

Customizing the cPanel User Interface

Who Am I?

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I am the manager for the User Interface department at cPanel and an active developer on one of the scrum teams adding features to the product. I've worked at cPanel almost 5 years and have been an influencer and maintainer for x3 and have been a major contributor to the movement towards x4, the new interface we have been developing for the last year. I contributed significant work on recent changes to the product including the improved HTML Editor in 11.40, improvements to the SSL interfaces, various released of the x4 alpha plugin, and changes to the WHM interface in 11.36 and 11.34.

I have been developing software and leading software teams for 15 years. And have been programming since I was 8 years old. I live and breathe computers, programming, usability, user experience, and design.

Tutorial:

This is a tutorial covers how to do make various customizations to the cPanel front-end. They extend from very basic to advanced usage patterns.

IMPORTANT: Do not perform these actions on a production account since some of these steps will leave the account in a weird state and your customer will see it. Create a test account as you are building out your various customizations and then deploy them to the production accounts only when you have completed your changes and tested them.

How to create a reseller to work through these examples?

For these exercises, we are going to work as a reseller. Many of the customizations can be applied to the whole server as well, but we will be working as a reseller so we can use the tools built into cPanel.

1. Login to whm
 - a. User: root
 - b. Password: cpanel1

2. Search for Create Account
3. Fill in the required fields.
4. Check the **Make the account a reseller.**
5. Log in to this account.

How to create a custom branding package for cPanel?

1. Log into cPanel as the reseller who has access branding customization.
2. Click on the 'Branding Editor' icon
3. Click on 'Create or Upload Branding'
4. Fill in the name.
5. Click the 'Create' button.

How to set the new branding package as your branding package?

This step is mostly for our convenience:

1. From the Branding Editor page, find the branding package you just created.
2. Click 'Apply To My Account'
3. Your account is now setup on the branding we are going to work on.
4. Right click on the 'Home' icon and open in a new tab. (So we can monitor some of our changes as we go)

How to make changes to a custom branding in place on your server?

Once you create a custom branding, there are many ways to make changes to it.

1. Use file manager to access the files.
2. Download the branding using the branding editor.
3. User FTP or WebDav to access the files.
4. Use a text editor to edit the related files.

Today we are going to stick with tools in the product as much as possible.

How to download a custom branding so you can work on it offline?

1. Click on the 'Branding Editor' icon.
2. Click on 'Download or Delete Branding'
3. Find the branding you want to download.

- a. The ones marked (Yours) are ones you create and will be available to edit for your account.
4. Click the 'Download (Yours)' link.

Note: This file will be a .tar.gz. If you are working on a Windows system you may not have a tool that can unarchive this file. Google should get you started on finding a tool.

Note: When you edit the branding files on a Windows system be sure to save your files with Linux line endings. Check with the instructions on your editor to find out how to do this.

How to upload a custom branding to the server so you can test it?

1. Log into cPanel as the reseller who has access branding customization.
2. Click on the 'Branding Editor' icon
3. Click on 'Create or Upload Branding'
4. In the second section, click the 'Browse...' button.
5. Select the archive from your local file system.

NOTE: All the files must be located in the root of the archive. Files in sub-directories will be ignored.

NOTE: If your branding archive was created by the system, it will have the correct layout described.

How to add your own logo to cPanel?

1. Click the 'Edit this Style' link on the branding you want to edit.
2. Click the 'Edit Logos' link.
3. The logo editor shows you the available logos. The editor shows the following three logos.
These are used for various scenarios depending on how you cPanel is deployed:
 - a. top-logo - ???
 - b. top-logo_opt – used on non vps deployments.
 - c. top-logo_vps2 – used on vps deployments.

Note: The branding system supports logos in any of the following formats:

- jpg
- gif
- png

How to move your?

The logo editor provides two ways to change the position and size of your logo.

1. Navigate to the 'Edit Logos' page.
2. The most obvious one in the interface is by changing the CSS manually.
 - a. Click the CSS [edit] link.
 - b. In the code editor, change the top, left, width and height as desired.
 - c. **DO NOT REMOVE ANY OF THE CSS SELECTORS** as that may break the header for your branding.
 - d. You can add other attributes here to modify the logo, such as a border, outline, padding, and margin.

NOTE: the Icon Editor page does not show your customization outside of the top, left, width and height attributes.

