Parallels H-Sphere 3.6.3 Customization Guide

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Contents

CHAPTER 1

Preface

In this chapter:

Typographical Conventions

Before you start using this guide, it is important to understand the documentation conventions used in it.

The following kinds of formatting in the text identify special information.

Formatting convention	Type of Information	Example
Special Bold	Items you must select, such as menu options, command buttons, or items in a list.	Go to the **System** tab.
	Titles of chapters, sections, and subsections.	Read the **Basic Administration** chapter.
Italics	Used to emphasize the importance of a point, to introduce a term or to designate a command line placeholder, which is to be replaced with a real name or value.	The system supports the so called *wildcard character* search.
`Monospace`	The names of commands, files, directories, and domain names.	The license file is located in the `http://docs/common/licenses` directory.

`Preformatted`	On-screen computer output in your command-line sessions; source code in XML, C++, or other programming languages.	`# ls -al /files` `total 14470`
`Preformatted Bold`	What you type, contrasted with on-screen computer output.	**`# cd /root/rpms/php`**
CAPITALS	Names of keys on the keyboard.	SHIFT, CTRL, ALT
KEY+KEY	Key combinations for which the user must press and hold down one key and then press another.	CTRL+P, ALT+F4

Feedback

If you have found a mistake in this guide, or if you have suggestions or ideas on how to improve this guide, please send your feedback using the online form at http://www.parallels.com/en/support/usersdoc/. Please include in your report the guide's title, chapter and section titles, and the fragment of text in which you have found an error.

CHAPTER 2

Introduction To Parallels H-Sphere Customization

There are the following tiers of Parallels H-Sphere control panel customization:

- **Basic interface settings** can be configured through the control panel. The **Look and Feel** menu allows to set skins and colors, images and icons, and some interface texts.
- **Advanced interface customization** is what goes beyond the scope of the Control Panel settings. It is performed on the Parallels H-Sphere CP server by designers and programmers with administrative rights, in order to create or modify Parallels H-Sphere interface elements.
- **Parallels H-Sphere Packages (.hsp)** are installable addons that extend H-Sphere functionality. This is a way to share custom elements between Parallels H-Sphere installations. Third parties can use it to develop and distribute packages that add new or extend/override standard Parallels H-Sphere functionality. Documentation on building packages is introduced in *Parallels H-Sphere Developer Guide*.

This Customization Guide explains how to customize the following Parallels H-Sphere elements:

Customizable Elements	Description
Templates	Design and control patterns for dynamic HTML generation. They are to be modified if you need to restructure the layout of certain pages of the Control Panel interface, or to change the look of the Control Panel header and footer.
System E-Mail Notifications	A special type of templates used to generate standard email notifications sent by Parallels H-Sphere.
Context Help	A special type of templates to generate context help for certain elements of the Control Panel interface.
GUI Texts	Standard messages and labels that appear on the interface pages are placed in the special configuration files and may be set for different languages.
Localization	Adding new languages to the interface and modifying language files with interface texts in different languages.
CP Menu	Generating and modifying control panel menus and submenus and adding external links to the menu.
GUI Design (Skins And Icon	Parallels H-Sphere interface design has a broader meaning than just configuration of certain color

Sets)	schemes and the corresponding icon sets, what is called the skin. It also determines the set of skins available for this design, specifies the sets of icons in the Quick Access page and enables to override the standard settings with the custom ones.
CP Crons	Parallels H-Sphere utilities regularily executed on the Control Panel server.
Plan Wizards	Custom plan wizards defined and configured in XML documents.
Merchant Gateways	The media for making real-time payments with online credit card processing centers automatically from the CP.
Web Payment Systems	The media for making payments manually from the web interface of the payment systems.
Signup Forms	Generating custom signup forms to sign up users aside from the standard signup procedure provided in Parallels H-Sphere, as well as modifying the standard signup pages.

Warning:
1. Advanced customization may produce unpredictable results after updating Parallels H-Sphere, since updates affect the template structure and the page generation.
2. Advanced customization performed by Parallels H-Sphere customers is done at their own risk and is not supported by the Parallels.

CHAPTER 3

Template Customization

This section explains how to customize Parallels H-Sphere templates.

In this chapter:

Understanding Parallels H-Sphere Templates

What Are Templates

Parallels H-Sphere templates lay behind the Parallels H-Sphere Control Panel Web interface. For the most part, templates are written using Freemarker Java processing language for dynamic content generation.

Location of Templates

Template root directory

Parallels H-Sphere template root directory is by default `~cpanel/shiva/shiva-templates`. It is set by the `TEMPLATE_PATH` parameter in the `~cpanel/shiva/psoft_config/hsphere.properties` file:

```
TEMPLATE_PATH = /hsphere/local/home/cpanel/shiva/shiva-templates/
```

Default (common) design directory

Design, or *skin*, is the Control Panel GUI representation. Each design is defined by its own sets of templates, images, CSS styles, JavaScripts, etc. The most important part of GUI, templates, are placed in separate subdirectories of the template root directory in accordance with a design they belong to. The special *common* subdirectory is used to store templates that are the same for different designs. Also, this directory contains templates for the *Left Menu* design which is the default Parallels H-Sphere design. The path to this directory, relative to `TEMPLATE_PATH`, is set in hsphere.properties:

```
DEFAULT_TEMPLATES = common/
```

Important: Common template directory must always exist!

Custom template directory

Custom template directory is usually `~cpanel/shiva/custom/templates`. Its location is set in `hsphere.properties`:

```
USER_TEMPLATE_PATH=/hsphere/local/home/cpanel/shiva/custom/templates/
```

Custom templates directory structure should correspond with the default template root directory (`shiva-templates`) tree. However, you should be aware that templates in the custom template directory override the corresponding templates in the default template directory, thus all modifications and new features in existing default templates coming with new Parallels H-Sphere releases would be also overriden by custom templates. Therefore, only customized templates should be placed to your custom template directory.

System E-Mail Notification Templates

System email notifications templates are used to generate standard Parallels H-Sphere e-mail messages sent to customers or to admins on certain events related to account management, billing, and the like. It is made possible to edit these messages directly from Control Panel, in plain text or HTML and for each of the available languages, without the need of customizing the default templates.

E-mail templates are located in the `~cpanel/shiva/shiva-templates/common/mail` directory and have `.txt` extension. See the list of the system e-mail templates (on page 21).

Skeletons

Skeleton templates, or *skeletons*, are special templates designed to generate user default sites for newly created domains in corresponding domain subdirectories of user home directories. Skeleton templates are written in HTML (without Freemarker instructions) and located in the `/hsphere/shared/skel` directory. See how to modify default skeletons (on page 19).

Web Interface Templates

Templates for generating Control Panel interface pages are of the following types:

- main templates
- control templates
- submit templates
- function templates
- special purpose templates
- context help page templates

Main Templates

Main, **or** *basic*, *templates* are templates for generating the entire Web page in CP. The code of a main template represents a framework that contains calls of functions (on page 21) for generation of the page header, menu and footer, and includes control templates for processing forms.

Main templates are `.html` files located in the `~cpanel/shiva/shiva-templates/`***<design>***`/` directories for each design (on page 21).

Control Templates

Contol templates, or *controls*, are responsible for generation and management of forms in the *working area* of Parallels H-Sphere interface. They represent the part of HTML code included in the main templates.

Control templates are with or without *form field validation mechanism* implemented:

- **Client-side form validation:** `.html.in` templates provide client-side form validation. They need to be compiled to apply changes made in them. The corresponding .html templates are generated as the result of compilation of `.html.in` templates of the same name. Thus, if there is a pair of `.html` and `.html.in` templates with the same name, it is recommended to modify the `.html.in` template and then to recompile it. Read more about compiling templates with client-side validation (on page 18).

- **No field validation mechanism** is implemented in `.html` templates that do not have the initial `.html.in` templates of the same name. Changes in `.html` templates take effect immediately.

Control templates are located in the `~cpanel/shiva/shiva-templates/`***<design>***`/control` directories for each group of main templates.

Control templates assign submit templates that do not have visual HTML representation and serve solely to process form submits.

Submit Templates

Submit templates do not have visual representation. They contain instructions to be performed upon the form submit. These templates provide *server-side validation* of submitted data and scenarios of subsequent actions if submit is successful or if an error occurs. Submit template files have `.sbm` extension.

Function Templates

These templates contain collections of *functions* (or *macros*) used in other templates, for example, for drawing menu, footer and header.

- `~cpanel/shiva/shiva-templates/common/functions` - generic macro collection, Does not depend on designs.
- `~cpanel/shiva/shiva-templates/`***<design>***`/menu.fn` - functions for drawing menu for a particular design.
- `~cpanel/shiva/shiva-templates/`***<design>***`/design.fn` - functions for drawing interface elements for a particular design (implemented for *common* and *XPressia/XPressia Lite* designs)
- `~cpanel/shiva/shiva-templates/`***<design>***`/extra.fn` - extra functions.
- `~cpanel/shiva/shiva-templates/common/control/signup_function.html` - functions for signup templates.

Templates For Special Purposes

There are some Web interface templates that do not fall into any of the above mentioned categories. They are designed for special tasks such as to draw a menu on the left, or the page header or footer, or login page, etc. Some special purpose templates are located in the `~cpanel/shiva/shiva-templates/`***<design>***`/design/` directory, some like `signup_top.html.in` or `signup_bottom.html` in the `~cpanel/shiva/shiva-templates/`***<design>***`/signup` directory. There is no general classification for such templates.

Context Help Templates

Context help templates are special templates for generating online help message in popup windows. Each context help template has its topic header and body. They can be modified as usual Parallels H-Sphere templates.

Online help files are located in the `~cpanel/shiva/shiva-templates/common/online_help` directory. They have `.oh` extension and contain the text in HTML format. See the instructions how to add context help pages to Parallels H-Sphere interface (on page 19). Also read about context help in different languages (on page 65).

Designs

Design, or *skin*, is the Control Panel GUI representation. It provides a different look of menu (left menu or dropdown menu on the top, or no menu present at all), CSS styles, colors and images, and the **Quick Access** page with icon links to different CP pages.

These are basic Parallels H-Sphere designs whose templates are located in the corresponding design template directories of `~cpanel/shiva/shiva-templates` (referred to as **<*design*>** in the document):

- **common** - the left-menu design (**Left Menu** in CP). All core templates are made for this design scheme. Other templates that do not depend on design, inlcuding online help templates (on page 11) and system e-mail notification templates (on page 11), are also located there.
- **nomenu** - the design with no left menu (**No Menu** in CP). It is turned on as the default user design after the Parallels H-Sphere installation.
- **text_based** is the alternative look of the **No Menu** design (**Text-Based** in CP) where only captions with no icons are provided in the **Quick Access** menu page.
- **xcp** - the **XPressia** design with dropdown menus, extensive use of CSS styles and other advancements.
- **xcpl** - the **XPressia Lite** design, a simpler and faster implementation of XPressia.
- **reloaded** - the XP Reloaded design introduced in H-Sphere 3.0.

If a certain template is not found for a particular design, Parallels H-Sphere gets that template in the `common` directory.

The default design configuration file `design_config.xml` is located in the `~cpanel/shiva/psoft/hsphere/` directory.

Replacements

Replacements are templates that override basic templates for particular plans. Replacements' root directory for each design is the `~cpanel/shiva/shiva-templates/<design>/replacements` directory. Replacements are located in separate subdirectories specified in *plan settings* as the *Template Directory* parameter, relative to the `replacement` directory.

Parallels H-Sphere first searches for a template in the `<design>/replacements/<plan>` directory which has the same structure as the `<design>` directory. If the template is not found, it starts to look for it in the `<design>` directory. Read more about template lookup sequence (on page 11).

Template Directory Structure

- `~cpanel/shiva/shiva-templates/`**<*design*>** - template directory for one of the Parallels H-Sphere basic designs.
- `~cpanel/shiva/shiva-templates/common/JS` - JavaScript functions (used for all designs)
- `~cpanel/shiva/shiva-templates/`**<*design*>**`/design` - contains templates for special purposes such as login page, password reminder page, header and footer templates and the like.
- `~cpanel/shiva/shiva-templates/`**<*design*>**`/CSS` - CSS styles for a design.

- ~cpanel/shiva/shiva-templates/***<design>***/***<subdir>*** - main templates are placed into separate subdirectories, according to their tasks, e.g., admin, billing, MSSQL, etc.
- ~cpanel/shiva/shiva-templates/***<design>***/control/***<subdir>*** - corresponding control templates.
- ~cpanel/shiva/shiva-templates/***<design>***/submit/***<subdir>*** - corresponding submit templates.
- ~cpanel/shiva/shiva-templates/***<design>***/replacements/ - template replacements for different types of plans.
- ~cpanel/shiva/shiva-templates/***<design>***/replacements/***<plan>***/***<subdir>*** - template replacements overriding templates in corresponding subdirectories for that design. directory.
- ~cpanel/shiva/shiva-templates/***<design>***/replacements/control/***<resources>*** - control templates for corresponding replacements.
- ~cpanel/shiva/shiva-templates/***<design>***/replacements/submit/<resources> - submit templates for corresponding replacements.

Template Lookup Sequence

1. Parallels H-Sphere searches for a template of a particular design first in the custom template directory in replacements, then, if the template is not found there, it proceeds to the corresponding default template directory:

   ~cpanel/shiva/custom/templates/***<design>***/replacements/

   ~cpanel/shiva/shiva-templates/***<design>***/replacements/

2. If the template is not found in replacements, Parallels H-Sphere searches in the design directory, first in among the custom templates, then amonng the corresponding default templates:

   ~cpanel/shiva/custom/templates/***<design>***/

   ~cpanel/shiva/shiva-templates/***<design>***/

3. If the template is not found for this design, the search continues in the same sequence in the common design template directory:

   ~cpanel/shiva/custom/templates/common/replacements/

   ~cpanel/shiva/shiva-templates/common/replacements/

   ~cpanel/shiva/custom/templates/common/

   ~cpanel/shiva/shiva-templates/common/

Customizing Templates Step by Step

This document will guide you through the generic step-by-step instruction on customizing templates. This implies you are already familiar with the concept of templates (on page 11) in Parallels H-Sphere.

It is possible to create and install *packages* of templates. Read more about template packages in *Developer Guide*.

Pre-Cautions

1. Advanced customization may produce unpredictable results after updating Parallels H-Sphere, since updates affect the template structure and the page generation.
2. Advanced customization performed by Parallels H-Sphere customers is done at their own risk and is not supported by the PSoft team.
3. **Template customization affects ALL Parallels H-Sphere accounts, regardless of their plans!**

   In terms of Parallels H-Sphere customization, only two types of accounts are customized, regardless of plans: *admin* accounts which are Parallels H-Sphere administrative accounts, and *user* accounts - all other accounts. Reseller accounts are regarded as user accounts, except for the reseller administrative account which relates to the admin account type.

Pre-Requisites

- Before you do any customization, log into CP server under root as the cpanel (on page 130) user.
- Make sure templates have the `cpanel:cpanel` ownership. Mind, however, that images, CSS and JavaScript files and directories have `cpanel:httpdcp` ownership and you **must not** change their ownership to `cpanel:cpanel`. Parallels H-Sphere updater checks and automatically sets correct ownership and permissions on respective default and custom files and directories (this does not refer to Parallels H-Sphere packages).

  Note: We don't recommend changing manually the ownership and permissions of default templates!
- The `make` directive which is performed to rebuild `*.html` templates should be run ONLY under cpanel.
- Do not use **whitespaces** in the template filenames!
- **Do not make any changes to the default templates**, because:
  1. You may need them to restore the original setup;
  2. You will lose all your changes with the next upgrade.

  Instead, follow the step-by-step instructions specified below.

Step-By-Step Template Customization Procedure

1. On the CP server, log in as the cpanel (on page 130) user.
2. In the ~cpanel/shiva/ directory, create the custom template directory custom/templates/ if it doesn't exist.
3. In the ~cpanel/shiva/psoft_config/hsphere.properties file, find the USER_TEMPLATE_PATH parameter. Here, the full to your custom template directory must be specified:

   ```
   USER_TEMPLATE_PATH=/hsphere/local/home/cpanel/shiva/custom/templates/
   ```

   The directory name must end with a slash. Don't do anything if the directory name is already there.

   Warning: Don't change the TEMPLATE_PATH variable in hsphere.properties! TEMPLATE_PATH points to the *default* template directory. If you change it, you won't see any updates in the default templates.
4. Copy the templates you would like to customize into shiva/custom/templates/, preserving their file paths relative to this directory.

   For instance, if you are going to customize the ~cpanel/shiva/shiva-templates/***path_to_template/FILE***,
   copy it to ~cpanel/shiva/custom/templates/***path_to_template/FILE***.

   The original configuration can be restored without server restart by simply deleting your custom files from the custom template directory.

   Warning: Don't copy the *whole* directory content! Your custom templates will override the default templates and you won't see the new features and bugfixes that come with new versions!
5. Modify the templates you have copied to the ~cpanel/shiva/custom/templates/ directory.

   The following documents will be helpful:

   - Interface Controls and Colors (on page 40)
   - Skin and Icon Set Customization (on page 31)
   - Edit Interface Texts (on page 57)

   Important:

   1. We don't recommend inserting the interface text directly into the templates. Use text labels defined in language bundles (on page 55) to ensure multilingual support.
   2. Parallels H-Sphere uses the Unicode (UTF-8) charset for all languages. Therefore, text directly inserted into templates (i.e., not by means of text labels defined in language bundles) **must be** in the UTF-8 encoding.
6. Restart Parallels H-Sphere (on page 130).

Compiling Templates With Client-Side Form Validation

There are two types of templates that are responsible for generating Control Panel web content:

- `*.html.in` templates with client-side form validation that require compilation before modifications in them would take effect, and
- `*.html` templates that provide server-side form validation and don't need to be recompiled after their modification.

This document provides step-by-step instructions on how to compile control panel templates with the client-side validation of HTML form input fields.

➢ *To compile templates with client-side form validation:*

1. Log into the control panel server as the `cpanel (on page 130)` user.

   To implement customization correctly, all template files and directories should have the `cpanel:cpanel` ownership.

2. Check settings in `~cpanel/shiva/psoft_config/hsphere.properties`:

   1. Check the `TEMPLATE_PATH` parameter. It should point to the default template directory. Default setting is:

   ```
   TEMPLATE_PATH = /hsphere/local/home/cpanel/shiva/shiva-templates/
   ```

   2. Uncomment the `USER_TEMPLATE_PATH` parameter and set it to your custom templates directory, for example:

   ```
   USER_TEMPLATE_PATH = /hsphere/local/home/cpanel/shiva/custom/templates/
   ```

   3. Check the JS (JavaScripts) and IMAGES parameters:

   ```
   JS =
   IMAGES =
   ```

   By default, `JS` and `IMAGES` are left blank. It means that javascripts and images are placed inside each design directory (on page 11). You don't need to change these parameters if you have default system settings.

3. Go to the default templates directory (DocumentRoot, `~cpanel/shiva/shiva-templates` by default). Check parameters in the configure file:

   - `SHIVA_ROOT` - Parallels H-Sphere Control Panel's root directory (`~cpanel/shiva` by default)
   - `HSPHERE_PROPERTIES` - path to the `hsphere.properties` file.

4. Run `./configure` in the `templates` directory. This will create `Makefile`'s for all of designs.

Warning: Running `./configure clean` would remove *ALL* the compiled templates in the nested directories and delete *ALL* `Makefile`'s created by the previous configure execution! After that, your control panel interface would not show up correctly!

5. To compile all modified templates, run `make` or `make all` in your default templates directory (`gmake` for FreeBSD). If you need just to modify one template, run make from the directory where this template is located.

Warning: Running the make clean command from a certain template directory would clear all the compiled template files (`*.html`) in the nested directories! After that, your control panel interface would not show up correctly!

Customizing Skeleton Templates

When an end-user adds a new domain, the system generates initial web site based on skeleton templates. Skeleton templates are written in HTML. Unlike FreeMarker templates (on page 10), Skeleton templates are customized right in the directory they are located.

➢ *To modify Skeleton templates:*

1. Log in as the `cpanel (on page 130)` user.
2. Enter the Skeleton template directory:
   ```
   cd /hsphere/shared/skel
   ```
3. Customize the template files directly according to your needs.

Please only pay attention that with each automatic upgrade of web boxes, all the customizations get lost. So, after performing the customization, backup the templates into a safe location to get them back working after performing box upgrades.

Adding Context Help Pages

Context help (or *online help*) is implemented through special templates, each with a topic header and a body. Context help files are located in the `/hsphere/local/home/cpanel/shiva/shiva-templates/common/online_help` directory. They have `.oh` extension and contain text in HTML format. Context help may be implemented in different languages (on page 65).

➢ *To add a new context help page to Parallels H-Sphere interface:*

1. Log into the CP server as the cpanel (on page 130) user.
2. Create an online help file and put it anywhere inside `~cpanel/shiva/shiva-templates/common/online_help/`. You can create new subdirectories for your files where necessary.

3. In `~cpanel/shiva/psoft/hsphere/online_help.xml`, add an **id/file** correspondence, where **file** is the path and filename of the context help file, and **id** is the string that will be used in the template.
4. Find the template where the context help icon will be added. The easiest way to find the name of the template is to view html page source code. The templates you need are located in `~cpanel/shiva/shiva-templates/common/control/`. More about templates (on page 11)
5. Add context help function call to the template. The function call has the following syntax:

   ```
   <call draw_help("HELP_ID","LABEL")>
   ```

   where ***HELP_ID*** is the id of the file specified in `~cpanel/shiva/psoft/hsphere/online_help.xml`, and ***LABEL*** is the description used as the title in the html link.

   If the second parameter is left empty, the default text ("`Click to get help`") is used. For example:

   ```
   <call draw_help("admin-emanager-l_availableforsignup","")>
   ```

   Alternatively, you can call the function that draws help PLUS gives a link to send a trouble ticket:

   ```
   <call draw_tt_help("RESOURCE_ID", "HELP_ID", "LABEL")>
   ```
6. In plan creation and edit wizard templates, context help file IDs are passed with resource calls:

   ```
   <call service(TAG,PARENT,STRMOD,CAN_ENABLED,OH_ID)>
   ```

   where ***OH_ID*** is the id of the file specified in `~cpanel/shiva/psoft/hsphere/online_help.xml`. For example:

   ```
   <call service("asp", "hosting","","1","admin-editwizard-
   w_asp")>
   ```
7. If the edited template is in `*.html.in` format, run `make` in this template's directory.
8. Restart Parallels H-Sphere (on page 130).

System E-Mail Templates

System e-mail notifications are messages Parallels H-Sphere automatically sends to customers.

It is possible to edit system emails in the admin CP interface, in the **Settings/Notifications/E-Mail Notifications** menu (see *Parallels H-Sphere Administrator Guide* for details). Both default messages and messages in each interface language can be customized there. Custom modifications are stored in the Parallels H-Sphere database and do not affect the system email templates. On the contrary, default settings can be restored from the templates.

This document explains where to find the default system email templates and how to customize them.

Note: Support info and checks info is modified in the **Settings -> Look and Feel -> Misc.Text** menu by filling in the **Customer Support Info** and **Checks Info** forms.

Important: It is strongly recommended not to touch the default system email templates; instead, you should edit notifications in the administrator's Control Panel to be able to restore default texts from the templates.

