

# Interaction protocol

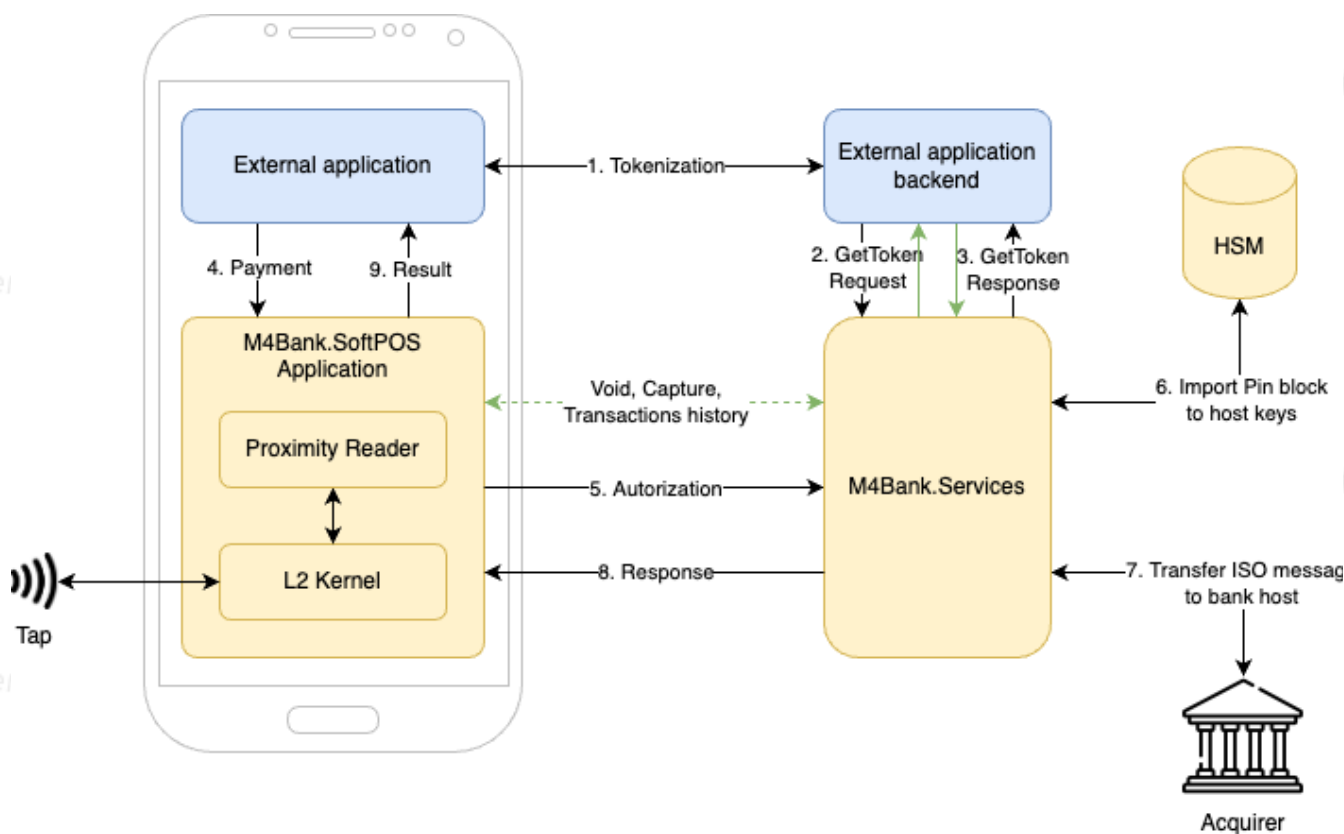
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## Change history

Version	Date of modification	Change history
v1	30.06.2020	Document creation
v2	14.05.2024	Document refactored to actual API
v2.1	01.06.2024	Added new fields

## Working with an external application

### Common scheme



## Constant values

### Serialization Keys

Name	Value	Description
EXTERNAL_INPUT_DATA_KEY	ru.m4bank.ExternalApplication.InputDataKey	Used in the putExtra() method as the serialization key of the operation input
EXTERNAL_RESULT_DATA_KEY	ru.m4bank.ExternalApplication.ResultDataKey	Used in the getExtraString() method as the serialization key of the resulting operation data
EXTERNAL_OPERATION_TYPE_KEY	ru.m4bank.ExternalApplication.OperationTypeKey	Used in the putExtra() method as the serialization key of the type of operation being performed

### Response codes

For the list of possible interaction protocol error codes, see the article [Application interaction protocol response codes](#).  
 For the list of possible error codes when performing an operation, see the article [Operation error codes](#).