- e. Click the 'Save CSS' button to save your changes.
3. The second way to modify the position and size of your logo is the hidden gem on this page. Just put your mouse on the actual header icon.
 - a. To resize, use the resize square on each side and corner of the icon box.
 - b. To move, hold down the left mouse button while over the middle of the icon. Drag the icon to the new position and release the left mouse button.

NOTE: If you had made any additional CSS changes to the logo CSS, those changes will be lost using this technique.

How can you change an icon for an application in cPanel?

1. Click the 'Edit Icons' link.
2. You will see a screen with all the icons available on your system.
3. To change one or more:
 - a. Find the icon you want to change.
 - b. Click the 'Browse...' button.
 - c. Select the file you want to use from the disk on your workstation. [We currently only support uploading from your local system at this time. If the icon is already on your server, please retrieve it to your local workstation using File Manager or FTP or Web Disk access.]
4. Once you have selected all the icons you want to change, click the 'Upload Images' button.
5. **NOTE:** Icons need to be 32 x 32 jpg images.
6. Once you have made all the changes you want, click the Generate Sprites button to make these available to users of this branding package.

How to make changes to the header and footer for you branding?

1. Click the 'Edit Icons' link.
2. This screen shows you the images related to the various header and footer background images.
3. To change one or more:
 - a. Find the image you want to change.
 - b. Click the 'Browse...' button.
 - c. Select the file you want to use from the disk on your workstation.

NOTE: We currently only support uploading from your local system at this time. If the icon is already on your server, please retrieve it to your local workstation using File Manager or FTP or Web Disk access.

4. Once you have selected all the images you want to change, click the 'Upload Images' button.
5. Once you have made all the changes you want, click the Generate Sprites button to make these available to users of this branding package.

How to make changes to various other UI elements?

1. Click the 'Edit UI Images' link.
2. This screen shows you the images related to the parts of the User Interface, including many of the buttons in the system, some form validation related and others. This is a grab bag of everything else we let you manage the images for.
3. To change one or more:
 - a. Find the image you want to change.
 - b. Click the 'Browse...' button.
 - c. Select the file you want to use from the disk on your workstation. [We currently only support uploading from your local system at this time. If the icon is already on your server, please retrieve it to your local workstation using File Manager or FTP or Web Disk access.]
4. Once you have selected all the images you want to change, click the 'Upload Images' button.
5. Once you have made all the changes you want, click the Generate Sprites button to make these available to users of this branding package.

How to show off your branding package to your users (Preview)?

Once you have completed all the changes you want to make to a branding package, the final step is to create a preview image of your branding. This is displayed on the users "Style" page. To setup the preview:

1. Install the custom branding on an account.
2. Login to that account.
3. Use some software to take a screen shot of the home page.

4. You may need to further edit the screen shot using other software. Previews need to be in two sizes, the full screen size (685 px by ?) and the thumbnail size (200 px by ?).
5. Now in cPanel, Click the 'Edit this Style' link on the branding you want to edit.
6. Click the 'Edit UI Images' link.
7. This screen shows you the preview images for your branding package:
 - a. preview - The full size preview image of the branding, double click a style to set this.
 - b. preview-sm – The smaller size used in the 'Styles' grid.
8. To change one or more:
 - a. Find the image you want to change.
 - b. Click the 'Browse...' button.
 - c. Select the file you want to use from the disk on your workstation. [We currently only support uploading from your local system at this time. If the icon is already on your server, please retrieve it to your local workstation using File Manager or FTP or Web Disk access.]
9. Once you have selected all the images you want to change, click the 'Upload Images' button.

How do you change the cPanel home page? [INTERMEDIATE]

Pros:

1. You can do a lot more with this technique than with the icon adjustment.
2. You can effect larger scale layout changes to the available pages.

Cons:

1. To make these changes you must understand HTML and CSS.
2. It is possible to break the home page pretty bad if you do this wrong.
3. If you change this page, users on this branding package will not get updates for the home page during product updates. You must manually update the page with changes.

Steps:

1. Click the 'Edit Html Pages' link.
2. Find the file called:
 - a. index.html - its Description is Entry Page
3. Click the 'Edit' button.
4. You will see the markup for the index page in the Code Editor.

Trick: The editor can be expanded so it's easier to work with:

- a. With the mouse, hover over the lower right corner of the editor.
- b. Click the left mouse button.
- c. The editor changes to an outline.
- d. Drag the corner out so you can see the text better.
- e. Click the left mouse button again to return to editor mode.

5. You will see a lot of html markup intermixed with cpanels proprietary markup. [<cpane ...> <?cp> tags] Be very cautious about removing or change and of these custom tags.

