posConnect

Dokumentation

Rest-Protokoll

Schnittstellenbeschreibung für die REST API

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Dokumentation des von der posConnect eingesetzten REST Protokolls

Inhaltsverzeichnis

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1 POS Kit

2 Overview

To invoke the POS Kit API using an HTTP request you can use any development language. The API returns an HTTP response, which generally includes the result of the request invocation in a non language-specific way.

2.1 Example

2.1.1 Node.js

```
const gaxios = require('gaxios')

const response = await gaxios.request({

      url: `http://localhost:${process.env.PORT}/ping`

})

const timestamp = new Date(response.data.timestamp)
```

2.2 Notes on implementation

For simplicity the POS Kit API does not work with various `HTTP status codes`. The main strategy is to remove this complexity and return always HTTP state `200`. Of course there can be other states like HTTP status 500 or 400, but this means that a technical error has occurred. In case of an error at software level the server will always return an error object which describes the occurred error more precisely. Each implementation should look ahead that all responses including the error object can vary and extend in future for different API calls. But error responses will always contain a field `type` and a field `message`. Take a look at each API command description to get more information about specific error conditions.

2.2.1 Named API error type classifications

- `ValidationError`: Invalid payload using the POS Kit API.
- `ApiError`: Incorrect usage of the POS Kit API.
- `PaymentError`: Error while processing a payment API method.
- `FetchError`: Refers to HTTP network requests. For example, network timeout when the time allowed for a process to complete before it is aborted with an error.
- `SystemError`: A serious runtime error that endangers the stability of the system.

3 API

3.1 API - GET providers

Obtain a list of available providers to get the possibility for target-oriented API requests.

GET

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3.1.1 Header

Field	Type	Description
content-type	String	application/json

3.1.2 Success 200

Field	Type	Description
providers	Object[]	A list of available providers.
id	Number	Users ID.
name	String	Users Name.

- Success-Response:

```
HTTP/1.1 200 OK
{
  providers: [{
    id: 0,
    name: 'bluecode'
  }]
}
```

4 Loyalty

4.1 Loyalty - POST redeem

Mark a reward as redeemed (used) after a payment transaction. The redeem reward endpoint should be called for every reward that was applied in the current payment transaction. It ensures that the reward cannot be used again. It will thus not appear in future calls to the loyalty status endpoint. Note that, since it requires the payment transaction ID, it can only be called after the payment transaction has completed.

POST

http://poskit.box/api/v1/loyalty/rewards/redeem

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4.1.1 Header

Field	Type	Description
`content-type`	String	`application/json`
`authorization`	String	`Basic <credentials>` (Base64 encoded `username:password`)

4.1.2 Request

Field	Type	Description
`provider optional`	String	Provider for payment processing. Default value: `AUTO` Allowed values: `"AUTO"`, `"bluecode"`
`reward_id`	String	Reward ID taken from the Loyalty Status response. Size range: `1..`
`acquirerTransactionId`	String	The ID of the payment transaction in which the reward was redeemed. This ID was the response of a payment call. Size range: `1..`

4.1.3 Response

Field	Type	Description
`error`	Object	Error response object
`type`	String	The error type name classification Size range: `1..` Allowed values: `"ValidationError"`, `"ApiError"`, `"PaymentError"`, `"FetchError"`, `"SystemError"`
`message`	String	A humand readable error message Size range: `1..`

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Field	Type	Description
state	String	state Size range: 1.. Allowed values: "DECLINED"
code	String	code Size range: 1.. Allowed values: "TIMEOUT", "NON_CANCELED_TIMEOUTS", "UNAVAILABLE", "CANCELED", "SYSTEM_FAILURE", "INVALID_PARAMETER", "MERCHANT_TX_ID_NOT_UNIQUE", "ISSUER_NOT_SUPPORTED", "INVALID_BARCODE", "BRANCH_NOT_FOUND", "FRAUD_DETECTED", "INSUFFICIENT_FUNDS", "INVALID_STATE", "LIMIT_EXCEEDED", "CANCELED_BY_USER", "TRANSACTION_NOT_FOUND", "AMOUNT_TOO_HIGH", "UNAUTHORIZED", "CANCEL_PERIOD_EXPIRED", "CANCEL_NOT_SUPPORTED"

- Success-Response:
- Error-Response:

```
HTTP/1.1 200 OK

{

}

HTTP/1.1 200 OK

"{

  "error": {

    "message": "network timeout at: https://merchant-
api.bluecode.biz/v4/status",

    "provider": {

      "id": 0,

      "name": "bluecode"

    },

    "name": "request-timeout",
```


