

Partner API

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Description

Partner API is for lute Credit partners who want to use lute Credit integration functionality to give out loans to clients and take repayments from clients using lute Credit tools.

Partner API provides following integration functionality to partners:

- Calculate loan conditions
- Add new loan
- Cancel loan
- Check loan status
- Check loan info
- Generate agreement
- Upload files
- Allow cash release
- Confirm cash release
- Insert repayment

Each action is described in detail in API technical specification.

Process description

Every partner who wants to integrate with lute Credit Partner API must apply for username and password. During the process account is opened for them and partner offices are added with initial balance on the account.

Once this step is done partner can start using functionality described in first paragraph of this document.

In order to use Partner API client must develop their own system to send requests and handle responses to be able to communicate with lute CRM. lute Credit will give access to test environment with temporary tokens to make it more convenient for partners to integrate to lute CRM.

Typical loan process involves following steps:

1. Loan conditions and monthly payment are calculated for client using **Calculate loan conditions**
2. Submit new loan application using **Add new loan** interface
3. lute CRM validates input and does auto-rejection if necessary
4. lute Credit employee checks and **Approves** loan if all conditions met
5. Partner must use **Check loan status** to make sure loan application was approved
6. Partner generates agreement file using **Generate agreement** interface
7. Client signs the agreement
8. Files are sent to lute CRM using **Upload file** interface
9. lute Credit employee checks files and **Authorizes cash release**
10. Partner uses **Allow cash release** interface to make sure cash release is allowed
11. Partner can pay out money to client
12. Partner has to confirm that money was paid out using **Confirm cash release**
13. When repayments are made to Partner **Insert repayment** interface is used to notify lute CRM

API technical specification

This part of the document will describe in more detail of what data each request must contain and how to handle responses. Partner will get username and password and they must use these with **Basic Authentication** in order to be able to access Iute Credit systems. Also each partner is given **partner_type** value that needs to be sent with each request.

All successful requests will return HTTP code 200 and error code 400 or 403(for authentication problems) with description of error inside response content.

Requests

Requests are either **GET** or **POST** and must be sent in format of **Content-Type: multipart/form-data** or **Content-Type: application/x-www-form-urlencoded**.

Responses

Successful responses are sent back in xml format wrapped in <loan></loan> tag. Successful actions return HTTP code 200. If error occurs then response is HTML page with errors written in the content and HTTP error code is 400. In case of any authentication errors error code is 403.

There are some requests that will only return HTTP code 200 without response content. In this case it is enough to check that response code is 200.

Calculate loan conditions

This interface can be used to calculate monthly payment amount and total repayable amount given loan amount and period.

Type	POST
Authentication	Basic authentication
URI	/rest/api/partner/loan/calc

Request				
Name	Type	Required	Description	Example
loan_amount	numeric	yes	Loan amount in local currency	1000.55
loan_duration	integer	yes	Loan period in months	6
partner_type	varchar	yes	Partner type	post

Sample request

```
POST /iute/rest/api/partner/loan/calc HTTP/1.1
Host: localhost:8080
Content-Type: application/x-www-form-urlencoded
Authorization: Basic d2VziU6sbl91bmlvbjph

loan_amount=1000.55&loan_duration=6&partner_type=post
```

Response			
Name	Type	Description	Example
first_repayment_date	date	Date of first repayment Format: dd.MM.yyyy	26.07.2018
monthly_payment	numeric	Amount client has to pay each months	865.24
total_loan_amount	numeric	Total loan amount including all fees and interests	6921.92

Sample response

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
```

```

<loan_calc>
  <first_repayment_date>26.07.2018</first_repayment_date>
  <monthly_payment>865.24</monthly_payment>
  <total_loan_amount>6921.92</total_loan_amount>
</loan_calc>

```

Add new loan

Adds new loan application into lute Credit system with specified parameters. There is autoreject functionality in lute CRM that in some cases auto-reject loan after submit. After new loan is added then partner should check loan status with **Check loan status** API call to make sure it wasn't automatically rejected.

Type	POST
Authentication	Basic authentication
URI	/rest/api/partner/new/loan

Request				
Name	Type	Required	Description	Example
pin	varchar	yes	Identification number of person	I12356789T
first_name	varchar	yes	First name	John
last_name	varchar	yes	Last name	Smith
patronymic	varchar	yes	Fathers name	James
birth_date	date	yes	Birth date of client Format: dd.MM.yyyy	01/01/90
document_serial	varchar	yes	Document serial number	200000907
gsm	numeric	yes	Phone number Format: "0\\d{9}"	"0123456789"
phone_home	numeric	yes	Home phone number Format: "0\\d{8}"	"012345678"
alt_contact_name	varchar	yes	Alternative contact name	June
alt_contact_relation	varchar	yes	Alternative contact relation	sister
alt_contact_phone	numeric	yes	Alternative contact phone number Format: "0\\d{9}"	"0987654321"
town	varchar	yes	Home town	Chisinau

street	varchar	yes	Home street	Long street
house_nr	varchar	yes	House number	11
apartment_nr	varchar	yes	Apartment number	
loan_amount	numeric	yes	Loan amount	1000.55
loan_duration	integer	yes	Loan duration in months	5
submit_person	varchar	yes	Person name who submitted the request	Mike
submit_post_office	varchar	yes	Name of office where submitted	Main office
partner_type	varchar	yes	Partner type	post
id_copy	file	no	Copy of identification document Format: jpg, pdf	id_doc.jpg
data_verification	file	no	Copy of data verification document Format jpg, pdf	data_ver.jpg

Sample request