## Interaction between applications

### Calling an external application

An external application is called through an Intent:

### Starting an operation through an external application

```
Intent intent = new Intent();
intent.setComponent(new ComponentName("ru.m4bank.softpos.<customer_name>", "ru.m4bank.feature.externalapplication.ExternalApplicationActivity"));
intent.setFlags(Intent.FLAG_ACTIVITY_SINGLE_TOP);
intent.putExtra(EXTERNAL_OPERATION_TYPE_KEY, operationType);
intent.putExtra(EXTERNAL_INPUT_DATA_KEY, inputJsonData);
// "ru.m4bank.softpos.<customer_name>" - the application package name, different for customers. You can find it out through the command # aapt dump
badging <file_name.apk>
// operationType - see the section "List of supported operations"
// inputJsonData - json string containing input data for the operation start
// INTENT_REQUEST_CODE - the value specified by the user API is used to filter the received result in onActivityResult()
```

### Getting the result

The result of the performed operation can be processed in the onActivityResult() of the calling activity:

#### Processing the result of the operation

```
@Override public void onActivityResult(int requestCode, int resultCode, Intent resultData) {
    // requestCode is the value from the startActivityForResult() call in the previous step
    // resultCode - indicator of the success of data exchange between applications, Activity.RESULT_OK - exchange completed successfully
    String operationType = resultData.getStringExtra(EXTERNAL_OPERATION_TYPE_KEY);
    String result = resultData.getStringExtra(EXTERNAL_RESULT_DATA_KEY);
    // result of the operation in json-string format // desired processing of the result
}
```

### Test case

Файл	Изменено
Файл demoapp.apk	мар. 23, 2021 by Илья Булатов
ZIP Архив demoapp_sources.zip	мар. 23, 2021 by Илья Булатов
PNG файл Technical Flow Card Reading-Technical Flow External App - Card Reading.drawio.png	сент. 11, 2022 by Владимир Лукьянович

[Скачать Все](#)

### Operations

#### List of Supported Operations

```
public enum OperationType {
    PAYMENT,           // Payment
    REFUND,             // Return
    REVERSAL,           // Cancel
    CLOSE_DAY,          // Closing the trading day
    OPERATIONS_LIST,    // Getting the list of operations
    UPDATE_TERMINAL_KEYS, // Loading keys to the device
    SIGN_IN_APPLICATION, // Authorization without a response
    GET_INTERMEDIATE_REPORT, // Getting transactions list for the intermediate report
}
```

### Payment operation

#### Message format

## Description of the request

```
{
  "credentials": {
    "authorizationToken": "[Application authorization token]" // Required field
  },
  "operationData": {
    "instrument": "[CARD (card transaction) / CASH (cash transaction)]", // Required field
    "operationExternalId": "[External operation id]",
    "amountData": {
      "currencyCode": "[Transaction currency code]", // Required field
      "amount": "[Amount to complete the payment operation]", // Required field
      "amountExponent": "[Number of characters in the fractional part of the transaction amount]" // Required field
    },
    "goods": { // Required block
      "product": [
        {
          "name": "[Product name]",
          "price": "[Unit price (in minimum units)]",
          "quantity": "[Number of items of goods (in minimum units)]",
          "quantityExponent": "[Number of characters in the fractional part of the number of product units]",
          "taxRate": "[See document \"Item parameters\" block \"Tax Rate\" (https://wiki.m4bank.ru/pages/viewpage.action?pagelId=48923607 )]",
          "accountingSubject": "[See document \"Item parameters\" block \"Sign of the subject of calculation\" (https://wiki.m4bank.ru/pages/viewpage.action?pagelId=48923607 )]"
        }
      ]
    }
  }
}
```