How to add an additional style sheet to the home page? [INTERMEDIATE]

1. Create your additional style sheet use file manage to: cpanelbranding/x3/<branding> in the resellers home directory. (morecss.css)
2. Add a branding include tag to retrieve this file:

```
<cpanel Branding="include(morecss.css,1,1)">
```

3. Click the 'Save' button.
4. Refresh a child account's home page.

How to add a message to the top of the home page? [INTERMEDIATE]

1. Find the part of the page where you want to post your custom content. (We will try ours at the top of the home page after the header.)

TRICK: Finding interesting locations using the browsers developer tools

2. Insert some markup in the editor:

```
<div><b>Important Message:</b> Servers going down in 15  
minutes</div>
```

3. Click the 'Save' button.
4. Refresh the account's home page tab.
5. Now let us setup some formatting for the message. Go back to the code editor where you have morecss.css.
6. Add the following:

```
.important_message {  
    margin-left: auto;  
    margin-right: auto;  
    width: 50%;  
}
```

7. Save the CSS changes.
8. Refresh a child account's home page.

How do I add a conditional section of html on the home page?

Note: There are many variables you may use to change the behavior of the home page. Just scan through the code for index.html. You can make the page dependent on these variables, on existing NVData (personalization)

<http://docs.cpanel.net/twiki/bin/view/SoftwareDevelopmentKit/ExpVarRef>

For this exercise, we are going to add a special message for users that use the Arabic locale.

1. Click the 'Edit Html Pages' link.
2. Find the file called:
 - a. index.html - its Description is Entry Page
3. Click the 'Edit' button.
4. You will see the markup for the index page in the Code Editor.
5. Now where we put the previous content lets add an additional block:

```
<cpanelif $locale==ar>
We are asking our Arabic speakers to help us with translation. If
you find content on the page that does not make sense, please
notify us.
</cpanelif>
```

6. Save the CSS changes.
7. Go to the home icon.
8. Select the 'Change Language' tool.
9. Change to Arabic and save your change.
10. Return to the home page, and you should see the message.

IMPORTANT NOTE: `<cpanelif>` tags cannot be nested. Attempting to nest these tags will result in strange unpredictable behavior on the cPanel home page.

How to add a custom icon group to the home page?

Have you ever thought you wanted to rearrange the icons on the cPanel home page? With a custom branding package, you can change the organization of these icons.

Steps:

The home page icons are managed by a file:

```
usr/local/cpanel/base/frontend/x3/dynamicui.conf
```

This file controls a lot of the aspects of the home page, but primarily has to do with the organization of the application icons.

1. Create a new dynamicui.conf file for your branding.


```
>> cp /usr/local/cpanel/base/frontend/x3/dynamicui.conf  
/home/<account>/cpanelbranding/x3/<branding>/dynamicui.conf
```

2. Open the file using the file managers code editor and paste in the following:

```
#####menu boxes on index####
```

```
description=>Applications,file=>group_important,group=>important,group  
desc=>Applications,grouporder=>1,imgtype=>icon,subtype=>img,height=>32  
,type=>image,width=>32
```

3. Next lets add a few icons to the group:

```
#####icons w/ links inside menu boxes####
```

```
#important
```

```
description=>$LANG{'TAddondomains'},feature=>addondomains,file=>addond  
omain,group=>important,height=>32,imgtype=>icon,itemdesc=>$LANG{'TAddo  
ndomains'},subtype=>img,type=>image,url=>addon/index.html,width=>33,it  
emorder=>2,searchtext=>$LANG{'addon-searchtxt'}
```

```
description=>$LANG{'Webmail'},if=>!$ENV{'CPRESELLER'},feature=>webmail  
,file=>webemail,group=>important,height=>32,imgtype=>icon,itemdesc=>$L  
ANG{'ASIWebmail'},subtype=>img,type=>image,url=>webmaillogin.html,widt  
h=>32,itemorder=>2,searchtext=>$LANG{'webmail-searchtxt'}
```

```
description=>$LANG{'INDEXEmailAccounts'},feature=>popaccts,file=>manage  
accounts,group=>important,height=>32,imgtype=>icon,itemdesc=>$LANG{'ME  
NUEmailAccounts'},subtype=>img,type=>image,url=>mail/pops.html,width=>  
32,itemorder=>1,searchtext=>$LANG{'pops-searchtxt'}
```

4. **IMPORTANT:** Add an icon to /home/<account>/cpanelbranding/x3/whois/
named group_important.jpg.

```
>> cp /usr/local/cpanel/base/frontend/x3/group_email.jpg  
/home/<account>/cpanelbranding/x3/<branding>/group_important.jpg
```

5. Refresh your home page to see the changes. There is now a section called Applications with your chosen icons.

NOTE: When you copy icons from other sections, they are removed from those other sections. Only one copy of each icon is rendered on the home page.

