

Technical Manual VC Web

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1 Getting Started with VC Web

VC Web is an extension of Visucontrol that will enable the user to access their VisuControl project that runs in the HMI panel over HTTP protocol through a web browser.

VC Web will allow the user to access the VisuControl project in the panel via a PC, Tablet or a Mobile device from anywhere in the world.

1.1 Assumptions

We also assume that you have a basic understanding of PCs, Microsoft Windows, the type of network environment in which you will run the application and the browsers used by the devices from which you'll be accessing VC Web pages.

You may need Wifi capabilities if you want to work with iPad or that kind of a tablet to access the VC Web pages.

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2 Supported Browsers/Platforms

2.1 PC

VC Web works well in all modern web browsers. The following are the browsers that we mainly focus as far as the browser compatibility is concerned.

- Mozilla Firefox 3.6+
- Microsoft Internet Explorer 9+
- Apple Safari 5+
- Google Chrome 6+



Google Chrome

2.2 Tablets

- iOS 4.1+ - Mobile Safari
- Android 2.1+ - Android Webkit



2.3 Mobile / Smartphones

- iOS 4.1+ - Mobile Safari
- Android 2.1+ - Android Webkit



3 VisuControl Studio with VC Web

3.1 VisuControl

You need a VisuControl with VC Web feature in it to make VC Web work correctly. You can determine whether the VisuControl installed in your PC supports VC Web feature by clicking on **File** menu and check whether it has an **Export Web Project** menu item in it. Refer Figure 1 for more details.

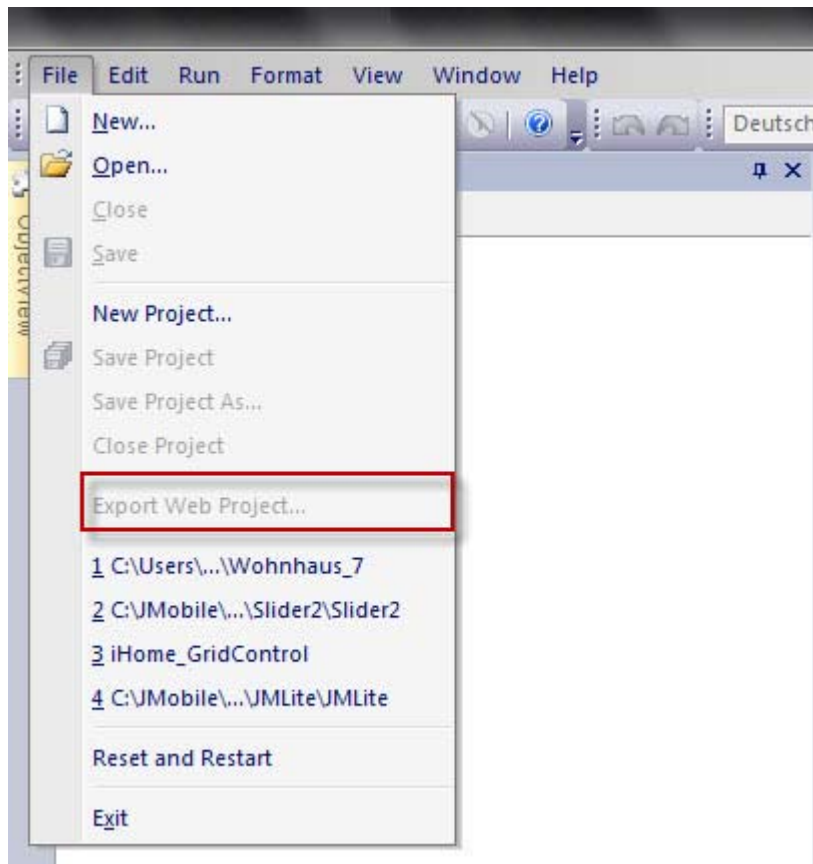


Figure 1

4 VC Web Compatible Items

4.1 Supported Widgets

VC Web now supports the following widgets in it. In other words the VisuControl projects that involve the following widgets will work correctly.

- Label
- Multiline Text
- Numeric Fields
- Buttons
- Hotspot Buttons
- Horizontal / Vertical Sliders
- Gauge / Needle
- Images
- Multistate Images
- Indicators (Lights)
- Date/Time
- Bar Graphs
- Segmented Bar Graphs
- Message widget
- Knobs
- Shapes

4.2 Supported Actions

VC Web currently supports the following VisuControl actions in it.

- HomePage
- LoadPage
- NextPage
- PrevPage
- LastVisitedPage
- WriteTag
- StepTag
- SetBit
- ToggleBit
- ShowDialog
- CloseDialog
- LaunchBrowser

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4.3 Tag Attachments

VC Web supports Tag attachments on widget's properties and will work as expected.

But at the moment it does not support that kind of tag attachment, which changes the range of the widget at runtime. For example a tag attached to a Slider or Bar Graph's **min** or **max** property that updates the **min** or **max** values dynamically does not work in VC Web at the moment.

Tags can be attached to properties like Value, Visible, Enable Animation, etc. based on the requirement.

A widget's value can be attached to another widget's property (ies), if needed. This is based on the properties of a widget supported in VC Web. The most commonly maintained property of a widget is its value property.

4.4 XForm Support

VC Web supports the following XForm functionalities.

- Scaling
- Offset
- ColorPalette
- BitIndex

The ColorPalette functionality now works with selected widgets like Buttons, Image, Bar graph, etc and with their Fill and Background Color properties. In other words only image based ColorPalette is now supported.

4.5 Supported Widget Events

The events support both VisuControl native actions as well as the ones based on JavaScript that are compatible with VC Web. Refer the section 4.2 and 4.7 for more information about the native actions as well as the JavaScript API supported by VC Web.

VC Web can handle multiple actions mentioned in any of the below furnished events.

- OnMouseDown Event
- OnMouseRelease Event
- OnDataUpdate Event

4.6 Supported Page Events

The events support both VisuControl native actions as well as the ones based on JavaScript that are compatible with VC Web. Refer the section 4.2 and 4.7 for more information about the native actions as well as the JavaScript API supported by VC Web.

VC Web can handle multiple actions mentioned in any of the below furnished events.

- OnActivate Event
- OnDeactivate Event

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4.7 Supported JavaScript API

VisuControl offers a set of JavaScript API through, which you can manipulate widgets, tag values, etc. Using these API, events mentioned in sections 4.5 and 4.6 can be handled to accomplish your requirements.

At the moment VC Web supports a small subset custom JavaScript API supported by VisuControl. VC Web currently supports the following JavaScript API's in it

- getTag
- setTag
- getProperty
- setProperty
- getWidget
- getProject

4.8 Template Support

VC Web works well with pages that use templates. The VC Web pages, when it accesses via browser it will be loaded in the browser based on the template used by the page in VisuControl.

VC Web will function correctly if the page uses a template or not.

4.9 Keypad support

Numeric widgets, with a mode **Read/Write** or **Write** only supports a provision through which the user can insert new values into the widget/tag from the browser.

This feature uses the keyboard of the device the user use, in other words there is no custom keypad to insert the value.

The user can **Click** on the Numeric widget that can accept value, which will show a textbox in which the new value can be inserted.

