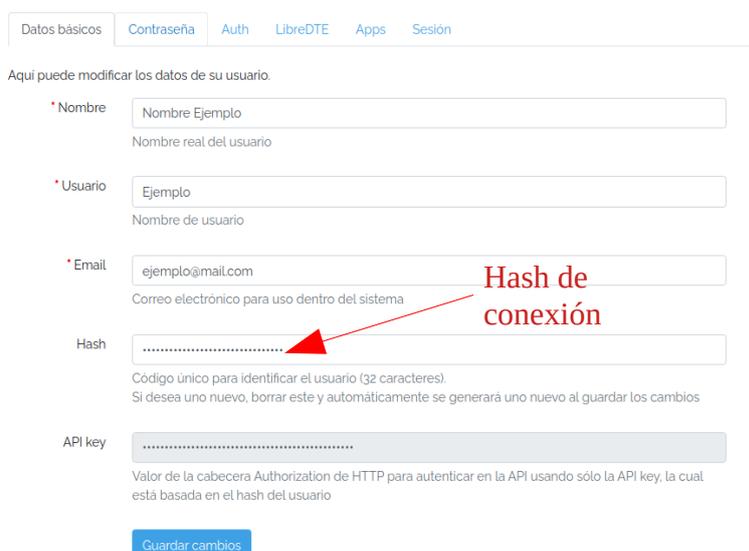# Brief of LibreDTE's Web Services
in the Official Version

LibreDTE provides in www.libredte.cl a web application, with the main purpose of creating electronic invoicing documents. This web application has Web Services based on REST for interacting with differentes functionalities of the software LibreDTE. This web services has the final goal of allow to users to integrate their own software with LibreDTE for generate electronic invoice documents ("documentos tributarios electrónicos" or "DTE" is the name in Chile).

The full documentation of this web services is in doc.libredte.cl

Authentication with hash

The web services allow only the authentication method with a **hash of 32 characters**. This hash can be obtained in the user's profile in libredte.cl/usuarios/perfil In the next image we show where you can find the hash in the user's profile.

This hash must be provide in the request using **HTTP Auth Basic**, where the hash is the username and the passwordis always an "X".

Example:

```
Authorization: Basic SEFTSDpYCg==
```

Where **SEFTSDpYCg==** is:

```
base64_encode('HASH:X');
```

Creating a DTE

What do I need for making a test request?

For making a test request with our web services, and specifically, create a DTE, you need:

- Have an user account and a company registered in LibreDTE. If you only want to test the software (without paying) you can register for the Demo of the Plus Service ("Servicio Plus" is a the service that allow the access to the software and web services).
  - Link to request the demo: libredte.cl/demo
- Upload the electronic signature (digital certificate) of the legal representative of the company.
  - Link to upload the digital certificate: libredte.cl/dte/admin/firma_electronicas
- Create the maintainer for CAF administration (CAF is an XML that authorize a range of numbers "folios" of electronic documents).
  - Link to upload the XML of the CAF: libredte.cl/dte/admin/dte_folios
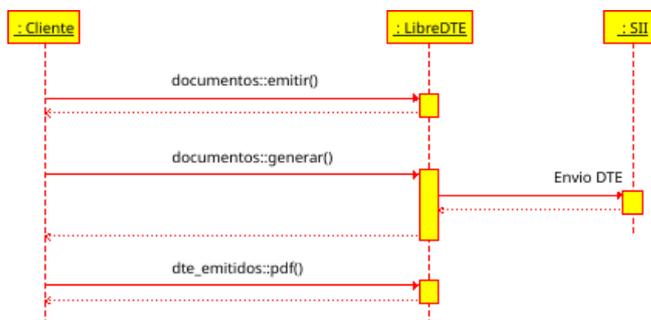
Steps for creating a DTE

In a brief way, the steps you need for integrate your software with LibreDTE are:

- Prepare the data you will use for your DTE, many examples are in github.com/LibreDTE/libredte-lib/tree/master/examples/json

- Learn how to consume the web services, the options are::
  - Check if an SDK for your programing language exists, you can search in the repository of LibreDTE on GitHub github.com/LibreDTE?q=sdk
  - Search for a library for your programing language that make easy consume the web services (example: Guzzle HTTP for PHP).
  - Build your own code ("SDK") for the programing language you want to use.

- Replicate in your software the basic example of the SDK, called "001", that allows the creation of a DTE. You must:

  1. Create a temporary DTE.
  2. Generate a real DTE from the temporary DTE.
  3. Recover the PDF of the real DTE.

This 3 steps, are the minimum required to the creation of any DTE. Making this 3 steps, your software will be integrated with LibreDTE.

