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# **Data Browser - User Manual**

***Release 1.1.0***

**Sistemi Territoriali**

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**CHAPTER  
ONE**

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## **ACRONYM AND GLOSSARY**

**.NET Core**

Free and open source software development framework for different operating systems: Microsoft Windows, MacOS e Linux

**IIS**

Internet Information Services

**DataBrowser Hub WS**

Data Browser Hub Web Services



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**CHAPTER  
TWO**

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**ABOUT**

This User Manual describes the Data Browser project giving an overview of its functionalities from a technical and practical point of view.

All sections fully describe configuration, management and organization of each single component in order to make it easy for the reader to understand and know how to directly move inside the system.

## **2.1 License**

European Union Public Licence V. 1.1

## **2.2 Product overview**

The **Data Browser** project is a web portal for sharing, integrating and disseminating macro-data produced by Sistan or other statistical agencies which fulfill functions or services of public interest. The system implements a distributed data warehouse based on the **SDMX** standard (*ISO IS-17369*) which can be freely queried by external users via a web interface.

The strategic aim of this innovation is to:

- create a “network” with the single Sistan agencies, focussing on the web data distribution;
- integrate datasets with the ones already available from the agencies;
- make sure that the created network contains statistical data of good quality;
- combine data and meta-data with a view to semantic interoperability;
- share international best practices on statistical dissemination systems.

The “**Hub**” architecture is based on the fact that the diffusion of data is carried out through the nodes of the system, each of which is managed by every individual entity participating in the project. Data publication on a system node, implies that the information entered is now available inside the network and easy to browse in the Hub.

The hub is, therefore, the only point from which data can be entered and, most of all, allows access to information produced by Sistan agencies.

To get more specific about the application, from a more technical and implementation point of view, the Data Browser project is the result of the combination of the following functional components:

1. Administration component
2. Browsing component

3. Data Visualization component
4. Sharing component
5. Search component

This User Manual gives an overview of the functionalities of the Data Browser and explains in detail how to configure and manage the application and the nodes (Administration) and how to visualize, search and share data (Data Browsing) .

## INSTALLATION

In this section we will show the steps needed in order to install the application.

### 3.1 Pre-requisites

#### IIS

IIS has to be installed in a version supported by the used Windows operating system. Make sure that the `.json` MIME type is available, by performing the following steps:

- click on the IIS Web Site under which the application has to be installed;
- double click the *MIME Types*;
- ensure that `.json` and `application/json` mime types are present;
- if they are missing, add them by right clicking and selecting “Add”.

#### .NET Core

The *.Net Core Framework ver.3.1.x* has to be installed together with *.NET Core hosting bundle for IIS*, in compliance with the necessary requirements as specified in <https://docs.microsoft.com/en-us/dotnet/core/install/dependencies?pivots=os-windows&tabs=netcore31>.

In order to check if these modules have been already installed, just access: *Control Panel/Programs/Programs and functions*.

If .NET Core has not been already installed, it is possible to proceed as follows: 1. Download the package from the following URL: <https://dotnet.microsoft.com/download/dotnet-core/3.1> the last version of 3.1.x Hosting Bundle in the section ASP.NET Core Runtime 3.1.x.

**Warning!** The installation of the *Microsoft Visual C++ 2015 Redistributable Update 3* or higher is needed.

Check in **Control panel/Programs/Programs and functions** if it exists or, alternatively, download and install the package from: <https://www.microsoft.com/en-us/download/details.aspx?id=52685>.

#### SSL CERTIFICATE

In order to publish the web services in https, an SSL certificate is needed.

The instructions for creating such certificate depend on the certificate type and on the IIS version.

For IIS ver.10, instructions are available and can be followed at: <https://www.digicert.com/csr-creation-ssl-installation-iis-10.htm>.

## 3.2 Software package

### PACKAGE DESCRIPTION

The software package ***databrowser\_x.x.zip*** contains a main folder ***app*** and inside the following folders:

- **databrowser**: configuration for client side.
- **databrowserhub**: configuration for server side.

### CONFIGURATIONS

The client application is already configured to communicate to the web service listening on <http://localhost/databrowserhub/>. The endpoint address can be set in the path **[ROOT\_IIS]databrowser\config.json**

The *json* file **appsettings.json**, included in the **databrowserhub** folder, contains all the information regarding paths and settings of the application. Let's take a closer look to all the possible configurations.

#### ***Memory cache***

In this part of the configuration, the user defines time values for the data to be held in cache.

```
"MemoryCache": {  
    "ExpirationKeys": {  
        "CatalogTree": "12:00:00",  
        "DefaultTimeSpan": "12:00:00"  
    }  
},
```

The *CatalogTree* refers to the catalog cache containing all informations regarding the nodes (dataflows, DSDs, codelists, concept schemes). Its format is hh:mm:ss and user can overwrite the default value. *DefaultTimeSpan* is the default value for all keys in cache. Its format is hh:mm:ss.

#### ***DataflowDataCache***

In this part of the configuration, the user defines all settings regarding the storage of the jsonstat for dataflow data.

```
"DataflowDataCache": {  
    "Type": "NoSql",  
    "ConnectionString": "Data Source=DB/DataflowDataCache.sqlite;",  
    "IsEnable": true,  
    "SaveDataOnFile": true,  
    "SavedDataFilePath": "_DataflowDataFiles",  
    "Expiration": 604800, //Second  
    "ExclusionList": ["DataflowId"],  
}  
},
```

Specifically:

- *Type* is the server storage's type (supports only “NoSql”).
- *ConnectionString* specifies the path of the sqlite database.
- *IsEnable* (*true/false*) indicates if the DataBrowser can use (or not use) the cache.

- *SaveDataOnFile* specifies if the jsonstat will be saved in a separated file or inside the nosql database (true is recommended).
- *Expiration* indicates the default value, in seconds, for the validity of the jsonstat in cache. This value can be overwritten by NodeId or DataflowID.

### **SDMX Cache**

In this part of the configuration, the user defines the path where some sdmx value will be saved in order to improve the SOAP operation (get namespace and other default values from WSDL). It is recommended to always leave the default values.

```
"SDMXCache": {
  "ConnectionString": "Data Source=DB/SDMXCache.sqlite;",
  "ExpiredTime": 86400,
  "DisableSdmxCache": true,
  "DisableGlobalCache": true,
  "DisableNamespace": false
},
```

### **Database**

In this part of the configuration, the user defines all settings necessary for the storage of information regarding the databrowser (nodes, dashboards, views, templates, users and so on).

```
"Database": {
  "DbType": "SQLite",
  "ConnectionString": "Data Source=DB/DataBrowserDevDB.sqlite;",
  "EnableQueryOptimizer": false,
  "QueryOptimizerDbType": "microsoft.data.sqlite", //system.data.
  ←sqlclient
  "QueryOptimizerConnectionString": "Data Source=DB/DataBrowserDevDB.
  ←sqlite;",
  "UseMigrationScript": true
},
```

Specifically:

- *DbType* is the server storage's type.
- *ConnectionString* is the path of the sqlite database.
- *EnableQueryOptimizer* supports only the value false.
- *QueryOptimizerDbType* supports only the “microsoft.data.sqlite” string
- *QueryOptimizerConnectionString* must be null or with the same value of the ConnectionString (this value is only used if the EnableQueryOptimizer is true).
- *UseMigrationScript true/false* indicates if the new version of the software can automatically update the used database (recommended value is true).

### **Geometry Database**

In this part of the configuration, the user defines the path of the database needed for the geometries.

```
"GeometryDatabase": {
  "DbType": "SQLite",
  "ConnectionString": "Data Source=DB/Geometry.sqlite;"
},
```

### *CORS policies*

In this part of the configuration, the user decides if CORS policies must be enabled or not.

```
"General": {  
    "CORS": {  
        "Enable": true  
    },
```

### *Validation rules*

In this part of the configuration, the user defines the rules regarding the validity of the entities contained in the Data Browser (nodes, dashboards, views, ...).

```
"ValidationRules": {  
    "View": [ "UniqueNamaForUser" ],  
    "Template": [ "NONE" ],  
    "Node": null  
},
```

Specifically:

- *View*: contains the name of the rules that are needed for the creation/update of the entity. In particular, UniqueNamaForUser is the rule that checks if the view has an unique name comparing all the views assigned to the current user.
- *Template*: defines the rules necessary to assign the template.
- *Node*: defines the rules necessary to assign the node.

In general, the value of NONE to a rule, indicates that the current entity hasn't got any rules to be checked. If the entity has a NULL value, then the default rules for all entity will be applied. The default rule for View is UniqueNamaForUser; for Template and Node the default rule is null.

### *External and internal rules*

```
"EndPointResponseLogForDebug": false,
```

If true and log level is “debug”, all responses from NSI will be saved on log file.

```
"InternalRestUrl": "",
```

Specifies the URL used for calling the DataBrowserAPI from the installation server.

```
"ExternalRestUrl": "http://databrowser/api/",
```

Specifies the URL used for calling the DataBrowserAPI from outside the installation server.

```
"ExternalClientUrl": http://demo.databrowser.sister.it/
```

Specifies the URL used for calling the DataBrowser frontend from outside the installation server.

### *Authentication*

In this part of the configuration, the user defines settings regarding login for authenticated users.

```
"Authentication": {
    "IsActive": true,
    "Key": "8CF07358F9BB4CA98C0EE4D26A97858C",
    "Issuer": "DataBrowserIssuerApi",
    "Audience": "DataBrowserApiUser",
    "JwtTokenLifeTime": 15, //Minute
    "EnableRefreshToken": true,
    "EnableAuditLogin": false,
    "TryLoginMax": 3,
    "TryLoginTime": 60,
    "DelayLogin": 3000,
```

Specifically:

- *IsActive* if set to false, all APIs will be accessible from anonymous users.
- *Key* is used for the generation of the hash token needed for login.
- *Audience* is used to generate login token.
- *JwtTokenLifeTime* specifies the time to live of the generated token.
- *EnableRefreshToken* tells the system to regenerate a new token from cookie instead of recalling token with user and password.
- *EnableAuditLogin* saves all tentative to login by all user on database.
- *TryLoginMax* sets the maximum number of login before activating the system of delay response.
- *DelayLogin* (ms) specifies the time of delay of login response (time is incremented by this value for each invalid login).

#### ***Refresh cookie options***

In this part of the configuration, the user defines the cookie's settings to refresh the token.

```
"RefreshCookieOptions": {
    //Name: null,
    //Domain: null,
    "HttpOnly": true,
    //Path: null,
    "SameSite": "Lax", //null, "Unspecified", "None", "Lax", "Strict"
    "Secure": false,
    "RefreshTokenLifeTime": 14400 //Minute
```

Specifically:

- *HttpOnly* is recommended to be always set to true.
- *SameSite*: *Lax* is recommended. If it is necessary to use crossdomain cookie, set it to “None” and use an Https connection.
- *Secure* must be set to true in case of https connection.
- *RefreshTokenLifeTime* defines validation time (in minutes) of the cookie.

#### ***User policy for password***

In this part of the configuration, the user defines settings for password policy and mail in order to enable the user to create or change password.

```
"UserPolicy": {  
    "PasswordRequiredLength": 8,  
    "PasswordRequireNonAlphanumeric": true,  
    "PasswordRequireLowercase": true,  
    "PasswordRequireUppercase": true,  
    "PasswordRequireDigit": true  
}
```

For the creation/change password configuration, it is necessary to set SMTP information important for email exchange from DataBrowserAPI.

```
"Mail": {  
    "Smtp": {  
        "Host": "",  
        "Port": 1234,  
        "Secure": false,  
        "Username": "user",  
        "Password": "pass"  
    },  
    "DefaultMail": "info@databrowser",  
    "Templates": {  
        "ResetPassword": {  
            "Sender": "",  
            "Subject": "Recovery Password",  
            "Message": "config/Template/recoveryPassword.html"  
        }  
    }  
}
```

In particular:

- *DefaultMail* is the default sender's email address.
- *Template* contains all html templates used for sending email. The only available template is ResetPassword. In this section, “Subject” is the subject of the email sent to reset the password. “Message” is the body of the email sent in html format. Usually the path to the html is specified. In this case the folder must be inside of DataBrowserAPI folder. This message can be overwritten by UserLang used from request. If the folder contains the config/Template/recoveryPassword.{UserLang}.html, that will be used as file for the message.

### Scheduler

In this part of the configuration, the user defines settings to enable the scheduler. In this case a timer is set to specify the interval to check if there is any work to do (five minutes is the recommended interval 00:05:00).

```
"Scheduler": {  
    "IsEnable": true,  
    "Timer": "00:05:00",  
}
```

### Special cache management

When talking about *cache* we refer to data stored so that future requests for that data can be served faster; the data stored in a cache might be the result of an earlier computation or a copy of data stored elsewhere. In this application, cache is very important especially when considering filterable dashboards that hold territorial dimensions and allow users to query results by changing these dimensions. For this reason timing is very important and a key component for a responsive and functional application.

In order to manage these requests, we consider services for handling cache regeneration depending on whether we are considering filterable or non-filterable dashboards (see section [Dashboards](#) for more information).

In particular, in the appsettings.json file a scheduler is defined in which a timer is set to specify the interval to check if there is any work to do (usually five minutes is the recommended interval 00:05:00). This scheduler picks the two files present in the config folder (config\dashboarddatacachegenerator.json and config\dataflowdatacachegenerator.json) to generate **DataflowDataCacheGenerator** (refreshes all dataflows configured in the DataflowDataCache section config) and **DashboardDataCacheGenerator** (refreshes all dataflows assigned to static not-filterable views in a dashboard).

```
"Scheduler": {
    "IsEnable": true,
    "Timer": "00:05:00",
}
```

In order to set the dashboards to refresh, user must follow these code lines:

```
"DashboardDataCacheGenerator": {
    "IsEnable": true,
    "StartTimer": "20:30:00",
    "Days": [ 0, 1, 2, 3, 4, 5, 6],
}
```

in which, *StartTime* defines the starting time *Days* indicates the day the worker runs (0 = Sunday and 6 = Monday). And for dataflows:

```
"DataflowDataCacheGenerator": {
    "IsEnable": true,
    "StartTimer": "20:30:00",
    "Days": [ 0, 1, 2, 3, 4, 5, 6],
    "DataflowsRefresh": [
        {
            "Id": "Agency+Id+Version",
            "Dimensions": [ "DimensionId" ],
            "NodeCode": "NodeId",
            "GruopByNumber": {
                "GroupSize": 20
            }
        },
    ]
}
```

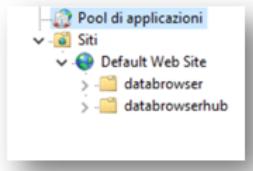
In particular:

- *DataflowsRefresh* is an array that contains the list of all dataflows that need to be refreshed in cache.
- *Dimensions* can have only one value and defines the dimension's ID to refresh.
- *NodeCode* defines the node's ID that contains the dataflowid to refresh.
- *GroupByNumber* contains the configuration for grouping the call to get the data that needs to be inserted in cache.
- *GroupSize* defines the number of codes that will be send for each request to the endpoint.

### 3.3 Application deployment

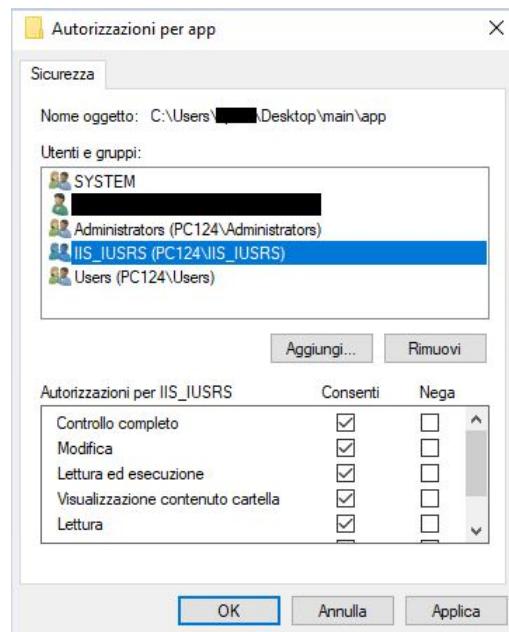
#### IIS CONFIGURATIONS

First of all, the user needs to copy the two folders from the software package (*databrowser* and *databrowserhub*) in the IIS root directory which from now on we will refer to as **[ROOT\_IIS]** (i.e. C:\inetpub\wwwroot\ ) and open the ISS Manager where these folders will now appear.