Here is the list of default templates for system email messages (located in the `~cpanel/shiva/shiva-templates/common/mail/` directory) that can be customized via CP interface:

Template	Filename	Notification Sent
Welcome Letter	`new_account.txt`	to customer on account activation
Welcome Letter for Moderated Accounts	`new_account_moderated.txt`	to customer on moderated check account registration (accounts waiting activation)
Welcome Letter For Moderated Account with CC	`new_account_moderated_cc.txt`	to customer on moderated credit card registration
Welcome Letter For Moderated Trial Account	`trial_moderated.txt`	to customer on moderated trial account registration
Trial Registration	`trial_account.txt`	to customer on account trial period expiration

Invoice	invoice.txt	to customer: - on each paid operation - at the beginning of the next billing period - on switching to another billing period
Money Back	money_back.txt	to admin when a user chooses to cancel hosting and wants his/her money back
Overlimit Notification	overlimit.txt	to customers when they reach traffic or disk usage limit
Account Suspended Notification	suspended_account.txt	to customers when their accounts get suspended
Account Resumed Notification	resumed_account.txt	to customers when their accounts get suspended
Accounting Error letter	accounting_error.txt	to admin on accounting error
Lost Password	forgot_passwd.txt	to customers after they enter their email address on the “forgot your password” page
Failed Signup Notification	you_have_files_signups.txt	to admin when customer signup fails
Domain Transfer Message	tranfer_domain.txt	to customers explaining how to transfer an external domain
Internal Ticket	ticket_internal.txt	to admin in case of internal problems
Shell Access Notificaton	ssh_notification.txt	to the customer when Shell Access is granted or refused (disabled)
Welcome Letter (Tax Exemption)	new_account_tax_exemption.txt	to new customers awaiting approval of their Tax Exemption Codes

Tax Exemption Approved Notification (Moderated Accounts)	`tax_exemption_approved_new.txt`	to new customers signed up to tax exemption plan, awaiting moderation
Tax Exemption Rejected Notification (Moderated Accounts)	`tax_exemption_rejected_new.txt`	to new customers signed up to tax exemption plan, on failing to verify tax exemption data
Tax Exemption Approved Notification (Live Accounts)	`tax_exemption_approved.txt`	to customers on tax exemption approval
Tax Exemption Rejected Notification (Live Accounts)	`tax_exemption_rejected.txt`	to customers on failing to verify tax exemption data

Below is the list of templates for standard texts sent as **mass mail**. Messages in these templates cannot be customized via Parallels H-Sphere interface:

Template	Filename	Notification Sent
Welcome Letter	`welcome.txt`	optionally from mass mail
User login and password	`login_psw.txt`	optionally from mass mail
User balance	`balance.txt`	optionally from mass mail

Customizing User Signup

This document explains how to modify standard user signup (order) forms or replace them with custom forms.

Before you begin signup customization, please note the following:

- The default signup forms contain validation scripts. It is recommended that your custom signup forms also provide a client side validation mechanism (on page 18).
- When Parallels H-Sphere server-side validation rejects user data, the user is redirected to the error page generated based on the template `~cpanel/shiva/shiva-templates/common/signup/end.html`, which has the look and feel of the standard Parallels H-Sphere interface and links to the STANDARD Parallels H-Sphere signup forms. Normally, you would want to customize this template to ensure that:
  - it has the look and feel of your custom signup forms,
  - it gives a way to go back to the signup forms, then modify and re-submit the signup data.
- The template has been written in FreeMarker, and in order to make changes to its code, please become familiar with the FreeMarker technology, the documentation available at http://freemarker.org. The way you customize the page will totally depend on how you organize your signup forms.
- Custom signup fields must match those in the default signup. If more fields are added in newer versions, you will need to update your custom forms.

Your signup script has to put the collected data into the html fields below and submit them to the following URL:

```
<form name="login" action="psoft.hsphere.CP" method="POST">
```

or

```
<form name="login"
action="protocol://cp.domain.name:PORT/psoft/servlet/psoft.hs
phere.CP" method="POST">.
```

For example:

```
<form name="login"
action="http://www.psoft.net:8080/psoft/servlet/psoft.hsphere
.CP" method="POST">
```

Note: `psoft.hsphere.CP` is case sensitive!

Some signup texts can be customized through the control panel from **Look And Feel -> Signup Texts**. If you have customized texts through the control panel, they will override the texts in your custom signup forms, so you may need to remove them.

Signup fields:

- Basic (service fields required for signup)
- User Contact Info
- Billing Info (not used for trial registration)
- Credit Cards
- Billing Period

- Domains
- Domain Registration
- Domain Regisration Contact Info

Basic (service fields required for signup)

Field name	Possible Values	Explanation
_eul_accept	"1"	Accept terms of End User License Agreement
_mod	▪ **"signup"** - transfer domain, ▪ **"opensrs"** - domain registration, ▪ **"nodomain"** - stopgap domain, ▪ **"3ldomain"** - third level domain, ▪ **"service"** - service domain, ▪ **"empty"** - signup without domain	Signup mode
action	"signup"	Service parameter
plan_id	numeric	Number of the plan for signup
signup	"yes"	Service parameter
login	alphanumeric	user login
password	alphanumeric	user password
password2	alphanumeric	Confirm user password
template_name	"submit/signup/end.sbm" ("submit/signup/end_osrs.sbm" for Domain registration)	The so-called submit template located in the ~cpanel/shiva/shiva-templates/common directory and used to perform server-side form validation.
admin_signup	"yes" - if we sign user up from the admin panel	Service parameter

User Contact Info

Field name	Possible Values	Explanation
_ci_first_name	alphanumeric	User's first name
_ci_last_name	alphanumeric	User's last name
_ci_address1	alphanumeric	User's address 1
_ci_address2	alphanumeric	User's address 2
_ci_city	alphanumeric	User's city of residence
_ci_company	alphanumeric	User's company name
_ci_country	alphanumeric	User's country code
_ci_email	alphanumeric	User's contact e-mail address
_ci_phone	numeric	User's phone number

_ci_postal_code	numeric	User's zip code
_ci_state	e.g.: "NY"; "NA" for non US or Canada residents.	User's state code. In the custom form for non US or Canada residents, you should add this field as hidden.
_ci_state2	alphanumeric	User's state or province for non US and Canada residents. Should be present in the custom form only in case _ci_state='NA'.
_promo_code	alphanumeric	PROMO code for subsidized plan. Contains 2-20 chars and starts from the letter.

Billing Info (not used for trial registration)

Field name	Possible Values	Explanation
_bi_first_name	alphanumeric	User's first name
_bi_last_name	alphanumeric	User's last name
_bi_address1	alphanumeric	User's address 1
_bi_address2	alphanumeric	User's address 2
_bi_city	alphanumeric	User's city of residence
_bi_company	alphanumeric	User's company name
_bi_country	alphanumeric	User's country code
_bi_email	alphanumeric	User's contact e-mail address
_bi_phone	numeric	User's phone number
_bi_postal_code	numeric	User's zip code
_bi_state	e.g.: "NY"; "NA" for non US or Canada residents.	User's state code. In the custom form for non US or Canada residents, you should add this field as hidden.
_bi_state2	alphanumeric	User's state or province for non US or Canada residents. Should be present in the custom form only in case _bi_state='NA'.
_bi_type	▪ **"CC"** - credit card, ▪ **"Check"** - check or bank transfer, ▪ **"PayPal"** - PayPal, ▪ **"2CheckOut"** - 2CheckOut, ▪ **"TRIAL"**	Payment type

Credit Cards

Field name	Possible Values	Explanation
_bi_cc_name	alphanumeric	Credit card name
_bi_cc_number	numeric	Credit Card number

_bi_cc_type	strings available in the Merchant Gateway Manager: “VISA”, “MC”, etc.	Credit Card type
_bi_cc_exp_month	two digits	the month of Credit Card expiry date
_bi_cc_exp_year	four digits	the year of Credit Card expiry date

Below are the fields for Solo/Switch debit cards used in some countries:

Field name	Possible Values	Explanation
_bi_cc_issues_no	alphanumeric	Issue number
_bi_cc_start_month	two digits	Card Start Month
_bi_cc_start_year	four digits	Card Start Year

Billing Period

Field name	Possible Values	Explanation
_bp	0 or a positive integer	Sequence number of the billing period in the list of billing periods for the selected plan. To see the list of the billing periods, go to your control panel, click the Settings link for this plan and scroll down to the Billing configuration section.

Domains

Field name	Possible Values	Explanation
type_domain	▪ **“transfer_new_misc_domain”** - transfer domain without registrar changes ▪ **“domain_transfer”** - transfer domain with registrar changes ▪ **“without_domain”** - stopgap domain ▪ **“3ldomain”** - third level domain ▪ **“service_domain”** - service domain ▪ **“empty_domain”** - signup without domain ▪ **“new_opensrs_domain”** - register new domain	Type of new domain
_mod	▪ **“signup”** - transfer domain without registrar changes ▪ **“dtransfer”** - transfer domain with registrar changes. It accepts the same fields as OpenSRS registration except the period field and extra contact/billing info for domain registration. ▪ **“nodomain”** - stopgap domain ▪ **“3ldomain”** - third level domain ▪ **“service”** - service domain ▪ **“empty”** - signup without domain ▪ **“opensrs”** - register new domain	Domain registration mode.

domain_name	alphanumeric	Domain name; may be omitted if type_domain="empty_domain"

Domain Registration

Field name	Possible Values	Explanation
period	numeric	Registrar's periods (years)
_srs_owner_first_name	alphanumeric	User's first name
_srs_owner_last_name	alphanumeric	User's last name
_srs_owner_address1	alphanumeric	User's address 1
_srs_owner_address2	alphanumeric	User's address 2
_srs_owner_city	alphanumeric	User's city of residence
_srs_owner_org_name	alphanumeric	User's company name
_srs_owner_country	alphanumeric	User's country code
_srs_owner_email	alphanumeric	User's contact e-mail address
_srs_owner_phone	numeric	User's phone number
_srs_owner_postal_code	numeric	User's zip code
_srs_owner_state	e.g.: "NY"; "NA" for non US or Canada residents.	User's state code. In the custom form for non US or Canada residents, you should add this field as hidden.
_srs_owner_state2	alphanumeric	User's state or province for non US or Canada residents. Should be present in the custom form only in case _srs_owner_state='NA'.

Domain Registration Contact Info

Field name	Possible Values	Explanation
_srs_billing_first_name	alphanumeric	User's first name
_srs_billing_last_name	alphanumeric	User's last name
_srs_billing_address1	alphanumeric	User's address 1
_srs_billing_address2	alphanumeric	User's address 2
_srs_billing_city	alphanumeric	User's city of residence
_srs_billing_org_name	alphanumeric	User's company name
_srs_billing_country	alphanumeric	User's country code
_srs_billing_email	alphanumeric	User's contact e-mail address
_srs_billing_phone	numeric	User's phone number
_srs_billing_postal_code	numeric	User's zip code

_srs_billing_state	e.g.: “NY”; “NA” for non US or Canada residents.	User’s state code. In the custom form for non US or Canada residents, you should add this field as hidden.
_srs_billing_state2	alphanumeric	User’s state or province for non US or Canada residents. Should be present in the custom form only in case _srs_billing_state='NA'.

CHAPTER 4

Design Customization

This chapter explains how to customize graphic elements of the Parallels H-Sphere Web interface.

In this chapter:

Skin And Icon Set Customization

Parallels H-Sphere interface design has a broader meaning than just configuration of certain color schemes and the corresponding icon sets, what is called the skin. It also determines the set of skins available for this design, specifies the sets of icons in the **Quick Access** page and enables to override the standard settings with the custom ones.

To provide multiple design support, Parallels H-Sphere uses the `design_config.xml` file, which can be found in the `/hsphere/local/home/cpanel/shiva/psoft/hsphere/` directory. Its structure is explained in the Design XML Configuration (on page 34) guide.

The current document shows you how to customize this file to add your own designs, color schemes, colors and images. For this, you need to:

1. customize `design_config.xml`
2. implement custom design templates

Design XML Customization

A designer should have access to the Parallels H-Sphere server as the `cpanel` user. To implement customization correctly, all template files and directories should have `cpanel:cpanel` ownership. In version 2.5 and up templates, images, CSS and JavaScript files and directories must have `cpanel:httpdcp` ownership.

Important: We don't recommend you to modify the default `~cpanel/shiva/psoft/hsphere/design_config.xml` file. These modifications will be lost with the next Parallels H-Sphere updates.

There are the following ways of customizing design XML configuration:

➢ *With packages*

You can customize `design_config.xml` by means of packages. In this case, within a package you create custom XML file that will be merged with default XML configuration (on page 68).

➢ *Merging custom XML configuration*

Instead of creating a package, create a custom XML configuration file to be merged with the default XML configuration (on page 68) and a custom package XML if installed.

➢ *Overrriding default XML configuration with custom XML configuration*

1. You create the custom design configuration file and perform modifications there:
2. Login to the CP server as the cpanel (on page 130) user under root.
3. Copy the standard `design_config.xml` file to a certain custom directory (it may be `~cpanel/shiva/custom/xml`):

```
cp ~cpanel/shiva/psoft/hsphere/design_config.xml
~cpanel/shiva/custom/xml/design_config.xml
```

4. Make changes into the custom `design_config.xml` structure (on page 34).
5. In ~cpanel/shiva/psoft_config/hsphere.properties, change the `DESIGN_SCHEME_CONFIG` variable to point to this new file:

```
DESIGN_SCHEME_CONFIG =
/hsphere/local/home/cpanel/shiva/custom/xml/design_config.xml
```

Implementation of Custom Design Templates

Custom design templates are created in the `~cpanel/shiva/custom/templates` custom template directory. In order to implement these custom designs, the symlinks to them should be put into the Apache DocumentRoot directory which is set by default to the `~cpanel/shiva/shiva-templates` standard templates directory.

However, on the subsequent Parallels H-Sphere update all symlinks in `~cpanel/shiva/shiva-templates` would be lost, and custom designs would not be displayed correctly.

To avoid this, we suggest to use another directory as DocumentRoot and to create there the symlinks to **ALL** design directories, for both custom designs and the Parallels H-Sphere built-in designs.

Warning: Don't change the `TEMPLATE_PATH` variable in `hsphere.properties`! `TEMPLATE_PATH` points to the default template directory. If you change it, you won't see any updates in the default templates.

---

1. Log into the CP server as the cpanel (on page 130) user.
2. Create the `~cpanel/shiva/web` directory.
3. Create the symlinks to the design directories using the `ln -s` command.

   You should have something similar to this:

```
$ pwd
/hsphere/local/home/cpanel/shiva/web
$ ls -la
```

```
...

lrwxrwxrwx 1 cpanel cpanel 55 Jun 4 08:55 common ->
/hsphere/local/home/cpanel/shiva/shiva-templates/common
lrwxrwxrwx 1 cpanel cpanel 46 Jun 2 13:39 counter ->
/hsphere/shared/SiteStudio/public_html/counter
lrwxrwxrwx 1 cpanel cpanel 47 Jun 2 13:39 custom-images ->
/hsphere/local/home/cpanel/shiva/custom/images/
lrwxrwxrwx 1 cpanel cpanel 50 Jun 2 13:39 custom-templates ->
/hsphere/local/home/cpanel/shiva/custom-templates/
lrwxrwxrwx 1 cpanel cpanel 48 Jun 2 13:40 guestbook ->
/hsphere/shared/SiteStudio/public_html/guestbook
lrwxrwxrwx 1 cpanel cpanel 55 Jun 2 13:42 IMAGES ->
/hsphere/local/home/cpanel/shiva/shiva-templates/IMAGES
lrwxrwxrwx 1 cpanel cpanel 46 Jun 2 13:40 masonry ->
/hsphere/shared/SiteStudio/public_html/masonry
lrwxrwxrwx 1 cpanel cpanel 55 Jun 4 08:55 nomenu ->
/hsphere/local/home/cpanel/shiva/shiva-templates/nomenu
lrwxrwxrwx 1 cpanel cpanel 43 Jun 2 13:40 poll ->
/hsphere/shared/SiteStudio/public_html/poll
lrwxrwxrwx 1 cpanel cpanel 48 Jun 2 13:41 shiva-templates ->
/hsphere/local/home/cpanel/shiva/shiva-templates
lrwxrwxrwx 1 cpanel cpanel 59 Jun 4 08:55 text_based ->
/hsphere/local/home/cpanel/shiva/shiva-templates/text_based
lrwxrwxrwx 1 cpanel cpanel 62 Jun 2 15:19 YourDesign1 ->
/hsphere/local/home/cpanel/shiva/custom/templates/YourDesign1
lrwxrwxrwx 1 cpanel cpanel 62 Jun 2 15:19 YourDesign2 ->
/hsphere/local/home/cpanel/shiva/custom/templates/YourDesign2
```

Here, the `counter`, `guestbook`, `masonry`, and `poll` directories are Parallels SiteStudio-related directories; `YourDesign1` and `YourDesign2` are custom design directories.

4. Make the `~cpanel/shiva/web` directory in the DocumentRoot directory. To do this, in the `~cpanel/apache/etc/httpd.conf` Apache configuration file change the DocumentRoot global definition line:

```
DocumentRoot "/hsphere/local/home/cpanel/shiva/shiva-
templates"
```

to the following line:

```
DocumentRoot "/hsphere/local/home/cpanel/shiva/web"
```

Then, delete all other instances of the DocumentRoot definition (for virtual hosts) in this file. Also, delete all DocumentRoot definitions in all configuration files located in the `~cpanel/apache/etc/sites` directory.

4. Logout from cpanel back to root and restart Parallels H-Sphere (on page 130).

Design XML Configuration

Parallels H-Sphere design configuration is represented in the `design_config.xml` file, which can be found by default in the `/hsphere/local/home/cpanel/shiva/psoft/hsphere/` directory. You can customize (on page 31) this XML configuration to add your own designs, color schemes, colors and images.

This document explains all important parts of the design configuration file, including:

- Icons
- Skill Icon Groups
- Icon Image Sets
- Common Images
- Color Types
- Designs (Skins)

Important:
1) Do not make changes into the default XML configuration file! Instead, follow instructions on design.xml customization (on page 31).
2) Changing design XML configuration implies proper knowledge of XML. Errors in XML structure may badly damage your Control Panel interface.

Icons

By *icon* we mean an Parallels H-Sphere control that provides quick access to a certain functional page of the control panel. All Parallels H-Sphere icons are displayed only on the **Quick Access** page, which is based on the `quick/quick_view.html` template.

icon

An icon description includes the following:

- **id** - the mnemonic system name of the icon
- **url_param** - typically, the name of the base template for the functional page this icon links to. Multiple url parameters are separated with the `&` delimiter
- **rtype** - the list of Parallels H-Sphere resource types whose availability determines whether the icon will be drawn. It may include simple resource types separated by semicolons and commas in the following way:
  - `res1` - simple resource type, icon will appear if the resource is available;
  - `res1, res2, res3` - group of resources where all of them must be available to show an icon (operation 'AND');
  - `res1; res2; res3` - icon will be shown if any of the resources is available (operation 'OR'). Example: `rtype="webalizer; modlogan; urchin"`
  - `res1,res2; res3,res4; res5,res6` - combination of groups where an icon will be shown if any of the groups: `res1,res2` or `res3,res4` or `res5,res6` includes both available resources. If translated to C or Java, this would mean `(res1 & res2) || (res3 & res4) || (res5 & res6)`

- **platform** - operating system (`unix|win2k`) on which plans using this icon are based. If `platform=unix` or `platform=win2k`, this means that the icon is displayed for Unix-based or Windows-based plans, respectively. If the platform attribute is left empty, the icon is available for all plans.
- **label** - mnemonic id of the caption under the icon image. It must be defined in the `hsphere_lang.properties` file
- **tip** - mnemonic id of the HTML tooltip of the icon. It must be defined in the `hsphere_lang.properties` file
- **help** - reserved for future use.

One icon can have many visual representations. This means that it will have a different look depending on which icon image set was selected by the user. You can specify which icon image sets will be available for each individual design, for example:

```
<allowed_icon_image_sets>
<set id="wooden"/>
<set id="square_set"/>
<set id="cartoon_set"/>
<set id="bubble_set"/>
</allowed_icon_image_sets>
```

Skill Icon Groups

In terms of the Parallels H-Sphere interface visual settings, only two types of accounts are customized, regardless of plans:

- `admin` accounts which are Parallels H-Sphere administrative accounts,
- `user` accounts - all other accounts.

Reseller accounts are regarded as user accounts, except for the reseller administrative account which relates to the admin account type.

Skill icon groups determine the structure of the icon groups in the **Quick Access** page for these two types of accounts and are defined as follows:

```
<skill_icon_sets account_type="account_type">
<skill_set id="standard"
label="icon_skill_set.standard_account_type_l">
<icon group id="group_id" label="icongroups.group_id">
<icon id="icon_id1"/>
    . . .
</icon_group>
 . . .
</skill_set>
<skill_set id="advanced"
label="icon_skill_set.advanced_account_type_l">
<icon group id="group_id" label="icongroups.group_id">
<icon id="icon_id1"/>
          . . .
</icon_group>
 . . .
</skill_set>
<skill_set id="simplified"
label="icon_skill_set.simplified_account_type_l">
<icon group id="group_id" label="icongroups.group_id">
<icon id="icon_id1"/>
```

```
    . . .
</icon_group>
 . . .
</skill_set>
</skill_icon_sets>
```

Account types:

- `admin` for admin accounts
- `user` for user accounts.

Skill set ids are of the following types:

- `standard` for the common (left menu) interface.
- `advanced` for the 'no menu' interface.
- `simplified` skill set may be chosen for any of the two types of accounts.

Icon groups are defined within the `skill_set` element structure. The icon group `id` attribute corresponds to menu groups, such as Info, FTP, mail, etc., and is a mnemonic identifier of the icon group (`mail`, `admin_mail`, and the like).

`icon_group` construction enlists the set of icons which are displayed in this icon group. Each icon is defined in the `icons` construction described above in the previous section.

Icon Image Sets

By *icon image set* we mean the set of icons corresponding to a certain Parallels H-Sphere color scheme:

```
<icon_image_sets base_dir="/IMAGES">
<icon_image_set id="image_set_id" label="iconsets.image_set_id"
dir="relative_image_set_dir">
<preview_image file="/IMAGES/previews/icons_default.gif"
width="375" height="60"/>
<image id="icon_id" file="filename_with_relative_path" width="xx"
height="yy"/>
    . . .
</icon_image_set>
  . . .
</icon_image_sets>
```

- **base_dir** attribute defines the directory where the Parallels H-Sphere images, both standard and custom, are to be stored. Typically, it is the `IMAGES` directory in the Apache document root directory (usually, `~cpanel/shiva/shiva-templates`).

Note: The base image directory is actually relative to the alternative directory for images which is located in the document root. This directory is set in the `IMAGES` variable in the `hsphere.properties` file. If it is not set there, `base_dir` contains the path relative to the document root.

icon_image_set

The `icon_image_set` element sets the list of images corresponding to a color scheme.

Attributes:

- **id** attribute refers to mnemonic name of the color scheme. It is **default** for the default color scheme; **cocoa**, **bubble** and some other schemes go with Parallels H-Sphere installation, while others may be created manually.
- **dir** is the path relative to the **base_dir** directory. If it is empty, images are located in the base images directory.

preview_image

The `preview_image` tag refers to the preview image appeared in the Parallels H-Sphere Look and Feel interface when choosing the available design. The following attributes are determined for the preview image:

- **file** - filename and path to the preview image relative to the document root directory.
- **width**, **height** - image width and height.
- **image** - image description tag.

Please keep in mind that the image should be set for EACH color scheme. In order to add a new image, first, add the image definition to the `icons` tag, and then add `image` elements with the same `id` attribute to EACH `icon_image_set` element.

The following attributes should be set:

- **id** attribute value refers to the icon described in the **icons** section.
- **file** is the image filename with the path relative to the icon image set subdirectory of the image set basic directory.
  For example, if `base_dir="/IMAGES"` and `dir="wooden"`, then images for wooden scheme will be located in `/IMAGES/wooden` directory. However, if `dir=""`, then, to do so that Parallels H-Sphere would find, let say, a GIF image, you should set the file attribute as `file="wooden/name_of_the_file.gif"`.
- **width**, **height** - image width and height. Unless these parameters are not changed, the user custom image would be displayed by Parallels H-Sphere with this width and height, regardless of the image size parameters.

Common Images

Common images are the set of images that have the same look in all designs, such as, arrows, bullets, home icon, etc.

The `common_images` element structure is as follows:

```
<common_images base_dir="/IMAGES/">
<image id="spacer" file="spacer.gif" width="1" height="1"/>
<image id="arrow" file="arrow.gif" width="22" height="22"/>
  . . .
</common_images>
```

- The `base_dir` attribute is defined in the same way as for the icon image sets.
- The image `id` attribute is an image mnemonic name used in templates.