## Description of the response

```
{
  "result": {
    "code": "[Response code of the protocol of interaction between applications. See document \"Application interaction protocol response codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923594 )]",
    "description": "[Response text]",
    "hostResponse": {
      "code": "[Host response code]",
      "description": "[Host response text]"
    },
    "errorData": {
      "code": "[Operation execution error code. See document \"Operation error codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923592 )]",
      "description": "[Error text]"
    }
  },
  "transaction": {
    "terminalId": "[ID of the terminal on which the operation was performed]",
    "operationDay": "[Operating day number]",
    "transactionNumber": "[Transaction number in the transaction day]",
    "reversible": "[Is this transaction may be reversed]",
    "refundable": "[Is this transaction may be refunded]",
    "externalTerminalId": "[Host terminal id]",
    "dateTime": "[Operation Time]",
    "instrumentSpecificData": {
      [See document \"Operation instrument data\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923636)]
    },
    "amountData": {
      "currencyCode": "[Currency iso numeric code]",
      "amount": "[Transactions amount in minimal units for currency]",
      "amountExponent": "[Exponent for amount]"
    },
    "company": {
      "name": "[Company name]"
    },
    "merchant": {
      "name": "[Merchant name]",
      "address": "[Merchant address]",
      "phoneNumber": "[Merchant phone number]",
      "merchantId": "[Merchant id]"
    }
  }
}
```

## Example

## Request

```
{
  "credentials": {
    "authorizationToken": "vdf8uger98v9ve9j"
  },
  "operationData": {
    "instrument": "CARD",
    "operationExternalId": "31",
    "amountData": {
      "currencyCode": "643",
      "amount": "6000",
      "amountExponent": "2"
    },
    "goods": {
      "product": [
        {
          "name": "Cookies",
          "price": "3000",
          "quantity": "2",
          "quantityExponent": "0",
          "taxRate": "TAX_20",
          "accountingSubject": "PRODUCT"
        }
      ]
    }
  }
}
```

## Response

```
{
  "result": {
    "code": "0",
    "description": "Successfully completed",
    "hostResponse": {
      "code": "0",
      "description": "Successfully completed"
    }
  },
  "transaction": {
    "terminalId": "123321",
    "operationDay": "4",
    "transactionNumber": "69",
    "externalTerminalId": "as123",
    "dateTime": "Mon Jun 21 14:49:39 GMT+03:00 2021",
    "merchant": {
      "name": "Test merchant"
    },
    "reversible": true,
    "instrumentSpecificData": {
      "authorizationCode": "000000",
      "rrn": "1234567890",
      "cardholderName": "IVAN IVANOV",
      "maskedPan": "123456*****7890",
      "cardType": "Mastercard",
      "applicationId": "A40000100023056"
    }
  }
}
```

## Return operation

## Message format

**Request Description**

```
{
  "credentials": {
    "authorizationToken": "[Application authorization token]" // Required field
  },
  "operationData": {
    "instrument": "[CARD (card transaction) / CASH (cash transaction)]", // Required field
    "operationExternalId": "[External operation id]",
    "amountData": {
      "currencyCode": "[Transaction currency code]", // Required field
      "amount": "[Amount to complete the refund operation]", // Required field
      "amountExponent": "[Number of characters in the fractional part of the transaction amount]" // Required field
    },
    // Required fields sets: (terminalId, operationDay, transactionNumber) or rrn
    "parentTransaction": {
      "terminalId": "[ID of the terminal on which the parent operation was performed]", // Required with operationDay, transactionNumber
      "operationDay": "[Operation day number of parent operation]", // Required with terminalId, transactionNumber
      "transactionNumber": "[Parent transaction number in the transaction day]", // Required terminalId, transactionNumber
      "rrn": "[RRN of parent transaction]" // Required if other fields in this block are absent
    }
  }
}
```

