eBay Service

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Contents

1 Overview

1.1 Task

Your team is tasked with putting together a design document to show how Ebay could change from a number of Perl scripts, each accessing the database, to a service oriented architecture where database access and some business logic would live in a service layer.

1.2 Document Purpose

This document will not assume any platform, but only discuss the interfaces between different API endpoints that could be implemented with many different platforms. This document will propose a series of methods, what data to pass into them, what they might return, and what parts of the database they might impact. The decision on which platform to use is out of scope of this document.

1.3 General Approach

Although the implementation details are out of scope of this document, this API design is assuming a service based/microservice architecture. All endpoints will accept and return serialized raw data rather than serialized objects. The motivation for this approach is as follows:

- Forces a single endpoint for like-operations, increasing the maintainability of the code base.

- Single endpoints are easier to test.

- Single endpoints are easier to log.

- Makes it easier to scale and parallelize different services based on load, which improves performance.

- Easier to manage development teams around small services with tight scope rather than a large and unorganized codebase.

1.4 How to read this document

This document attempts to describe the API while making as few implementation decisions as possible. Each section will have the endpoint of the API. This is where the user will make their request to when trying to access the API. The parameters section describes the payload that the API expects. This will be serialized using a format specified at implementation (but something like JSON or XML). The response describes the different ways that the API will respond and what parts of the system it impacts given different states.

Service Name	Service Domain Name
Auction	`auction.ebayapi.com`
Product Categories	`productcategory.ebayapi.com`
Seller	`seller.ebayapi.com`
Bidder	`bidder.ebayapi.com`
Session	`session.ebayapi.com`
Review	`review.ebayapi.com`

Table 1: Service names and their FQDNs.

1.5 Terms

data/payload
This is used to describe the data that is passed to and from the APIs. This will be serialized in a common format that will be decided when planning the implementation. Possible formats may be JSON or XML.

1.6 Services

All of our APIs are split up into different services. Table 1 is a list of all of our services along with their FQDN.

2 API Definition

2.1 `seller.ebayapi.com/newSeller`

Creates a new seller.

2.1.1 Parameters

passwordHash
A SHA-1 hash of the user's password generated by the user.

email
The user's default email address. This value is globally unique in the database.

publicName
Either the user's name or user name. Will be displayed publicly.

addressInfo
Users address formatted as described in the USPS Publication 28, Section 211.

2.1.2 Responses

Successful operation
Creates a new seller in the database with the provided information and generates a new session key for the new user. Returns the following:

status Status code or message indicating a successful operation.

sessionKey Session key for the new user.

Email already exists
Email provided in the payload already exists in the database. Nothing in the database is updated. Returns the following:

status Status code or message indicating the email provided already exists in the database.

Invalid Payload
Malformatted or incomplete payload. Nothing in the database is updated. Returns the following:

status Status code or message indicating a failed request due to an invalid payload.

2.2   `seller.ebayapi.com/getSeller`

A read-only operation that retrieves a seller's information by the sellers ID.

2.2.1   Parameters

sessionKey
A session key associated with a seller.

2.2.2   Responses

Successful operation
A seller with that sessionKey exists and is returned. If the session key does not exist, or the session key exists but is associated with a buyer, the return payload will be empty aside from a successful status code. The following payload is returned:

status Status code or message indicating a successful search.

lastAccess Datetime stamp of the last time this seller accessed the site while logged in.

email The unique email for this seller.

publicName The public name of this seller.

addressInfo Address of the seller.

Invalid Payload
malformatted or incomplete payload. Returns the following:

status Status code or message indicating a failed request due to an invalid payload.

2.3   `auction.ebayapi.com/newAuction`

Creates a new auction.

2.3.1   Parameters

sessionKey
Session key of the seller creating the auction.

title
Auction title.

description
Long description of the product up for auction.

openDate
ISO 8601 date time format of the date time that the auction becomes available for bidding.

closeDate
ISO 8601 date time format of the date time that the auction closes and no longer is available for bids. If there is a highest bidder, the process of awarding the bidder their product and the seller their payment begins.

minimumBid
Starting bid for the auction.

2.3.2 Responses

Successful operation
Creates a new auction in the database with the provided information. Returns the following:

status Status code or message indicating the auction was created successfully.

auctionKey Session key for the new auction.

No seller found
Session key either doesn't exist or is associated with a buyer.

status Status code or message indicating a failed request due to a bad sessionKey.

Invalid Payload
Malformatted or incomplete payload. Nothing in the database is updated. Returns the following:

status Status code or message indicating a failed request due to an invalid payload.

2.4 `auction.ebayapi.com/updateAuction`

Updates information of an auction.