Are many others actions that you can do with our web services, for example: query the state of a document created, send by email or get the list of documents created. If you want to do some of this actions, please, refer to the complete documentation in doc.libredte.cl

For the creation of a DTE and getting the PDF, you must query the 3 web services listed before. In the next image are the 3 web services calls in a secuence diagram:

DTE standardization

The DTE schema requires many fields that can be calculated and not send by you in the moment of the DTE creation. For this, LibreDTE has a process calles "**normalización de los DTE**" (DTE standardization). This allow to reduce the amount of field sent in the data of the DTE you want to create.

For example, the VAT of an invoice is a value calculable from the net amount and the VAT ratio. The user, or the developer, can omit the VAT amount and will be calculated automatically. This is the default behavior.

Specifically, the DTE standardization processes do the following actions:

- Add numbers of discounts/recharges and references.
- Standardization of the detail: number of the item and discounts of the item.
- Apply global discounts and recharges (calculating the amounts).
- Apply special taxes or retentions.
- Calculate the VAT amount and anothers totals.

1. Create a temporary DTE ("emitir")

Resource that allow to create a temporary document::

```
https://libredte.cl/api/dte/documentos/emitir?normalizar=1&formato=json&links=0&email=0
```

Resource via POST with the following parameters in the URL	
normalizar	1: use DTE standardization, will calculate some amounts
	0: do not use DTE standardization, you must provide all the tags and amounts according to the XML schema.
formato	json: default format is JSON
	We recommend always use JSON (others format in the full documentation).
links	0: Do not get links associated to the temporary document, like a public link to the PDF.

	1: Get links associated to the temporary document, like a public link to the PDF.
email	0: Do not send the document via email.
	1: Send the document via email, only if a email is associated to the client or was indicated in the data used to create the document.

The format of the JSON object has the same fields (tags) that the official XML of the SII ("Servicio de Impuestos Internos"), with the same data types and restrictions. For details of the fields availables in the XML you must review the official documentation of the SII available in the followings links:

- Electronic invoices and others documents for B2B ("no boletas"):
  - Description of the format of the document:
    - archivos.libredte.cl/sii/documentacion/formato_dte.pdf
  - XML diagram created using the XML schema of the document:
    - archivos.libredte.cl/sii/diagramas/diagrama_dte/EnvioDTE_v10.html
- Documents for B2C ("boletas"):
  - Description of the format of the document:
    - archivos.libredte.cl/sii/documentacion/boletas_elec.pdf
  - XML diagram created using the XML schema of the document:
    - archivos.libredte.cl/sii/diagramas/diag_boleta/boletas.html

There is other formats besides JSON, but we do not recommend the use. If you want to use that other formats, please, consider use XML or YAML. Because this two follow the same rules that JSON and the official XML of the SII.

If you want to use a format different than JSON, you must send the **data of the document codified in base64**. Also, the base64 string must be sent as a JSON string.

Example of data using the format JSONString:

```
"ewogICAgIkVuY2FiZXphZG8iOiB7CiAgICAgICAgICAgIklkRG9jIjogewogICAgICAgICAgICAiVGlwb0RURSI6IDM
5CiAgICAgICAgfSwKICAgICAgICAiRW1pc29yIjogewogICAgICAgICAgICAiUlVURW1pc29yIjogIjc2MTkyMDg
zLTkiCiAgICAgICAgfSwKICAgICAgICAiUmVjZXB0b3IiOiB7CiAgICAgICAgICAgICJSVVRSZWNlcCI6ICI2NjY
2NjY2Ni02IgogICAgICAgIH0KICAgIH0sCiAgICAiRGV0YWxsZSI6IFsKICAgICAgICB7CiAgICAgICAgICAgICJ
ObWJJdGVtIjogIkNvbmVjdG9yRXMgUko0NSIsCiAgICAgICAgICAgICJRdHlJdGVtIjogNDUwLAogICAgICAgICA
gICAiUHJjSXRlbSI6IDcwCiAgICAgICAgfQogICAgXQp9Cg=="
```

The rest of the documentation will assume the use of the JSON format. Because is the default format and we recommend the JSON format for the integration with the web services of LibreDTE.

If you need help with others formats, please, make a request of support in libredte.cl/soporte?tema=15 and we will help.