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```
    "type": "FetchError"
  }
}"
```

4.2 Loyalty - POST status

The loyalty status endpoint returns information on the active rewards of the consumer as well as any stored membership numbers for the current merchant.

POST

`http://poskit.box/api/v1/loyalty/status`

4.2.1 Header

Field	Type	Description
`content-type`	String	`application/json`
`authorization`	String	`Basic <credentials>` (Base64 encoded `username:password`)

4.2.2 Request

Field	Type	Description
`provider optional`	String	Provider for payment processing. Default value: `AUTO` Allowed values: `"AUTO"`, `"bluecode"`
`paymentMediaId`	String	Payment medium ID for example barcode number Size range: `1..`

4.2.3 Response

Field	Type	Description
`rewards optional`	Object[]	Undefined, The rewards section contains a list of rewards.
`id optional`	String	Identifies the reward to Bluecode. The ID uniquely identifies the user and the chosen reward type (e.g. "free dessert with pizzas over €10" or "50% off

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Field	Type	Description
		toothpaste"). It will be different for two different consumers receiving the same type of reward. Size range: `1..`
`ean optional`	String	EAN code configured by the merchant for the reward. The interpretation of this code is left up to the POS. It should be used to identify the size of the discount and the applicability of the reward on the current purchase. Size range: `1..`
`data optional`	Object	An arbitrary, free-form data object configured by the merchant for the reward. This can be used to communicate additional parameters about the reward to the POS in advanced use cases. Bluecode will not interpret or modify this data. The default loyalty scheme does not use it.
`memberships optional`	Object[]	Undefined, The membership section contains a list of memberships.
`kind optional`	String	Identifier of the membership program, chosen by the merchant. The kind makes it possible to tell apart membership numbers in the case of multiple membership schemes. Size range: `1..`
`number optional`	String	Loyalty scheme membership number as assigned by the merchant. Size range: `1..`
`error`	Object	Error response object
`type`	String	The error type name classification Size range: `1..` Allowed values: `"ValidationError"`, `"ApiError"`, `"PaymentError"`, `"FetchError"`, `"SystemError"`
`message`	String	A human readable error message

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Field	Type	Description
		Size range: `1..`
`state`	String	state Size range: `1..` Allowed values: `"DECLINED"`
`code`	String	code Size range: `1..` Allowed values: `"TIMEOUT", "NON_CANCELED_TIMEOUTS", "UNAVAILABLE", "CANCELED", "SYSTEM_FAILURE", "INVALID_PARAMETER", "MERCHANT_TX_ID_NOT_UNIQUE", "ISSUER_NOT_SUPPORTED", "INVALID_BARCODE", "BRANCH_NOT_FOUND", "FRAUD_DETECTED", "INSUFFICIENT_FUNDS", "INVALID_STATE", "LIMIT_EXCEEDED", "CANCELED_BY_USER", "TRANSACTION_NOT_FOUND", "AMOUNT_TOO_HIGH", "UNAUTHORIZED", "CANCEL_PERIOD_EXPIRED", "CANCEL_NOT_SUPPORTED"`

- Success-Response:
- Error-Response:

```
HTTP/1.1 200 OK

{
  "memberships": [
    {
      "kind": "Bonus Program A++",
      "number": "123456789"
    }
  ],
  "rewards": [
    {
      "ean": "9919564985450",
```


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```
      "id": "11111111-2222-0000-0000-000000000001"
    }
  ]
}
HTTP/1.1 200 OK
"{
  "error": {
    "message": "network timeout at: https://merchant-
api.bluecode.biz/v4/status",
    "provider": {
      "id": 0,
      "name": "bluecode"
    },
    "name": "request-timeout",
    "type": "FetchError"
  }
}"
```


4.3 Loyalty - POST update

Associate a membership number with a user (or more precisely, a wallet, i.e. a single app installation of the user.

POST

`http://poskit.box/api/v1/loyalty/update`

4.3.1 Header

Field	Type	Description
`content-type`	String	`application/json`
`authorization`	String	`Basic <credentials>` (Base64 encoded `username:password`)

4.3.2 Request

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Field	Type	Description
`provider optional`	String	Provider for payment processing. Default value: `AUTO` Allowed values: `"AUTO"`, `"bluecode"`
`paymentMediaId`	String	Payment medium ID for example barcode number Size range: `1..`
`number`	String	Loyalty scheme membership number as assigned by the merchant. Size range: `1..`
`kind`	String	Identifier of the membership program, chosen by the merchant. The kind makes it possible to tell apart membership numbers in the case of multiple membership schemes. Size range: `1..`

4.3.3 Response

Field	Type	Description
`error`	Object	Error response object
`type`	String	The error type name classification Size range: `1..` Allowed values: `"ValidationError"`, `"ApiError"`, `"PaymentError"`, `"FetchError"`, `"SystemError"`
`message`	String	A human readable error message Size range: `1..`
`state`	String	state Size range: `1..` Allowed values: `"DECLINED"`