2.4.1 Parameters

auctionKey
Key of the option being updated.

title
Auction title.

description
Long description of the product up for auction.

openDate
ISO 8601 date time format of the date time that the auction becomes available for bidding.

closeDate
ISO 8601 date time format of the date time that the auction closes and no longer is available for bids. If there is a highest bidder, the process of awarding the bidder their product and the seller their payment begins.

minimumBid
Starting bid for the auction.

2.4.2 Responses

Successful operation
Updates the auction with the provided auctionKey in the database with the provided information. Parameters not included in the payload are not updated. Parameters that are included but contain null or empty data are updated as such. Returns the following:

> **status** Status code or message indicating the auction was updated successfully.

No auction found
Auction key either doesn't exist or is associated with a buyer.

> **status** Status code or message indicating a failed request due to a bad auctionKey.

Invalid Payload
Malformatted or incomplete payload. Nothing in the database is updated. Returns the following:

> **status** Status code or message indicating a failed request due to an invalid payload.

2.5 `auction.ebayapi.com/getAuction`

A read-only operation that gets the attributes of an auction.

2.5.1 Parameters

auctionKey
Key of the auction being retrieved.

2.5.2 Responses

Successful operation, Auction Found
A auction with that sessionKey exists and is returned.The following payload is returned:

> **status** Status code or message indicating a successful search.
>
> **sellerSessionKey** Session key of the seller.
>
> **title** Auction title
>
> **description** Full description of the auction.
>
> **openDate** Timestamp of when the auction opens and bidders are allowed to bid.
>
> **closeDate** Timestamp of when the auction closes and bidders are no longer allowed to bid.
>
> **auctionStatus** Either a string or status code that indicates the status of the auction.
>
> **minimumBid** The smallest allowed bid. This will return the greater of the two: either minimum
bid the seller created or the highest bid if ones exists.

Successful operation, No Auction Found
A auction with that sessionKey does not exist. The following is returned.

> **status** Status code or message indicating a successful search, but did not find an auction with the provided key.

Invalid Payload
malformatted or incomplete payload. Returns the following:

> **status** Status code or message indicating a failed request due to an invalid payload.

2.6 `productcategory.ebayapi.com/getCategory`

Gets the children categories of a product category.

2.6.1 Parameters

breadCrumb
Bread crumb used to uniquely identify a category.

2.6.2 Responses

Successful operation
A category with that bread crumb was found, or no bread crumb was provided, in which case the categories that do not have a parent bread crumb are considered. The following is returned:

> **status** Status code or message indicating a successful search operation.

> **childrenCategories** List of category bread crumb where the parent crumb equals the crumb provided.

Successful operation: No Category Found
A category with that bread crumb does not exist. The following is returned.

> **status** Status code or message indicating a successful search, but did not find an category with the provided key.

Invalid Payload
malformatted or incomplete payload. Returns the following:

> **status** Status code or message indicating a failed request due to an invalid payload.

2.7 `session.ebayapi.com/getBidder`

Used to get a session key for a bidder.

2.7.1 Parameters

email
Email of the bidder, used to uniquely identify the bidder.

passwordHash
SHA-1 hash of the user's password.

2.7.2 Responses

Successful operation
A bidder with that email was found, and the password hash provided matches the password hash stored. The session key will be returned, and the last access timestamp will be touched and updated to the current time stamp. If no session was found for the verified bidder, a new one will be created and returned.

> **status** Status code or message indicating a successful operation.

> **sessionKey** Session key associated with the bidder.

Authentication Error
Either the provided email was not found, or the password hashes to the found email did not match. This is left vague for security reasons.

> **status** A status code or message indicating a general authentication error.

Invalid Payload
malformatted or incomplete payload. Returns the following:

> **status** Status code or message indicating a failed request due to an invalid payload.

2.8   `session.ebayapi.com/getSeller`

Used to get a session key for a seller.

2.8.1   Parameters

email
Email of the seller, used to uniquely identify the seller.

passwordHash
SHA-1 hash of the seller's password.

2.8.2   Responses

Successful operation
A seller with that email was found, and the password hash provided matches the password hash stored. The session key will be returned, and the last access timestamp will be touched and updated to the current time stamp. If no session was found for the verified seller, a new one will be created and returned.

   status Status code or message indicating a successful operation.

   sessionKey Session key associated with the seller.

Authentication Error
Either the provided email was not found, or the password hashes to the found email did not match. This is left vague for security reasons.

   status A status code or message indicating a general authentication error.

Invalid Payload
malformatted or incomplete payload. Returns the following:

   status Status code or message indicating a failed request due to an invalid payload.