Color Types

Color types comprise all possible interface entities for which colors are set: basic text, background, header, menu, error messages, etc.

The following attributes are present in the **color_type** tag:

- **id** is a mnemonic color type identifier later used in designs description;

- **label** is a mnemonic id to the caption under which this color type is configured in the CP interface.

Designs

Design, or *skin*, is a GUI representation including certain icon image sets and color schemes. The following designs are included into the default Parallels H-Sphere installation:

- **common** is the **Left Menu** design. All basic templates are made for this design scheme.
- **nomenu (No Menu)** is the design with no left menu. It is turned on as the default user design after the Parallels H-Sphere installation.

  text-based (Text-Based) is the alternative look of the **nomenu** design where only captions with no icons are provided in the **Quick Access** menu page.
- **xcp**, **xcpl** - **XPressia** and **XPressia Lite** are designs with dropdown menus.
- **reloaded (XP Reloaded)** is a left-menu design, default in Parallels H-Sphere 3.1 and up.

design

Attributes of the `design` element:

- **id** is a design mnemonic identifier: `nomenu`, `common`, `text-based`, `xcp`, `xcpl`, `reloaded`.
- **label** is a mnemonic id to the design name in the CP interface.
- **template_dir** is a directory relative to the document root directory where where template files for this design are located.
- **default_color_scheme** is the default color scheme identifier (see below, the `color_scheme` tag description).

preview_image

The `preview_image` tag defines the design preview image settings. The structure is the same as for the *icon image sets*.

colors

`The colors` element defines all available colors for this design. They are taken by default for every color scheme. Individual color settings for each color scheme could be defined in the corresponding `color_scheme` constructions (see description below).

Color `id` attribute refers to the color type identifier (see *Color types*).

base_images

`base_images` is the set of images that look the same for all color schemes in this design. The `base_images` tag structure is the same as for the *common images*.

image_sets

The `image_sets` element contains the settings for each image set enabled for this design. `base_dir` attribute points to the images directory (usually, `IMAGES`). The element includes the following tags:

- the `set_images` element contains the list of images in a standard image description which are taken by default for this design.

- the `image_set` tag contains image definitions for a color scheme to override the set_images default definitions. Here you may set an alternative directory where images for this color scheme will be searched, or modify settings so that an image will be taken from a file different from the default image file. image_set may contain image tags for images with alternative settings (for example, if the image file name is different from the default one).

Attributes:

- **id** - identifier for a color scheme (for example, default or cocoa);
- **label** - color scheme label;
- **dir** - alternative image directory relative to the base_dir directory; if it is empty the image search would be performed in the base_dir directory (usually, `IMAGES`).

  For example, if we need to change the `banner.jpg` image to `banner1.jpg` in the default color scheme so that this image would be searched in the base directory, the image tag should be inserted into the image_set construction in the following way:

```
<image_set id=”default” label=”imagesets.default” dir=””/>
<image id=”banner” file=”banner1.jpg” width=”468”
height=”60”/>
</image_set>
```

allowed_skill_icon_sets

The `allowed_skill_icon_sets` tags are used to determine a skill icon set for user and admin accounts (see *Skill icon groups*):

```
<allowed_skill_icon_sets account_type=”user”>
<set id=”standard”/>
</allowed_skill_icon_sets>
```

allowed_icon_image_sets

The `allowed_icon_image_sets` tags determine icon image sets that would be available for each account type (see *Icon sets*):

```
<allowed_icon_image_sets account_type=”admin”>
<set id=”default”/>
</allowed_icon_image_sets>
```

color_scheme

`color_scheme` sets page colors, image sets and icon image sets in this design.

Attributes:

- **id** - color scheme identifier (for example, blue_haze or default);
- **label** - color scheme label defined in hsphere.properties;
- **image_set** - image set identifier (for example, **blue_haze** or default);
- **icon_image_set** - icon image set identifier (for example, **blue_haze** or default).

The `color_scheme` element may include the `color` tags to set colors for this color scheme. If these colors are not set here, default colors would be taken from the `colors` tag definition for this design.

Example:

```
<color_scheme id=”marsh” image_set=”marsh”
icon_image_set=”marsh” label=”imagesets.marsh”>
<color id=”logo_bgcolor” value=”#C9D1CA”/>
 . . .
```

```
</color_scheme>
```

Interface Controls And Colors in Templates

This document introduces basic Freemarker functions related to interface controls (images, buttons, interface texts, etc.) and interface colors in Parallels H-Sphere templates.

To generate HTML representation of Parallels H-Sphere control panel, we use Java and Java-based FreeMarker package. Parallels H-Sphere templates contain calls to FreeMarker functions, variables, and substitutions. Due to the added support of multiple designs in user's control panel, some of the functions needed to be changed. If you are using templates that have been developed for Parallels H-Sphere earlier than 2.1, you need to bring parameters in all FreeMarker function calls in line with the following list:

Inserting HTML images:

```
<function draw_image(image_id)>
<function draw_image_width(image_id, image_width)>
<function draw_image_alt(image_id, alt_msg)>
<function draw_image_align(image_id, img_align)>
<function draw_image_align_alt(image_id, img_align, alt_msg)>
<function draw_spacer(s__width,s__height)>
```

Inserting ON/OFF buttons:

```
<function draw_state(state,toDisableURL,toEnableURL)>
<function draw_state_on(toDisableURL)>
<function draw_state_off(toEnableURL)>
<function draw_off()>
<function draw_on()>
<function draw_on_always()>
```

Inserting other control images:

```
<function draw_add(addURL, label)>
<function draw_edit(editURL, label)>
<function draw_delete(deleteURL, label)>
<function draw_change(editURL, label)>
<function draw_select(selectURL, label)>
<function draw_fix(selectURL, label)>
<function draw_setup(selectURL, label)>
<function draw_select_signup(plan)>
<function draw_select_adminsignup(plan)>
<function draw_preview(previewURL, label)>
<function draw_preview_large(previewURL, label)>
<function draw_launch(launchURL, label)>
<function draw_launch_large(launchURL, label)>
<function draw_uninstall(launchURL, label)>
<function draw_credit(jumpURL, label)>
```

```
<function draw_enlarge_credit(jumpURL, label)>
<function draw_debit(jumpURL, label)>
<function draw_set_period_begin(jumpURL, label)>
<function draw_login_account(loginURL, label)>
<function draw_suspend_account(toSuspendURL, label)>
<function draw_resume_account(toResumeURL, label)>
<function draw_delete_account(toDeleteURL, label)>
<function draw_mail_type(editURL, image_id, label)>
<function draw_mailbox_type(editURL)>
<function draw_mailforward_type(editURL)>
<function draw_mailalias_type(editURL)>
<function draw_maillist_type(editURL)>
<function draw_submit(field_name, image_id)>
<function draw_oscommerce(previewURL, label)>
<function draw_oscommerce_admin(previewURL, label)>
```

Inserting text labels/messages:

```
<function draw_colored_label(llabel,lcolor)>
<function draw_colored_label_bold(llabel,lcolor)>
<function draw_label(label)>
<function draw_label_bold(label)>
<function draw_header(header)>
<function draw_important_label(label)>
<function draw_important_header(header)>
```

Inserting basic link elements (**t** - target, **p** - picture, **a** - alt):

```
<function draw_link(url,label)>
<function draw_tlink(url,target,label)>
<function draw_plink(url, image_id)>
<function draw_palink(url, image_id, alter)>
<function draw_ptlink(url, target, image_id)>
<function draw_ptalink(url, target, image_id, alter)>
<function draw_onclick_palink(img, onClick, alt)>
```

Drawing traffic and disk usage charts:

```
<function draw_load_diagram(d_value, d_limit, d_app_percent,
d_width)>
<function draw_diagram_legend()>
```

Interface Colors

Designs in Parallels H-Sphere have customizable color schemes. To display interface elements, we use colors, each having its own id_handle. For example, `bgcolor` is the id for the background of the HTML page other than the menu and the header. Its color can be set in the **Look And Feel** menu.

To get the RGB value of the color by ***color_id***, the following syntax is used:

```
${design.color("color_id")}
```

Note: the ***color_id*** value must be replaced with an approprate handle and must be enclosed in double quotation marks.

Some colors are predefined in the `functions` file:

```
<assign LIGHT_STRIP=design.color("table_light_strip")>
<assign DARK_STRIP=design.color("table_dark_strip")>
<assign HEADER_COLOR=design.color("header_color")>
<assign ERROR_COLOR = design.color("error_color")>
<assign BG_COLOR = design.color("bgcolor")>
```

Use them as follows:

```
${BG_COLOR}
```

Adding Custom Icons

To provide multiple design support, Parallels H-Sphere uses the `design_config.xml` file, which can be found in the `/hsphere/local/home/cpanel/shiva/psoft/hsphere/` directory. Its structure is explained in the Design XML Configuration (on page 34) guide.

The current document provides an example of how to customize this file to add your own custom icons. For this, you need to:

1. Create custom design_config file in custom location that will be merged with the default XML configuration file (on page 68). Your `design_config.xml` should include only differences in relation to the original Parallels H-Sphere one.
2. As Parallels H-Sphere supports several icon sets, create an icon for each icon set and include information about this icon location into your custom design_config.xml. To do this:
   1. Declare the url and the image id that will be used for your icon:

```
<design_config>
<icons>
<icon id="custom_mail_icon"
url_param="template_name=email/custom_email.html"
rtype="" platform=""
label="quick.your_custom_mail_web_app"
tip="quick.your_custom_mail_web_app" help=""/>
</icons>
</design_config>
```

      Where:

      - The `email/custom_email.html` is a custom template from which a customer will be redirected to your url.
      - The ***quick.your_custom_mail_web_app*** label should be described in the customized `hsphere_lang.properties` file.

   2. Specify the place where the icon will be displayed. It can be included into the **Quick Access** page for the Admin Account or end user **Quick Access** page:

```
<design_config>
...
...
<skill_icon_sets account_type="user">
<skill_set id="advanced"
label="icon_skill_set.advanced_user_l">
```

```
<icon_group id=”mail” label=”icongroups.mail”>
<icon id=”custom_mail_icon”/>
</icon_group>
</skill_set>
<skill_set id=”standard”
label=”icon_skill_set.standard_user_l”>
<icon_group id=”mail” label=”icongroups.mail”>
<icon id=”custom_mail_icon”/>
</icon_group>
</skill_set>
</skill_icon_sets>
</design_config>
```

So, your icon will be included into standard and advanced **Quick Access** of the **Mail** section.

3. Describe which image will be used for each icon set. Use the custom image directory to store your new icons `/hsphere/local/home/cpanel/shiva/custom/images`:

```
<design_config>
    ...
    ...
<icon_image_sets base_dir=”/CUSTOM_IMAGES”>
<icon_image_set id=”default” label=”iconsets.default” dir=””>
<image id=”custom_mail_icon” file=”custom_mail_icon.gif”
width=”46” height=”49”/>
</icon_image_set>
<icon_image_set id=”blue_haze” label=”iconsets.blue_haze”
dir=”blue_haze”>
<image id=”custom_mail_icon” file=”custom_mail_icon.gif”
width=”46” height=”49”/>
</icon_image_set>
<icon_image_set id=”cocoa” label=”iconsets.cocoa”
dir=”pebble”>
<image id=”custom_mail_icon” file=”custom_mail_icon.gif”
width=”46” height=”49”/>
</icon_image_set>
<icon_image_set id=”marsh” label=”iconsets.marsh”
dir=”marsh”>
<image id=”custom_mail_icon” file=”custom_mail_icon.gif”
width=”46” height=”49”/>
</icon_image_set>
<icon_image_set id=”wooden” label=”quick.iconsets.wooden”
dir=”ICONS/wooden”>
<image id=”custom_mail_icon” file=”custom_mail_icon.gif”
width=”48” height=”48”/>
</icon_image_set>
<icon_image_set id=”square_set”
label=”quick.iconsets.square_set” dir=”ICONS/square_set”>
<image id=”custom_mail_icon” file=”custom_mail_icon.gif”
width=”48” height=”48”/>
</icon_image_set>
<icon_image_set id=”cartoon_set”
label=”quick.iconsets.cartoon_set” dir=”ICONS/cartoon_set”>
<image id=”custom_mail_icon” file=”custom_mail_icon.gif”
width=”48” height=”48”/>
</icon_image_set>
```

```
<icon_image_set id=”bubble_set”
label=”quick.iconsets.bubble_set” dir=”ICONS/bubble_set”>
<image id=”custom_mail_icon” file=”custom_mail_icon.gif”
width=”48” height=”48”/>
</icon_image_set>
<icon_image_set id=”xcp1_set” label=”quick.iconsets.xcp1_set”
dir=”ICONS/xcp1”>
<image id=”custom_mail_icon” file=”custom_mail_icon.png”
width=”48” height=”48”/>
</icon_image_set>
<icon image set id=”xcpl set” label=”quick.iconsets.xcpl set”
dir=”ICONS/xcp1”>
<image id=”custom_mail_icon” file=”custom_mail_icon.gif”
width=”48” height=”48”/>
</icon_image_set>
</icon_image_sets>
</design_config>
```

3. Create images for each icon set and place them into the corresponding directories. The base directory for your images is `/hsphere/local/home/cpanel/shiva/custom/images`.

CHAPTER 5

Menu Customization

Control Panel menu customization affects the following elements:

- **menu structure (on page 46):** by customizing the menu XML configuration file, you can restructure menu, add/delete menu groups and items, configure menu layouts for individual plans, add external links to menu.
- **menu texts (on page 57):** texts for menu item labels are stored in menu language bundles.
- **menu design (on page 51):** you can change the menu appearance: color, bullets, etc.

In this chapter:

Menu XML Customization

The Control Panel menu structure (on page 46) is represented in an XML file. Its default location is set in `~cpanel/shiva/psoft_config/hsphere.properties` by the `MENU_CONFIG` parameter:

```
MENU_CONFIG=/hsphere/local/home/cpanel/shiva/psoft/hsphere/menu.xml
```

You should not make changes in the default `menu.xml` file, because these changes will be lost with the next Parallels H-Sphere upgrade. Instead, you create custom XML files that either override or merge changes with default configuration.

Below are the alternative ways to customize `menu.xml`.

- **With Packages**

  You create a custom `menu.xml` file within an Parallels H-Sphere package (on page 108). After the package is installed, this custom XML configuration will be merged with default XML configuration.
- **Merging custom XML configuration**

  If you need minor modifications in menu configuration, you don't need to rebuild a package. Instead, you create a custom XML configuration (on page 46) file to be merged with the default XML configuration and a custom package XML if installed. In this case, you avoid changing the default `MENU_CONFIG` property in `hsphere.properties` and use the `CUSTOM_MENU_CONFIG` parameter to specify your custom menu.xml location.

Changing Menu Structure

Parallels H-Sphere's control panel menu structure is defined in XML file, `~cpanel/shiva/psoft/hsphere/menu.xml` by default.

This document explains how you can make changes into the XML structure in order to:

- modify menu items and groups
- configure individual menu layouts for different plans
- add external links to menu items

Location

The default location of `menu.xml` is set in `~cpanel/shiva/psoft_config/hsphere.properties`:

```
MENU_CONFIG =
/hsphere/local/home/cpanel/shiva/psoft/hsphere/menu.xml
```

Texts for menu elements are set in language bundles:

```
MENU_BUNDLE = psoft.hsphere.lang.menu
```

You should not make changes into the default `~cpanel/shiva/psoft/hsphere/menu.xml` **file!** There are several ways how to customize menu XML data correctly, and they are explained in a separate Menu XML Customization (on page 46) document.

Here in the text we refer to `menu.xml` assuming it is correctly customized according to menu.xml customization rules.

XML Structure

`menu.xml` consists of the following blocks going one after another:

1. DTD Scheme: http://hsphere.parallels.com/HSdocumentation/xmls/menu.dtd;
2. definition of menu groups (tag **<menus>**)
3. definition of menu layouts for different hosting plans (tag **<interface>**)

Here is an example of `menu.xml`: http://hsphere.parallels.com/HSdocumentation/xmls/menu.xml.

Modifying Menu Groups And Items

Groups of menu items are set within the `menus` tag. Each group is defined by a `menu` tag and comprises definitions of items in this group (`menuitem` tags), as well as inclusions of submenus (`initmenu` tags).

```
<menus>
<menu name=”SomeMenu” label=”somemenu.label”
defaultitem=”SomeMenu-Item1” tip=”somemenu.tip”>
<menuitem name=”SomeMenu-Item1” label=”somemenu.edit.label”
URL=”template1.html” resource=”” tip=”somemenu.edit.tip”/>
<menuitem name=”SomeMenu-Item2” label=”somemenu.add.label”
URL=”template2.html” resource=”” tip=”somemenu.add.tip”/>
    . . .
<initmenu name=”SomeSubmenu”>
    . . .
</menu>
. . .
<menu name=”SomeSubmenu” label=”somesubmenu.label”
defaultitem=”SomeSubmenu-Item1” tip=”somesubmenu.tip”>
<menuitem name=”SomeSubmenu-Item1”
label=”somesubmenu.item1.label”
URL=”submenu_template1.html” resource=””
tip=”somesubmenu.item1.tip”/>
    . . .
</menu>
. . .
</menus>
```

These menu groups are grouped into different menu layouts defined below in `menu.xml` within the `interface` container.

menu

Attributes of the `menu` tag:

- **name** - the name of the group.

- **label** - the mnemonic identifier of the text label for the menu group name displayed in CP. This label is set in the menu.properties bundle, for example:

  ```
  somemenu.label = Sample Menu Group
  ```

  See more about interface text bundles (on page 57).
- **defaultitem** - the name of the menu item that becomes active by default when the menu group is opened; contains the menu item name (the name attribute of the menu tag).

tip - the menu group tooltip label set in the menu.properties bundle. menuitem

Attributes of the `menuitem` tag:

- **name** - the name of the item.
- **label** - the menu item mnemonic identifier from the menu.properties bundle (see explanation above for the label attribute of the menu tag).
- **URL** - the template file the item refers to, the pathname is relative to each design directory in the template directory. Read more in Understanding Templates (on page 11) for template directory structure.
- **resource** - the resource name that must exist in the account for this item to be shown in the menu.
- **tip** - the menu item tooltip label set in menu.properties.

initmenu

Attributes of the `initmenu` tag:

- **name** - name of the menu group referred to the name attribute of the menu tag described among other menus in the menus container.

According to menu.xml customization rules (on page 46), you can do the following modifications in the structure of menu items and groups:

1. add/delete menu groups, items and submenus, and edit their attributes.
2. choose menu items to be activated by default when menu group is opened in CP.
3. restructure the order of menu items within a group.

Configuring Individual Menu Layouts For Different Hosting Plans

Each hosting plan in Parallels H-Sphere may have its own menu configuration set in `menu.xml` after the description of menu groups. Plan menu structure is set by the `menudef` tag within the `interface` container. For example:

```
<interface>
. . .
<menudef id="TestPlan">
<initmenu name="acct-pref"/>
<initmenu name="billing"/>
<initmenu name=""/>
<menuitem name="logout" label="logout.label"
URL="design/logout.html&action=logout" resource=""
tip="logout.tip"/>
</menudef>
```

```
. . .
</interface>
```

The `menudef` tags contain sets of menu groups (on page 46) and separate items in order of their appearance in Parallels H-Sphere interface. The `name` attribute of `initmenu` tags points to the name of the respective menu group defined above in `menu.xml` in the `menus` container.

The value for the **id** attribute of the `menudef` tag (***TestPlan*** in the example above) must be the same as of the **menuId** parameter in the **Plan Settings** form (the **Plans** menu, the **Settings** icon for the plan, in admin CP). Please refer to the *Plan Settings* document in the *Parallels H-Sphere Administrator Guide*.

These are default menu identifiers for the standard Parallels H-Sphere plan types:

- **unix** - Unix plan;
- **admin** - Admin plan;
- **ttadmin** - Trouble Ticket Admin plan;
- **bill** - Billing plan;
- **reseller** - Reseller plan;
- **winduz** - Windows plan;
- **real** - Real Server plan;
- **mysql** - MySQL Only plan;
- **email_only** - Mail Only plan;
- **vps** - VPS plan.

➢ *To add your custom menu and assign it to a specific plan:*

1. According to menu.xml customization rules (on page 46), add the new `menudef` structure for the plan and fill it with menu groups and items as shown in the above example:

```
<menudef id="custom_menuId">
...
</menudef>
```

2. In the admin control panel, in the plan's **Settings** form, set the **menuId** custom value to ***custom_menuId*** (read the *Plan Settings* document in the *Parallels H-Sphere Administrator Guide* for details.)

Assigning External Links to Menu Items

It is not possible to put a direct URL to the external page in the menu XML description. The path in the URL attribute of the menuitem element is relative to design subdirectories of the template directory (`~cpanel/shiva/shiva-templates` by default) and will be searched by Parallels H-Sphere according to its template lookup sequence (on page 11).

A solution is in creating a template (specially-formatted HTML document) redirecting to an external URL.

Consider an example of menu customization where to a certain external page on logout from admin CP.

We assume that menu.xml (on page 46) and the template (on page 10) created are customized properly according to the respective customization rules.

Note: Alternatively, instead of creating a new logout_redirect.html template with an external link, you may customize the standard `logout.html` template without customizing `menu.xml`. The example below is given merely to illustrate `menu.xml` customization.

1. In `menu.xml`, find the element corresponding to the admin plan:

   ```
   <menudef id=”admin”>
   ```

   This would mean we are going to change CP menu only for the admin user and the change would not affect resellers and other plans.

2. Within this `menudef` element, find the line:

   ```
   <menuitem name=”logout” label=”logout.label”
   URL=”design/logout.html&action=logout” resource=””
   tip=”logout.tip”/>
   ```

3. Change the URL attribute to the HTML file which would redirect to the URL you want. It is preferable to place this file to the `~cpanel/shiva/shiva-templates/common/misc` directory. In this case, the URL attribute should be set as:

   ```
   URL=”misc/logout_redirect.html”
   ```

4. In the specified directory, create the redirecting HTML file. Parallels H-Sphere will search for it in `~cpanel/shiva/custom/templates/common/misc/logout_redirect.html`.

   The HTML redirecting document will be organized as follows:

   ```
   <HTML>
   <HEAD>
   <meta HTTP-EQUIV=”refresh” CONTENT=”0; URL=http://external_link”>
   </HEAD>
   <BODY>
   </BODY>
   </HTML>
   ```

5. Restart Parallels H-Sphere (on page 130).

6. Refresh browser to see the changes. It is better to log out and in again.

Menu Design Customization

This document explains how to change the appearance of the navigation menu in the Parallels H-Sphere control panel. You are expected to be familiar with the FreeMarker technology and with Parallels H-Sphere templates (on page 11).

The template to be customized is `~cpanel/shiva/shiva-templates/common/menu.fn`. The instruction below is the regular way of template customization. This customization can be also performed by means of Parallels H-Sphere packages (on page 108).

1. Login as the `cpanel` (on page 130) user from `root`.
2. Create the `~cpanel/shiva/custom` directory if it doesn't exist yet.
3. Inside the custom/ directory, create the following directories if they aren't there:
   - `templates/`
   - `images/`
   - `bundles/`

   Note: If the `images/` directory is created, there must be a symlink to this directory from the Apache document root (which is the default template directory `~cpanel/shiva/shiva-templates`); if not, users should place their images into the `IMAGES` directory.
4. Put your images into the `images/` directory and your interface text files (on page 57) (bundles) into the `bundles/` directory.
5. In the `templates/` directory, create the common/ directory if it doesn't exist and copy the `menu.fn` file from the `shiva-templates/common/` directory into that directory.
6. Make changes in the custom `menu.fn`. The following Freemarker functions are used in `menu.fn` to draw the navigation menu:

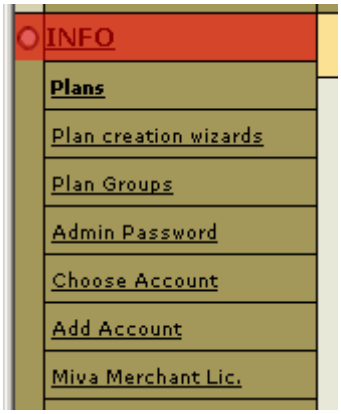
```
<function draw_menu(activeItem)>;
<function draw_sub(item, level)>;
<function draw_item(item, level)>;
<function draw_blank_menu()>.
```

   These functions draw different elements of the control panel menu. If you change them, please note that the HTML tags you add must be well ordered and valid. For example, you have to make sure that the number of columns in the menu table, which is set in `draw_menu`, is the same in all these functions.