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Field	Type	Description
code	String	code Size range: 1.. Allowed values: "TIMEOUT", "NON_CANCELED_TIMEOUTS", "UNAVAILABLE", "CANCELED", "SYSTEM_FAILURE", "INVALID_PARAMETER", "MERCHANT_TX_ID_NOT_UNIQUE", "ISSUER_NOT_SUPPORTED", "INVALID_BARCODE", "BRANCH_NOT_FOUND", "FRAUD_DETECTED", "INSUFFICIENT_FUNDS", "INVALID_STATE", "LIMIT_EXCEEDED", "CANCELED_BY_USER", "TRANSACTION_NOT_FOUND", "AMOUNT_TOO_HIGH", "UNAUTHORIZED", "CANCEL_PERIOD_EXPIRED", "CANCEL_NOT_SUPPORTED"

- Success-Response:
- Error-Response:

```
HTTP/1.1 200 OK

{

}

HTTP/1.1 200 OK

"{

  "error": {

    "message": "network timeout at: https://merchant-
api.bluecode.biz/v4/status",

    "provider": {

      "id": 0,

      "name": "bluecode"

    },

    "name": "request-timeout",

    "type": "FetchError"

  }

}"
```


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5 Payment

5.1 Payment - POST cancel

Abort a payment transaction regardless if it is ongoing or has finished to process.

POST

`http://poskit.box/api/v1/cancel[?timeout=10000]`

5.1.1 Header

Field	Type	Description
`content-type`	String	`application/json`
`authorization`	String	`Basic <credentials>` (Base64 encoded `username:password`)

5.1.2 Request

Field	Type	Description
`transactionId`	String	ID of the transaction. Size range: `1..`

5.1.3 Response

Field	Type	Description
`error`	Object	Error response object
`type`	String	The error type name classification Size range: `1..` Allowed values: `"ValidationError"`, `"ApiError"`, `"PaymentError"`, `"FetchError"`, `"SystemError"`
`message`	String	A human readable error message Size range: `1..`
`state`	String	state Size range: `1..`

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Field	Type	Description
		Allowed values: `"DECLINED"`
code	String	code Size range: `1..` Allowed values: `"TIMEOUT"`, `"NON_CANCELED_TIMEOUTS"`, `"UNAVAILABLE"`, `"CANCELED"`, `"SYSTEM_FAILURE"`, `"INVALID_PARAMETER"`, `"MERCHANT_TX_ID_NOT_UNIQUE"`, `"ISSUER_NOT_SUPPORTED"`, `"INVALID_BARCODE"`, `"BRANCH_NOT_FOUND"`, `"FRAUD_DETECTED"`, `"INSUFFICIENT_FUNDS"`, `"INVALID_STATE"`, `"LIMIT_EXCEEDED"`, `"CANCELED_BY_USER"`, `"TRANSACTION_NOT_FOUND"`, `"AMOUNT_TOO_HIGH"`, `"UNAUTHORIZED"`, `"CANCEL_PERIOD_EXPIRED"`, `"CANCEL_NOT_SUPPORTED"`

- Success-Response:
- Error-Response:

```
HTTP/1.1 200 OK

{

}

HTTP/1.1 200 OK

"{

  "error": {

    "message": "network timeout at: https://merchant-
api.bluecode.biz/v4/status",

    "provider": {

      "id": 0,

      "name": "bluecode"

    },

    "name": "request-timeout",

    "type": "FetchError"

  }
```


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}"

5.2 Payment - POST payment

Charges the customer for a purchase.

POST

`http://poskit.box/api/v1/payment`

5.2.1Header

Field	Type	Description
`content-type`	String	`application/json`
`authorization`	String	`Basic <credentials>` (Base64 encoded `username:password`)

5.2.2 Request

Field	Type	Description
`provider optional`	String	Provider for payment processing. Default value: `AUTO` Allowed values: `"AUTO"`, `"bluecode"`
`posId optional`	String	The ID of POS device/system initiating the transaction Size range: `1..`
`locale optional`	String	If not present server side environment variable `API_LOCALE` with fallback to `en-GB` will be used. Allowed values: `"en-GB"`, `"de-DE"`
`scheme optional`	String	The scheme that should be used for the payment by the target provider. Default value: `AUTO` Allowed values: `"AUTO"`
`transactionId`	String	It is used to identify the transaction in the case of cancellation and has to be unique among all

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Field	Type	Description
		transactions ever issued by the merchant. random.org can help you make some up. Size range: `1..`
`paymentMediaId`	String	Payment medium ID for example barcode number Size range: `1..`
`amount`	Object	Price of purchase details
`purchase`	Integer	The total price of the purchase (before tip and discount). Size range: `1 - ∞`
`discount optional`	Integer	Any discount offered on the purchase amount. Default value: `0` Size range: `0 - ∞`
`tip optional`	Integer	Tip amount captured on the merchant device. Default value: `0` Size range: `0 - ∞`
`currency optional`	String	ISO 4217 currency code. Default value: `EUR` Allowed values: `"EUR"`
`slip optional`	String	Providers may support further identifier for a transaction. Assumed to be printed on customer receipt and used to identify the transaction given the slip. The format of this ID can be freely chosen by the caller and is not validated. Size range: `1..`
`slipDateTime optional`	Integer	The date and time of the transaction Size range: `241920000000 - ∞`