**Description of the response**

```
{
  "result": {
    "code": "[Response code of the protocol of interaction between applications. See document \"Application interaction protocol response codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923594)]",
    "description": "[Response text]",
    "hostResponse": {
      "code": "[Host response code]",
      "description": "[Host response text]"
    },
    "errorData": {
      "code": "[Operation execution error code. See document \"Operation error codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923592)]",
      "description": "[Error text]"
    }
  },
  "transaction": {
    "terminalId": "[ID of the terminal on which the operation was performed]",
    "operationDay": "[Operating day number]",
    "transactionNumber": "[Transaction number in the transaction day]",
    "operationExternalId": "[External operation id]",
    "externalTerminalId": "[Host terminal id]",
    "dateTime": "[Operation Time]",
    "reversible": "[true if reversal is available / false if not]",
    "instrumentSpecificData": {
      [See document "Operation instrument data" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923636)]
    },
    "amountData": {
      "currencyCode": "[Currency iso numeric code]",
      "amount": "[Transactions amount in minimal units for currency]",
      "amountExponent": "[Exponent for amount]"
    },
    "company": {
      "name": "[Company name]"
    },
    "merchant": {
      "name": "[Merchant name]",
      "address": "[Merchant address]",
      "phoneNumber": "[Merchant phone number]",
      "merchantId": "[Merchant id]"
    }
  }
}
```

**Example**

As an example, a partial return on the operation from the previous example:

**Request**

```
{
  "credentials": {
    "authorizationToken": "vdf8uger98v9ve9j"
  },
  "operationData": {
    "instrument": "CARD",
    "operationExternalId": "31",
    "amountData": {
      "currencyCode": "643",
      "amount": "4500",
      "amountExponent": "2"
    },
    "parentTransaction": {
      "terminalId": "123321",
      "operationDay": "4",
      "transactionNumber": "69"
    }
  }
}
```

**Response**

```
{
  "result": {
    "code": "0",
    "description": "Successfully completed",
    "hostResponse": {
      "code": "0",
      "description": "Successfully completed"
    }
  },
  "transaction": {
    "terminalId": "123321",
    "operationDay": "4",
    "transactionNumber": "70",
    "operationExternalId": "31"
  },
  "merchant": {
    "name": "Test merchant"
  },
  "externalTerminalId": "as123",
  "dateTime": "Mon Jun 21 14:49:39 GMT+03:00 2021",
  "reversible": false,
  "instrumentSpecificData": {
    "authorizationCode": "000000",
    "rrn": "1234567890",
    "cardholderName": "IVAN IVANOV",
    "maskedPan": "123456*****7890",
    "cardType": "Mastercard",
    "applicationId": "A40000100023056"
  }
}
```

**Cancel operation****Message format**



**Request Description**

```
{
  "credentials": {
    "authorizationToken": "[Token for authorization in the application]" // Required field
  },
  "operationData": {
    "operationExternalId": "[External operation id]",
    // Required fields sets: (terminalId, operationDay, transactionNumber) or rrn
    "parentTransaction": {
      "terminalId": "[ID of the terminal on which the parent operation was performed]", // Required with operationDay, transactionNumber
      "operationDay": "[Operation day number of parent operation]", // Required with terminalId, transactionNumber
      "transactionNumber": "[Parent transaction number in the transaction day]", // Required terminalId, transactionNumber
      "rrn" : "[RRN of parent transaction]" // Required if other fields in this block are absent
    }
  }
}
```