After inserting the value the user can either press **Enter key / Enter key equivalent** in touch devices or the user can click on the **Save** button shown below the text box to make the newly inserted value permanent. Only meaningful numbers will be accepted during the save process anything else will be ignored and will not result in a value change.

The user can cancel the data insertion at any point by **Clicking** the **Cancel** button. Please refer Figure 2 for more details.

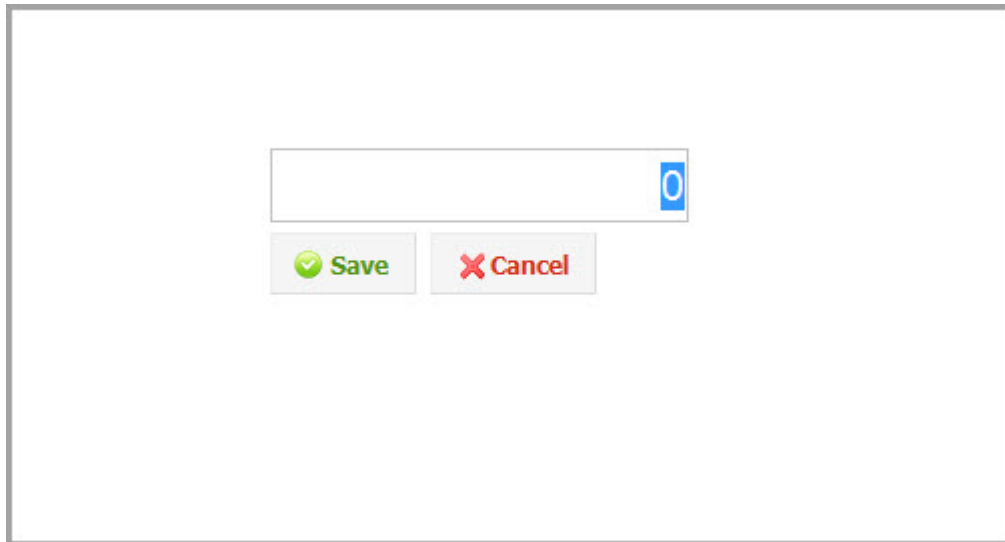


Figure 2

4.10 Dialog Pages

VC Web supports Dialog pages. You can show them and close them based on the requirement via the **ShowDialog** and **CloseDialog** actions.

Known limitations of Dialog Pages are:

- They are not movable unlike the one supported by VisuControl Runtime
- They can't be positioned at a place.

5 Limitations of VC Web Compatible Widgets

As VC Web is still in its infancy and there are some known issues that may experience while using VC Web

- Widget rotation is not supported
- Custom font in iPad has some issues.
- Horizontal Slider reverse mode yet to support
- Vertical Slider reverse false mode yet to support
- Static Optimization of Page should be enabled if you encounter issues while generating the page background image, do this if applicable
- Shape widgets at the moment acts as images ie you may not change the look and feel of it by attaching tag(s) on its UI based properties in your project.
- Colorpalette XForm works only with selected widgets like Buttons, Images, Bar graph, etc
- Widget properties based tag attachment may not work on all allowed properties by VisuControl
- Dialog pages in VC Web supports only modal dialogs.
- Dialog page sin VC Web does not support the Runtime positioning and are not movable
- Round Bar Button widget is not supported in VC Web
- The reflection of tag value updation made at the HMI panel at the browser will come with a bit delay ie the browser will get the updated value when it request data from the server. There may have a bit delay.

6 Limitations of VC Web compatible Page Events

- Currently Page's **OnDataUpdate** event is not supported.
- Currently Dialog page's **OnDataUpdate** event is not supported.
- Currently Template page's **OnDataUpdate** event is not supported.

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7 Generate VC Web Pages for Using

7.1 VisuControl Project

You can use any of your existing VisuControl project or can make a new project to start using VC Web. If you are working with an existing project anything in the project which is not compatible with VC Web will be ignored. You can create a new project using VisuControl if you prefer to avoid using an existing project. You must load a project in VisuControl to start things.

7.2 Exporting Pages

This is the first step in which we create VC Web pages is generating VC Web pages for the VisuControl project/dialog pages. These generated pages will work on the browser.

You can export the currently loaded VisuControl project pages by clicking on **File -> Export Web Project**.

Refer Figure 3 for more details

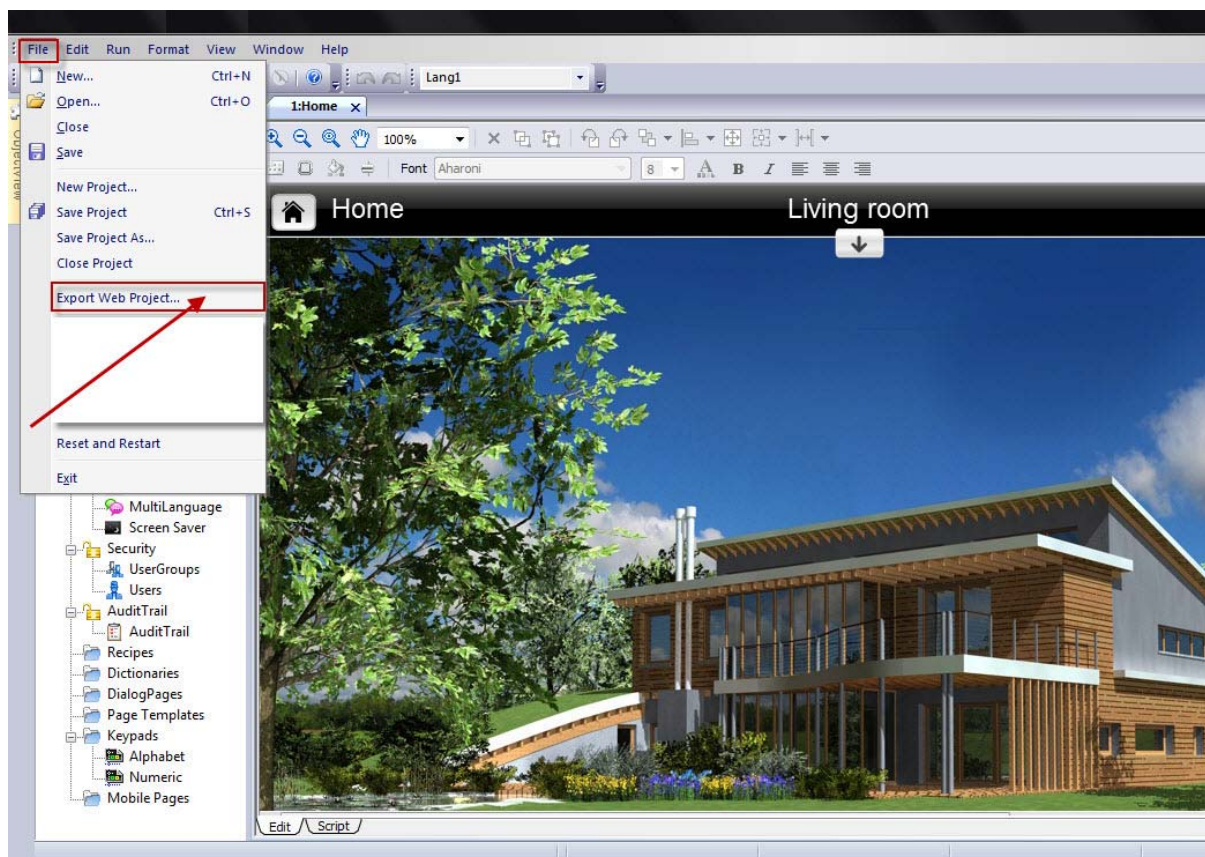


Figure 3

You'll have to Export the pages each time after you make any changes in the project to make the changes reflect in the VC Web page in the browser. You'll have to reload/refresh the VC Web if you have the page opened in the browser.