2.9   `auction.ebayapi.com/getOpenAuctions`

Get auctions that match search criteria. Searches are performed by choosing every auction where words matched either the title or the description (excluding common works like "the"), and first ordered by how many words matched, then ordered by newest to oldest within the auctions that had equal word matches.

2.9.1   Parameters

keywords
A string of commonly delaminated search terms.

searchStartIndex
The index at which the results will return, beginning at searchStartIndex for numberOfItems long.

numberOfItems
Number of elements to return.

2.9.2 Responses

Successful Operation
Search operation was successful performed. Search resulted in zero or more results. Results returned are the elements between searchStartIndex and searchStartIndex + numberOfItems index, or the last item of the resulting database query. New auctions made within the pagination session prior to the current page may not be shown. The following is returned:

status Status code or message indicating a successful search.

auctionKeys List of auctionKeys, ordered by the ordering system mentioned in the description.

Invalid Payload
malformatted or incomplete payload. Returns the following:

status Status code or message indicating a failed request due to an invalid payload.

2.10 `auction.ebayapi.com/placeBid`

Places a bid on an auction. If this bid is higher than the current max bid, the auction maxBid will be updated and the highestBidId will point to this bid.

2.10.1 Parameters

auctionKey
Key of the auction that a bid is being placed on.

sessionKey
Session key of the bidder placing the bid.

bidAmmount
Amount of money being bid on the product. Max amount if isSingleBid is false.

isSingleBid
True if the bid amount placed is the absolute price. False if its an automatic auction where the bidAmmount is the max amount of money the bidder will pay and the auction works up to it.

2.10.2 Responses

Successful Bid
Bid successfully placed on an active auction. The bid is greater than or equal to the minimum bid, but may or may not be greater than the current maximum bid on the auction. The following is returned:

status Status code or message indicating a successful bid placement.

No auction found
auctionKey does not match any active auction. No bid was created.

status Status code or message indicating an invalid auction key.

No bidder found
session key does not match any bidder. No bid was created.

status Status code or message indicating an invalid bidder key.

Bid ammount less than minimum
The amount bid is less than the minimum bid of the auction. No bid was created.

status Status code or message indicating an invalid bid amount.

Invalid Payload
malformatted or incomplete payload. Returns the following:

status Status code or message indicating a failed request due to an invalid payload.

2.11 `auction.ebayapi.com/getWinningBidderes`

Returns a list of auction IDs and bidder IDs from all completed auctions that have a status of closed within a specified date time range.

startDateTimeRange
The left bound date time stamp.

endDateTimeRange
The right bound date time stamp.

2.11.1 Responses

Successful Operation
Zero or more closed auctions were found within the date time range. The following is returned:

status Status code or message indicating a successful search.

winningBidderAuctionPairs A list of tuples that contain the winning bidder key and the auction key.

Invalid date range
Either the right bound date is in the future, or the right bound date is less than the left bound date.

status Status code or message indicating invalid date ranges.

Invalid Payload
malformatted or incomplete payload. Returns the following:

status Status code or message indicating a failed request due to an invalid payload.

2.12 `auction.ebayapi.com/addReview`

Adds a product review by the winning bidder.

2.12.1 Parameters

auctionKey
Key of the auction that a review is being made for.

sessionKey
Session key of the winning bidder.

numStars
Number of stars out of five the bidder is rating the product out of.

description
Long review description of the product.

2.12.2 Responses

Successfully Added Review
A review was successfully created.

    status Status code or message indicating a successful operation.

Session key does not match winning bidder
Session key provider does not match the session key of the winning bidder. No review is created.

    status Status code or message indicating an invalid session key.

Invalid auction key
Auction key provided does not match any closed auctions. No review created.

    status Status code or message indicating an invalid auction key.

Invalid number of stars
Stars provided is either less than zero or more than five. No review is created.

    status Status code or message indicating an invalid number of stars.

Invalid Payload
malformatted or incomplete payload. Returns the following:

    status Status code or message indicating a failed request due to an invalid payload.

2.13 `auction.ebayapi.com/getAllBids`

Get all bids for specific auction.

2.13.1 Parameters

auctionKey
Key of the auction that the user is getting all bids for.

2.13.2 Responses

Successful Operation
Zero or more bids were found for an auction. The following is returned:

    status Status code or message indicating a successful operation

    bids A 2D list where each 2nd Dimensional list represents a bid, containing the bidderKey, bidAmmount, timeOfBid, and bidType.

Invalid Auction
No auction with the provided auction key exists.

    status Status code or message indicating a failed request due to an invalid auction key.

Invalid Payload
malformatted or incomplete payload. Returns the following:

    status Status code or message indicating a failed request due to an invalid payload.