**Description of the response**

```
{
  "result": {
    "code": "[Response code of the protocol of interaction between applications. See document \"Application interaction protocol response codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923594)]",
    "description": "[Response text]",
    "hostResponse": {
      "code": "[Host response code]",
      "description": "[Host response text]"
    },
    "errorData": {
      "code": "[Operation execution error code. See document \"Operation error codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923592)]",
      "description": "[Error text]"
    }
  },
  "transaction": {
    "terminalId": "[ID of the terminal on which the operation was performed]",
    "operationDay": "[Operating day number]",
    "transactionNumber": "[Transaction number in the transaction day]",
    "operationExternalId": "[External operation id]"
  },
  "externalTerminalId": "[Host terminal id]",
  "dateTime": "[Operation Time]",
  "instrumentSpecificData": {
    [See document "Operation instrument data" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923636)]
  },
  "amountData": {
    "currencyCode": "[Currency iso numeric code]",
    "amount": "[Transactions amount in minimal units for currency]",
    "amountExponent": "[Exponent for amount]"
  },
  "company": {
    "name": "[Company name]"
  },
  "merchant": {
    "name": "[Merchant name]",
    "address": "[Merchant address]",
    "phoneNumber": "[Merchant phone number]",
    "merchantId": "[Merchant id]"
  }
}
```

**Example**

As an example, canceling an operation from a payment example:

**Request**

```
{
  "credentials": {
    "authorizationToken": "vdf8uger98v9ve9j"
  },
  "operationData": {
    "operationExternalId": "31",
    "parentTransaction": {
      "terminalId": "123321",
      "operationDay": "4",
      "transactionNumber": "69"
    }
  }
}
```

**Response**

```
{
  "result": {
    "code": "0",
    "description": "Successfully completed",
    "hostResponse": {
      "code": "0",
      "description": "Successfully completed"
    }
  },
  "transaction": {
    "terminalId": "123321",
    "operationDay": "4",
    "transactionNumber": "71",
    "operationExternalId": "31"
  },
  "externalTerminalId": "as123",
  "dateTime": "Mon Jun 21 14:49:39 GMT+03:00 2021",
  "merchant": {
    "name": "Test merchant"
  },
  "instrumentSpecificData": {
    "authorizationCode": "000000",
    "rrn": "1234567890",
    "cardholderName": "IVAN IVANOV",
    "maskedPan": "123456*****7890",
    "cardType": "Mastercard",
    "applicationId": "A40000100023056"
  }
}
```

**Reconciliation operation with the host of the bank (closing of the transaction day)****Message format****Description of the request**

```
{
  "credentials": {
    "authorizationToken": "[Token for authorization in the application]" // Required field
  },
  "operationData": {
    "needPrintReceipt": "[true if printing is required / false if not]" // Required field
  }
}
```

## Description of the response

```

{
  "result": {
    "code": "[Response code of the protocol of interaction between applications. See document \"Application interaction protocol response codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923594)]",
    "description": "[Response text]",
    "hostResponse": {
      "code": "[Host response code]",
      "description": "[Host response text]"
    },
    "errorData": {
      "code": "[Operation execution error code. See document \"Operation error codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923592)]",
      "description": "[Error text]"
    }
  },
  "transactions": {
    "transaction": [{
      "type": "[PAYMENT / REFUND / CANCEL]",
      "instrument": "[CARD (card transaction) / CASH (cash transaction)]",
      "amountData": {
        "currencyCode": "[Currency iso numeric code]",
        "amount": "[Transactions amount in minimal units for currency]",
        "amountExponent": "[Exponent for amount]"
      },
      "terminalId": "[ID of the terminal on which the operation was performed]",
      "operationDay": "[Operating day number]",
      "transactionNumber": "[Transaction number in the transaction day]",
      "operationExternalId": "[External operation id]",
      "instrumentSpecificData": {
        [See document \"Operation instrument data\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923636)]
      },
      "parentTransaction": {
        "terminalId": "[ID of the terminal on which the parent operation was performed]",
        "operationDay": "[Operation day number of parent operation]",
        "transactionNumber": "[Parent transaction number in the transaction day]"
      },
      "dateAndTime": [yyyy-mm-ddThh:mm:ssZ],
      "company": {
        "name": "[Company name]"
      },
      "merchant": {
        "name": "[Merchant name]",
        "address": "[Merchant address]",
        "phoneNumber": "[Merchant phone number]",
        "merchantId": "[Merchant id]"
      }
    }]
  },
  "closeDayResults": {
    "reconciliationResult": {
      "hostResultCode": "[Host response code]",
      "hostResultDescription": "[Host response text]",
      "terminalExternalId": "[External terminal identifier]"
    }
  }
}

```

, where **closeDayResults** is a list of reconciliation results for each user TID.