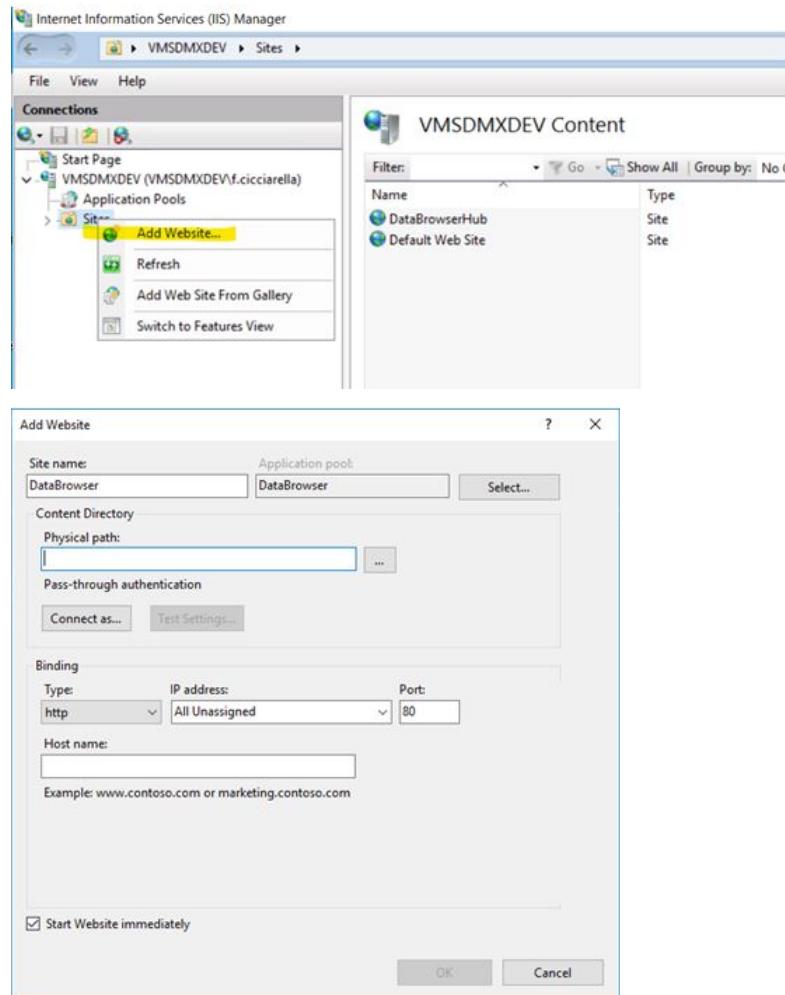


The users IIS\_IUSRS e IUSR must have the suitable permissions on the web applications, therefore on the folder:

- right click on the folder;
- select *Property/Security*;
- click on *Edit/Add*;
- in the section “Locations”, select the local computer;
- in the section “Enter the object name to select” write IIS\_IUSRS;
- click on “check names” and then OK;
- in the section “Permission for IIS\_IUSRS” include “full control”;
- repeat steps from 3 to 6 for user IUSR
- in the section “Permission for IIS\_IUSRS” include “write/read” permissions.

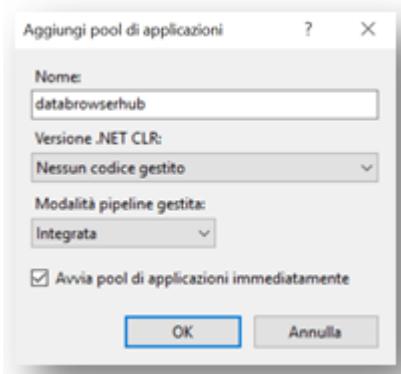


The user can now create a website for the DataBrowser

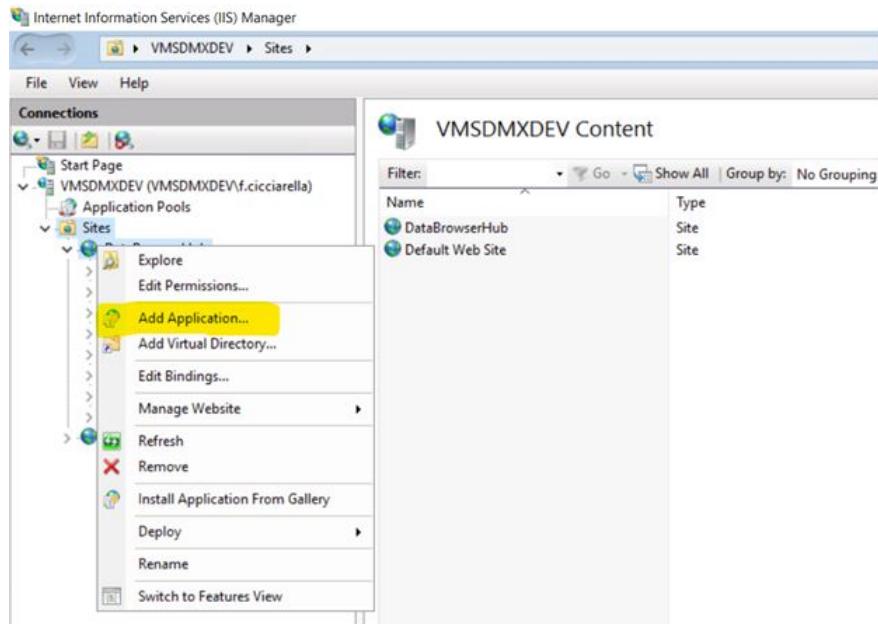


The user selects the DefaultApplicationPool or creates a new one with type **.NET CLR Version 4** and selects the psysical path of the databrowser's folder. Finally, he inserts the hostname of his machine (or name created by the network administrator).

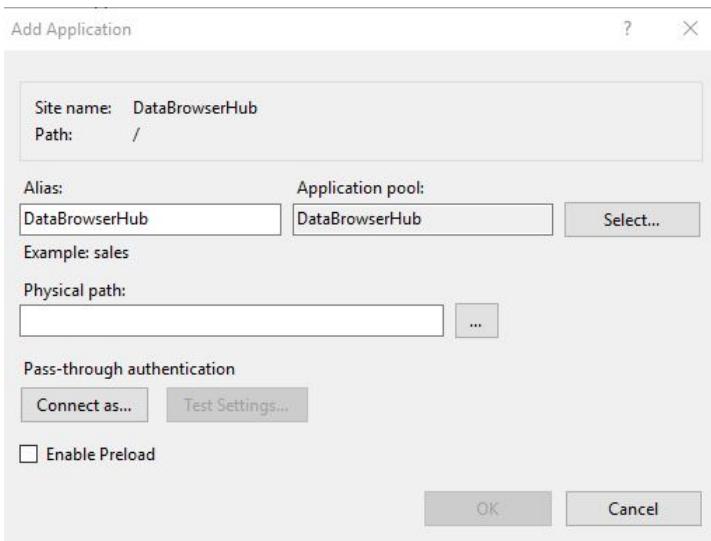
At this point the user needs to create an application pool for the web service “databrowserhub”. This operation can be made by right-clicking on “Application Pool” and by selecting “Add Application Pool” item



Afterwards, the user needs to create a new application (as shown in picture):



and configure it



Once the previous operations are completed, the user selects the application pool created for the DataBrowserHub and inserts the path to the databrowserhub's folder into the *Physical path* field.

Most recent browsers use aggressive caching techniques that tend to contact the web server only as necessary. The client application implements a mechanism to minimize requests to the web server while keeping its latest version in the browser cache. In order for this mechanism to work, it is necessary to configure the web server so that caching of the index.html file is denied. Such operation is made possible by adding some custom headers in the web.config file, stored in the IIS root directory, indicating that the location path file (in this case index.html) must include these just mentioned headers in order to avoid caching.

The following part of code is the one that was added in the web.config file:

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

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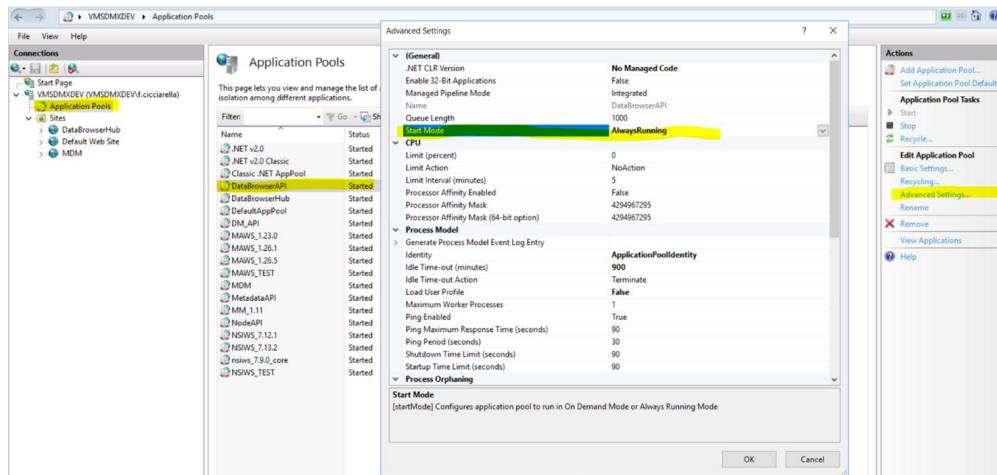
```

<location path="index.html">
  <system.webServer>
    <httpProtocol>
      <customHeaders>
        <add name="Cache-Control" value="no-store, must-revalidate"/>
        <add name="Pragma" value="no-cache" />
        <add name="Expires" value="0" />
      </customHeaders>
    </httpProtocol>
  </system.webServer>
</location>
</configuration>

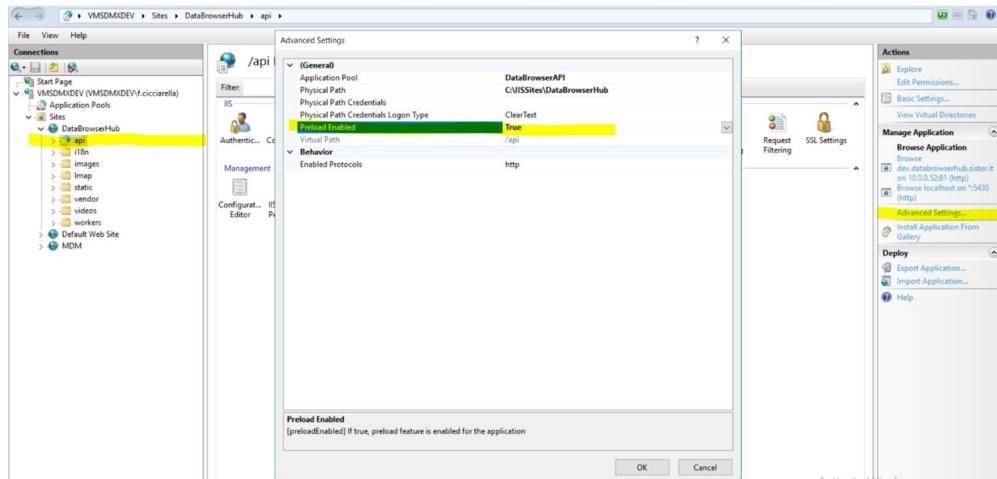
```

## IIS Configuration for Application Initialization

Initialization needs to be applied on the Application Pool as well as the IIS Application level.



On the Site/Application level user can specify whether the site should pre load; in this case the Preload Enabled flag needs to be set to true.



## HTTPS BINDINGS

It is needed to create a binding for https. The task can be performed as follows:

- click on *Default Web Site*;

- click on *Binding* in the *Actions* menu on the top-right;
- click on *Add*;
- select *http sas type*;
- select an available SSL certificate;
- click on *OK*.

## OTHER POSSIBLE CONFIGURATIONS

It is also possible to set other parameters (time-outs, lenght content, etc.) that can be useful according to the users' needs. Here are some examples:

- **Maximum allowed lenght for the content**
  - Click on the IIS Web Site under which the application has to be installed;
  - double click on the *Requests filtering* menu item;
  - click on *Edit feature settings*;
  - modify the *Maximum allowed content length (byte)* to the desired value.
- **Connection time-out.** The connection time-out parameter has to be set in order to allow delayed responses by the web services. The suggested value for this parameter is 6000 seconds (100 minutes).
  - Click on the IIS Web Site under which the application has to be installed;
  - select the *Advanced Settings* menu;
  - click on *Limits*;
  - modify the *Connection Timeout* parameter to the desired value.
- **Request time-out.** This parameter allows to increase the time interval after which a time-out error is launched (blocking the execution) during the waiting of a response by a web service. It is suggested to increase this parameter to 120 minutes.
  - Click on the IIS Web Site under which the application has to be installed;
  - select *Configuration Editor*;
  - access the *system.webServer/aspNetCore* section;
  - modify the *requestTimeout* parameter.
- **Execution time-out.** This parameter, similar to the previous, allows to increase the time after which a timeout is launched (blocking the execution) after the execution of a web service that doesn't modify its execution status. Is suggested to increase this parameter to 120 minutes.
  - Click on the IIS Web Site under which the application has to be installed;
  - select *Configuration Editor*;
  - access the *system.webServer/httpRuntime* section;
  - modify the *executionTimeout* parameter.
- **Session state.** In order to increase the application session duration, the *Session State* parameter has to be set. It allows the maintenance of the session cookies without constraining users to re-login to the application.
  - In IIS manager, click on the *Default Web Site*;

- click on the *Session State* menu;
- set the option *TimeOut* (in minutes) to a suitable value (e.g. 60 minutes)
- ***Idle time-out.*** This parameter determines the time after which an idle web service is stopped. It allows to eliminate the waiting time for restarting the web service in case of a very long session. It has to be set for each pool involved in long duration tasks.
  - Click on the pool;
  - select Advanced settings;
  - modify the Idle TimeOut parameter i.e. by setting it to 120 minutes.

## 3.4 Quick steps

This paragraph contains the synthetic summary of the steps needed to install and configure the application, considering that the prerequisites have been already satisfied.

1. Download the software package ***databrowser\_x.x.zip***
2. Extract the two folders from the package(*databrowser* and *databrowserhub*) and copy them into the IIS root directory
3. Set the ISS configurations
  - Assign to the IIS\_IUSRS and IUSERS users read/write grants to the folder
  - Create an IIS application pool for the web service “**databrowserhub**”
4. Deploy the web service
  - Create under the IIS Default Web Site a new application associated with the just created application pool “**databrowserhub**”
5. Start the navigation
  - Go to <http://localhost/databrowser>

## 3.5 Customizing Hub and nodes styles

In the client folder, when starting configuration of the application, it is also possible to set a personalization of the styles of the application itself or a single node inside the application. User can perform this operation by changing the custom.css file inside the DataBrowserHub-Client folder.

The following sections show examples on how to customize parts of the application modifying the css file.

### ENTIRE HUB PERSONALIZATION

```
/*Color for principal structures which include:
 - Header banner background color
 - principal application buttons (in data visualization and windows)
 - text color in databrowsing windows (criteria, layout, ...)*/

.theme__palette-primary-main {
  color: #00295a
}
```

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```

.theme__palette-primary-light {
    color: #3b5187
}

.theme__palette-primary-dark {
    color: #000030
}

/*Contrast text color for structures
having palette-primary background color*/

.theme__palette-primary-contrastText {
    background-color: #ffffff
}

/*
Secondary structures colors which include:
- background color in buttons in hub's main page
- rendering messages when opening files or applying configurations
- loading bars
*/

```

```

.theme__palette-secondary-main {
    color: #f8a81e
}

.theme__palette-secondary-light {
    color: #ffd956
}

.theme__palette-secondary-dark {
    color: #c07900
}

/*Contrast text color for structures having palette-secondary
background color (information-nodes-dashboards buttons)*/
.theme__palette-secondary-contrastText {
    color: #00295a
}

```

## SINGLE NODE PERSONALIZATION

The following css code sets style's personalization to a node which ID is “CUSTOM”. In particular considers the main and secondary colors of the structures.

```

/*Color for principal structures which include:
- Header banner background color
- principal application buttons (in data visualization and
windows)
- text color in databrowsing windows (criteria, layout, ...
 */

.theme__node__CUSTOM__palette-primary-main {
    color: #bf360c
}

```

(continues on next page)

(continued from previous page)

```

.theme__node__CUSTOM_palette-primary-light {
    color: #f9683a
}

.theme__node__CUSTOM_palette-primary-dark {
    color: #870000
}

/*
    Contrast text color for structures
    having palette-primary background color*/

.theme__node__CUSTOM_palette-primary-contrastText {
    background-color: #ffffff
}

/*
Secondary structures colors which include:
    - background color in buttons in hub's main page
    - rendering messages when opening files or applying
    ↵configurations
        - loading bars
*/

```

```

.theme__node__CUSTOM_palette-secondary-main {
    color: #7cb342
}

.theme__node__CUSTOM_palette-secondary-light {
    color: #aee571
}

.theme__node__CUSTOM_palette-secondary-dark {
    color: #4b830d
}

Contrast text color for structures having palette-secondary
background color (information-nodes-dashboards buttons)
.theme__node__CUSTOM_palette-secondary-contrastText {
    color: #000000
}

```

It is also possible to set custom colors to tables of a specific node. In the next code example, colors of borders and background of cells are modified for the node with ID “CUSTOM”.

