Parallels

Parallels Business Automation Standard

Software Development Kit

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Copyright Notice

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.

Shell Prompts in Command Examples

Command line examples throughout this guide presume that you are using the Bourne-again shell (bash). Whenever a command can be run as a regular user, we will display it with a dollar sign prompt. When a command is meant to be run as root, we will display it with a hash mark prompt:

Bourne-again shell prompt	$
Bourne-again shell root prompt	#

General Conventions

Be aware of the following conventions used in this book.

- Chapters in this guide are divided into sections, which, in turn, are subdivided into subsections. For example, Documentation Conventions is a section, and General Conventions is a subsection.
- When following steps or using examples, be sure to type double-quotes ("), left single-quotes (`), and right single-quotes (') exactly as shown.
- The key referred to as RETURN is labeled ENTER on some keyboards.

The root path usually includes the `/bin`, `/sbin`, `/usr/bin` and `/usr/sbin` directories, so the steps in this book show the commands in these directories without absolute path names. Steps that use commands in other, less common, directories show the absolute paths in the examples.

CHAPTER 2

XML API

XML API has been developed to become primary point of integration with external shopping carts, billing, and accounting systems and other third-party components.

In This Chapter

Introduction to Parallels Business Automation - Standard XML API

Parallels Business Automation - Standard XML API Gate is based on SOAP protocol, currently maintained by World Wide Web Consortium at http://www.w3c.org and supported by most of modern programming languages as framework for messages exchange and remote method calls.

Parallels Business Automation - Standard XML API Gate is implemented as mod_perl handler and inherits from `SOAP::Transport::HTTP::Apache`, i.e. is based on the functionality provided by `SOAP::Lite` module available from CPAN. Please, refer to `SOAP::Lite` documentation for general information and this section provides implementation details and examples.

Module namespaces are package names with '::' included are replaced with '/' - see examples below.

Security

There are two different strategies used by Parallels Business Automation - Standard XML API Gate in defining security requirements:

- For requests coming from a `local` machine (directly to backend server without involving frontend, i.e. originating from the same address space and using http://localhost:8080 or https://localhost:8443 as Parallels Business Automation - Standard XML API Gate proxy URL).
- For requests coming from `remote` machines (using frontend for proxying requests to backend).

Safe packages and methods:

- `local` requests: *all* packages are considered safe and all their methods are public
- remote requests: only packages with namespace starting with HSPC/API are considered as safe

Authentication and sessions handling:

- `local` requests: authentication by password is possible, but not required, authentication is possible by account number only,
- `remote` requests: authentication by password is required.

Authentication is done with call to session_open() interface in HSPC/API (on page 16) namespace and relies on functionality provided by Security Manager.

Interfaces in `HSPC/API` namespace:

`session_open()`

Parameters: `account_no`, `e-mail`, `password`

Performs authentication with given parameters (required for `remote` requests and optional for `local`, except for `account_no` or `server_name`) and initializes session.

If `account_no` is set to 0, first account which user has roles in is chosen automatically, but in this case `e-mail` and `password` must be set as well.

If `server_name` is passed and `account_no` is empty or missing, `account_no` is located by vendor's server name located in `server_name` parameter.

Returns either unique value to be used as `HSPC-SID` in next requests (see examples of clients) or SOAP fault envelope with error message.

`session_close()`

Performs cleanup of session identified by `HSPC-SID` header.

Returns `undef` or SOAP fault envelope with error message.

Configuration

Parallels Business Automation - Standard XML API Gate intended for requests from both `local` and `remote` machines is pre-configured at `/hspc/xml-api` location.

`backend`

`/etc/hspcd/conf/hspc_xml-api.conf`

```
<Location /hspc/xml-api>
     SetHandler perl-script
     PerlHandler HSPC::XMLAPI
     Order Allow,Deny
     Allow from all
 </Location>
```

`frontend`

`/etc/httpd/conf/hspc_frontend.conf`:

```
<VirtualHost _default_:443>
    ...
    SSLEngine on
    ...
    <Location /hspc/xml-api>
        Order Deny,Allow
        Allow from all
</VirtualHost>
```

```
<Location /hspc/xml-api>
   Order Deny,Allow
   Deny from all
</Location>
```

Security limitation is set by explicitly allowing `/hspc/xml-api` location for HTTPS connections and denying for HTTP connections, so that plain text SOAP envelopes couldn't be read by intruders.

Parallels Business Automation - Standard XML API Gate could be opened at another locations as well by configuring backend and frontend server in the same way as described above, i.e. by adding more `Location` blocks to backend and frontend servers' configurations.

Servers

Exported methods of packages providing API through Parallels Business Automation - Standard XML API Gate should rely on the following rules:

- in order to be available for remote requests, a package name should start from `HSPC::API::` prefix and have its version set:

```
our $VERSION = 1.0;
```

- first parameter of each call to exported method is *always* package name, not reference or whatever;
- `$ENV{session}` is valid *only* for requests including session ID returned by `session_open()` call, i.e. could be valid for *local* and always valid for *remote* requests;
- `$ENV{security_obj}` is valid only for requests including session ID and contains valid account and user IDs identified by call to `session_open()` (on page 16);
- `die` with error message to immediately return it in SOAP fault envelope with message as description, using the call like this:

```
## return fault with:
## - error code 'ErrorCode'
## - error message
die HSPC::API->fault('ErrorCode', 'Error description.');
```

Notes for HSPstore:

If error code starts with the `User` prefix, its description is shown to PHP Store visitor, so it must be localized:

```
die HSPC::API->fault('UserPassword', string('passwords_do_not_match'));
```

If error code does not start with the `User` prefix, its description is not shown to PHP Store visitor and is only logged to vendor's local log file, so it must not be localized:

```
die HSPC::API->fault('AuthenRequired', 'Authentication required.');
```

feel free to return any data structures that you can theoretically serialize to XML - and do not expect an object to arrive at remote side by just returning its blessed reference (guess why it's just ridiculous).

Examples

`HSPC/Test.pm` (local requests):

```
package HSPC::Test;
use strict;
use Data::Dumper;
## returns dump of parameters list, including class name
sub method {
    return Dumper(\@_);
}
1;
```

`HSPC/API/Test.pm` (remote requests):

```
 package HSPC::API::Test;
 use strict;
our $VERSION = 1.0;
 ## gets/sets parameter with key passed as a parameter
 sub param {
     my (undef, $key, $value) = @_;
     return defined $value
         ? $ENV{session}->{$key} = $value
         : $ENV{session}->{$key};
 }
 1;
```

Clients

In order to initialize stable communication with Parallels Business Automation - Standard XML API Gate, first call `session_open()` in `HSPC/API` (on page 16) namespace to receive `HSPC-SID` value and then add `HSPC-SID` to either HTTP or SOAP headers to each request before sending SOAP envelope.

Examples

```
local.pl:
```

```
use SOAP::Lite;
use strict;
my $result = SOAP::Lite
    ->proxy('http://127.0.0.1:8080/hspc/xml-api') ## Gate URL
    ->ns('HSPC/Test') ## package namespace
    ->method ## method name
        ('param1', {param2 => 'test', param3 => [1, 2, 3]}, 0); ## parameters
print $result->fault
    ? 'Fault: ' . $result->faultstring
    : 'Result: ' . $result->result;
```

`local.php`:

```
 <?
 require_once('nusoap.php');
 $client = new soap_client('http://127.0.0.1:8080/hspc/xml-api'); // Gate URL
 $result = $client->call(
     'method', // method name
     array ("param1", array ("param2" => "test", "param3" => array (1, 2, 3)),
0), // parameters
     'HSPC/Test' // package namespace
 );
 if ($client->fault)
     die("Fault: {$client->faultstring}");
 echo $result;
 ?>
```

`remote.pl`:

```
use strict;
use SOAP::Lite;
my $client = SOAP::Lite
       ->proxy('https://192.168.0.100/hspc/xml-api')
       ->on_fault(sub {die 'Fault: ' . $_[1]->faultstring});
## pass authentication and receive session ID
my $sid = $client->ns('HSPC/API/1.0')->session_open({
         email => 'email@provider.com', password => 'password'
})->result->{session_id};
## put session ID to outgoing requests' HTTP headers
$client->transport->http_request->header('HSPC-SID' => $sid);
## make session-dependent calls
$client->ns('HSPC/API/Test/1.0');
$client->param('key' => 'value');
print $client->param('key')->result;
$client->ns('HSPC/API/1.0')->session_close;
```

`remote.php`

```
<? require_once('nusoap.php');
 $client = new soap_client('https://192.168.0.100/hspc/xml-api'); // Gate URL
 ## pass authentication and receive session ID
 $sid_result = $client->call('session_open', array (
      array ('email' => 'root@provider.com', 'password' => '1q2w3e')
 ), 'HSPC/API/1.0');
 $sid = $sid_result['session_id'];
 if ($client->fault)
        die("Fault: {$client->faultstring}");
 ## put session ID to outgoing requests' SOAP headers $client-
>setHeaders("<HSPC-SID>$sid</HSPC-SID>");
 ## make session-dependent calls
 $client->call('param', array ('key', 'value'), 'HSPC/API/Test/1.0');
 if ($client->fault)
        die("Fault: {$client->faultstring}");
 echo $client->call('param', array ('key'), 'HSPC/API/Test/1.0') . "\n";
 if ($client->fault)
        die("Fault: {$client->faultstring}");
 $client->call('session_close', undef, 'HSPC/API/1.0');
 if ($client->fault)
        die("Fault: {$client->faultstring}"); ?>
```

HSPC/API

session_open

The function opens session with Parallels Business Automation - Standard XML API server. The input parameters composition depends on the store installation: (local, i.e. Store is installed on the same server as Parallels Business Automation - Standard or remote, i.e., the Store installed on a remote server).

In the function call the namespace must be followed by API version number, e.g. HSPC/API/1.0

Note: Session ID returned by `session_open` must be included in HTTP Headers or SOAP Headers for all the other methods called in the frame of each session.

Parameters:

account_id	ID of a vendor account a session is to be opened for. This parameter is to be passed in case of a local Store installation. Optional parameter in case `server_name` is specified.
server_name	Vendor server name used for authentication. This parameter is to be passed in case of a local Store installation. Optional parameter in case `account_id` is specified.
email	Registered person e-mail. Parameter is to be specified in case of the Store remote installation together with the `password` parameter.
password	Registered person password. Parameter is to be specified in case of the Store remote installation together with the email parameter.

Returns: {

account_id =>

session_id => }

Parameter	Means
account_id	The numerical identifier of an account a session has been opened for. Account ID is returned in any case, a vendor account ID is then used by the other Store API functions.
session_id	The identifier of the opened session.

Common SOAP Faults codes:

UserError	Mandatory parameter missing from SOAP method call
WrongParams	Invalid method parameters

No specific SOAP Faults codes.

session_close

The function closes session.

In the method call the namespace must be followed by API version number, e.g. HSPC/API/1.0

The function usage is not necessary but recommended.

No parameters.

No return value.

Common SOAP Faults codes:

UserError	Mandatory parameter missing from SOAP method call
WrongParams	Invalid method parameters

No specific codes.

HSPC/API/HP

check_app_compat

The function checks applications compatibility in Plesk and Virtuozzo Container hosting plans.

Parameters:

`hp_sid`	Hosting plan series key
`app_list`	The list of application templates IDs.
`os_tmpl`	Optional parameter: ID of OS template selected for a hosing plan. If not passed, then the method will return the result as if OS template with the lowest ID (from OSes included in hosting plan) was passed as `os_tmpl`.

Returns: `result` => 1 on success or `Fault`

SOAP Faults codes:

`HPNoApplicationSupport`	Hosting plan passed as an argument does not support an application.
`UserAppIncompat`	Application(s) passed are incompatible with each other.

check_license_compat

The function checks licenses compatibility in hosting plans.

Parameters:

`hp_sid`	Hosting plan series key
`lic_list`	The list of licenses IDs

Returns: result => 1 on success or Fault

SOAP Faults codes:

`HPNoLicClassSupport`	Hosting plan does not support at least one license
`HPBaseLicConflict`	Base licenses specified are incompatible.
`HPNoBaseForAddon`	No base license has been specified for an add-on license.

get_categorized_plan_list

The method returns the list of hosting plans grouped by categories. Only the basic information is returned.

The method is similar to `get_sellable_plan_list` (on page 31). Input parameters are the same, but output parameters differ: the list of returned hosting plans is grouped by categories.

Parameters:

type_id	Optional parameter: The ID of hosting plan type. Only hosting plans of the type specified will be returned.
promo_id	Optional parameter: ID of promotion to be applied to hosting plans prices.
account_id	Optional parameter: ID of account the prices are to be calculated for.
sb_sid	Optional parameter: Trial site ID. The parameter is predefined on redirect from Sitebuilder.
sb_node	Optional parameter:Sitebuilder node numeric ID assigned in PBAS.

Returns: plan_list => HP list

SOAP Faults codes:

HPProviderNotAllowed	Provider account ID is used to get hosting plan details. Only customer or reseller account ID is allowed as parameter.

get_extended_plan_info

The function returns extended information about a hosting plan. Extended information is all the data not shown in hosting plans listing.

Parameters:

`hp_sid`	Optional parameter: Hosting plan series key. If not specified, the information about default domain hosting plan will be returned.
`promo_id`	Optional parameter: The ID of promotion to be applied to hosting plan prices.
`account_id`	Optional parameter: ID of account the prices are to be calculated for.
`period`	Optional parameter: Subscription period the discounts are to be calculated for.
`for_trial`	Optional parameter: If this parameter is specified then zero prices for add-ons (custom attributes, applications, etc.) will be returned.
`os_tmpl`	Optional parameter: ID of OS template selected for a hosing plan. If not passed, then the method will return the result as if OS template with the lowest ID (from OSes included in hosting plan) was passed as `os_tmpl`.

Returns: EXTENDED_HP_INFO (on page 22)

SOAP Faults codes:

HPNoTrial	The for_trial parameter has been specified, but a hosting plan does not support trial periods.
HPNotFound	The hosting plan specified is not found.
HPNoDefaultDMPlan	Hosting plan series key is not specified and default domain hosting plan does exist.
HPProviderNotAllowed	Provider account ID is used to get hosting plan details. Only customer or reseller account ID is allowed as parameter.

Example of EXTENDED_HP_INFO Hash

```
$VAR1 = {
          'dns_hosting' => {
                             'is_unlim' => '0',
                             'included_value' => '5',
                             'max_value' => '10',
                             'overuse_rate' => {
                                                 'is_discount' => '0',
                                                 'promo_period' => undef,
                                                 'promo_percent' => undef,
                                                 'is_promo' => '0',
                                                 'discount_percent' => undef,
                                                 'discount_amount' => undef,
                                                 'promo_amount' => undef,
                                                 'price_original' => {
                                                                       'price' =>
'1.00',

'is_complimentary' => '0'
                                                                     },
                                                 'price' => '439182056',
                                                 'full_discount_period' => undef,
                                                 'promo_name' => undef
                                               }
                           },
          'assigned_dm_plan' => '2',
          'is_trial' => '0',
          'vendor_id' => '1',
          'name' => 'Domain Registration Support',
          'provider_id' => '1',
          'description' => '',
          'question_list' => [
                               {
                                 'question' => 'How do you like services
included in your subscription?',
                                 'answer' => undef,
                                 'id' => '1'
                               }
                             ],
          'custom_attribute_list' => [
                                       {
                                         'is_exclusive' => '1',
                                         'cat_name' => 'Support'
                                         'description' => 'Attribute
description'
                                         'cat_id' => '1'
                                         'cat_sort_order' => '1'
                                         'option_list' => [
                                                           {
                                                             'is_default' => '0',
                                                             'sort_order' =>
'17',
                                                             'name' => 'Support
by phone',
                                                             'is_included' =>
'0',
                                                             'upgrade_fee' => {

'is_discount' => '0',

'promo_period' => undef,

'promo_percent' => undef,

'is_promo' => '0',
'discount_percent' => undef,

'discount_amount' => undef,

'promo_amount' => undef,

'price_original' => {

'price' => '50.0000',

'is_complimentary' => '0'

},

'price' => '437640876',

'full_discount_period' => undef,

'promo_name' => undef
                                                                                      },
                                                              'setup_fee' => {

'is_discount' => '0',

'promo_period' => undef,

'promo_percent' => undef,

'is_promo' => '0',

'discount_percent' => undef,

'discount_amount' => undef,

'promo_amount' => undef,

'price_original' => {

'price' => '20.0000',

'is_complimentary' => '0'

},

'price' => '382151368',

'full_discount_period' => undef,

'promo_name' => undef
                                                                                    },
                                                              'subscr_fee' => {

'is_discount' => '0',

'promo_period' => undef,

'promo_percent' => undef,

'is_promo' => '0',

'discount_percent' => undef,

'discount_amount' => undef,

'promo_amount' => undef,
'price_original' => {

'price' => '50.0000',

'is_complimentary' => '0'

},

'price' => '440264964',

'full_discount_period' => undef,

'promo_name' => undef
                                                                      },
                                                            'id' => '17'
                                                          },
                                                          {
                                                            'is_default' => '0',
                                                            'sort_order' =>
'18',
                                                            'name' => 'ICQ
Consultant',
                                                            'is_included' =>
'0',
                                                            'upgrade_fee' => {

'is_discount' => '0',

'promo_period' => undef,

'promo_percent' => undef,

'is_promo' => '0',

'discount_percent' => undef,

'discount_amount' => undef,

'promo_amount' => undef,
```

'price_original' => {

```
'price' => '30.0000',

'is_complimentary' => '0'

},

'price' => '438862184',

'full_discount_period' => undef,

'promo_name' => undef
                                                                      },
                                                            'setup_fee' => {

'is_discount' => '0',

'promo_period' => undef,

'promo_percent' => undef,

'is_promo' => '0',

'discount_percent' => undef,
'discount_amount' => undef,

'promo_amount' => undef,

'price_original' => {

'price' => '20.0000',

'is_complimentary' => '0'

},

'price' => '440650072',

'full_discount_period' => undef,

'promo_name' => undef
                                                                                          },
                                                                             'subscr_fee' => {

'is_discount' => '0',

'promo_period' => undef,

'promo_percent' => undef,

'is_promo' => '0',

'discount_percent' => undef,

'discount_amount' => undef,

'promo_amount' => undef,

'price_original' => {

'price' => '30.0000',

'is_complimentary' => '0'

},

'price' => '439183520',

'full_discount_period' => undef,

'promo_name' => undef
                                                                                           },
                                                                             'id' => '18'
                                                                           }
                                                                         ],
                                                       'sort_order' => '0',
                                                       'is_required' => '0',
                                                       'name' => 'Miscellaneous',
                                                       'id' => '6'
                                                     }
                                                   ],
          'summary' => '',
          'fee_list' => [
                        {
                          'setup_fee' => {
                                         'is_discount' => '0',
                                         'promo_period' => undef,
                                         'promo_percent' => undef,
                                         'is_promo' => '0',
                                         'discount_percent' => undef,
                                         'discount_amount' => undef,
                                         'promo_amount' => undef,
                                         'price_original' => {
                                                               'price' =>
'10.0000',

'is_complimentary' => '0'
                                                             },
                                         'price' => '440550508',
                                         'full_discount_period' => undef,
                                         'promo_name' => undef
                                       },
                          'subscr_fee' => {
                                          'is_discount' => '0',
                                          'promo_period' => undef,
                                          'promo_percent' => undef,
                                          'is_promo' => '0',
                                          'discount_percent' => undef,
                                          'discount_amount' => undef,
                                          'promo_amount' => undef,
                                          'price_original' => {
                                                                'price' =>
'5.0000',

'is_complimentary' => '0'
                                                              },
                                          'price' => '440553148',
                                          'full_discount_period' => undef,
                                          'promo_name' => undef
                                        },
                          'period' => '2592000'
                        },
                        {
                          'setup_fee' => {
                                         'is_discount' => '0',
                                         'promo_period' => undef,
                                         'promo_percent' => undef,
                                         'is_promo' => '0',
                                         'discount_percent' => undef,
                                         'discount_amount' => undef,
                                         'promo_amount' => undef,
                                         'price_original' => {
                                                               'price' =>
'20.0000',

'is_complimentary' => '0'
                                                             },
                                         'price' => '439338076',
                                         'full_discount_period' => undef,
                                         'promo_name' => undef
                                       },
                          'subscr_fee' => {
                                          'is_discount' => '0',
                                          'promo_period' => undef,
                                          'promo_percent' => undef,
                                          'is_promo' => '0',
                                          'discount_percent' => undef,
                                          'discount_amount' => undef,
                                          'promo_amount' => undef,
                                          'price_original' => {
                                                                'price' =>
'10.0000',

'is_complimentary' => '0'
                                                              },
                                          'price' => '440307792',
                                          'full_discount_period' => undef,
                                          'promo_name' => undef
                                        },
                          'period' => '7776000'
                        },
                        {
                          'setup_fee' => {
                                         'is_discount' => '0',
                                         'promo_period' => undef,
                                         'promo_percent' => undef,
                                         'is_promo' => '0',
                                         'discount_percent' => undef,
                                         'discount_amount' => undef,
                                         'promo_amount' => undef,
                                         'price_original' => {
                                                               'price' =>
'30.0000',

'is_complimentary' => '0'
                                                             },
                                         'price' => '439238836',
                                         'full_discount_period' => undef,
                                         'promo_name' => undef
                                       },
                          'subscr_fee' => {
                                          'is_discount' => '0',
                                          'promo_period' => undef,
                                          'promo_percent' => undef,
                                          'is_promo' => '0',
                                          'discount_percent' => undef,
                                          'discount_amount' => undef,
                                          'promo_amount' => undef,
                                          'price_original' => {
                                                                'price' =>
'15.0000',

'is_complimentary' => '0'
                                                              },
                                          'price' => '440439372',
                                          'full_discount_period' => undef,
                                          'promo_name' => undef
                                        },
                          'period' => '15552000'
                        },
                        {
                          'setup_fee' => {
                                         'is_discount' => '0',
                                         'promo_period' => undef,
                                         'promo_percent' => undef,
                                         'is_promo' => '0',
                                         'discount_percent' => undef,
                                         'discount_amount' => undef,
                                         'promo_amount' => undef,
                                         'price_original' => {
                                                               'price' =>
'40.0000',

'is_complimentary' => '0'
                                                             },
                                         'price' => '438988552',
                                         'full_discount_period' => undef,
                                         'promo_name' => undef
                                       },
                          'subscr_fee' => {
                                          'is_discount' => '0',
                                          'promo_period' => undef,
                                          'promo_percent' => undef,
                                          'is_promo' => '0',
                                          'discount_percent' => undef,
                                          'discount_amount' => undef,
                                          'promo_amount' => undef,
                                          'price_original' => {
                                                                'price' =>
'20.0000',

'is_complimentary' => '0'
                                                              },
                                          'price' => '440380584',
                                          'full_discount_period' => undef,
                                          'promo_name' => undef
                                        },
                          'period' => '31104000'
                        }
                      ],
          'id' => '21',
          'category' => undef,
          'type' => {
                      'summary' => 'Miscellaneous hosting plans designed for
selling any arbitrary services. It gives highest flexibility together with
Custom Attributes and Questionnaire.',
                      'name' => 'Miscellaneous',
                      'id' => '7',
                      'description' => ''
                    },
          'qos_list' => [
                        {
                          'is_unlim' => '0',
                          'incl_amount' => '5',
                          'max_amount' => '10',
                          'overuse_rate' => {
                                            'is_discount' => '0',
                                            'promo_period' => undef,
                                            'promo_percent' => undef,
                                            'is_promo' => '0',
                                            'discount_percent' => undef,
                                            'discount_amount' => undef,
                                            'promo_amount' => undef,
                                            'price_original' => {
                                                                  'price' =>
'1.00',

'is_complimentary' => '0'
                                                                },
                                            'price' => '439020192',
                                            'full_discount_period' => undef,
                                            'promo_name' => undef
                                          },
                          'id' => '4000',
                          'name' => 'Number of domains with DNS hosting
provided',
                          'is_metered' => '0',
                          'short_name' => 'numdnshosting',
                          'units' => 'domain(s)',
                          'is_rateable' => '1',
                          'multiplier' => '1'
                        }
                      ],
          'series_key' => '3'
        };
```

get_full_extended_plan_info

The method returns extended information about a hosting plan. Extended information is all the data not shown in hosting plans listing.

