# Standalone RestAPI deployment using WAR file

**Summary:** This section describes how to install and configure the standalone **CAST RestAPI 1.x and 2.x in WAR file format** (i.e. web application server required).

## Introduction

### Dedicated WAR file or re-use a CAST dashboard?

CAST provides the RestAPI in a dedicated **WAR file**, however, it is not absolutely necessary to deploy this dedicated WAR file to use the RestAPI, because the RestAPI is provided with all CAST dashboard WAR files as standard. Therefore if you have already deployed a CAST dashboard, you can, if you choose, use this for RestAPI needs.

### Dashboard or Measure schema?

The RestAPI war can be configured to access a Dashboard schema or a Measure schema, or both, depending on your requirements.

## Requirements

See **Standalone dashboard - installation requirements**.

## Pre-installation check list

Before beginning the installation process, please ensure that you have carried out all of the following tasks and that the following requirements have been met:

| | |
|---|---|
| ✓ | Ensure that your web application server is up and running. |
| ✓ | Ensure you have read all Release Notes accompanying CAST products for any last-minute information. |
| ✓ | Decide where the CAST RestAPI  will be installed. |
| ✓ | Ensure that your user login on the target machine has sufficient user privileges to install applications. |
| ✓ | Make sure you have the required .WAR file ready for deployment. |

## Installation procedure

This document assumes you are using **Apache Tomcat** in a **Windows** or **Linux environment** to host the CAST RestAPI. For Supported Application Servers for WAR file deployment, please see: **Standalone dashboard - installation requirements**. If you are using **IBM Websphere Application Server** in a **Linux** environment, please see **Deployment on IBM WebSphere Application Server**.

The installation process is divided into various steps:

| | |
|---|---|
| **Step 1** | Rename and deploy the .WAR file on your application server |
| **Step 2** | Configure your deployed .WAR file |
| **Step 3** | Install the license key |
| **Step 4** | Restart Tomcat and test connection |
| **Step 5** | Configure user authentication |
| **Step 6** | First login and become admin -  2.1 only |
| **Step 7** | Configure roles |
| **Step 8** | Generate snapshot data |
| **Step 9** | Configure data authorization |

## Step 1 - Deploy and configure the .WAR file on your application server

### Rename WAR file

The name of the .WAR file will be included in the URL used to access the dashboard in a browser, as listed below. Therefore, before you deploy the .WAR file, you may wish to rename it to your own chosen name:

- **1.11.0** - the deployed folder will be named **com.castsoftware.aip.dashboard.restapi**
- **1.10.0** - the deployed folder will be named **CAST-RestAPI**

### Deploy the WAR file

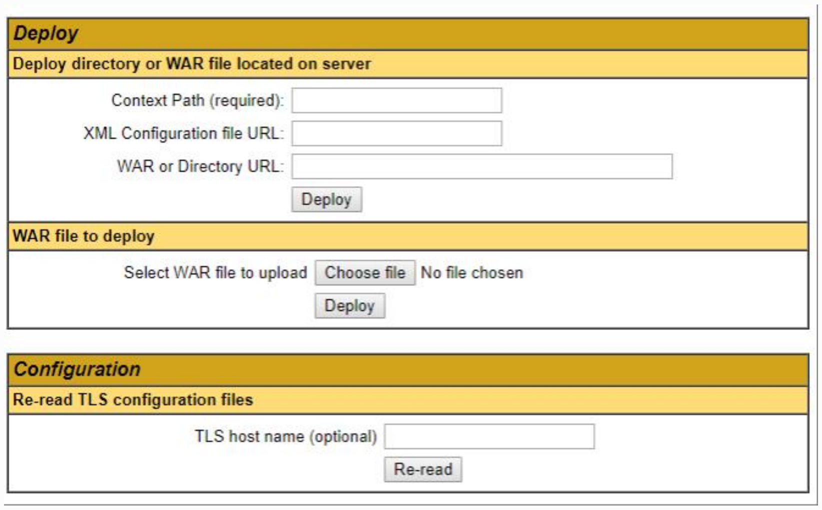
Locate the .WAR file and move it to the web application installation location. By default on Apache Tomcat this is set to:

```
CATALINA_HOME\webapps
```

If the Apache Tomcat server is running, the .WAR file will then be unpacked and deployed in a folder matching the name of the .WAR file. If the Apache Tomcat server is not running, start it up and the WAR file will be automatically deployed.