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Field	Type	Description
`source optional`	String	Source of transaction. Possible values Allowed values: `"pos"`, `"ecommerce"`, `"mcommerce"`, `"vending"`, `"moto"`, `"others"`
`operator optional`	String	Identifies the cashier initiating the transaction. The format of this ID can be freely chosen by the caller and is not validated. Size range: `1..`
`entryMode optional`	String	How the Payment medium ID was entered. Allowed values: `"scan"`, `"keyentry"`, `"nfc"`
`endToEndId optional`	String	If the payment is an instant payment, this is the end to end ID that identifies the transaction to the consumer's and merchant's bank. Size range: `1..`

5.2.3 Response

Field	Type	Description
`acquirerTransactionId`	String	The transaction ID assigned by the acquirer
`transactionId`	String	Originial initiation transaction ID
`slipNote`	String	Providers may support further identifier for a transaction. Assumed to be printed on customer receipt and used to identify the transaction given the slip. The format of this ID can be freely chosen by the caller and is not validated.
`error`	Object	Error response object
`type`	String	The error type name classification Size range: `1..` Allowed values: `"ValidationError"`, `"ApiError"`, `"PaymentError"`, `"FetchError"`, `"SystemError"`

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Field	Type	Description
message	String	A human readable error message Size range: 1..
state	String	state Size range: 1.. Allowed values: "DECLINED"
code	String	code Size range: 1.. Allowed values: "TIMEOUT", "NON_CANCELED_TIMEOUTS", "UNAVAILABLE", "CANCELED", "SYSTEM_FAILURE", "INVALID_PARAMETER", "MERCHANT_TX_ID_NOT_UNIQUE", "ISSUER_NOT_SUPPORTED", "INVALID_BARCODE", "BRANCH_NOT_FOUND", "FRAUD_DETECTED", "INSUFFICIENT_FUNDS", "INVALID_STATE", "LIMIT_EXCEEDED", "CANCELED_BY_USER", "TRANSACTION_NOT_FOUND", "AMOUNT_TOO_HIGH", "UNAUTHORIZED", "CANCEL_PERIOD_EXPIRED", "CANCEL_NOT_SUPPORTED"

- Success-Response:
- Error-Response:

```
HTTP/1.1 200 OK

{

  "transactionId": "b9df899e-788f-456c-9e96-794a391e3eda",

  "acquirerTransactionId": "b9df899e-788f-456c-9e96-794a391e3eda",

  "slipNote": "www.bluecode.com"

}

HTTP/1.1 200 OK

{

  "error": {

    "state": "DECLINED",
```


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```
    "code": "LIMIT_EXCEEDED",
    "message": "Zahlung wurde abgelehnt. Bitte anderes Zahlungsmittel benutzen.",
    "type": "PaymentError"
  }
}
```

5.3 Payment - POST refund

Refund a payment for an earlier transaction, either fully or partially.

POST

`http://poskit.box/api/v1/refund[?timeout=10000]`

5.3.1 Header

Field	Type	Description
`content-type`	String	`application/json`
`authorization`	String	`Basic <credentials>` (Base64 encoded `username:password`)

5.3.2 Request

Field	Type	Description
`acquirerTransactionId`	String	ID of the transaction assigned by the acquirer. Size range: `1..`
`amount optional`	Integer	The amount to be refunded in the original transaction's currency. If not specified, the full amount will be refunded. Size range: `1 - ∞`
`reason optional`	String	Reason of refund. e.g. "Warranty" Size range: `1..`

5.3.3 Response

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Field	Type	Description
`error`	Object	Error response object
`type`	String	The error type name classification Size range: `1..` Allowed values: `"ValidationError"`, `"ApiError"`, `"PaymentError"`, `"FetchError"`, `"SystemError"`
`message`	String	A human readable error message Size range: `1..`
`state`	String	state Size range: `1..` Allowed values: `"DECLINED"`
`code`	String	code Size range: `1..` Allowed values: `"TIMEOUT"`, `"NON_CANCELED_TIMEOUTS"`, `"UNAVAILABLE"`, `"CANCELED"`, `"SYSTEM_FAILURE"`, `"INVALID_PARAMETER"`, `"MERCHANT_TX_ID_NOT_UNIQUE"`, `"ISSUER_NOT_SUPPORTED"`, `"INVALID_BARCODE"`, `"BRANCH_NOT_FOUND"`, `"FRAUD_DETECTED"`, `"INSUFFICIENT_FUNDS"`, `"INVALID_STATE"`, `"LIMIT_EXCEEDED"`, `"CANCELED_BY_USER"`, `"TRANSACTION_NOT_FOUND"`, `"AMOUNT_TOO_HIGH"`, `"UNAUTHORIZED"`, `"CANCEL_PERIOD_EXPIRED"`, `"CANCEL_NOT_SUPPORTED"`

- Success-Response:
- Error-Response:

```
HTTP/1.1 200 OK

{

}

HTTP/1.1 200 OK
```


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```
"{
  "error": {
    "message": "network timeout at: https://merchant-
api.bluecode.biz/v4/status",
    "provider": {
      "id": 0,
      "name": "bluecode"
    },
    "name": "request-timeout",
    "type": "FetchError"
  }
}"
```


5.4 Payment - POST status

Verfiy status of a payment.