The method is similar to the `get_extended_plan_info` (on page 21).

The difference between these methods is: the `get_extended_plan_info` method returns resources and applications for a specified OS. The `get_full_extended_plan_info` method returns resources and applications for all OSes enabled for a hosting plan.

Parameters:

`hp_sid`	Optional parameter: Hosting plan series key. If not specified, the information about default domain hosting plan will be returned.
`promo_id`	Optional parameter: The ID of promotion to be applied to hosting plan prices.
`account_id`	Optional parameter: ID of account the prices are to be calculated for.
`period`	Optional parameter: Subscription period the discounts are to be calculated for.
`for_trial`	Optional parameter: If this parameter is specified then zero prices for add-ons (custom attributes, applications, etc.) will be returned.
`os_tmpl`	Optional parameter: ID of OS template selected for a hosing plan. If not passed, then the method will return the result as if OS template with the lowest ID (from OSes included in hosting plan) was passed as `os_tmpl`.

Returns: EXTENDED_HP_INFO (on page 22)

SOAP Faults codes:

HPNoTrial	The for_trial parameter has been specified, but a hosting plan does not support trial periods.
HPNotFound	The hosting plan specified is not found.
HPNoDefaultDMPlan	Hosting plan series key is not specified and default domain hosting plan does exist.
HPProviderNotAllowed	Provider account ID is used to get hosting plan details. Only customer or reseller account ID is allowed as parameter.

get_plan_promotion_list

The function returns the list of promotions applicable to a hosting plan.

Parameters:

hp_sid	Hosting plan series key.

Returns: PROMOTION list

SOAP Faults codes:

HPNoPromoFound	No promotions are applied to a hosting plan.

get_promotion

The function returns information about a promotion by a promotion ID.

Parameters:

promo_id	Promotion ID.

Returns: PROMOTION:

SOAP Faults codes:

HPNoPromoSeriesFound	No promotion with ID specified exists.

get_sellable_plan_list

The function returns the list of hosting plans for sale. The base information only is returned.

Parameters:

type_id	Optional parameter: The ID of hosting plan type. Only hosting plans of the type specified will be returned.
promo_id	Optional parameter: ID of promotion to be applied to hosting plans prices.
account_id	Optional parameter: ID of account the prices are to be calculated for.
sb_sid	Optional parameter: Trial site ID. The parameter is predefined on redirect from Sitebuilder.
sb_node	Optional parameter: Sitebuilder node numeric ID assigned in PBAS.

Returns: plan_list => HP list

SOAP Faults codes:

HPProviderNotAllowed	Provider account ID is used to get hosting plan details. Only customer or reseller account ID is allowed as parameter.

validate_plesk_login

The function checks Plesk Administrator login, password, and forward URL.

Parameters:

login	Optional parameter: Plesk Administrator login.
password	Optional parameter: Plesk Administrator password.
forward_url	Optional parameter: Plesk forwarding URL.

Returns: result => 1 on success, Fault otherwise

SOAP Faults codes:

PleskLoginInvalid	Plesk Administrator login invalid.
PleskPasswordInvalid	Plesk Administrator password invalid.
UserPleskForwardURLInvalid	Plesk forwarding URL invalid.

HSPC/API/Billing

calculate_order

The function calculates prices in an order.

Parameters:

account_id	ID of account the prices are to be calculated for.
hp_sid	Optional parameter: Hosting plan series key.
hp_id	Optional parameter: Hosting plan ID.
period	Optional parameter in case a period is trial (for_trial parameter is specified) or if a domain hosting plan is purchased. Subscription period.
promo_id	Optional parameter: The ID of promotion to be applied to hosting plan prices.
domain_hash	Optional parameter: The list of domains.
app_list	Optional parameter: The list of application templates IDs.
attribute_list	The list of custom attributes.
sb_plan	Optional parameter: The parameter is to be used only if Sitebuilder service is included in a hosting plan. If a Sitebuilder site already exists, the Sitebuilder site alias must be passed. If a new Sitebuilder site is to be created, the '`new`' value must be passed.

license_list	Optional parameter: List of licenses included in a hosting plan. The list of licences is presented as the following hash:
	`'license_list' => {`
	`   'plugin_1' => {`
	`    'SITEBUILDER' => {`
	`      'feature_list' => [`
	`      '500_SITES',`
	`      '1YR_PREMIUM_SUPPORT_PACK',`
	`      'MULTI_SERVER_CAPABILITY',`
	`      '1YR_EMAIL_SUPPORT_PACK'`
	`                         ]`
	`                 },`
	`    'PLESK_75_RELOADED' => {`
	`        'addon_list' => {`
	`          'PLESK_BATTLEFIELD' => {`
	`        'feature_list' => [`
	`          '5_BATTLEFIELD_SERVERS'`
	`                          ]`
	`                                 },`
	`          'PLESK_CS_GAMESERVER' => {`
	`        'feature_list' => []`
	`                                   }`
	`                        },`
	`        'feature_list' => [`
	`          '100_DOMAINS',`
	`          'TROUBLE_TICKETING_SYSTEM',`
	`          '1YR_PREMIUM_SUPPORT_PACK',`
	`          'COLDFUSION',`
	`          'INEXPENSIVE_SERVER',`
	`          'EXPENSIVE_SERVER'`
	`                          ]`
	`                             }`
	`                           }`
	`                   }`

login	Optional parameter: The list can include three parameters: ▪ password ▪ login ▪ forwarding URL The parameters composition depends upon hosting plan type.
answer_list	The list of answers on a hosting plan questionnaire. Each answer is a list consisting of a question ID and an answer string.

qos_list	Optional parameter. The list of billable resources presented as the following hash:
	`{`
	`'res_id_1003' => {'res_id' => '1003','value' => '2','multiplier' => '1'},`
	`'res_id_1012' => {'res_id' => '1012','value' => '1','multiplier' => '1'},`
	`...`

	} Where: `res_id` - is a resource numerical identifier assigned in the Parallels Business Automation - Standard database `multiplier` - is a resource units `value` - is an additional resource value ordered over the included value.

Returns: ORDER (on page 37).

SOAP Faults codes:

AFMdenied	Anti-Fraud Manager has stopped an order.
AuthzError	Authorization error.
DomainRequired	Hosting plan requires a domain registration, but no domains were registered.
HPNoApps	Applications specified are not supported by a hosting plan.
HPNoDomainAction	A domain operation specified is not supported.
HPNoDomainAvailable	A domain name is not available for registration.
HPNoDomainReg	Hosting plan does not support domain registration.
HPNoDomainSubscrAllowed	No more domains allowed for a hosting plan. Allowed limit for domains registration is used up.
HPNoLicClasses	Licenses specified are not supported by a hosting plan.
HPNoSB	Sitebuilder service specified is not supported by a hosting plan.
HPNoSecureWhois	A domain hosting plan does not support secure whois service.
HPNoTransferDomainAvailable	A domain specified is not available for transfer in a particular hosting plan.
HPNoTrial	Hosting plan does not support trial periods.
HPSBErrors	Errors connected with Sitebuilder site have occurred during order processing.
InvalidDomain	Invalid domain name was specified.
NoOrderForProvider	Provider tries to place order for themselves.

NoPointerAllowed	Domain pointer operation is not available for a domain specified.
NoQuestion	No question exists in a hosting plan for an answer specified.
NoSubdomain	Subdomain creation is not available for a domain specified.
OrderFailed	Order creation error.
SubscrNotFound	A subscription a domain registration is to be added to does not exist.
TLDNoSuchPeriod	A domain registration period specified does not supported for a TLD.
UserNoVPSPasswd	No password specified for Container.
UserVPSPasswdWeak	Container password does not meet the password strength requirements.
NoHPSidOrID	Hosting plan sid or id is not set.
NOPersonId	Require person_id but not set in request

Examples of ORDER Hash

Example 1:

```
$VAR1 = {
          'time_stamp' => '2006-08-07 10:34:59',
          'doc_balance_print' => '15.0000',
          'detail_list' => [
                           {
                             'count' => undef,
                             'period' => '0',
                             'taxfree_amount' => '10.0000',
                             'quantity' => undef,
                             'taxfree_gross_amount'            =>
'10.0000',
                             'duration' => '0',
                             'discount' => '0.00',
                             'rate' => '10.000001',
                             'amount' => '10.0000',
                             'unit' => '0',
                             'comment'   =>   'Dedicated   Server
hosting plan setup fee',
                             'gross_amount' => '10.0000',
                             'multiplier' => undef
                           },
                           {
                             'count' => '1.000000',
                             'period' => '2592000',
                             'taxfree_amount' => '5.0000',
                             'quantity' => undef,
                             'taxfree_gross_amount' => '5.0000',
                             'duration' => '0',
                             'discount' => '0.00',
                             'rate' => '5.000001',
                             'amount' => '5.0000',
                             'unit' => '0',
                             'comment' => 'Dedicated Server
hosting plan subscription fee',
                             'gross_amount' => '5.0000',
                             'multiplier' => undef
                           }
                         ],
          'rperiod' => '2592000',
          'order_type' => '100',
          'doc_status_txt' => 'open',
          'plan_type' => '3',
          'added_by_account' => '3',
          'bhp_id' => '1',
          'doc_total' => '15.0000',
          'id' => '354057',
          'doc_balance' => '15.0000',
          'doc_subtotal_print' => '15.0000',
          'subscr_end_date' => undef,
          'period' => '2592000',
          'is_tax_included' => undef,
          'name' => 'order',
          'doc_subscr_prices' => undef,
          'description' => 'Order on purchase Dedicated
Hosting',
          'plan_id' => '1',
        'doc_type' => 'OR'
    };
```

Example 2:

```
$VAR1 = {
'doc_balance_print' => '0.0000',
'time_stamp' => '2007-12-14 16:04:12',
'detail_list' => [
{
'count' => undef,
'period' => '0',
'taxfree_amount' => '5.0000',
'quantity' => '',
'taxfree_gross_amount' => '5.0000',
'duration' => '',
'discount' => '0.00',
'rate' => '4.240000',
'amount' => '4.2400',
'unit' => '',
'comment' => 'Virtuozzo Container with lics hosting plan setup
fee',
'gross_amount' => '4.2400',
'multiplier' => undef
},
{
'count' => '1.000000',
'period' => '2592000',
'taxfree_amount' => '5.0000',
'quantity' => '',
'taxfree_gross_amount' => '5.0000',
'duration' => '1 month(s)',
'discount' => '0.00',
'rate' => '4.240000',
'amount' => '4.2300',
'unit' => '',
'comment' => 'Virtuozzo Container with lics hosting plan
subscription fee',
'gross_amount' => '4.2400',
'multiplier' => undef
},
{
'count' => '1.000000',
'period' => '31104000',
'taxfree_amount' => '10.0000',
'quantity' => '',
'taxfree_gross_amount' => '10.0000',
'duration' => '1 year(s)',
'discount' => '0.00',
'rate' => '8.470000',
'amount' => '8.4800',
'unit' => '',
'comment' => 'Domain testdomain.com registration for 1 year',
'gross_amount' => '8.4700',
'multiplier' => undef
},
{
'count' => '1.000000',
'period' => '0',
'taxfree_amount' => '123.0000',
'quantity' => '',
'taxfree_gross_amount' => '123.0000',
'duration' => '',
'discount' => '0.00',
'rate' => '104.240000',
'amount' => '104.2400',
'unit' => '',
'comment' => 'Workgroup Administrator Control Panel setup fee',
'gross_amount' => '104.2400',
'multiplier' => undef
},
{
'count' => '1.000000',
'period' => '2592000',
'taxfree_amount' => '11.0000',
'quantity' => '',
'taxfree_gross_amount' => '11.0000',
'duration' => '1 month(s)',
'discount' => '0.00',
'rate' => '9.320000',
'amount' => '9.3200',
'unit' => '',
'comment'  =>  'Workgroup  Administrator  Control  Panel  monthly
fee',
'gross_amount' => '9.3200',
'multiplier' => undef
},
{
'count' => '1.000000',
'period' => '0',
'taxfree_amount' => '33.0000',
'quantity' => '',
'taxfree_gross_amount' => '33.0000',
'duration' => '',
'discount' => '0.00',
'rate' => '27.970000',
'amount' => '27.9600',
'unit' => '',
'comment' => 'Php As3 setup fee',
'gross_amount' => '27.9700',
'multiplier' => undef
},
{
'count' => '1.000000',
'period' => '2592000',
'taxfree_amount' => '21.0000',
'quantity' => '',
'taxfree_gross_amount' => '21.0000',
'duration' => '1 month(s)',
'discount' => '0.00',
'rate' => '17.800000',
'amount' => '17.8000',
'unit' => '',
'comment' => 'Php As3 monthly fee',
'gross_amount' => '17.8000',
'multiplier' => undef
},
{
'count' => '1.000000',
'period' => '0',
'taxfree_amount' => '23.0000',
'quantity' => '',
'taxfree_gross_amount' => '23.0000',
'duration' => '',
'discount' => '0.00',
'rate' => '19.490000',
'amount' => '19.4900',
'unit' => '',
'comment' => 'Psa Sb Publish As3 setup fee',
'gross_amount' => '19.4900',
'multiplier' => undef
},
{
'count' => '1.000000',
'period' => '2592000',
'taxfree_amount' => '3.0000',
'quantity' => '',
'taxfree_gross_amount' => '3.0000',
'duration' => '1 month(s)',
'discount' => '0.00',
'rate' => '2.540000',
'amount' => '2.5500',
'unit' => '',
'comment' => 'Psa Sb Publish As3 monthly fee',
'gross_amount' => '2.5400',
'multiplier' => undef
},
{
'count' => undef,
'period' => '0',
'taxfree_amount' => '5.0000',
'quantity' => '',
'taxfree_gross_amount' => '5.0000',
'duration' => '',
'discount' => '0.00',
'rate' => '4.240000',
'amount' => '4.2300',
'unit' => '',
'comment' => '512 MB DDR setup fee',
'gross_amount' => '4.2400',
'multiplier' => undef
},
{
'count' => '1.000000',
'period' => '2592000',
'taxfree_amount' => '6.0000',
'quantity' => '',
'taxfree_gross_amount' => '6.0000',
'duration' => '1 month(s)',
'discount' => '0.00',
'rate' => '5.080000',
'amount' => '5.0900',
'unit' => '',
'comment' => '512 MB DDR monthly fee',
'gross_amount' => '5.0800',
'multiplier' => undef
},
{
'count' => undef,
'period' => '0',
'taxfree_amount' => '2.0000',
'quantity' => '',
'taxfree_gross_amount' => '2.0000',
'duration' => '',
'discount' => '0.00',
'rate' => '1.690000',
'amount' => '1.6900',
'unit' => '',
'comment' => '80 GB setup fee',
'gross_amount' => '1.6900',
'multiplier' => undef
},
{
'count' => '1.000000',
'period' => '2592000',
'taxfree_amount' => '2.0000',
'quantity' => '',
'taxfree_gross_amount' => '2.0000',
'duration' => '1 month(s)',
'discount' => '0.00',
'rate' => '1.690000',
'amount' => '1.7000',
'unit' => '',
'comment' => '80 GB monthly fee',
'gross_amount' => '1.6900',
'multiplier' => undef
},
{
'count' => undef,
'period' => '2592000',
'taxfree_amount' => '8.0000',
'quantity' => '2',
'taxfree_gross_amount' => '8.0000',
'duration' => '1 month(s)',
'discount' => '0.00',
'rate' => '3.390000',
'amount' => '6.7800',
'unit' => 'domain',
'comment'  =>  'Number  of  domains  with  DNS  hosting  provided
monthly fee',
'gross_amount' => '6.7800',
'multiplier' => '1.000000'
},
{
```

```
'count' => undef,
'period' => '2592000',
'taxfree_amount' => '2.0000',
'quantity' => '1',
'taxfree_gross_amount' => '2.0000',
'duration' => '1 month(s)',
'discount' => '0.00',
'rate' => '1.690000',
'amount' => '1.6900',
'unit' => 'ip(s)',
'comment' => 'Number of Static IP addresses monthly fee',
'gross_amount' => '1.6900',
'multiplier' => '1.000000'
},
{
'count' => undef,
'period' => '0',
'taxfree_amount' => '2.0000',
'quantity' => '',
'taxfree_gross_amount' => '2.0000',
'duration' => '',
'discount' => '0.00',
'rate' => '1.690000',
'amount' => '1.7000',
'unit' => '',
'comment' => 'Plesk 7.5 Plus setup fee',
'gross_amount' => '1.6900',
'multiplier' => undef
},
{
'count' => undef,
'period' => '2592000',
'taxfree_amount' => '3.0000',
'quantity' => '1',
'taxfree_gross_amount' => '3.0000',
'duration' => '1 month(s)',
'discount' => '0.00',
'rate' => '2.540000',
'amount' => '2.5400',
'unit' => '',
'comment' => 'Plesk 7.5 Plus monthly fee',
'gross_amount' => '2.5400',
'multiplier' => undef
},
{
'count' => undef,
'period' => '0',
'taxfree_amount' => '2.0000',
'quantity' => '',
'taxfree_gross_amount' => '2.0000',
'duration' => '',
'discount' => '0.00',
'rate' => '1.690000',
'amount' => '1.6900',
'unit' => '',
'comment' => 'Unlimited Domains w/1 yr SUS (Plesk 7.5 Plus)
setup fee',
'gross_amount' => '1.6900',
'multiplier' => undef
},
{
'count' => undef,
'period' => '2592000',
'taxfree_amount' => '3.0000',
'quantity' => '1',
'taxfree_gross_amount' => '3.0000',
'duration' => '1 month(s)',
'discount' => '0.00',
'rate' => '2.540000',
'amount' => '2.5500',
'unit' => '',
'comment' => 'Unlimited Domains w/1 yr SUS (Plesk 7.5 Plus)
monthly fee',
'gross_amount' => '2.5400',
'multiplier' => undef
},
{
'count' => undef,
'period' => '0',
'taxfree_amount' => '5.0000',
'quantity' => '',
'taxfree_gross_amount' => '5.0000',
'duration' => '',
'discount' => '0.00',
'rate' => '4.240000',
'amount' => '4.2300',
'unit' => '',
'comment' => '1 yr E-mail Support Package (Plesk 7.5 Plus) setup
fee',
'gross_amount' => '4.2400',
'multiplier' => undef
},
{
'count' => undef,
'period' => '2592000',
'taxfree_amount' => '4.0000',
'quantity' => '1',
'taxfree_gross_amount' => '4.0000',
'duration' => '1 month(s)',
'discount' => '0.00',
'rate' => '3.390000',
'amount' => '3.3900',
'unit' => '',
'comment' => '1 yr E-mail Support Package (Plesk 7.5 Plus)
monthly fee',
'gross_amount' => '3.3900',
'multiplier' => undef
},
{
'count' => undef,
'period' => '0',
'taxfree_amount' => '0.0000',
'quantity' => '',
'taxfree_gross_amount' => '0.0000',
'duration' => '',
'discount' => '0.00',
'rate' => '0.000000',
'amount' => '42.4100',
'unit' => '',
'comment' => '+ NDS 18.00 %',
'gross_amount' => '42.4100',
'multiplier' => undef
}
],
'rperiod' => '2592000',
'subscr_id' => '240',
'order_type' => '100',
'doc_date' => '2007-12-14 16:03:26',
'doc_subtotal' => '235.5900',
'subscriptions' => [
{
'ar_doc_id' => '745',
'subscr_status' => '1',
'applied' => '1',
'start_date' => '2007-12-14 16:03:56',
'id' => '240'
},
{
'ar_doc_id' => '745',
'subscr_status' => '1',
'applied' => '1',
'start_date' => '2007-12-14 16:04:06',
'id' => '241'
}
],
'added_by_account' => '2',
'doc_status_txt' => 'ds_completed',
'plan_type' => '1',
'plan_type_txt' => 'Virtuozzo Container',
'domain' => 'testdomain.com',
'bhp_id' => '314',
'doc_balance' => '0.0000',
'doc_total' => '278.0000',
'id' => '745',
'provider_tax_ex_number' => '',
'doc_subtotal_print' => '235.5900',
'period' => '2592000',
'subscr_end_date' => undef,
'is_tax_included' => '1',
'name' => 'order',
'order_id' => '745',
'doc_num' => '1336',
'description' => 'Order on the Container creation',
'plan_id' => '314',
'doc_type' => 'OR',
'added_by_ip' => '10.30.64.209',
'plan_name' => 'Virtuozzo Container with lics'
};
```

get_hosting_target_list

The function returns the list of subscriptions (that already exist for an account) with not fully used resources, which allows creating hosting in the range of these remaining resources.