## Example

Request
<pre>{   "credentials": {     "authorizationToken": "vdf8uger98v9ve9j"   },   "operationData": {     "needPrintReceipt": true/false   } }</pre>

## Response

```
{
  "result": {
    "code": "0",
    "description": "Successfully completed"
  },
  "transactions": {
    "transaction": [{
      "type": "PAYMENT",
      "instrument": "CARD",
      "amountData": {
        "currencyCode": "643",
        "amount": "4500",
        "amountExponent": "2"
      },
      "terminalId": "123321",
      "operationDay": "4",
      "transactionNumber": "69",
      "operationExternalId": "31"
    }, {
      "type": "REFUND",
      "instrument": "CARD",
      "amountData": {
        "currencyCode": "643",
        "amount": "4500",
        "amountExponent": "2"
      },
      "terminalId": "123321",
      "operationDay": "4",
      "transactionNumber": "70",
      "instrumentSpecificData": {
        "authorizationCode": "000000",
        "rrn": "1234567890",
        "cardholderName": "IVAN IVANOV",
        "maskedPan": "123456*****7890"
      },
      "parentTransaction": {
        "terminalId": "123321",
        "operationDay": "4",
        "transactionNumber": "69"
      },
      "dateAndTime": "2011-12-03T10:15:30Z"
    }
  ],
  "closeDayResults": {
    "reconciliationResult": {
      "hostResultCode": "000",
      "hostResultDescription": "Success",
      "terminalExternalId": "example_terminal_id"
    }
  }
}
```

## Getting a list of operations

## Message format

## Description of the request

```
{
  "credentials": {
    "authorizationToken": "[Token for authorization in the application]" // Required field
  },
  "operationData": {
    "params": {
      "offset": "[Position in the list of operations]", // Required field
      "limit": "[Maximum number of operations in the selection]" // Required field
    },
    "filter": { // Required block
      "dateTimeMin": "[Date of the oldest operation in the selection (in the format yyyy-MM-dd)]",
      "dateTimeMax": "[Date of the last operation in the sample (in the format yyyy-MM-dd)]",
      "amountMin": "[Minimum transaction amount to be included in the selection]",
      "amountMax": "[Maximum transaction amount to be included in the selection]",
      "operationDay": "[Get operations by the number of the operating day]",
      "transactionTypes": "[Receiving operations of a certain type: PAYMENT (payment operations) / REFUND (refunds) / REVERSAL (canceling)]", // you can
      transfer several elements in an array
      "cardholderName": "[Get a list of card transactions with the specified cardholder name]",
      "cardPan": "[Get a list of card transactions with the specified card number]",
      "cardExpireDate": "[Get a list of card transactions with the specified card expiration date]",
      "operationExternalId": "[External operation id]"
    }
  }
}
```

## Description of the response

```

{
  "result": {
    "code": "[Response code of the protocol of interaction between applications. See document \"Application interaction protocol response codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923594)]",
    "description": "[Response text]",
    "hostResponse": {
      "code": "[Host response code]",
      "description": "[Host response text]"
    },
    "errorData": {
      "code": "[Operation execution error code. See document \"Operation error codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923592 )]",
      "description": "[Error text]"
    },
    "transactions": {
      "transaction": {
        "type": "[PAYMENT / REFUND / REVERSAL]",
        "instrument": "[CARD (card transaction) / CASH (cash transaction)]",
        "terminalId": "[ID of the terminal on which the operation was performed]",
        "operationDay": "[Operating day number]",
        "transactionNumber": "[Transaction number in the transaction day]",
        "operationExternalId": "[External operation ID]"
      },
      "instrumentSpecificData": {
        [See document \"Operation instrument data\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923636)]
      },
      "parentTransaction": {
        "terminalId": "[ID of the terminal on which the parent operation was performed]",
        "operationDay": "[Operation day number of parent operation]",
        "transactionNumber": "[Parent transaction number in the transaction day]"
      },
      "dateAndTime": [yyyy-mm-ddThh:mm:ssZ],
      "amountData": {
        "currencyCode": "[Currency iso numeric code]",
        "amount": "[Transactions amount in minimal units for currency]",
        "amountExponent": "[Exponent for amount]"
      },
      "company": {
        "name": "[Company name]"
      },
      "merchant": {
        "name": "[Merchant name]",
        "address": "[Merchant address]",
        "phoneNumber": "[Merchant phone number]",
        "merchantId": "[Merchant id]"
      },
      "refundable": "[Is this operation may be refunded or not]",
      "reversible": "[Is this operation may be reversed or not]"
    }
  }
}