POST

`http://poskit.box/api/v1/status[?timeout=10000]`

5.4.1 Header

Field	Type	Description
`content-type`	String	`application/json`
`authorization`	String	`Basic <credentials>` (Base64 encoded `username:password`)

5.4.2 Request

Field	Type	Description
`transactionId`	String	ID of the transaction. Size range: `1..`

5.4.3 Response

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Field	Type	Description
`transactionId optional`	String	Originial initiation transaction ID Size range: `1..`
`acquirerTransactionId optional`	String	undefined Size range: `1..`
`amount`	Object	Price of purchase details
`purchase optional`	Integer	The total price of the purchase (before tip and discount). Size range: `1 - ∞`
`tip optional`	Integer	Tip amount captured on the merchant device. Default value: `0` Size range: `0 - ∞`
`currency optional`	String	ISO 4217 currency code. Allowed values: `"EUR"`
`endToEndId optional`	String	undefined Size range: `1..`
`scheme optional`	String	undefined Size range: `1..`
`slipNote optional`	String	undefined Size range: `1..`
`state optional`	String	undefined Size range: `1..` Allowed values: `"APPROVED"`, `"DECLINED"`, `"FAILURE"`, `"CANCELLED"`, `"REFUNDED"`, `"REGISTERED"`, `"CONFIRMATION"`, `"PROCESSING"`

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Field	Type	Description
`error`	Object	Error response object
`type`	String	The error type name classification Size range: `1..` Allowed values: `"ValidationError"`, `"ApiError"`, `"PaymentError"`, `"FetchError"`, `"SystemError"`
`message optional`	String	A human readable error message Size range: `1..`
`errors optional`	Object[]	A list of errors if more than one errors occured. undefined

- Success-Response:
- Error-Response:

```
HTTP/1.1 200 OK

{

  "transactionId": "81aec6eb-d3c2-4506-937f-172cab9ac68f",

  "acquirerTransactionId": "3YULQECIU0K54AIIRZRZB00TG7",

  "amount": {

    "tip": 0,

    "purchase": 120

  },

  "currency": "EUR",

  "endToEndId": null,

  "scheme": "BLUE_CODE",

  "slipNote": "www.bluecode.com",

  "state": "APPROVED"

}

HTTP/1.1 200 OK

"{
```


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```
  "error": {
    "message": "network timeout at: https://merchant-
api.bluecode.biz/v4/status",
    "provider": {
      "id": 0,
      "name": "bluecode"
    },
    "name": "request-timeout",
    "type": "FetchError"
  }
}"
```


6 System

6.1 System - GET ping providers

Verify connectivity and availability of service(s).

GET

`http://poskit.box/api/v1/ping/:provider[?timeout=10000]`

6.1.1 Header

Field	Type	Description
content-type	String	application/json

6.1.2 Parameter

Field	Type	Description
provider	String	Optional provider name
timeout	Integer	Optional request timeout in milliseconds. Use this for tests only.

- Error-Response (invalid provider):
- Error-Response (timeout):
- Success-Response:

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```
HTTP/1.1 200 OK

{
      "errors": [
            {
                  "type": "ApiError",
                  "message": "ApiError: invalid provider name \"test\"",
                  "details": {
                        "name": "ApiError",
                        "type": "ApiError"
                  }
            }
      ]
}
HTTP/1.1 200 OK

{
      "errors": [
            {
                  "provider": {
                        "id": 0,
                        "name": "bluecode"
                  },
                  "type": "request-timeout",
                  "message": "FetchError: network timeout at:
https://merchant-api.bluecode.biz/v4/ping",
                  "details": {
                        "message": "network timeout at: https://merchant-
api.bluecode.biz/v4/ping",
                        "type": "request-timeout",
                        "config": {
                              "_id": "4de2e614-fb70-45da-ada1-
6133c68ad8cb",
```


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```
                        "method": "get",
                        "url": "https://merchant-
api.bluecode.biz/v4/ping",
                        "data": null,
                        "timeout": "1",
                        "params": {},
                        "headers": {
                              "Accept": "application/json"
                        },
                        "responseType": "json"
                  },
                  "provider": {
                        "id": 0,
                        "name": "bluecode"
                  }
            }
      }
]
}
HTTP/1.1 200 OK
{}
```


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6.2 System - GET ping system

Ping the base system to verify server status.

GET