Parameters:

account_id	Account ID.

Returns: {hosting_target_list => {id => ID, name => STRING, plan_name => STRING, sites_available => NUMBER} }

SOAP Faults codes:

No specific codes.

place_order

The function places order.

Parameters:

account_id	ID of account the prices are to be calculated for.
hp_sid	Hosting plan series key.
period	Optional parameter in case a period is trial (for_trial parameter is specified) or if a domain hosting plan is purchased. Subscription period.
campaign	Optional parameter. ID of campaign (Marketing Director > Campaign Manager > Campaigns). When user is redirected to store via a Campaign link, redirector adds `HSPC_MM=<campaign_id>` parameter to store URL. Example: Redirect To URL: `http://mystore.host.com` Campaign ID: 25 Redirection is done to URL `http://mystore.host.com?HSPC_MM=25` In this way store gets campaign ID. When order is placed, campaign ID must be send back to the server, to add this order to campaign report.
promo_id	Optional parameter: The ID of promotion to be applied to hosting plan prices.

domain_hash	The list of domains. Each domain in this list is presented by the following hash:
	
	{'domain1' => {
	
	domain_name => 'example.com' -- self-explanatory
	
	dm_action => 'register_new' -- action over domain
	
	period => 2, -- registration period in years
	
	whois_privacy => 1|0 -- use whois privacy yes|no
	
	is_manual => 1| 0 -- use manual registration yes|no. Use when importing domain subscription.
	
	expire_time => Expiration date for domain. Use when importing domains. Format: Use any string parsable by Date::Manip (which is, well, just about anything).
	
	contact_hash => {admin => 45, billing => 0, owner => undef} -- mapping of contact types to use for domain to contact IDs. If contact id is 'undef' or '0', it will be created on the basis of account contact information
	
	create_site => 1|0 - create site for this domain or no.
	
	hosting_destination => 56 - Subscription number, for which this domain is bought.
	
	is_default => 1|0 -- If 1, this domain is specified as the default one in the order.
	
	ns_list => [[HOSTNAME, IP], [HOSTNAME, IP], ...] -- list of nameservers for domain. If present,
	no DNS hosting service will be provided.
	
	},
	
	'domain2' => { ... },
	
	ext_data => { purpose of domaun usage => 'Business', ... } -- any additional information required by a registrar. This parameter is always the only one in the hash.
	
	}

app_list	The list of application templates IDs.

attribute_list	The list of custom attributes.
sb_plan	Optional parameter: The parameter is to be used only if Sitebuilder service is included in a hosting plan. If a Sitebuilder site already exists, the Sitebuilder site alias must be passed. If a new Sitebuilder site is to be created, the 'new' value must be passed.
license_list	List of licenses included in a hosting plan.
login	The list can include three parameters: password login forwarding URL The parameters composition depends upon hosting plan type.
answer_list	The list of answers on a hosting plan questionnaire. Each answer is a list consisting of a question ID and an answer string.
for_trial	If an order is for trial period.
initiator_email	E-mail of a person that has added an order.
initiator_ip	IP address of a person that has added an order.
description	Optional parameter. Order description.

is_free	1 - yes or 0 - no. Optional parameter that can be used by provider only. The parameter specifies whether an order should be free (1) or not (0). If yes, the balance of an order created on a subscription import is adjusted to zero, that is a special 'balance correction' string is added to an order. This parameter can be used, for example if a provider wants to import a a subscription or a number of subscriptions into Parallels Business Automation - Standard and it is necessary that a corresponding orders to be generated for these subscriptions will be of a zero amount. **Note:** Only provider is allowed to use the `is_free` parameter. If this parameter is used by a reseller, this will result in SOAP fault (see the list of SOAP Fault Codes below this table).
ext_data	List of extended attributes

qos_list	Optional parameter. The list of billable resources presented as the following hash:
	`{`
	`'res_id_1003' => {'res_id' => '1003','value' => '2','multiplier' => '1'},`
	`'res_id_1012' => {'res_id' => '1012','value' => '1','multiplier' => '1'},`
	`...`
	`}`
	Where:
	`res_id` - is a resource numerical identifier assigned in the Parallels Business Automation - Standard database
	`multiplier` - is a resource units
	`value` - is an additional resource value ordered over the included value.

Returns: ORDER (on page 37).

SOAP Faults codes:

AFMdenied	Anti-Fraud Manager has stopped an order.
AuthzError	Authorization error.
DomainRequired	Hosting plan requires a domain registration, but no domains were registered.
HPNoApps	Applications specified are not supported by a hosting plan.

HPNoDomainAction	A domain operation specified is not supported.
HPNoDomainAvailable	A domain name is not available for registration.
HPNoDomainReg	Hosting plan does not support domain registration.
HPNoDomainSubscrAllowed	No more domains allowed for a hosting plan. Allowed limit for domains registration is used up.
HPNoLicClasses	Licenses specified are not supported by a hosting plan.
HPNoSB	Parallels Sitebuilder service specified is not supported by a hosting plan.
HPNoSecureWhois	A domain hosting plan does not support secure whois service.
HPNoTransferDomainAvailable	A domain specified is not available for transfer in a particular hosting plan.
HPNoTrial	Hosting plan does not support trial periods.
HPSBErrors	Errors connected with Parallels Sitebuilder site have occurred during order processing.
InvalidDomain	Invalid domain name was specified.
NoOrderForProvider	Provider tries to place order for themselves.
NoPointerAllowed	Domain pointer operation is not available for a domain specified.
NoQuestion	No question exists in a hosting plan for an answer specified.
NoSubdomain	Subdomain creation is not available for a domain specified.
OrderFailed	Order creation error.
OrderFreeDenied	The is_free parameter is used not by provider (for example, reseller tries to create a free order).
OrderExtData	Extended attribute addition error.
SubscrNotFound	A subscription a domain registration is to be added to does not exist.
TLDNoSuchPeriod	A domain registration period specified does not supported for a TLD.
UserNoVPSPasswd	No password specified for Container.

UserVPSPasswdWeak	Container password does not meet the password strength requirements.

create_offline_payment

This function allows creating an offline payment and, at the same moment, applying this payment to a number of documents.

Note: The payment created by this function can be applied to documents with Open or Overdue status. The payment can be applied only to the following types of documents: Order, Invoice, Debit Adjustment, and Payment Request. A payment can be applied only to documents assigned to an account a payment was issued for.

Parameters:

amount	A payment total amount.
account_id	ID of account a payment is issued for.
ref_num	A payment reference number.
doc_list	Optional parameter. List of IDs of documents a payment is to be applied to.
adjust_error_fatal	Optional parameter that defines the function behavior in case of error, depending of a value assigned to this parameter : If 1, then any error that occurs will stop payment processing and produce SOAP fault DocAdjustError. Errors will be placed into SOAP details. If 0, then in case errors occur, the function will keep trying to pay documents, but all the errors will be returned.

Returns:

`{ result => 1 }` if no errors occurred, and offline payment has been placed successfully.

or

`{ result => 0, error_info => ARRAYREF }` if adjust_error_fatal=0 and some errors occurred.

Example of returned value:

```
{
          'error_info' => [
                          {
                            'error_message' => 'Document 103 has been paid',
                            'document' => '103',
                            'error_code' => 'DocPaid'
                          }
                        ],
          'result' => '0'
};
```

SOAP Faults codes:

DocAdjustError	Error adjusting documents!

Document type specific errors:

DocInvalidAccount	Document %DOCID% was not added by the account trying to pay for it.
DocPaid	Document %DOCID% has been paid
DocNotOpen	Document %DOCID% is not open
DocWrongType	Document %DOCID% is of an inappropriate type.

Example of Test Code for create_offline_payment Function

```
#!/usr/bin/perl

use strict;
use SOAP::Lite;
use Data::Dumper;

my $client = SOAP::Lite
    ->proxy('https://hspc_mn_server_name/hspc/xml-api')
    ->on_fault(sub {die 'Fault: '.$_[1]->faultstring.' '.$_[1]->faultcode.'
'.$_[1]->faultdetail});
my $sid = $client->ns('HSPC/API/1.0')->session_open(
{
       email => 'someuser@somehost', password => 'somepassword'
}
)->result->{session_id};

$client->transport->http_request->header('HSPC-SID' => $sid);

my %h = (
       amount => 5,
       account_id => 2,
       ref_num => 'test offline payment',
       doc_list => [103],
       adjust_error_fatal  => 1,
);

my $obj = $client->ns('HSPC/API/Billing/1.0')->create_offline_payment(%h)-
>result;

print "\nResult: " . Dumper($obj);

$client->ns('HSPC/API/1.0')->session_close;
```

get_order_details

This function allows getting the full information about an order by an order ID.

Parameters:

order_id	An order numerical identifier assigned in the Parallels Business Automation - Standard database.
doc_num	An order reference number (optional).

Returns: ORDER (on page 37), see Example 2.

Note: The function can be used to get details of other types of documents, for example, invoice. To use the function this way, a document ID is to be passed. In this case, th parameter name remains the same, order_id.

SOAP Faults codes:

OrderNotFound	Order not found. This means that no order with the ID specified.
AuthzError	Access Denied.

get_extended_attr_list

The function returns extended attributes available for a particular hosting plan type.

Parameters:

order_type	Order type: corresponds to a hosting plan type, the parameter value (constant) is a hosting plan code used in Store.

Returns value: [{ view_name=>, title=>, value=>, type=> }, ..]

SOAP Faults codes:

No specific codes.

get_account_subscr

The function returns the list of account subscriptions.

Parameters:

account_id	ID of account the list of subscriptions is requested.

Returns an array of hashes:

{'plan_type_txt' => STRING, 'plan_type' => INT, 'status' => STRING, 'plan_name' => STRING, 'subscr_name' => STRING, 'subscr_id' => ID }

SOAP Faults codes:

MissingAccount	No accounts with passed ID has been found.
AccessDenied	Function is called by a person not logged in or logged in with insufficient permissions. Access to account information is denied.
AccountAccessDenied	Access to account information is denied in case a reseller uses this function, but account belongs to another reseller. Another match is the situation when a user is logged in and requests information about account that does not belong to him/her.

subscr_auth

The function authorizes an account against subscription ID.

Parameters:

account_id	ID of account the list of subscriptions is requested.
subscr_id	ID of subscription.

Returns:

is_authorized => 1 or 0

SOAP Faults codes:

SubscrNotFound	No subscription with ID passed.
AuthzError	Subscription belongs to another account or in case a reseller uses this function, to another reseller.

get_subscr_info

The function returns full subscription information.

Parameters:

subscr_id	ID of subscription.
account_id	Optional parameter. ID of account subscription belongs to.

If account_id is provided, subscription is verified for belonging to the account.

Returns:

Various outputs depending on Subscription type, see examples (on page 62).

In general, the following parameters are returned.

All subscriptions:

Common output fields for all subscription types:

id	ID of subscription.
name	Subscription name.
account_no	ID of account.
status_txt	Subscription status in text form (Active, On Hold, etc.).
status	ID of subscription status.
prev_status	Subscription previous status ID.
plan_type	Hosting plan ID.
plan_type_txt	Hosting plan type in text.
plan_id	Hosting plan ID.
plan_sid	Hosting plan series key.
plan_name	Hosting plan name in text.
create_order_id	ID of order placed for subscription.
period	Subscription period duration (given in seconds).
next_period	If subscription has been renewed, next subscription period.

renewal_policy	Renewal policy code: ▪ 0 - Do not generate renewal order automatically; ▪ 1 - Generate renewal order automatically and try to pay it. ▪ 2. - Generate renewal order automatically and do not to pay it.
trial_period	If subscription is trial, then trial period duration in seconds is returned.
custom_subscr_fee	Custom subscription fee (if such has been set for subscription).
start_date	Subscription start date.
end_date	Subscription end date.
grace_date	If subscription is in Graced status, the grace period start date.
expiration_date	Subscription expiration date.
termination_date	If subscription has been terminated, subscription termination date is returned.
goaway_date	If subscription has been deleted, the deletion date is returned.

Common returned parameters for all subscription types except for Domain registration ones:

prom_id	If promotion has been applied to subscription, promotion ID is returned.
prom_start_date	Promotion period start date (if promotion has been applied).
prom_end_date	Promotion period end date (if promotion has been applied).
res_info	All resources included in subscription.
bm_attr	Custom attributes assigned to subscription (if any).
questions	Questions specified (Questionnaire) for subscription, if any.
assigned_domains	Domains assigned to subscription, if any.

The following subscription types have some extra output fields:

Domain registration subscription returned parameters:

domain	Hash containing information about domain zone.
regdomain	Hash containing information about domain registration.

Virtuozzo Container subscription:

platform_id	ID of Container platform: ▪ -1 - Unknown ▪ 0 - All ▪ 1 - Linux Vz2.0 ▪ 3 - Linux Vz3.x ▪ 4 - Windows Vz3.x ▪ 5 - Linux Vz3.x EM64T ▪ 6 - Linux Vz3.x IA64 ▪ 100 - Non-VZ ▪ 201 - Plesk for Unix ▪ 202 - Plesk for Windows
platform	Platform name in text form.
traf_class	Traffic class ID, if such has been configured for subscription.
app_resources	Applications available for subscription.
is_root_access	If root access allowed for Container.
ve_id	Container ID.
ve	Container name.

Plesk Client subscription:

traf_class	Traffic class ID, if such has been configured for subscription.
plesk_client	Hash containing information about Plesk client (ID, node, status, etc.)
platform_id	Plesk platform ID (name as for Virtuozzo Container subscription.
platform	Plesk platform name in text form.
app_resources	Applications available for subscription.

Plesk Domain subscription:

traf_class	Traffic class ID, if such has been configured for subscription.
plesk_domain	Hash containing information about Plesk domain (ID, node, status, etc.)
platform_id	Plesk platform ID (name as for Virtuozzo Container subscription.
platform	Plesk platform name in text form.
app_resources	Applications available for subscription.

Plesk Dedicated Server subscription:

hw_id	Server ID assigned in Parallels Business Automation.
server_properties	Hash containing information about server configuration.

Dedicated Server subscription:

platform_id	Server platform ID (name as for Virtuozzo Container subscription.
platform	Platform name in text form.
traf_class	Traffic class ID, if such has been configured for subscription.
server_properties	Hash containing information about server configuration.
hw_id	Server ID assigned in Parallels Business Automation.

SOAP Faults codes:

SubscrNotFound	No subscription with ID passed.
AuthzError	Subscription belongs to another account or in case a reseller uses this function, to another reseller.

Example of get_subscr_info Returned Values

Examples of get_subscr_info function output depending on a subscription type are presented in this topic.

Dedicated server

```
{
          'goaway_date' => undef,
          'prom_start_date' => '2007-09-10 08:54:12',
          'trial_period' => '0',
          'traf_class' => undef,
          'plan_type' => '3',
          'plan_type_txt' => 'Dedicated Server',
          'account_no' => '3',
          'renewal_policy' => '1',
          'assigned_domains' => [],
          'id' => '7',
          'bm_attr' => [
                       {
                         'group_id' => '1',
                         'group_name' => 'Hard Disk',
                         'bm_attr_id' => '2',
                         'name' => '80 GB',
                         'subscr_id' => '7',
                         'is_complimentary' => '0'
                       },
                       {
                         'group_id' => '2',
                         'group_name' => 'Memory',
                         'bm_attr_id' => '5',
                         'name' => '512 MB DDR',
                         'subscr_id' => '7',
                         'is_complimentary' => '0'
                       },
                       {
                         'group_id' => '3',
                         'group_name' => 'Processor',
                         'bm_attr_id' => '8',
                         'name' => 'AMD Athlon64 3000',
                         'subscr_id' => '7',
                         'is_complimentary' => '0'
                       },
                       {
                         'group_id' => '5',
                         'group_name' => 'Operating System',
                         'bm_attr_id' => '14',
                         'name' => 'Windows Server 2003',
                         'subscr_id' => '7',
                         'is_complimentary' => '0'
                       }
                     ],
          'period' => '2592000',
          'prom_id' => '0',
          'name' => 'DS1234',
          'questions' => [],
          'prom_end_date' => undef,
          'custom_subscr_fee' => undef,
          'is_traffic_overused' => '0',
          'end_date' => '2008-11-30 00:00:00',
          'plan_name' => 'DS',
          'next_period' => '2592000',
          'base_date' => '2000-01-30 00:00:00',
          'res_info' => [
                          {
```

```
                          'short_name' => 'numstaticip',
                          'is_unlim' => '0',
                          'is_advanced' => '0',
                          'id' => '7',
                          'value' => '1',
                          'name' => 'Number of Static IP addresses',
                          'is_domain' => '0',
                          'is_countable' => '1',
                          'max_value' => '1048576',
                          'overuse_rate' => '0.000000',
                          'is_ve_related' => '0',
                          'is_metered' => '0',
                          'res_id' => '201',
                          'is_reducible' => '1',
                          'multiplier' => '1',
                          'units' => 'ip(s)'
                        },
                        {
                          'short_name' => 'numdnshosting',
                          'is_unlim' => '0',
                          'id' => '7',
                          'is_advanced' => '0',
                          'value' => '1',
                          'is_countable' => '1',
                          'is_domain' => '0',
                          'name' => 'Number of domains with DNS hosting
provided',
                          'is_ve_related' => '0',
                          'overuse_rate' => '0.000000',
                          'max_value' => '1048576',
                          'is_metered' => '0',
                          'res_id' => '208',
                          'is_reducible' => '0',
                          'units' => 'domain',
                          'multiplier' => '1'
                        }
                      ],
          'server_properties' => {
                                 'port' => '',
                                 'identification' => 'DS1234',
                                 'switch_id' => '0',
                                 'ipaddresses' => [
                                                  '12.13.14.15',
                                                  '12.13.14.16'
                                                ],
                                 'comment' => 'test dedicated',
                                 'switch' => undef,
                                 'rack' => undef,
                                 'id' => '3',
                                 'attributes' => [
                                                 {
                                                   'attr_id' => '6',
                                                   'name' => '1024 MB DDR'
                                                 },
                                                 {
                                                   'attr_id' => '11',
                                                   'name' => 'VIRUS
Protection'
                                                 },
                                                 {
                                                   'attr_id' => '3',
                                                   'name' => '120 GB'
                                                 },
                                                 {
                                                   'attr_id' => '13',
                                                   'name' => 'ROOT Access'
                                                 },
                                                 {
                                                   'attr_id' => '9',
                                                   'name' => 'Dual Intel Xeon
D 2.8 GHz'
                                                 },
                                                 {
                                                   'attr_id' => '12',
                                                   'name' => 'Development
Tools'
                                                 },
                                                 {
                                                   'attr_id' => '15',
                                                   'name' => 'Fedora Linux'
                                                 }
                                               ],
                                 'form_factor' => '45'
                               },
          'plan_sid' => '16',
          'status' => '1',
          'is_upgrade' => undef,
          'is_notify' => undef,
          'prev_status' => '10',
          'create_order_id' => '31',
          'status_txt' => 'active',
          'grace_date' => '2008-05-14 08:48:21',
          'billable_items' => [],
          'start_date' => '2007-09-10 08:54:12',
          'platform' => 'Non-VZ',
          'termination_date' => undef,
          'hw_id' => '3',
          'expiration_date' => '2008-10-26 00:00:00',
          'plan_id' => '16',
          'platform_id' => '100'
};
```