```

POST /iute/rest/api/partner/new/loan HTTP/1.1
Host: localhost:8080
Content-Type: multipart/form-data; boundary=----WebKitFormBoundary7MA4YWxkTrZu0gW
Authorization: Basic d2VziU6sbl91bmlvbjph
Cache-Control: no-cache

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="pin"

I80606014N
-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="first_name"

Nelea
-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="last_name"

Iacovet
-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="patronymic"

asd

```

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="birth_date"

31.08.1997

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="document_serial"

asdasdasd

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="gsm"

0602160911

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="phone_home"

0602160911

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="alt_contact_name"

asdsad

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="alt_contact_relation"

asdasdasdasd

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="alt_contact_phone"

0602160911

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="town"

Chisinau

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="street"

asdasda

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="house_nr"

1

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="apartment_nr"

1

-----WebKitFormBoundary7MA4YWxkTrZu0gW

Content-Disposition: form-data; name="loan_amount"

2000

-----WebKitFormBoundary7MA4YWxkTrZu0gW

Content-Disposition: form-data; name="loan_duration"

6

-----WebKitFormBoundary7MA4YWxkTrZu0gW

Content-Disposition: form-data; name="submit_person"

wu

-----WebKitFormBoundary7MA4YWxkTrZu0gW

Content-Disposition: form-data; name="submit_post_office"

o.p.6514

-----WebKitFormBoundary7MA4YWxkTrZu0gW

Content-Disposition: form-data; name="id_copy"; filename="id_doc.jpg"

Content-Type: image/jpeg

-----WebKitFormBoundary7MA4YWxkTrZu0gW

Content-Disposition: form-data; name="data_verification"; filename="data_ver.jpg"

Content-Type: image/jpeg

-----WebKitFormBoundary7MA4YWxkTrZu0gW

Content-Disposition: form-data; name="partner_type"

post

-----WebKitFormBoundary7MA4YWxkTrZu0gW--

Response			
Name	Type	Description	Example
loan_ref	integer	Reference number of loan in CRM	90000
loan_period	integer	Loan period in months	6
first_repayment_date	date	First repayment date Format: dd.MM.yyyy	26.07.2018
client_pin	varchar	Client identification	112356789T

		number	
client_name	varchar	Client name (First name + ' ' Last name)	John Smith

Sample response
<pre><?xml version="1.0" encoding="UTF-8" standalone="yes"?> <loan> <loan_ref>90000</loan_ref> <loan_period>6</loan_period> <first_repayment_date>26.07.2018</first_repayment_date> <client_pin>I12356789T</client_pin> <client_name>John Smith</client_name> </loan></pre>

Cancel loan

This request withdraws the loan application from lute Credit system. It can only be done when loan application process is in status of **NEW** or **APPROVED**.

Type	GET
Authentication	Basic authentication
URI	/rest/api/partner/cancel/loan

Request				
Name	Type	Required	Description	Example
loanRef	integer	yes	Ref number of loan to be canceled	90000
partner_type	varchar	yes	Partner type	"post"

Sample request
<pre>GET /iute/rest/api/partner/cancel/loan?loanRef=90007&partner_type=post HTTP/1.1 Host: localhost:8080 Authorization: Basic d2VziU6sbl91bmlvbjph Cache-Control: no-cache</pre>

Response
In case of success response is empty string with HTTP code 200
In case of error HTML content is returned with description of what went wrong. HTTP code 40*.

Check loan status

This functionality can be used to check if loan application is approved or not. In case loan application is approved it is okay to move on with **Generate agreement** and sign agreement steps.

Type	POST
Authentication	Basic authentication
URI	/rest/api/partner/loan/check/status

Request				
Name	Type	Required	Description	Example
loan_ref	integer	yes	Reference number of loan	90000
partner_type	varchar	yes	Partner type	post

Sample request
<pre> POST /iute/rest/api/partner/loan/check/status HTTP/1.1 Host: localhost:8080 Authorization: Basic d2VziU6sbl91bmlvbjph Cache-Control: no-cache Content-Type: multipart/form-data; boundary=----WebKitFormBoundary7MA4YWxkTrZu0gW -----WebKitFormBoundary7MA4YWxkTrZu0gW Content-Disposition: form-data; name="loan_ref" 90000 -----WebKitFormBoundary7MA4YWxkTrZu0gW Content-Disposition: form-data; name="partner_type" post -----WebKitFormBoundary7MA4YWxkTrZu0gW-- </pre>

Response			
Name	Type	Description	Example
approved	varchar	Shows status of loan. When loan approved then show 'true'. When loan rejected then shows 'rejected'. If loan application has moved to any other process step then HTTP code 400 is returned	true rejected
loan_ref	integer	Reference number of loan	90000

Sample response
<pre><?xml version="1.0" encoding="UTF-8" standalone="yes"?> <loan> <approved>false</approved> <loan_ref>90000</loan_ref> </loan></pre>

Check loan info

Shows loan information after loan process has successfully finished and loan is paid out to customer.

Type	GET
Authentication	Basic authentication
URI	/rest/api/partner/loan/info

Request				
Name	Type	Required	Description	Example
loanRef	integer	yes	Reference number of loan	90000
partner_type	varchar	yes	Partner type	post

Sample request

GET /iute/rest/api/partner/loan/info?loanRef=90000&partner_type=post HTTP/1.1
Host: localhost:8080
Authorization: Basic d2VziU6sbl91bmlvbjph
Cache-Control: no-cache

Response

Name	Type	Description	Example
loan_ref	integer	Reference number of loan	90000
loan_period	integer	Loan period in months	6
total_balance	numeric	Total initial loan amount with fees and interests	5000.55
repaid	numeric	Total repaid amount	1000.55
remaining_balance	numeric	Total remaining amount	4000
client_pin	varchar	Client identification number	I12356789T
client_name	varchar	Full name First name + ' ' + Last name	John Smith
installment_table	installment[]	List of installments. Count matches with period	
installment			
number	integer	Expected repayment number	1
due_date	date	Expected repayment date Format: dd.MM.yyyy	26.07.2018
total	numeric	Expected amount to be paid on current date	1095.68
to_be_paid	numeric	Remaining amount to be paid on current date. If installment repaid fully then it will be 0	1095.68

Sample response