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7.3 Select Pages to Export

While exporting pages you can export all the project pages or a number of the project pages based on your requirements.

By default for the first time all the pages (project and dialog pages) will be ready to export. This can be changed if and only if you want.

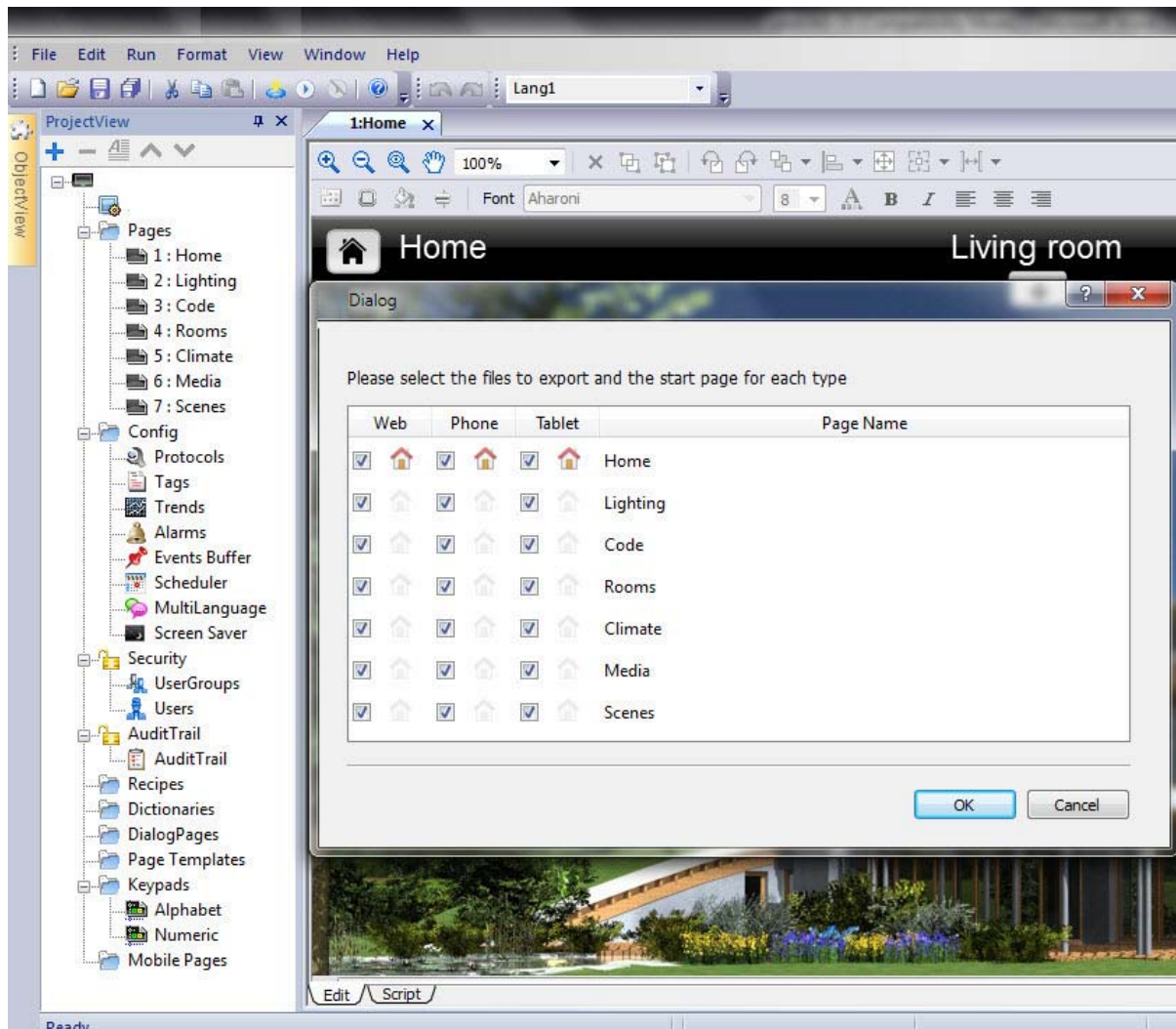


Figure 4

After clicking the **File -> Export Web Project** menu item VisuControl will show a dialog similar that of Figure 4.

VC Web support 3 platforms generally: **Web**, **Tablets** and **Phone**. You can either select all these platforms for your pages while exporting ie the selected pages will be compatible in all three platforms.

You can uncheck the checkbox under specific platform(s) for a page if you don't need a page in a specific platform

This is the place where you can select or unselect all the pages that you'd like to be in VC Web.

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7.4 Pages for Specific VC Web Platforms

You can design VisuControl project pages in such a way that the page fits for specific platform that the VC Web supports. This is suitable for designing pages for Mobile/Smartphone devices.

The viewport area of the Mobile/Smartphone devices is limited and may not fit a big page in it. So you can design some special pages suitable for this platform.

Also you can create a different set of pages, which will have all the functionality of the normal project pages but will be really suitable for the VC Web purpose and can export them to VC Web. In other words the look and feel of the pages in the VC Web will not be similar that of the one in HMI panel but they'll be similar in a functional point of view. So that you can design the pages for the platforms Web, Mobile or Tablet like the way you want and still be able to manipulate the project that is running in HMI panel.

7.5 Setting VC Web Homepage

Setting a Homepage for your VC Web app is important. Either you can use first page of the project as the Homepage or you can select another page manually as your VC Web Homepage or you can set different Homepages for Web, Tablets and Mobile platforms. It is all based upon your actual requirement.