Miscellaneous Subscription

```
{
          'goaway_date' => undef,
          'prom_start_date' => '2008-04-29 11:25:58',
          'trial_period' => '0',
          'plan_type' => '7',
          'plan_type_txt' => 'Miscellaneous',
          'account_no' => '2',
          'renewal_policy' => '1',
          'assigned_domains' => [
                                  'fdgfdgdfg.com'
                                ],
          'id' => '166',
          'bm_attr' => [],
          'period' => '2592000',
          'prom_id' => '0',
          'name' => 'Miscellaneous (34)',
          'questions' => [
                           {
                             'question' => 'Question 1',
                             'value' => 'answer 1',
                             'question_id' => '1',
                             'hp_id' => '238',
                             'subscr_id' => '166'
                           },
                           {
                             'question' => 'Question 2',
                             'value' => 'answer 2',
                             'question_id' => '2',
                             'hp_id' => '238',
                             'subscr_id' => '166'
                           },
                         {
                           'question' => 'Question 3',
                           'value' => 'answer 3',
                           'question_id' => '3',
                           'hp_id' => '238',
                           'subscr_id' => '166'
                         }
                       ],
          'prom_end_date' => undef,
          'custom_subscr_fee' => undef,
          'end_date' => '2008-05-29 00:00:00',
          'plan_name' => 'Misc 21',
          'next_period' => '7776000',
          'base_date' => '2008-05-29 00:00:00',
          'res_info' => [
                          {
                            'short_name' => 'numdnshosting',
                            'is_unlim' => '0',
                            'is_advanced' => '0',
                            'id' => '166',
                            'value' => '10',
                            'name' => 'Number of domains with DNS hosting
provided',
                            'is_domain' => '0',
                            'is_countable' => '1',
                            'max_value' => '1048576',
                            'overuse_rate' => '1.000000',
                            'is_ve_related' => '0',
                            'is_metered' => '0',
                            'res_id' => '4000',
                            'is_reducible' => '0',
                            'multiplier' => '1',
                            'units' => 'domain'
                          }
                        ],
          'plan_sid' => '127',
          'status' => '1',
          'is_upgrade' => undef,
          'is_notify' => undef,
          'prev_status' => '3',
          'create_order_id' => '922',
          'status_txt' => 'active',
          'grace_date' => undef,
          'billable_items' => [],
          'start_date' => '2008-04-29 11:25:58',
          'termination_date' => undef,
          'expiration_date' => undef,
          'plan_id' => '241'
};
```

Plesk Client Subscription

```
{
          'goaway_date' => '2008-03-08 00:00:00',
          'prom_start_date' => '2007-12-21 13:31:32',
          'trial_period' => '0',
          'traf_class' => undef,
          'plan_type' => '10',
          'plan_type_txt' => 'Plesk Client',
          'account_no' => '4',
          'renewal_policy' => '0',
          'assigned_domains' => [
                                  'sub-cli-2.com'
                                ],
          'id' => '36',
          'bm_attr' => [],
          'period' => '2592000',
          'prom_id' => '0',
          'name' => 'Dr. John Lector (4-1047)',
          'questions' => [],
          'app_resources' => [],
          'prom_end_date' => undef,
          'plesk_client' => {
                            'status' => '0',
                            'status_txt' => 'active',
                            'subscr_id' => '36',
                            'hw_id' => '1',
                            'id' => '244',
                            'plesk_status' => '0',
                            'plesk_id' => '26',
                            'plesk_name' => 'Dr. John Lector (4-1047)'
                          },
          'custom_subscr_fee' => undef,
          'is_traffic_overused' => '0',
          'end_date' => '2008-02-21 13:37:43',
          'plan_name' => 'PC Win Uniq HN',
          'next_period' => '2592000',
          'base_date' => '2007-12-21 13:37:43',
          'res_info' => [
                        {
                          'short_name' => 'pc_diskquota',
                          'is_unlim' => '0',
                          'is_advanced' => '0',
                          'id' => '36',
                          'value' => '100',
                          'name' => 'Disk space quota',
                          'is_domain' => '0',
                          'is_countable' => '1',
                          'max_value' => '1024000',
                          'overuse_rate' => '0.000000',
                          'is_ve_related' => '0',
                          'is_metered' => '0',
                          'res_id' => '1300',
                          'is_reducible' => '0',
                          'multiplier' => '1048576',
                          'units' => 'MB'
                        },
                        {
                          'short_name' => 'pc_numwebusers',
                          'is_unlim' => '0',
                          'id' => '36',
                          'is_advanced' => '0',
                          'value' => '1',
                          'is_countable' => '1',
                          'is_domain' => '0',
                          'name' => 'Number of web users',
                          'is_ve_related' => '0',
                          'overuse_rate' => '0.000000',
                          'max_value' => '32000',
                          'is_metered' => '0',
                          'res_id' => '1302',
                          'is_reducible' => '0',
                          'units' => 'users',
                          'multiplier' => '1'
                        },
                        {
                          'short_name' => 'pc_nummailbox',
                          'is_unlim' => '0',
                          'id' => '36',
                          'is_advanced' => '0',
                          'value' => '1',
                          'is_countable' => '1',
                          'is_domain' => '0',
                          'name' => 'Number of mailboxes',
                          'is_ve_related' => '0',
                          'overuse_rate' => '0.000000',
                          'max_value' => '32000',
                          'is_metered' => '0',
                          'res_id' => '1304',
                          'is_reducible' => '0',
                          'units' => 'unit',
                          'multiplier' => '1'
                        },
                        {
                          'short_name' => 'pc_mailboxquota',
                          'is_unlim' => '0',
                          'id' => '36',
                          'is_advanced' => '0',
                          'value' => '1',
                          'is_countable' => '1',
                          'is_domain' => '0',
                          'name' => 'Mailbox quota',
                          'is_ve_related' => '0',
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databases',
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                          'is_domain' => '0',
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                          'is_ve_related' => '0',
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                          'units' => 'alias(es)',
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provided',
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          'status_txt' => 'expired',
          'start_date' => '2007-12-21 13:31:32',
          'platform' => 'Plesk for Windows',
          'termination_date' => undef,
          'expiration_date' => '2009-03-08 00:00:00',
          'plan_id' => '51',
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```

Plesk Domain Subscription

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                                  'hadelen.com'
                                ],
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          'bm_attr' => [],
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          'prom_id' => '0',
          'name' => 'hadelen.com',
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                        },
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                          'is_unlim' => '0',
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                          'value' => '0',
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                          'short_name' => 'pd_mysqldbquota',
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                          'value' => '100',
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                          'is_domain' => '0',
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databases',
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                        },
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                          'units' => 'unit',
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                        {
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                          'id' => '90',
                          'is_advanced' => '0',
                          'value' => '1',
                          'is_countable' => '1',
                          'is_domain' => '0',
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                        },
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                          'is_advanced' => '0',
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                          'is_domain' => '0',
                          'name' => 'Number of domains with DNS hosting
provided',
                          'is_ve_related' => '0',
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                          'id' => '90',
                          'is_advanced' => '0',
                          'value' => '1',
                          'is_countable' => '1',
                          'is_domain' => '0',
                          'name' => 'Maximum number of FTP subaccounts',
                          'is_ve_related' => '0',
                          'overuse_rate' => '0.000000',
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                          'multiplier' => '1'
                        },
                        {
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                          'is_advanced' => '0',
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                          'is_countable' => '1',
                          'is_domain' => '0',
                          'name' => 'Maximum number of Microsoft FrontPage
subaccounts',
                          'is_ve_related' => '0',
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                          'units' => 'unit',
                          'multiplier' => '1'
                        },
                        {
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                          'is_advanced' => '0',
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                          'is_reducible' => '1',
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                          'multiplier' => '1'
                        },
                        {
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                          'id' => '90',
                          'is_advanced' => '0',
                          'value' => '0',
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                          'is_domain' => '0',
                          'name' => 'Maximum number of ColdFusion DSN
connections',
                          'is_ve_related' => '0',
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                          'max_value' => '0',
                          'is_metered' => '0',
                          'res_id' => '1231',
                          'is_reducible' => '1',
                          'units' => 'unit',
                          'multiplier' => '1'
                        }
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          'plan_sid' => '113',
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          'is_upgrade' => undef,
          'is_notify' => undef,
          'add_params' => '90',
          'prev_status' => '3',
          'create_order_id' => '424',
          'status_txt' => 'active',
          'grace_date' => undef,
          'billable_items' => [],
          'start_date' => '2008-03-03 12:35:00',
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          'plesk_domain' => {
                            'status' => '0',
                            'hw_id' => '10',
                            'subscr_id' => '90',
                            'plesk_status' => '0',
                            'plesk_id' => '102',
                            'plesk_ip' => '10.26.0.97',
                            'status_txt' => 'active',
                            'id' => '206',
                            'plesk_name' => 'hadelen.com'
                          },
          'termination_date' => undef,
          'expiration_date' => undef,
          'plan_id' => '113',
          'platform_id' => '202'
        };
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Virtuozzo Container Subscription

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{
          'goaway_date' => undef,
          'prom_start_date' => '2008-03-31 13:09:36',
          'is_root_access' => '1',
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          'plan_type' => '1',
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                                  'app.ssl.lmtest.ru'
                                ],
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          'bm_attr' => [],
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          'questions' => [],
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                               'name' => 'Majordomo with Autoresponder',
                               'is_upgrade' => '0',
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                             },
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                               'is_notify' => '0',
                               'setup_fee' => '0.00',
                               'app_key' => 'awstats-fc4',
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                               'subscr_fee' => '0.00',
                               'is_complementary' => '0',
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                               'cid' => '1'
                             },
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                               'setup_fee' => '0.00',
                               'app_key' => 'jre-fc4',
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                               'app_key' => 'mod_perl-fc4',
                               'subscr_fee' => '0.00',
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                               'app_key' => 'mod_ssl-fc4',
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                               'is_upgrade' => '0',
                               'is_notify' => '0',
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                               'app_key' => 'mysql-fc4',
                               'subscr_fee' => '0.00',
                               'is_complementary' => '1',
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                               'id' => '129',
                               'cid' => '1'
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                               'setup_fee' => '0.00',
                               'app_key' => 'openwebmail-fc4',
                               'subscr_fee' => '0.00',
                               'is_complementary' => '0',
                               'type' => '1',
                               'id' => '129',
                               'cid' => '1'
                             },
                             {
                               'name' => 'Php Fc4',
                               'is_upgrade' => '0',
                               'is_notify' => '0',
                               'setup_fee' => '0.00',
                               'app_key' => 'php-fc4',
                               'subscr_fee' => '0.00',
                               'is_complementary' => '1',
                               'type' => '1',
                               'id' => '129',
                               'cid' => '1'
                             },
                             {
                               'name' => 'Phpmyadmin Fc4',
                               'is_upgrade' => '0',
                               'is_notify' => '0',
                               'setup_fee' => '0.00',
                               'app_key' => 'phpmyadmin-fc4',
                               'subscr_fee' => '0.00',
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                               'type' => '1',
                               'id' => '129',
                               'cid' => '1'
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                               'is_upgrade' => '0',
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                               'app_key' => 'postgresql-fc4',
                               'subscr_fee' => '0.00',
                               'is_complementary' => '0',
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                             },
                             {
                               'name' => 'Proftpd Fc4',
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                               'is_notify' => '0',
                               'setup_fee' => '0.00',
                               'app_key' => 'proftpd-fc4',
                               'subscr_fee' => '0.00',
                               'is_complementary' => '0',
                               'type' => '1',
                               'id' => '129',
                               'cid' => '1'
                             },
                             {
                               'name' => 'Psa Fc4',
                               'is_upgrade' => '0',
                               'is_notify' => '0',
                               'setup_fee' => '0.00',
                               'app_key' => 'psa-fc4',
                               'subscr_fee' => '0.00',
                               'is_complementary' => '1',
                               'type' => '1',
                               'id' => '129',
                               'cid' => '1'
                             },
                             {
                               'name' => 'SSH 3.1',
                               'is_upgrade' => '0',
                               'is_notify' => '0',
                               'setup_fee' => '0.00',
                               'app_key' => 'ssh',
                               'subscr_fee' => '0.00',
                               'is_complementary' => '1',
                               'type' => '4',
                               'id' => '129',
                               'cid' => '3'
                             },
                             {
                               'name' => 'Usermin Fc4',
                               'is_upgrade' => '0',
                               'is_notify' => '0',
                               'setup_fee' => '0.00',
                               'app_key' => 'usermin-fc4',
                               'subscr_fee' => '0.00',
                               'is_complementary' => '0',
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                               'id' => '129',
                               'cid' => '1'
                             },
                             {
                               'name' => 'Webmin Fc4',
                               'is_upgrade' => '0',
                               'is_notify' => '0',
                               'setup_fee' => '0.00',
                               'app_key' => 'webmin-fc4',
                               'subscr_fee' => '0.00',
                               'is_complementary' => '0',
                               'type' => '1',
                               'id' => '129',
                               'cid' => '1'
                             },
                             {
                               'name' => 'ZendOptimizer',
                               'is_upgrade' => '0',
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                               'setup_fee' => '0.00',
                               'app_key' => 'zend-optimizer-fc4',
                               'subscr_fee' => '0.00',
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                               'type' => '1',
                               'id' => '129',
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                             }
                           ],
           'prom_end_date' => undef,
           'custom_subscr_fee' => undef,
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           'end_date' => '2008-06-01 08:18:06',
           'plan_name' => '99026 test',
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           'next_period' => '2592000',
           'base_date' => '2008-05-01 08:18:06',
           'res_info' => [
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                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '0',
                           'value' => '1',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Number of Static IP addresses',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '1048576',
                           'is_metered' => '0',
                           'res_id' => '25',
                           'is_reducible' => '0',
                           'units' => 'ip(s)',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'nummailbox',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '0',
                           'value' => '1024',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Number of mailboxes',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
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                           'res_id' => '38',
                           'is_reducible' => '0',
                           'units' => 'mailbox',
                           'multiplier' => '1'
                         },
                         {
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                           'id' => '129',
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                           'res_id' => '69',
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                           'units' => 'website',
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                         },
                         {
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                           'id' => '129',
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                           'res_id' => '72',
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                           'units' => 'database',
                           'multiplier' => '1'
                         },
                         {
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                           'is_domain' => '0',
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                           'is_ve_related' => '1',
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                           'max_value' => '1048576',
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                           'res_id' => '74',
                           'is_reducible' => '0',
                           'units' => 'backup',
                           'multiplier' => '1'
                         },
                         {
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                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '0',
                           'value' => '100',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Total size of all backups',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '1048576',
                           'is_metered' => '0',
                           'res_id' => '76',
                           'is_reducible' => '0',
                           'units' => 'MB',
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                         },
                         {
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                           'id' => '129',
                           'is_advanced' => '0',
                           'value' => '1',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Number of domains with DNS hosting
 provided',
                           'is_ve_related' => '1',
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                           'res_id' => '100',
                           'is_reducible' => '0',
                           'units' => 'domain',
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                         },
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                           'short_name' => 'kmemsize',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '10800',
                           'is_countable' => '1',
                           'is_domain' => '0',
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                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2097151',
                           'is_metered' => '0',
                           'res_id' => '101',
                           'is_reducible' => '1',
                           'units' => 'KB',
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                         {
                           'short_name' => 'lockedpages',
                           'is_unlim' => '0',
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                           'value' => '256',
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                           'is_domain' => '0',
                           'name' => 'Unswappable user pages',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '102',
                           'is_reducible' => '1',
                           'units' => 'pages',
                           'multiplier' => '1'
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                         {
                           'short_name' => 'vmguarpages',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '6144',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Memory allocation guarantee',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '103',
                           'is_reducible' => '1',
                           'units' => 'pages',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'shmpages',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '21504',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Total size of SysV IPC shared memory',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '104',
                           'is_reducible' => '1',
                           'units' => 'pages',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'privvmpages',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '655360',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Total size of private pages',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '105',
                           'is_reducible' => '1',
                           'units' => 'pages',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'numproc',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '240',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Number of processes',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '32000',
                           'is_metered' => '0',
                           'res_id' => '106',
                           'is_reducible' => '1',
                           'units' => '',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'physpages',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '2147483647',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Total number of physical memory pages',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '107',
                           'is_reducible' => '1',
                           'units' => 'pages',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'oomguarpages',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '6144',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Guaranteed allocating address space',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '108',
                           'is_reducible' => '1',
                           'units' => 'pages',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'numfile',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '9312',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Number of open files',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '109',
                           'is_reducible' => '1',
                           'units' => '',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'numtcpsock',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '360',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Number of TCP/IP sockets',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '110',
                           'is_reducible' => '1',
                           'units' => '',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'numflock',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '206',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Number of file locks',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '111',
                           'is_reducible' => '1',
                           'units' => '',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'numpty',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '16',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Number of pseudo-terminals',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '112',
                           'is_reducible' => '1',
                           'units' => '',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'numsiginfo',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '256',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Number of siginfo structures',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2560',
                           'is_metered' => '0',
                           'res_id' => '113',
                           'is_reducible' => '1',
                           'units' => '',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'tcpsndbuf',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '1680',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Total size of TCP send buffers',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2095171',
                           'is_metered' => '0',
                           'res_id' => '114',
                           'is_reducible' => '1',
                           'units' => 'KB',
                           'multiplier' => '1024'
                         },
                         {
                           'short_name' => 'tcprcvbuf',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '1680',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Total size of TCP receive buffers',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2095171',
                           'is_metered' => '0',
                           'res_id' => '115',
                           'is_reducible' => '1',
                           'units' => 'KB',
                           'multiplier' => '1024'
                         },
                         {
                           'short_name' => 'othersockbuf',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '2048',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Total size of other socket buffers',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2097151',
                           'is_metered' => '0',
                           'res_id' => '116',
                           'is_reducible' => '1',
                           'units' => 'KB',
                           'multiplier' => '1024'
                         },
                         {
                           'short_name' => 'dgramrcvbuf',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '256',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Total size of UDP receive buffers',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2097151',
                           'is_metered' => '0',
                           'res_id' => '117',
                           'is_reducible' => '1',
                           'units' => 'KB',
                           'multiplier' => '1024'
                         },
                         {
                           'short_name' => 'numiptent',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '128',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Number of entries in IP tables',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '3000',
                           'is_metered' => '0',
                           'res_id' => '118',
                           'is_reducible' => '1',
                           'units' => '',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'netrateguar',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '0',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Guaranteed network rate',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '1024',
                           'is_metered' => '0',
                           'res_id' => '119',
                           'is_reducible' => '1',
                           'units' => 'MBit/sec',
                           'multiplier' => '1024'
                         },
                         {
                           'short_name' => 'diskspace',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '0',
                           'value' => '1024',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Disk space quota',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '4194303',
                           'is_metered' => '0',
                           'res_id' => '121',
                           'is_reducible' => '1',
                           'units' => 'MB',
                           'multiplier' => '1024'
                         },
                         {
                           'short_name' => 'diskinodes',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '200000',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Disk inode quota',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '122',
                           'is_reducible' => '1',
                           'units' => 'inodes',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'cpuunits',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '0',
                           'value' => '1000',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'CPU usage',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '500000',
                           'is_metered' => '0',
                           'res_id' => '124',
                           'is_reducible' => '1',
                           'units' => 'unit',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'dcachesize',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '3624960',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Size of busy dentry/inode cache',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147482624',
                           'is_metered' => '0',
                           'res_id' => '125',
                           'is_reducible' => '1',
                           'units' => 'bytes',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'quotaugidlimit',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '100',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Limit of user quotas',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '126',
                           'is_reducible' => '1',
                           'units' => '',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'numothersock',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '360',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'Number of sockets other than TCP/IP',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '2147483647',
                           'is_metered' => '0',
                           'res_id' => '127',
                           'is_reducible' => '1',
                           'units' => '',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'rate_bound',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '0',
                           'is_countable' => '0',
                           'is_domain' => '0',
                           'name' => 'Guaranteed network rate is network rate
 limit',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '1',
                           'is_metered' => '0',
                           'res_id' => '178',
                           'is_reducible' => '1',
                           'units' => '',
                           'multiplier' => '1'
                         },
                         {
                           'short_name' => 'cpulimit',
                           'is_unlim' => '0',
                           'id' => '129',
                           'is_advanced' => '1',
                           'value' => '100',
                           'is_countable' => '1',
                           'is_domain' => '0',
                           'name' => 'CPU limit',
                           'is_ve_related' => '1',
                           'overuse_rate' => '0.000000',
                           'max_value' => '100',
                           'is_metered' => '0',
                           'res_id' => '181',
                           'is_reducible' => '1',
                           'units' => '%',
                           'multiplier' => '1'
                         }
                       ],
           'plan_sid' => '100',
           'status' => '1',
           'is_upgrade' => undef,
           'is_notify' => undef,
           'add_params' => undef,
           'prev_status' => '3',
           'create_order_id' => '696',
           'status_txt' => 'active',
           'grace_date' => undef,
           'billable_items' => [],
           'start_date' => '2008-03-31 13:09:36',
           'platform' => 'Linux Vz3.x',
           'termination_date' => undef,
           'expiration_date' => undef,
           'plan_id' => '206',
           'platform_id' => '3',
           've' => {
                   'slm_mode' => '0',
                   'hn_ip_address' => '10.30.64.248',
                   'status' => 'running',
                   'apps' => undef,
                   'qos' => undef,
                   'hn_vz_interface' => '2',
                   'ips' => undef,
                   'offline_management' => '0',
                   'status_txt' => 'running',
                   'id' => '1027',
                   'is_root_pwd_syncd' => '1',
                   'ip_address' => '10.25.41.34',
                   'vza_status' => 'running',
                   'is_bandwidth_limited' => undef,
                   'is_custom_resolver' => undef,
                   'vendor_id' => '1',
                   'hw_id' => '2',
                   'os_tmpl_id' => '56',
                   'hn_service_ve_ip' => '10.24.8.101',
                   'account_id' => '3',
                   'utf_ve_name' => 'Plesk',
                   'platform_id' => '3',
                   've_name' => 'Plesk'
                 }
         };
```

Domain Registration Subscription

```
{
          'goaway_date' => undef,
          'plan_sid' => '185',
          'status' => '1',
          'is_notify' => undef,
          'prev_status' => '3',
          'create_order_id' => '884',
          'plan_type' => '6',
          'plan_type_txt' => 'Domain Registration',
          'account_no' => '6',
          'domain' => {
                      'domain' => 'ros-test-851.cc',
                      'dns_enabled' => '1',
                      'added_by' => '1',
                      'nsset_id' => '1',
                      'ns_info' => undef,
                      'action' => '2',
                      'utf_domain' => 'ros-test-851.cc'
                    },
          'renewal_policy' => '1',
          'status_txt' => 'active',
          'grace_date' => undef,
          'id' => '163',
          'start_date' => '2008-04-22 16:52:41',
          'period' => '31104000',
          'name' => 'ros-test-851.cc',
          'termination_date' => undef,
          'expiration_date' => undef,
          'regdomain' => {
                         'real_expire_time_check' => undef,
                         'reg_status' => '1',
                         'period' => '1',
                         'plugin_name' => 'WebNIC',
                         'real_expire_time' => undef,
                         'reg_time' => '2008-04-22 16:52:42',
                         'domain' => 'ros-test-851.cc',
                         'id_protect' => undef,
                         'registrar' => 'WebNIC',
                         'action' => '2',
                         'reg_status_txt' => 'registered',
                         'expire_time' => '2009-04-22 16:52:42'
                       },
          'plan_id' => '189',
          'custom_subscr_fee' => undef,
          'end_date' => '2009-04-22 16:52:41',
          'plan_name' => '[WebNIC] Domain Registration',
          'next_period' => '31104000',
          'base_date' => '1941-04-01 13:38:32'
        };
```

create_custom_invoice

The function allows adding an invoice manually, without aforegoing orders. A custom includes custom items and fees.