```
<loan_response>
  <message>success</message>
  <status>0</status>
  <loan>
    <loan_ref>90000</loan_ref>
    <loan_period>6</loan_period>
    <total_balance>6574.08</total_balance>
    <repaid>1095.68</repaid>
    <remaining_balance>5478.4</remaining_balance>
    <client_pin>I123456789T</client_pin>
    <client_name>John Smith</client_name>
    <installment_table>
      <installment>
        <number>1</number>
        <due_date>26.07.2018</due_date>
        <total>1095.68</total>
        <to_be_paid>0.0</to_be_paid>
      </installment>
      <installment>
        <number>2</number>
        <due_date>26.08.2018</due_date>
        <total>1095.68</total>
        <to_be_paid>1095.68</to_be_paid>
      </installment>
      <installment>
        <number>3</number>
        <due_date>26.09.2018</due_date>
        <total>1095.68</total>
        <to_be_paid>1095.68</to_be_paid>
      </installment>
      <installment>
        <number>4</number>
        <due_date>26.10.2018</due_date>
        <total>1095.68</total>
        <to_be_paid>1095.68</to_be_paid>
      </installment>
      <installment>
        <number>5</number>
        <due_date>26.11.2018</due_date>
        <total>1095.68</total>
        <to_be_paid>1095.68</to_be_paid>
      </installment>
      <installment>
        <number>6</number>
```

```

    <due_date>26.12.2018</due_date>
    <total>1095.68</total>
    <to_be_paid>1095.68</to_be_paid>
  </installment>
</installment_table>
</loan>
</loan_response>

```

```

<loan_response>
  <message>No active loan found!</message>
  <status>-1</status>
</loan_response>

```

Generate agreement

Result of this request is specific agreement for client to sign. Once signed, it must be sent back to lute Credit for validation.

Type	GET
Authentication	Basic authentication
URI	/rest/api/partner/generate/agreement

Request				
Name	Type	Required	Description	Example
loanRef	integer	yes	Reference number of loan	90000
lang	varchar	yes	Language for generated document. User three character code for language.	alb
partner_type	varchar	yes	Partner type	post

Sample request