```

*****EXTERNAL TABLE BORDER (red border) *****/
/* Top border first row of the table */
#node__CUSTOM thead tr:first-child th.c{
    border-top-color: #da0d14 !important;
}

/* Left border first column of the table (head section) */

#node__CUSTOM thead tr th.c.cfm.ch.cl0{
    border-left-color: #da0d14 !important;
}

```

(continues on next page)

(continued from previous page)

```
/* Left border first column of the table (body section) */

#node__CUSTOM tbody tr th.c.cfm.csh.c10{
    border-left-color: #da0d14 !important;
}

/* Right border last column of the table */

#node__CUSTOM .c.c-rb{
    border-left-color: #da0d14 !important;
}

/* Top border of the last row (not visible with data) of the table */

#node__CUSTOM .c.c-bb{
    border-top-color: #da0d14 !important;
}

***** END EXTERNAL TABLE BORDER *****

***** TABLE'S BODY ROW BACKGROUND *****

/* Alternating rows color (grey even and white odd) */
#node__CUSTOM tbody tr:nth-child(even) td.c.cfm{
    background-color: #dcdcdc !important;
}

***** END TABLE'S BODY ROW BACKGROUND *****

***** TABLE'S LAYOUT *****

/*Background color and text color
for dimensions set in rows (dimensions' titles)*/

#node__CUSTOM thead tr[data-row-key="hh"] th.c.cfm.ch{
    background: #fff !important;
    color: #000000;
    text-decoration: underline;
}

/*Background color for dimensions set in rows
(cells componing rows with no titles)*/

#node__CUSTOM thead tr[data-row-key="hh"] th.c.cfm.csh{
    background: #fff !important;
}

/*Background color and text color
for dimensions set in sections */

#node__CUSTOM tbody th.c.cfm.cs{
    background-color: #da0d14 !important;
    color: #ffffff;
}
```

(continues on next page)

(continued from previous page)

```

/*Background color and text color for dimensions
set in columns (dimensions' titles)*/

#node__CUSTOM .c.cfm.ch{
    background: #aaa !important;
    color: #000000;
    text-decoration: underline;
}

/*Background color and text color for dimensions
set in columns (dimensions' single items)*/

#node__CUSTOM thead th.c.cfm.csh{
    background: #aaa !important;
    color: #ffffff;
}

```

Last but not least, user can also change the map colors in the application or just in a specific node. In case of node customization, remember to always write the node's ID (like in the example “CUSTOM”).

```

.map__start-color {
    color: white;
}
.map__end-color {
    color: black;
}
.map_node_CUSTOM_start-color {
    color: orange;
}
.map_node_CUSTOM_end-color {
    color: red;
}

```

Another important functionality contained in the Data Browser application is the web accessibility. It is also possible to configure a personalized style of the page when this functionality is enabled.

```

/*
-----
ACCESSIBILITY
-----

you can apply colors for accessibility (ally) mode too, like this:*/
.ally-theme_palette-primary-main { color: white }