Parameters

subscr_id	Optional parameter: ID of subscription. Optional parameter.
vendor_id	ID of vendor account.
description	Invoice description text.
account_no	ID of account an invoice is created for.

items	Services or any other items included in an invoice. Array of hashes of the following kind:
	
	{
	
	rate - fee for an item;
	quantity - number of items (optional), 1 by default;
	comment - item name or comment to an item;
	start_time - item provisioning start date. Optional parameter. If not specified, invoice creation date is used.
	
	}

amount	Invoice total amount. Optional parameter.

Returns:

In case of success, ID of added invoice is returned.

In case of error, error message is returned.

SOAP Faults codes:

NoOrderForProvider	Provider tries to place invoice for themselves.
InvalidAccount	A person logged in and trying to place an invoice is not registered for an account that stands as vendor in respect to an account an invoice is placed for.
Initiator	Failed to find a registered person that places an order by initiator_email passed.

InvoiceFailed	A list of invoice items has been passed, but amount specified for at least one of items is negative. In this case, fees for all invoice items must be positive.
'Wrong amount value'	A list of invoice items has not been passed and invoice amount passed is zero. In this case, an invoice amount must be either positive or negative (for credit invoice).

get_account_campaigns

The function allows getting the information about marketing campaigns applied to a given account.

Parameters:

account_id	ID of account the list of campaigns is needed.

Returns:

List o f arrays, each array consists of campaign ID (in database) and campaign digest (campaign ID used in campaign URL):

Example of returned value:

return [

[3,'97651bf001'],....]

SOAP Faults codes:

No specific codes.

HSPC/API/Account

create_customer

The function adds a new customer account and person.

Parameters:

address1	Address line 1.
address2	Optional parameter: Address line 2.
city	City.
comment	Comment to account.
company_name	Optional parameter: If specified, account is business.
country	Customer country.
email	Customer administrative e-mail.
fax_src	Customer fax number.
first_name	Customer first name.
fraud_check	Optional parameter: A flag that defines whether an account is to be checked by anti-fraud manager or not.
gender	Customer gender.
insertion	Customer name insertion.
lang	Customer personal language.
last_name	Customer last name.
middle_name	Customer middle name.
mobile_src	Customer mobile phone.
password	Customer personal password.
phone_src	Customer phone number.
prefix	Customer name prefix.

state	Customer state of residence.
suffix	Customer name suffix.
tax_ex_number	Customer VAT number.
zip	Customer address zip code.
ext_data	List of extended attributes
timezone	Customer time zone.

Returns: {account_id => NUMBER}

SOAP Faults codes:

NewAccountsDenied	New accounts creation is denied.
UserExtData	Extended attribute addition error.
UserAccount	Account creation error.

create_domain_contact

The function creates domain contacts.

Parameters:

account_id	Customer account ID.
address	Postal Address.
city	Customer city.
country	Customer country.
email	Customer administrative e-mail.
fax	Customer fax number.
first_name	Customer first name.
last_name	Customer last name.
company_name	Optional parameter: If specified, account is business. Company name
phone	Customer phone number.
state	Customer state of residence.
zip	Customer address zip code.

Returns: {contact_id => NUMBER}

SOAP Faults codes:

No specific codes.

create_reseller

The function creates a partner application.

Parameters:

address1	Address line 1.
address2	Optional parameter: Address line 2.
city	City.
comment	Optional parameter: Comment to partner application.
company_name	Company name.
description	Optional parameter: The text passed from the comment parameter and shown in Partner Application details in PCC.
country	Reseller country.
email	Reseller administrative e-mail.
ext_date	Optional parameter: Any additional information needed in case specific accounting plug-in is used.
fax_src	Optional parameter: Reseller fax number.
first_name	Reseller first name.
gender	Optional parameter: Customer gender.
insertion	Optional parameter: Reseller name insertion.
lang	Optional parameter: Reseller personal language.
last_name	Reseller last name.
middle_name	Optional parameter: Reseller middle name.
mobile_src	Reseller mobile phone.
password	Customer personal password.
phone_src	Reseller phone number.
prefix	Optional parameter: Reseller name prefix.

state	Optional parameter (for non USA or Canada countries): Reseller state of residence.
suffix	Optional parameter: Reseller name suffix.
tax_ex_number	Optional parameter: Reseller VAT number.
zip	Reseller address zip code.

Returns: {account_id => NUMBER}

SOAP Faults codes:

NewResellerDenied	New reseller accounts creation denied.
CompanyRegistered	A company with similar name is already registered.
UserExtData	Extended attribute addition error.
ResellerSaveError	Reseller account creation error.

get_account_info

The function returns information on an account.

Parameters:

account_id	Account ID

Returns: ACCOUNT_INFO (on page 102)

SOAP Faults codes:

No specific codes.

Example of ACCOUNT_INFO Hash

```
 {
   'vendor_name' => 'Provider',
   'technical_phone' => '+1 1239867',
   'technical_fax' => '',
   'admin_first_name' => 'Kate',
   'address' => {
                 'country' => 'US',
                 'country_loc' => 'United States',
                 'city' => 'Karson',
                 'zip' => '123456',
                 'fax' => '',
                 'state' => 'AL',
                 'state_loc' => 'Alabama',
                 'address1' => 'Park Lane 45',
                 'phone' => '+1 1239867',
                 'mobile' => '',
                 'address2' => '',
                 'state' => undef
               },
   'admin_phone' => '+1 1239867',
   'billing_prefix' => '',
   'admin_prefix' => '',
   'billing_mobile' => '',
   'billing_last_name' => 'Green',
   'lang' => 'en',
   'billing_middle_name' => '',
   'technical_middle_name' => '',
   'name' => 'Kate Green',

   'admin_last_name' => 'Green',

   'account_id' => '228315',

   'technical_email' => 'kate@green.com',

   'admin_middle_name' => '',

   'account_type' => '3',

   'technical_insertion' => '',

   'technical_suffix' => '',

   'admin_suffix' => '',

   'billing_fax' => '',

   'billing_email' => 'kate@green.com',

   'billing_phone' => '+1 1239867',

   'status' => 'active',

   'billing_first_name' => 'Kate',

   'admin_gender' => '',

   'admin_email' => 'kate@green.com',

   'technical_prefix' => '',

   'admin_fax' => '',

   'admin_insertion' => '',

   'technical_last_name' => 'Green',

   'billing_gender' => '',

   'technical_first_name' => 'Kate',

   'vendor_id' => '1',

   'billing_insertion' => '',

   'technical_gender' => '',

   'billing_suffix' => '',

   'admin_mobile' => '',

   'technical_mobile' => '',
   'comment' => ''
 };
```

get_domain_contact_list

The function returns the list of domain contacts.

account_id	Account ID.

Returns: {contact_list => DM_CONTACT list}

SOAP Faults codes:

No specific codes.

get_reseller_terms

The function returns reseller Terms and Conditions.

Returns: {title => STRING, body => STRING}

SOAP Faults codes:

No specific codes.

validate_password

The function checks password in accordance with password strength settings.

Parameters:

password	Password.

Returns: {result => 1}

SOAP Faults codes:

UserBadPassword	Password is invalid or not acceptable.

get_extended_attr_list

The function returns extended attributes needed for customer or reseller account creation if a specific accounting plug-in is enabled or just some custom extended attributes (on page 199) are used.

Parameters:

customer_type	Account type: customer or reseller, value: ▪ 1 - customer account ▪ 2 - reseller account

Returns value: [{ view_name=>, title=>, value=>, type=> }, ..]

SOAP Faults codes:

No specific codes.

get_person_list

The function returns the detailed information about person(s) associated with a particular account, i.e., account users.

Parameters:

account_id	Account numerical identifier assigned in the Parallels Business Automation - Standard database.

Returns: a hash or a hash of hashes (if several users are associated with an account). A hash per person looks like:

```
'person_list' => [
      {
      'lang' => 'en',
      'person_id' => '2',
      'account_list' => [
            {
            'status' => '0',
            'vendor_id' => '1',
            'person_id' => '2',
            'name' => 'First Last',
            'type' => '3',
            'account_id' => '2'
            }
                  ],
      'middle_name' => '',
      'last_name' => 'Last',
      'email' => 'mail@provider.com',
      'insertion' => '',
      'comment' => '',
      'suffix' => '',
      'gender' => 'M',
      'prefix' => '',
      'first_name' => 'First'
      }
            ],
      ...
      };
```

SOAP Faults codes:

MissingAccount	Account not found.
AccountsDenied	Access denied.
AccountAccessDenied	Access denied.
MissingPerson	Person not found.
PersonsDenied	You are not allowed to access persons.

HSPC/API/Person

auth_person

The function authenticates a person.

Parameters:

email	Person e-mail. Together with password can be replaced with sid.
password	Person password. Together with email can be replaced with sid.
ip	Optional parameter. Customer IP. If specified, the anti-fraud Login Filter is activated.
sid	Client CP session ID (SID). Optional parameter. Can be passed instead of email and password and in this case a customer will be authenticated in Store by this session ID.
login_to_cp	Optional parameter. The value can be 1 (true) or 0 (false). If true, the function will include the client CP session ID (SID) into the response.

Returns: PERSON_INFO:

```
{
            'sid' => 'e3b09cb237a41b6867bcbb62ac8899da',
            'person' => {
                        'lang' => 'en',
                        'person_id' => '5',
                        'account_list' => [
                                    {
                                      'status' => '0',
                                      'vendor_id' => '1',
                                      'person_id' => '5',
                                      'name'    =>    'Account
Name',
                                      'type' => '3',
                                      'account_id' => '5'
                                    }
                                  ],
                        'middle_name' => '',
                        'last_name' => 'Smith',
                        'email' => 'smith@mail.com',
                        'insertion' => '',
                        'comment' => '',
                        'suffix' => '',
                        'gender' => 'female',
                        'prefix' => '',
                        'first_name' => 'Jane'
                      }
          };
```

SOAP Faults codes:

UserAuthen	User authentication error.

The returned hash presents person information:

Parameter	Means
`sid`	Client CP session ID. Returned in case the `sid` parameter is passed with the 'true' value.

`person`	Person information. Contains hash:

Parameter	Means
`lang`	Two-letter ISO 639 (http://www.loc.gov/standards/iso639-2/php/code_list.php) language codes abbreviation in lower case of the interface language set for a person.
`person_id`	Person numerical identifier assigned in the Parallels Business Automation - Standard database.
`account_list`	Properties of the account a person is associated with. Contains hash: `status` - Account status: 0 - 'active', 1 - 'on_hold', 2 - 'for_approval' (held by anti-fraud filter and waits for vendor manual approval), 255 - 'deleted'. `vendor_id` -Numerical identifier of vendor account (provider or reseller). This is an account ID assigned automatically in Parallels Business Automation - Standard. `person_id` - Person numerical identifier assigned in the Parallels Business Automation - Standard database. `name` - Account name. `type` - Account type: 1- Provider account, 2 -Reseller account, 3 - Customer account. `account_id` - Account numerical identifier assigned automatically in Parallels Business Automation - Standard.
`middle_name`	Person middle name.
`last_name`	Person last name.
`email`	Person e-mail used as password.
`insertion`	Person last name insertion.
`comment`	Free-form comment that can be added to a person information.
`suffix`	Person name suffix.
`gender`	Person gender: Male or Female.
`prefix`	Person name prefix (Mr, Mrs, etc.).
`first_name`	Person first name.

get_person_info

The function returns a registered person details by a person numerical ID assigned on registration in the Parallels Business Automation - Standard database.

Parameters:

person_id	A registered person numerical identifier assigned in the Parallels Business Automation - Standard database

SOAP Faults codes:

MissingPerson	Person not found
PersonsDenied	You are not allowed to access persons

Returns:

```
$VAR1 = {
      'lang' => 'en',
      'person_id' => '2',
      'account_list' => [
            {
            'status' => '0',
            'vendor_id' => '1',
            'person_id' => '2',
            'name' => 'First Last',
            'type' => '3',
            'account_id' => '2'
            }
      ],
      'middle_name' => '',
      'last_name' => 'Last',
      'email' => 'mail@provider.com',
      'insertion' => '',
      'comment' => '',
      'suffix' => '',
      'gender' => 'M',
      'prefix' => '',
      'first_name' => 'First'
      };
```

HSPC/API/Domain

check_domain_list

The function checks domains for availability.

Parameters:

hp_sid	Hosting plan series key.
action	An action to be performed over a domain: ▪ 'dns_hosting' - Subdomain either in provider's or in user's domain. Domain must present in Provider DNS already. ▪ 'domain_pointer' - Use domain, registered elsewhere, new in Provider DNS. It's equivalent to 'Use existing domain, registered elsewhere' field in store. ▪ 'register_new' - Register a new domain. ▪ 'reg_transfer' - Transfer a registered domain to Provider DNS. ▪ 'use_existing' - A domain is present in Provider DNS already, for example a user already has domain registration subscription. Now user wants, for example, to buy a plesk domain with the same domain name. The action corresponds to 'Use one of my domains' field in Store.
account_id	Optional parameter in all cases except for the action='use_existing': ID of an account a domain is to be registered for.
domain_list	List of domains to be checked.

Returns: {available_domain_list => [List of OK domains]}

SOAP Faults codes:

HPDomainOnly	Hosting plan series key passed to the function does not belong to domain registration hosting plan.
NoAccountIdSpecified	action='use_existing', but ID of account is not specified.

check_domain_name_syntax

The function checks domain name syntax.

Parameters:

domain	Domain name.

Returns: {result => 1 | 0}

SOAP Faults codes:

No specific codes.

get_domain_list

The function returns the list of domains a customer can use for subdomains creation.

Parameters:

account_id	ID of an account for which the information is returned.
for_trial	If this parameter is specified, then only those domains which allow creation of trial subscriptions are returned.

Returns: {domain_list => [List of domains for subdomain]}

SOAP Faults codes:

No specific codes.

validate_ns_list

The function checks validity of name servers list.

Parameters:

ns_list	LIst of name servers. Each list item consists of two elements: ▪ name server hostname ▪ name server IP address

Returns: {result => 1 } or Fault

SOAP Faults codes:

UserNoNS	Name server hostname is not specified.
UserNoIP	Name server IP address is not specified.
UserInvalidNSName	Name server hostname is invalid.
UserIPInvalid	Name server IP address is invalid.

save_contact

The function creates or saves changes to an existing domain contact.

Parameters (all optional except for account_id):

hp_sid	Hosting plan series key.
domain	A domain name.
action	An action performed over a domain: domain registration or transfer.
contact_type	Contact type (administrative, billing, technical, etc., depending on a plug-in). The plug-in specific contact types are also specified using this parameter.
account_id	Account numerical ID assigned in Parallels Business Automation - Standard database.
contact_id	Contact ID in database (used for contact editing only since when a new contact is created, no ID yet exists)
form_data	Domain contacts screen form data hash. In other words, the data to be filled into a domain contact dorm. If not provided, then a contact form is filled by data taken from account.

Returns: {contact_id => [new contact ID]} or Fault

SOAP Faults codes:

HPTypeInvalid	HP SID does not correspond to a hosting plan type
DMContactError	Error saving contact data

validate_domain_data

The function validates data for a domain or domains list.

Parameters (all optional, but at least domain, action, contact_hash or domain_data_hash must be used):

hp_sid	Hosting plan series key.
domain	A domain name.
action	An action performed over a domain: domain registration or transfer.
contact_hash	Contact data hash (all contact data: administrative, billing, technical, other additional types of contact data, depending on a plug-in)
account_id	Account numerical ID assigned in Parallels Business Automation - Standard database. Used only if no contacts found in database and domain contact data is to be taken from account profile.
form_data	A domain form data hash (extdata). In other words, any extended data besides the base contacts needed for a domain registration. If extended data is required, his hash is used to fill the extended data form.

domain_data_hash	This parameter allows validating a number of domains at once. The hash looks like:
	
	{
	
	domain_name => $h{domain},
	
	contact_hash => $h{contact_hash},
	
	action => $h{action},
	
	}

Returns: {result => 1 } or Fault

SOAP Fault Codes:

UserDomainDataError	Invalid data in domain contacts or extdata.

HSPC/API/Mailer

send

This function sends e-mail.

Parameters:

to_email	Recipient's e-mail.
to_name	Recipient's name.
subject	Message subject.
body	Message body.
from_email	Sender's e-mail.
from_name	Sender's name, by default is set in mailer.

Returns: {result => 1}

SOAP Faults codes:

No specific codes.

HSPC/API/PP

get_saved_paymethod_list

The method provides a list of payment methods saved in Parallels Business Automation - Standard database the owner (customer) could choose from.

Parameters:

plugin_id	A payment plug-in alphabetical ID internally used in Parallels Business Automation - Standard.
account_id	Numerical identifier (ID) of account owning a payment method.

Returns:

```
PAYMETHOD_LIST =
{
 paymethod_id => NUMBER,
 name => STRING,
 paytype => STRING,
 paytype_id => STRING,
 expire_date => STRING,
}
```

Note: The expire_date is returned for credit cards only.

SOAP Faults codes:

No specific codes.

get_plugin_list

The method provides a list of plug-ins available for payment.

No parameters.

Returns:

```
PLUGIN =
{
 plugin_id => STRING,
 title => STRING,
 is_redirect => BOOLEAN,
 has_form => BOOLEAN,
 paymethod_category_titles => [STRING, ...],
 description => STRING,
}
```

SOAP Faults codes:

No specific codes.

get_layout_hash

The method provides the form to be filled by customer in Store.

Parameters.

plugin_id	A payment plug-in alphabetical ID internally used in Parallels Business Automation - Standard.
account_id	Numerical identifier (ID) of account owning a payment method.

Returns:

```
LAYOUT =
{
 form => STRING,
 check_javascript => STRING,
 param_list => [STRING, STRING, ... ],
}
```

SOAP Faults codes:

No specific codes.

get_redirect_hash

The method registers an attempt to pay by redirect or INIpay plug-in and returns back the redirect information.

Parameters:

plugin_id	A payment plug-in alphabetical ID internally used in Parallels Business Automation - Standard.
order_id	Numerical identifier (ID) of an order.
url_back	Store URL a customer is to be redirected from an external payment gateway.

Returns:

```
REDIRECT =
{
 iframe => BOOL,
 url    => STRING,
 method => STRING,
 attrs  => {param1 => STRING, param2 => STRING, ...}
 onload_js_func => STRING,
 content => STRING,
}
```

SOAP Faults codes:

No specific codes.

pay

The method registers an attempt to pay by direct plug-in and does nothing in case of redirect payment.

Parameters:

plugin_id	A payment plug-in alphabetical ID internally used in Parallels Business Automation - Standard.
order_id	Numerical identifier (ID) of order.
$paymethod_id	For saved payment methods: a payment method numerical identifier (ID) assigned in Parallels Business Automation - Standard.
$form_args	Arguments for the form to be filled by a customer obtained from get_layout_hash.
$fraud_query	

In case a new payment method has been submitted, the PHP Store picks up the `form_args` for `pay()` method from the `param_list` returned by the `get_layout_hash` method. In case a customer wants to use that payment method already saved in Parallels Business Automation - Standard database, the additional argument is `paymethod_id`. So, either `paymethod_id` or `$form_args->{paytype_id}` must be specified . The `fraud_query` are arguments gathered from client (if any) regarding anti-fraud check. The required fields are obtained via `HSPC::API::Fraud->get_warning_newpaymethod`.

get_status

The method returns the current status of a document in Parallels Business Automation - Standard Payment Processing.

