

"column_name_id": 1379,

"sql_operator_id": 7,

"column_value": "100"

},

{

"column_name_id": 35,

"sql_operator_id": 7,

"column_value": "50"

}

]

}

]

}

}

Item Image

Currently the full representation of item GET does not include the item image ('image_data') since that can be large. However if a request specifies the `fields`query string parameter and the 'image_data' field is specified, we will return the field and value.

This will return the id and image data for one or more items.

GET .../entity/item/?fields=id,image_data

This will return the id and image data for a specific item.

GET .../entity/item/{id}/?fields=id,image_data

The 'fields `parameter may still be combined with other filters per normal functionality:

GET .../entity/item/?fields=id,image_data&barcode=ITEM123&...