```
http://poskit.box/ping
```

6.2.1 Header

Field	Type	Description
content-type	String	application/json

6.2.2 Success 200

Field	Type	Description
time	String	System date and time in ISO-8601 (RFC 3339) standard format of request.
timestamp	Integer	System date and time represented as number of milliseconds* since the Unix Epoch of request.
timezone	String	System time zone regarding to Greenwich Mean Time (GMT) which is now called UTC (Coordinated Universal Time).
timezoneOffset	Integer	Difference in hours and minutes from Coordinated Universal Time (UTC).
upTime	String	Human readable string which displays current up time of the server.
upTimestamp	Integer	Current up time of the server.
version	String	Software version in Semantic Versioning Specification format (SemVer).
remoteAddress	String	IP of current request.

- Success-Response:

```
HTTP/1.1 200 OK

{
```


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```
  "time": "2020-06-24T06:53:06+02:00",
  "timestamp": 1592974386487,
  "timezone": "Europe/Berlin",
  "timezoneOffset": -120,
  "upTime": "today at 6:53 AM",
  "upTimestamp": 1592974386155,
  "version": "1.0.0-alpha",
  "remoteAddress": "::1"
}
```


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6.3 System - GET schema

Returns a JSON schema to validate payload data for a specific api call.

GET

`http://poskit.box/api/v1/schema/:name`

6.3.1 Header

Field	Type	Description
`content-type`	String	`application/json`

6.3.2 Parameter

Field	Description
`name`	A schema name for example (payment | status | cancel | refund)

6.3.3 Success 200

Field	Type	Description
`schema`	Object	A JSON schema. See verify and https://json-schema.org/ for more informations.

- Success-Response:

```
HTTP/1.1 200 OK

{

  schema: {

        ...

  }

}
```


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6.4 System - POST verify

Verfiy payload data for a specific REST API call.

POST

`http://poskit.box/api/v1/verify`

6.4.1 Header

Field	Type	Description
`content-type`	String	`application/json`

6.4.2 Parameter

Field	Type	Description
`command`	String	The API command name you want to verify.
`payload`	Object	The payload for the specific API method.

6.4.3 Response

Field	Type	Description
`error`	Object	Error response object
`type`	String	The error type name classification Size range: `1..` Allowed values: `"ValidationError"`, `"ApiError"`, `"PaymentError"`, `"FetchError"`, `"SystemError"`
`message optional`	String	A human readable error message Size range: `1..`
`errors optional`	Object[]	A list of errors if more than one errors occured. undefined

- Success-Response:
- Error-Response:

```
HTTP/1.1 200 OK
```


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```
{}

HTTP/1.1 200 OK

{

      "error": {

            "message": "validation failed",

            "errors": [

                  {

                        "keyword": "required",

                        "dataPath": "",

                        "schemaPath": "#/required",

                        "params": {

                              "missingProperty": "transactionId"

                        },

                        "message": "should have required property
'transactionId'"

                  },

                  {

                        "keyword": "required",

                        "dataPath": "",

                        "schemaPath": "#/required",

                        "params": {

                              "missingProperty": "paymentMediaId"

                        },

                        "message": "should have required property
'paymentMediaId'"

                  },

                  {

                        "keyword": "required",

                        "dataPath": "",

                        "schemaPath": "#/required",

                        "params": {
```


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```
                        "missingProperty":
"amount"
                    },
                    "message": "should have required property
'amount'"
                }
            ],
            "type": "ValidationError"
        }
}
```


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7 Playground

7.1 Test data

Providers sandbox environment may provide barcodes which provides a certain response and does not expire. This saves the time it takes to generate new, valid codes for testing or to reproduce specific error cases.

7.1.1 Bluecode

7.1.1.1 Barcodes

7.1.1.1.1 Success

The most commonly used barcode is the one that always results in a payment that is immediately accepted.

Barcode	Status
98802222100100123456	Always results in successful payment.
98800000000000000100	A successful payment that includes an end-to-end ID.
98800000000000000101	A successful payment that include extra, undocumented attributes in all calls (e.g. loyalty status). This is useful to test that the client can deal with future extensions to the API.
98800000000000000099	A successful payment that include an "acquirer_tx_id" that can be used to trigger a successful .../refund API request .

7.1.1.1.2 Processing

The following barcodes will respond delayed.

Barcode	Status
98802222999900301000	Successful payment with 1 second delay
98802222999900305000	... 5 second delay
98802222999900309000	... 9 second delay
98802222999900308001	Successful payment with 8 second delay that returns a ttl value of 5000

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7.1.1.1.3 Errors

The following barcodes can be used to provoke a specific error response.