Note that:

- You can find out more about the CATALINA_HOME environment variable and how to configure it in **Apache Tomcat installation and configuration options**
- You can also use the **deploy** action in **Apache Tomcat manager** to deploy the WAR file:


Deploy

Deploy directory or WAR file located on server

Context Path (required):

XML Configuration file URL:

WAR or Directory URL:

WAR file to deploy

Select WAR file to upload No file chosen

Configuration

Re-read TLS configuration files

TLS host name (optional)

## Step 2 - Configure your deployed .WAR file

### For CAST RestAPI 1.x

**context.xml file configuration**

When the .WAR has been deployed you now need to configure the **context.xml** file to tell the web application where the Dashboard/Measure schemas are stored. This file is located here:

```
CATALINA_HOME\webapps\<deployed_war>\META-INF\context.xml
```

**Instructions for Tomcat 8 / 8.5 / 9**

Open the **context.xml file** (as detailed above) with an editor. By default, the file will contain an **uncommented** template as follows - this is tailored for connections to **Dashboard/Measure schemas** located on a **CAST Storage Service / Postgres** instance running with **port 2280** using **Tomcat 8 / 8.5 / 9.** If you are only configuring access to one type of schema, you should comment the other type:

```
<Resource name="jdbc/domains/AAD" url="jdbc:postgresql://localhost:2280/postgres"
                 connectionInitSqls="SET search_path TO [Measure Schema];"
                 username="operator" password="CastAIP"

                 auth="Container" type="javax.sql.DataSource" driverClassName="org.postgresql.Driver"
                 validationQuery="select 1"
                 initialSize="5" maxTotal="20" maxIdle="10" maxWaitMillis="-1"/>

<Resource name="jdbc/domains/AED" url="jdbc:postgresql://localhost:2280/postgres"
                 connectionInitSqls="SET search_path TO [Central Schema];"
                 username="operator" password="CastAIP"

                 auth="Container" type="javax.sql.DataSource" driverClassName="org.postgresql.Driver"
                 validationQuery="select 1"
                 initialSize="5" maxTotal="20" maxIdle="10" maxWaitMillis="-1"/>
```

- Set the `URL` parameter to the server on which the **Dashboard/Measure schema** is located:
  - change the `"localhost"` to the name of the server on which the host CSS is located
  - change the **port** from `2280` if necessary
- Change **[Central Schema]** and **[Measure Schema]** to the name of the **Dashboard/Measure schema** you are using.
- Ensure the `username` and `password` parameters are correct (note that if you need to **encrypt** the username and password to avoid entering names in clear text, please see: **Encrypt login and password for database and LDAP**)
- You should end up with a section something like this:

```
<Resource name="jdbc/domains/AAD" url="jdbc:postgresql://localhost:2280/postgres"
                  connectionInitSqls="SET search_path TO general_measure;"
                  username="operator" password="CastAIP"

                  auth="Container" type="javax.sql.DataSource" driverClassName="org.postgresql.Driver"
                  validationQuery="select 1"
                  initialSize="5" maxTotal="20" maxIdle="10" maxWaitMillis="-1"/>

<Resource name="jdbc/domains/AED" url="jdbc:postgresql://localhost:2280/postgres"
                  connectionInitSqls="SET search_path TO my_central;"
                  username="operator" password="CastAIP"

                  auth="Container" type="javax.sql.DataSource" driverClassName="org.postgresql.Driver"
                  validationQuery="select 1"
                  initialSize="5" maxTotal="20" maxIdle="10" maxWaitMillis="-1"/>
```

Following any changes you make, **save the context.xml file** and then **restart** your application server so that the changes are taken into account.