   1. The `draw_menu` function calls the other mentioned functions to draw the menu and also defines the menu table as follows:

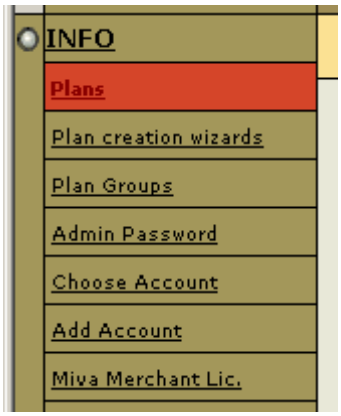
```
<TABLE WIDTH=”100%” BORDER=”0” CELLPADDING=”0”
CELLSPACING=”0”>.
```

   2. The `draw_sub` function draws the menu item which is the node for the submenu (group name):

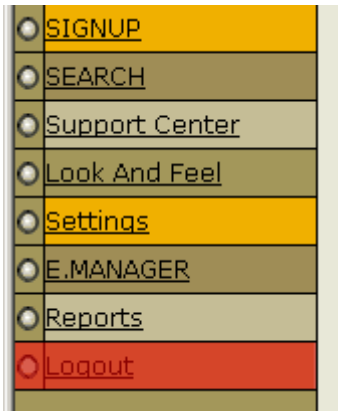


The `menu_was_drawn` variable is used to figure out how to show the next item.

3. The `draw_item` function draws the menu item which does not have a submenu. It may be a second-level item:



Or, it could be even a first-level item that does not fall into any menu group:



4. The `draw_sub_items` function checks the type of the menu item and calls the function draw_item or `draw_sub`.

   If you don't want to use a standard Parallels H-Sphere image, change the following calls:

```
<call draw_image("standard-image-mnemonic-id")>
```

   with:

```
<IMG SRC="path_to_your_image/replacing_image" WIDTH="xx"
HEIGHT="yy"></TD>
```

   where ***path_to_your_image*** could be set either as the `/IMAGES` URL relative to the Apache document root, or as any absolute URL to your image, like http://www.yourdomain.com/replacing/image/dir/.

7. Open the `~cpanel/shiva/psoft_config/hsphere.properties` file, uncomment and correct (if necessary) the following lines:

```
USER_TEMPLATE_PATH =
/hsphere/local/home/cpanel/shiva/custom/templates/
CUSTOM_MENU_BUNDLE = custom.bundles.menu
```

See more about template customization (on page 10) and menu.xml customization (on page 46).

Note: Don't initialize the variables you are not using!

8. Login as root and restart Parallels H-Sphere (on page 130).

CHAPTER 6

Interface Text Customization (Language Bundles)

This chapter explains how to add and modify texts in the Parallels H-Sphere Control Panel interface.

In this chapter:

Understanding Interface Text (Language) Bundles

Interface texts are defined in **key=value** sets collected in separate files for each language and encoding, where **key** is a mnemonic identifier for the text, and **value** is the text itself that is different for each language and encoding. Such files are called resource bundles, or language bundles, or simply bundles. Parallels H-Sphere templates (on page 11) include mnemonic identifiers and thus generate language-independent dynamic content.

We distinguish the following types of language bundles:

- **Default bundles** - bundles installed with Parallels H-Sphere and containing default interface text values.
- **Custom bundles** - bundles created by H-Sphere customers that adding new interface texts or overriding the default ones.
- **Internal bundles** - resulting bundles whereto default and custom bundles are merged after language bundle compilation.

Default bundles

Default bundle location is set in `~cpanel/shiva/psoft_config/hsphere.properties`:

```
TEMPLATE_BUNDLE=psoft.hsphere.lang.hsphere_lang
```

It means that default bundles are set in the following files of the `~cpanel/shiva/psoft/hsphere/lang/` directory.

- **hsphere_lang.properties** - default English bundle.

  Important: Starting with Parallels H-Sphere 3.0 RC 1, `menu.properties` and `messages.properties` with navigation menu and system email notification texts become deprecated, and all labels are collected in a single `hsphere_lang.properties` for each language!

- **hsphere_lang_<*language*>_<*COUNTRY*>_<*ENCODING*>.properties** - default language bundles in other languages.

  Please refer to the tables of canonical identifiers:

  - Language: http://www.ics.uci.edu/pub/ietf/http/related/iso639.txt
  - Countries: http://www.chemie.fu-berlin.de/diverse/doc/ISO_3166.html
  - Encodings (charsets or variants): http://java.sun.com/j2se/1.4.2/docs/guide/intl/encoding.doc.html

  Note: For CP server under FreeBSD, use canonical encodings for Java 1.3: http://java.sun.com/j2se/1.3/docs/guide/intl/encoding.doc.html.

All source bundles, in whatever encoding they were created, are compiled into Unicode (UTF-8). Therefore, in most cases **<*ENCODING*>** and **<*COUNTRY*>** identifiers may be omitted in bundle names according to the following rules:

- Some languages have different character sets, e.g., standard Chinese and simplified Chinese. In such case you cannot omit the encoding in bundle names.

  - **Standard Chinese (Big5 encoding)** bundle will look like: `hsphere_lang_zh_CN_Big5.properties`
  - **Simplified Chinese (EUC_CN encoding)** bundle will be: `hsphere_lang_zh_CN_EUC_CN.properties`
- Some languages have variations in different countries, e.g., **Portuguese (Portugal)** and **Portuguese (Brazil)**. Then, you specify language and country for each case:
  - **Portuguese (Portugal)** bundle will be: `hsphere_lang_pt_PT.properties`
  - **Portuguese (Brazil)** bundle will be: `hsphere_lang_pt_BR.properties`
- If you know for sure the language won't be used for other countries, you may omit the country identifier.

  For example, for **Russian**: `hsphere_lang_ru.properties`

Important: In any case, you must fully specify the correct language, country and encoding identifiers in the `LANG_LIST` parameter in `hsphere.properties` or in package properties file for Parallels H-Sphere packages (on page 108). In particular, Parallels H-Sphere should know in what encoding the bundles were created to be able to convert them to Unicode.

`LANG_LIST` contains definitions for the languages, delimited with whitespace, each including the following components:

<*language*>_<*COUNTRY*>_<*ENCODING*>|<*HTML_ENCODING*>**:misc.langs.**<*LABEL*>**lang**

```
Here:
```

- **<*HTML_ENCODING*>** is HTML-compliant encoding (parameter deprecated since 2.4 and is not really used but must still be specified for the sake of compatibility);
- misc.langs.**<*LABEL*>**lang is the label for the language name in Parallels H-Sphere interface. These labels are set in the bundles in the following way:

```
misc.langs.rulang = Russian
```

Custom Bundles

Default bundle directory is being rewritten with each Parallels H-Sphere update. So, if you make changes in the default bundles or add new bundles to the default bundle directory, you will lose all such modifications.

Instead, you use custom bundles to modify and expand default bundles.

Custom bundle location is set in `hsphere.properties` in the `CUSTOM_TEMPLATE_BUNDLE` parameter. For example:

```
CUSTOM_TEMPLATE_BUNDLE=custom.bundles.hsphere_lang
```

It means that custom bundles will be searched by Parallels H-Sphere in the `~cpanel/shiva/custom/bundles/` custom bundle directory.

Custom bundle files are of the same filename format as in the default bundle directory. To customize texts in the default bundles, files with the same names are created in the custom bundle directory; they contain only labels to be added or to override the default texts. New language bundles are also created in the custom bundle directory, and you don't worry they'll be lost with the next updates.

See the following documents for customization instructions:

- Interface Text Customization (on page 57)
- Adding New Language To Parallels H-Sphere (on page 62)

It is also possible to build installable packages with custom bundles.

Internal Bundles

Default and custom bundles, along with bundles coming with Parallels H-Sphere packages (on page 108), are compiled and merged into the so-called *internal bundles* located in the `~cpanel/shiva/languages` directory. It is there that Parallels H-Sphere takes bundles from.

Internal bundles location can be changed. You either set `INT_LANGBUNDLE_DIRECTORY` to override the whole internal bundles directory (`~cpanel/languages/`), or set `INT_TEMPLATE_BUNDLE` to override the respective internal bundle.

Please refer to Compiling Language Bundles (on page 58) for details.

Bundle Lookup Sequence

Parallels H-Sphere searches for text labels in language bundles in the following order:

The search is made in the internal bundle directory (`~cpanel/shiva/languages` by default):

1. `hsphere_lang_`***<language>***`_<`***COUNTRY***`>_<`***ENCODING***`>`.properties
2. `hsphere_lang_`***<language>***`_<`***COUNTRY***`>`.properties
3. `hsphere_lang_`***<language>***.properties
4. `hsphere_lang`.properties (default English text)

If no appropriate labels are found, the user will get a corresponding notification and a possibility to send a trouble ticket.

Note: No different encodings for languages are present in internal bundles. Language bundle compiler (on page 58) converts all regional data in default and custom language bundles into UTF-8 format.

Interface Text Customization

This document dwells on interface text customization methods. It implies you are familiar with the concept of language bundles (on page 55).

These are the following alternative ways to customize texts:

With packages

Packages are helpful when you want to add a new language (on page 114) to Parallels H-Sphere. In this case, you build new language bundles into a portable package easily installed on other Parallels H- Sphere clusters (on page 126).

Compiling bundles

This scheme of customizing bundles enables you to apply modifications by merging custom bundles with default bundles without building and installing packages. Read more about compiling bundles (on page 58).

1. Log into CP server as cpanel (on page 130) user.
2. All affected files must have cpanel:cpanel ownership.
3. Create custom bundle directory, e.g., `~cpanel/shiva/custom/bundles` if it is not created yet.
4. Set custom bundle location in `~cpanel/shiva/psoft/hsphere/lang/hsphere_lang.properties` (if it's not set):

```
CUSTOM_TEMPLATE_BUNDLE=custom.bundles.hsphere_lang
```

5. Find the string you want to modify among default or custom bundles. Create the corresponding custom bundle file if it doesn't exist to place modified string there.
6. For example, you are going to change the label **Shell Access** to **SSH Access**. It is set in the `~cpanel/shiva/psoft/hsphere/lang/hsphere_lang.properties` file. Create the file `~cpanel/shiva/custom/bundles/hsphere_lang.properties` if it isn't there already.
7. Copy the line with the identifier and the value you want to change into the custom bundle and change its value the way you want. You should use **two single quotes** (apostrophes) instead of one in labels containing Freemarker variables in curly brackets, such as `{0}`. For example:

```
search.view_invoice = View Client's Invoice
```

but:

```
billing.del_no = No, I don"t want to delete {0}
```

8. Run language bundle compiler (on page 58) to implement customization:

```
java psoft.hsphere.LangBundlesCompiler
```

Language Bundle Compiler

Language bundles (on page 55) - default, custom, and those installed with Parallels H-Sphere packages (on page 126) - are compiled and **merged** into the resulting **internal bundles** located in the internal bundle directory, `~cpanel/shiva/languages` by default. Instead of parsing default and custom bundles, Parallels H-Sphere takes interface texts directly from this directory.

Merging language bundles is performed by a Java tool called **language bundle compiler**:

```
java psoft.hsphere.LangBundlesCompiler
```

➢ *Language bundle compiler works in the following way:*

1. Bundle compiler parses the `LANG_LIST` parameters set in:
   - package properties files for all packages installed in Parallels H-Sphere: usually, `~cpanel/shiva/packages/`***PackageName***`/default.properties`, where ***PackageName*** is the name of the package without its version and build number;

- the default ~cpanel/shiva/psoft_config/hsphere.properties file;

- LANG_LIST contains definitions for the languages, delimited with whitespace, each including the following components:

  <*language*>_<*COUNTRY*>_<*ENCODING*>|<*HTML_ENCODING*>:misc.langs.**<*LABEL*>**lang

  Here:

  - **<*language*>**, **<*COUNTRY*>**, and **<*ENCODING*>** are Java locale identifiers. For detailed description and the tables of canonical identifiers, please refer to Understanding Language Bundles) (on page 55). **<*ENCODING*>** is an encoding in which bundles were created and saved,
  - **<*HTML_ENCODING*>** is the HTML-compliant encoding (this parameter is deprecated since 2.4 and is not really used but must still be specified for the sake of compatibility);
  - **misc.langs.<*LABEL*>lang** is a label for language name set in language bundles.

1. According to Java locale identifiers set in the LANG_LIST parameters, bundle compiler looks for the bundles:
   - hsphere_lang.properties
   - hsphere_lang_**<*language*>**.properties
   - hsphere_lang_**<*language*>**_**<*COUNTRY*>**.properties
   - hsphere_lang_**<*language*>**_**<*COUNTRY*>**_**<*ENCODING*>**.properties

   in the following directories, in order of priority:
   - **installed package bundles directory:** ~cpanel/shiva/packages/***PackageName***/

     Package bundle location is set in the package properties file ~cpanel/shiva/packages/***PackageName***/default.properties:

     ```
     TEMPLATE_BUNDLE=packages.PackageName.hsphere_lang
     ```
   - **custom bundles directory:** ~cpanel/shiva/custom/bundles/

     Custom bundle location is set in ~cpanel/shiva/psoft_config/hsphere.properties:

     ```
     CUSTOM_TEMPLATE_BUNDLE=custom.bundles.hsphere_lang
     ```
   - **default bundles directory:** ~cpanel/shiva/psoft/hsphere/lang/

     Default bundle location is set in hsphere.properties:

     ```
     TEMPLATE_BUNDLE=psoft.hsphere.lang.hsphere_lang
     ```

   See Introduction To Bundles (on page 55) for details.
2. Bundle compiler merges default, custom and package bundles with the same filenames and save the resulting bundles in UTF-8 format into the *internal bundle directory* ~cpanel/shiva/languages/.

   See Bundle Lookup Sequence (on page 55).

Notes:

- If the ~cpanel/shiva/languages directory is not found, language bundle compiler will be launched automatically and will create this directory with the resulting bundles.
- To override the default internal bundle directory, set the INT_LANGBUNDLE_DIRECTORY parameter in hsphere.properties. Or, set INT_TEMPLATE_BUNDLE to override the location of the respective internal bundles.

- When a text label is set several times, e.g., in a package bundle and in a custom/default bundle, package bundle takes precedence and override labels set in custom or default bundles. The order of priority is: package bundles, custom bundles, default bundles.
- Depending on bundle encodings specified in the `LANG_LIST` parameters, bundle compiler converts all regional language bundles into UTF-8. This is done due to the Java restrictions in relation to regional encodings: Java can work only with ISO-8859-1 and Unicode symbols.

Encoding conversion hints:

- To convert regional symbols into Unicode, you can use the native2ascii JDK tool: http://java.sun.com/j2se/1.4.2/docs/tooldocs/windows/native2ascii.html.
- To convert a language bundle file into Unicode, you can also run make in the `~cpanel/shiva/psoft/hsphere/lang` directory.

CHAPTER 7

Localization

This chapter dwells on adding new Parallels H-Sphere localization.

In this chapter:

Adding New Languages To Parallels H-Sphere

This document introduces methods of adding languages to Parallels H-Sphere interface. We presume you are familiar with the concept of language bundles (on page 55).

Translating Language Bundles

Note: Parallels H-Sphere developers are not responsible for adding languages to Parallels H-Sphere interface and updating translation (on page 66) of the default English bundles. It is entirely up to Parallels H-Sphere owners. All language bundle translations included into Parallels H-Sphere interface or localization packages are kindly provided by our customers.

Default Parallels H-Sphere interface language is English. The default English interface labels are located in the `~cpanel/shiva/psoft/hsphere/lang` directory in the `hsphere_lang.properties` file.

Note: Since H-Sphere 3.0, `menu.properties` and `messages.properties` with menu labels and system e-mail notification texts are collected in a single `hsphere_lang.properties` file.

You can also download default (English) language bundles from our site: http://hsphere.parallels.com/downloads/English.zip

Translate these files and save new language bundles to a separate location as:

hsphere_lang_<language>_<COUNTRY>_<ENCODING>.properties

here, ***<language>***, ***<COUNTRY>***, and ***<ENCODING>*** are Java locale identifiers. For detailed description and the tables of canonical identifiers, please refer to Understanding Language Bundles (on page 55).

For example, for Portuguese (Brazil) it will be `hsphere_lang_pt_BR.properties`.

Please take into account the following considerations on translating the bundles:

- **Using quotes in the text:** If a label or message has a Freemarker variable in curly brackets, e.g. `{0}`, single quotes and apostrophes (') must be replaced with two single quotes (''). For example, in English we write:

  ```
  search.view_invoice = View Client's Invoice
  ```

  but:

  ```
  billing.del_no = No, I don''t want to delete {0}
  ```

- **Updating the translation:** With upcoming versions of Parallels H-Sphere, default English texts may be changed and new labels may be added, so you need to update translation (on page 66) of your language bundles accordingly.
- **Encoding:** Translation can be performed in any encoding. All language bundles are converted into UTF-8 during their compilation (on page 62).

- **Right-to-left languages (Arabic, Hebrew, etc.):** Parallels H-Sphere supports right to left languages, such as Arabic or Hebrew. On this step, you need to specify whether the target language is “left to right” or “right to left”. In the file `hsphere_lang_<LANGUAGE_CODE>.properties`, add the following lines:

```
#####################################################
# “text_direction” is a special label used to define
# which text direction is appropriate for the current
# language bundle.
# There are 2 possible values:
# - “ltr” means “Left to right”;
# - “rtl” means “Right to left”.
text_direction = ltr
```

Adding New Language Bundles Into Parallels H-Sphere

Parallels H-Sphere provides the following alternative ways of adding new languages:

With packages

Parallels H-Sphere provides an easy way to add languages by installing packages (on page 126) (.hsp files) to the system. You may install ready-to-use and portable packages to any of your Parallels H-Sphere control panels or build language packages yourself (on page 114).

Compiling bundles

Instead of building a package, you create new language bundles in custom bundle directory and run language bundle compiler (on page 58).

1. Login as the cpanel (on page 130) user. All affected files must have `cpanel:cpanel` ownership.
2. Create custom bundle directory, e.g., `~/shiva/custom/bundles` if it is not created yet.
3. Set custom bundle location in `~cpanel/shiva/psoft_config/hsphere.properties` (if it’s not set):

```
CUSTOM_TEMPLATE_BUNDLE=custom.bundles.hsphere_lang
```

4. Create the files `hsphere_lang.properties`, menu.properties, and messages.properties in the `~/shiva/custom/bundles` directory if they are not there. Even if you don’t need to modify them, they are important for correct bundle compilation:

```
cd ~cpanel/shiva/custom/bundles
touch hsphere_lang.properties
```

5. Copy the translated language bundles (on page 62) to `~cpanel/shiva/custom/bundles`. For example, for Portuguese (Brazil):

```
cd ~cpanel/shiva/custom/bundles
cp /some/location/hsphere_lang_pt_BR.properties .
```

6. To ensure that the new language is available to choose from the interface, add a label for your language (ID and definition) into the `~cpanel/shiva/custom/bundles/hsphere_lang.properties` file, following the pattern:

   ```
   misc.langs.<LABEL>lang = <LANGUAGE> (<COUNTRY>)
   ```

   For example, for Portuguese (Brazil):

   ```
   misc.langs.ptlang = Portugu\u00eas (Brasil)
   ```

   Notes:

   1. Default (English) language bundles are written in the ISO-8859-1 encoding. Special Latin and non-Latin characters must be presented in Unicode. Use the native2ascii JDK tool to convert these symbols into Unicode characters (`\uxxxx` notations, like "`\u00ea`" instead of "`ê`" in the example above).
   2. If the original language name significantly differs from that in English, (especially for non-Latin alphabets), we recommend adding its English transcription, e.g.:

   ```
   misc.langs.de_atlang = Deutch (\u00d6sterreich) - German
   (Austria)
   ```

7. Add new language to the list of languages available in Parallels H-Sphere. For this, add the language and encoding of the translated files to the `LANG_LIST` parameter in `~cpanel/shiva/psoft_config/hsphere.properties`. For example:

   ```
   LANG_LIST = en_US_ISO8859_1|ISO-8859-1:misc.langs.englang
   pt_BR_ISO-8859-15|ISO-8859-15:misc.langs.ptlang
   ```

   This line contains definitions for the languages that come with Parallels H-Sphere, delimited with whitespace, each including the following components:

   ```
   <language>_<COUNTRY>_<ENCODING>|<HTML_ENCODING>:misc.langs.<LABEL>la
   ng
   ```

   Here, misc.langs.<LABEL>lang; is the label with the language name, which is set in the previous step.

8. In `hsphere.properties` set system locale and encoding to custom values. The locale should correspond to the Java ISO standards, the encoding must correspond to the browser standards. For example, settings for the Portuguese (Brazil) language will look as follows:

   ```
   # Override system locale
   LOCALE = pt_BR
   # Encoding
   ENCODING = UTF-8
   ```

   The `LOCALE` value will affect not only the interface language, but also the currency, date, time, days of the week and other locale settings.

9. Run language bundle compiler (on page 58) to implement new bundles into Parallels H-Sphere:

   ```
   java psoft.hsphere.LangBundlesCompiler
   ```

10. Restart Parallels H-Sphere (on page 130).

Changing Language of Context Help

Online help texts are hard-coded in special Parallels H-Sphere templates (on page 11) with .oh extension located in the `~cpanel/shiva/shiva-templates/common/online_help/` directory.

Carefully follow the procedure outlined in the Customizing Templates (on page 10) document, with the following considerations specific to context help templates:

- Copy the online help files from the `~cpanel/shiva/shiva-templates/common/online_help/` folder to the custom template directory `~cpanel/shiva/custom/templates/common/online_help/`, to files whose names contain identifiers for target language, country and encoding, in the format similar to that of language bundles (on page 55):

  cp ~cpanel/shiva/shiva-templates/common/online_help/*some/dir/helpfile***.oh ~cpanel/shiva/custom/templates/common/online_help/***some/dir/helpfile_<***LANGUAGE***>_<***COUNTRY***>.oh**

  Consider the following example for the Russian language:

  cp ~cpanel/shiva/shiva-templates/common/online_help/user/b_invoice/01balance.oh ~cpanel/shiva/custom/templates/common/online_help/user/b_invoice/01balance_ru_RU.oh

  Important: Parallels H-Sphere uses the **UTF-8** charset for all languages. Therefore, text directly inserted into templates (i.e., not by means of text labels defined in language bundles (on page 55)) **must be** in the UTF-8 encoding. Other regional encodings (for example, Windows-1251 for Russian) must not be used anymore in context help templates, and texts there must be converted into UTF-8.

- Translate the heading and the body of each help file in the corresponding encoding.

Updating Translation of Parallels H-Sphere Interface

With every update of Parallels H-Sphere, your translation of the control panel interface becomes outdated, and you need to update translation in language bundles (on page 55).

Note: Parallels H-Sphere developers are not responsible for adding languages to Parallels H-Sphere interface and updating translation of the default English bundles. It is entirely up to Parallels H-Sphere owners. All language bundle translations included into Parallels H-Sphere interface are kindly provided by our customers.

Parallels H-Sphere comes with a script that finds differences between two files: the new English file and its old translated version. This script, `diff_labels.pl`, is located in the `~cpanel/shiva/psoft/hsphere/lang/` default bundle directory.