/*and for specific nodes too:*/
.ally-theme_node_NODE_ID_palette-primary-main { color: white }

```



---

**CHAPTER  
FOUR**

---

## **ADMINISTRATION**

The “Administration” functional component allows super administrator type user to manage the whole application. In particular the following sections will properly explain all types of interventions that can be done.

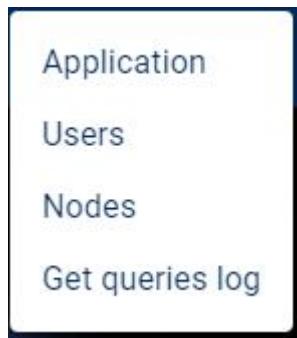
### **4.1 How to configure the application**

#### **4.1.1 General settings**

The super administrator user has the authority to configure the application settings (consisting in managing nodes, users and so on). It is possible to configure specific settings by clicking the setting icon:



and choosing the option related to the operation the user wants to perform from the list that appears:



In the “Application” configuration window it is possible to choose the maximum number of observations that can be viewed after setting the criteria.

In the “Users” configuration window it is possible to create, edit or delete users.

By clicking the “Node” link, it is possible to create new nodes, manage node’s cache and templates, delete nodes and, most importantly, set user’s permissions on nodes.

The “Get queries log” link allows the administration user to download the last  $n$  SDMX-queries requested in the page.

## 4.1.2 Landing page settings

Generally, the Landing page must have at least a title, a slogan, a section on information and nodes, and also a possible section dedicated to dashboards. It could have a welcome image or a short video. These settings appear in the “application configuration” window:

The screenshot shows the "Application configuration" window with the "GENERAL" tab selected. The window contains the following fields:

- Title \***: A dropdown menu showing the flag of the United Kingdom and the text "Public Statistics HUB".
- Slogan**: A dropdown menu showing the flag of the United Kingdom and the text "Slogan".
- Supported languages**: A dropdown menu with "en" and "it" selected, and an "Insert code" link.
- Default language \***: A dropdown menu showing "en". Below it is a note: "Have to be one of the supported languages codes".

At the bottom right are "CANCEL" and "SUBMIT" buttons.

In this window, the super administrator user, can choose to insert dashboards that will be publicly available to all users once the landing page is visited (see section *Dashboard management* for detailed information). It is also possible to set a title for each language supported by the application allowing the user to benefit of the multilingual functionality (indicated by the presence of the flag in certain fields).

In the configuration panel user can find the “USERS” tab where he can set the disclaimer text that will appear in the “Sign Up” window when a new user decides to sign up to the application (see section *How to add a registered user* for detailed information).

If only a node is configured, then landing page and node home page will be the same; otherwise if more than one node is configured (beside the default one), then the landing page will show a section, named “Nodes”, containing all nodes contained in the Hub which can be browsed.

## 4.1.3 Accessible version

The Data Browser application also contemplates web accessibility allowing all kind of people to benefit of the application’s functionalities.

Activation of this option is very simple.

On the main page of the hub, click on the little man icon and choose “Accessible version” from the list that appears.



Once the functionality is enabled, a green check will appear near the icon  meaning that the application now is in accessible mode (this means that the system will apply special CSS styles that can be defined in the “custom.CSS” file using the special CSS class “a11y”, that will allow to treat in a dedicated way any element of the interface in order to increase the contrast or other properties useful for the purpose. At the moment, the most important operation that this functionality provides, is that when clicking on a data the system will not show the viewing/navigation page of the data because this functionality requires an advanced and interactive human-machine interaction, but it will guarantee the fruition of the information contained in the data through the CSV download of that data itself.

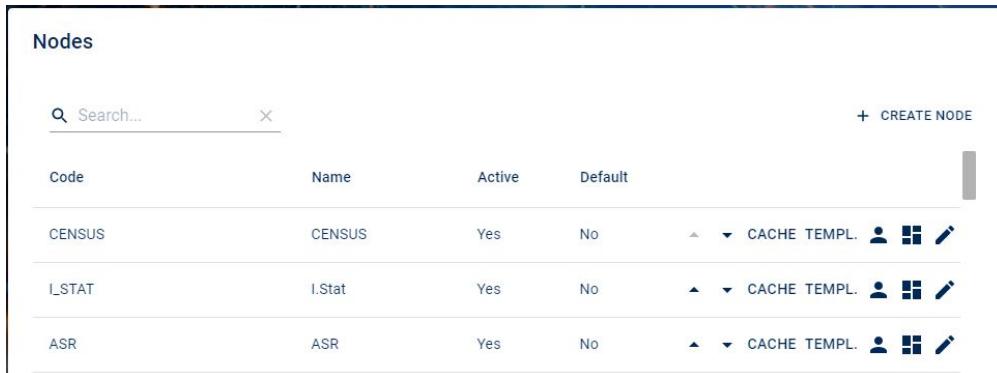
## 4.2 Hub management

In this section we explore basic operations of managing and configuring nodes.

### 4.2.1 How to manage data providers (nodes)

From the setting icon, choosing the “Nodes” option, the super administrator user can manage and configure all the present nodes. Moreover in this section he can set the configurations focused on:

1. Ordering the appearance of nodes
2. Setting a default node
3. Checking if the node is active or not
4. Adding/Removing nodes
5. Editing nodes
6. Editing/Deleting Dataflows and catalog cache
7. Viewing/Deleting data templates
8. Setting permissions to node administrator users
9. Editing/Deleting dashboards



The screenshot shows a table titled "Nodes" with the following data:

Code	Name	Active	Default	
CENSUS	CENSUS	Yes	No	  CACHE TEMPL.   
I_STAT	I.Stat	Yes	No	  CACHE TEMPL.   
ASR	ASR	Yes	No	  CACHE TEMPL.   

The above figure shows all the possible settings. In particular

- the “+ CREATE NODE” adds a new node;
- the small arrows allow the user to set the sorting method for the nodes to appear;

- by clicking on “CACHE” it is possible to edit or delete cache for each dataflow and catalog of the node.
- by clicking on “TEMPLATES” it is possible to view or delete a data template
- the person icon allows the super administrator user to set permissions for the other users (such as node administrator users)
- the mosaic icon manages the dashboards for that specific node
- the pencil symbol allows to edit the node.
- the trashcan symbol deletes the selected node;

Node administrator users cannot delete or change position of the nodes they are allowed to manage. Most of all, based on what kind of permission they have on the nodes, not all the above mentioned icons will be present in their node configuration window.

#### **4.2.2 How to configure a data provider**

Editing an existing node or adding a new one, will bring to another window where it is possible to configure the fields that will afterwards be the settings for that node. In general these fields relate to:

FIELD	DESCRIPTION
Max Num Observation	Maximum number of observations that it is possible to visualize.
Decimal separator	Possible values . or , . This configuration can be overwritten by the Data Annotation.
Number of decimals	Indicates the number of decimal after the decimal separator. This configuration can be overwritten by the Data Annotation.
Empty cell character	This configuration can be overwritten by the Data Annotation.
Default views	This configuration can be overwritten by the Data Annotation.

In some tabs the multilingual functionality is enabled (indicated by the presence of the flag in certain fields). This allows the user to set a title for each language supported by the application. More specifically, the configuration window appears like this:

The screenshot shows the 'Edit node' interface with the 'GENERAL' tab active. The 'ID' field contains 'SISTER\_TEST'. The 'Title' field has a UK flag icon. The 'Agency' field contains 'SDMX'. The 'Active' checkbox is checked. The 'Default' checkbox is unchecked. There is a 'Slogan' section with a UK flag icon and the text 'Slogan EN'. A 'Background image/video' section with an 'UPLOAD' button is also present. At the bottom right are 'CANCEL' and 'SUBMIT' buttons.

It contains different tabs, each one configuring specific settings related to the node itself. Getting a closer look to each tab, it is possible to notice that:

- in the “**General**” tab, the mandatory fields are the ID of the node, the TITLE and the AGENCY. The user can decide to check the ACTIVE box if the node is ready to be browsed otherwise it must be left unchecked (it might happen that a node is part of the hub but still under construction). The “Default” checkbox allows to set the node as default node of the application. “Slogan”, “Background image/video” and “Logo” are all components of the node.
- In the “**Information**” tab, the user can give a brief description of the node which will appear once it will be selected.

The screenshot shows the 'Edit node' interface with the 'INFORMATION' tab active. A rich text editor toolbar is at the top, featuring buttons for bold, italic, underline, strikethrough, superscript, subscript, and various alignment and list options. Below the toolbar is a large text area where users can enter content. At the bottom right are 'CANCEL' and 'SUBMIT' buttons.

- The “**Endpoint**” tab specifies the configurations needed in order to manage the system’s capability to connect and query the SDMX web service. This functionality allows the system to correctly query the data and also to recover any SDMX artefacts useful to the

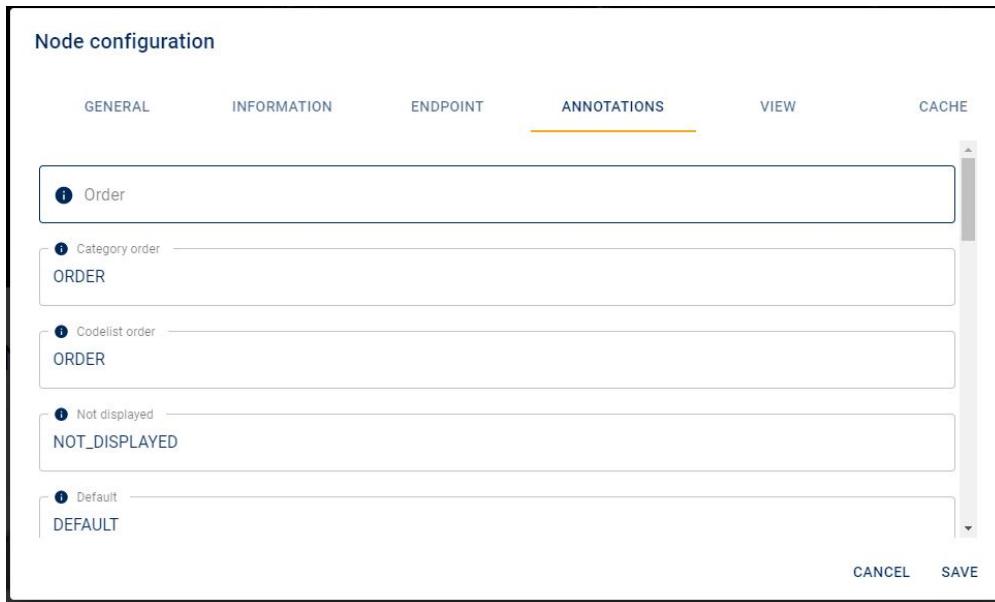
application (for example the category scheme and the categorizations useful for the Node Catalog). It is possible to set a HTTP Authentication and a Proxy, check the specific box to support POST filters and also the possibility to enable a SOAP endpoint. User can also select the method to access the codes of the dataflow dimensions when defining criteria. There are five possible choices regarding the criteria selection mode:

- *ALL\_FULL*: in this case all dimensions' items are simultaneously loaded (even those that are not contained in the data) with the numerosity already present.
- *ALL\_PARTIAL*: in this case only dimensions' items contained in the data are simultaneously loaded with the numerosity already present.
- *STEP\_BY\_STEP\_FULL*: in this case all dimensions' items are loaded (even those that are not contained in the data) while moving from one tab's dimension to another. Numerosity is not showed at the beginning.
- *STEP\_BY\_STEP\_PARTIAL*: in this case only dimensions' items contained in the data are loaded while moving from one tab's dimension to another. Numerosity is not showed at the beginning.
- *STEP\_BY\_STEP\_DYNAMIC*: in this case only dimensions' items contained in the data are loaded while moving from one tab's dimension to another. Furthermore, choices made in a tab affect next selections acting as filters. Numerosity is not showed at the beginning.

The screenshot shows the 'Node configuration' dialog with the 'ENDPOINT' tab selected. The dialog is divided into several sections:

- GENERAL**, **INFORMATION**, **ENDPOINT** (highlighted in yellow), **ANNOTATIONS**, **VIEW**, **CACHE**
- Node type**: SDMX-REST
- Criteria selection mode**: STEP\_BY\_STEP\_DYNAMIC
- Endpoint URL \***: http://demost-mdm.sister.it:85/NSIWSST/rest
- Response format \***: JSON
- Buttons**: CANCEL, SAVE

- The “*Annotations*” tab specifies the name of the components used to configure some specific visualization aspects of the node defined through the Annotation mechanism.



- The “View” tab specifies some other visualization aspects of the node and of all its components. In particular it is possible to select configurations on how to :
  - show uncategorized dataflows.
  - Show data not in production (for example linked dataflows).
  - Show all the category level or just stop to the first one.
  - Decide which decimal separator use when data is shown.
  - Insert territorial dimension IDs.
  - Insert temporal dimension IDs.
  - Exclude particular category schemes from the main page.
  - Choose what kind of visualization the catalog navigation mode should have by default (CARD or LIST for example).
  - Insert attributes ids in order to not show them in the data visualization.
  - Set page size.
  - Set the download file format.

When creating a new node, this tab will already have the following default values:

**category levels visible:** *first*  
**decimal number:** *1*  
**decimal separator:** *comma*  
**navigation mode:** *list*

**Edit node**

GENERAL	INFORMATION	ENDPOINT	ANNOTATIONS	VIEW	CACHE
<input type="checkbox"/> Show uncategorized dataflow <input type="checkbox"/> Show dataflow not in production Category levels visible in the homepage * <input type="text" value="5"/> Decimal number * <input type="text" value="1"/> Decimal separator * <input type="text" value="UK"/>					
<a href="#">CANCEL</a> <a href="#">SUBMIT</a>					

- In the “**Cache**” tab, the user can manage cache. In particular it is possible to set cache validity for:
  - Catalog cache: it concerns the cache of data exposed by a single node, it speeds up the search on catalog, node preview, etc..  
The user can decide cache time duration (in seconds) for all Catalog elements.
  - Dataflows cache: it is related to queries on individual dataflows  
The user can decide cache time duration (in seconds) for all Dataflows.

**Node configuration**

GENERAL	INFORMATION	ENDPOINT	ANNOTATIONS	VIEW	CACHE
Catalog cache validity (in seconds) Dataflow cache validity (in seconds)					
<a href="#">CANCEL</a> <a href="#">SAVE</a>					

### 4.2.3 How to configure Dataflows cache

By clicking on “CACHE” on Nodes configuration frame the user opens a new window where it is possible to edit or delete cache for each dataflow.

Nodes				
Code		Name	Active	Default
8000CENS	8000 Census	Yes	No	▲ ▼ CACHE TEMPL.  
8000CENS2	8000 Census (2)	Yes	No	▲ ▼ CACHE TEMPL.  
ISTAT_REST_XML	ISTAT_REST_XML	Yes	No	▲ ▼ CACHE TEMPL.  