Note that it is **critically important** to configure the **initialSize, maxTotal**, and **maxIdle** parameters according to your consumption use case and the number of schemas you want to configure. The default values are high but could probably be decreased to limit the number of active connections to your database instance (eg. initialSize="2" maxTotal="10" maxIdle="2"). Please see the "**Optimize context.xml**" section in **Configure the Health Dashboard for large numbers of Applications** for more information about these parameters, or consult the relevant Apache Tomcat documentation: **https://tomcat.apache.org**.

**Instructions for Tomcat 7**

Open the **context.xml file** (as detailed above) with an editor. By default, the file will contain an **uncommented** templates for **Tomcat 8 / 8.5 / 9.** You need to comment these template by adding **<!--** and **-->** around the section:

```
<!--
<Resource name="jdbc/domains/AED" url="jdbc:postgresql://localhost:2280/postgres"
    connectionInitSqls="SET search_path TO [Central Schema];"
    username="operator" password="CastAIP"
    auth="Container" type="javax.sql.DataSource" driverClassName="org.postgresql.Driver"
    validationQuery="select 1"
    initialSize="5" maxTotal="20" maxIdle="10" maxWaitMillis="-1"/>
-->
```

Now locate the **Tomcat 7** template - this is located at the end of the file:

```
<!--  Tomcat 7 Documentation : http://ci.apache.org/projects/tomcat/tomcat7/docs/jndi-resources-howto.html --
>
<!-- These connections examples on Tomcat 7 are provided for CSS connections especially useful for REST API
on central database.
add parameter if you don't want to use the connection pool :
- for CSS : initConnectionSqls="SET search_path TO ${schema};"

template for resources on CSS with connection pool mode :
    <Resource name="jdbc/domains/${domainName}"
            url="jdbc:postgresql://${host}:${port}/postgres"
            username="${user}" password="${password}"
            auth="Container" type="javax.sql.DataSource" driverClassName="org.postgresql.Driver"
            validationQuery="select 1" initialSize="5" maxActive="20" maxIdle="10" maxWait="-1"/>

template for resources on CSS without connection pool mode :
    <Resource name="jdbc/domains/${domainName}"
            url="jdbc:postgresql://${host}:${port}/postgres"
            username="${user}" password="${password}"
            initConnectionSqls="SET search_path TO ${schema};"
            auth="Container" type="javax.sql.DataSource" driverClassName="org.postgresql.Driver"
            validationQuery="select 1" initialSize="5" maxActive="20" maxIdle="10" maxWait="-1"/>
-->
```

Copy the **Tomcat 7 for CSS without connection pool mode** template into **uncommented white space.** If you need to reference both a Dashboard and Measure schema, copy the template twice:

```
<Resource name="jdbc/domains/${domainName}"
    url="jdbc:postgresql://${host}:${port}/postgres"
    username="${user}" password="${password}"
    initConnectionSqls="SET search_path TO ${schema};"
    auth="Container" type="javax.sql.DataSource" driverClassName="org.postgresql.Driver"
    validationQuery="select 1" initialSize="5" maxActive="20" maxIdle="10" maxWait="-1"/>
```