To compare these 2 files with a new English language bungle with outdat, do the following:

1. Log into your CP server as the cpanel (on page 130) user.
2. Go to the default bundle directory:

   ```
   cd shiva/psoft/hsphere/lang/
   ```

3. Execute the following command:

   ```
   ./diff_labels.pl hsphere_lang.properties
   /path/to/hsphere_lang_<LOCALE>.properties >
   /path/to/hsphere_lang_<LOCALE>.diff
   ./diff_labels.pl menu.properties /path/to/menu_<LOCALE>.properties
   > menu_<LOCALE>.diff
   ./diff_labels.pl messages.properties
   /path/to/messages_<LOCALE>.properties >
   /path/to/messages_<LOCALE>.diff
   ```

   Here, ***/path/to/*** is a path to language bundles in another language (they may not be located in the default bundle directory), ***<LOCALE>*** contains language, country and encoding identifier in accordance with language bundle filename format (on page 55).

   The tool will write all the differences between these updated default language bundles and their previous translation into the corresponding `.diff` files.

4. Customize your language bundles (on page 57) by adding translated labels from the resulting `.diff` files.

CHAPTER 8

XML Customization

The following Parallels H-Sphere components are configured by means of XML files located in the ~cpanel/shiva/psoft/hsphere/ directory:

Component	Property	Filename
CP Skins (Designs)	DESIGN_SCHEME_CONFIG	design_config.xml
CP Menu	MENU_CONFIG	menu.xml
CP Crons	CRON_CONFIG	cron_config.xml
Online (Context) Help	HELP_CONFIG, ONLINE_HELP_CONFIG	help.xml help_url.xml
Promotion Validators And Calculators	PROMO_CONFIG	promotion/xml/promotions.xml
Merchant Gateways	MERCHANT_GATEWAYS_CONF	merchants.xml
Domain Registrars	REGISTRAR_CONF	registrar.xml
E-Mail Notifications	USER_EMAILS	user_emails.xml

Custom XML files can be merged with default XML files by means of XML merger (on page 70). Instead of moving and changing a default XML file, a small custom file is created containing only the changes to be implemented, and its location is specified in ~cpanel/shiva/psoft_config/hsphere.properties in the parameter with the "CUSTOM_" prefix added to the default parameter name. For example:

```
MENU_CONFIG =
/hsphere/local/home/cpanel/shiva/psoft/hsphere/menu.xml
CUSTOM_MENU_CONFIG =
/hsphere/local/home/cpanel/shiva/custom/xml/menu.xml
```

In this chapter:

Merging XML Configuration Files

➢ ***To customize XML configuration files:***

1. Login as the cpanel (on page 130) user.
2. Create a directory for custom XML configuration files if it does not exist, for example, `~cpanel/custom/xml`.
3. In the custom directory, create a custom XML file if it hasn't been created yet. Here, you add only those tags that need to be added or modified with relation to the default XML file. Please follow the rules for merging XMLs.

   For example, if you need just to add a new item to the menu, the custom `menu.xml` file will look like:

```
<?xml version="1.0"?>
<!DOCTYPE config [
<!ELEMENT config (menus,interface)>
<!ELEMENT menus (menu+)>
<!ELEMENT menu (menuitem*,initmenu*)>
<!ELEMENT menuitem (#PCDATA)>
<!ELEMENT initmenu (#PCDATA)>
<!ELEMENT interface (menudef+)>
<!ELEMENT menudef (initmenu*,menuitem*)>
<!ATTLIST menudef id CDATA #REQUIRED>
<!ATTLIST menu name CDATA #REQUIRED>
<!ATTLIST menu label CDATA #REQUIRED>
<!ATTLIST menu platform_type CDATA "">
<!ATTLIST menu resource CDATA "">
<!ATTLIST menu defaultitem CDATA #REQUIRED>
<!ATTLIST menu tip CDATA "">
<!ATTLIST menuitem name CDATA #REQUIRED>
<!ATTLIST menuitem label CDATA #REQUIRED>
<!ATTLIST menuitem URL CDATA #REQUIRED>
<!ATTLIST menuitem platform_type CDATA "">
<!ATTLIST menuitem resource CDATA "">
<!ATTLIST menuitem tip CDATA "">
<!ATTLIST menuitem check_type CDATA "1">
<!ATTLIST menuitem new_window CDATA "0">
<!ATTLIST initmenu name CDATA #REQUIRED>
]>
<config>
<menus>
<menu name="info" label="info.label" defaultitem="info-plans"
tip="info.tip">
<menuitem name="new_item" label="NEW PAGE"
URL="/newpage.html" resource="" tip="Positive Software
Corporation"/>
</menu>
</menus>
</config>
```

Important: In the custom XML file to be merged with the default one, you must define the same DTD structure!

4. In `~cpanel/shiva/psoft_config/hsphere.properties`, add the location for the custom XML file, for instance:

```
CUSTOM_MENU_CONFIG =
/hsphere/local/home/cpanel/shiva/custom/xml/menu.xml
```

5. Login as root (log off from cpanel) and restart Parallels H-Sphere (on page 130).

XML Manager

XML Manager serves for loading custom XMLs into Parallels H-Sphere and merging them with the standard, or default, Parallels H-Sphere XML configuration files. This enables to *extend* Parallels H-Sphere by adding new elements, like custom menu items, without changing the standard XML configuration files. This mechanism makes customization more flexible to the Parallels H-Sphere updates. Now you don't need to apply custom settings each time the standard configuration files are rewritten by new releases.

XML Manager Implementation

XMLManager is the subclass of the *psoft.hsphere.util* class of Parallels H-Sphere utilities. XMLManager returns either Document object or TemplateXML object.

XMLManager searches for custom XML configuration files, by the key, not by the filename:

1. in `hsphere.properties;`
2. in the predefined values (see `psoft.hsphere.util.PackageConfigurator`).

For example, the menu XML configuration file is set in hsphere.properties as follows:

```
MENU_CONFIG =
/hsphere/local/home/cpanel/shiva/psoft/hsphere/menu.xml
```

XMLManager looks for the `MENU_CONFIG` key instead of the full pathname (`/hsphere/local/home/cpanel/shiva/psoft/hsphere/menu.xml`).

XMLManager may also process the group of XML files. It is currently implemented for XML plan wizards (on page 74), where the key is compounded from the corresponding path + the name of XML file, like:

```
XMLManager.getXML(PLAN_WIZARDS_DIR, "unix.xml");
```

Example:

Consider an example of merging menu default and custom menu XMLs. For details, please refer to *Menu Customization* in *Customization Guide*.

1. Log in as the cpanel user.
2. Create custom XML file and specify its location as `CUSTOM_XML_CONFIG` in hsphere.properties (see *XML Merge Customization* in Customization Guide for details):

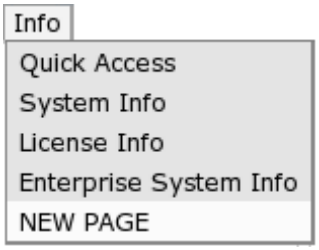
```
MENU_CONFIG =
/hsphere/local/home/cpanel/shiva/psoft/hsphere/menu.xml
CUSTOM_MENU_CONFIG =
/hsphere/local/home/cpanel/shiva/custom/xml/test1_menu.xml
```

3. To add a custom menu item, `~cpanel/shiva/custom/xml/test1_menu.xml` should look like this:

```
<?xml version=”1.0”?>
<!DOCTYPE config [
<!ELEMENT config (menus,interface)>
<!ELEMENT menus (menu+)>
<!ELEMENT menu (menuitem*,initmenu*)>
<!ELEMENT menuitem (#PCDATA)>
<!ELEMENT initmenu (#PCDATA)>
<!ELEMENT interface (menudef+)>
<!ELEMENT menudef (initmenu*,menuitem*)>
<!ATTLIST menudef id CDATA #REQUIRED>
<!ATTLIST menu name CDATA #REQUIRED>
<!ATTLIST menu label CDATA #REQUIRED>
<!ATTLIST menu platform_type CDATA “”>
<!ATTLIST menu resource CDATA “”>
<!ATTLIST menu defaultitem CDATA #REQUIRED>
<!ATTLIST menu tip CDATA “”>
<!ATTLIST menuitem name CDATA #REQUIRED>
<!ATTLIST menuitem label CDATA #REQUIRED>
<!ATTLIST menuitem URL CDATA #REQUIRED>
<!ATTLIST menuitem platform_type CDATA “”>
<!ATTLIST menuitem resource CDATA “”>
<!ATTLIST menuitem tip CDATA “”>
<!ATTLIST menuitem check_type CDATA “1”>
<!ATTLIST menuitem new_window CDATA “0”>
<!ATTLIST initmenu name CDATA #REQUIRED>
]>
<config>
<menus>
<menu name=”info” label=”info.label” defaultitem=”info-plans”
tip=”info.tip”>
<menuitem name=”xyz-wow” label=”NEW PAGE” URL=”/newpage.html”
resource=”” tip=”Positive Software Corporation”/>
</menu>
</menus>
</config>
```

Note: In the custom XML file to be merged with the default one, you must define the same DTD structure!

Also note that we don’t copy the whole structure of the standard menu.xml file. The custom menu will be merged with the standard menu in the following way (the **NEW PAGE** item in the **INFO** menu):



4. To check if the merge is performed correctly, run the DOMLoader utility and check `out.xml` afterwards:

```
java psoft.util.xml.DOMLoader
/hsphere/local/home/cpanel/shiva/psoft/hsphere/menu.xml
     /hsphere/local/home/cpanel/shiva/custom/xml/test1_menu.x
ml > out.xml
```

With DOMLoader, you may merge more than two XML files:

```
java psoft.util.xml.DOMLoader file1.xml file2.xml ...
fileN.xml > out.xml
```

XML Merge Processing Instructions

In your custom XML configuration files you should use the *processing instructions* to change or remove certain fragments in the default configuration file, instead of merging these fragments directly.

There are 4 major processing instructions:

- `<?change?>`
- `<?remove?>`
- `<?merge?>`
- `<?changeattr?>`

The `merge` instruction is used by default and can be omitted.

The `<?changeattr?>` instruction is added to customize tag attributes in XML documents.

In order to change, remove, or merge an element, you need to create a well formed XML document, which describes the location of this element relative to other elements. Leave out the elements you don't want to change/remove/merge. Put the instruction before the XML element that needs to be changed/removed/merged.

Examples:

1) To remove a certain (tt) item from the the default menu configuration:

```
<?xml version="1.0"?>
<!DOCTYPE config [
<!ELEMENT config (menus,interface)>
<!ELEMENT menus (menu+)>
<!ELEMENT menu (menuitem*,initmenu*)>
<!ELEMENT menuitem (#PCDATA)>
<!ELEMENT initmenu (#PCDATA)>
<!ELEMENT interface (menudef+)>
<!ELEMENT menudef (initmenu*,menuitem*)>
<!ATTLIST menudef id CDATA #REQUIRED>
<!ATTLIST menu name CDATA #REQUIRED>
<!ATTLIST menu label CDATA #REQUIRED>
<!ATTLIST menu platform_type CDATA "">
<!ATTLIST menu resource CDATA "">
```

```
<!ATTLIST menu defaultitem CDATA #REQUIRED>
<!ATTLIST menu tip CDATA “”>
<!ATTLIST menuitem name CDATA #REQUIRED>
<!ATTLIST menuitem label CDATA #REQUIRED>
<!ATTLIST menuitem URL CDATA #REQUIRED>
<!ATTLIST menuitem platform_type CDATA “”>
<!ATTLIST menuitem resource CDATA “”>
<!ATTLIST menuitem tip CDATA “”>
<!ATTLIST menuitem check_type CDATA “1”>
<!ATTLIST menuitem new_window CDATA “0”>
<!ATTLIST initmenu name CDATA #REQUIRED>
]>
<config>
<interface>
<menudef id=”unix”>
<?remove?>
<initmenu name=”tt”/>
</menudef>
</interface>
</config>
```

2) To replace the whole icon section to the one with only 3 icons:

```
<?change?>
<icons>
<icon id=”changelanguage”
url_param=”template_name=misc/langs.html”
rtype=”” platform=”” label=”nomenu.language” tip=”” help=””/>
<icon id=”changedesign”
url_param=”template_name=misc/user_account_lf.html” rtype=””
platform=””
label=”nomenu.lookfeel.alt” tip=”” help=””/>
<icon id=”cgiwiz_formmail”
url_param=”template_name=quick/choice_script.html&sname=formm
ail”
rtype=”hosting” platform=”unix”
label=”quick.quickview.cgiwiz_formmail”
tip=”quick.quickview.cgiwiz_formmail”
help=””/>
</icons>
```

3) To remove a certain (cgiwiz_formmail) icon from the default configuration:

```
<icons>
<icon id=”changelanguage”
url_param=”template_name=misc/langs.html”
rtype=”” platform=”” label=”nomenu.language” tip=”” help=””/>
<icon id=”changedesign”
url_param=”template_name=misc/user_account_lf.html” rtype=””
platform=””
label=”nomenu.lookfeel.alt” tip=”” help=””/>
<?remove?>
<icon id=”cgiwiz_formmail”
```

```
url_param=”template_name=quick/choice_script.html&sname=formm
ail”
rtype=”hosting” platform=”unix”
label=”quick.quickview.cgiwiz_formmail”
tip=”quick.quickview.cgiwiz_formmail”
help=””/>
</icons>
```

4) To change and add tag’s attributes:

```
<?changeattr newtag=”xyz” tip=”My Tip”?>
<icon id=”changelanguage”
url_param=”template_name=misc/langs.html”
rtype=”” platform=”” label=”nomenu.language” tip=”” help=””/>
```

The resulting element will look like:

```
<icon id=”changelanguage”
url_param=”template_name=misc/langs.html”
rtype=”” platform=”” label=”nomenu.language” tip=”My Tip”
help=”” newtag=”xyz”/>
```

Creating Plan Wizards with XML

This document explains how to customize plan wizards by modifying plan wizard XML configuration files.

Introduction

Parallels H-Sphere supports XML-based plan wizards. Wizards are located in the `~cpanel/shiva/psoft/hsphere/plan/wizard/xml` directory. Location can be altered by setting `PLAN_WIZARDS_DIR` in `~cpanel/shiva/psoft_config/hsphere.properties` to a target directory.

```
PLAN_WIZARDS_DIR =
/hsphere/local/home/cpanel/shiva/psoft/hsphere/plan/wizard/xm
l
```

The list of wizards is defined in the `plan_wizards.xml` file, which is by default located in the plan wizards directory. The file’s name and location is set in the `PLAN_WIZARDS` parameter in hsphere.properties (the full path to the file is required):

```
PLAN_WIZARDS =
/hsphere/local/home/cpanel/shiva/psoft/hsphere/plan/wizard/xm
l/plan_wizards.xml
```

Important: When you customize plan wizard XMLs make sure the `PLAN_WIZARDS_DIR` and `PLAN_WIZARDS` parameters are set in `hsphere.properties`.

You can also customize plan wizard XML files by means of Parallels H-Sphere packages (on page 108).

Adding a New Wizard to the List of Plan Wizards

To add a new wizard, add the following line to the list of wizards in `plan_wizards.xml`:

```
<wizard name="NAME" description="DESCRIPTION"/>
```

Here,

- **name** - the name of a plan's XML file. It must be specified without .xml extension (.xml will be appended automatically). The file contains plan wizard specification.
- **description** is a language bundle label defined in `~cpanel/shiva/psoft/hsphere/lang/hsphere_lang.properties`. It should not contain the `lang`.

Example:

```
<wizard name="unix" description="planeditor.res_unix"/>
```

Here, Unix plan XML definition file is `~cpanel/shiva/psoft/hsphere/xml/unix.xml`, and the plan's description is set in the `lang.planeditor.res_unix` label in `~cpanel/shiva/psoft/hsphere/lang/hsphere_lang.properties`.

Defining Plan Wizard

Plan wizard definition starts with creating a new .xml file. See `unix.xml` (http://hsphere.parallels.com/HSdocumentation/xmls/unix.xml) as an example of planwizard definition.

<PlanWizard>

The root XML tag is `<PlanWizard>`:

```
<PlanWizard name="NAME" description="DESCRIPTION">
```

Attributes:

- **name:** should match the filename (without `.xml` prefix) and the corresponding name attribute in `plan_wizards.xml`.
- **description:** language bundle with plan wizard description from hsphere_lang.properties without "lang." prefix.

<DefaultName>

`DefaultName` is the name that will serve as the default plan name in creating plans.

```
<DefaultName>name</DefaultName>
```

<DefaultValues>

`DefaultValues` is a construction where the plan's default values are set. Usually, the `add _template` and `menuId` values are added here.

```
<DefaultValues>
<value name="NAME1">VALUE1</value>
<value name="NAME2">VALUE2</value>
  ...
</DefaultValues>
```

<categories>

The `categories` tag defines plan resources. Resources are grouped into categories and described within the `<category>` tags. Each category tag can have the `description` attribute which is optional. Categories are used in plan wizard screens to group resources into *logical groups*.

```
<categories>
<category>
...
</category>
<category description=”DESCRIPTION”>
...
</category>
</category>
```

<resource>

The `<resource>` tag within the `<category>` construction defines the resource class, name, description and includes the following attributes if necessary:

- **name** - name of the resource, like account, mailbox;
- **class** - name of the resource class;
- **help** *(optional)* - description of the resource from the `hsphere_lang.properties` file;
- **unit** *(optional)* - units for the resource, MB or GB;
- **required** *(optional)* - if it is set to 1, the resource is required in the plan and regarded to be automatically included to the plan;
- **include** *(optional)* - if it is set to 1, the resource will be marked as included by default to the plan wizard;
- **active** *(optional)* - if active parameter is not set, no active checkbox will be available for the resource. Otherwise, if it is set to 1, resource will be marked as active by default. Any other value - active checkbox will be present but not checked;
- **noprice** *(optional)* - if 1, the wizard will not prompt to enter pricing for the resource;
- **ifresource** *(optional)* - list of resources separated by the vertical bar ‘|’ character. If any of the resources are included to or required in the plan, this resource will also be included.

<field>

Inside the `<resource>` construction, the `<field>` tag allows to get more info from the user for a resource specified. The data will be returned as a part of HTTP request and can be used later via the `#name` parameter.

Attributes:

- **name** - name of the field, you can retrieve it later via the #name parameter;
- **label** - label from hsphere_lang.properties, refers to a caption to be displayed in the wizard;
- **type** - type of the field to be displayed: textbox|checkbox.

If `type = “textbox”`, the following attributes are set:

- **value** - the default value;

- **planvalue** - name of the resource plan value (value defined in the plan); While editing the plan, the wizard will try to retrieve this value and show it as the textbox value;
- **size** - size of the textbox;
- **check** - yafv check (not implemented yet).

Example:

```
<field type=”textbox” name=”max_conn”
label=”planeditor.max_connections” value=”10”
planvalue=”MAX_CONN” size=”4” check=”vPriceReq”/>
```

<LogicalGroup>

The `<LogicalGroup>` tag defines a logical server, allows user to select one logical server if several are present.

Attributes:

- **name** - name of the group;
- **type** - type of the group;
- **help** - help message;
- **default** - default group.

Example:

```
<LogicalGroup name=”unix_real” type=”unix_real” help=”admin-
editwizard-o_lsgunix_real”/>
```

<ifresource>

The `<ifresource>` element allows to group resources/LogicalGroup and activate them for the plan, only if the resource is enabled via global resources, or for the reseller plan.

Attributes:

- **name** - resource name. Will be checked by `admin.isResourceDisabled`;
- **description** - description of the resource from `hsphere_lang.propeperties`.

<ifgroup>

The `<ifgroup>` element works in the same way as `ifresource` but checks if the server group is available.

Attributes:

- **name** - server group name;
- **else** - resource name to show as unavailable.

<resources>

The `<resources>` element is used to define resources and their initialization sequence.

Resources are defined in the resources element in the custom `res_`***RESOURCE_NAME*** child tag where ***RESOURCE_NAME*** is the resource mnemonic identifier.

For example, for the ***unixuser*** resource the tag would look like:

<res_unixuser> </res_unixuser>

<mod>

The `<mod>` tags determine what mods will be defined in the plan.

Attributes:

- **name** - name of the mod; “” if missing;
- **ifresource** - list of resources delimited with ‘|’. If any of those resources will be available in plan, i.e., required, selected through the Web as included, or derived as included, the mod will be defined in the plan, otherwise it won’t be defined.

<initresource>

The `<initresource>` tags inside `mod` constructions define what child resources are created with the creation of this resource.

Attributes:

- **name** - name of the resource. The system automatically checks if the resource is included in the plan before adding the initresource;
- **ifactive** - list of resources delimited with ‘|’. If any of these resources are selected in the plan wizard as activated, the initresource is created; otherwise, it won’t be created, but will be available for creation by account owners.
- **unique** *(optional)* - a flag to mark the initresource whose mod will be changed in the plan wizard. For example, you may set initresource for the IP resource to shared IP, and then change shared IP to dedicated IP in the plan wizard in Control Panel. In this case, if you don’t set the unique attribute in the `initresource` tag, another initresource record will be added to the system database and that will cause serious malfunctions.

  However, if `unique=”1”` is set, no new initresouce record will be created when another mod is selected; instead, the existing initresource record will be modified.

Example:

```
<initresource name=”ip” mod=”shared” unique=”1”/>
```

<initvalue>

The `<initvalue>` tag defines initial plan values.

Initvalues are passed to the resource constructor as a Collection, and you need to be very careful with their order. Initvalue names aren’t used as keys. Typically, the constructor would read initvalues like this:

```
Iterator i = initValues.iterator();
value1 = (String) i.next();
value2 = (String) i.next();
```

Attributes:

- **type** - one of the following types as defined in psoft.hsphere.plan.InitValue:
- **static** - the value enclosed in the tag.
- **field** - the value taken from the submitted form by the name enclosed in the tag.
- **relative** - the value obtained with the `TemplateModel get(String key)` method of the resource chain from the current resource up the resources tree. The search stops upon finding the first not null value.

- **absolute** - the value obtained with the `TemplateModel get(String key)` method of the current resource. Unlike 'relative', it allows getting values of `TemplateHash` returned by the `TemplateModel get` method.

  Example: A resource returns a hash accessible from `TemplateModel get(String key)` by the key ***a***. This hash, in its turn, contains a value accessible by the key ***b***. To access this value, you need to set `initvalue` to ***a.b***.
- **relative_rec** - implements embedding as in '**absolute**' with support of ascending recursion as in '**relative**'.
- **absolute_rec** - implements embedding, but calls `TemplateModel get(String key)` of the top resource in the tree - the account.
- **hostgroup** - is used to get a random HostEntry object within the given logical server group. The value of the group is stored as a plan value with id '`_HOST_`' + value of the current init value.
- **plan_free** - returns free units for the current resource if applicable.
- **plan_value** - returns plan value accessible by the current initvalue as key.
- **label** - is not used anymore, can be considered a comment.

The `initvalue` tag content is a string. If it starts with `#`, the value will be used as a name of the parameter which is passed via http request.

Here are several pre-defined variables that could serve as the `initvalue` tag content:

- `$STOPGAP_ZONE`
- `$STOPGAP_PREFIX`
- `$INSTANT_ZONE`

`$INSTANT_PREFIX` Example:

```
<initvalue type=”static” label=”Home
Directory”>#homedir</initvalue> <initvalue
type=”static”>$INSTANT_PREFIX</initvalue>
```

<if>

The `<if>` tag allows to include initresources or initvalues under a certain condition. For example:

```
<if type=”eq” left=”#mixedip” right=”dedicated”>
<true><initresource name=”ip” mod=”dedic_no_a”/></true>
<false><initresource name=”ip” mod=”shard_no_a”/></false>
</if>
```

Here, the value of the `mixedip` parameter that is passed via HTTP request is checked for being equal to the value of the `dedicated` parameter.

<values>

The `<values>` element includes the <value> constructions inside.

<value>

The `<value>` tag defines the resource values in the plan.

Attributes:

- **name** - mnemonic identifier. If the tag content string starts with #, the value will be used as a name of the parameter that is passed via HTTP request.

