# GUI02: Graphical User Interfaces with RealWeb.Gen

This chapter describes the generation of Graphical User Interfaces using IDDOS / RealWeb.Gen

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# 1. Software Installation

## 1.1 Development Environment

### 1.1.1 RealWeb.Gen installation

Perform installation of the OS/400 RealWeb.Gen development environment, being the following libraries:

> IDDOSDS
>
> IDDOSDSDTA
>
> IDDOSES
>
> IDDOSESDTA
>
> IDDOSINT

This is a <u>licensed</u> product, after installation the license code should be entered to activate the product

The Graphical User Interface generator is available starting from RealWeb.Gen Release 12.1

### 1.1.2 RealGUI.Gen installation

Following folders need to be created and then restored (using the below command example) on your local IFS:

> IDDOSDS (guigen_ds)
>
> IDDOSES (guigen_es)
>
> ICONS (guigen_ic)

```
RST DEV('qsys.lib/iddosds.lib/guigen_ic.file')
  OBJ(('wwwserver/iseries/icons' *INCLUDE
  'yourWebServerPath/icons'))
```

Replace *yourWebServerPath* with the (root-)path of a directory being hosted by your (Apache) HTTP-server (e.g. wwwserver/iseries or www/htdocs or just www), but leave the qsys.lib/<u>iddosds</u> the same for all restores.

The installation of RealGUI.Gen is always done "on top of" RealWeb.Gen (no <u>additional</u> licenses are required).

# 1.2  Hosting Environment

### 1.2.1    HTTP server

The setup of the AS/400 HTTP-server is required to arrange data communication between the clients and your iSeries.  This step is crucial for RealWeb.Gen and is described in IDDOS manual **XML01** (XML driver).

If you are already using RealWeb.Gen this step can be skipped since specific settings are described hereunder.

### 1.2.2    Migration to Apache

It is strongly advised to migrate any IBM original HTTP server to Apache now.  Although RealWeb.Gen and RealGUI.Gen function with both server types, only the Apache HTTP server will be allowed as from OS/400 release 5.3 (IBM original will no longer be supported).

### 1.2.3    RealGUI.Gen aliasMatch

In order to root incoming URL requests to the RealGUI.Gen directory on your IFS an aliasMatch needs to be included in the setup of your HTTP-server:

AliasMatch ¬/(.*) /*yourWebServerPath*/$1

Replace *yourWebServerPath* with the (root-)path of a directory being hosted by your (Apache) HTTP-server (e.g. wwwserver/iseries or www/htdocs or just www).

It now should be possible to reach the RealGUI.Gen login page, but **at this point** it is not possible to login:

http://**url:port**/iddosds/IDDOS_GUI/index.html
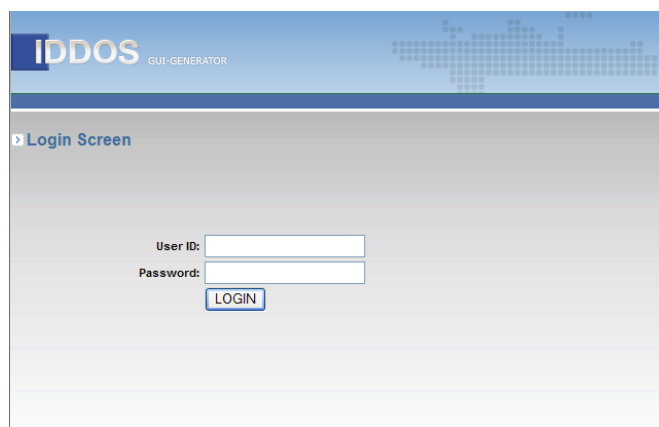
# 2. RealGUI.Gen

## 2.1  Settings

### 2.1.1    Jobdescription GUIGEN

During the setup of RealWeb.Gen a jobdescription
WEBGEN has been generated (see XML01).  In order to
make RealGUI.Gen work copy this jobdescription into
library QGPL and name it GUIGEN.  Then check the
initial library list so it (only) contains the following:

> QTEMP
>
> IDDOSDS
>
> IDDOSDSDTA
>
> QGPL

```
CRTDUPOBJ OBJ(WEBGEN)
      FROMLIB(QGPL) OBJTYPE(*JOBD)
      TOLIB(QGPL) NEWOBJ(GUIGEN)
```

```
CHGJOBD JOBD(GUIGEN)
INLLIBL(QTEMP IDDOSDS IDDOSDSDTA QGPL)
```