- Set the `${domainName}` value to `AED` or `AAD` as required
- Set the `URL` parameter to the server on which the **Dashboard/Measure schema** is located:
  - change the `${host}` to the name of the server on which the host CAST Storage Service/PostgreSQL instance is located
  - change the `${port}` values to the required port (e.g.: 2280, 2282, 2284 or a custom port depending on the CAST Storage Service /PostgreSQL instance you are running).
- Ensure the `${user} and ${password}` parameters are correct - use the **operator** and **CastAIP** username/password combination if you have not changed these defaults (note that if you need to **encrypt** the username and password to avoid entering names in clear text, please see: **Encrypt login and password for database and LDAP**)
- Change `${schema}` to the name of the **Dashboard/Measure schema**
- You should end up with a section something like this for a Dashboard schema:

```
<Resource name="jdbc/domains/AED"
        url="jdbc:postgresql://my_server:2282/postgres"
        username="operator" password="CastAIP"
        initConnectionSqls="SET search_path TO my_central_schema;"
        auth="Container" type="javax.sql.DataSource" driverClassName="org.postgresql.Driver"
        validationQuery="select 1" initialSize="5" maxActive="20" maxIdle="10" maxWait="-1"/>
```

Following any changes you make, **save the context.xml file**.

Note that it is **critically important** to configure the **initialSize, maxActive** and **maxIdle** parameters according to your consumption use case and the number of schemas you want to configure. The default values are high but could probably be decreased to limit the number of active connections to your database instance (eg. initialSize="2" maxActive="10" maxIdle="2"). Please see the "**Optimize context.xml**" section in **Configure the Health Dashboard for large numbers of Applications** for more information about these parameters, or consult the relevant Apache Tomcat documentation: **https://tomcat.apache.org**.

#### Configuring access to multiple Dashboard schemas

If you would like to configure access to multiple Dashboard schemas for use with your Engineering Dashboard, please do as follows:

- For **each additional** Dashboard Service you want to configure access to, please add an **uncommented configuration template** (these are supplied in the **context.xml** file - ensure you chose the correct template for **Tomcat 7** or **Tomcat 8/8.5/9**) for the target CAST Storage Service/PostgreSQL instance underneath the section configured for your initial Dashboard schema
- First change the `name` parameter to something other than **`"jdbc/domains/AED"`** (the default "name" used in the pre-provided templates) - CAST recommends using the name of your target Dashboard Service - for example `"jdbc/domains/my_central_schema"` (you must retain the `"jdbc/domains"` part of the the name). This is because each Dashboard schema you connect to the Engineering Dashboard must have a **unique** "name" parameter
- Set the `URL` parameter to the server on which the additional **Dashboard schema** is located:
  - change the `${host}` to the name of the server on which the host CAST Storage Service/PostgreSQL instance is located
  - change the `${port}` values to the required port (e.g.: 2280, 2282, 2284 or a custom port depending on the CAST Storage Service /PostgreSQL instance you are running).
- Ensure the `${user}` and `${password}` parameters are correct - use the **operator** and **CastAIP** username/password combination if you have not changed these defaults (note that if you need to **encrypt** the username and password to avoid entering names in clear text, please see: **Encrypt login and password for database and LDAP**)
- Change `${schema}` to the name of the **Dashboard schema**
- Following any changes you make, **save the context.xml file**.

#### Connection pooling

It is possible to modify the connection configuration for the Engineering Dashboard to pool multiple Dashboard schemas in one resource "domain".  In other words, you no longer have to configure one resource (in the context.xml) per Dashboard schema, instead, one resource (in the context.xml) can function for multiple Dashboard schemas. Please see **CAST Dashboard Service schema connection configuration pooling** for more information.

**Using a custom CAST Storage Service or PostgreSQL database other than the default postgres**

If you are using **AIP Core 8.3.40** it is possible to connect to a custom CAST Storage Service/PostgreSQL database other than the default "p ostgres" (previously custom databases were not permitted for use with CAST). To be able to exploit this change, see **Using a custom CAST Storage Service or PostgreSQL database other than the default postgres**.