Example:

```
<value name="SSI">1</value>
```

<special>

The <special> element is used to define some additional settings such as tld pricing. It allows to add checkbox to any resource and, if checkbox is selected, to include another template.

To define the special attribute for a resouce, create the <res_***RESOURCE_NAME***> tag (like <res_opensrs>) inside the <special> element (you can have multiple tags inside the special section).

<field>

Inside <res_RESOURCENAME> tag, the <field> tag is used to define the HTML field.

Attributes:

- **type** - checkbox type;
- **name** - name of the checkbox field;
- **label** - label from hsphere_lang.properties referrring to the field caption;
- **value** - value of the checkbox;
- **checked** - equals 1 if checked.

<include>

Inside the <field> element, the <include> tag defines a template to be included.

Attributes:

- **ifvalue** - a value to match against the field; if it matches, the template is included;
- **name** - the name of the template to be included.

Example:

```
<special>
<res_opensrs>
<field type="checkbox" name="leave_osrs_prices"
label="planwizard.leave_osrs_prices" value="1" checked="1">
<include ifvalue="" name="admin/wizards/tldprices.html"/>
</field>
</res_opensrs>
</special>
```

Adding Custom CP Cron Jobs

CP cron jobs are internal Parallels H-Sphere Java utilities that perform regular tasks such as accounting, trouble ticket management, etc.

It is possible to manage crons in XML configuration files (on page 82) and to add custom cron jobs.

➢ ***To create a custom cron job:***

1. Log in as the cpanel (on page 130) user.
2. Create the cron job class.
3. Extend the abstract class `psoft.hsphere.background.BackgroundJob` and implement the method:

```
protected abstract void processJob() throws Exception
```

4. Add the custom cron job class to `CLASSPATH` set in the `.bash_profile` file located in the `~panel` home directory.
5. Create the custom cron XML configuration file if it is not created yet. We recommend to add all custom cron jobs into the *custom cron configuration file*, not to the standard cron XML configuration file (on page 82).
   1. Create the custom cron configuration file, for example, `~cpanel/shiva/custom/xml/cron_config.xml`
   2. The XML structure of the custom cron config file should be the same as of the standard cron configuration file.
   - DTD Scheme: http://hsphere.parallels.com/HSdocumentation/xmls/cron_config.dtd
   - Example: http://hsphere.parallels.com/HSdocumentation/xmls/cron_config.xml
   1. Set the full pathname to the custom cron configuration file in `~cpanel/shiva/psoft_config/hsphere.properties`:

```
CRON_CONFIG =
/hsphere/local/home/cpanel/shiva/custom/xml/cron_config.xml
```

6. Add the custom cron job to the custom cron configuration file.

   Add a new group of jobs if required or add your custom cron job there, or, add your custom job to an existing group. Group is set by the `group` tag. Jobs are set in the cron tags within their groups. For example:

```
<config>
...
<group name="GroupN" maxpriority="10" defpriority="3">
<!-- priority of jobs within the group is ranked from 1 to
10;
if job priority is not specified, it is 3 by default -->
  ...
<job name="CustomCron" class="custom.cron.CustomCron"
starttime="5:00" period="1440"/>
<!-- job starts every day (1440 minutes) at 5am -->
  ...
<group>
</config>
```

XML syntax is described in the CP Cron XML Configuration (on page 82) guide.

In this section:

CP Cron XML Configuration

Control Panel cron configuration is represented in XML format in the `~cpanel/shiva/psoft/hsphere/cron_config.xml` file. Its location is set by the `CRON_CONFIG` parameter in `hsphere.properties`:

CRON_CONFIG = /hsphere/local/home/cpanel/shiva/psoft/hsphere/cron_config.xml

- DTD Scheme: http://download.hsphere.parallels.com/HSdocumentation/xmls/cron_config.dtd
- Example: http://download.hsphere.parallels.com/HSdocumentation/xmls/cron_config.xml

Cron jobs are grouped according to their purpose. Default group is `CRON`. Cron groups are set in the `group` constructions that contain the `job` tags describing jobs in these groups:

```
<config>
<group name="CRON" maxpriority="10" defpriority="3">
<!-- priority of jobs within the group is ranked from 1 to
10;
if job priority is not specified, it is 3 by default -->
  ...
<job name="CustomCron" class="custom.cron.CustomCron"
db_mark="C_CRON"
starttime="now+15m" period="15"/>
<!-- job starts in 15 minutes after CP start and runs every
15 minutes -->
  ...
</group>
...
</config>
```

Group attributes:

- **name** - group name;
  disabled - group jobs are all disabled if `disabled="1"`. If not set, disabled is set to **0** (enabled);
- **maxpriority** - sets the maximum number to which job priority within a group is scaled. For example, if `maxpriority` is 15, then job priority within a group is from 1 to 15, where 1 is the least priority, and 15 is the maximum priority. If this option is not set, maximum priority for a group is **10** by default;
- **defpriority** - set the default job priority. If the job's priority attribute is not set, the job priority will be equal to the group's `defpriority` value.
- **defperiod** - sets the default launching period for group jobs, in minutes;
- **maxjobcount** - maximum number of jobs in the group running at a time.

Job attributes:

- **name** - job name;
- **class** - a fully qualified Java class name for the cron job (see Adding Custom CP Crons (on page 80) for instructions on adding custom cron job classes);
- **disabled** - if set to **1**, the job is disabled; otherwise, it is enabled;
- **priority** - if set, overrides the default group priority;

- **starttime** - time when the job starts first. Format:
  - ***HH:MM*** - time in hours and minutes, for example, `5:15`;
  - **now** - job starts immediately after CP start/restart;
  - **now+*HH*h*MM*m** - job starts in ***HH*** hours ***MM*** minutes after CP start/restart, for example, `now+15m`, `now+2h`, `now+2h15m`.

  If **starttime** is not set, the job won't start automatically.
- **period** - sets the job launching period, in minutes; if not set, the job won't run;
- **maxinstancecount** - maximum number of job instances running at a time.
- **threadcount** - maximum number of threads running at a time in a multi-thread job.
- **db_mark** - points to the job name in the Parallels H-Sphere database (value of the name field in the `last_start` table).
  See *CP Crons* in *H-Sphere Sysadmin Guide* for the `last_start` table description.

Adding Custom Promotion Validators and Calculators

Parallels H-Sphere allows to define custom *promotions* - flexible discount systems - and assign them for individual plans.

Usually, a customer enters a certain *promotion code* on signup, the system verifies the entered code if it proves to be valid and corresponds to the chosen plan, that user signs up with that discount. This is called a *codeable promotion*. There are also *codeless promotions* that don't require a code. Discount depends on a particular promotion and the way the discount is *calculated*.

This document explains how to add and configure custom promotion validators and calculators.

➢ *To add a custom promotion validator or calculator to Parallels H-Sphere:*

1. Log into the CP server as the cpanel (on page 130) user.
2. Create a custom promotion validator or calculator:
   - To create a promotion validator, use the the `psoft.hsphere.promotion.PromoValidator` Java class interface: http://hsphere.parallels.com/HSdocumentation/sdk/api/psoft/hsphere/promotion/PromoValidator.html.

     The class can also extend the `AbstractPromoDataStorage` class to store the validator's data in the Parallels H- Sphere database: http://hsphere.parallels.com/HSdocumentation/sdk/api/psoft/hsphere/promotion/AbstractPromoDataStorage.html.
   - To create a promotion calculator, use the the `psoft.hsphere.promotion.calc.PromoCalculator` Java class interface: http://hsphere.parallels.com/HSdocumentation/sdk/api/psoft/hsphere/promotion/calc/PromoCalculator.html.

     The class can also extend the `AbstractPromoDataStorage` class to store the calculator's data in the Parallels H- Sphere database: http://hsphere.parallels.com/HSdocumentation/sdk/api/psoft/hsphere/promotion/AbstractPromoDataStorage.html.

   Example:

```
package psoft.hsphere.promotion.calc;
import psoft.hsphere.promotion.AbstractPromoDataStorage;
import psoft.hsphere.Session;
import psoft.hsphere.Account;
import psoft.util.USFormat;

import java.util.Hashtable;
public class PercentDiscountCalc
extends AbstractPromoDataStorage implements PromoCalculator {
private double discountPercent;
public PercentDiscountCalc(long promoId) throws Exception {
```

```
super(promoId);
discountPercent =
USFormat.parseDouble((String) data.get("discount_percent"));
    }

public PercentDiscountCalc(long promoId, Hashtable data)
throws Exception {
super(promoId, data);
discountPercent =
USFormat.parseDouble((String) data.get("discount_percent"));
    }

public int getDataType() {
return 2;
    }

public double getPromoDiscount(Account a, double sum) {
return sum*discountPercent/100;
    }

public void updateData(long promoId, Hashtable data) throws
Exception {
super.updateData(promoId, data);
Session.getLog().debug("Updating discount percent");
discountPercent =
USFormat.parseDouble((String) data.get("discount_percent"));
    }
}
```

3. Configure custom promotion validator or calculator in the XML configuration file.

   All promotion validators and calculators should be added to and configured in the `promotions.xml` file. Its default location is `~cpanel/shiva/psoft/hsphere/promotion/xml/`. The file location can be altered with the `PROMO_CONFIG` and `CUSTOM_PROMO_CONFIG` properties in `~cpanel/shiva/psoft_config/hsphere.properties`:

```
PROMO_CONFIG=/hsphere/local/home/cpanel/shiva/psoft/hsphere/p
romotion/xml/promotions.xml
CUSTOM_PROMO_CONFIG=/hsphere/local/home/cpanel/shiva/custom/x
ml/promotions.xml
```

   `promotions.xml` should be customized according to XML customization (on page 68) rules.

DTD Structure: http://hsphere.parallels.com/HSdocumentation/xmls/promotions.dtd

Example: http://hsphere.parallels.com/HSdocumentation/xmls/promotions.xml

Elements and attributes:

- **<promotions>** - contains all defined promotion validators.
- **<promo>** - configuration of a particular promotion validator.
  Attributes:
  - **id** - a unique promotion identifier: 1,2,...
  - **description** - a short description of a validator. It shows up in the dropdown list of promotions in Control Panel.

- **class** - a name of a Java class for this validator.
- **itype** - a type of the validator's interface. If it is set to "AUTO", interface for adding the validator parameter will be built automatically, depending on parameters defined for the validator or calculator; otherwise, values of the **add_template** and **edit_template** attributes will be used as template names for adding/editing set of data which is required for a given promotion validator.
- **add_template** - a name of a template for adding the validator data; the value of this attribute will take effect only in case if **itype** is not set to "AUTO".
- **edit_template** - a name of a template for editing the validator data; the value of this attribute will take effect only in case if **itype** is not set to "AUTO".

- **<calculators>** - contains all defined promotion calculators.
- **<calc>** - configuration of a particular promotion calculator. Attributes have the same meaning as for promotion validators.
- **<params>** - contains all parameters used by promotion validators or calculators.
- **<param>** - configuration of a particular parameter.
  Attributes:
  - **label** - a name of a label in `~cpanel/psoft/hsphere/lang/hsphere_lang.properties` with the message that appears on the page where users enters a promo code.
  - **name** - the parameter's name. The `AbstractPromoDataStorage` object stores validators' or calculators' data from HttpRequest using this name with the prefix **pv**_ for a validator and **pc**_ for a calculator. For example, if `name="percent"`, `AbstractPromoDataStorage` expects the **pv_percent** variable for the validator and the **pc_percent** variable for the calculator to be present in HttpRequest.

Adding Custom MS Exchange Plans into Parallels H-Sphere

Since version 2.5 Parallels H-Sphere provides integration with Microsoft Exchange mail hosting plans. The following four default MS Exchange plans are already included into Parallels H-Sphere as resources:

- **Base Mail**
- **Gold Mail**
- **Platinum Mail**
- **Platinum Mail Pro**

Parallels H-Sphere admin can also import more plans created on MS Exchange server into Parallels H-Sphere as MS Exchange hosting resources. This document is an example of a step-by-step procedure on how to do it:

1. Create a custom `msExchangePlans.xml` file with description of your new custom MsExchange plan (it will be merged with the standard `msExchangePlans.xml`):

```
<plans>
   <plan type=”new_plan”>
      <planName>NewPlanName</planName>
      <planDescription>New MS Exchange Plan
Name</planDescription>
      <planFeatures>
. . . .
         <feature>
            <featureName>some_feature</featureName>
            <featureDescription>This feature’s
description</featureDescription>
            <featureValue>some_value</featureValue>
         </feature>
. . . .
      </planFeatures>
   </plan>
</plans>
```

2. Create the `msexchange.xml` file that will be merged with the standard hsphere plan wizard xml (`msexchange.xml`):

```
<PlanWizard name=”msexchange”
description=”planeditor.res_msexchange”>
<categories>
   <category description=”planeditor.other”>
      <resource name=”new_plan” required=”1”
class=”psoft.hsphere.resource.mpf.hostedexchange.HostedExchan
gePlan”/>
   </category>
</categories>
<resources>
   <res_bizuser>
      <mod name=”new_plan”>
         <initresource name=”new_plan”/>
      </mod>
   </res_bizuser>
</resources>
</PlanWizard>
```

where ***new_plan*** is the name of the MS Exchange hosting plan you are adding. **This name must not exceed 10 symbols.**

Notes:

1. Don’t copy content of the existing standard HS MsExchange plan xml file.
2. Parallels H-Sphere 2.5 and up implements a Java utility that fetches this information from MS Exchange hosting server:

```
java psoft.hsphere.tools.HePlanExctractor
```

   This utility prints XML output with properties of all available MS Exchange hosting plans. Or, you can obtain plan features in XML form in the `HostedExchange` Web interface under the `GetPlanDetail` service.

3. Read more how to merge custom XML files in Customization Guide.

3. Log into the CP server as the `cpanel` user.

4. Create a special location where you will assemble and build a package describing your MsExchange plan, for example, `~cpanel/shiva/custom/Packages`:

```
mkdir ~cpanel/shiva/custom/Packages
```

5. Run package configurator (on page 109):

```
cd ~cpanel/shiva/custom/Packages
java psoft.hsp.tools.PkgConfigurator—with-
prefix=./ms_customization—with-xmls—with-properties—with-sql
```

Package configurator will create the ms_customization directory, which includes the following structure:

- `src/pkg_config/` - directory with the `default.properties` file
- `src/pkg_xmls/` - directory directory where you will place msExchangePlans.xml and msexchange.xml
- src/_pkg.xml - file to set package name, version, build, vendor and description
- src/_SCRIPTS/_pkg.sql - file to add the SQL query that will be executed during the package installation

1. Set the package name, version, build, vendor, description in `src/_pkg.xml`:

```
<?xml version="1.0" encoding="UTF-8"?>
<pkg build="00" description="Description for test package"
info="Additional information" name="MSExchangeCustomization"
vendor="Vendor" version="00.00.00">
<xmls src="pkg_xmls/"/>
<config path="pkg_config/default.properties"/>
```

Note: Package name can't contain spaces and special characters.

2. Edit `src/_SCRIPTS/_pkg.sql`. Add the following line into it:

```
INSERT INTO type_name (id, name, price, description, rprice)
VALUES ('resource_type_id', 'new_plan', 'RFS', 'resource_type_description',
'RFS');
```

where:

- **resource_type_id** is an integer from the range 20100-21490, unique in the type_name.
- **new_plan** is a resource type name, up to 10 symbols string without spaces.
- **resource_type_description** is your plan description.
- **RFS** - price type, should be `RFS` for all MS Exchange plans you add.

For example, a standard MS Exchange plan will have the following records:

```
hsphere=# SELECT * from type_name where description like
'Hosted Exchange%';
id | name | price | description | rprice | required |
priority | ttl
------+-----------+-------+-------------------------------
--------+--------+----------+----------+-----
7222 | plat_mailp | RFS | Hosted Exchange Platinum Mail Plus
Plan | RFS | | |
7219 | base_mail | RFS | Hosted Exchange Base Mail Plan | RFS
| | |
7221 | plat_mail | RFS | Hosted Exchange Platinum Mail Plan |
RFS | | |
7220 | gold_mail | RFS | Hosted Exchange Gold Mail Plan | RFS
| | |
```

3. Copy the prepared `msExchangePlans.xml` and `msexchange.xml` files to `ms_cutomization/src/pkg_xmls/`:

```
cp /some/location/msExchangePlans.xml
~cpanel/shiva/custom/Packages/ms_customization/src/pkg_xmls/
cp /some/location/msexchange.xml
~cpanel/shiva/custom/Packages/ms_customization/src/pkg_xmls/
```

4. Edit `src/pkg_config/default.properties`:

   Add properties that specify location of xml file implemented in this package:

```
PLAN_WIZARDS_DIR=.
HOSTED_EXCHANGE_PLANS = msExchangePlans.xml
```

   Return from the package directory and run package builder (on page 116):

```
cd ~cpanel/shiva/custom/Packages
java psoft.hsp.tools.PkgBuilder—with-source=ms_customization
```

The hsp package, for example, `MSExchangeCustomization-00.00.00-01.hsp`, will be created in the directory.

Customizing E-Mail Notification List

Parallels H-Sphere e-mail notifications can be customized directly in CP admin interface as in the **Settings->E-Mail Notifications** menu.

Custom E-Mails		
Misc		
CC	**Description**	
☐	Async. Manager Canceled Transactions	
☑	Async. Manager Processed Transactions	
☐	Lost Password Message	
☑	Overlimit Notification	
☑	Shell Access Notificaton	
☑	Virtual Private Server Initialization Notification	
Custom Domain Registration		
☑	User Information Changed Message	
☑	Custom Domain Registration Request Message	
☑	Custom Renew Domain Registration Message	
Managing Debtors		
☑	Deletion Warning	
☑	Account Deletion	
☑	Suspension Warning	
☑	Account Suspension	

The list of e-mail notifications is set in the `~cpanel/shiva/psoft/hsphere/user_emails.xml` XML configuration file. It is customizable by means of Parallels H-Sphere packages (on page 125).

- **DTD Scheme:** http://hsphere.parallels.com/HSdocumentation/xmls/user_emails.dtd

Example: http://hsphere.parallels.com/HSdocumentation/xmls/user_emails.xml
`user_emails.xml` has the following structure:

- **groups** - container for description of the groups of e-mail notifications. (In **Settings->E-Mail Notifications**, notifications are displayed in groups, according to their purpose.)
- **group** - tag for the group description.
  Attributes:
  - **id** - group identifier.
  - **name** - group name, corresponds to the label in language bundles (on page 55) (`~cpanel/languages/hsphere_lang.properties`).
- **emails** - container for description of e-mail notifications.
- **email** - tag with notification description.
  Attributes:
  - **tag** - notification tag. Corresponds to the notification's `ce.`***`TAG_NAME`***`.title` (name of the notification in the list in CP), and `ce.`***`TAG_NAME`***`.desc` (short description in the list) labels in `hsphere_lang.properties`, where ***TAG_NAME*** is the value set in the tag attribute of the notification in `user_emails.xml`
  - **group_id** - corresponds to the id attribute of the group to which this e-mail notification belongs to.
  - **template** - pathname to the corresponding system e-mail notification template, relative to the `~cpanel/shiva/shiva-templates/common` directory of default Parallels H-Sphere templates. For example, `template="mail/custom_registrar_registration.txt"` points to the `~cpanel/shiva/shiva-templates/common/mail/new_account.txt` template for the "welcome" message on creating a new account.
  - **massmail_applicable** - if set to `1`, this notification is available for mass mail delivery.
  - **admin_only** - if `admin_only="true"`, this notification is available only from the admin CP.
  - **no_cc** - if `no_cc="true"`, no copies (the BCC: field) of this e-mail notification are sent to the addresses defined in the CP admin's **Settings->Notification Recipients** menu. That corresponds to unchecking the Sent CC checkbox while editing the notification in CP.
- **subject** - tag with the subject of the e-mail message to be sent to customers.

In this section:

Using Variables in Parallels H-Sphere E-Mail Notifications

Parallels H-Sphere e-mail notifications can be customized directly in CP admin interface in the **Settings->E-Mail Notifications** menu.

This document aims at advanced customization of these messages. It contains the description of basic notification variables.

Below is the table illustrating which variables are used in which notifications. The notifications are grouped and named according to their XML configuration file, `user_emails.xml`. The **Tag** column corresponds to the names of the notifications set in the **tag** attributes in `user_emails.xml`. In the **Variables** column, only variables specific to that particular notifications are listed. Standard variables are variables common for all notifications. Properties and methods for variables are listed below.

The List of Notification Variables

Tag	Description	Variables
Misc		
LOST_PASSWORD	Lost Password Message	*standard variables*
OVERLIMIT	Overlimit Notification	suspend over_limit_res *standard variables*
SSH_NOTIFICATION	Shell Access Notification	result subject *standard variables*
VPS_INIT	Virtual Private Server Initialization Notification	vpsname ips ci *standard variables*
Custom Domain Registration		
ASYNC_CANCELED	Async. Manager Canceled Transactions	Not implemented
ASYNC_DONE	Async. Manager Processed Transactions	d toolbox
CUSTOM_REGISTRAR_CONTACT_CHANGED	User Information Changed Message	registrant tech admin billing domain_name renew_days

		email_days *standard variables*
CUSTOM_REGISTRAR_REGISTRATION	Custom Domain Registration Request Message	registrant tech admin billing domain_name renew_days email_days *standard variables*
CUSTOM_REGISTRAR_RENEW	Custom Renew Domain Registration Message	registrant domain_name renew_days email_days period *standard variables*
Managing Debtors		
DEBT_DEL_NOT	Deletion Warning	bill negative_date current_date suspend_date delete_date *standard variables*
DEBT_DEL_REASON	Account Deletion	bill negative_date current_date suspend_date delete_date *standard variables*
DEBT_SUSP_NOT	Suspension Warning	bill negative_date current_date suspend_date delete_date *standard variables*
DEBT_SUSP_REASON	Account Suspension	Not implemented
DEBT_WARN_NOTIFICATION	Outstanding Balance Notification	bill negative_date current_date suspend_date delete_date *standard variables*
TRIAL_SUSP_REGISTER	Trial Suspension Notification	*standard variables*
Welcome Messages		

FAILED_SIGNUP	Failed Signup Notification	failed_signups_q accounts lang
NEW_ACCOUNT	Welcome Letter	bi ci *standard variables*
NEW_MODERATED	Welcome Letter For Moderated Accounts	bi ci reseller_url *standard variables*
NEW_MODERATED_CC	Welcome Letter For Moderated Account with CC	bi ci reseller_url *standard variables*
TRIAL_MODERATED	Welcome Letter For Trial/Moderated Account	bi ci reseller_url *standard variables*
TRIAL_REGISTER	Trial Registration	*standard variables*
Tax Exemptions		
ACCOUNT_TEXEMPT_APPROVED	Tax Exemption Approved Notification (Live Accounts)	bi ci date *standard variables*
ACCOUNT_TEXEMPT_REJECTED	Tax Exemption Rejected Notification (Live Accounts)	bi ci date *standard variables*
MODERATED_TEXEMPT_APPROVED	Tax Exemption Approved Notification (Moderated Accounts)	bi ci date request *standard variables*
MODERATED_TEXEMPT_REJECTED	Tax Exemption Rejected Notification (Moderated Accounts)	bi ci date request *standard variables*
NEW_MODERATED_TEXEMPT	Welcome Letter (Tax Exemption)	bi ci reseller_url *standard variables*

Domain Registration		
DOMAIN_TRANSFER	Domain Transfer Message	domain *standard variables*
REGISTRAR_EXPIRED_WARN	Expired Domain Registration Notification	osrs *standard variables*
REGISTRAR_RENEW_WARN	Domain Registration Renew Warning	osrs *standard variables*
Managing Trials		
TRIAL_APPROACH_NOT	Trial Expiry Warning	current_date delete_date suspension_date trial_days_till *standard variables*
TRIAL_DEL_NOT	Deletion Warning	current_date delete_date suspension_date trial_days_till *standard variables*
TRIAL_DEL_REASON	Account Deletion	current_date delete_date suspension_date trial_days_till *standard variables*
TRIAL_SUSP_NOT	Suspension Warning	current_date delete_date suspension_date trial_days_till *standard variables*
Trouble Ticket System		
INTERNAL_TICKET	Internal Ticket	*standard variables*
Accounting		
ACCOUNTING_ERROR	Accounting Error letter	error date stack error_subject *standard variables*
INVOICE	Order Confirmation	entries taxes subtotal total reseller_url

		standard variables
MONEY_BACK	Money Back Notification	*standard variables*
Suspend/Resume		
RESUME	Account Resumed Notification	*standard variables*
SUSPEND	Account Suspended Notification	reason *standard variables*

Standard Variables

Variable	Description
account	The instance of the Account object
user	The instance of the User object
plan	The instance of the Plan object
toolbox	The instance of the Toolbox object
config	Values from hsphere.properties
settings	Current reseller settings
lang	The Lang object

Special Variables

Variable	Description
suspend	The date when account will be suspended
over_limit_res	The list of overlimited resources: Traffic, Quota, SummaryQuota
result	The result of the request (OK, REFUSED, DISABLED), used only in SSH_NOTIFICATION
subject	The result description, used in SSH_NOTIFICATION
vpsname	VPS server name
ips	List of VPS server IPs
d	The instance of the AsyncDescriptor object, used only in ASYNC_DONE
registrant	The same as ContactInfo
tech	Tech info
admin	Admin info
billing	Registrar Billing Info
domain_name	Domain name

renew_days	Renew domains that many days before domain expiration
email_days	Warn users about domain expiration that many days in advance
period	Renewal period, in years
bill	The instance of the Bill object
negative_date	Outstanding balance date
current_date	Current date
suspend_date	The date when account will be suspended
delete_date	The date when account will be deleted
failed_signups_q	Failed signups counter, only for FAILED_SIGNUP
accounts	List of accounts with failed signup, only for FAILED_SIGNUP
bi	The instance of the BillingInfo object
ci	The instance of the ContactInfo object
date	Current date
request	Fake request object
reseller_url	Reseller URL
suspension_date	The date when the account will be suspended
trial_days_till	Days left till the end of the trial period
error	Error message
stack	Java stack trace
error_subject	Error’s short description
entries	The list of bill entries
taxes	List of taxes
subtotal	The total, without taxes
total	The total, with taxes

reason	Reason for suspension, used only in SUSPEND

Properties and Methods

Many variables used in e-mail notifications are instances of Parallels H-Sphere objects. Below is the table with the description of methods and properties of respective objects (in bold).