ISTAT_REST	ISTAT_REST	Yes	No	▲ ▼ CACHE TEMPL.  
SISTER_DEV_REST	SISTER_DEV_REST	Yes	No	▲ ▼ CACHE TEMPL.  
BENCHMARK_REST	BENCHMARK_REST	Yes	No	▲ ▼ CACHE TEMPL.  

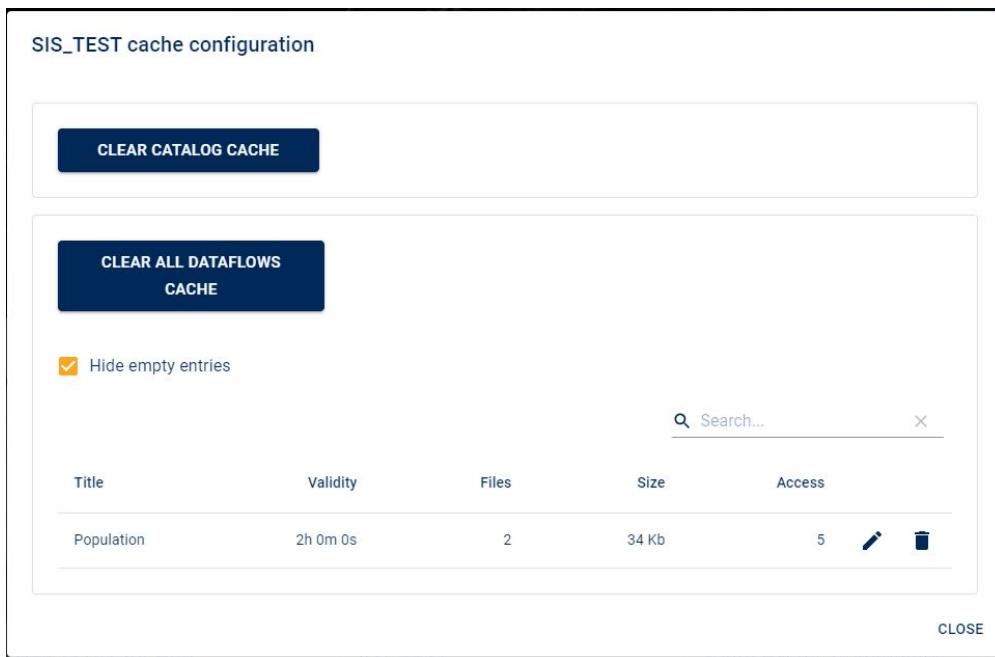
In Dataflows cache configuration window, for each dataflow these attributes are listed:

- cache duration time (in seconds)
- number of cached files
- cache size

The super administrator user, after selecting a dataflow, can change cache duration time (pencil icon) or delete cache (trashcan icon).

Moreover the user can:

- clear catalog cache
- clear dataflow cache for all the dataflows in the node
- show/hide not cached dataflows. By checking the “Hide empty entries” box, if data is not cached, it is not show in the list of cached data.



Node administrator users are allowed to manage cache only if the super administrator user sets them the right permission otherwise the “CACHE” clickable link won’t even be present in the node configuration window.

## 4.3 User management

In this section we will show and describe all possible users that this application allows. There are different types of scenarios based on the permissions that the superadmin user sets to each other user present.

Let’s take a closer look to the user roles and functionalities in the following paragraphs.

### 4.3.1 Application roles

There are four types of possible users allowed in this application:

1. **Super administrator:** he is the only one that can access all configuration sections of the application, manage nodes and, most importantly, manage users and roles.

He can configure the dashboards that can be shown in the Hub’s landing page. Of course, the super administrator will have the same permissions of the node administrator and the registered user. (See [How to add a super administrator](#) paragraph for more details)

2. **Node administrator:** he can create templates and dashboards for the nodes he manages accessing their specific sections. He can configure the node’s home page and, in particular, which dashboard show in it.

However, it is possible that the node administrator does not have all permissions regarding templates management, cache management and so on. The super administrator sets permissions for the node administrator by checking one or all the options present in the node configuration section. (See [How to add a node](#)

*administrator* paragraph)

Permission options relate to:

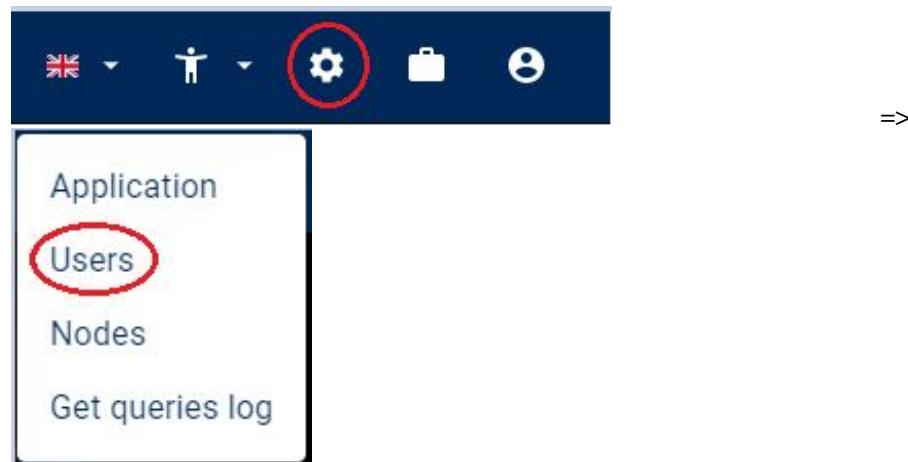
- Cache management
- Template management
- Configuration management

3. **Registered user:** he has its own account but does not have management permissions. He can visualize and download files of all nodes. He can create, visualize or remove views on the dataflows he can access and, lastly, he can share particular visualizations. (See *How to add a registered user* paragraph for more information)
4. **Anonymous user:** does not have his own account and he has read-only permissions on nodes. He can share links regarding data but has no management rights.

#### 4.3.2 How to add a registered user

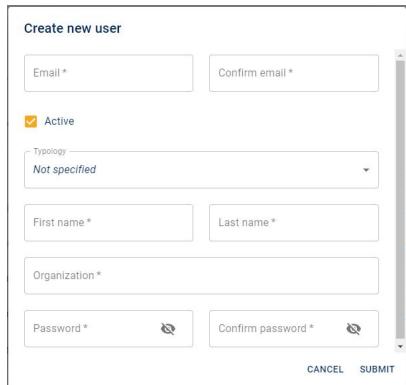
A registered user is a common user that has an account which enables him to login the application but does not have permissions regarding management of any kind. He can create views, visualize them and delete them if necessary. He can share particular visualizations of the data he visits.

In order to create a new registered user, a super administrator user must enter the user setting menu by accessing the main menu of the page



and select the “Create user” button that will bring to a new window which defines email, name, organization and password of this new user - the specified email represents the username necessary for logging in to the application and it cannot be changed.



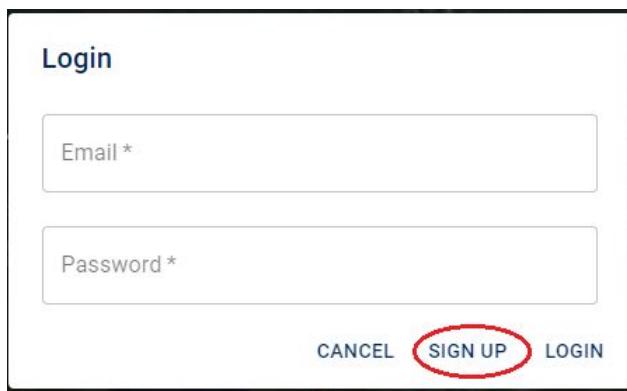


The 'Create new user' form contains the following fields:

- Email \* (text input)
- Confirm email \* (text input)
- Active (checkbox)
- Typeology: Not specified (dropdown menu)
- First name \* (text input)
- Last name \* (text input)
- Organization \* (text input)
- Password \* (password input)
- Confirm password \* (password input)

CANCEL SUBMIT

It is also possible to create a new user by accessig the login link and by clicking on "SIGN UP"

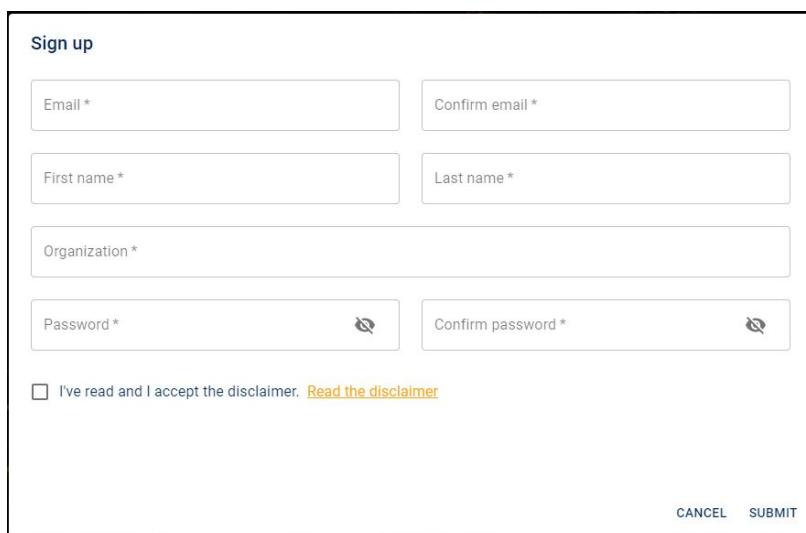


The 'Login' form contains the following fields:

- Email \* (text input)
- Password \* (text input)

CANCEL SIGN UP LOGIN

This opens a new window in which the new user defines his information. It is necessary to check the disclaimer box to continue the operation otherwise an error message will appear.



The 'Sign up' form contains the following fields:

- Email \* (text input)
- Confirm email \* (text input)
- First name \* (text input)
- Last name \* (text input)
- Organization \* (text input)
- Password \* (password input)
- Confirm password \* (password input)

I've read and I accept the disclaimer. [Read the disclaimer](#)

CANCEL SUBMIT

### 4.3.3 How to add a node administrator

In order to add a new node administrator, the super administrator user can create a new user (as described in section [How to add a registered user](#)) and give him permission or he can use one of the already existing users.

From the “Users” configuration panel, the super administrator can edit or erase the users. At this point, permission must be given to the new user regarding management of the node (this management relates to node configuration, templates and cache settings).

From the main settings menu, the super administrator selects the node configuration option and by clicking on the person icon of a specific node, enables permissions to the new user for that particular node.

Code	Name	Active	Default	
8000CENS	8000 Census	Yes	No	<input type="checkbox"/> CACHE TEMPL.
8000CENS2	8000 Census (2)	Yes	No	<input type="checkbox"/> CACHE TEMPL.
ISTAT_REST_XML	ISTAT_REST_XML	Yes	No	<input type="checkbox"/> CACHE TEMPL.
ISTAT_REST	ISTAT_REST	Yes	No	<input type="checkbox"/> CACHE TEMPL.
SISTER_DEV_REST	SISTER_DEV_REST	Yes	No	<input type="checkbox"/> CACHE TEMPL.
BENCHMARK_REST	BENCHMARK_REST	Yes	No	<input type="checkbox"/> CACHE TEMPL.

CLOSE

The window that allows the setting, contains all users (because more than one user can manage the same node) and three checkbox that enable, respectively, cache management, template management and configuration management. If all checkbox are selected, the user has all permissions on nodes otherwise, some options might not be present in the node configuration window or data visualization.

For example, considering the following permission given to users federica.nododemo@sister.it and federica.nododemo\_cache@sister.it

SISTER_DEMO permissions configuration					
Organization	Email	ManageCache	ManageTemplate	ManageConfig	
	federica.nododemo@sister.it	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	federica.nododemo1@sister.it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	federicaauto@sister.it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Federica.nododemo_cache@sister.it	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

CANCEL SAVE

federica.nododemo@sister.it has access to everything regarding cache, templates, node configuration and dashboard management for the node itself. This user can edit the node settings but cannot delete the node itself.  
On the other hand, federica.nododemo\_cache@sister.it, can only manage cache and won't even be able to create or view templates.

#### 4.3.4 Manage user's password

It might happen that the user doesn't remember his password or, in some cases, he would like to change it. In this application, the before mentioned operations are possible and easy to perform.

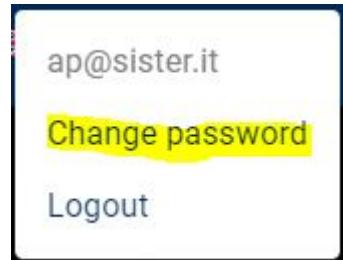
##### RECOVER PASSWORD

In the login window, right under the User/Password boxes, there is the “*Recover password*” link that allows the user to retrieve his password. Once the user clicks this link, a new window opens in which the email address must be inserted. The user will receive an email containing a restore password link that helps the user to redefine the password once again.

So, no password is sent via email, this operation guides the user to create a new one.

##### CHANGE PASSWORD

The change password operation is also very easy to perform. Once the user is logged in, by clicking on the user icon on the top right of the page, will show him a small window where the “*Change password*” link is available



Once the link is clicked, a new window appears in which the user defines his new password

Change password

Old password \*

New password \*

Confirm new password \*

CANCEL SUBMIT

#### 4.3.5 Enable/Disable user

It might happen that a user needs to be disabled, in this case the super administrator user can perform the disable operation.

In the user setting menu (accessible from the main menu of the page), the list of all the registered user appears. Every line of the list refers to an user and his information (name, surname, organization) and one specific column in the lines tells if the user is active or not. If the user's account is active, there will be a YES, otherwise there will be a NO. To change the activeness of the account, the super administrator user needs to click the edit button (pencil icon) and select/deselect the active box.

Edit user informations

Email \*

ap@sister.it

Active

Typology

Not specified

First name \* -

Mario

Last name \* -

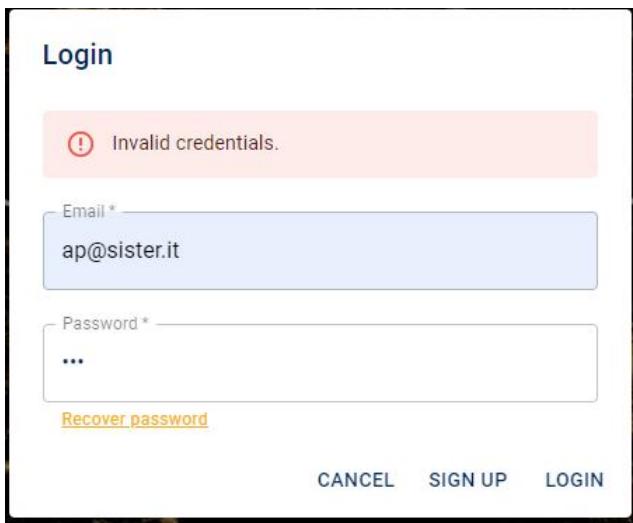
Rossi

Organization \* -

Sistemi Territoriali

CANCEL SUBMIT

If disabled users try to login the application, an error message will describe the inability to connect.



The image shows a 'Login' screen. At the top, the word 'Login' is displayed. Below it, a red error message box contains the text 'Invalid credentials.' with an exclamation mark icon. The main form fields include 'Email \*' with the value 'ap@sister.it' and 'Password \*' with the value '...'. Below the password field is a 'Recover password' link. At the bottom of the form are three buttons: 'CANCEL', 'SIGN UP', and 'LOGIN'.

## 4.4 Template management

The template is a “default visualization” of the data chosen by the super administration user (and node administrator user if allowed by the super administrator). There can be only one template for each dataset contained in a node. The super administrator user sets the configurations for criteria and layout and saves the template by clicking the save button  on the top-right panel above the table. The multilanguage functionality allows users to set different titles depending on the selected language. This is made possible by selecting the flag related to a language and by defining a title for that language.



Once “Create new Template” is selected, this action will open a new window that allows to set other configurations.

Create new template

OPTIONS	TABLE PREVIEW	CHART PREVIEW	MAP PREVIEW
<b>General</b> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Title *  <input type="text" value="Justice test"/> </div> <div style="width: 45%;"> Default view  <input type="text" value="Table"/> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <input checked="" type="checkbox"/> Enable Criteria    <input checked="" type="checkbox"/> Enable Layout    <input checked="" type="checkbox"/> Enable variation (*) </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> Decimal places *  <input type="text" value="1"/> </div> <div style="width: 45%;"> Decimal separator *  <input type="text" value="Dot"/> </div> </div> <b>Table</b> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> Empty cell placeholder * </div>			
(*): not yet implemented			
<a href="#">CANCEL</a> <a href="#">SAVE</a>			

The super administrator user, in the general tab, can choose to:

- disable/enable criteria and layout when accessing this data (this means the buttons and windows regarding criteria and layout won't be shown anymore);
- set the number of decimal places in the table or the decimal separator;
- set the empty cell value in case of empty cells.
- Enable variation (*for future implementations*).

In the table tab, the super administrator user can choose to keep a default view of the table or always show the custom view that he set in the configurations.

### Create new template

The screenshot shows the 'Create new template' interface. At the top, there are four tabs: 'OPTIONS', 'TABLE PREVIEW' (which is selected), 'CHART PREVIEW', and 'MAP PREVIEW'. Below the tabs, there is a dropdown menu with 'Default layout' and 'Custom' options, where 'Custom' is circled in red. The main area contains a table with data for various years from 2000 to 2011, categorized by case type, state of the cases, court type, and time period. The table has several columns for each category, with numerical values in parentheses. At the bottom right of the table area are 'CANCEL' and 'SAVE' buttons.

Case type	Civil Affairs cases						Correctional business cases	
State of the cases	Recruited during the year <b>N</b>			Processed during the year <b>N</b>			Recruited during the year <b>N</b>	
Court type	Cassation Courts	1st Instance Courts	Appeal Courts	Cassation Courts	1st Instance Courts	Appeal Courts	1st Instance Courts	Appeal Courts
Time period								
2000	(*) 7,088	(*) 128,210	(*) 23,058	(*) 8,685	(*) 119,859	(*) 21,174	(*) 3,412	(*) 92,149
2001	(*) 7,664	(*) 132,657	(*) 23,249	(*) 6,550	(*) 123,989	(*) 21,305	(*) 5,820	
2002	(*) 8,587	(*) 131,091	(*) 24,692	(*) 8,591	(*) 126,170	(*) 25,137	(*) 5,342	