## For CAST RestAPI 2.x

#### Modify application.properties

When the .WAR has been deployed you now need to configure the **application.properties** file to tell the web application on which **CAST Storage Service/PostgreSQL instance** the Dashboard/Measure schemas are stored. This file is located here:

```
CATALINA_HOME\webapps\<deployed_war>\classes\application.properties
```

Locate the following section in the file:

```
## DATASOURCE
# Resource1 is the datasource name used in domains.properties
# Adapt server name (localhost) and port (2282) if required
# You can add multiple datasources if you want to connect to multiple CSS Servers. Datasource name must be
unique
# You have to configure your domains names and relative schema names in domains.properties
restapi.datasource[0].url=jdbc:postgresql://localhost:2282/postgres
restapi.datasource[0].username=operator
restapi.datasource[0].password=CastAIP
restapi.datasource[0].poolname=Resource1
restapi.datasource[0].minimumIdle=10
restapi.datasource[0].maximumPoolSize=20
```

If all your Dashboard/Measure schemas are located **on one single CAST Storage Service/PostgreSQL instance** then you need to modify the `url`, `username` and `password` entries to match your target CAST Storage Service/PostgreSQL, for example:

```
## DATASOURCE
# Resource1 is the datasource name used in domains.properties
# Adapt server name (localhost) and port (2282) if required
# You can add multiple datasources if you want to connect to multiple CSS Servers. Datasource name must be
unique
# You have to configure your domains names and relative schema names in domains.properties
restapi.datasource[0].url=jdbc:postgresql://192.168.200.104:2282/postgres
restapi.datasource[0].username=operator
restapi.datasource[0].password=CastAIP
restapi.datasource[0].poolname=Resource1
restapi.datasource[0].minimumIdle=10
restapi.datasource[0].maximumPoolSize=20
```

If your Dashboard/Measure schemas are located **on multiple CAST Storage Services/PostgreSQL instances**, you need to add in the additional servers as shown in the example below:

- Ensure that you modify the `url`, `username, password` and `resource` entries to match your target CAST Storage Service/PostgreSQL. In particular, the `resource` entry must be unique within the **application.properties** file.
- The `[0]` must also be incremented for additional CAST Storage Service/PostgreSQL instances, for example, use `restapi.datasource[1]`, `restapi.datasource[2]` etc.

```
## DATASOURCE
# Resource1 is the datasource name used in domains.properties
# Adapt server name (localhost) and port (2282) if required
# You can add multiple datasources if you want to connect to multiple CSS Servers. Datasource name must be
unique
# You have to configure your domains names and relative schema names in domains.properties
restapi.datasource[0].url=jdbc:postgresql://192.168.200.104:2282/postgres
restapi.datasource[0].username=operator
restapi.datasource[0].password=CastAIP
restapi.datasource[0].poolname=Resource1
restapi.datasource[0].minimumIdle=10
restapi.datasource[0].maximumPoolSize=20

restapi.datasource[1].url=jdbc:postgresql://192.168.200.105:2282/postgres
restapi.datasource[1].username=operator
restapi.datasource[1].password=CastAIP
restapi.datasource[1].poolname=Resource2
restapi.datasource[0].minimumIdle=10
restapi.datasource[0].maximumPoolSize=20
```

Save the file before proceeding.

**minimumIdle and maximumPoolSize**

The following options are used to govern the connections from the web application to the target CAST Storage Service/PostgreSQL instance:

```
restapi.datasource[0].minimumIdle=10
restapi.datasource[0].maximumPoolSize=20
```

CAST recommends using the default options unless you are experiencing performance issues. The options are used as follows:

| | |
|---|---|
| minimumIdle | The minimum number of connections that should be kept in the pool at all times (even if there is no traffic). Default value is 10.  Idle connections are checked periodically. |
| maximumPoolSize | The maximum number of active connections that can be allocated from this pool at the same time. The default value is 20. |

See also **Configure the Health Dashboard for large numbers of Applications**.

**Using a custom CAST Storage Service or PostgreSQL database other than the default postgres**

If you are using **AIP Core 8.3.40** it is possible to connect to a custom CAST Storage Service/PostgreSQL database other than the default "postgres" (previously custom databases were not permitted for use with CAST). To be able to exploit this change, see **Using a custom CAST Storage Service or PostgreSQL database other than the default postgres**.