```

GET /iute/rest/api/partner/generate/agreement?loanRef=90000&lang=alb&partner_type=post
HTTP/1.1
Host: localhost:8080
Authorization: Basic d2VziU6sbl91bmlvbjph
Cache-Control: no-cache

```

Response
<p>Response is a file in .pdf format. HTTP response code 200</p> <p>In headers: Content-Disposition → attachment;filename=specific_agreement_90000_alb.pdf Content-Type → application/pdf;charset=UTF-8</p>

Upload file

Upload file is used to send signed agreement and bank statement files to lute Credit for validation and documentation.

Type	POST
Authentication	Basic authentication
URI	/rest/api/partner/loan/files/upload

Request				
Name	Type	Required	Description	Example
loan_ref	integer	yes	Reference number of loan	90000
loan_agreement	file	yes	Signed agreement by end customer	
bank_statement	file	yes	Bank statement of end customer	
partner_type	varchar	yes	Partner type	post

Sample request
<pre>POST /iute/rest/api/partner/loan/files/upload HTTP/1.1 Host: localhost:8080 Authorization: Basic d2VziU6sbl91bmlvbjph Cache-Control: no-cache Content-Type: multipart/form-data; boundary=----WebKitFormBoundary7MA4YWxkTrZu0gW -----WebKitFormBoundary7MA4YWxkTrZu0gW</pre>

Content-Disposition: form-data; name="loan_agreement"; filename="iddoc.jpg"
Content-Type: image/jpeg

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="bank_statement"; filename=""
Content-Type:

-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="loan_ref"

90000
-----WebKitFormBoundary7MA4YWxkTrZu0gW
Content-Disposition: form-data; name="partner_type"

post
-----WebKitFormBoundary7MA4YWxkTrZu0gW--

Response

There is no response content only HTTP code 200

Allow cash release

Used to verify that application is checked by lute Credit employee and cash release allowed.

Type	GET
Authentication	Basic authentication
URI	/rest/api/partner/allow/cash/release

Request

Name	Type	Required	Description	Example
loanRef	integer	yes	Reference number of loan	90000
partner_type	varchar	yes	Partner type	post

Sample request

GET /iute/rest/api/partner/allow/cash/release?loanRef=90000&partner_type=post HTTP/1.1

Host: localhost:8080
Authorization: Basic d2VziU6sbl91bmlvbjph
Cache-Control: no-cache

Response			
Name	Type	Description	Example
allowed	boolean	Shows wether cash release is allowd or not	TRUE
loan_status	varchar	Shows loan status in CRM system	normal
loan_ref	integer	Reference number of loan	90000
loan_amount	numeric	Loan amount principal amount	5000
client_pin	varchar	Client identification number	I123456789T
client_first_name	varchar	First name	John
client_last_name	varchar	Last name	Smith

Sample response

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<loan>
  <allowed>true</allowed>
  <loan_status>normal</loan_status>
  <loan_ref>90000</loan_ref>
  <loan_amount>5000.0</loan_amount>
  <client_pin>I123456789T</client_pin>
  <client_first_name>John</client_first_name>
  <client_last_name>Smith</client_last_name>
</loan>
```

Confirm cash release

Request to notify lute Credit that money was paid out to customer.

Type	GET
------	-----

Authentication	Basic authentication
URI	/rest/api/partner/confirm/cash/release

Request				
Name	Type	Required	Description	Example
loanRef	integer	yes	Reference number of loan	90000
partner_type	varchar	yes	Partner type	post

Sample request
<pre>GET /iute/rest/api/partner/confirm/cash/release?loanRef=90000&partner_type=post HTTP/1.1 Host: localhost:8080 Authorization: Basic d2VziU6sbl91bmlvbjph Cache-Control: no-cache</pre>

Response
There is no response content. Only HTTP code 200.

Insert repayment

Client can use partner offices to make a repayment of active loan. Partner must notify lute Credit of all repayments using this interface.

Type	GET
Authentication	Basic authentication
URI	/rest/api/partner/insert/repayment

Request				
Name	Type	Required	Description	Example
loanRef	integer	yes	Reference number of loan	90000

date	date	yes	Repayment date Format: ddMMyyyy	22052018
amount	numeric	yes	Amount to pay back	1095.68
partner_type	varchar	yes	Partner type	post

Sample request

```
GET
/iute/rest/api/partner/insert/repayment?loanRef=90000&date=22052018&amount=1095.68&partner
_type=post HTTP/1.1
Host: localhost:8080
Authorization: Basic d2VziU6sbl91bmlvbjph
Cache-Control: no-cache
```

Response

There is no response content. Only HTTP code 200.

Successful repayment can be checked using **Check loan info** interface. Installments are covered sequentially from 1 to n. Repayment date does not have any effect on installment coverage.