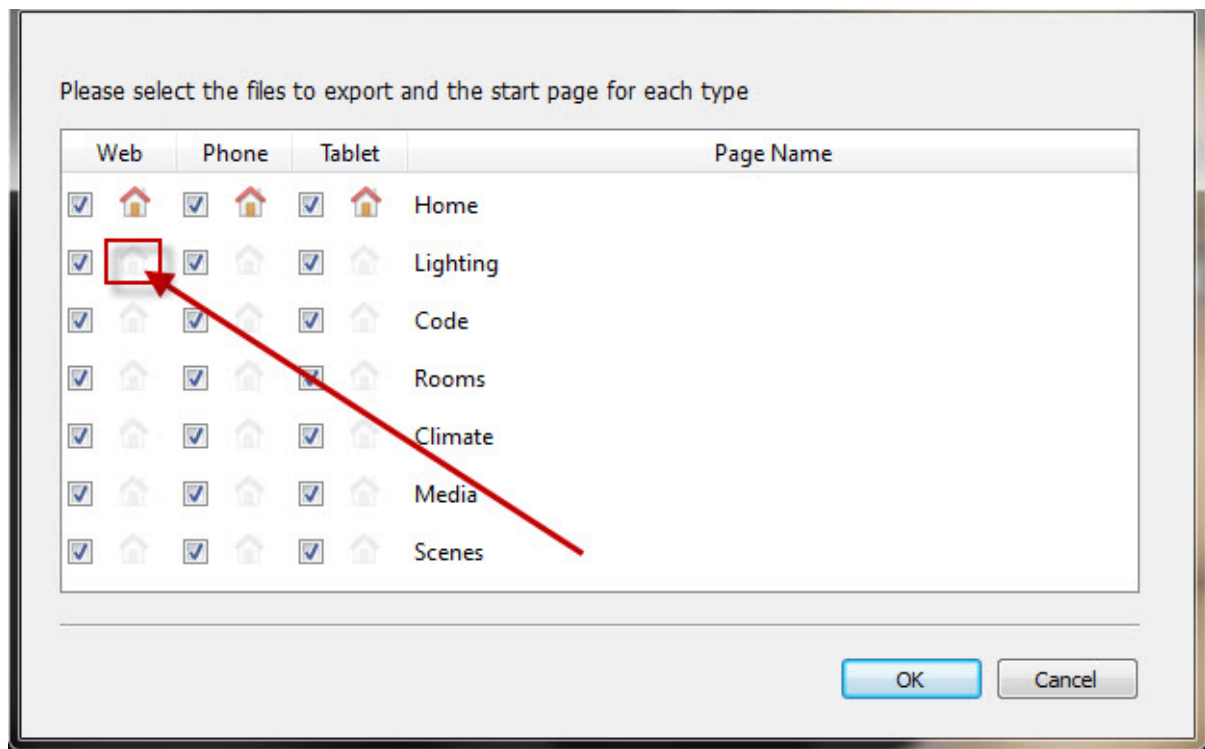


Figure 5

In the Figure 5 you can see that the Page named **Home** is acting as the Homepage for all 3 platforms. If you want to change it to something else then you just need to click on the inactive Home icon shown under the platform (marked as a red box in Figure 5 and marked with an arrow). After the click the inactive Dome icon this dialog will be like Figure 6.

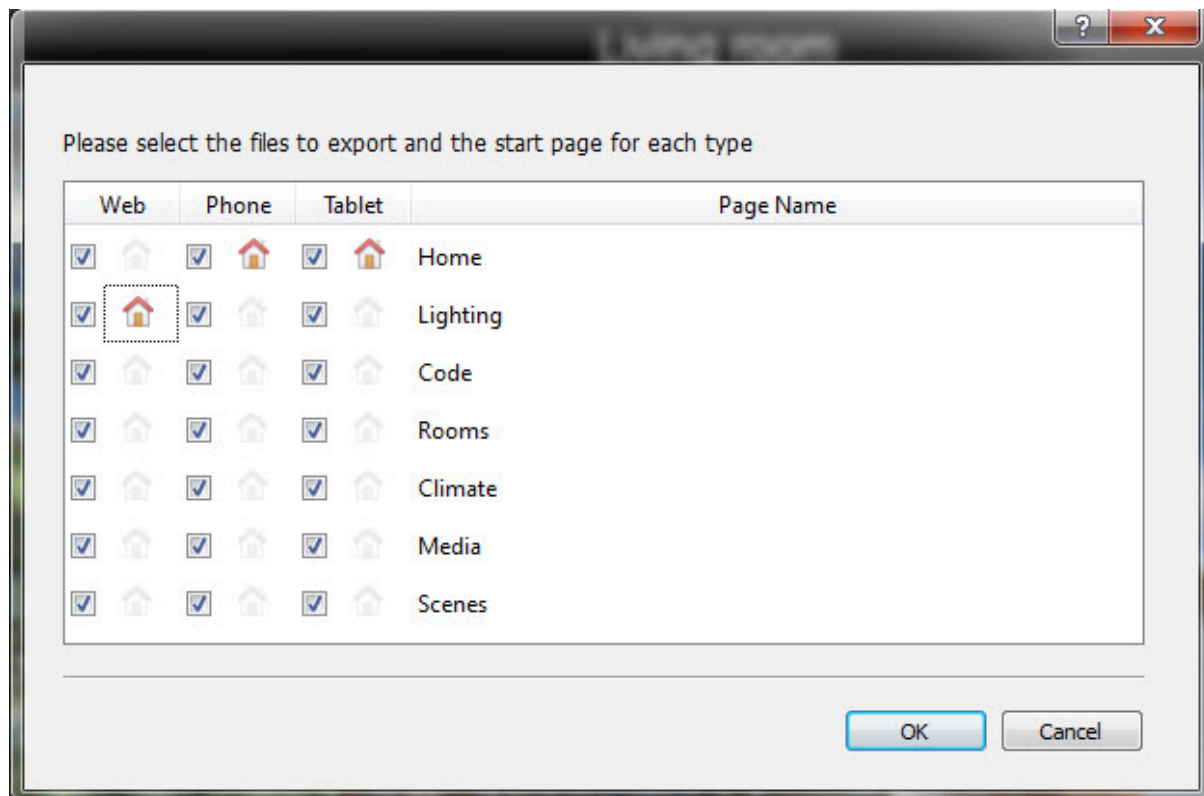


Figure 6

You can see that the Homepage of the Web platform is **Lighting** page now.

Like this you'll be able to designate a different Homepages for each of the 3 platforms if the situation demands that.

7.6 Start VC Web Pages Export

After selecting the pages and a Homepage for each platform you can click on **OK** Button to start the actual VC Web page generation. Refer Figure 7 for more details

At this point you can cancel the page export by clicking the **Cancel** button or the **Close** button of the dialog. Refer Figure 7 for more details