Barcode	Status
Any string, e.g. hello-world	INVALID_BARCODE
98804444000000402005	INVALID_STATE
98804444000000402007	LIMIT_EXCEEDED
98802222999900500500	SYSTEM_FAILURE (status 500)
98802222999900315000	Fail due to timeout after 15 seconds delay

7.1.1.1.4 Loyalty-scheme related

Barcode	Status
98802222100100500099	Simulates a user that does not have any activated rewards. The payment will succeed. The loyalty status call will succeed and not return any rewards.
98802222100100500001	Simulates a user that has a single activated reward. The loyalty status call will succeed and return a single rewards. The user has a membership number.
98802222100100500002	Same as ...0001 but with two rewards.
98802222100100500004	Simulates a user that has two memberships.
98802222100100500005	Simulates a user that is enrolled in the membership scheme but has not entered a membership number (membership_number is null).
98802222100100500599	The payment will succeed but the loyalty status call will time out.
98802222100100500500	Loyalty status will return a reward and the payment will succeed, but the redeem reward will return system failure (which should cause the POS to cancel the payment).
98802222100100500503	Loyalty status will return a reward and the payment will succeed, but the redeem reward will time out (which should cause the POS to cancel the payment).

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8 POS Kit Server runtime environment (DRAFT)

So far the POS Kit executables will be distributed for the following runtime environments

- Windows (x64)
- A pos-kit.exe specificly compiled for the target platform and architecture. It contains the POS Kit API platform.
- A pos-kit-service.exe which can install pos-kit.exe as a Windows Service.
- A pos-kit-service.xml which contains the Windows service settings.
- A .env which contains the pos-kit.exe runtime environment settings.

8.1 Runtime environment configuration

8.1.1 API runtime environment

Example: `API_ENV=sandbox`. Various payment providers may maintain different runtime environments for testing and development purpose. Possible values are `sandbox` and `production`

8.1.2 Server ID

Example: `SERVER_ID=POS_KIT_TEST_SERVER_DEVELOPMENT`. A global unique POS Kit server identification.

8.1.3 Port

Example: `PORT=5001`. The Port specifies on which port number the REST API web server should listen to accept connections.

8.1.4 Request timeout

Example: `REQUEST_TIMEOUT=20000`. Default timeout in milliseconds for remote API requests. If a request has no timeout parameter the system will use this default value. The fallback value is `10000` if `REQUEST_TIMEOUT` does not exist. To force request timeouts while test driven development you can pass `?timeout=1` as `HTTP GET` parameter.

8.1.5 Remote log server

Example: `ERROR_LOG_SERVER_URL=https://test.sit-pay.de/error-log-server/log`. In case of unexpected errors the POS Kit try to send a detailed error log to a central error log server. This will either work or not work. It will not affect the production process.

8.1.6 TCP server

TCP HOST server configuration for ZVT communications.

8.1.6.1 Host

Example: `TCP_HOST=localhost`.

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8.1.6.2 Port

Example: `TCP_PORT=2222`.

8.1.7Ignore error types while remote logging

Example: `ERROR_LOG_SERVER_IGNORE=PaymentError` a comma separated list of error types which should be ignored while sending errors to the remote error log server. Some error types may be expected in production.

8.1.8Log level

Example: `LOG_LEVEL=info`. Defines the level of logging for the application which should in different scenarios contain automatically maintained log of all or certain actions of processes on a computer system. The recommended mode for production environments is `info`.

8.1.8.1 Available log levels

The log levels in `POS Kit` are as follows. The level descriptions are best practice opinions of the author.

`LOG_LEVEL=fatal` (60): The service/app is going to stop or become unusable now. An operator should definitely look at this soon.

`LOG_LEVEL=error` (50): Fatal for a particular request, but the service/app continues servicing other requests. An operator should look at this soon(ish).

`LOG_LEVEL=warn` (40): A note on something that should probably be looked at by an operator eventually.

`LOG_LEVEL=info` (30): Detail on regular operation.

`LOG_LEVEL=debug` (20): Anything else, i.e. too verbose to be included in "info" level.

`LOG_LEVEL=trace` (10): Logging from external libraries used by your app or very detailed application logging.

8.1.9IP range access restriction

Example: `ACCESS_RESTRICTION=192.168.20.0/24,::1,::ffff:127.0.0.1,::ffff,127.0.0.1`. A comma seperated list of IPs or I Masks which should have permisson to use payment relevant API.

8.1.10 API authentification

Some `POS Kit` API commands may expect `basic form` authentification header. `BASIC_AUTH_USER` and `BASIC_AUTH_PASSWORD` will define these credentials

- `BASIC_AUTH_USER=test`
- `BASIC_AUTH_PASSWORD=test`

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8.1.11 Language

Example: `API_LOCALE=de-DE`. At some points, the cash register could make suggestions on how to proceed in certain situations. These suggestions are available in different languages. Possible values are `en-GB` and `de-DE`.