**Modify domains.properties**

You now need to configure the **domains.properties** file which provides a link between the **CAST Storage Services/PostgreSQL instances** defined in the **application.properties** file and the Dashboard/Measure schemas containing the relevant snapshot data. This file is located here:

```
CATALINA_HOME\webapps\<deployed_war>\classes\domains.properties
```

This file is delivered empty as shown below:

```
# Domains for API
# empty lines in this file lead to connection error, remove all empty lines
# The Connection pool is configured as a datasource in application.properties
# - AAD domain is mandatory for the portal
# - You can only connect one measure schema and domain must be "AAD"
# - You have to align [Resource1] with the datasource name configured in application.properties
# - You have to replace [Measure Schema] by your measure schema name you want to connect
# AAD=Resource1,[Measure Schema]
# - You have to align [Resource1] with the datasource name configured in application.properties
# - You have to replace [Central Schema1] by the central schema name
# - Domains names must be unique
# AED1=Resource1,[Central Schema1]
# AED2=Resource1,[Central Schema2]
```

For each schema that you need to access via the RestAPI, **add one line to the file** ensuring that there are no empty lines:

| | |
|---|---|
| **AAD / AED1** | This is known as the "domain" and this **must be unique** in the **domains.properties** file:<br>• AAD = Measure schema (one only)<br>• AED1, AED 2 etc. = Dashboard schemas<br><br>Therefore for each schema that you need to access via the RestAPI, you need to assign **one unique domain**:<br>• For a Measure schema, you should ALWAYS use AAD.<br>• For a Dashboard schema, you can use any domain name notation you want, however, CAST highly recommends incrementing the number, i.e. AED1, AED2, AED3 etc. |
| **Resource1** | This entry refers to the CAST Storage Service/PostgreSQL instance as defined in the **application.properties** file. |
| **[Measure Schema] / [Central Schema1]** | This entry refers to the Measure or Dashboard schema containing the relevant Application data. |

For example, for one Dashboard schema called "MEUDON_CENTRAL" and one Measure schema called "MEUDON_MEASURE" stored in the CAST Storage Service/PostgreSQL instance defined in **Resource1** in the **application.properties** file, add the following:

```
# Domains for API
# empty lines in this file lead to connection error, remove all empty lines
# The Connection pool is configured as a datasource in application.properties
# - AAD domain is mandatory for the portal
# - You can only connect one measure schema and domain must be "AAD"
# - You have to align [Resource1] with the datasource name configured in application.properties
# - You have to replace [Measure Schema] by your measure schema name you want to connect
# AAD=Resource1,[Measure Schema]
# - You have to align [Resource1] with the datasource name configured in application.properties
# - You have to replace [Central Schema1] by the central schema name
# - Domains names must be unique
AAD=Resource1,MEUDON_MEASURE
AED1=Resource1,MEUDON_CENTRAL
```

Save the file before proceeding.

**Modify application.properties to define connection to CSS/PostgreSQL for the roles/permissions schema - 2.1 only**

In **2.1 only**, an interface exists to manage **User roles - 2.x and above** and **Data authorization - 2.x and above** - this interface stores all its records in a **dedicated schema** on a **CAST Storage Service/PostgreSQL instance**. This instance does not need to be the same as used for your AIP schemas (Dashboard/Measure schemas), however, the required schema is small and therefore CAST recommends using an existing CAST Storage Service/PostgreSQL instance to host it. The schema is created automatically when you start up your Dashboard deployment if it does not already exist.