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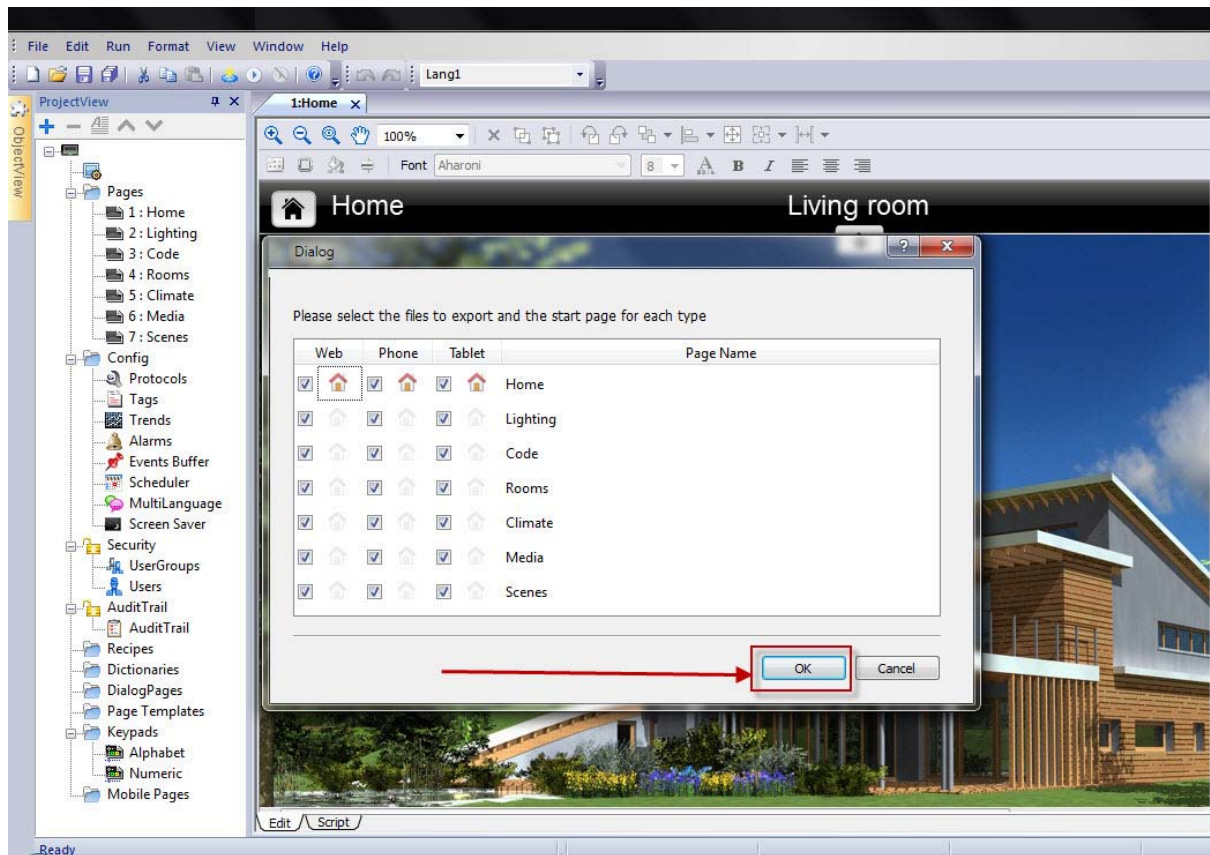


Figure 7

Once you press the **OK** button, Refer Figure 7, VisuControl will start generating VC Web pages for each of the selected project pages and will show a progress bar during the process. Refer Figure 8

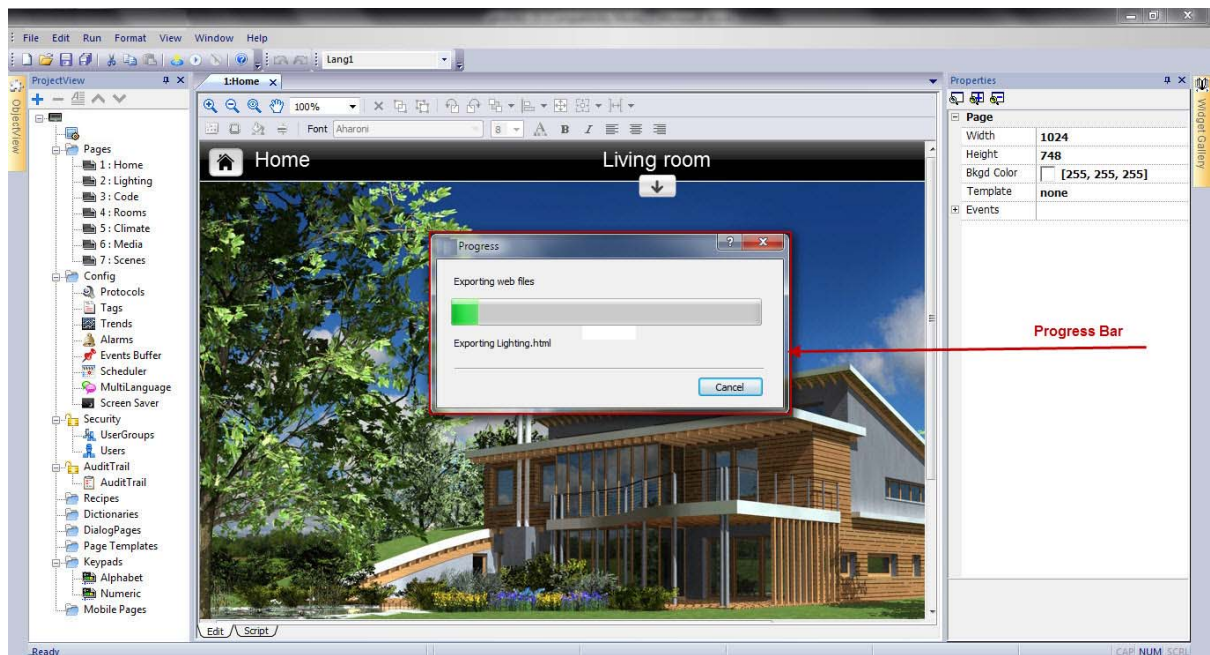


Figure 8

After the page generation the progress bar shown in Figure 8 will be removed from the studio interface and you can proceed to download the project to your desired target.

8 Download Project

After generating the VC Web pages the next step is to download the project to the desired target, assuming that the Touchpanel is already in running mode with the correct Runtime in it.

You can start the project download by clicking on the **Run -> Download To Target** menu item. Refer Figure 9

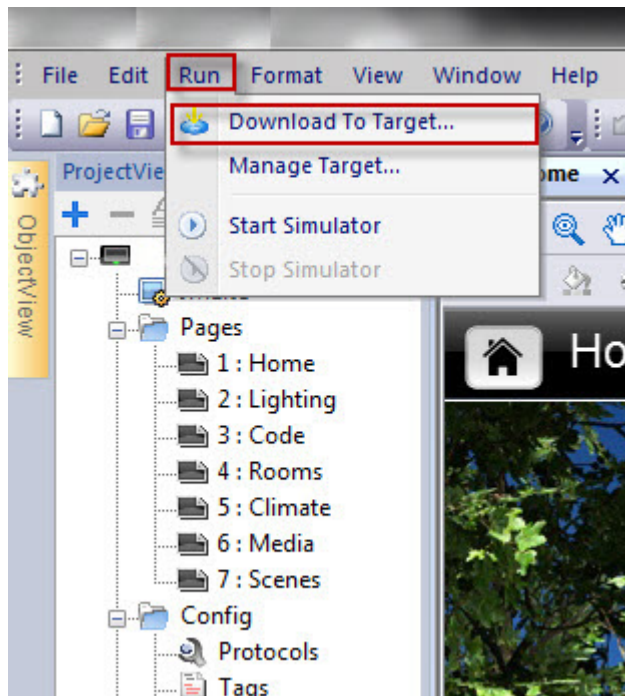


Figure 9

You can start the download process even by clicking the '**Download To Target**' Toolbar button. Refer Figure 10 for more details