```

## Example

Request

```
{
  "credentials": {
    "authorizationToken": "vdf8uger98v9ve9j"
  },
  "operationData": {
    "params": {
      "offset": "12",
      "limit": "25"
    },
    "filter": {
      "amountMax": "669900",
      "amountMin": "10",
      "dateTimeMax": "2022-12-31",
      "dateTimeMin": "2022-12-29",
      "transactionTypes": [
        "PAYMENT"
      ]
    }
  }
}
```



## Response

```
{
  "result": {
    "code": "0",
    "description": "Successfully completed"
  },
  "transactions": {
    "transaction": [
      {
        "type": "PAYMENT",
        "instrument": "CARD",
        "amountData": {
          "currencyCode": "643",
          "amount": "6000",
          "amountExponent": "2"
        },
        "terminalId": "123321",
        "operationDay": "4",
        "transactionNumber": "69",
        "refundable": true,
        "reversible": false,
        "instrumentSpecificData": {
          "authorizationCode": "000000",
          "rrn": "1234567890",
          "cardholderName": "IVAN IVANOV",
          "maskedPan": "123456*****7890",
          "cardType": "Mastercard",
          "applicationId": "A40000100023056"
        },
        "dateAndTime": "2023-01-13T12:15:24+01:00[Europe/Tirane]"
      },
      {
        "type": "REFUND",
        "instrument": "CARD",
        "amountData": {
          "currencyCode": "643",
          "amount": "4500",
          "amountExponent": "2"
        },
        "terminalId": "123321",
        "operationDay": "4",
        "transactionNumber": "70",
        "refundable": false,
        "reversible": true,
        "instrumentSpecificData": {
          "authorizationCode": "000000",
          "rrn": "1234567890",
          "cardholderName": "IVAN IVANOV",
          "maskedPan": "123456*****7890"
        },
        "parentTransaction": {
          "terminalId": "123321",
          "operationDay": "4",
          "transactionNumber": "69"
        },
        "dateAndTime": "2023-01-13T12:15:24+01:00[Europe/Tirane]"
      }
    ]
  }
}
```

[Get report](#)

Message format

Description of the request
<pre>{   "credentials": {     "authorizationToken": "[Token for authorization in the application]" // Required field   },   "operationData": {     "needPrintReceipt": true/false // Required field   } }</pre>

## Description of the response

```

{
  "result": {
    "code": "[Response code of the protocol of interaction between applications. See document \"Application interaction protocol response codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923594)]",
    "description": "[Response text]",
    "hostResponse": {
      "code": "[Host response code]",
      "description": "[Host response text]"
    },
    "errorData": {
      "code": "[Operation execution error code. See document \"Operation error codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923592)]",
      "description": "[Error text]"
    }
  },
  "transactions": {
    "transaction": {
      "type": "[PAYMENT / REFUND / REVERSAL]",
      "instrument": "[CARD (card transaction) / CASH (cash transaction)]",
      "terminalId": "[ID of the terminal on which the operation was performed]",
      "operationDay": "[Operating day number]",
      "transactionNumber": "[Transaction number in the transaction day]",
      "operationExternalId": "[External operation id]"
    },
    "instrumentSpecificData": {
      [See document \"Operation instrument data\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923636)]
    },
    "parentTransaction": {
      "terminalId": "[ID of the terminal on which the parent operation was performed]",
      "operationDay": "[Operation day number of parent operation]",
      "transactionNumber": "[Parent transaction number in the transaction day]"
    },
    "dateAndTime": [yyyy-mm-ddThh:mm:ssZ],
    "amountData": {
      "currencyCode": "[Currency iso numeric code]",
      "amount": "[Transactions amount in minimal units for currency]",
      "amountExponent": "[Exponent for amount]"
    },
    "company": {
      "name": "[Company name]"
    },
    "merchant": {
      "name": "[Merchant name]",
      "address": "[Merchant address]",
      "phoneNumber": "[Merchant phone number]",
      "merchantId": "[Merchant id]"
    },
    "refundable": "[Is this operation may be refunded or not]",
    "reversible": "[Is this operation may be reversed or not]"
  },
  "total": {
    "payments": {
      "count": "[operations count]",
      "amount": "[operations amount]"
    },
    "refunds": {
      "count": "[operations count]",
      "amount": "[operations amount]"
    },
    "reversals": {
      "count": "[operations count]",
      "amount": "[operations amount]"
    },
    "result": {
      "count": "[operations count]",
      "amount": "[operations amount]"
    }
  }
}