The **application.properties** file contains a section dedicated to this schema - this file is located here:

```
CATALINA_HOME\webapps\<deployed_war>\WEB-INF\classes\application.properties
```

Locate the following section in the file:

```
#datasource configuration for user management
spring.datasource.url=jdbc:postgresql://localhost:2282/postgres?
ApplicationName=DASHBOARDS&currentSchema=cast_dashboards
spring.datasource.platform=postgres
spring.datasource.username=operator
spring.datasource.password=CastAIP
spring.datasource.initialization-mode=always
spring.datasource.driver-class-name=org.postgresql.Driver
spring.liquibase.change-log=classpath:db/changelog/db.changelog-master.xml
spring.liquibase.default-schema=cast_dashboards
spring.liquibase.enabled=true
```

Change the line `spring.datasource.url` to match the CAST Storage Service/PostgreSQL instance you intend to use for the roles/permissions schema, for example:

```
#datasource configuration for user management
spring.datasource.url=jdbc:postgresql://192.168.200.104:2282/postgres?
ApplicationName=DASHBOARDS&currentSchema=cast_dashboards
spring.datasource.platform=postgres
spring.datasource.username=operator
spring.datasource.password=CastAIP
spring.datasource.initialization-mode=always
spring.datasource.driver-class-name=org.postgresql.Driver
spring.liquibase.change-log=classpath:db/changelog/db.changelog-master.xml
spring.liquibase.default-schema=cast_dashboards
spring.liquibase.enabled=true
```

Save the file before proceeding. This will ensure that a schema called "**cast_dashboards**" is created on the target CAST Storage Service /PostgreSQL instance when you start the web application.

**Using a custom CAST Storage Service or PostgreSQL database other than the default postgres**

If you are using **AIP Core 8.3.40** it is possible to connect to a custom CAST Storage Service/PostgreSQL database other than the default "p ostgres" (previously custom databases were not permitted for use with CAST). To be able to exploit this change, see **Using a custom CAST Storage Service or PostgreSQL database other than the default postgres**.

## Step 3 - Install the license key

As explained in **Dashboard Service license key configuration**, when you want to access a **Dashboard schema** using the **CAST RestAPI** (i.e. via the **En gineering Dashboard**, or via the **CAST Report Generator**), a special **license key** is required. This license key grants specific access to one or multiple Dashboard schemas for the web application in which it is installed (i.e. the Engineering Dashboard or the CAST RestAPI).

You must therefore install the license key and, if you are using a restricted license key, define data access authorization. These two steps are explained in **Dashboard Service license key configuration** in the sections **How do I install a license key?** and **How to authorize users when using a RESTRICTED license key**.