### 2.1.2    Dataarea WEBGENHTML

Within library IDDOSDSDTA the (settings) dataarea
WEBGENHTML[*] should contain following variables:

PATH="/ *yourWebServerPath* /IDDOSDS/IDDOS_GUI/"

WEBROOT="../IDDOSDS/IDDOS_GUI/"

DEVUSER=""

```
CHGDTAARA
DTAARA(IDDOSDSDTA/WEBGENHTML (1 50))
VALUE('PATH="/ yourWebServerPath
/IDDOSDS/IDDOS_GUI/"')
```

---

[*] CRTDTAARA DTAARA(IDDOSDSDTA/WEBGENHTML) TYPE(*CHAR) LEN(2000) TEXT('IDDOS HTML Client Config')

### 2.1.3   Document SETTINGS.JS

After the software installation (as described in the first chapter of this document) there are two versions of the settings.js on the IFS of your iSeries.  Hereunder the description of the one located in the IDDOS<u>DS</u>-folder:

X:\***yourWebServerPath**\iddosds\IDDOS_GUI\settings.js

1. strURLPathToPost
   http://**url:port**/WebGenCGI/IP700CLB.PGM
   This parameter contains the url that should be used to post requests to the RealWeb.Gen CGI-program (replace url:port with your own local DNS-name)

2. strSystem
   *FIRST
   This value should remain as it is for RealGUI.Gen and is used to issue the first requests during login

3. strEnvironment
   GUIGEN
   In fact this value corresponds to the jobdescription like described above (and should remain as is)

4. strWebRoot
   iddosds/IDDOS_GUI/
   In normal circumstances this value shouldn't be changed here as well (determines the location of the RealGUI.Gen application within the WebServer)

5. strXMLRequestsDir
   XML/
   Standard location of the XML-documents

6. strXSLStylesDir
   XSL/
   Standard location of the several stylesheets

7. *strServerPrefix*
   ***yourWebServerPath/***
   Contains (again) the (root-)path of the directory being hosted by your (Apache) HTTP-server

8. *strServerName*
   **url:port**
   Take this value from the strURLPathToPost

9. strIndexPath
   http://**url:port**/iddosds/IDDOS_GUI/index.html
   Again take the url:port from above settings in order to point to the first page of the application (the index.html etc. should remain as they are)

# 2.2 Procedure

At this point the described url can be used to logon:

```
http://url:port/iddosds/IDDOS_GUI/index.html
```

For a detailed description of the way how to work with RealGUI.Gen please refer to the provided user manual, but following steps are to be taken during the process:

## 2.2.1 Settings

Use the settings-button within RealGUI.Gen to introduce some necessary parameters (paths and extensions):

default template path
/ *yourWebServerPath* /iddos<u>d</u>s/templates

default target location
/ *yourWebServerPath*/iddos<u>e</u>s/APPLICATION/Eng

| Extension | Subdirectory |
|-----------|--------------|
| .css | /xsl |
| .html | /FOLDER |
| .js | /FOLDER |
| .xml | /xml |
| .xsl | /xsl |

When used in the standard (recommended) settings, the mentioned APPLICATION and FOLDER should not be changed although it is possible to do so (according IFS).

## 2.2.2 Templates

Some templates are included within the RealGUI.Gen product (and can be found on your local IFS in folder /*yourWebServerPath*/iddosds/templates/*ccyymmdd*), but feel also free to create some templates of your own.

All templates first need to be introduced within RealGUI.Gen and should be scanned afterwards to search and inventories the included replacement variables.

Finally it's necessary to define all listed variables (type, length, …) for future use during the generation process.

### 2.2.3 Generation runs

From this moment on the templates can be easily used to generate applications. The user(s) who takes care of this just need(s) to know which templates to take (or template group, if this was filled during introduction) while no knowledge is required about the syntax of the replacement variables nor the content of the templates itself. A generation run consists of the following steps:

1. selection of the necessary templates
2. filling of the values for the listed variables
3. the generation itself (push the button)

Since RealGUI.Gen wants to be a learning tool as well it is advised (for inexperienced users) to have a look at the generated code now in order to understand what it does and how the different parts work together. It is possible now to make minor (or even major) changes to the new generated product, but depending the templates used the generated application should be able to work on its own.

### 2.2.4 Generated applications

The generated application can be found in the target location of the used generation run (the default is /**yourWebServerPath**/iddoses/APPLICATION/Eng).