NOTE: The caches may be getting in the way while you are making quick changes. To clear the dynamic ui cache:

```
>> rm -rf /home/<user>/cpanel/caches/dynamicui/*
```

Reference:

<http://docs.cpanel.net/twiki/bin/view/SoftwareDevelopmentKit/AddingIconsAndGroup>

How to add news to your users?

The cPanel home page provides an area called Notices. You can add any arbitrary HTML markup in this area. To setup news, you need to log into WHM.

1. Log into WHM.
2. From the search box, type news.
3. Click 'Modify cPanel & WHM News'
4. To communicate with your cPanel users, we are going to use the section called:

cPanel News (displayed in all of your customers' cPanels):

5. Paste in any arbitrary HTML markup here:

```
Running out of disk space? We are now selling packages with more  
disk space up to 20 GB for $10 per month. Send me a email to  
request the upgrade.
```

```
<br/>
```

```
<br/>
```

```
<b>Have you met our new company mascot Moris?</b>
```

```
<div style="text-align:center; margin: 10px; padding-top: 3px;  
padding-bottom: 3px"></div>
```

```
<div>
```

```
He hunts, he fetches, he meows. When your visiting our offices  
next time, stop by an say hello to Moris.
```

```
</div>
```

How to create a custom theme? [Advanced]

A custom theme is the ultimate UI customization available.

Pros:

- You can change any of the front-end behavior of the application.

Cons:

- You do not get maintenance updates to the front end code for your custom theme. (The built in themes front end code will continue to be updated, but yours will not.)
- You should consider themes as a new application build on top of the cPanel infrastructure.
- You must do all the code maintenance work on your custom theme.
- As the core system evolves, you do not get the new features added to cPanel and there is even the possibility the certain features will break as you upgrade your system. [We try to publish information about these kinds of breaking changes, but do not publish tools to automatically fix your custom themes.]

Why:

Why would you use this technique? The primary reason to use this technique is that you have some very specific custom requirements for the cPanel application and the only way to get your feature into the product is to modify a large number of the existing pages.

How:

1. Log into WHM.
2. Select Universal Theme Manager from the left menu.
3. Click cPanel Manage Themes
4. Click the clone icon next to the theme you want to clone. (Probably x3)
5. Type the name of the new theme.
6. Click the 'Submit' button.
7. Click 'Go Back'
8. Your theme should now be listed in the 'cPanel Themes' list.
9. Now that you have a custom theme, you can proceed with several approaches:
 - a. If you have root shell access to the server, you can ssh into the box and start modifying the theme directly. It will be located at:

`/usr/local/cpanel/base/frontend/<name>`

- b. Use the download/upload tools provided on the page and edit your theme on your workstation.

What does it mean if you get `/unprotected/broken.gif` for an image in your custom branding?

The branding system will look for resources using a system of fallback directories:

1. Current Users Reseller branding images folder.

2. Current Themes branding images folder.
3. Current Themes root images folder.

If the image requested cannot be found in any of these folders, the branding system will return the image:

`/unprotected/broken.gif`

How to make updates to pages easier do with system updates? [DRAFT]

When you start making HTML customization to a branding, some parts of the system may get updated in new releases, but your brandings will not be updated. This is a procedure to help identify the changes you made to the initial branding copy.

1. Log onto your server as root via a shell.
2. Locate the branding directory of the reseller you want to monitor branding changes. On my system:

`/home/<account>/cpanelbranding`

3. Find the specific branding we want to monitor.

`/home/<account>/cpanelbranding/<name>`

4. Setup a git repository for that folder

```
>> cd /home/account/cpanelbranding/custom_branding
>>git init
>> git add *
```

5. Now as you make changes to the folder, git will help identify the changes you have made.
6. As you make changes to the branding, make small commits.

```
>> git add -u -v
>> git commit -m "Describe your change set"
```

7. Now when these files are updated you can create a patch from this copy, revert your changes, replace the original files with the changed files, and then reapply your patch.
8. Git is a complicate developer tool. For more information on its use, you can read more about git here:

<http://git-scm.com/documentation>

What other topics would you like to see in the future?

Questions?