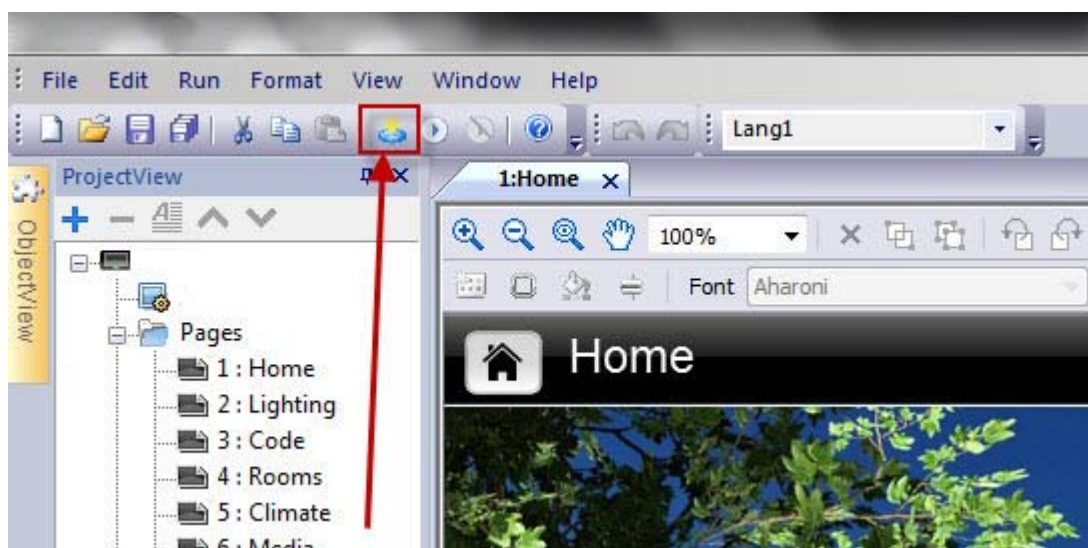


Figure 10

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This will show the **Download To Target** dialog box from which you can select your target device's IP address and can start the download process. Refer Figure 11 for more details

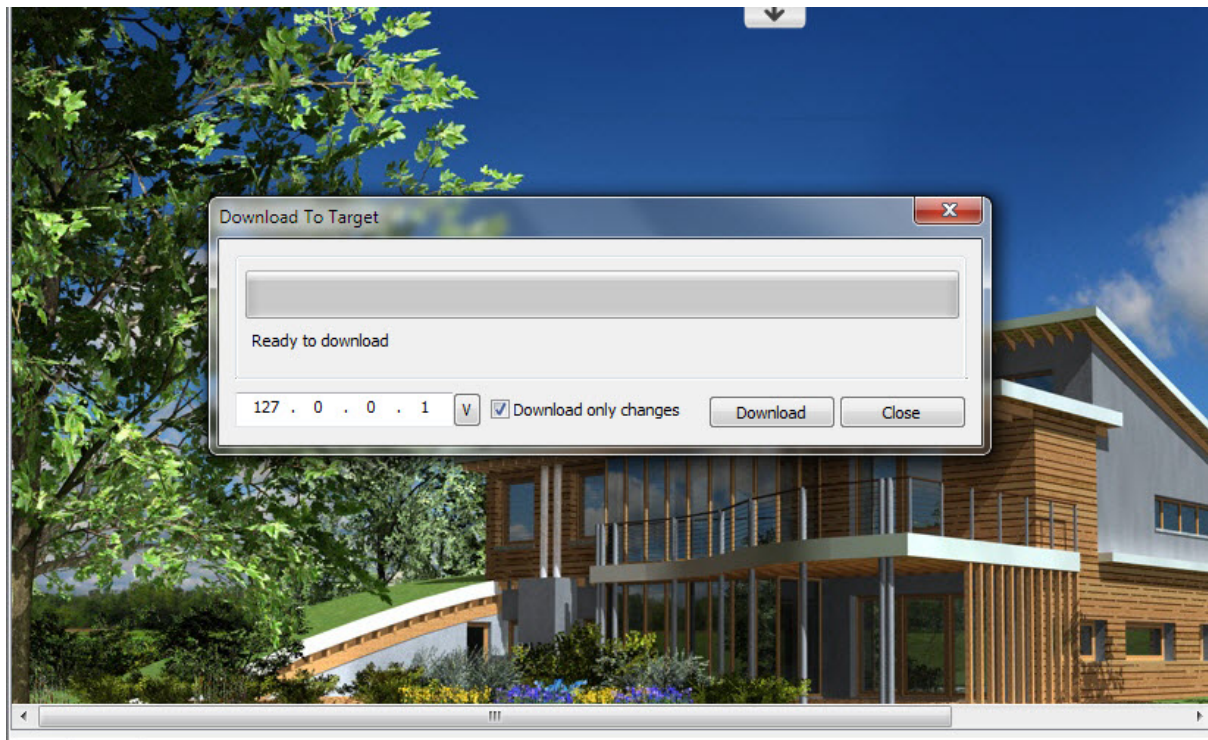


Figure 11

Click on the **Download** button shown in Figure 11 to start the download process.

9 Loading VC Web Pages from Browser

After the successful download of VisuControl project to your target device your VC Web pages are ready for access.

You can open any one of the VC Web compatible browser specified in section 2.1, 2.2 or 2.3 and type the IP address of your HMI Panel or the Server in which the Runtime is running with the project loaded in it and press enter or hit any button that simulates an Enter key click in the device that you use.

You'll now see the VC Web Login page in your screen. Refer Figure 12

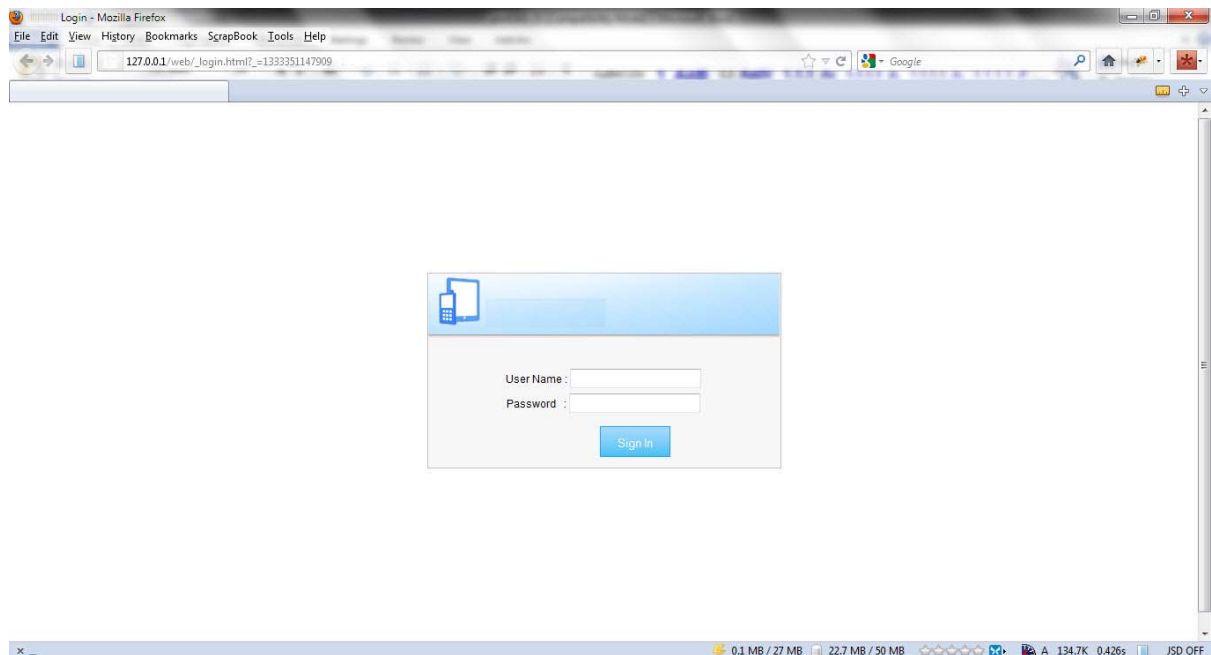


Figure 12

Figure 12 shows the login page from PC using Mozilla Firefox browser

Figure 13 shows the login page from iPad using Mobile Safari browser.