Parameters:

order_id	Numerical identifier (ID) of an order.

Returns:

```
STATUS =
{
 code => NUMBER,
 string => STRING,
}
```

SOAP Faults codes:

No specific codes.

HSPC/API/Fraud

get_warning_newpaymethod

The method provides a form to be displayed in the Store to query a user information related to Anti-Fraud check of his/her order, when he/she pays by a new payment method.

Parameters:

order_id	Numerical identifier (ID) of an order.

Returns:

```
 {
        form             => STRING,
        check_javascript => STRING,
        param_list       => [STRING, STRING, ... ],
};
```

SOAP Faults codes:

No specific codes.

get_resume_newpaymethod

The method returns the current status for a given order in case an asynchronous Anti-Fraud check is performed.

Parameters:

order_id	Numerical identifier (ID) of an order.

Returns:

HTML string (with formatting).

SOAP Faults codes:

No specific codes.

get_safe_description

The method returns the reason the order was declined by Anti-Fraud system.

Parameters:

order_id	Numerical identifier (ID) of an order.

Returns string.

SOAP Faults codes:

No specific codes.

HSPC/API/Config

get_provider_config

Parameters:

No parameters

Returns (returned data structure is described later in this section):

```
$VAR1 = {
          'currency' => {
                          'currency_radix' => '.',
                          'currency_sign_code' => '90;36',
                          'separator_char' => ',',
                          'currency' => 'Dollar',
                          'iso_alfa' => 'ZWD',
                          'entity' => 'Zimbabwe',
                          'currency_alignment' => '1',
                          'currency_minor' => '2'
                        },
          'default_lang' => 'en',
          'lang_list' => [
                           {
                             'title' => 'English',
                             'id' => 'en'
                           },
                           {
                             'title' => 'Spanish',
                             'id' => 'es'
                           },
                         {
                           'title' => 'Russian',
                           'id' => 'ru'
                         }
                       ],
          'store' => {
                     'referral' => {
                                   'question' => undef,
                                   'option_list' => []
                                 },
                     'is_opened' => '1',
                     'provider_name' => 'Provider-Provider',
                     'text_info' => {
                                    'account_agreement_text'   =>
undef,
                                    'offline_header' => undef,
                                    'agreement_text' => undef
                                  }
                   },
          'is_use_ssl' => '1',
          'is_use_ssl_cp' => '0',
          'tax_info' => {
                        'is_taxation_enabled' => '0',
                        'tax_zone' => undef,
                        'is_tax_included' => '0'
                      }
        };
```

SOAP Faults codes:

No specific codes.

The returned hash presents provider configuration and store settings:

Parameter	Means
`currency`	System-wide currency settings. Includes the hash: **Parameter** — **Means** `currency_radix` — Decimal separator character. `currency_sign_code` — Currency sign ASCII code. `separator_char` — Thousand separator character. `currency` — Currency name. `iso_alfa` — Alphabetical currency ISO code. `entity` — Country name. `currency_alignment` — Currency sign alignment, to the right or to the left of the amount (1 - to the left, 2 - to the right). `currency_minor` — Format of the fractional part of prices, i.e., number of digits after comma.
`default_lang`	Provider default language.
`lang_list`	Language packs enabled. Contains hash of hashes each of them specifying a language pack enabled. Each hash looks like: **Parameter** — **Means** `title` — Language name shown in store. `id` — ISO language code in lower-case, just like a language pack directory name (en for English, de for German)..

`store`	Basic Store settings. Includes the hash of hashes:	
	Parameter	**Means**
	`referral`	Referral question parameters hash: `question` - referral question `option_list` - referral answers list
	`is_opened`	Is store opened. 1 - yes, 0 - no.
	`provider_name`	Provider company name shown in store
	`text_info`	User Agreements and offline payment system description. Contains hash: `account_agreement_text` - User Agreement to accept on account registration `offline_header` - Offline payment systems descriptin shown on Payment page. `agreement_text` - User Agreement to accept before placing order.
`is_use_ssl`	If SSL is enabled for store. 1 - yes, 0 - no.	
`is_use_ssl_cp`	If SSL is enabled for Control Panel. 1 - yes, 0 - no. The parameter passes to store, how customers should be redirected from store to CP: by http or by https.	

<table>
<tr><td><code>tax_info</code></td><td>Taxation settings. Contains hash:

Parameter	Means
`is_taxation_enabled`	If taxation is enabled as system-wide setting. 1 - yes, 0 - no.
`tax_zone`	Name of a tax zone to be mentioned in store.
`is_tax_included`	If hosting plan prices include taxes (1) or not (0). If not then if taxation is enabled, taxes will be added to an order total upon checkout.
</td></tr>
</table>

HSPC/API/Campaign

get_campaign

Parameters:

digest	Campaign key used as a unique campaign identifier.

Returns ID (numerical identifier assigned in Parallels Business Automation - Standard database) of the promotion associated with a given Campaign:

```
{

      'promo_id' => '1'

      };
```

SOAP Faults codes:

NoCampaignFound	No campaign exists for the digest specified

get_account_campaigns

The method allows finding campaigns that belong to an account.

Parameters:

account_id	ID of an account.

Returns a reference to array of [`id, digest`] pairs,

where id is internal `Campaign ID`, digest - Campaign identifier used in redirector URL.

SOAP Faults codes:

No specific codes.

HSPC/API/SSL

get_cert_form

The function returns the SSL certificate configuration form in HTML format.

Parameters:

hp_sid	Hosting plan series key.
form_data	Prefill values for the HTML form.
account_id	ID of an account an SSL certificate is to be registered for.

Returns:

“<table><SSL certificate configuration form and fields></table>”

SOAP Faults codes:

No specific codes.

validate_cert_form

The function checks the SSL certificate configuration form data for validity.

Parameters:

hp_sid	Hosting plan series key.
form_data	The values filled out by the customer using the `form from get_cert_form`.
account_id	ID of an account an SSL certificate is to be registered for.

Returns:

{ field_with_error => “Field with error: error description” }

SOAP Faults codes:

No specific codes.

get_parsed_csr_data

The function parses the CSR submitted by user in order to show the parsed CSR content on the "Submit Order" step in store.

Parameters:

hp_sid	Hosting plan series key.
form_data	The values filled out by the customer using the `form from get_cert_form`.
account_id	ID of an account an SSL certificate is to be registered for.

Returns the parsed CSR data as follows:

```
{
     parse_error => if exists,
     country => string,
     state => string,
     city => string,
     organization_name => string,
     organizational_unit_name => string,
     common_name => string,
};
```

SOAP Faults codes:

No specific codes.

C H A P T E R 3

Online Store Integration and Customization

Starting with the version 4.3.3, PBAS is shipped with two stores:

- **The old store** used in previous versions, fully functional with all the options used before version 4.3.3. After upgrading to version 4.3.3, the old store remains in use, by default. For details about old store configuration and customization refer to PBAS SDK version below 4.3.4 (http://download.pa.parallels.com/pbas/4.3/doc/PBAS_SDK_43.pdf).
- **The new store** which is faster, dynamic, customizable, with the tabbed screen and shortened purchase wizard.

In this chapter the new online store integration and customization options are described.

The new store configuration available from PBAS Provider Control Panel is described in PBAS Provider guide >> Managing Online Store > New Store Configuration Basics.

In This Chapter

Online Store Structure

Online store is installed by default into the `/var/opt/hspc-store` directory.

It has the following structure:

- `i18n` – directory with language packs
- `includes` – directory contains symphony framework components and online store logic
- `templates` – directory with templates
- `web` – contains index.php and static content
- `customization` – the directory, where your customization should be placed. See below.
- `settings.ini` – online store config

Deploying Online Store

The new store is installed automatically in its default location on PBAS Management Node `/var/opt/hspc-store` and does not affect the old store settings. By default, after upgrading to version 4.3.3, the old store is used.

The new store can also be deployed on a remote server (on page 133).

Store Installation on Remote Server

The new store installation on a remote server is basically similar to the the old store installation. Step-by-step instructions are below.

Important: It is supposed that in case of the remote installation the store is used by one vendor only.

Store Installation in Virtuozzo Container

Since the new store is included in the PBAS installer, the Virtuozzo Container that will host the store must match a part of the requirements for PBAS Management Node. For instance, the installation is possible over the following 32-bit host OSes:

- Red Hat Enterprise Linux AS5
- CentOS 5

The new store may be deployed over the other OSes, including the 64-bit ones, however in this document we do not consider such environments for the new store.

Important: It is recommended to use secured connection for the store (https). To this effect, install the mod_ssl template in the Container designated for the store deployment.

By default, the store is deployed in the `/var/opt/hspc-store/` directory. If needed, you may deploy the store in any other folder, providing that you make the corresponding changes to `httpd` settings.

➢ *To deploy the new store in the Container:*

1. Copy the following packages from PBAS distributive into the Container designated for the store deployment:

   ```
   # cd /path/to/pbas-installer/packages/
   # scp hspc-store-4*.rpm php53-*.rpm gmp-*.rpmlibxml2-*.rpmroot@remote.store:/tmp/
   ```

   For PBAS 4.3.4 the list of packages will be the following:

   ```
   hspc-store-4.3.3-46.swsoft.i386.rpm
   php53-5.3.3-13.el5_9.1.i386.rpm

   php53-cli-5.3.3-13.el5_9.1.i386.rpm
   ```

```
php53-common-5.3.3-13.el5_9.1.i386.rpm
php53-mbstring-5.3.3-13.el5_9.1.i386.rpm
php53-soap-5.3.3-13.el5_9.1.i386.rpm
gmp-4.1.4-7.i386.rpm
libxml2-2.6.26-2.1.2.8.i386.rpm
```

2. Log in to the store Container and run the following commands:

```
# cd /tmp/
# rpm -Uhv *.rpm
```

3. Configure the httpd server:

   Open the file `/etc/php.ini` and add/edit the following settings:

```
default_socket_timeout = 300
```

   The installer includes the ready-to-use configuration file for Apache HTTP Server: `/var/opt/hspc-store/hspc_shop.conf.in`

   Run the following commands:

```
# cp /var/opt/hspc-store/hspc_shop.conf.in /etc/httpd/conf.d/hspc_shop.conf
# service httpd restart
```

   Important: If you are planning to use the secured protocol https for the store, do the following:

   a Open the file `/etc/httpd/conf.d/ssl.conf`

   b Find the section <VirtualHost _default_:443> and at the end of this section add the following string:

```
Include "conf.d/hspc_shop.conf"
```

   c Run the command:

```
# service httpd restart
```

4. Configure the access to PBAS XML API. At the sever that runs Parallels Business Automation - Standard (i.e., your Management Node), edit the `/etc/hspcd/conf/hspc_ssl.conf` file:

   Change `Allow from none`

   Into `Allow from` *store_hostname store_ip*

   where *store_hostname store_ip* must be replaced with either your store hostname, or store IP address, or both store hostname and IP in one string divided with a space.

   Save the changes to `hspc_ssl.conf` file.

   Restart `httpd`.

5. Configure authorization for the store:

   a Log in to PCC, go to Commerce Director > Store Manager > Configure Store > Security Settings, generate the key.

   b Log in the store Container, open the file `/var/opt/hspc-store/settings.ini`.

Specify the PBAS Management Node IP address for the `HSPCOMPLETE_SERVER` parameter.

Paste the generated secure key for the `SECURE_KEY` parameter.

Warning: During the store upgrade to the next version, the file `/var/opt/hspc-store/settings.ini` will be rewritten. It is highly recommended that you create a copy of this `settings.ini` file and keep it safely.

6. Configuration is competed. If all of the configuration steps are done correctly, the new store will be available by the Container address.

Store Installation in Parallels Plesk Panel

➢ *To deploy the new store in Parallels Plesk Panel:*

1. Create a subscription in Plesk Panel. PHP Support should be enabled for domain in Plesk Panel at: Websites & Domains > domain.tld > Website Scripting and Security.

   Note: PHP version 5.3.3 or higher should be installed on the Plesk server. Additionally, the php53-soap (php-soap) and php53-mbstring (php-mbstring) packages should be installed.

2. Copy the store files into the Plesk Panel domain.

   For example, using the command as follows:

```
# scp -r /var/opt/hspc-store/ root@PLESK_SERVER_IP:/var/www/vhosts/domain.tld/httpdocs/
```

3. Configure web server parameters. Use the predefined configuration file shipped with the store:

   /var/www/vhosts/domain.tld/httpdocs/hspc-store/hspc_shop.conf.in

   - For Plesk 11.5:

   Copy the content of the `hspc_shop.conf.in` file and in the Plesk Panel, enter it into Websites & Domains > domain.tld > Web Server Settings.

   Fields: Additional directives for HTTP or Additional directives for HTTPS depending on the protocol that would be used for the store.

   Important! Do not forget to replace the default directory:

```
Alias /shop/    /var/opt/hspc-store/web/
```

   with the directory that corresponds to your domain name, for example such as for domain.tld:

```
Alias /shop/    /var/www/vhosts/domain.tld/httpdocs/hspc-store/web/
```

   - For Plesk versions below 11.5

   Copy the content of the `hspc_shop.conf.in` file into the file:

```
/var/www/vhosts/domain.tld/conf/vhost.conf
```

   Or (depending on the protocol used for the store):

```
/var/www/vhosts/domain.tld/conf/vhost_ssl.conf
```

   Important! Do not forget to replace the default directory

```
Alias /shop/    /var/opt/hspc-store/web/
```

with the directory that corresponds to your domain name,for example such as for domain.tld:

```
Alias /shop/       /var/www/vhosts/domain.tld/httpdocs/hspc-store/web/
```

Reconfigure the domain:

```
/usr/local/psa/admin/bin/httpdmng         --reconfigure-domain domain.tld
```

4. Configure the access to PBAS XML API. At the sever that runs Parallels Business Automation - Standard (i.e., your Management Node), edit the `/etc/hspcd/conf/hspc_ssl.conf` file:

   Change `Allow from none`

   Into `Allow from` *store_hostname store_ip*

   where *store_hostname store_ip* must be replaced with either your store hostname, or store IP address, or both store hostname and IP in one string divided with a space.

   Save the changes to `hspc_ssl.conf` file.

   Restart `httpd`.

5. Configure authorization for the store:

   Log in to PCC, go to Commerce Director > Store Manager > Configure Store > Security Settings, generate the key.

   Open the file `/var/www/vhosts/domain.tld/httpdocs/hspc-store/settings.ini`

   Specify the PBAS Management Node IP address for the `HSPCOMPLETE_SERVER` parameter.

   Paste the generated secure key for the `SECURE_KEY` parameter.

   In addition, we recommend to specify the path to store logs via the LOG_LOCATION parameter.

   Note: You may see the error "open_basedir restriction in effect" in domain error log (`/var/www/vhosts/domain.tld/logs/error_log` or `/var/www/vhosts/domain.tld/statictics/logs/error_log`). To avoid this error, add the logs directory path (as you have specified for the LOG_LOCATION parameter) to the value of the `open_basedir` parameter. This will make the logs directory content allowed for reading by PHP scripts. The `open_basedir` parameter value can be set in the Plesk Panel, Websites & Domains > domain.tld > PHP settings.

6. Configure the Store settings in PBAS. Log in to PCC.

   a Go to Commerce Director > Store Manager > Configure Store and enter the valid Store URL.

   b Set the SSL support for the store. Go to Configuration Director > Miscellaneous Settings > SSL Setup. If SSL is enabled for the Plesk Domain, where Store is deployed, then activate the Enable SSL in Store option.

Note: To enable SSL for the Plesk Domain, log in to the Plesk Panel, go to Home > Subscriptions > https-shop.com > Websites & Domains > domain.tld > Website Scripting and Security, enable the SSL support. In addition, the Plesk Domain should be moved to the dedicated IP address and SSL certificate should be installed.

Open Store, Switch between Old and New Stores

The new store is opened and closed together with the old store, in Commerce Director > Store Manager > Configure Store, the General Settings tab, the Status field.

To switch between the old and the new stores change the Store URL so that the links used in Provider/Reseller Control Centers and Customer Control Panel point to the new store: Go to Commerce Director > Store Manager > Configure Store, the General Settings tab. Enter the new store URL: (depending on security settings, specify http:// or https://): Default URL to the new store: <PBAS_Node_Hostname>/shop.

How to stop using one of the stores. Since both stores are closed together, it is not possible to close or open one of them. To stop using one of the stores, you need to configure redirect from one store to another. For details, refer to Knowledgebase Article (http://kb.parallels.com/116379).

Configuring Redirect URLs to Integrate the Store with Existing Website

The new store provides graphical interface to compose the redirect URLs that may be placed to your existing website, to integrate it with PBAS online store.

The redirect may contain:

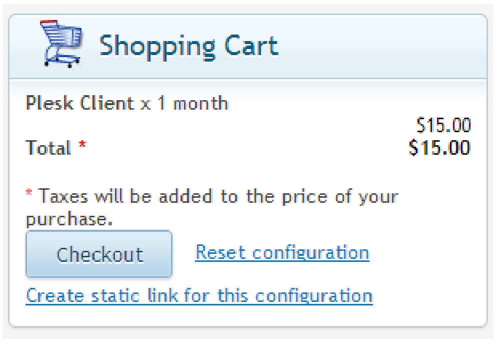
- **The pre-selected packages**. Customers are redirected to the online store with a particular package already in the Shopping Cart. The redirect ID that is appended to the URL carries the information about the package preselected. Promotions applied to the preselected packages are also passed to redirect.

Note: The auto-generated ID for the redirect URL may be renamed later into a more descriptive one, to easier recognize your redirects.

- **The online store tabs** (that correspond to hosting plan categories) and plan groups. For more details about Plan categories and Plan groups refer to PBAS Provider guide >> Managing Online Store > New Store Configuration Basics. In this case, **manually** append the plans category ID to the generated redirect. The Default tabs (More Services and Domains) have the fixed IDs specified at the bottom of the store Redirector screen. For details, see the Example 1.
- **Domain lookup data.** The domain lookup data may be sent to PBAS store from the HTTP form, together with the redirect. The generated redirect URL is placed in the Search Domain form HTML code **manually**. For details, see the Example 2 (on page 141).
- **Store language**. Appended automatically when the Redirect URL is created. You may also append any language available in online store by replacing a language two-letter code (in lowercase) in the generated redirect URL.

➢ *To configure redirect URLs:*

1. Open the store in the browser.
2. Select a hosting plan or a plan group.
3. Sign in as an existing customer and enter your Provider account login and password. When signed in, the Create static link for this configuration link appears in the Shopping Cart area:

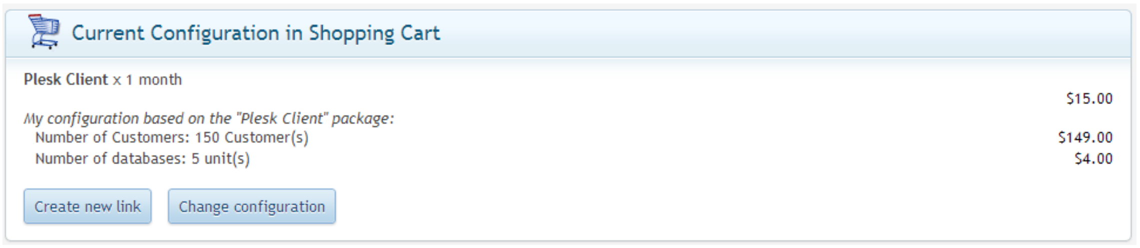

Shopping Cart

Plesk Client x 1 month $15.00

Total * $15.00

* Taxes will be added to the price of your purchase.

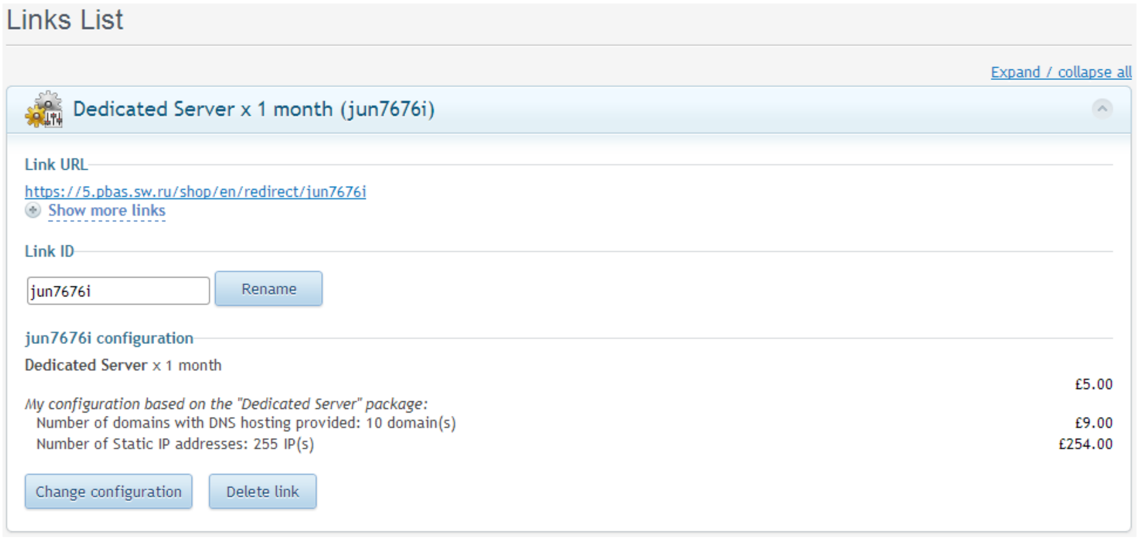
4. Click the Create static link for this configuration link. Now your pre-selection is captured, but not saved yet. The Preconfigured Store Links page opens. The newly pre-selected link and all the links created before are displayed. The new pre-selection is shown on the top as the Current Configuration in Shopping Cart.