## Step 4 - Restart Tomcat and test connection

### Restart Tomcat

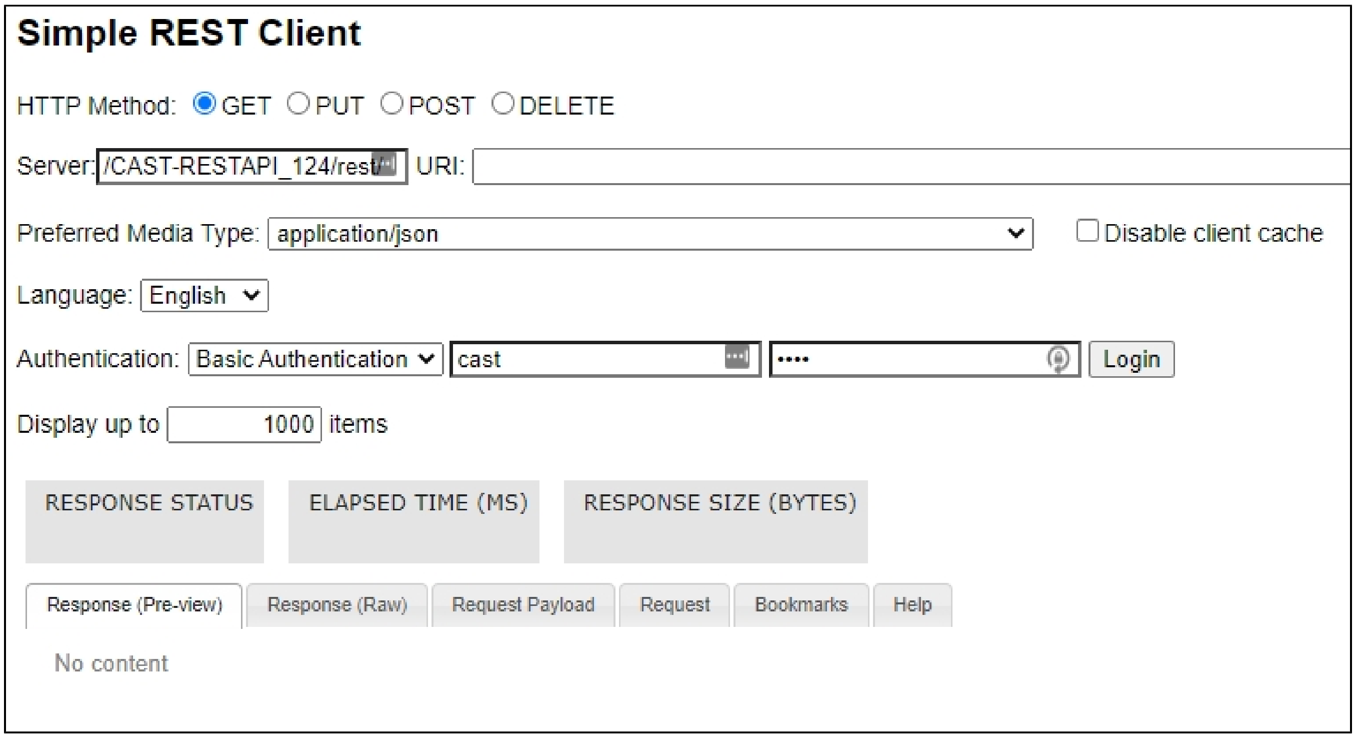
Before proceeding, ensure you **restart** your application server so that the configuration changes you made are taken into account.

### Test access to the RestAPI

You can now access the RestAPI using the URL:

```
http://<server_name>:[<port_number>]/<name-of_deployed_war>
```

You should see the Rest Client page as follows - this indicates that the initial setup was successful:



Simple REST Client

HTTP Method: [✓ GET] PUT POST DELETE

Server: /CAST-RESTAPI_124/rest/ URI:

Preferred Media Type: application/json ☐ Disable client cache

Language: English

Authentication: Basic Authentication cast •••• Login

Display up to 1000 items

No content

## Step 5 - Configure user authentication

This step involves configuring how your users will **authenticate** with the CAST RestAPI. Most organizations opt for LDAP/Active Directory integration so that users can use their corporate username/password to access the resources they need. The RestAPI also has a built in username/password authentication mechanism which is enabled "out of the box". See **User authentication**.

## Step 6 - First login and become admin -  2.1 only

By default, the CAST Dashboard requires that at least one user is granted the **ADMIN role** following the first login after the **User authentication** configuration. This ensures that one user can access all data and cofiguration settings. See **First login and become admin**. This step is not required when using **Dashboards 1.x** and can be skipped.

## Step 7 - Configure roles

This step involves configuring **roles** for users and groups that are accessing the CAST RestAPI. See **User roles**.

## Step 8 - Generate snapshot data

Before your users can exploit data via the CAST RestAPI, you need to generate snapshot data and (if accessing a Measurement Service) ensure the snapshot data is uploaded to the Measurement schema.

## Step 9 - Configure data authorization

This step involves configuring data **Authorization**. An authorization defines permission to a user or group of users to access and "consume the data" in a specific Application via the RestAPI. If permission is not granted then any information related to this Application will be not accessible: application properties such as name, technologies or grades and measures, etc. Therefore, an Authorization must be defined before a user/group of users can access a specific application. See **Data authorization**.