Account

Property/Method	**Description**
id	Account ID
description	Description
periodId	Billing period ID
bi	The BillingInfo object
ci	The ContactInfo object
bill	The Bill object
plan	The Plan object
planId	Plan ID
receive_invoice	Flag indicating if the invoice is received
suspend_reason	Reason for suspension
password	Password
login	Login
trial_time_left	Time left from trial account creation
p_end	Billing period end date
exhaustion_date	Exhaustion date
created	Account creation date

User

Property/Method	**Description**
login	Login
password	Password
reseller_id	Reseller ID

reseller_url	Reseller’s CP URL
reseller_context_url	Reseller Context URL
prefix	Prefix for databases
isdemo	Flag indicating that the account is in demo mode

Plan

Property/Method	Description
id	Plan ID
description	Description
reseller_id	Reseller ID
disabled	Flag indicating that plan is disabled
isPromocodeApplicable	Flag indicating if promocode is available
type	Plan type

Toolbox

Property/Method	Description
getInvoice(modId)	Returns an Invoice object
calculateTaxes(total[,bi_id])	Calculates taxes
currency(value)	Returns a string with currency representation
numberToCurLocale(value,useGrouping)	Converts a number to current locale
getPaymentLink(gateway, sbalance, prefix, account, description)	Returns payment link
int2ext(ip)	Converts internal IP to external
lt(val1,val2)	Compares two variables. Returns 1 if val<val2, else 0
sub(val1,val2)	Subtracts val2 from val1

mul(val1,val2)	Multiplies val1 and val2
taxes	The list of taxes
displayBalance(balance)	Returns a string with the balance
now	Current date
date	Current date

Traffic

Property/Method	**Description**
traffic	Current traffic
size	Traffic limit
tt_type	Traffic type
text_traffic	Text representation of traffic amount
info	Current traffic status
start_date	Date when traffic calculation is started

Quota

Property/Method	**Description**
limitMb	Quota size, in MB
limitFiles	Limit of used files
usedMb	Disk space now in use, in MB
usedFiles	Used files counter
info	Current quota status
start_date	Date when disk usage calculation is started

SummaryQuota

limitMb	Disk usage limit
usedMb	Current disk usage, in MB
lastDayUsedMb	The last day usage, in MB
info	Current disk usage status

start_date	Date when disk usage calculation is started
short_start_date	Disk usage calculation starting date, short format

ContactInfo

Property/Method	Description
first_name	First name
last_name	Last name
org_name	Company name
address1	Address
address2	Second address
address3	Third address
city	City
state	State
country	Country
postal_code	ZIP code
phone	Phone number
fax	Fax number
email	E-mail address

BillingInfo

Property/Method	Description
id	Billing contact info identifier
bi_id	Bill id
name	Name
first_name	First name
last_name	Last name
org_name	Company name
address1	Address

address2	Second address
city	City
state	State
state2	Second state
country	Country
postal_code	ZIP code
phone	phone number
fax	Fax number
email	E-mail address
reason	Reason for suspension
type	Payment type: **CC** - credit card, **CHECK** - check, **TRIAL** - trial account.
pi	The PaymentInfo object
exemption_code	Tax exemption code
negative_date	Outstanding balance date

PaymentInfo

Property/Method	**Description**
number	CC number
hNumber	Hidden number
cvv_checked	Flag indicating that CVV is checked
exp	CC expiration date
exp_year	CC expiration year
exp_month	CC expiration month
exp_day	CC expiration day
start_date	CC creation date
start_year	CC creation year
start_month	CC creation month

start_day	CC creation day
issue_no	Issue number
name	CC name
expired	Flag indicating if CC is expired
info	CC info
type	CC type
fatts	Failed Charge Attempts Counter
fatts_info	Failed Charge Attempts info
is_fatts_checked	Flag indicating if Fatts control is activated

AsyncDescriptor

Property/Method	Description
user_id	User id
user	the User object
rid	Resource id
description	Description
start_date	Start date
last_check	Last check
state	State
max_delay	Maximum delay
interval	Interval
error	Error message
error_code	Error code

Bill

Property/Method	Description
id	Bill id
opened	Date when the billing period is opened

closed	Date when the billing period is closed
entries	List of billing entries
description	Description
desc_plan	Plan description
desc_short	Short description
start_balance	Start of the billing period
end_balance	End of the billing period
debits	Debit
credits	Credit
change	Difference
amount	Amount
subamount	Amount without taxes
balance	Balance
credit	Credit
customCredit	Custom credit
negativeDate	Outstanding balance
format_opened	Formatted date when the billing period was opened
format_closed	Formatted date when the billing period was closed
to_pay	Negative balance
taxes	List of taxes
total_taxes	Taxes, total

BillEntry

Property/Method	**Description**
id	Billing entry id
bill_id	Billing period id
description	Description

is_credit	Flag indicating if credit is added
tax	Tax
amount	Amount
balance	Balance
note	Note
type	Payment type
canceled	Flag indicating if the billing entry is canceled
billing_info_id	Billing info id
date	Date when the billing entry is added
format_date	Formatted date when the billing entry was added

Invoice

Property/Method	Description
localized_total	The total in local currency
total	The total
subtotal	The total without taxes
entries	Billing entries
taxes	List of taxes

- ***Examples of Usage***

Labels from language bundles

Labels from the `hsphere_lang.properties` language bundles (on page 55) are called by means the `lang` variable.

For example, the `massmail.welcome_login` label is called:

```
${lang.massmail.welcome_login}
```

In more complex cases, labels may contain arguments within their text, for example:

```
massmail.welcome_header = Dear {0} {1},
```

where the arguments `{0}` and `{1}` stand for a customer's first name and last name, respectively.

To call such labels with arguments:

```
${lang.massmail.welcome_header(account.ci.first_name,account.
ci.last_name)}
```

Please refer to the description of **account** and **ci**.

Getting credit card information

The **pi** variable returns information about user credit card. For example, to get credit card number:

```
${account.bi.pi.number}
```

CHAPTER 9

Packages

Packages (`.hsp`) are addons extending the default functionality of Parallels H-Sphere. This chapter explains how to build and install packages into Parallels H-Sphere.

In this chapter:

Building Packages

Parallels H-Sphere offers an interface for integrating custom plugins, or *packages*. With these packages, you may add new or override default Parallels H-Sphere functionality.

Packages can be used to integrate the following elements:

- **resources**: new or custom Java classes
- **system scripts** (in the `/hsphere/shared/scripts` directory)
- **templates**: new or custom templates
- **images**: custom images
- **menu**: Control Panel menu elements
- **interface**: Control Panel skins and icon sets
- **language bundles**: adding new languages to Parallels H-Sphere interface or updating language files
- **context help**: context help XML file customization
- **plans**: XML plan wizards (on page 74)
- **crons**: new or custom CP cron jobs (on page 82)
- **promotions**: custom promotion validators and calculators
- **SQL quieries**: making changes into the Parallels H-Sphere database
- **third party RPMs and tarballs** to be included into Parallels H-Sphere scripts.

These components are built into one portable `.hsp` file which can be easily installed (on page 126) by an Parallels H-Sphere system administrator.

➢ ***Building packages is performed in the following steps:***

1. **preconfiguration**:
   - determine package configuration: what resources, templates, systems scripts, XML configuration files, language bundles, jars, etc. would be included into a package
   - prepare package content: make sure the files to be included to a package are located in the corresponding directories you will specify in the package configurator's command line
   - run package configurator to collect package source files into one preconfigured package source directory
2. **configuration**:
   - set package info: package name, version, build, etc.
   - set package custom properties configuration: custom XML configs, language bundles, etc.
   - check and manually add source files wherever needed
3. **building**: assemble the package into one Java archive file with .hsp extension

In this section:

Step 1. Preconfiguration

1. Log into the CP server as cpanel user.
2. Run **package configurator** to prepare the structure of your package. The format is:

```
java psoft.hsp.tools.PkgConfigurator—with-prefix[=TARGET_DIR]
[WITH-OPTIONS] [-l LOG_FILE [-dl]]
```

Here:

- ***TARGET_DIR*** is the directory where the package will be assembled. Package configurator creates the directory structure where you will later add files to build the package. If the specified directory does not exist, the configurator will try to create it. If TARGET_DIR is omitted, the directory structure will be created in the current directory.
- ***WITH-OPTIONS***: you choose the options to specify which components you will include into the package: templates, language bundles, images, scripts, etc. See Package Tools (on page 116) for details.
- ***LOG_FILE***: with the -l option, package configurator writes its actions to a log file where you could check if it worked through correctly; `-dl` is a detailed log mode.

Example:

```
cd ~cpanel/shiva/custom/Packages
java psoft.hsp.tools.PkgConfigurator—with-prefix=./MyPackage—
with-properties—with-templates—with-lang-bundle—with-classes—
with-scripts—with-xmls -l conf.log -dl
```

Notes on usage:

1. It is convenient to create a special location where you will assemble your packages. For example, you can create the `~cpanel/shiva/custom/Packages` directory and specify the `MyPackage` subdirectory as ***TARGET_DIR*** for package configurator.
2. Normally, you don't need to specify paths in ***WITH-OPTIONS***. In such case, package configurator will create empty directories (with empty default files for some options) within the ***TARGET_DIR*** directory, and you will be able to add the files later.

Inside the package directory (specified in the—`with-prefix` option), package configurator creates:

- the **package configuration file** `_pkg.xml`. In this XML file you define the package info (name, version, build, vendor, description) and configure what elements will be included into the package.
- the `src` directory where all source files are collected in the following directories and files specified in _pkg.xml, in accordance with the configurator's options chosen:
- `templates/` - custom templates;
- `pkg_classes/` - custom Java classes;

- `pkg_scripts/` - custom scripts;
- `pkg_xmls/` - custom XML configuration files;
- `pkg_jars/` - 3rd party JARs;
- `pkg_config/` - custom package properties (the empty default.properties file created);
- `pkg_lang_bundle/` - language bundles
- `pkg_images/` - custom images
- `pkg_tarballs/` - 3rd-party tarballs (`.tgz` archives)
- `pkg_rpms/` - 3rd-party RPMs
- `_SCRIPTS/_pkg.sql` - SQL queries to be performed upon the Parallels H-Sphere database
- `_SCRIPTS/_pre-install` - script to be executed before the package installation (on page 126)
- `_SCRIPTS/_post-install` - script to be executed after the package installation
- `_SCRIPTS/_pre-uninstall` - script to be executed before the package uninstallation (on page 127)
- `_SCRIPTS/_post_uninstall` - script to be executed after the package uninstallation

Step 2. Configuration

Package Configuration File (_pkg.xml)

- DTD Scheme: http://hsphere.parallels.com/HSdocumentation/xmls/package.dtd
- Description of Tags and Attributes in _pkg.xml (on page 121)
- Example: http://hsphere.parallels.com/HSdocumentation/xmls/package.dtd

According to the options selected, package configurator creates the package configuration file `_pkg.xml` which looks similar to this:

```
<?xml version="1.0" encoding="utf-8"?>
<pkg build="00" description="Description for test package"
info="Additional information" name="NameOfThePackage"
vendor="Vendor" version="00.00.00">
<scripts src="pkg_scripts/"/>
<templates src="templates/"/>
<classes src="pkg_classes/"/>
<xmls src="pkg_xmls/"/>
<config path="pkg_config/default.properties"/>
</pkg>
```

Here, define the package name, description, vendor, version and build. This may look like:

```
<pkg build="2" description="Test Package"
info="This is a package built for test purposes"
name="MyPackage"
vendor="Company Name" version="1.0.1">
```

In the above example, the package will be built into the `MyPackage-1.0.1-2.hsp` file.

You may not need to edit paths specified in `_pkg.xml`.

Package Properties File (default.properties)

If you run the package configurator with the—`with-properties` option, package configurator creates the empty `src/pkg_config/default.propeties` file. It has the same syntax as the default Parallels H-Sphere properties file `~cpanel/shiva/psoft_config/hsphere.properties`. Package properties will customize the default properties in `hsphere.properties`.

1. You must not change settings in `hsphere.properties`;
2. The package's `default.properties` file should contain only settings to be added to/override the settings in `hsphere.properties`. **Don't copy the whole content of hsphere.properties!**

Templates

The **src/templates/** directory with custom templates must have a structure similar to that of the Parallels H-Sphere custom templates (on page 11) directory.

Important: For those templates that have both `.html` and `.html.in` files, you should include only `.html.in` templates sources into the package. They should be automatically compiled during installation.

Read a separate document on customizing templates with packages (on page 123).

XML Configuration Files

The **pkg_xmls/** directory will include custom XML configuration files, such as `menu.xml` (see Menu XML Customization (on page 46)) or `design-config.xml` (see Design XML Customization (on page 34)).

If you are planning to include XML configuration files into your package, you must run package configurator with the—`with-xmls`—`with-properties` options. The—`with-properties` option will create the package properties file, where you will set the corresponding properties for custom XML config files to be included to the package.

1. In `default.properties`, specify just the names of the XML config files to be customized, without paths to them, for example:

```
DESIGN_SCHEME_CONFIG=design_config.xml
MENU_CONFIG=menu.xml
```

2. Make sure that custom XML config files contain only those tags that need to be customized. Package builder will automatically find and merge custom XML configuration with default configuration (on page 70).

Read a separate document on customizing XML configuration files with packages (on page 125).

Language Bundles

If you include language bundles to the package, you must run package configuration with the—`with-lang-bundle`—`with-properties` options. The—`with-properties` option is used to create the package properties file.

1) Add custom language bundle files:

- Copy your customized language bundle file to the `src/pkg_lang_bundle` directory:

  `hsphere_lang_`***<language>***`_`***<COUNTRY>***`.properties`

  For example, language bundles for Portuguese (Brazil) will be:

  `hsphere_lang_pt_BR.properties`
- If you are not changing the default language file, add *empty files* with these names to the `src/pkg_lang_bundle` directory:

```
cd src/pkg_lang_bundle
touch hsphere_lang.properties
```

  This is required for correct bundle compilation (on page 58).
- In `default.properties`, add the following lines:

```
TEMPLATE_BUNDLE=packages.PackageName.hsphere_lang
```

  The package properties will be merged with the default settings in hsphere.properties.

2) Adding a new language to Parallels H-Sphere: see Building New Language Packages (on page 114)

Scripts

The **pkg_scripts/** directory will have a tree of subdirectories, their level reflecting the server type, OS family, OS name. For example, if you need to integrate a script that will run on the CP server with RedHat Enterprise Linux EL 4, you will have to put your script into the directory `src/pkg_scripts/CP/Linux/RHEL4/`

Classes

The **pkg_classes/** directory will have a tree of Java classes similar to the Parallels H-Sphere resource tree in `/hsphere/local/home/cpanel/shiva/`.

Step 3. Package Builder

Run package builder to build the package. Use the—`help` option to see the list of possible parameters:

```
java psoft.hsp.tools.PkgBuilder—help
```

The command will look similar to the following:

```
java psoft.hsp.tools.PkgBuilder—with-source=./MyPackage
```

Package builder checks if all required files in the source directory are present, forms one jar file of Java classes (if they are present), and makes a package as one jar file with the `.hsp` extension (e.g., `MyPackage-1.0.1- 2.hsp`) in the source directory (`./MyPackage` in the example above).

After the package is built successfully, the package is ready to use. It can be easily installed (on page 126) and uninstalled (on page 127) on other Parallels H-Sphere clusters.

Building Language Packages

This document will guide you through the process of building a package (on page 109) that adds a new language to Parallels H-Sphere interface. A package is built into one portable `.hsp` file and can be easily installed by a Parallels H- Sphere system administrator.

Please also refer to the collection of Parallels H-Sphere language packages: http://www.psoft.net/downloads/index.html#languages.

To build a language package, you should be familiar with the concept of language bundles (on page 55) and the way they are compiled.

Let us take Portuguese (Brazil) as a sample language to be added. We assume you have the language bundles already translated.

1. Log into the CP server as cpanel user (on page 130).

2. Create a special location where you will assemble and build your packages, for example, `~cpanel/shiva/custom/Packages`:

```
mkdir ~cpanel/shiva/custom/Packages
```

3. Run package configurator:

```
cd ~cpanel/shiva/custom/Packages
java psoft.hsp.tools.PkgConfigurator—with-prefix=./pt_BR—
with-properties—with-lang-bundle
```

4. Package configurator will create the `pt_BR` directory, which includes the following structure:

   `src/_pkg.xml` - package configuration file

   `src/pkg_lang_bundle/` - directory where you will place new language files

   `src/pkg_config/default.properties` - custom package properties file (initially empty)

5. Set the package name, version, build, vendor, description in `src/_pkg.xml`:

```
<pkg build=”1” name=”Language_PT_BR” description=”Portuguese
(Brazil) Language Package”
info=”Package for installation of the Portuguese (Brazil)
language into Parallels H-Sphere”
vendor=”Sample Company Inc.” version=”0.0.1”>
```

6. You don’t need to edit other tags in `_pkg.xml`.

7. Copy the translated language files into `pt_BR/src/pkg_lang_bundle/`:

Important: Starting with Parallels H-Sphere 3.0 RC 1, `menu.properties` and `messages.properties` become deprecated, and all labels are collected a single `hsphere_lang.properties` file for each language!

```
cd src/pkg_lang_bundle/
cp /some/location/hsphere_lang_pt_BR.properties .
```

8. Create the empty file `hsphere_lang.properties` in the `pt_BR/src/pkg_lang_bundle/` directory:

```
touch hsphere_lang.properties
```

9. These files are required for correct bundle compilation during the package installation.

10. Add the misc.langs.***<LABEL>***lang label with the name of the new language into `hsphere_lang.properties`. This text will appear as the new language option in the *Change Language* dropdown menus in Parallels H-Sphere.

```
misc.langs.ptlang = Portugu\u00eas (Brasil)
```

Notes:

1) Default (English) language bundles are written in the ISO-8859-1 encoding. Special Latin and non-Latin characters must be converted into Unicode. Use the native2ascii JDK tool (http://java.sun.com/j2se/1.4.2/docs/tooldocs/windows/native2ascii.html) to convert these symbols into Unicode characters (\u*xxxx* notations, like “Portugu**\u00ea**s” instead of “Portugu**e**s” in the example above).

2) If the original language name significantly differs from that in English, (especially for non-Latin alphabets), we recommend adding its English transcription, e.g.:

```
misc.langs.de_atlang = Deutch (\u00d6sterreich) - German
(Austria)
```

11. Edit `src/pkg_config/default.properties`:

12. Add properties that specify location of language bundles implemented in this package. The format is:

```
TEMPLATE_BUNDLE=packages.PackageName.hsphere_lang
```

Here, ***PackageName*** is the value of the name attribute of the `pkg` tag in `_pkg.xml`.

In our example, we add the following lines to default.properties:

```
TEMPLATE_BUNDLE=packages.Language_PT_BR.hsphere_lang
```

13. Add the new language to the list of languages available in Parallels H-Sphere. Set the language and encoding of the translated language files in the LANG_LIST parameter. The format is:

```
LANG_LIST =
<language>_<COUNTRY>_<ENCODING>|<HTML_ENCODING>:misc.langs.<LABEL>la
ng
```

Here:

- **<*language*>**, **<*COUNTRY*>**, and **<*ENCODING*>** are Java locale identifiers. For detailed description and the tables of canonical identifiers, please refer to Understanding Language Bundles (on page 55).
- **<*HTML_ENCODING*>** is the HTML-compliant encoding (this parameter is deprecated since 2.4 and is not really used but must still be specified for the sake of compatibility);
- misc.langs.**<*LABEL*>**lang is the previously set **language** label.
- For Portuguese (Brazil):

```
LANG_LIST = pt_BR_ISO-8859-15|ISO-8859-15:misc.langs.ptlang
```

Notes:

- Don't specify other languages into `LANG_LIST` in `default.properties`! During the package installation, the package properties will be customize the default properties in `~cpanel/shiva/psoft_config/hsphere.properties`.
- You must specify the correct encoding in which the language bundle files were created and saved. During the package installation, language bundle compiler will convert these files into UTF-8.

14. Return from the package directory and run package builder (on page 116):

```
cd ~cpanel/shiva/custom/Packages
java psoft.hsp.tools.PkgBuilder—with-source=./pt_BR
```

The package `Language_PT_BR.0.0.1-1.hsp` will be created in the `pt_BR` directory. It is ready to be installed (on page 126) on Parallels H-Sphere.