Current Configuration in Shopping Cart

Plesk Client x 1 month $15.00

My configuration based on the "Plesk Client" package:
Number of Customers: 150 Customer(s) $149.00
Number of databases: 5 unit(s) $4.00

5. Click Create new link. The redirect URL is generated. The new link details are shown on top of the Links List:


Links List

Expand / collapse all

Dedicated Server x 1 month (jun7676i)

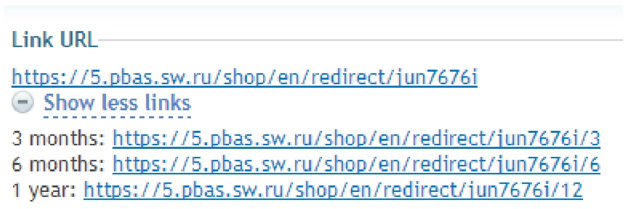
Link URL
https://5.pbas.sw.ru/shop/en/redirect/jun7676i
Show more links

Link ID
jun7676i

jun7676i configuration
Dedicated Server x 1 month £5.00

My configuration based on the "Dedicated Server" package:
Number of domains with DNS hosting provided: 10 domain(s) £9.00
Number of Static IP addresses: 255 IP(s) £254.00

To get the Links for other subscription periods, click Show more links (the link is shown if there are more subscription periods available for the package selected in the store). The list of the ready to use links for the various subscription periods is expanded:

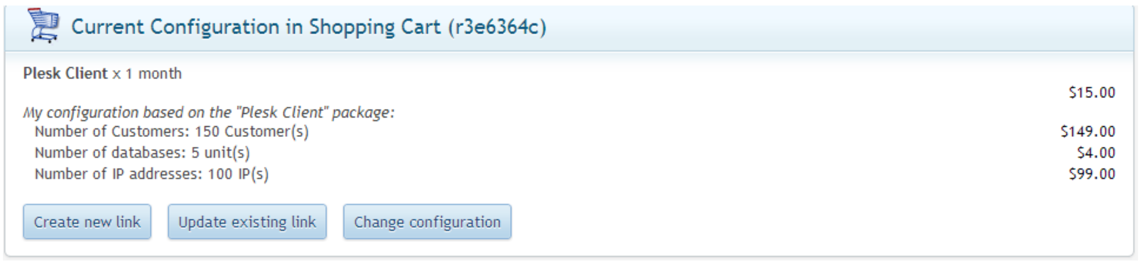

Link URL
https://5.pbas.sw.ru/shop/en/redirect/jun7676i
Show less links
3 months: https://5.pbas.sw.ru/shop/en/redirect/jun7676i/3
6 months: https://5.pbas.sw.ru/shop/en/redirect/jun7676i/6
1 year: https://5.pbas.sw.ru/shop/en/redirect/jun7676i/12

To collapse the list of links, click Show less links.

To change the Link ID, just retype it and then click Rename. The Link ID may consist of digits '0-9', lowercase and uppercase letters 'a-z' and underscores '_' only. The length of the Link ID should be between 3 and 30 characters.

To delete the link, click Delete link.

To change the pre-selected package for the redirect URL, click Change configuration. You will be redirected to Store page with the pre-selected package configuration. Change configuration and click the Create static link for this configuration link in the Shopping Cart area. The Links List is displayed. The updated configuration is shown on top:


Current Configuration in Shopping Cart (r3e6364c)

Plesk Client x 1 month $15.00

My configuration based on the "Plesk Client" package:
Number of Customers: 150 Customer(s) $149.00
Number of databases: 5 unit(s) $4.00
Number of IP addresses: 100 IP(s) $99.00

To save the changes to the configuration and update the redirect URL, click Update existing link.

Important: Save the updated link before you start updating another links. When you are redirected to store, your unsaved updates are dropped.

Example 1. Redirect URL to the Store Tab

The store tabs correspond to the Plan Categories, and each Plan Category has the numeric ID assigned in PBAS.

In addition, there are two default tabs that have the static links:

- Domains
- More Services

Generally, to get the Redirect to the Store tab, the tab ID is appended to the Redirect URL instead of the link ID.

For your convenience, the ready to use redirects to all of the store tabs that are in use, are shown at the bottom of the Redirector screen. For details, read more about Redirects (on page 138).

To get the list of the "Store tab" Redirects, scroll the Redirector screen down to the Static Links List. Then expand the list. The list of links is displayed. Copy the link and use it at your website.

Example 2. Pass Domain Lookup Data to the Store with Redirect URL

The Store Redirector allows redirecting the customers to your Store not only with the pre-selected package, but at the same time, pass the Domain Lookup data. In this case, the Store will be opened with the pre-selected package, or the Domains tab chosen, then the Domain Lookup performed, and the Domain lookup results are shown.

To set up the redirect with the Domain Lookup data, prepare the Domain Search form, to be placed to the external website.

The HTML code for the Domain Search form should contain the specific parameters:

Parameter	Value or Description
`method`	`POST`
`action`	`http://<YOURDOMAIN.TLD>/shop/<LANG_ID>/redirect/<LINK_ID>` Where: ▪ `<YOURDOMAIN.TLD>` - domain name of your PBAS MN ▪ `<LANG_ID>` - the two-letter language code, for Store interface. For example, `en`. ▪ `<LINK_ID>` - the link to any of the pre-configured packages from your pre-selector, or link to the Domains tab. For example: `http://provider.com/shop/en/redirect/c_domains`.
`dm_action`	Domain action. Possible values: ▪ `register_new` - register a new domain ▪ `reg_transfer` - transfer a registered domain ▪ `domain_pointer` - use a domain registered elsewhere
`domain_selection_type`	The type of the input for the domain lookup. Use either `single` or `multi` types in the Domain Search form. Possible values: ▪ `single` - check the single domain with various TLDs. Use the text input type with the `domain_name` parameter, to enter the domain name and then the checkbox input types with the `tld[]` parameter to provide the TLDs selection in the Domain Search form. ▪ `multi` - use only the textarea input type with the `domain_names` parameter, to enter the full domain names divided with comma, semicolon, or white space, like mydomain.com otherdomain.com.
`domain_name`	The domain name for lookup. Use this parameter for the `single` `domain_selection_type`.
`tld[]`	TLDs, for the single domain name. Use this parameter for the `single` `domain_selection_type`.
`domain_names`	Domain names for lookup. Use this parameter for the `multi` `domain_selection_type`.

Example of the Domain Search form HTML code. The usage of all parameters is shown in this example.

```
<html>
	<head>
		<title>Test preselector with domain lookup data</title>
		<meta http-equiv="X-UA-Compatible" content="IE=edge,chrome=1">
		<meta content="text/html; charset=UTF-8" http-equiv="Content-
Type">
	</head>
	<body>
		<form id="do_action" name="do_action" method="POST"
target="_blank"
action="https://<yourdomain.com>/shop/<lang_id>/redirect/c_domains">
			<table>
				<tr>
					<td>dm_action</td>
					<td>
						<select name="dm_action">
							<option
value="register_new">register_new</option>
							<option
value="reg_transfer">reg_transfer</option>
							<option
value="domain_pointer">domain_pointer</option>
						</select>
					</td>
				</tr>
				<tr>
					<td>domain_selection_type</td>
					<td>
						<select name="domain_selection_type">
							<option
value="single">single</option>
							<option
value="multi">multi</option>
						</select>
					</td>
				</tr>
				<tr>
					<td>domain_name</td>
					<td><input type="text" name="domain_name"
value="testdomain01" size="30" /></td>
				</tr>
				<tr>
					<td>tld[]</td>
					<td>
						<input type="checkbox" name="tld[]"
value="com" />&nbsp;com&nbsp;&nbsp;&nbsp;
						<input type="checkbox" name="tld[]"
value="net" />&nbsp;net&nbsp;&nbsp;&nbsp;
						<input type="checkbox" name="tld[]"
value="org" />&nbsp;org&nbsp;&nbsp;&nbsp;
						<input type="checkbox" name="tld[]"
value="biz" checked="checked" />&nbsp;biz&nbsp;&nbsp;&nbsp;
					</td>
				</tr>
				<tr>
					<td>domain_names</td>
					<td><textarea name="domain_names" cols="30"
rows="7">testdomain01.com testdomain01.biz testdomain02.org</textarea></td>
				</tr>
				<tr>
					<td colspan="2"><input type="submit"
value="submit" /></td>
			</table>
```

```
                </form>
        </body>
</html>
```

Store Customization

The store customization options are described in this section.

Changing Store Layout, Styles and Images

The store provides a wide range of options for pages customization.

It is possible to customize palette, fonts, use own images and logotypes, change the size and positioning of configuration blocks and controls, hide configuration blocks for various types of hosting plans, change any templates, for example header and footer. All these option are described below in this section.

Change palette, fonts, and styles

The Parallels Common UI skin, which is used, for instance for Plesk Panel 11.5, has been taken as the basic theme for the new Store.

If you already have the store branded with the corporate palette for Plesk 11.5, you may use this skin for PBAS Store as well. For details, refer to Plesk Panel documentation: Customizing Panel Appearance and Branding (http://download1.parallels.com/Plesk/PP11/11.5/Doc/en-US/online/plesk-themes-guide/).

The store UI elements are available by the following paths:

- `/var/opt/hspc-store/web/css/` - CSS files
- `/var/opt/hspc-store/web/images` - images

Together with the common elements, such as headers, icons, buttons, and styles for pages layout design, the new Store also brings the own styles for the controls, jQuery library elements, the images not yet included in Common UI Skin. In addition, the new store redefines a certain properties of Common UI Skin screen elements.The Store own styles are defined in the `/var/opt/hspc-store/web/css/stylesheet.css` file. The styles definitions in the `stylesheet.css` file are annotated and grouped into sections according to the styles designation.

The Store styles are customized separately for each vendor. In future Store versions it may become possible to customize the styles for all vendors at a time.

Attention: In order to avoid overwriting of the customized files during Store upgrade, place the customized files in the following upgrade-safe directories:

- `/var/opt/hspc-store/customization/vendor/VENDOR_ID/static/css/` - CSS files
- `/var/opt/hspc-store/customization/vendor/VENDOR_ID/static/images/` - images

  Where VENDOR_ID - is the ID of the vendor account, for which the Store is customized.

Change header and footer templates

The store templates are located in the `/var/opt/hspc-store/templates/` directory.

The customized templates should be placed in the upgrade-safe directory:

`/var/opt/hspc-store/customization/vendor/1/templates/`

To add the content in the `description` and `keywords meta` tags, or to change the other HTML header element, modify the file:

`/var/opt/hspc-store/templates/html_header.html.php`

To change the top navigation block, modify the file:

`/var/opt/hspc-store/templates/header.html.php`

To change the footer, modify the file:

`/var/opt/hspc-store/templates/footer.html.php`

Customizing Store by Means of Configuration Parameters

The file `/var/opt/hspc-store/settings.ini` contains the global parameters for the store including connection settings, layout and behavior, environment variables, and other options related to store customization. The comments that describe the designation and usage are provided for each parameter. Thus, to know about all parameters, look into the `settings.ini` file.

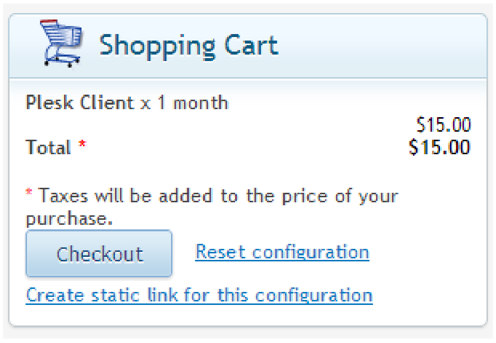
Custom settings should be placed to the special customization directory.

Important: The changes made to the original file `/var/opt/hspc-store/settings.ini` are reset to defaults during PBAS updates installation. Always put your custom settings in the update-safe directory: `/var/opt/hspc-store/customization/vendor/<VENDOR_ID>/custom.ini`, where `<VENDOR_ID>` is the ID of vendor account. For provider account with ID=1 the directory is created automatically during new store deployment: `/var/opt/hspc-store/customization/vendor/1/custom.ini.` In this custom file, all the store custom settings may be placed, except for the ones related to PBAS Management Node access and authorization.

To facilitate store customization, the **graphical interface is provided for some the store parameters related to layout and behavior**. When you use this graphical interface to change the parameters values, the custom settings are automatically placed into the upgrade-safe directory `/var/opt/hspc-store/customization/vendor/<VENDOR_ID>/custom.ini.`

➢ *To open the graphical configurator for store global settings:*

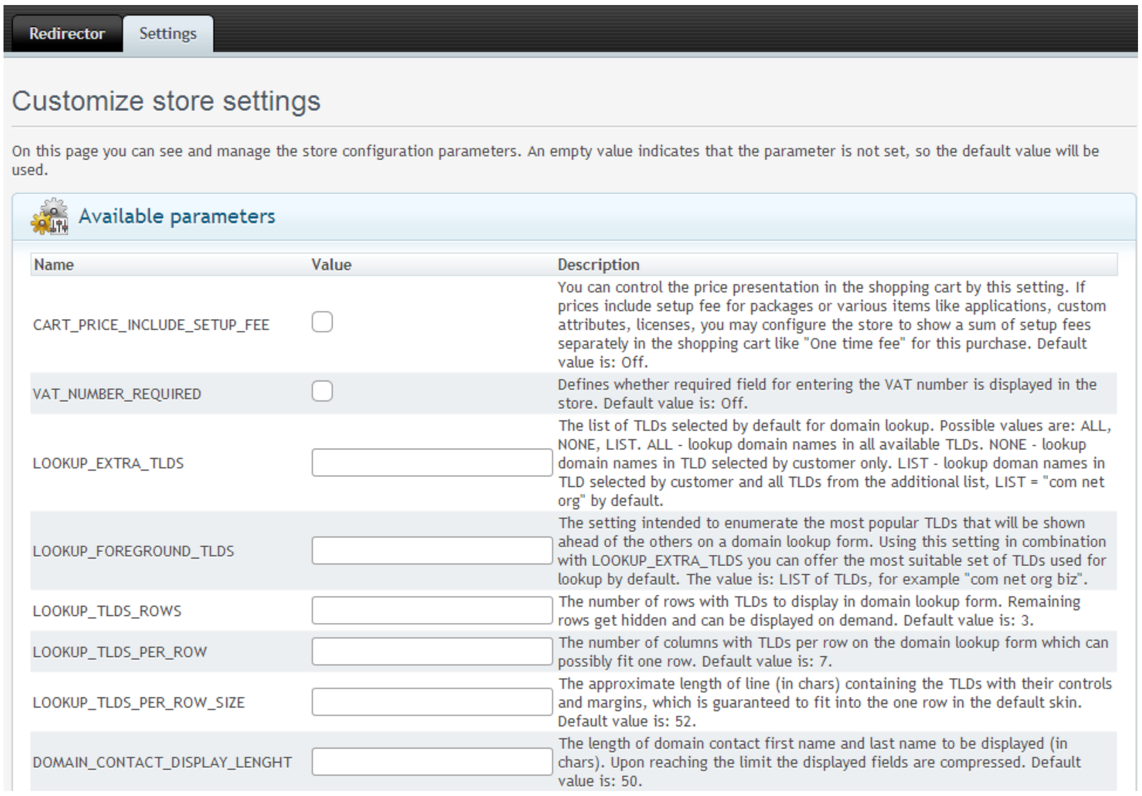
1. Open the store in the browser.
2. Select a hosting plan or a plan group.
3. Sign in as an existing customer and enter your Provider account login and password. When signed in, the Create static link for this configuration link appears in the Shopping Cart area:



Plesk Client x 1 month $15.00
Total * $15.00

* Taxes will be added to the price of your purchase.

4. Click the **Create static link for this configuration** link. The store configuration settings are displayed.
5. Click the **Settings** tab. The list of the store parameters is displayed (the screenshot below shows only part of the screen):



Customize store settings

On this page you can see and manage the store configuration parameters. An empty value indicates that the parameter is not set, so the default value will be used.

Available parameters

Name	Value	Description
CART_PRICE_INCLUDE_SETUP_FEE	☐	You can control the price presentation in the shopping cart by this setting. If prices include setup fee for packages or various items like applications, custom attributes, licenses, you may configure the store to show a sum of setup fees separately in the shopping cart like "One time fee" for this purchase. Default value is: Off.
VAT_NUMBER_REQUIRED	☐	Defines whether required field for entering the VAT number is displayed in the store. Default value is: Off.
LOOKUP_EXTRA_TLDS		The list of TLDs selected by default for domain lookup. Possible values are: ALL, NONE, LIST. ALL - lookup domain names in all available TLDs. NONE - lookup domain names in TLD selected by customer only. LIST - lookup doman names in TLD selected by customer and all TLDs from the additional list, LIST = "com net org" by default.
LOOKUP_FOREGROUND_TLDS		The setting intended to enumerate the most popular TLDs that will be shown ahead of the others on a domain lookup form. Using this setting in combination with LOOKUP_EXTRA_TLDS you can offer the most suitable set of TLDs used for lookup by default. The value is: LIST of TLDs, for example "com net org biz".
LOOKUP_TLDS_ROWS		The number of rows with TLDs to display in domain lookup form. Remaining rows get hidden and can be displayed on demand. Default value is: 3.
LOOKUP_TLDS_PER_ROW		The number of columns with TLDs per row on the domain lookup form which can possibly fit one row. Default value is: 7.
LOOKUP_TLDS_PER_ROW_SIZE		The approximate length of line (in chars) containing the TLDs with their controls and margins, which is guaranteed to fit into the one row in the default skin. Default value is: 52.
DOMAIN_CONTACT_DISPLAY_LENGHT		The length of domain contact first name and last name to be displayed (in chars). Upon reaching the limit the displayed fields are compressed. Default value is: 50.

6. Enter the parameters values in the fields next to their names. For the parameters that are set to Yes/No, put a tick in the check box for Yes or clear the tick for No.
7. When ready, click Update parameters to save the changes.

Note: To skip all the customization, click Reset to defaults. This will delete the `custom.ini` file, so the store parameters' values will be taken from the default file `settings.ini`.

Show/Hide the password during entering

In the store, the password generation widget is used. Customers can either enter the password or generate it.

By default, the entered password is hidden. Such behavior is defined by means of the Store general parameter `SHOW_FORM_PASSWORDS`. To show the entered password as plain text, set the `SHOW_FORM_PASSWORDS` parameter value to `"Yes".` This will certainly does not restrict the ability for the customer to show or hide the password using the Show/Hide option in the password generation widget area.

The customer may do one of the following:

- **Manually enter the password** into the Type field. The bar next to this field dynamically shows the password strength. Then retype the password. To facilitate the password retyping, the customer may put a tick in the Show check box, this would display the plain password on the screen.

  OR
- **Automatically generate the password** by clicking the Generate button. The automatically generated password has the Strong security level, by default. To view and copy the auto-generated password, the customer may put a tick in the Show check box.

Hide the configuration blocks for different types of hosting plans

By default, the Store displays all the options and controls used to change the hosting plan configuration during purchase. Typically, the hosting plan configuration controls are presented as blocks in the store: for example, Resources, Applications, Domains, etc. If needed, a particular configuration blocks for a particular type of hosting plans can be hidden and thus, kept away of changes during purchase.

Hiding a hosting plan configuration blocks may be useful for some types of hosting that provide a wide range of settings to configure, but at the same time have some default settings that meet the needs of most of the customers.

The plans configuration blocks are hidden by means of the `COLLAPSED_BLOCKS` directive. Syntax is the following:

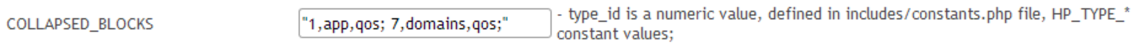
```
COLLAPSED_BLOCKS = "type_id,block_name,block_name,...;
<type_id,block_name,block_name,...;>"
```

Where:

`type_id` - a numeric value, defined in the file `/var/opt/hspc-store/includes/constants.php`, `HP_TYPE_*` constant values

`block_name` - a string value, defined in the file `/var/opt/hspc-store/includes/constants.php`, `HP_BLOCK_*` constant values

Example: Hide the Applications and Resources blocks for Virtuozzo Container hosting plans and the Domains and Resources blocks for Miscellaneous hosting plans. Enter the following directive:



COLLAPSED_BLOCKS	"1,app,qos; 7,domains,qos;"	- type_id is a numeric value, defined in includes/constants.php file, HP_TYPE_* constant values;

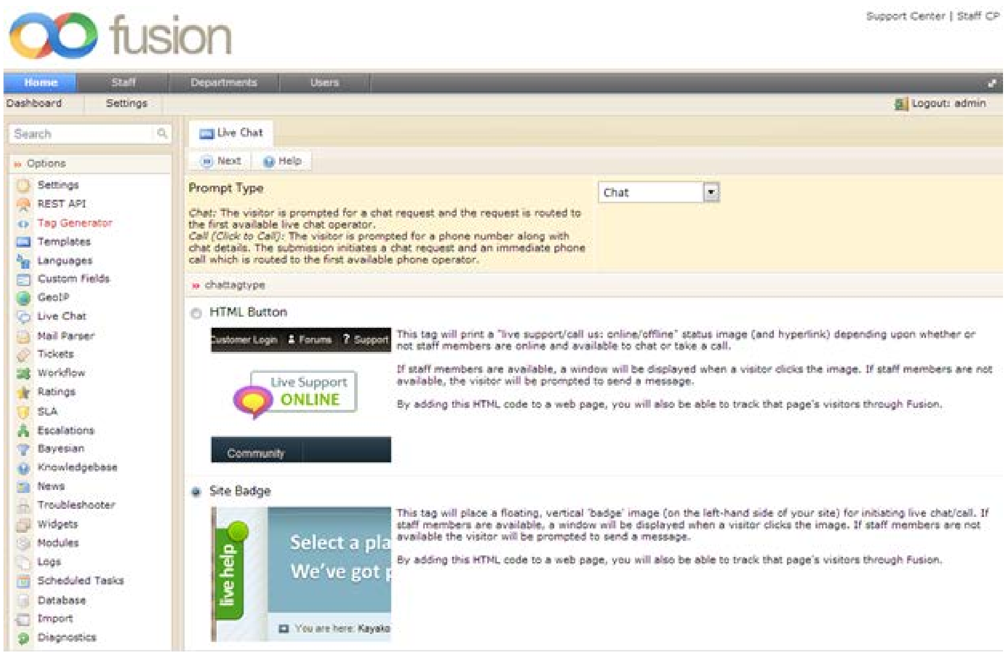
Integrating with 3rd Party Applications. Kayako Chat

Here is an example how to add Kayako site badge to the online Store.