Example of JSON data sent in the body of the HTTP request using POST. In this case for the creation of a "boleta":

```json
{
    "Encabezado": {
        "IdDoc": {
            "TipoDTE": 39
        },
        "Emisor": {
            "RUTEmisor": "76192083-9"
        },
        "Receptor": {
            "RUTRecep": "11222333-4",
            "RznSocRecep": "Juan Pérez",
            "GiroRecep": "Informática",
            "DirRecep": "Domicilio de Juan 123",
            "CmnaRecep": "Santa Cruz"
        }
    },
    "Detalle": [
        {
            "NmbItem": "Conectores RJ45",
            "QtyItem": 450,
            "PrcItem": 70
        }
    ]
}
```

The data that you need to send, is only the data needed for the type of document you want to create. In this case a "boleta".

In the previous example, we do not send some amounts (like amount of VAT or totals), because we are using DTE standardization.

Another important thing, is the meaning value of the tag **PrcItem**. This tag has 2 possible type of values:

- In the documents "no boletas": the amount must be without VAT amount (net price).

- In "boletas": the amount must be with VAT amount (gross price).

We recommend use this options, for avoid problems and get the maximum functionalities from LibreDTE.

Add extra data to the document

LibreDTE allow the incorporation of extra data in the creation of the document. This extra data is used, mainly, to add data in the PDF. For example:

- Using fields of "no boletas" in "boletas":
  ◦ Example: **TermPagoGlosa**.
- Add extra data not supported for the official XML of the SII.
  ◦ Example: add a graphic of consume of water by a client to the PDF.

If you want to use this extra data, you must add a label "LibreDTE" to the data sent in the body of the request, with data like the following:

```
{
    "LibreDTE": {
        "extra": {
            "dte": {
                "Encabezado": {
                    "IdDoc": {
                        "TermPagoGlosa": "OBSERVACIONES"
                    }
                }
            },
            "historial": {
                "titulo": "Consumo de Agua Potable",
                "datos": {
                    "Feb": 12,
                    "Mar": 11,
                    "Abr": 12,
                    "May": 10.5,
                    "Jun": 4,
                    "Jul": 5
                }
            },
            "servicios_basicos": {
                "consumos": {
                    "unidad": "M3",
                    "lectura_actual": 9,
                    "lectura_anterior": 5.9,
                    "consumo_calculado": 3.1,
                    "consumo_facturado": 3,
                    "limite_sobreconsumo": 40
                }
            }
        }
    }
}
```

2. Generate a real DTE from the temporary DTE

Resource that allow to generate the real DTE from the temporary one:

```
https://libredte.cl/api/dte/documentos/generar?getXML=0&links=0&email=0
```

Resource via POST with the following parameters in the URL	
getXML	0: Do not get the XML of the real DTE. 1: Get the XML of the real DTE.
links	0 : Do not get links associated to the real DTE, like a public link to the PDF. 1 : Get links associated to the real DTE, like a public link to the PDF.
email	0: Do not send the document via email. 1: Send the document via email, only if a email is associated to the client or was indicated in the data used to create the document.

Example of the JSON date sent in the body of the HTTP request via POST. The data used is the response of the previous step in the creation of the temporary DTE.

```
{
    "emisor": 76192083,
    "receptor": 66666666,
    "dte": 39,
    "codigo": "587ccc1706a77a21833d0f1734fd0acc"
}
```

3. Recover the PDF of the real DTE

Resource that allow the download of the PDF associated to the real DTE previously generated using a request HTTP via GET:

```
https://libredte.cl/api/dte/dte_emitidos/pdf/:dte/:folio/:emisor?
formato=general&papelContinuo=0
```

The resource has many parameters in the URL explained in the full documentation, the most importants are:

- **formato**: allow to select the format of the PDF:
  - estandar: most basic format of the PDF.
  - general: allow to include images and a graphic (is the official of SASCO SpA).
  - servicios_basicos: used by companies like "Agua Potable Rural" (basic services).
- **papelContinuo**: allow to choose if you want a PDF in thermal format (continuous paper). This only works with the "estandar" format.
  - 0: letter sheet.
  - 80: continuous paper of 80mm.
  - 57: continuous paper of 57mm.

The binary data of the PDF will be in the HTTP response, ready to be used.

Basic example for obtaining a PDF document using curl from the command line. In this case we are getting a "boleta afecta" of number ("folio") 10. The full example is available in the repository of LibreDTE in github.com/LibreDTE/libredte-sdk-curl

```
curl --location --request GET \
    "https://libredte.cl/api/dte/dte_emitidos/pdf/39/10/76192083" \
    --header "Authorization: Basic SEFTSDpYCg==" \
    --silent \
    --output boleta_10.pdf
```

Need additional help?

If you need help with any of the steps described here or others resources of the web services, please, open a request of support in libredte.cl/soporte?tema=15 and we will help.