2003	(*) 8,233	(*) 1,437	(*) 26,298	(*) 8,478	(*) 135,756	(*) 24,866	(*) 295,839	
2004	(*) 9,420	(*) 166,129	(*) 26,522	(*) 9,351	(*) 162,570	(*) 27,329	(*) 365,463	
2005	(*) 9,652	(*) 168,262	(*) 30,378	(*) 8,466	(*) 166,941	(*) 29,054	(*) 343,827	
2006	(*) 11,029	(*) 172,861	(*) 37,839	(*) 10,331	(*) 173,694	(*) 29,177	(*) 316,380	
2007	(*) 11,736	(*) 169,902	(*) 41,912	(*) 9,463	(*) 166,682	(*) 38,816	(*) 343,331	
2008	(*) 11,214	(*) 188,550	(*) 44,599	(*) 10,703	(*) 175,848	(*) 43,272	(*) 313,338	
2009	(*) 11,115	(*) 182,755	(*) 38,672	(*) 10,132	(*) 180,476	(*) 40,465	(*) 339,685	
2010	(*) 13,170	(*) 196,156	(*) 46,393	(*) 12,447	(*) 189,444	(*) 43,198	(*) 368,548	
2011	(*) 11,071	(*) 187,792	(*) 39,785	(*) 12,034	(*) 169,149	(*) 42,060	(*) 310,084	

CANCEL SAVE

The same will be for the chart and map tabs in the following implementations.

If a specific data already has a template, if the administration user decides to save new configurations, these will overwrite the previously saved ones. There will not be a new template saved for the same data.

It is possible to see saved templates by selecting the “Template” item from the configuration node settings.

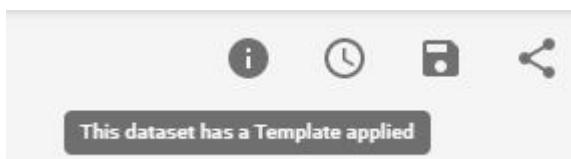
The screenshot shows the 'Nodes' configuration window. At the top, there is a search bar labeled 'Search...' and a '+ CREATE NODE' button. The main area is a table with columns: 'Code', 'Name', 'Active', and 'Default'. Each row represents a node with its code, name, status, and configuration options. The 'Default' column contains a 'CACHE TEMPL.' button, which is circled in red. At the bottom right of the table area are 'CLOSE' and 'CREATE' buttons.

Code	Name	Active	Default
8000CENS	8000 Census	Yes	No
8000CENS2	8000 Census (2)	Yes	No
ISTAT_REST_XML	ISTAT_REST_XML	Yes	No
ISTAT_REST	ISTAT_REST	Yes	No
SISTER_DEV_REST	SISTER_DEV_REST	Yes	No
BENCHMARK_REST	BENCHMARK_REST	Yes	No

The new window shows the information about the saved template (which node is part of, the data ID, description) and also actions the user can perform (visualize the template, delete it).

SISTER_TEST Templates		
Dataset ID	Name	Actions
SDMX,DFB_JUS_NEW,1.0	Justice new	
SDMX,DF_JUS_TEST,1.0	Justice test	
SDMX,DFB_POPULATION_ANTO,1.0	Population test	

It is important to notice that if a template is set for a specific data, once this data is opened, the user won't see the criteria window and most of all there will be an information icon, on the top right of the table, saying that there is a template applied

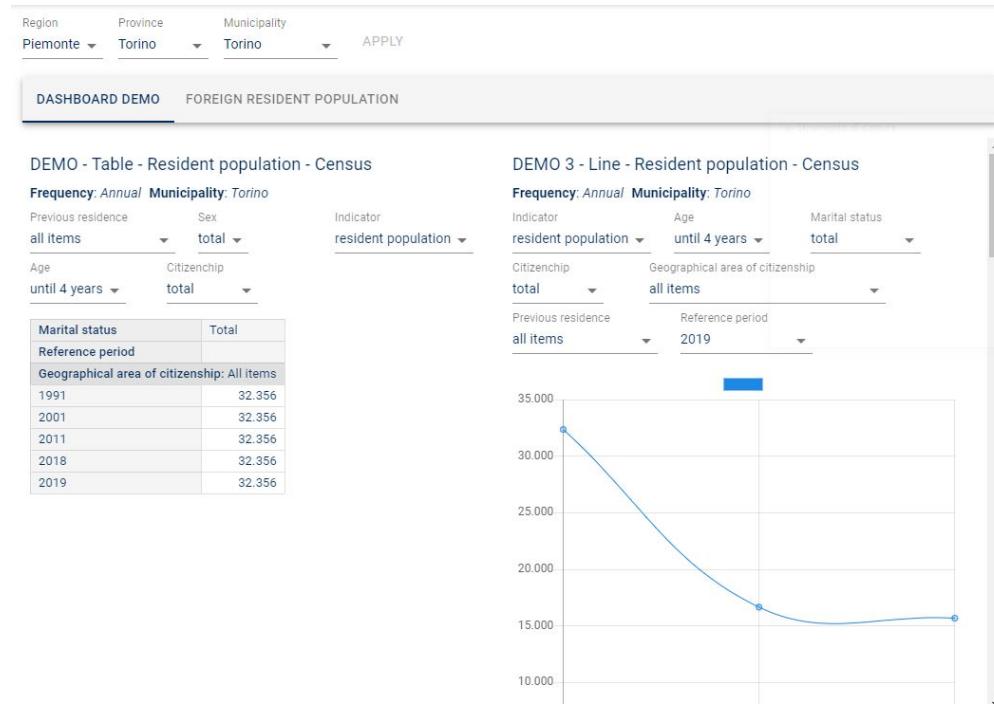


If the template needs to be changed and modified, this is also possible. The user with template management permissions, can modify the table and then click on the save button and select "Update template".



## 4.5 Dashboard management

Dashboards are groups of views and text that the user can put together in the same page. For example:

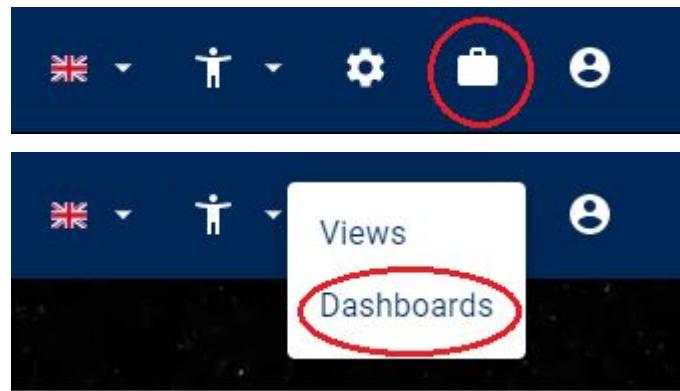


Most important operations on dashboards are **creation** and **management**. The super administrator user and also a node administrator user with configuration permission, have all powers on creating dashboards on node level. They can change dashboards' order or delete them. However, only the super administrator can set dashboards on the application level. All elements in dashboards can be independently downloaded (by clicking on the export icon) and also viewed in *fullscreen* mode.

Let's give a more detailed description of what happens when dealing with dashboards.

### Dashboard creation

To create a dashboard, the user must click the suitcase icon and select "Dashboards"



From the window that appears, there will be the list of the existing dashboards which can be visualized, edited or deleted, and on the top right by clicking "+ CREATE DASHBOARD" it will be possible to create the new object.

The screenshot shows the Data Browser interface. At the top, there's a header 'Dashboards' and a button '+ CREATE DASHBOARD'. Below this, a table lists a single dashboard entry with the name 'test'. To the right of the table are three icons: a magnifying glass, a pencil, and a trash can.

Below the table is a section titled 'Create dashboard'. It includes a title input field with a dropdown for language selection (set to English) and a placeholder 'Dashboard title'. Underneath is a section for 'Filterable territorial detail levels' with checkboxes for Region, Province, and Municipality, all of which are unchecked.

The main workspace is divided into two columns. The left column contains a card for 'Tabella - Population' with options to 'Show title' (checked), 'Enable filters' (checked), and a dropdown for 'Dimension for territorial filters' set to 'No one'. The right column is currently empty and has buttons for 'ADD VIEW', 'ADD TEXT', and 'ADD ROW'.

There are two types of dashboards that can be created: *filterable* and *non-filterable*. The difference between these two consists in the possibility to set a territorial filter (by writing in the text box the respective dimension contained in the data table, e.g. ITTER107) which allows the user to change the territorial dimension once visualizing the dashboard. This makes the dashboard dynamic and flexible. Of course specific cache management is necessary in order to retrieve short response time since we are dealing with territorial dimensions which consider a big amount of items and information. For more detailed information on this matter check the section [Software package](#) under the **SPECIAL CACHE MANAGEMENT** paragraph.

Another important functionality is the multilingual functionality which allows users to set different titles depending on the selected language. This is made possible by selecting the flag related to a language and by defining a title for that language.

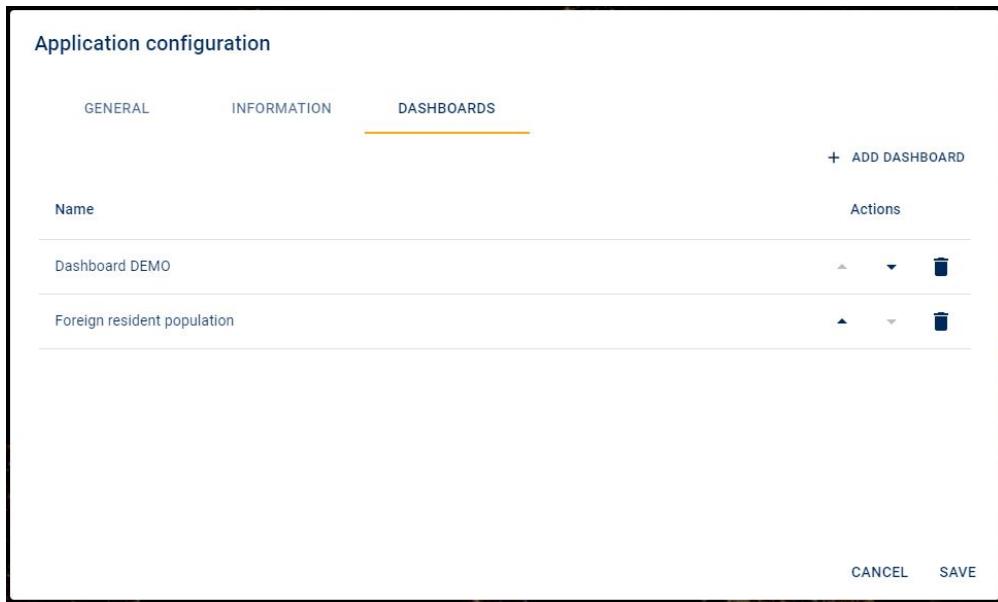
### **Dashboards on application level**

The super administrator user has permissions on adding dashboards on the landing page of the application. These dashboards will also be present at node level.

If dashboards already exist, they will be visible to the user by clicking on the ‘‘Dashboard’’ button on the landing page:



To add new dashboards in this section, the super administrator user opens the “Application” configuration window from the main menu (settings icon) and, under the “Dashboard” tab, adds one or more of the created dashboards.



The screenshot shows the "Application configuration" window with the "DASHBOARDS" tab selected. It lists two dashboards: "Dashboard DEMO" and "Foreign resident population". Each dashboard has a set of actions icons (up, down, delete) next to it. At the bottom right, there are "CANCEL" and "SAVE" buttons.

Name	Actions
Dashboard DEMO	▲ ▼ ⚡
Foreign resident population	▲ ▼ ⚡

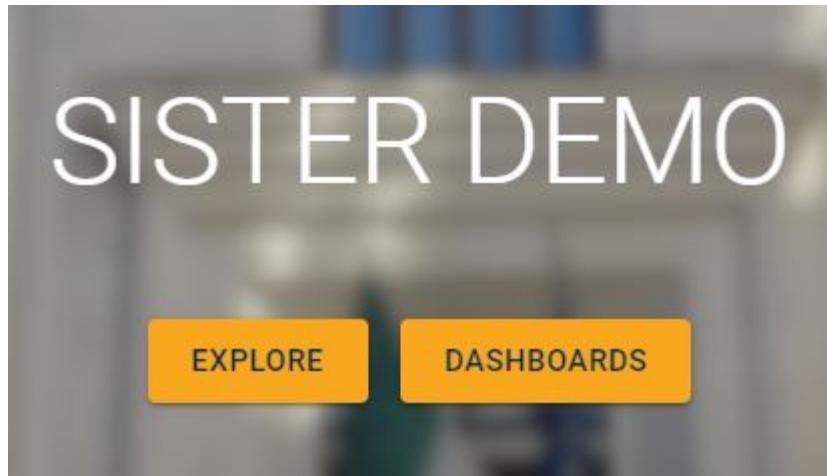
From the “Dashboard” tab he can always delete the dashboard from the landing page or change the order of appearance.

#### Dashboards on node level

Both the super administrator user and the node administrator user with configuration permissions can manage dashboards at node level. If dashboards are already set for a specific node, the mosaic icon will appear on the main menu of the page,



and also on the node home page (like it happens in the landing page)



Otherwise in order to add an existing dashboard to the node, the user must open the “Node” configuration window, click on “+ ADD DASHBOARD” on the top right and select the particular dashboard he wants to add.



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**CHAPTER  
FIVE**

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## **DATA BROWSING**

In this chapter we'll see how to:

- select a data provider (node)
- explore node's contents through categories tree
- find specific data
- display data in tabular, graphic and map format
- configure visualization and modify display layout

### **5.1 How to browse different data providers**

The landing page shows information about default node (if set). From the landing page the user can choose to browse a different node by selecting the data providers in the section **Other nodes** both by clicking on the images or the descriptions.

#### **Other nodes**



Another way of reaching a different node from the default one, is by selecting the node from the top left menu of the page and choosing from the pop-up list.



Once the node is clicked, the Public Statistics Hub will show the node's homepage including: information, data grouped by categories and dashboards.



From a node's homepage it is possible to browse a different data provider by clicking again on the top left menu and selecting a different node from the list.

## 5.2 How to browse a data provider

In this section we'll explain data's organization and how to search specific data.

### 5.2.1 Data catalog

All data contained in a node is grouped in categories organized in a catalog. The catalog of a node can be displayed by clicking on the burger button on the top left . Categories have an hierarchical structure: a category can contain one or more subcategories; a subcategory may in turn contain other subcategories, and so on. It is possible to expand or collapse a category or a subcategory by clicking on it.

Initial view	Expanded view
<p>Sustainable Development Goals</p> <hr/> <p>Back to Node home page</p> <p>Categories</p> <ul style="list-style-type: none"> <li>&gt;  Category 1</li> <li>&gt;  Category 2 <span>(i)</span></li> <li>&gt;  Category 3</li> <li>&gt;  Category 4</li> <li>&gt;  Category 5</li> <li>&gt;  Category 6 <span>(i)</span></li> </ul>	<p>Sustainable Development Goals</p> <hr/> <p>Back to Node home page</p> <p>Categories</p> <ul style="list-style-type: none"> <li>▽  Category 1           <ul style="list-style-type: none"> <li>≡ Data</li> <li>▽  Subcategory 1.1               <ul style="list-style-type: none"> <li>≡ Data</li> <li>&gt;  Subcategory 1.1.1 <span>(i)</span></li> <li>&gt;  Subcategory 1.1.2</li> <li>&gt;  Subcategory 1.1.3</li> </ul> </li> <li>&gt;  Subcategory 1.2</li> <li>&gt;  Subcategory 1.3</li> </ul> </li> <li>&gt;  Category 2 <span>(i)</span></li> </ul>

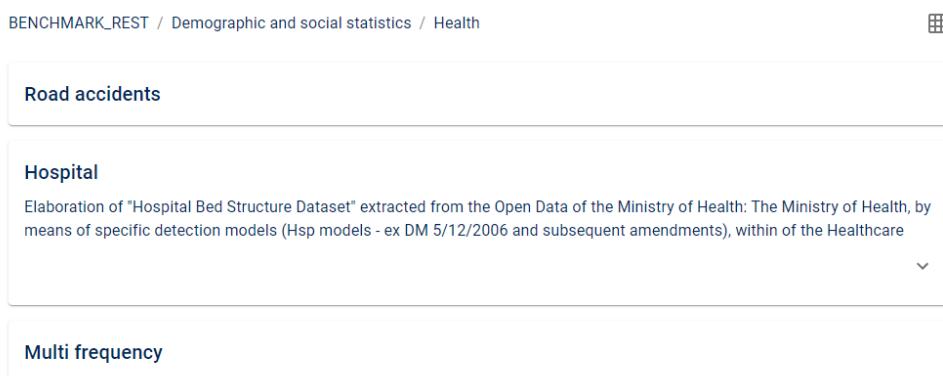
All categories belong to a category scheme and one node can have more than one category scheme; in this case the same data can belong to more than one category in different category schemes. Moreover the same data can belong to different categories in the same category scheme. If a node has just one category scheme, it isn't shown in the tree visualization of the catalog. If there are more than one category scheme in the node, only the root nodes (i.e. category scheme names) will be shown without showing the categories.

Initial view	Expanded view
<p>Istituto Nazionale Previdenza Sociale</p> <hr/> <p>Back to Node home page</p> <p>Categories</p> <ul style="list-style-type: none"> <li>&gt;  Category scheme 1</li> <li>&gt;  Category scheme 2</li> <li>&gt;  Category scheme 3</li> <li>&gt;  Category scheme 4</li> <li>&gt;  Category scheme 5</li> </ul>	<p>Istituto Nazionale Previdenza Sociale</p> <p>Back to Node home page</p> <p>Categories</p> <ul style="list-style-type: none"> <li>▽  Category scheme 1           <ul style="list-style-type: none"> <li>≡ Data</li> <li>&gt;  Subcategory 1.1</li> <li>&gt;  Subcategory 1.2</li> <li>&gt;  Subcategory 1.3</li> </ul> </li> <li>&gt;  Category 2 <span>(i)</span></li> <li>&gt;  Category 3</li> <li>&gt;  Category 4</li> <li>&gt;  Category 5</li> <li>&gt;  Category 6 <span>(i)</span></li> </ul> <ul style="list-style-type: none"> <li>▽  Category scheme 2           <ul style="list-style-type: none"> <li>≡ Data</li> <li>&gt;  Subcategory 1.1</li> <li>&gt;  Subcategory 1.2</li> </ul> </li> <li>▽  Category 1           <ul style="list-style-type: none"> <li>≡ Data</li> <li>&gt;  Subcategory 1.1</li> <li>&gt;  Subcategory 1.2</li> </ul> </li> </ul>

By clicking the information icon  next to a category, it is possible to see notes associated with the category. By clicking the  icon, instead, the user can see metadata as well. The leaves of the catalog are nodes of Data type. By selecting this kind of node on the right side of the panel, all the data belonging to the selected navigation path will be shown. Once data is shown, the user can decide to display the list of data in two different modes: by rows or by cards changing the icon on the top right.

For each data the user can see the title and the description. By clicking on the information icon  next to the data it is possible to see notes associated with that data and by clicking on the  icon the user can see metadata as well. By clicking on the data title, results can be visualized in tabular, graphic and geographic format. Attachments might be present in the data visualization list, this means that data attachments are available regarding that information. Depending on its native format, not all data can be displayed.

Example of list of data for a specific category:



The screenshot shows a navigation bar at the top with 'BENCHMARK\_REST / Demographic and social statistics / Health'. Below the bar, there are three main categories listed in boxes: 'Road accidents' (selected), 'Hospital' (with a dropdown menu showing a detailed description of the 'Hospital Bed Structure Dataset'), and 'Multi frequency'.

### 5.2.2 Textual search

It is possible to find specific data by textual search. Even if the user doesn't know the exact name of the data, he can type some text in an input box and the system will search for all data containing the typed text in titles, descriptions or keywords. All data belonging to the search will appear to the result set. Search text can be inserted by clicking the magnifying glass on the top bar menu:



In future releases it will be possible to also search by using the search input text box on the top left of the page where all data belonging to a category or a subcategory is displayed.

When the searched data appears, the user can click on the title and the default visualization will open.

#### KEYWORDS

Keywords are specific words linked to the content of the data which are included in the uploaded dataset in a node. It is no mandatory to have keywords, so they might not appear in all data contained in a node.

If they are present, keywords are listed in the pane that describes the specific data.

The screenshot shows a search results page for the keyword "gender". At the top, there is a header "Population" with three buttons below it: "population", "marital status", and "gender". Below the header, a message says "User can search for keywords by clicking the magnifying glass on the top-right of the page, and all related datasets containing that specific word will appear in the page." The main content area is titled "Search results for 'gender'" and shows a list of datasets. The first item is "Demographic and social statistics (1)" with a folder icon. To its right is another "Population" header with the same three buttons. Below this, there is a "FILTERING FOR CATEGORY" section. It explains that if there are multiple category schemes, two levels of categories will be shown, and if there is one, it will filter for the first level categories. It also states that shown categories will include ones with at least one research result between its children.

**FILTERING FOR CATEGORY**

In case there is more than one category scheme involved in the research results, two levels of category (category scheme at first level and at second level) will be shown. If there is only one category scheme, results will be filtered only for the first level categories of the only category scheme.

Shown categories, will be the ones for which there is at least one research result between its children.

The screenshot shows search results for the keyword "industr". At the top, there is a header "Search results for 'industr'" with a grid icon on the right. On the left, there is a sidebar with two collapsed categories: "Economic statistics (1)" and "Environment and multi-domain statistics (1)". The main content area shows two expanded datasets: "Industrial turnover and orders (whole cube) 1.1" and "Industrial production and orders (whole cube, INDICATOR not coded)". The "Industrial turnover and orders" dataset has a detailed description: "Industry, Trade and Services statistics are part of Short-term statistics (STS), they give information on a wide range of economic activities according to NACE Rev.2 classification".

## 5.3 How to visualize data

In this section we'll explain how to configure data visualization, how to change layout, how to visualize data in different ways and download information.

On the top of the table, the name of the dataset is shown and right under it, dimension containing one single item are displayed.

In the central part of the visualization window it is possible to directly access the information contained in the data. On the left side, a side bar containing several buttons allow the user to change configuration and layout, to view metadata and to change the type of data visualization among table, chart and map. On the top right page, two small panels make the user able to change font size, choose a full-screen view and to save the visualization, to share it, to download attachments and data.

Most importantly, the “Label format” menu allows to change the labels of the dimensions in the table. Possible options are:

- Name: shows the names of the dimensions
- ID: shows the ids of the dimensions
- Both: shows ids and names of the dimensions

Territory	Almese							
Gender	Females							
Marital status	Divorced	Married	Widowed	Widow/widower of same-sex civil partner	Total	Same sex civil partner	Divorced same-sex civil partner	Ne
Select time								
2012	109	1,608	393		3,231			
2013	115	1,619	389		3,254			
2014	117	1,623	384		3,272			
2015	127	1,598	388		3,275			
2016	143	1,584	382		3,277			
2017	148	1,581	373		3,270			
2018	161	1,569	378		200	3,287	100	300
2019	171	1,568	354		200	3,257	100	300

Once the data is visualized, it is possible to check interaction and responses timing between node and servers by clicking on the clock button on the top left menu of the page:



This is a possible output once the button is clicked:

Server timings	
NSI Response:	1581ms
NSI Response Download:	450ms
Json Sdmx to Json Stat:	156ms
Others:	169ms
<b>Total:</b>	<b>2356ms</b>
NSI Response Download Size:	28Kb
Observation count:	792
Client timings	
Generating HTML:	15ms

CLOSE

If the file was already available in cache, response calls will be different compared to the first time and also times will show new entries. This is an example of time logs returned when a cached data is requested:



### 5.3.1 How to manage data criteria

By clicking on the **Criteria** button in the visualization window, a page opens where users can manage what information will be shown in data visualization. For each dimension the system will show available values in a hierarchical way (if a hierarchy is defined) and the user can select the values to filter. By clicking on **Apply** the system will retrieve data according to the filters set, and just the result set will be shown to the end users. The set query must return at most the maximum number of observations (configurable at single node level), beyond which the user will be asked to set more restrictive conditions.

Example #1:

Criteria

FREQ (0/3)	MARKET (0/3)	REF_AREA	ADJUSTMENT	INDICATOR	>
------------	--------------	----------	------------	-----------	---

Market (IT1+CL\_MARKET+1.0)

- All nodes at level 0
- [T] total market
  - [T]
  - [D] domestic market
  - [E] non domestic market

CANCEL    APPLY

Example #2:

**Criteria**

FREQ (0/3)	MARKET (0/3)	REF_AREA (0/1)	<b>ADJUSTMENT (0/3)</b>	INDICATOR	>
Adjustment (IT1+CL_ADJUSTMENT+1.0)					
<input type="text"/> Search... <span style="float: right;">×</span>					
<input type="checkbox"/> Adjustment <span style="float: right;">▼</span>					
<input type="checkbox"/> [N] raw data					
<input type="checkbox"/> [Y] seasonally adjusted data					
<input type="checkbox"/> [W] calendar adjusted data					

from 1 to 3 of 3 rows

**CANCEL** **APPLY**

A particular focus can be set on the visualization of **time\_period**, especially on its ordering and how it is managed. If data has multiple frequencies such as:

**Criteria**

<b>FREQ (0/3)</b>	
Frequency (IT1+CL_FREQ+1.0)	
<input type="checkbox"/> Frequency	
<input type="checkbox"/> [A] annual	
<input type="checkbox"/> [M] monthly	
<input type="checkbox"/> [Q] quarterly	

the output table as default, will return the time\_period ordered in a “hierarchical” way. Considering the previous example, starting from the the first month available, in order, quarters, semesters and year will follow, as shown in this image:

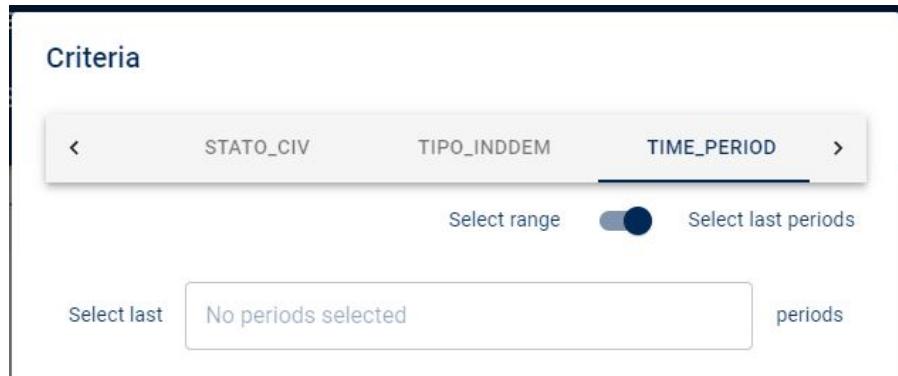
Reference Area	Indicator	Base period						
Italy	Turnover	year 2015						
Reference Market	Total market							
Adjustment	Raw data							
Economic Activity	Intermediate goods			Capital goods				
Frequency	Annual	Monthly	Quarterly	Annual	Monthly			
Time period								
2018-03		118		120				
2018-Q1			90		125			
2018-04		106		100				
2018-05		123		119				
2018-06		119		128				
2018-Q2			90		125			
2018-07		123		114				
2018-08		70		69				
2018-09		112		112				
2018-Q3			90		125			
2018-10		122		113				
2018-11		113		117				
2018-12	90	90	125	125				
2019-01		106		83				
2019-02		108		96				
2019-03		117		115				
2019-04		107		100				

It is also possible to select the range for time\_period choosing between the minimum and the maximum date present in the data table.

Criteria

ADJUSTMENT (0/3)	INDICATOR	ACTIVITY	BASE_PER	TIME_PERIOD
Start	Year 2018	Period 01		
End	Year 2019	Period 04		
			CANCEL	APPLY

Or in some cases, if time can be separated in periods, user can choose the period to visualize



### 5.3.2 How to customize a table

By clicking on the **Pivoting** button opens a page where users can change the layout choosing which dimensions will be shown in rows, in columns, in sections or used to filter data.



The layout page interface changes according to the type of active visualization selected among Table, Chart and Map. If the active visualization is Table, information will be shown in a multidimensional table with the dimensions arranged on the axes according to layout settings, in descending order of priority. When the user chooses how to arrange dimensions among axes, sections and filters, a preview of the resulting table will be shown on the right of the layout page. Filters are shown on the top of the multidimensional table: if a dimension has only one value (fixed data) it will be automatically included in filters. Dimensions in rows and columns will be shown according to the order set in the layout pane. Choosing to show a dimension as row\_section means “breaking” the table into many subtables for all the different values of that dimension. Some layout configuration examples.

Example #1:

**Table layout**

**FILTERS**

- FREQ (1)
- ETA (1)
- TIPO\_INDEM (1)

**ROWS**

- TIME\_PERIOD (8)

**SECTIONS**

- SESSO (3)

**COLUMNS**

- ITTER107 (6)
- STATO\_CIV (8)

Territory	xxx	xxx	xxx
Marital status	xxx	xxx	xxx
Select time			
Gender: xxx			
xxx			
xxx			
xxx			

Number of rows: 24
Number of columns: 48

CANCEL APPLY

Territory	Almese								
Marital status	Divorced	Married	Widowed	Widow/widower of same-sex civil partner	Total	Same sex civil partner	Divorced same-sex civil partner	Never married	
Select time									
Gender: Females									
2012	109	1.608	393		3.231			1.121	
2013	115	1.619	389		3.254			1.131	
2014	117	1.623	384		3.272			1.148	
2015	127	1.598	388		3.275			1.162	
2016	143	1.584	382		3.277			1.168	
2017	148	1.581	373		3.270			1.168	
2018	161	1.569	378		200	3.287	100	300	1.179
2019	171	1.568	354		200	3.257	100	300	1.164
Gender: Males									
2012	81	1.587	73		3.056			1.315	
2013	88	1.626	73		3.123			1.336	
2014	84	1.626	73		3.134			1.351	
2015	92	1.612	77		3.133			1.352	
2016	97	1.582	80		3.124			1.365	
2017	110	1.563	89		3.153			1.391	
2018	107	1.559	90		200	3.122	100	300	1.366
2019	111	1.552	88		200	3.121	100	300	1.370
Gender: Total									
2012	190	3.195	466		6.287			2.436	
2013	203	3.245	462		6.377			2.467	
2014	201	3.249	457		6.406			2.499	
2015	219	3.210	465		6.408			2.514	

=&gt;

Example #2:

**Table layout**

**FILTERS**

- ETA (1)
- TIPO\_INDEM (1)
- SESSO (3)

**ROWS**

- TIME\_PERIOD (8)

**COLUMNS**

- ITTER107 (6)
- STATO\_CIV (8)

Territory	xxx	xxx	xxx
Marital status	xxx	xxx	xxx
Select time			
xxx			
xxx			
xxx			

Number of rows: 8  
Number of columns: 48

CANCEL APPLY

Gender

females ▾

Territory	Almese							
Marital status	Divorced	Married	Widowed	Widow/widower of same-sex civil partner	Total	Same sex civil partner	Divorced same-sex civil partner	Never married
Select time								
2012	109	1.608	393		3.231			1.121
2013	115	1.619	389		3.254			1.131
2014	117	1.623	384		3.272			1.148
2015	127	1.598	388		3.275			1.162
2016	143	1.584	382		3.277			1.168
2017	148	1.581	373		3.270			1.168
2018	161	1.569	378	200	3.287	100	300	1.179
2019	171	1.568	354	200	3.257	100	300	1.164

=>

Data can have an information icon  next to the title to show any notes associated with data. Notes can be also associated to dimensions and even to a single cell.

For more information see section [Attributes](#)

It will also be possible to access the reference metadata of the dataflow through a special button located in the bar on the left.

60

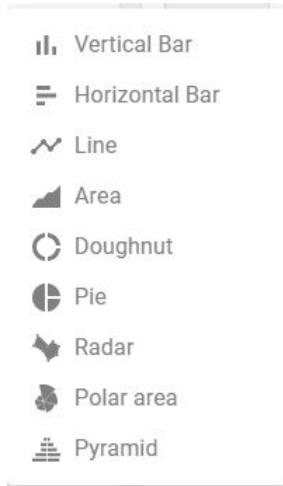
Chapter 5. Data Browsing

### 5.3.3 How to customize a chart

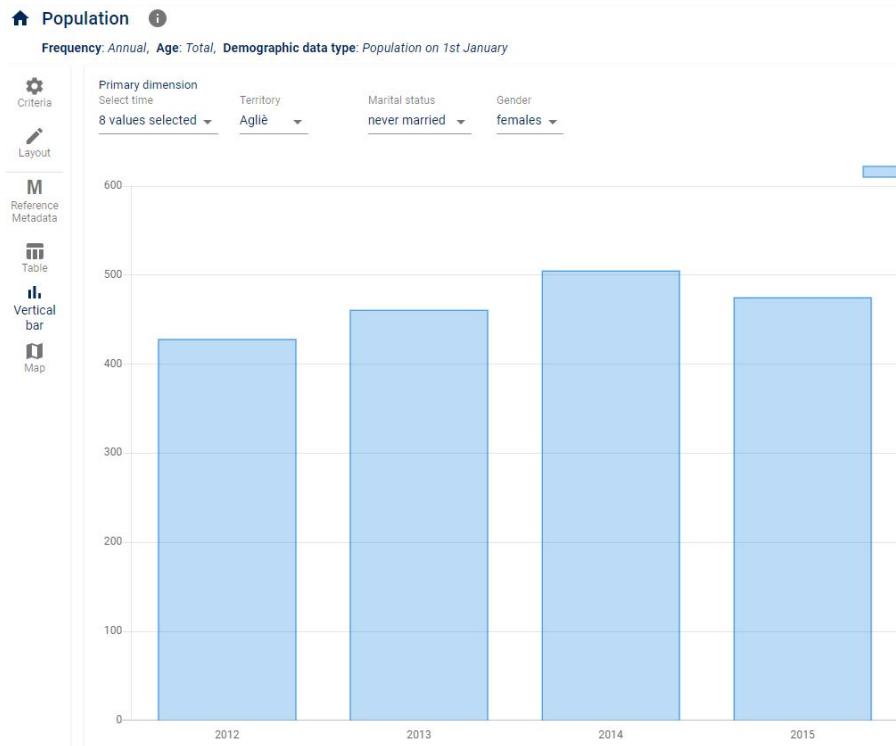
Once data is displayed in tabular format, it is possible to create customizable charts by clicking on the chart symbol on the left pane of the table.



User can choose the chart type between the ones listed once the chart symbol is clicked



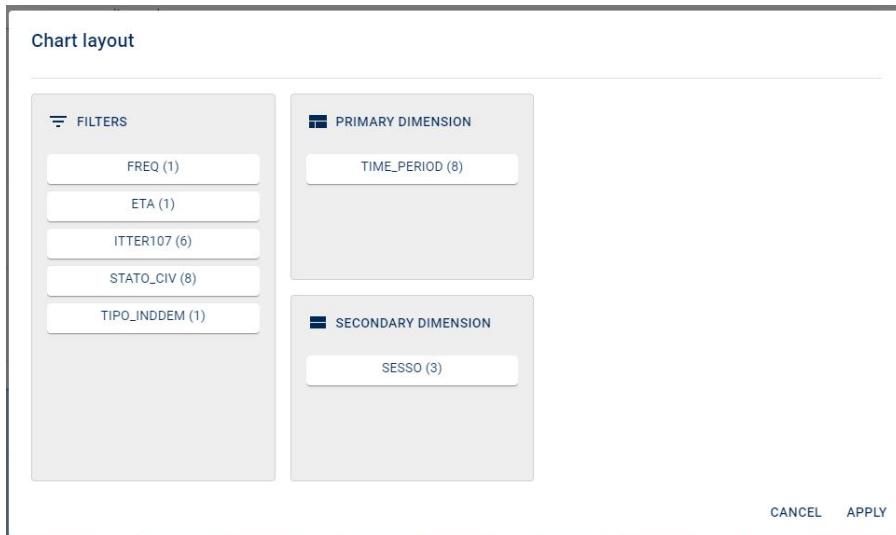
By default one primary dimension is set (usually the time\_period) and all other dimension are contained in the filter section



Obviously, these settings can be modified by clicking the layout button. This operation allows the user to select a secondary dimension to consider in the chart or move dimensions as filter

Example:

Setting the following layout

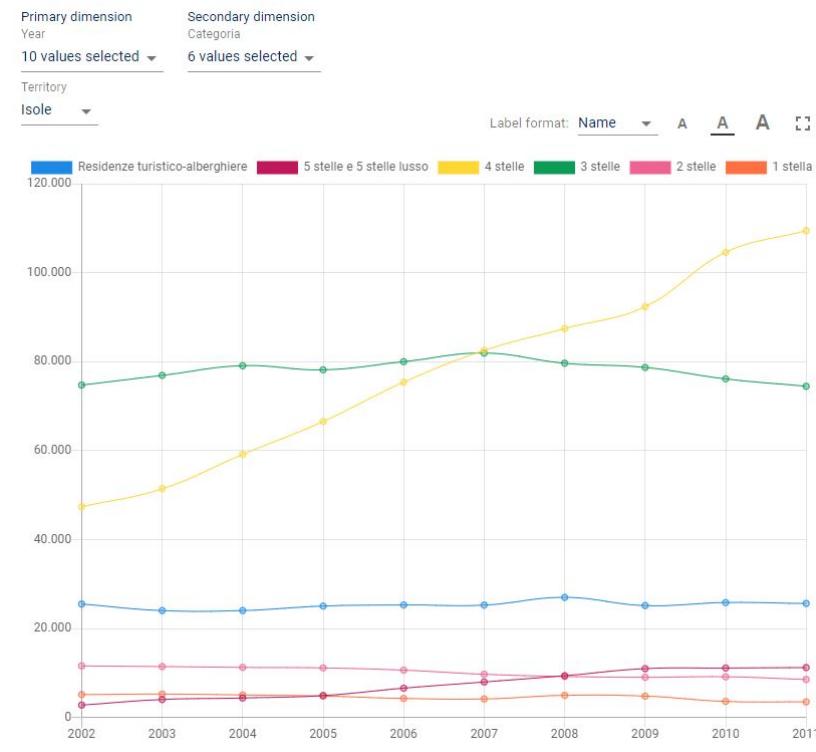


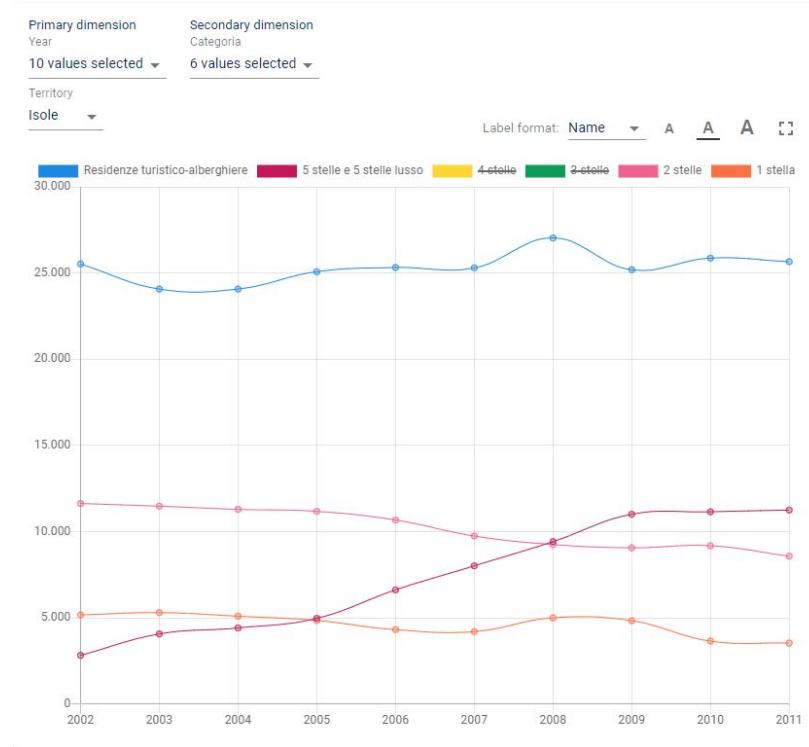
this is the returned chart



The main two functionalities of the chart section are that:

- by selecting the export icon a JPEG version of the chart is downloaded
- by selecting the dimension values in the chart caption, these can be excluded from the graph



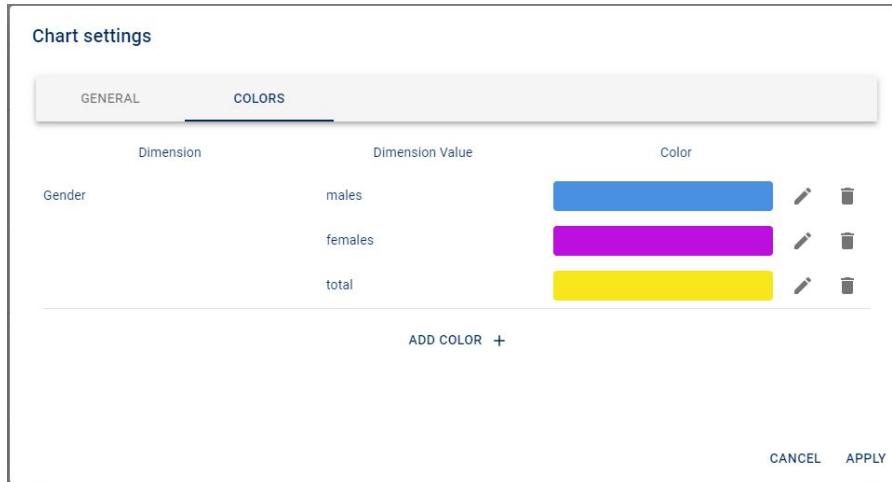


Another functionality added to the graphical visualization, consists in the possibility to change dimensions' colors, change caption's position and stack secondary dimension, if the graph allows it.

This configuration is reachable by clicking on the configuration icon on the top right of the graph. Once the icon is clicked the following window appears:



This window contains two tabs: in the first tab, "General", it is possible to set caption's position (top, left, right or bottom) and the possibility to stack secondary dimension (in checked and the graph does not allow this configuration, nothing will change in the final visualization). In the second tab, "Colors", it is possible to set colors to a dimension's items just as shown in this example



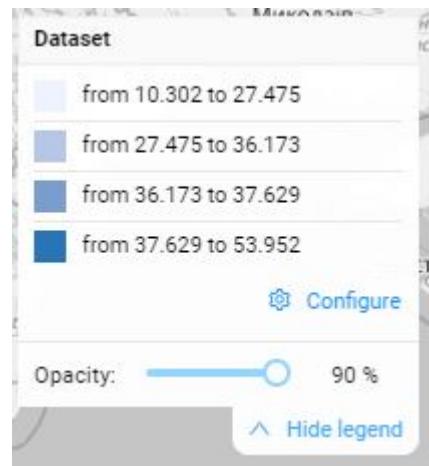
### 5.3.4 How to customize a map

From the tabular visualization, it is also possible to move to the map section where a map is shown. Although the map button is not always enabled, in fact if in the node configuration the user does not specify territorial dimension's IDs, the application doesn't recognize any dimension for the map automatically. So first of all, in the node configuration window, under the "View" tab, the "Territorial dimensions Ids" must be filled with the territorial ids that it is possible to find in the datasets (for example: ITTER107, REF\_AREA, COM and so on). If no territorial id is set in the node configuration, another way to visualize the map for a specific data is to set a geographic annotation when data is uploaded.

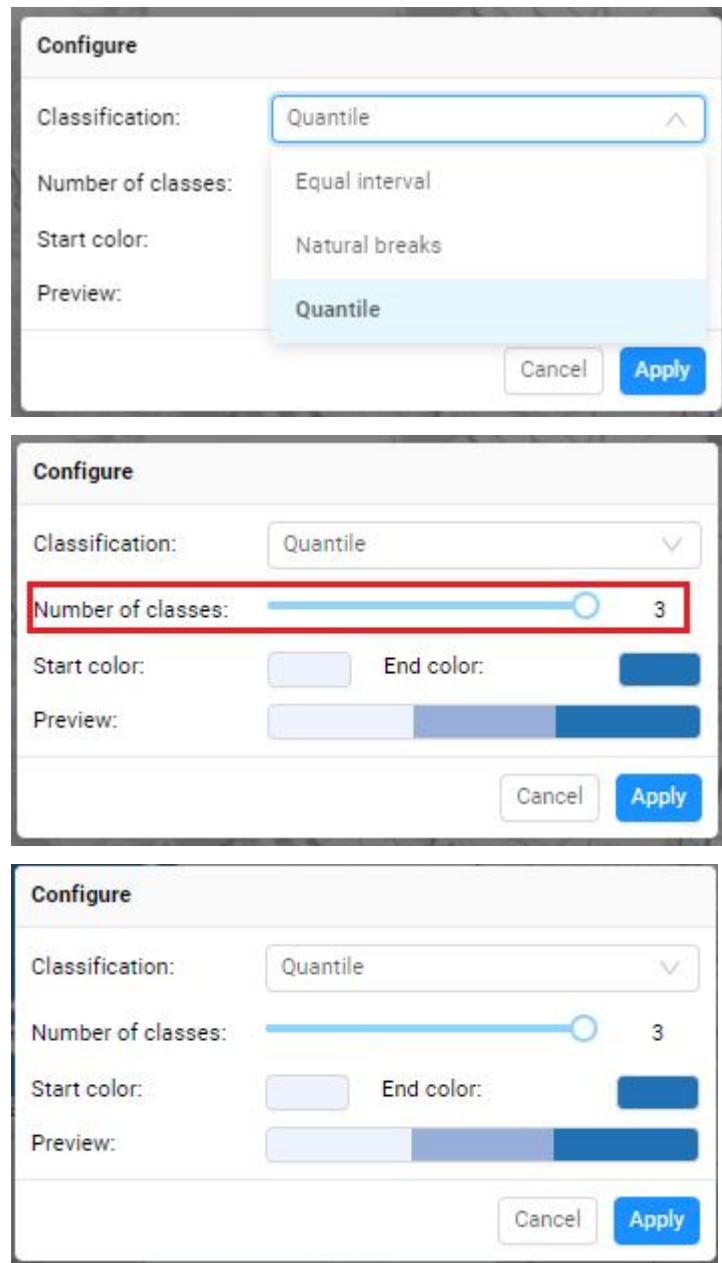
Once the user detects that the map visualization is available, he can click on the related button. If no criteria is selected initially, the dimensions present in the data are inserted as filters in the map visualization otherwise they are printed, with the chosen value, under the title of the data.

The dimension based on the territory, goes in a specific filter, labelled as “Detail level”, which is categorized considering the geographic section (area, region, province, municipality) and user can drill down or drill up in the map.

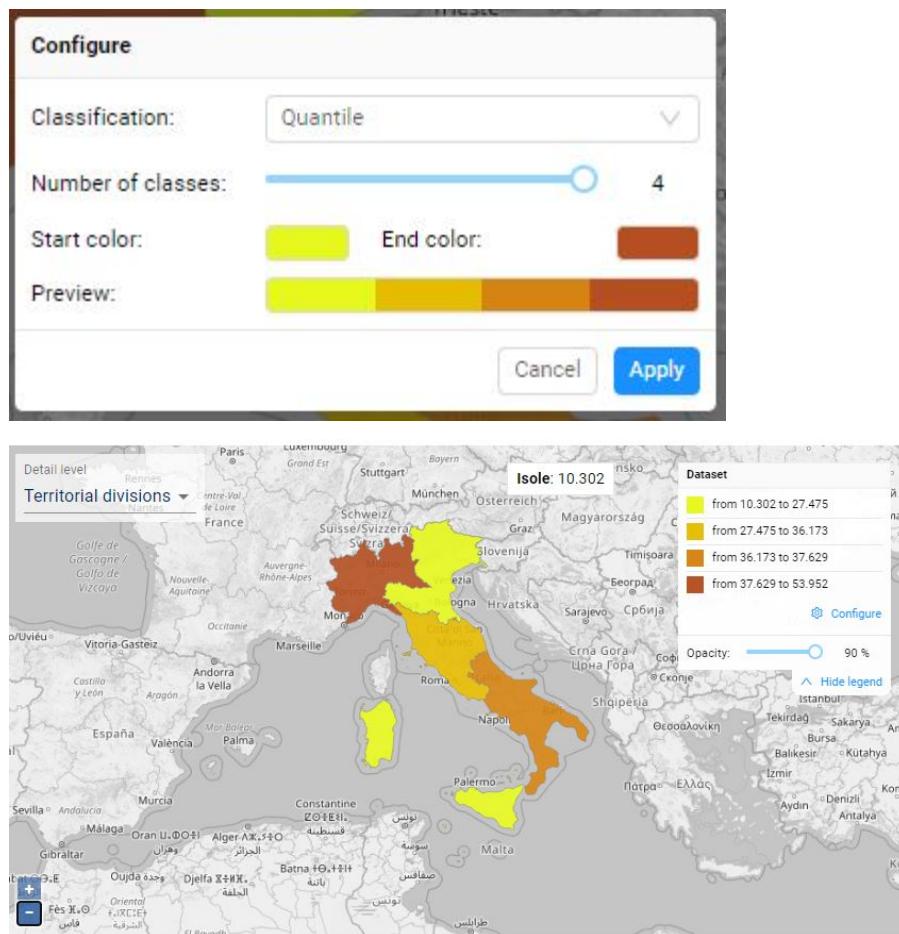
Map configuration can be personalized expanding the “Show legend” indication on the top right of the map which opens the following window



Opacity of the map can be selected by moving the scroll bar that shows the percentage of opaqueness. If, instead, the user decides to change the colors in the map, classification or number of classes in order to choose the way intervals are divided, this is made possible by clicking on “configure”.



Selecting “Start color” or “End color”, enables the user to change colors in the map and, right away, there is a preview of the new colors. Modifications take place right after the user clicks on “Apply”. The map will now have the new colors.



### 5.3.5 Attributes

Data can have four attribute types:

- Dataset attributes
- Group attributes
- DimensionGroup attributes
- Observation attributes

The user can see attributes in the same window where data is visualized.

When an attribute is present, the application generally shows an asterisk. On mouse over the cell containing the attribute, a tooltip shows the attribute(s) and its value(s) and the user can copy it; a tooltip can contain more than one attribute.

For encoded attributes, if the code id has less than 6 characters it will be shown together with the asterisk.

**Justice test (\*)**

Frequency: Annual, Indicator type: Number of cases

Case type	Civil Affairs cases		
State of the cases	Recruited during the year <b>N</b>		
Court type	Cassation Courts	1st Instance Courts	Appeal Courts
Time period			
2000	(*) 7,088	(*) 128,210	(*) 23,058
2001	(*) 7,664	(*) 132,657	(*) 23,249
2002	(*) 8,587	(*) 131,091	(*) 24,692
2003	(*) 8,233	(*) 1,437	(*) 26,298
2004	(*) 9,420	(*) 166,129	(*) 26,522

The user can see attributes at dataset level by clicking the asterisk between brackets - (\*) - next to the title (Dataset level). If the dataset has attributes for more than one dimension (Group/DimensionGroup attributes) they will also be shown by clicking the same icon (Series level).

**Justice test (\*)**

Frequency: Annual, Indicator type: Number of cases

Case type	Civil Affairs cases		
State of the cases	Recruited during the year <b>N</b>		
Court type	Cassation Courts	1st Instance Courts	Appeal Courts
Time period			
2000	(*) 7,088	(*) 128,210	(*) 23,058
2001	(*) 7,664	(*) 132,657	(*) 23,249
2002	(*) 8,587	(*) 131,091	(*) 24,692
2003	(*) 8,233	(*) 1,437	(*) 26,298

## Attributes

### Dataset information:

Territory: Calabria EN

### Series information:

**Case type:** Civil Affairs cases, **State of the cases:** Processed during the year

- Confidentiality status: CIVAFF\_PRO

**Case type:** Civil Affairs cases, **Court type:** 1st Instance Courts

- Contact: A

**Case type:** Civil Affairs cases, **Court type:** Appeal Courts

- Contact: A

**Case type:** Civil Affairs cases, **Court type:** Cassation Courts

- Contact: A

If the dataset has dimension level attributes an asterisk will be present for each value of the dimension, if the dimension has just one value the attribute is visible in the subtitle.

Criteria	Civil Affairs cases								Confidentiality status: Not for publication, restricted for internal use only [N]					
Pivoting	Recruited during the year [N]								Processed during the year [N]					
Table	Cassation Courts				1st Instance Courts		Appeal Courts		Cassation Courts		1st Instance Courts		Appeal Courts	
Chart	2000	(*) 7,088	(*) 128,210	(*) 23,058	(*) 8,685	(*) 119,859	(*) 21,174	(*) 3,412	(*) 11,200	(*) 21,305	(*) 5,820	(*) 1,000		
Map	2001	(*) 7,664	(*) 132,657	(*) 23,249	(*) 6,550	(*) 123,989	(*) 21,174	(*) 3,412	(*) 11,200	(*) 21,305	(*) 5,820	(*) 1,000		
	2002	(*) 8,587	(*) 131,091	(*) 24,692	(*) 8,591	(*) 126,170	(*) 25,137	(*) 5,342	(*) 11,200	(*) 21,305	(*) 5,820	(*) 1,000		
	2003	(*) 8,233	(*) 1,437	(*) 26,298	(*) 8,478	(*) 135,756	(*) 24,866	(*) 295,839	(*) 11,200	(*) 21,305	(*) 5,820	(*) 1,000		

If data has observation level attributes an asterisk will be present in the corresponding cell.

Case type	Civil Affairs cases			
State of the cases	Recruited during the year <b>N</b>		Processed during the year <b>N</b>	
Court type	Cassation Courts	1st Instance Courts	Appeal Courts	Cassation Courts
Time period			<ul style="list-style-type: none"> <li>• Observation status: V</li> <li>• Observation status: Estimated value [E]</li> </ul>	
2000	(*) 7,088	(*) 128,210	(*) 23,059	(*) 8,665
2001	(*) 7,664	(*) 132,657	(*) 23,249	(*) 6,550
2002	(*) 8,587	(*) 131,091	(*) 24,692	(*) 8,591
2003	(*) 8,233	(*) 1,437	(*) 26,298	(*) 8,478
2004	(*) 9,420	(*) 166,129	(*) 26,522	(*) 9,351
				(*) 119,859
				(*) 123,989
				(*) 126,170
				(*) 135,756
				(*) 162,570

### 5.3.6 Annotations

When talking about annotation, we consider the possibility of setting configurations, at meta and data manager level (this means when creating the dataflow), regarding

- the visualization of single dimension or dimension's items
- items' order
- inclusion of keywords to the dataflow
- row, column and section layout
- criteria selection mode
- territorial dimension ids
- dataflow update and more.

In general, for the application DataBrowser to recognize the annotations, annotations' IDs must be inserted in the node configuration under the ANNOTATION tab. Foreach annotation type, the correspondent ID (which must be exactly the same that appears in the metadata manager application), has to be written in the textbox.

Let's get a closer look to the most used annotations.

#### Annotation Not Displayed

The Administrator user can decide to not show some elements in the dataset by setting annotation "Not Displayed" in Dataflow's metadata. The user can choose to not display the whole dimension or just some items.

During data visualization, if the annotation "Not Displayed" is at dimension level, the dimension is not added in the results, but just if it has only one element otherwise the annotation is ignored.

If the annotation "Not Displayed" is at item level all the lines with items having this kind of annotation are not displayed.

Edit Not Displayed codes for CSTAT

English X

Search... Q 2 selected rows

ID	Name	Par.	Ord.
<input type="checkbox"/> RCR	Recruited during the year		1
<input checked="" type="checkbox"/> PRO	Processed during the year		2
<input checked="" type="checkbox"/> REM	Remained to 30 september		3

Frequency: Annual, Indicator type: Number of cases

Criteria Layout Reference Metadata Table Chart Map

Case type	Civil Affairs cases			Correctional business cases		
	Court type	Cassation Courts [^]	1st Instance Courts [^]	Appeal Courts [^]	1st Instance Courts [^]	Appeal Courts [^]
Time period	State of the cases					
2000	Recruited during the year	[^] 7,088	[^] 128,210	[^] 23,058	[^] 3,412	[^] 92,149
2001	Recruited during the year	[^] 7,664	[^] 132,657	[^] 23,249	[^] 5,820	

### Annotation Order

This annotation specifies the order for codelists, dimensions and categories present. Such annotation can show its effects when visualizing the table of the dataflow or the category tree.

Items' sorting is defined in the metadata manager.

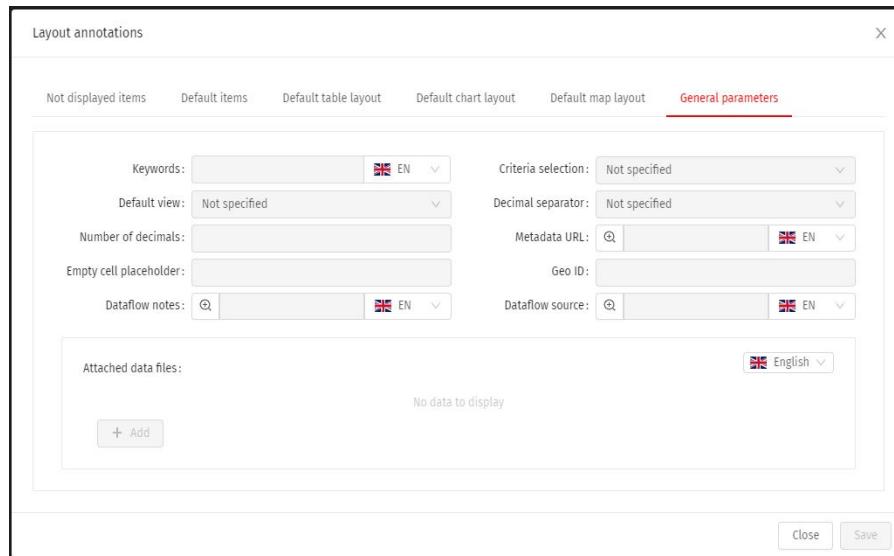
### Other annotations

- **Keywords** : used for dataflow research.
- **Default items** : used to initialize criteria with the filters set in this field.
- **Default table layout** : sets how dimensions must appear in table for rows, columns and sections' configuration.
- **Default chart layout** : sets how dimensions must appear in chart (primary dimension, secondary dimension and filter dimensions).
- **Default map layout** : sets how dimensions must appear in map.
- **GEO ID**: allows to indicate the territorial dimension used in the dataflow in order to show the map visualization.
- **Number of decimals** : sets the number of decimal after the separator.
- **Empty cell placeholder** : sets the value to visualize in case of empty cell.

- **Criteria selection** : sets the criteria selection mode for a dataflows (independently from the node configuration).
- **Decimal separator** : sets the decimal separator (dot or comma)
- **Last update** : if set, shows the information regarding last update of the dataflow.
- **Hidden dataflow** : sets a published dataflow to be “invisible” in the catalog.

All these annotation can be set at Data Structure Definition or Dataflow level in the metadatamanager platform.

The following image shows the configuration of some annotation at dataflow level.



### 5.3.7 How to download data

The download of a dataflow in the different formats can be activated through a down arrow icon on the top right corner of the page.

The formats available for each node are defined in the node configuration and will be a subset of the overall formats supported by the application, which are:

- SDMX Standard
- SDMX - Generic 2.1\*
- SDMX - Generic 2.0\*
- SDMX - Compact 2.0\*
- SDMX - Structure Specific 2.1\*
- Custom CSV
- SDMX-CSV\*
- SDMX-JSON\*
- RDF
- JSON-STAT

- PC-AXIS
- HTML (table only)
- Excel (table only)
- PNG (only for graph and map)

\*only available for REST nodes

## 5.4 Views

In this section, we will explain how to manage, save and share views once data is visualized.

### 5.4.1 What is a view

Views can be described as visualization at user level that, once saved, they can be accessed again in other moments as long as the user doesn't decide to delete them. The user modifies criteria and/or layout and saves his choices, so that when he reopens the saved view, the output will show the settings he previously configured for the table.

### 5.4.2 How to save a view

Once the user visualizes his data, as shown in previous paragraphs, it is possible to change the criteria (this enables filters on the output) or the table layout (by changing position of the dimensions in the table). The new table presents a different output from the default. This new visualization can be saved as a View. Multiple views can be saved for the same table. To save a view, the user must click on the save button  and select "Save View" from the list that appears:



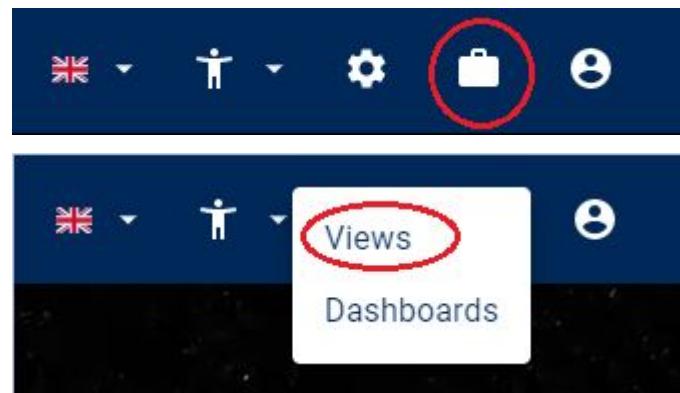
this will bring to a new window that enables the user to set the name to the view. The multilanguage functionality allows users to set different titles depending on the selected language. This is made possible by selecting the flag related to a language and by defining a title for that language.

Create new view

Title \*

### 5.4.3 How to manage views

The user can search for the views he saved and delete them, by selecting “Views” from the suitcase icon that appears in the main menu bar on the top-right of the pane.



The new window shows the information about the saved view (which node is part of, the data ID, name) and also actions the user can perform (visualize the view, delete it).

Views

Node	Dataset ID	Name	Actions
ISTAT_REST	test-dataset-id	EN title	
SISTER_TEST	SDMX+DFB_JUS_NEW+1.0	Table - Justice new	

Once the user visualizes a view, it is also possible to modify it. In this case changes can be used to overwrite the existing view or create a new one. This selection can be made by choosing the preferred option from the menu shown by clicking the save button.



## 5.5 Linked dataflows

The application provides the possibility to include within the nodes also linked dataflows. A linked dataflow is a dataflow defined in a node but linked to another dataflow which is contained in a totally different node.

The advantage of having a linked dataflow consists in the fact that it is not necessary to have all the base structures mandatory for a dataflow to be published on the node we are using but all we need is the link to the orginal node that contains it.

Nevertheless, the most important thing for all the mechanism to work is that the orginal node that contains the dataflow we want to link to, must be included in our hub named with its original ID.