8.1.12 Offline mode

Example: `MOCK=true`. The application can return data from previous recorded API responses for various API endpoints and payload data. This setting only works if `API_ENV` is equal to `sandbox`. The data is saved in `./mock` folder which is relative to `pos-kit.exe` working directory. The function is only for development and test driven implementation scenarios where no internet connection is available. So use this setting in unusual test situations only! Deactivate the setting by removing the environment variable "MOCK" or setting it to "false". The recommended mode for all environments is `false` or simply undefined.

8.1.13 Record mock sandbox data

Example: `MOCK_RECORD_MODE=true`. Determines if the application should save remote API responses for various API endpoints and payload data in `./mock` folder which is relative to `pos-kit.exe` working directory.

8.1.14 Strict secure mode

Example: `STRICT_SECURE=true`. Force ALL routes to be protected by the IP based authentication middleware.

8.1.15 Provider specific configurations

8.1.15.1 API environment Sandbox

8.1.15.1.1 BLUECODE access id

Example: `API_SANDBOX_BLUECODE_ACCESS_ID=PORTAL-c2b67e03-6117-4918-a1d4-8243f577352f`

8.1.15.1.2 BLUECODE access secret key

Example: `API_SANDBOX_BLUECODE_ACCESS_SECRET_KEY=adb2a048-2e86-487e-8ab7-e49190eb7eb9`

8.1.15.1.3 BLUECODE branch ext ID

Example: `API_SANDBOX_BLUECODE_BRANCH_EXT_ID=test`

8.1.15.1.4 BLUECODE terminal

Example: `API_SANDBOX_BLUECODE_TERMINAL=12819074-f159-4e16-9b04-43194df94862`

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8.1.15.2 API environment Production

8.1.15.2.1 BLUECODE access ID

Example: `API_PRODUCTION_BLUECODE_ACCESS_ID=PORTAL-c2b67e03-6117-4918-a1d4-8243f577352f`

8.1.15.2.2 BLUECODE access secret key

Example: `API_PRODUCTION_BLUECODE_ACCESS_SECRET_KEY=adb2a048-2e86-487e-8ab7-e49190eb7eb9`

8.1.15.2.3 BLUECODE branch ext ID

Example: `API_PRODUCTION_BLUECODE_BRANCH_EXT_ID=test`

8.1.15.2.4 BLUECODE terminal

Example: `API_PRODUCTION_BLUECODE_TERMINAL=12819074-f159-4e16-9b04-43194df94862`

8.1.16 Command line parameters

- `--help` ouput command line parameters
- `--v` or `--version` output application version
- `--test` execute unit tests
- `--log_level` log level. Default `fatal` while unit tests
- `--mock` POS Kit should use previosly recorded mock data as HTTP response. Default `false`
- `--port` POS Kit server listener port. Defaults to `9001`
- `--error_log_server_ignore` Defaults to `PaymentError,ValidationError,FetchError,ApiError`
- `--tcp_host` Defaults to `localhost`
- `--tcp_port` Defaults to `2222`
- `--tcp_unit_test_server_port` Defaults to `2222` # Internal TCP Server for unit tests

8.1.17 Unit test

POS Kit system can test itself on host machines. While unit tests depends on environment settings you can change settings by passing parameters to executable. However the unit tests can only be executed in sandbox mode. The system itself sets `API_ENV=sandbox` internal.

8.1.18 Example

```
C:\pos-kit\>pos-kit.exe --test --log_level fatal

  Log prepare module

    √ should fail to valdate an invald logger
```


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```
  #/auth

    √ should get data protected by basic form authorization

    √ should fail to get data protected by basic form authorization using
invalid credentials


  #/ping

    √ should get valid result from ping route


  #/api/v1/payment [bluecode]

    √ should deny access without crendentials

    √ should deny access with invalid crendentials

    √ should return an error with invalid payload (78ms)

    √ should approve a payment [APPROVED] (261ms)

    √ should fail with [DECLINED/INVALID_STATE] (297ms)

    √ should fail with [DECLINED/LIMIT_EXCEEDED] (221ms)

    √ should fail with [DECLINED/INVALID_BARCODE] (157ms)

    √ should fail with [INVALID IP]

    √ should delay a payment [APPROVED] (5785ms)


  #/api/v1/ping

    √ #/api/v1/ping/* (122ms)

    √ #/api/v1/ping/*?timeout=20000 (154ms)

    √ #/api/v1/ping/*?timeout=1

    √ #/api/v1/ping/bluecode (146ms)

    √ #/api/v1/ping/bluecode?timeout=20000 (121ms)

    √ #/api/v1/ping/google


  #/api/v1/providers

    √ should get a list of providers


  #/api/v1/status [bluecode]
```


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```
  √ should get status of approved payment (330ms)


#/api/v1/status [bluecode/timeout]
  √ should return FetchError (268ms)


#/api/v1/verify && #/api/v1/schema
  √ #/api/v1/schema/payment [invalid payload] (39ms)
  √ #/api/v1/schema/payment [valid payload] (50ms)
```


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