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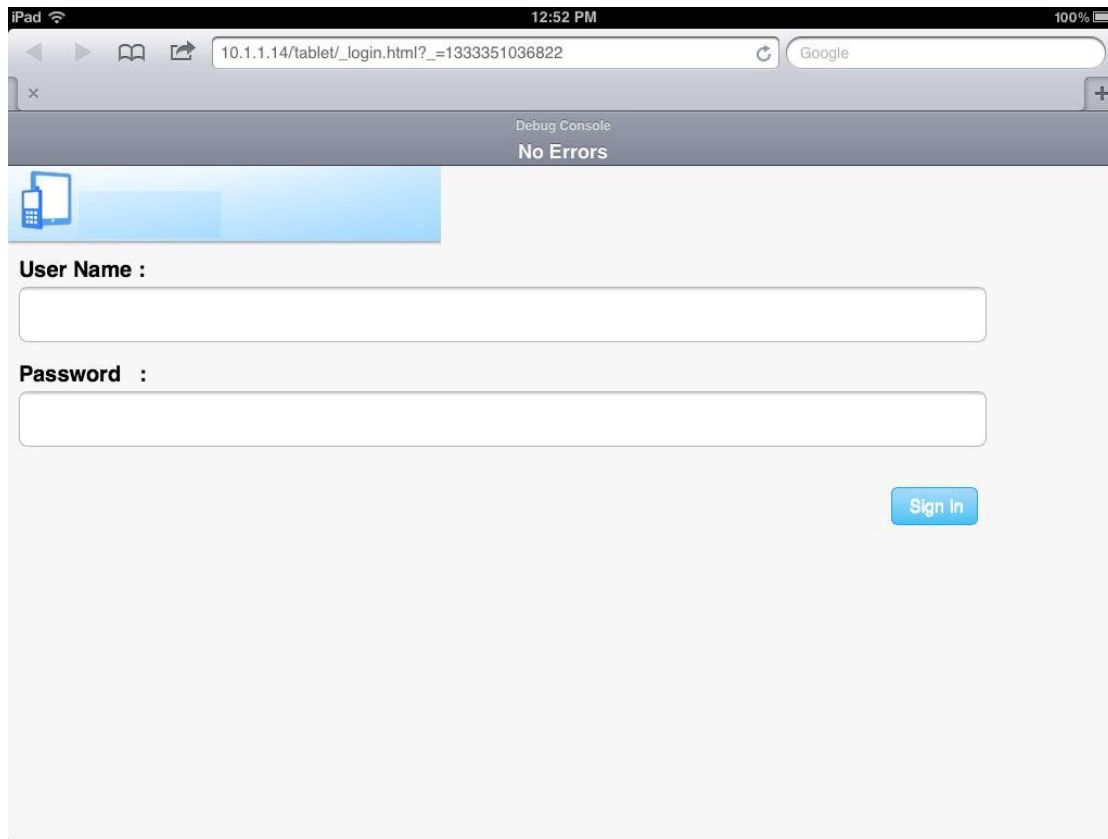


Figure 13

Enter the User name and Password and click on Sign In button or click Enter key or Tap on the key equivalent to the Enter key in touch devices.

Now you'll be redirected to the Homepage of the platform you've selected during the page export. Refer Figure 14, which shows a sample project page in VC Web



Figure 14

After you reach the Homepage of your project in VC Web you can use it the same way you do it in your HMI Panel or your target.

10 VC Web and Server Crash / Disconnection

10.1 Determine Server Crash/Disconnection in VC Web

The server that runs in the HMI panel may crash or disconnect from the network. This directly results in non-accessibility of service for VC Web as it will not be able to communicate with the server for getting data from it as well as writing the data to it.

VC Web has a provision that constantly checks whether there is any disconnection from the server. If there is a disconnection VC Web will show a toolbar on top of the VC Web page loaded in the browser with a disconnected icon in it. Refer Figure 15 in which the disconnected icon is marked using a red arrow.



Figure 15

10.2 VC Web Action Execution during Server Crash/Disconnection

Any Server bound operation will result in a failure during a Server crash/disconnection. The changes may reflect in VC Web pages but it'll have no effect in the Server as it is no longer live.

For example assume that you have some **StepTag** actions associated with some Button widgets in the page. A Server crash/disconnection has occurred and the disconnection icon is visible that shown in Figure 15. At this point you click on the button and start the **StepTag** action. The action will execute correctly and reflect the change in VC Web but the final step of this action is to write the new value to the Server, which will result in a failure as the Server is not live.

So next time server comes online the fields that are using the Server bound values in the VC Web page will be rolled back to the values from the Server.

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10.3 Restart of Server from a Crashed/Disconnected state

This will affect only if you have some VC Web page opened in your device that shows the disconnected icon at the moment.

At this state when the Server restarted your page will show a modal login dialog, refer Figure 16 – *taken from Mozilla Firefox browser*, through which you can insert the user credentials and complete the login process.

After a successful login process the current page will be shown and the disconnected icon and the toolbar will be removed from the screen.

The page will be back to the ready state on which you can perform the operation as you need.