Java Tools For Packaging

Packages are configured, built and installed by means of Java classes located in the directory `/hsphere/local/home/cpanel/shiva/psoft/hsp/tools/`:

- **Package configurator:** `psoft.hsp.tools.PkgConfigurator`
- **Package builder:** `psoft.hsp.tools.PkgBuilder`
- **Package installer:** `psoft.hsp.tools.PkgInstaller`
- **Package unistaller:** `psoft.hsp.tools.PkgUnInstaller`
- **Package checker:** `psoft.hsp.tools.PkgRecheck`

Package Configurator

Package Configurator (`PkgConfigurator`) is a tool to configure directory structure for assembling Parallels H-Sphere packages. PkgConfigurator creates the package directory skeleton and populates it with files used by the package. The parameters specify the types of the files and where they must be copied from. The source locations must have the correct directory structure. If the path parameter is omitted, the directory skeleton is created empty, and the files will have to be copied manually.

```
java psoft.hsp.tools.PkgConfigurator
•  with-prefix[=/path/to/directory]
        [   --with-templates[=/path/to/directory]   ]
        [   --with-images[=/path/to/directory]   ]
        [   --with-properties[=/path/to/directory]   ]
[  --with-xmls[=/path/to/directory]  ]
        [   --with-classes[=/path/to/directory]   ]
        [   --with-scripts[=/path/to/directory] | --with-
scripts-advanced[=/path/to/directory]   ]
        [   --with-scripts-advanced   ]
        [   --with-lang-bundle[=/path/to/directory]   ]
        [   --with-preinstall[=/path/to/file]    ]
        [   --with-postinstall[=/path/to/file]   ]
        [   --with-preupgrade[=/path/to/file]    ]
        [   --with-postupgrade[=/path/to/file]   ]
        [   --with-preuninstall[=/path/to/file]   ]
        [   --with-postuninstall[=/path/to/file]   ]
        [   --with-jars[=/path/to/directory]   ]
        [   --with-rpms   ]
        [   --with-tarballs   ]
        [   --with-sql[=/path/to/file]   ]
        [   --with-sql-uninstall[=/path/to/file]   ]
        [   --with-sql-upgrade[=/path/to/file]   ]
        [   --with-uninstall-sql[=/path/to/file]  ]
[ - l log_file [ -dl ] ]
```

Allowed parameters:

- `--with-prefix[=/path/to/directory]`
  Specifies the directory where the package skeleton will be generated. If the parameter is omitted, the current working directory will be used as the destination folder.
- `[ --with-templates[=/path/to/directory] ]`

Specifies that the package contains templates. The template files must be located relative to the custom templates directory. If the path parameter is omitted, the default directory skeleton will be generated in the package's templates directory, otherwise, templates located in the specified path will be copied to the package directory.

- `[ --with-images[=/path/to/directory] ]`
  Specifies that the package contains images. The path to the custom directory should be specified.
- `[ --with-properties[=/path/to/directory] ]`
  Specifies that the package requires `custom .properties` file to be appended to `hsphere.properties`. If the parameter path is present, the `.properties` file will be copied from the path specified.
- `[ --with-xmls[=/path/to/directory] ]`
  Specifies that the package uses custom XML configuration files. This allows to customize menu, hosting plans, CP design.

Important: Run this option with the—`with-properties` option to add custom XML files location into the package properties file.

- `[ --with-classes[=/path/to/directory] ]`
  Specifies that the package contains java classes. This allows to add new classes and override Parallels H-Sphere core classes.
- `[ --with-scripts[=/path/to/directory] | --with-scripts-advanced[=/path/to/directory] ]`
  Specifies that the package contains system scripts. This allows to add new scripts and override core Parallels H-Sphere scripts.
- `[ --with-lang-bundle[=/path/to/directory] ]`
  Specifies that the package contains language bundle files. This allows to define new languages and override the default language dependent elements.

Important: Run this option with the—`with-properties` option to add custom language bundle configuration into the package properties file.

- `[ --with-preinstall[=/path/to/file] ]`
  Specifies that the package contains a pre-installed script which will be executed before the installation of the package.
- `[ --with-postinstall[=/path/to/file] ]`
  Specifies that the package contains a postinstall script which will be executed after the deployment of package files.
- `[ --with-preupgrade[=/path/to/file] ]`
  Specifies that the package contains the script which will be executed before the the package upgrade.
- `[ --with-postinstall[=/path/to/file] ]`
  Specifies that the package contains the script which will be executed after the package upgrade.
- `[ --with-preuninstall[=/path/to/file] ]`
  Specifies that the package contains a pre-uninstall script which will be executed before the deletion of package files.
- `[ --with-postuninstall[=/path/to/file] ]`

Specifies that the package contains a post-uninstall script which will be executed after the deletion of package files.

- `[ --with-jars[=/path/to/directory]`
  Specifies that the package contains Java libraries.
- `[ --with-rpms ]`
  Specifies that the package contains third party products supplied as RPMs.
- `[ --with-tarballs ]`
  Specifies that the package contains third party products supplied as tarballs (.tgz files).
- `[ --with-sql[=/path/to/file] ]`
  Specifies that the package contains SQL file(s) which will be executed against Parallels H-Sphere database after the deployment of the package files and before the execution of the package preinstall script if it is pre-configured.
- `[ --with-sql-upgrade[=/path/to/file] ]`
  Specifies that the package will have the file with SQL queries to be run upon the package upgrade.
- `[ --with-uninstall-sql[=/path/to/file] ]`
  Specifies that the package will have the file with SQL queries to be run upon the package uninstallation.
- `[ -l log_file [ -dl ] ]`
  Creates and writes configuration process messages to a log file; -dl is a detailed log mode.

Example:

```
java psoft.hsp.tools.PkgConfigurator—with-prefix=./SuperPKG—
with-templates—with-classes—with-scripts—with-properties -l
conf.log -dl
```

The package source files consisting of templates, Java classes, system scripts and the custom properties file will be copied to the ***SuperPKG*** subdirectory of the current directory.

Package Builder

Package builder is a tool to build a package as one jar file after the package is pre-configured (on page 109) by package configurator and all required tuning is performed. Package builder checks if all required files in the package source directory are present, checks the config file and the package properties file if they are present, forms one jar file from Java classes if they are present and makes a package as one jar file with `.hsp` extension.

```
java psoft.hsp.tools.PkgBuilder—with-source=/path/to/package/source
```

Example:

```
java psoft.hsp.tools.PkgBuilder—with-source=./SuperPKG
```

Package Installer

```
java psoft.hsp.tools.PkgInstaller—
package=/path/to/package/file [--upgrade] [--check-only] [--
force]
```

Options:

- `--package=/path/to/package/file`
  Specifies the path to the built package. Parallels H-Sphere package is a Java archive file (JAR) with the `.hsp` extension.

`[--upgrade]`

Use this option if you upgrade the package already installed on your Parallels H-Sphere. With this option, you can easily upgrade the package without uninstallation of the older package and restarting Parallels H-Sphere after the uninstallation.

- `[--check-only]`
  Makes utility not install the package but only perform a check routine if the package can be installed.
- `[--force]`
  Forces the package installation even if conflicts were detected. For example, if you are installing two packages that use exactly the same file, install the first one without, and the second one with the—`force` option. The first instance of the file will be replaced with the second. Use this option only if you are sure this won't damage other packages.
  See Package Installation (on page 126) for details.

Package Uninstaller

```
java psoft.hsp.tools.PkgUnInstaller—pkg-name=PACKAGE_NAME [--
force]
```

Options:

- `--pkg-name=`*PACKAGE_NAME* – specify the package name. It should be without the version and build number, as in the **Package Name** column in the list of installed packages (**Settings -> Packages** menu in admin panel).
  For example, if the package installed is `MyPackage-1.0.1-2.hsp`, package name to be specified is ***MyPackage*:**
  ```
  java psoft.hsp.tools.PkgUnInstaller—pkg-name=MyPackage
  ```
- `--force` - force the uninstallation.

Package Checker

Scripts, tarballs, and rpms included into Parallels H-Sphere packages are copied to the `~cpanel/shiva/packages/`***PACKAGE_NAME*** directory on the CP server. If needed, use `java psoft.hsp.tools.PkgRecheck` to check package integrity and reinstall the missing files from the `*.hsp` file.

This is true only for new Parallels H-Sphere packages. You will need to copy `*.hsp` packages already installed on your boxes to the corresponding `~cpanel/shiva/packages/PACKAGE_NAME` directories on the CP server.

```
java psoft.hsp.tools.PkgRecheck [--pkg-name=PACKAGE_NAME] [--force]
```

Options:

- `[--pkg-name=PACKAGE_NAME]`
  Specifies the path to the package checked; otherwise, checks all installed packages.
- `[--force]`
  Reinstalls missing package files on remote physical boxes.

Package XML Configuration File (_pkg.xml)

- DTD Scheme: http://download.hsphere.parallels.com/HSdocumentation/xmls/package.dtd
- Example: http://download.hsphere.parallels.com/HSdocumentation/xmls/_pkg.xml

➢ *Tags and attributes:*

- **pkg** - package information. It is set manually in `_pkg.xml` after package configurator (on page 116) run.
  Attributes:
  - **name** - package name.
  - **description** - brief description.
  - **info** - additional info.
  - **vendor** - package vendor.
  - **version** - package version.
  - **build** - package build.
- **scripts** - system scripts to be included into the package. This tag appears if package configurator runs with the—`with-scripts` option.
  Attributes:
  - **src** - directory in the package `src/` directory where scripts are collected. It is `pkg_scripts` by default. You may not need to change it.
- **classes** - classes to be included into the package. This tag appears if package configurator runs with the—`with-classes` option.
  Attributes:
  - **src** - directory in the package `src/` directory where classes are collected. It is `pkg_classes` by default. You may not need to change it.
- **jars** - jar files to be included into the package. This tag appears if package configurator runs with the—`with-jars` option.
- Attributes:
  - **src** - directory in the package `src/` directory where classes are collected. It is `pkg_jars` by default. You may not need to change it.
- **templates** - custom templates to be included into the package. This tag appears if package configurator runs with the—`with-templates` option.
  Attributes:

    - **src** - directory in the package `src/` directory where templates are collected. It is templates by default. You may not need to change it.
- **xmls** - custom XML configuration files to be included into the package. This tag appears if package configurator runs with the—`with-xmls` and—`with-properties` options.

  Attributes:
    - **src** - directory in the package `src/` directory where custom XMLs are collected. It is `pkg_xmls` by default. You may not need to change it.
- **images** - custom images to be included into the package. This tag appears if package configurator runs with the—`with-images` and—`with-properties` option.

  Attributes:
    - **src** - directory in the package `src/` directory where images are collected. It is `pkg_images` by default. You may not need to change it.
- **lang_bundles** - custom language bundles to be included into the package. This tag appears if package configurator runs with the—`with-lang-bundle` and—`with-properties` options.

  Attributes:
    - **src** - directory in the package `/src` directory where language bundles are collected. It is `pkg_lang_bundle` by default. You may not need to change it.
- **sql** - file with SQL queries to make changes in the Parallels H-Sphere database. This tag appears if package configurator runs with the—`with-sql` option.

  Attributes:
    - **src** - file location in the package `src/` directory where scripts are collected. It is `_SCRIPTS/_pkg.sql` by default. You may not need to change it.
- **config** - custom language bundles to be included into the package. This tag appears if package configurator runs with the—`with-properties` option.

  Attributes:
    - **path** - file pathname relative to the package `src/` directory. It is `pkg_config/default.properties` by default. You may not need to change it.
- **actions** - container tag for the scripts running before and after the package installation and uninstallation. They are created in the `src/_SCRIPTS` directory by default. You may not need to change their location.
- **pre_install** - tag with location of the script that runs before the package installation. This file (`src/_SCRIPTS/_pre-install` by default) is created empty when package configurator runs with the—`with-preinstall` option.
- **post_install** - tag with location of the script that runs after the package installation. This file (`src/_SCRIPTS/_post-install` by default) is created empty when package configurator runs with the—`with-postinstall` option.
- **pre_uninstall** - tag with location of the script that runs before package uninstallation. This file (`src/_SCRIPTS/_pre-uninstall` by default) is created empty when package configurator runs with the—`with-preuninstall` option.
- **post_uninstall** - tag with location of the script that runs after the package uninstallation. This file (`src/_SCRIPTS/_post_uninstall` by default) is created empty when package configurator runs with the—`with-postuninstall` option.

- **rpms** - container tag for the list of rpm tags with third-party RPMs (`.rpm` files) to be included into the package. The rpms and rpm tags appear when package configurator run with the—`with-rpms` option.
- **rpm** - third party RPM file information. During the package installation these RPMs will be copied to the /hsphere/shared/scripts/pkg_rpms/ directory to all servers belonging to a logical server group specified in the server_group attribute.
  Attributes:
  - **name** - RPM filename without .rpm extension.
  - **server_group** - Parallels H-Sphere logical server group this RPM relates to: WEB, MAIL, DNSANY applies tarballs to all logical server groups.
- **tarballs** - container tag for the list of tarball tags with third-party tarballs (.tgz files) to be included into the package. The tarballs and tarball tags appear when package configurator run with the—with-tarballs option.
- **tarball** - third party .tgz package file information. During the package installation these tarballs will be copied to the `/hsphere/shared/scripts/3rd_party/` directory to all servers belonging to a logical server group specified in the server_group attribute.
  Attributes:
  - **name** - tarball filename without .tgz extension.
  - **server_group** - Parallels H-Sphere logical server group this tarball relates to: WEB, MAIL, DNS; ANY applies tarballs to all logical server groups.
- **platform** - tags (at least one; may be more than one) included into the tarball and rpm tags to specify location of third-party tarballs or RPMs for corresponding OS types.
- Attributes:
  - **name** - server OS type supported in Parallels H-Sphere: RH72, RH73, RHES, RHAS, RHAS3, FBSD4, ANY for all of the previously mentioned supported OSs.
  - **location** - tarball/RPM location for this type of platform. Location may be an URL: `http://...` or `ftp://...`, or it may be `BUILT-IN`.
    If `location="BUILT-IN"`, the file will be taken from the OS type subdirectory (the name attribute of the platform tag) of the tarballs/RPMs directory (pkg_tarballs for tarballs or pkg_rpms for RPMs in the package's src/ directory). For example: `src/pkg_rpms/RHEL4/`***rpm_name*****`.rpm`** for an RPM file for RedHat Enterprise Linux EL 4 platform, where ***rpm_name*** is set in the **name** attribute of the **rpm** tag.

See also Building Packages (on page 109) guide for package configuration details.

Template Customization With Packages

This documentation dwells on preparation and peculiarities of building the Parallels H-Sphere packages (on page 109) containing templates (on page 11).

Preparation

Before you build a package out of your custom templates, make sure customization you need to build into a package has already been performed correctly, that custom directories are correctly defined in the Parallels H-Sphere properties file and that custom templates have correct pathes in the custom template directory.

Note: Parallels H-Sphere upgrade script would automatically create the custom template directory and the custom image directory if they haven't been created before. If so, just skip certain steps below.

1. Login to the CP server as cpanel (on page 130) user.

   All customization should be done under cpanel, and all affected files should have `cpanel:cpanel` ownership.

2. In the `~cpanel/shiva/psoft_congig/hsphere.properties` file, add or comment out the corresponding lines to specify the correct paths to the directories where you wish to have your custom templates and custom images. Create these directories if they do not exist yet. The default paths are:

   ```
   USER_TEMPLATE_PATH=/hsphere/local/home/cpanel/shiva/custom/templates
   USER_IMAGE_PATH=/hsphere/local/home/cpanel/shiva/custom/images
   ```

3. Add symlinks to the custom image directory from the default template directory (`~cpanel/shiva/shiva-templates/`):

   ```
   ln -s /hsphere/local/home/cpanel/shiva/custom/images
   /hsphere/local/home/cpanel/shiva/shiva-
   templates/CUSTOM_IMAGES
   ```

   This will create the `CUSTOM_IMAGES` symlink directory in the default template directory.

4. Make sure your custom templates are located in the custom template directory, and your custom images in the custom image directory. To correctly implement new templates or to override default templates or images, the directory structure within the custom directories should be identical to the default directories.

5. To implement custom templates, follow instructions outlined in the Template Customization (on page 10) guide.

6. To implement custom images for Parallels H-Sphere skins and icon sets, assign the dir attribute in the `design_config.xml` file to `/CUSTOM_IMAGES` instead of default `/IMAGES`. For example:

   ```
   <icon_image_sets base_dir="/CUSTOM_IMAGES">
   ```

For details of customizing designs, please read Skin and Icon Set Customization (on page 31) in Customization Guide.

Building Packages Containing Templates

After you have prepared custom templates for creating a package, follow the general instructions on building packages (on page 109), with certain considerations specific to the templates:

- You should include only `.html.in` template sources. They will be compiled automatically during the package installation.

- If you customize the Control Panel menu or skins, you need to run the package configurator with the—`with-xmls` option to add custom `menu.xml` and `design-config.xml` files to the package, and with the—`with-properties` option to plug in these custom XMLs to the system.

See also Building Packages with XMLs (on page 125) for details.

XML Customization With Packages

This document dwells on building Parallels H-Sphere packages to customize XML configuration files.

Some custom XML files can be merged with default XMLs by means of XML merger (on page 70). Instead of moving and changing a default XML file, a small custom file is created containing necessary changes and its location is specified in `~cpanel/shiva/psoft_config/hsphere.properties` in the parameter with the "`CUSTOM_`" prefix added to the default parameter name, e.g.:

```
MENU_CONFIG =
/hsphere/local/home/cpanel/shiva/psoft/hsphere/menu.xml
CUSTOM_MENU_CONFIG =
/hsphere/local/home/cpanel/shiva/custom/xml/menu.xml
```

➢ *To build packages with custom XMLs:*

1. Log into CP server as the `cpanel (on page 130)` user.
2. Create Custom XML files

   Custom XML files should contain only parts to be added to or to modify default XMLs. During the package installation (on page 126) these custom files will be merged with default XMLs. Please refer to the XML Manager (on page 70) guide for examples.
3. Run Package Configurator.

   Run package configurator (on page 109) in the package directory you created with the following options, at least:

   - `--with-prefix=path/to/package/directory`: specify a target directory (relative to the current directory) where all package files will be collected and the package will be configured (on page 109). We will call it package directory later in the text.

     Hint: You may create a special directory with corresponding package directories where you assemble package source files. For example, it may be `~cpanel/shiva/custom/packages`.
   - `--with-xmls[=path/to/xml/directory]`: specify directory with custom XML files. Note that if you don't specify the directory, the empty `src/pkg_xmls` directory will be created in the package directory and you will need to copy custom XML files there manually.
   - `--with-properties[=path/to/package/properties/directory]`: this option is required to include custom XML files to the package properties in order to merge custom XMLs with default XMLs on package installation. If you don't specify the directory, the empty `src/pkg_config/default.properties` file will be created in the package directory.

Thus, package configurator's command line will look like:

```
$ su -l cpanel
bash-2.05a$ java psoft.hsp.tools.PkgConfigurator—with-
prefix=/hsphere/local/home/cpanel/shiva/custom/packages/MyPacka
ge—with-properties—with-xmls
```

4. Configure the Package

   To include custom XMLs into the package configuration, add corresponding parameters into the package properties file. Go to the `src/pkg_config` directory of the package directory (`~cpanel/custom/packages/`***MyPackage*** in the above example).

   Edit the `default.properties` file. It will be empty if you did not specify the path to the package properties file in the—`with-properties` option of package configurator.

   You don't need to copy all contents of the default `hsphere.properties` file to your package properties file. Only add custom parameters that will be merged with the default ones when the package is installed.

   In the package properties file, specify just the names of the XML config files to be customized (on page 67), without paths to the. For example, to include changes in menu and designs, just add these lines to the properties file:

```
# Custom design
DESIGN_SCHEME_CONFIG=design_config.xml
# Custom menu
MENU_CONFIG=menu.xml
```

   After you have configured package properties, proceed to other package configuration options (on page 109) required.

5. Run Package Builder

   Run package builder (on page 116) to build the package, for example:

```
java psoft.hsp.tools.PkgBuilder—with-
source=/hsphere/local/home/cpanel/custom/packages/MyPackage
```

   The package will be assembled to the `.hsp` Jar file in the current directory.

6. Install the Package

   Login as cpanel and run package installer (on page 126), for example:

```
java psoft.hsp.tools.PkgInstaller—package=./MyPackage
```

Package Installation

This document explains how to install custom packages on standard Parallels H-Sphere.

➢ ***To install a Parallels H-Sphere package:***

1. Login to CP server as the cpanel (on page 130) user.
2. Install the package using the **Package Installer** tool. Use the—`help` option for the syntax:

```
java psoft.hsp.tools.PkgInstaller—
package=/path/to/package/file [--upgrade] [--check-only] [--
force]
```

Options description:

- `package=/path/to/package/file`

Specifies the path to the built package. Parallels H-Sphere package is a Java archive file (JAR) with .hsp extension.

`[--check-only]`

Makes utility not install the package but only perform a check routine if the package can be installed.

`[--upgrade]`

Use this option if you upgrade the package already installed on your Parallels H-Sphere. With this option, you can easily upgrade the package (on page 128) without uninstallation of the older package and restarting Parallels H-Sphere after the uninstallation (on page 127).

`[--force]`

Forces the package installation even if conflicts were detected. For example, if you are installing two packages that use exactly the same file, install the first one without, and the second one with the—`force` option. The first instance of the file will be replaced with the second. Use this option only if you are sure this won't damage other packages.

3. Restart Parallels H-Sphere (on page 130).
4. Check whether all Parallels H-Sphere package components have been successfully installed.
   - The files installed with the package will be copied to the `~cpanel/shiva/packages/`***PackageName*** directory, where ***PackageName*** is the name of the package without its version and build number. For example, after installation of the ***MyPackage***`-1.0.1-2.hsp` package its files will be stored in the `~cpanel/shiva/packages/`***MyPackage*** directory.
   - If some package components (scripts, 3rd-party bundles, etc.) of Parallels H-Sphere `*.hsp` packages are missing after the installation or on newly added Parallels H-Sphere physical boxes, run the Parallels H-Sphere update script with the `3rdpackages` option. See the *Parallels H-Sphere Upgrade Guide* for the update script options details.
   - After you installed a package, it will be added to the list of installed packages in your admin Control Panel, in the **Settings->Packages** menu. Click a package to check its details and files installed by that package. This is helpful to find out whether all package files are installed correctly.

If something goes wrong during or after the installation, you can uninstall the package (on page 127).

Package Uninstallation

➢ ***To uninstall a package:***

1. Log into CP server as cpanel (on page 130) user.
2. Run package uninstaller:

```
java psoft.hsp.tools.PkgUnInstaller—pkg-name=PackageName [--force]
```

Options:

- `pkg-name=`***PackageName***

Specify the package name. It should be without the version and build number, as in the **Package Name** column in the list of installed packages in the **Settings/Packages** menu in admin panel.

For example, if the package installed is `MyPackage-1.0.1-2.hsp`, package name to be specified is `MyPackage`:

```
java psoft.hsp.tools.PkgUnInstaller—pkg-name=MyPackage
```

- `force` - force the uninstallation (no prompts to be shown).

3. Restart Parallels H-Sphere (on page 130).

Package Upgrade

To upgrade an installed package to its newer version, run the package installer tool with the—`upgrade` option. With this option, you don't need to care about uninstalling the older package and restarting Parallels H-Sphere before updating the package.

➢ *To upgrade a package:*

1. Login to CP server as cpanel (on page 130) user.
2. Install the new package with the—upgrade option:

```
java psoft.hsp.tools.PkgInstaller—
package=/path/to/package/file—upgrade
```

Package Installer options (on page 126)

3. Restart Parallels H-Sphere (on page 130).

The package files will be installed to the `~cpanel/shiva/packages/`***PackageName*** directory, where ***PackageName*** is the name of the package without its version and build number. For example, after installation of the `MyPackage-1.0.1-2.hsp` package its files will be stored in the `~cpanel/shiva/packages/MyPackage` directory.

To ensure the package is upgraded, check the *Settings->Packages* menu in admin interface for the package version and the package files installed.

CHAPTER 10

Appendix

In this chapter:

Logging in as the cpanel User

Parallels H-Sphere control panel runs under the `cpanel` user on the CP server. You need to log in as `cpanel` to perform many administrative tasks, such as CP configuration, customization, access the system databse, running console Parallels H-Sphere java tools, and many others.

Under `cpanel`, Parallels H-Sphere control panel communicates with other Parallels H-Sphere boxes via SSH.

➢ ***To log in as the `cpanel` user:***

1. Log in as root first:

```
$ su -l
```

2. Log in as the cpanel user:

```
# su -l cpanel
```

Restarting Parallels H-Sphere Control Panel

➢ ***To restart Parallels H-Sphere Control Panel:***

1. Log into the CP server as root.
2. Run:

Linux:

```
/etc/rc.d/init.d/httpdcp stop
killall -9 java
sleep 10
/etc/rc.d/init.d/httpdcp start
```

FreeBSD:

```
/usr/local/etc/rc.d/apachecp.sh stop
killall -9 java
sleep 10
/usr/local/etc/rc.d/apachecp.sh start
```