Whether or not you choose to copy the application now to your own (test) environment (or if you want to have a look at it while it still is in the IDDOSES-environment) depends your own needs and liking. Mind that any new generation run (or even RealGUI.Gen product upgrade) might overwrite the existing situation so especially if you (plan to) modify the generated application manually it is advised to move it elsewhere before continuing.

# 3. Applications

## 3.1 Framework

Like described in the chapter "*Generated applications*" a choice should be made to work with IDDOSES or to copy it to your own environment. The provided folder /*yourWebServerPath*/IDDOSES/APPLICATION/ not only contains your own generated application, it also includes all required documents for your application to work (this framework is part of RealGUI.Gen product).

Feel free to browse through the different parts of this framework. For inexperienced users it will be useful in the learning process, while later on it can also be used to extend your generated application(s) since it contains numerous additional functions you might want to use.

## 3.2 Settings

### 3.2.1 Dataarea WEBGENHTML

For your own application(s) another version of the WEBGENHTML dataarea should exist. Feel free to copy the one from library IDDOSDSDTA and place it in a library of your choice, but one that will be placed on top of the related jobdescription (see 3.2.3).

Since it is allowed to use the same settings for several (or all) of your applications, you might want to pick an IDDOS or system-library but in order to avoid future limitations it is advised to create a new separate library.

Dataarea WHATEVER/WEBGENHTML finally should contain following variables (in default *yourLocation* is to be replaced with our IDDOSES/APPLICATION):

PATH="/ *yourWebServerPath* / *yourLocation*/"

WEBROOT="../ *yourLocation* /"

DEVUSER=""

CHGDTAARA DTAARA(*whatever*/WEBGENHTML (1 50)) VALUE('PATH="/ *yourWebServerPath* /IDDOSES/APPLICATION/"')

### 3.2.2 Library WHATEVER

As described in the previous chapter this library should only contain (settings) dataarea WEBGENHTML.

It is mentioned here again since it will also be used in the next chapter concerning the jobdescription.

### 3.2.3 Jobdescription WHATEVER

In order to include the new WEBGENHTML settings we need a jobdescription that contains the created library WHATEVER.  The name of this jobdescription is free, but it is advisable to use the same name as the library in order to see the relation better.

Copy the jobdescription GUIGEN (e.g.) and create a new jobdescription in QGPL (named WHATEVER) :

QTEMP

***WHATEVER***

IDDOSDS

IDDOSDSDTA

***…REP***

***…SRC***

***…PGM***

***…DTA***

QGPL

The ***…'s*** stand for the IDDOS-environment of your choice (and will be used to capture the data as well as the CGI-programs, using their classes and methods).

### 3.2.4 Document SETTINGS.JS

For every WHATEVER/WEBGENHTML a settings.js should exist as well.  Initially there already are two versions of this settings.js on the IFS of your iSeries.

X:\\***yourWebServerPath***\\***yourLocation***\\settings.js where yourlocation by default means iddoses\\APPLICATION

For generated applications you should start with the one located in the IDDOS<u>ES</u>-folder and modify the content:

1. strURLPathToPost
   http://**url:port**/WebGenCGI/IP700CLB.PGM
   This parameter contains the url that should be used
   to post requests to the RealWeb.Gen CGI-program
   (replace url:port with your own local DNS-name)

2. strSystem
   yourEnvironment(IDDOS)
   This value should correspond with the listed **…**'s
   libraries from the jobdescription ***WHATEVER***
   (it is the name of the IDDOS-system to be used)

3. strEnvironment
   WHATEVER
   This value should correspond to the jobdescription

4. strWebRoot
   yourLocation/
   This determines the location of your application
   within the WebServer (iddoses/APPLICATION)

5. strXMLRequestsDir
   XML/
   Standard location of the XML-documents

6. strXSLStylesDir
   XSL/
   Standard location of the several stylesheets

7. strServerPrefix
   ***yourWebServerPath/***
   Contains (again) the (root-)path of the directory
   being hosted by your (Apache) HTTP-server

8. strServerName
   **url:port**
   Take this value from the strURLPathToPost

9. strIndexPath
   http://**url:port**/***yourLocation***/index.html
   Again take the url:port from above settings in order
   to point to the first page of the application

## 3.3  Procedure

Use the provided login.html, it can be reached at the
strIndexPath from settings.js:

http://**url:port**/***yourLocation***/index.html

Feel free to modify the copied login.html (from the
IDDOSES) in order to use it to logon for your own
applications (testing purposes or even in production).

The also provided ASP-version is only needed if you
want to connect via such a type of additional server.