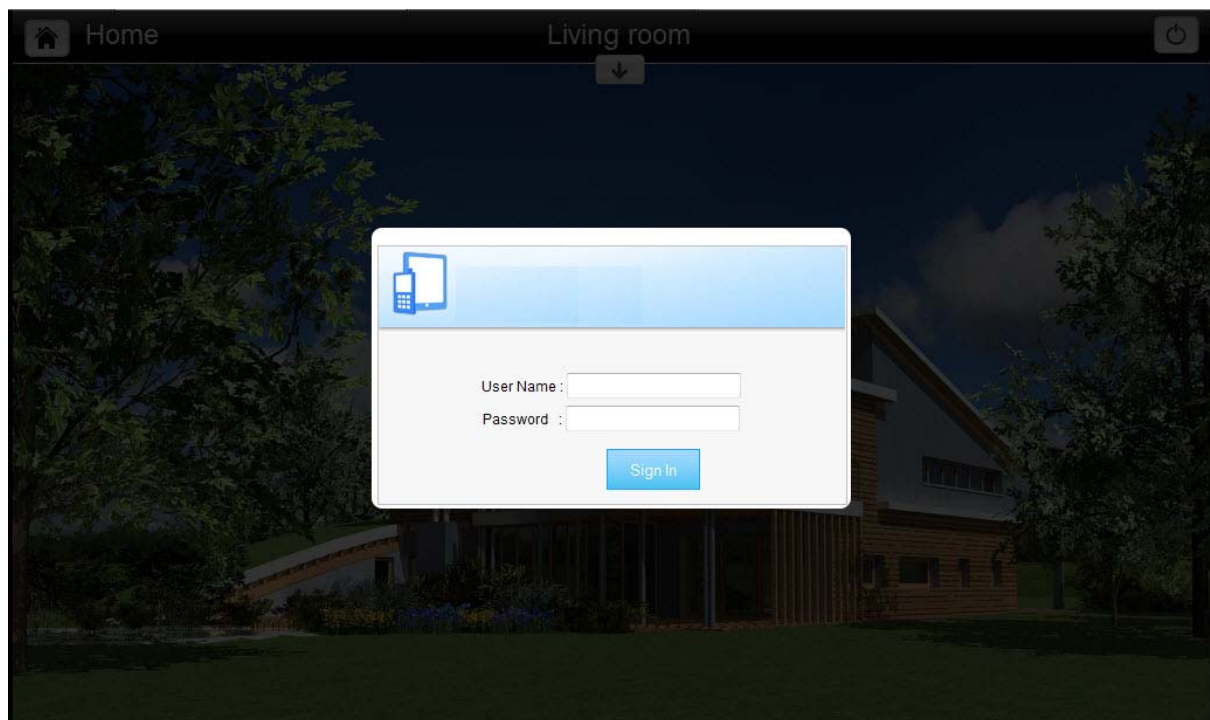


Figure 16

11 Modal Login Dialog in VC Web Page

When you work with VC Web you'll notice that at times a modal login dialog will be shown, refer Figure 17.

This will happen when any of the following condition is true

- User session timeout occur
- Explicitly removing all the browser cookies
- Removing the cookie from will result in showing this modal login dialog.

The modal login dialog will help you to perform the login process while you are in a VC Web page without going back to the initial login page.

For example if you are working with a project that has large number pages in it. Assume that you are in a middle page. You have reached here by executing **LoadPage** action lots of time using the page widget (Button). Now due to any of the above cited reason the user session timeout occurs. Now you need to perform the login if we try to go back the initial login page you may have to execute the **LoadPage** actions lot of times to get back to the current page. Modal login dialog will help you to complete your login process in a much simpler manner so that after the login process you'll remain on the current page itself without going to any other page.

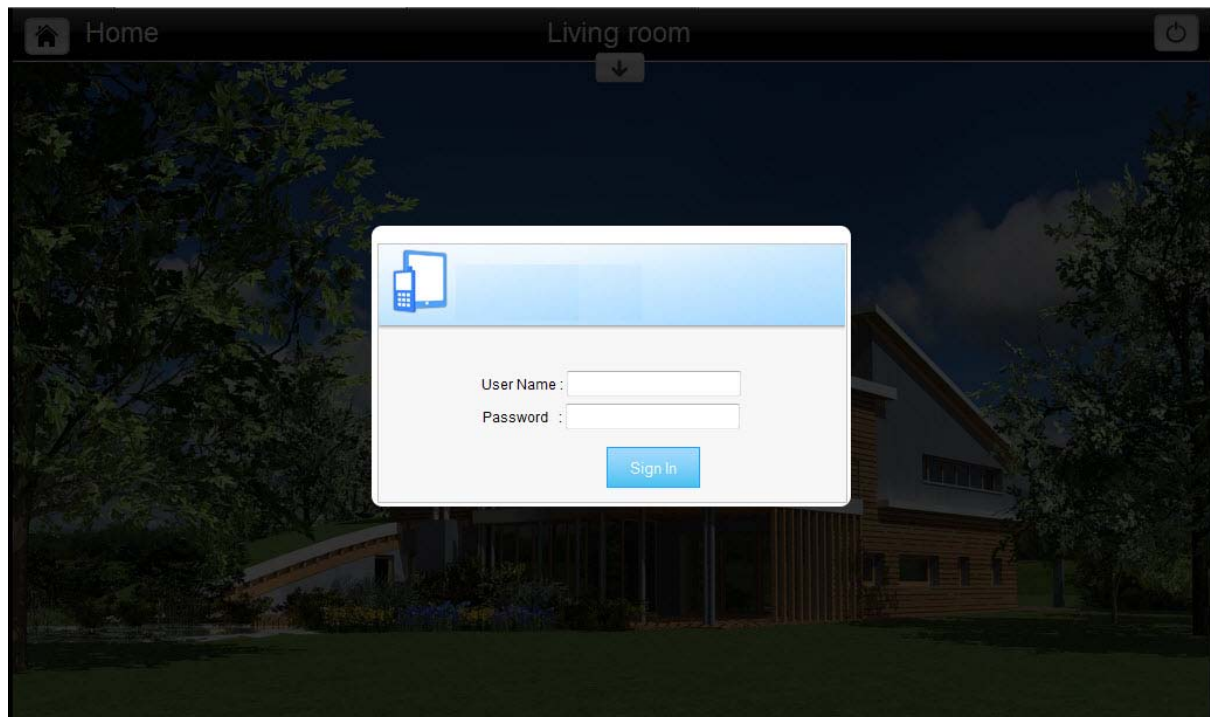


Figure 17

12 Browser Settings

12.1 Enable JavaScript

VC Web is entirely depends upon JavaScript. If your device browser has JavaScript disabled then VC Web will not work correctly.

By default browser comes with enabled JavaScript. But if you have disabled JavaScript in the past make sure you turned it on before accessing VC Web page.

12.2 Accept HTTP Cookies

In order to make VC Web work correctly in your browser, your browser should be able to accept HTTP Cookies.

If your browser can't accept cookies then change your browser settings in such a way that it can accept cookies.

By default the browsers accepts cookies and you need not change this settings unless you have made an explicit change in this setting earlier.

Section 12.1 explains how you can change your browser settings (in Windows) so that it can accept Cookies. You can skip this section if your browser accepts cookies.

12.2.1 Enable Cookies in Mozilla Firefox

- Click **Tools** -> **Options**.
- Click **Privacy** in the top panel.
- Set "**Firefox will:**" field to **Use custom settings for history**.
- Check the box next to "**Accept cookies from sites**" to enable cookies.
- Click **OK**.

12.2.2 Enable Cookies in Microsoft Internet Explorer

- Open **Control Panel**.
- Double-click the **Internet Options** icon.
- Select the **Privacy** tab.
- Click **Advanced**.
- Select "**Override automatic cookie handling**" under the "**Cookies**" section in **the Advanced Privacy Settings** window.
- Select the "**Accept**" or "**Prompt**" option under "**First-party Cookies**".
- Select the "**Accept**" or "**Prompt**" option under "**Third-party Cookies**." (If you select the "**Prompt**" option, you'll be asked for approval every time a website attempts to send you a cookie.)
- In the **Internet Options** window, click **OK** to exit.

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12.2.3 Enable Cookies in Google Chrome

- Click the **Tools** icon near the address bar.
- Select **Settings**.
- Click the **Under the Hood** tab.
- Click **Content settings** in the "**Privacy**" section.
- Select **Allow local data to be set** to allow both first-party and third-party cookies. If you only want to accept first-party cookies, check the box next to "**Block all third-party cookies without exception.**"

12.2.4 Enable Cookies in Apple Safari

- Go to the **Edit** drop-down menu.
- Select **Preferences**.
- Click **Privacy** in the top panel.
- In **Block cookies** section Select the first radio button with value, '**From third parties and advertisers**'. This means to reject cookies from advertisers and from "third parties"—websites other than those you open. This might help prevent certain advertisers from storing cookies on your computer.