```

## Example

## Description of the response

```
{
  "result": {
    "code": "0",
    "description": "Successfully completed"
  },
  "transactions": {
    "transaction": [
      {
        "type": "PAYMENT",
        "instrument": "CARD",
        "amountData": {
          "currencyCode": "643",
          "amount": "6000",
          "amountExponent": "2"
        },
        "terminalId": "123321",
        "operationDay": "4",
        "transactionNumber": "69",
        "refundable": true,
        "reversible": false,
        "instrumentSpecificData": {
          "authorizationCode": "000000",
          "rrn": "1234567890",
          "cardholderName": "IVAN IVANOV",
          "maskedPan": "123456*****7890",
          "cardType": "Mastercard",
          "applicationId": "A40000100023056"
        }
      },
      {
        "type": "REFUND",
        "instrument": "CARD",
        "amountData": {
          "currencyCode": "643",
          "amount": "4500",
          "amountExponent": "2"
        },
        "terminalId": "123321",
        "operationDay": "4",
        "transactionNumber": "70",
        "refundable": false,
        "reversible": true,
        "instrumentSpecificData": {
          "authorizationCode": "000000",
          "rrn": "1234567890",
          "cardholderName": "IVAN IVANOV",
          "maskedPan": "123456*****7890",
          "cardType": "Mastercard",
          "applicationId": "A40000100023056"
        }
      },
      {
        "parentTransaction": {
          "terminalId": "123321",
          "operationDay": "4",
          "transactionNumber": "69"
        }
      }
    ]
  },
  "total": {
    "payments": {
      "count": "1",
      "amount": "500"
    },
    "refunds": {
      "count": "0",
      "amount": "0"
    },
    "reversals": {
      "count": "0",
      "amount": "0"
    }
  },
  "result": {
    "count": "1",
```

```
    "amount": "500"
  }
}
```

## Update terminal keys

### Message format

#### Description of the request

```
{
  "credentials": {
    "authorizationToken": "[Application authorization token]" // Required field
  }
}
```

#### Description of the response

```
{
  "result": {
    "code": "[Response code of the protocol of interaction between applications]",
    "description": "[Response text]",
    "hostResponse": {
      "code": "[Host response code]",
      "description": "[Host response text]"
    },
  },
  "errorData": {
    "code": "[Operation execution error code. See document \"Operation error codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923592)]",
    "description": "[Error text]"
  }
}
```

## Sign In Application

### Message format

#### Description of the request

```
{
  "credentials": {
    "authorizationToken": "[Application authorization token]" // Required field
  }
}
```

#### Description of the response

```
{
  "result": {
    "code": "[Response code of the protocol of interaction between applications]",
    "description": "[Response text]",
    "hostResponse": {
      "code": "[Host response code]",
      "description": "[Host response text]"
    },
  },
  "errorData": {
    "code": "[Operation execution error code. See document \"Operation error codes\" (https://wiki.m4bank.ru/pages/viewpage.action?pageId=48923592)]",
    "description": "[Error text]"
  }
}
```

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