Note: The instructions are given for Kayako Fusion 4.5 and may differ for other versions. You may refer to Kayako documentation for instructions how to generate source code for the badge.

To generate the Kayako tag:

1. Login to Kayako Admin panel, go to Home > Tag generator



Prompt Type: Chat

Chat: The visitor is prompted for a chat request and the request is routed to the first available live chat operator.
Call (Click to Call): The visitor is prompted for a phone number along with chat details. The submission initiates a chat request and an immediate phone call which is routed to the first available phone operator.

chattagtype

( ) HTML Button

This tag will print a "live support/call us: online/offline" status image (and hyperlink) depending upon whether or not staff members are online and available to chat or take a call.

If staff members are available, a window will be displayed when a visitor clicks the image. If staff members are not available, the visitor will be prompted to send a message.

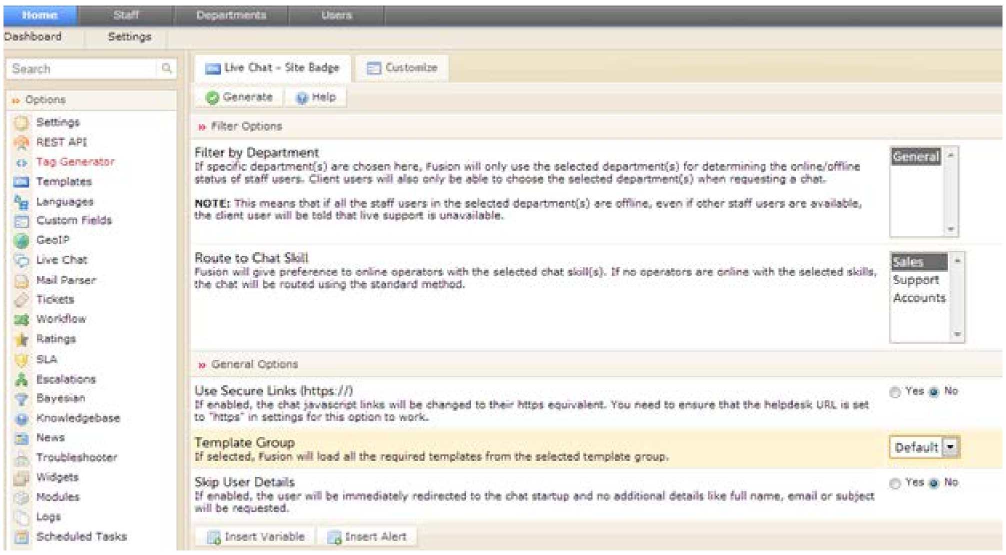
By adding this HTML code to a web page, you will also be able to track that page's visitors through Fusion.

(●) Site Badge

This tag will place a floating, vertical 'badge' image (on the left-hand side of your site) for initiating live chat/call. If staff members are available, a window will be displayed when a visitor clicks the image. If staff members are not available the visitor will be prompted to send a message.

By adding this HTML code to a web page, you will also be able to track that page's visitors through Fusion.

2. Click on Site Badge and then click **Next**.
3. Set the options like Department, Route to Chat Skills, customize styles if needed and click **Generate**.



» Filter Options

Filter by Department
If specific department(s) are chosen here, Fusion will only use the selected department(s) for determining the online/offline status of staff users. Client users will also only be able to choose the selected department(s) when requesting a chat.

NOTE: This means that if all the staff users in the selected department(s) are offline, even if other staff users are available, the client user will be told that live support is unavailable.

General

Route to Chat Skill
Fusion will give preference to online operators with the selected chat skill(s). If no operators are online with the selected skills, the chat will be routed using the standard method.

Sales
Support
Accounts

» General Options

Use Secure Links (https://)
If enabled, the chat javascript links will be changed to their https equivalent. You need to ensure that the helpdesk URL is set to "https" in settings for this option to work.

Yes [✓ No]

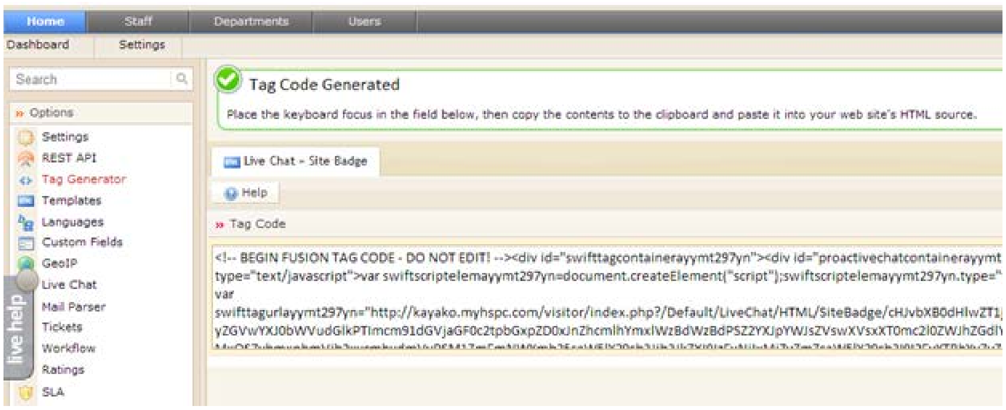
Template Group
If selected, Fusion will load all the required templates from the selected template group.

Default

Skip User Details
If enabled, the user will be immediately redirected to the chat startup and no additional details like full name, email or subject will be requested.

Yes [✓ No]

4. Copy the generated tag code.



Tag Code Generated

Place the keyboard focus in the field below, then copy the contents to the clipboard and paste it into your web site's HTML source.

» Tag Code

```
<!-- BEGIN FUSION TAG CODE - DO NOT EDIT! --><div id="swifttagcontainerayymt297yn"><div id="proactivechatcontainerayymt
type="text/javascript">var swiftscriptelemayymt297yn=document.createElement("script");swiftscriptelemayymt297yn.type="
var
swifttagurlayymt297yn="http://kayako.myhspc.com/visitor/index.php?/Default/LiveChat/HTML/SiteBadge/cHJvbXB0dHlwZT1
yZGVwYXJ0bWVudGlkPTImcm91dGVjaGF0c2tpbGxpZD0xJnZhcmlhYmxlWzBdWzBdPSZ2YXJpYWJsZVswXVsxXT0mc2l0ZWJhZGdl
```

The code will look like:

```
<!-- BEGIN FUSION TAG CODE - DO NOT EDIT! --><div
id="swifttagcontainerayymt297yn"><div
id="proactivechatcontainerayymt297yn"></div><div style="display: inline;"
id="swifttagdatacontainerayymt297yn"></div></div><script
type="text/javascript">var
swiftscriptelemayymt297yn=document.createElement("script");swiftscriptelemayym
t297yn.type="text/javascript";var swiftrandom =
Math.floor(Math.random()*1001); var swiftuniqueid = "ayymt297yn"; var
swifttagurlayymt297yn="http://kayako.myhspc.com/visitor/index.php?/Default/Liv
eChat/HTML/SiteBadge/cHJvbXB0dHlwZT1jaGF0JnVuaXF1ZWlkPWF5eW10Mjk3eW4mdmVyc2lvb
j00LjQwLjEwNzkmcHJvZHVjdD1GdXNpb24mZmlsdGVyZGVwYXJ0bWVudGlkPTImcm91dGVjaGF0c2t
pbGxpZD0xJnZhcmlhYmxlWzBdWzBdPSZ2YXJpYWJsZVswXVsxXT0mc2l0ZWJhZGdlY29sb3I9d2hpd
GUmYmFkZ2VsYW5ndWFnZT1lbiZiYWRnZXRleHQ9bGl2ZWhlbHAmb25saW5lY29sb3I9IzE5OGMxOSZ
vbmxpbmVjb2xvcmhvdmVyPSM1ZmFmNWYmb25saW5lY29sb3Jib3JkZXI9IzEyNjIxMiZvZmZsaW5lY
29sb3I9I2EyYTRhYyZvZmZsaW5lY29sb3Job3Zlcj0jYmVjMGM1Jm9mZmxpbmVjb2xvcmJvcmRlcj0
jNzE3Mzc4JmF3YXljb2xvcj0jNzM3YzRhJmF3YXljb2xvcmhvdmVyPSM5ZWE0ODEmYXdheWNvbG9yY
m9yZGVyPSM1MTU3MzQmYmFja3Nob3J0bHljb2xvcj0jNzg4YTIzJmJhY2tzaG9ydGx5Y29sb3Job3Z
lcj0jYTFhZTY2JmJhY2tzaG9ydGx5Y29sb3Jib3JkZXI9IzU0NjExOSZjdXN0b21vbmxpbmU9JmN1c
3RvbW9mZmxpbmU9JmN1c3RvbWF3YXk9JmN1c3RvbWJhY2tzaG9ydGx5PQpkYzVkZGUzNzZlNmY2ZDU
0MmEzZmU0NjBlMjc4ZThhMDdjYWEwOGYx";setTimeout("swiftscriptelemayymt297yn.src=s
wifttagurlayymt297yn;document.getElementById('swifttagcontainerayymt297yn').ap
pendChild(swiftscriptelemayymt297yn);",1);</script><!-- END FUSION TAG CODE -
DO NOT EDIT! -->
```

5. Login to the server, where online Store is deployed and go to the Store directory. (Default store location is `/var/opt/hspc-store`).
6. Customize `footer.html.php` template (on page 143) and insert the generated code there:

   a Create the directory for custom templates for your vendor:

   ```
   #mkdir –p customization/vendor/1/templates/
   ```

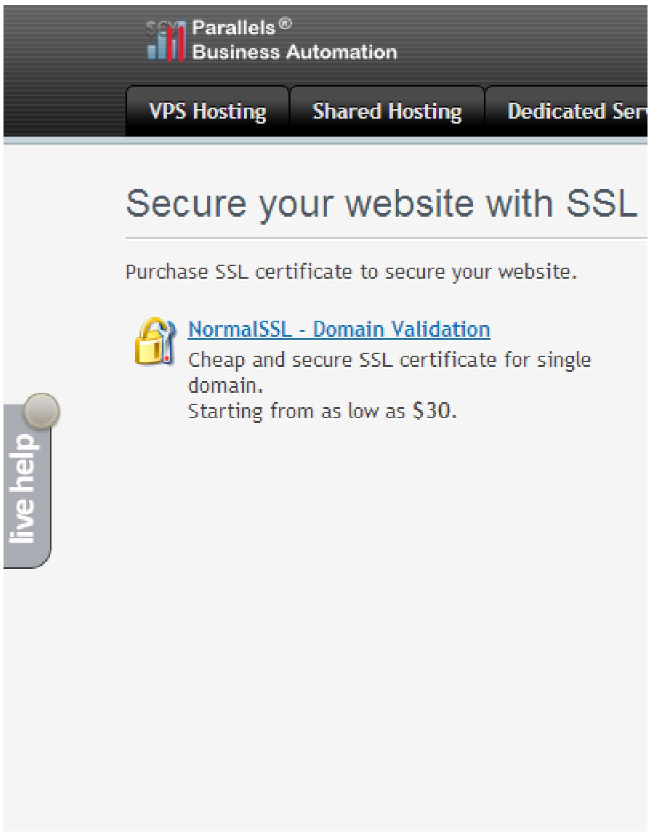
   In this example, we create the directory for provider account (vendor ID= 1). For other cases, use your vendor account ID.

   b Copy the original `footer.html.php` file into the created directory:

   ```
   # cp templates/footer.html.php
   customization/vendor/1/templates/
   ```

   c Open the `customization/vendor/1/templates/footer.html.php` template and insert the generated code before the "`<!-- footer.html.php -->`" line. Save the changes.

As the result, the Kayako site badge will be added to all online Store screens as it's shown on screen shot below.



Secure your website with SSL

Purchase SSL certificate to secure your website.

NormalSSL - Domain Validation
Cheap and secure SSL certificate for single domain.
Starting from as low as $30.

Customizing Store Localization

In this section we describe:

- How to customize the existing language pack for the store.
- How to add a new language pack for the store.

Note: The customized strings will be applied for all vendors.

Customize the existing language pack for the store

The existing language pack is customized by means of replacing the original strings with the custom ones.

Custom strings are kept as the XML file in the special pre-defined customization directory, which enables the strings replacement, and at the same time protects the custom strings from having been rewritten during PBAS upgrading. When rendering the store page, PBAS first looks through the customization directories, and if custom strings are found, they are used in the store UI, otherwise - the original strings are used.

➢ *To customize the store localization:*

1. Create the customization directory to keep the custom strings.

   For the default store installation the path should be as follows:

```
/var/opt/hspc-store/customization/localization/XX/
```

where XX - is the two letter language code (ISO 639), same as used in PBAS for the language pack you want to customize.

For the custom store installation, the `customization/localization/XX` directory should be created over the store installation root directory.

2. Create the XML file, where you will place the customized strings. The file name may be any. Then open this XML file and do the following:
   - To the beginning of the file, paste the XML declaration and the header from the original XML file, for example such as (for the EN locale):

```
<?xml version="1.0" encoding="iso-8859-1"?>

<!DOCTYPE xsl:stylesheet [ <!ENTITY nbsp "&#160;"> ]>

<strings                                                      lang="en"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="strings.xsd">


</strings>
```

   - Inside the `strings` tag, paste the string(s) specification(s) you want to customize.

Note: Only the customized strings should be kept in the customization file.

   - Adjust the strings values in the way you need.
3. Save the changes to the custom XML file.
4. Place the custom XML file into the store strings customization directory (see step 1).

Note: To get the changes applied to the store, it may be needed to open the store in a new browser session. When locale is changed, there is no need to restart any of the services or clear the browser cache. No additional actions needed to make visible the changes made to the localization.

Add a new language pack for the store

Before you start translating the store localization into the new language that is not shipped with PBAS, it is necessary to add the corresponding language pack to PBAS (on page 225).

When a new language pack is added, do the following:

1. Add the flag image. Create a new image or copy an existing one from the old store to the new one:

```
#   cp   -p   /var/opt/hspc-frontend/images/flags/flag_xx.gif
/var/opt/hspc-store/web/images/flags/
```

   where xx - is the language two-letter ISO code in lowercase.
2. Create the directory for the new locale and copy the etalon (EN) locale into this directory:

```
# mkdir /var/opt/hspc-store/i18n/XX
#   cp   -p   /var/opt/hspc-store/i18n/EN/hspc-store-basic.xml
/var/opt/hspc-store/i18n/XX/hspc-store-basic.xml
```

`XX` - is the language two-letter ISO code in uppercase. The new directory must be named by a two-letter language code in upper case, following the ISO 639 (http://www.loc.gov/standards/iso639-2/php/code_list.php) language codes.

3. Translate the etalon locale into the new language.

If the old store has already been translated into a custom language, this translation can be used as the base for the new store translation.

Note: To get the new locale applied to the store, it may be needed to open the store in a new browser session. When locale is changed, there is no need to restart any of the services or clear the browser cache. No additional actions needed to make visible the changes made to the translation.

Updating Third-Party Libraries

The store uses jQuerylibrary (http://jquery.com/download/), jQuery UI (http://jqueryui.com/download), jQueryFormPlugin (http://jquery.malsup.com/form/#download), and Symfony Components framework (http://symfony.com/components).

By the moment of PBAS version 4.3.3 release, the latest versions of these libraries were included in the Store distribution. However, the PBAS release cycle may differ from the third-party libraries releases. In such a situations, the third-party libraries should be updated manually.

Important: Back up the Store before updating the third-party components.

Updating jQuery

The default path for jQuery files is `/var/opt/hspc-store/web/js/thirdparty/`:

- `jquery-1.9.1.js`
- `jquery.form.js`
- `jquery-ui-1.10.2.custom.js`

Important: Before upgrading, it is strongly recommended to carefully read the Release Note and Upgrade Notes for the jQuery version you are going to install, paying a special attention to the issues related to compatibility with the previous versions.

The jQuery files may be updated either for a particular vendor or for all vendors.

In the step-by-step instructions below we suppose that `VENDOR_ID` should be replaced with the vendor account numeric ID.

➢ *To update the jQuery files for the particular vendor:*

1. Place the new jQuery files to the directory:

```
/var/opt/hspc-store/customization/vendor/VENDOR_ID/statis/js/
```

2. Copy the file:

   `/var/opt/hspc-store/templates/html_header.html.php`

   into the customization directory:

   `/var/opt/hspc-store/customization/vendor/VENDOR_ID/templates/`

3. Open the `html_header.html.php` file. Change the .js files' names into the new ones in the following strings:

   ```
   <script src="<?php echo $view['assets']->getUrl('/js/thirdparty/jquery-1.9.1.min.js'); ?>" type="text/javascript"></script>
   ```

   ```
   <script src="<?php echo $view['assets']->getUrl('/js/thirdparty/jquery.form.js'); ?>" type="text/javascript"></script>
   ```

   ```
   <script src="<?php echo $view['assets']->getUrl('/js/thirdparty/jquery-ui-1.10.2.custom.min.js'); ?>" type="text/javascript"></script>
   ```

4. Save the changes.

➢ *To update the jQuery files for all vendors:*

1. Place the new jQuery files to the directory:

   `/var/opt/hspc-store/web/js/thirdparty/`

2. Change the .js files' names in the original file:

   `/var/opt/hspc-store/templates/html_header.html.php`

   For details, see the step-by-step instruction above, for per vendor customization, steps 3 and 4.

Updating Symfony Components

By default, the executable files are located in the directory:

```
/var/opt/hspc-store/includes/vendor/
```

The following components are used:

- `"symfony/finder": "v2.3.0",`
- `"symfony/class-loader": "v2.3.0",`
- `"symfony/event-dispatcher": "v2.3.0",`
- `"symfony/http-foundation": "v2.3.0",`
- `"symfony/routing": "v2.3.0",`
- `"symfony/http-kernel": "v2.3.0",`
- `"symfony/config": "v2.3.0",`
- `"symfony/yaml": "v2.2.2 "`

Important: Before you start updating do the following:

1. Carefully read the Release Note and Upgrade Notes for the Symfony Components version you are going to install, paying a special attention to the issues related to compatibility with the previous versions.
2. Open the file `/var/opt/hspc-store/includes/composer.json` and specify the particular components that should be updated. For example:

```
{
  "require": {
   "symfony/finder": "2.3.*",
   "symfony/class-loader": "2.3.*",
   "symfony/event-dispatcher": "2.3.*",
   "symfony/http-foundation": "2.3.*",
   "symfony/routing": "2.3.*",
   "symfony/http-kernel": "2.3.*",
   "symfony/config": "2.3.*",
   "symfony/yaml": "2.3.*"
}
}
```

➢ *To update the Symfony Components:*

1. Run the following commands:

```
# cd /var/opt/hspc-store/includes/
# curl -sS http://getcomposer.org/installer | php
# phpcomposer.pharupdate
```

The output of the last command should look as follows:

```
Loading composer repositories with package information
Updating dependencies (including require-dev)
  - Removing symfony/finder (v2.3.0)
  - Installing symfony/finder (v2.3.1)
    Downloading: 100%

  - Removing symfony/class-loader (v2.3.0)
  - Installing symfony/class-loader (v2.3.1)
    Downloading: 100%

  - Removing symfony/routing (v2.3.0)
  - Installing symfony/routing (v2.3.1)
    Downloading: 100%

  - Removing symfony/http-foundation (v2.3.0)
  - Installing symfony/http-foundation (v2.3.1)
    Downloading: 100%

  - Removing symfony/event-dispatcher (v2.3.0)
  - Installing symfony/event-dispatcher (v2.3.1)
    Downloading: 100%

  - Removing symfony/http-kernel (v2.3.0)
  - Installing symfony/http-kernel (v2.3.1)
    Downloading: 100%

  - Removing symfony/config (v2.3.0)
  - Installing symfony/config (v2.3.1)
    Downloading: 100%

  - Removing symfony/yaml (v2.2.3)
  - Installing symfony/yaml (v2.3.1)
    Downloading: 100%

Writing lock file
Generating autoload files
```

CHAPTER 4

User Interface Customization

Parallels Business Automation - Standard customization tools are described in this chapter.

In This Chapter

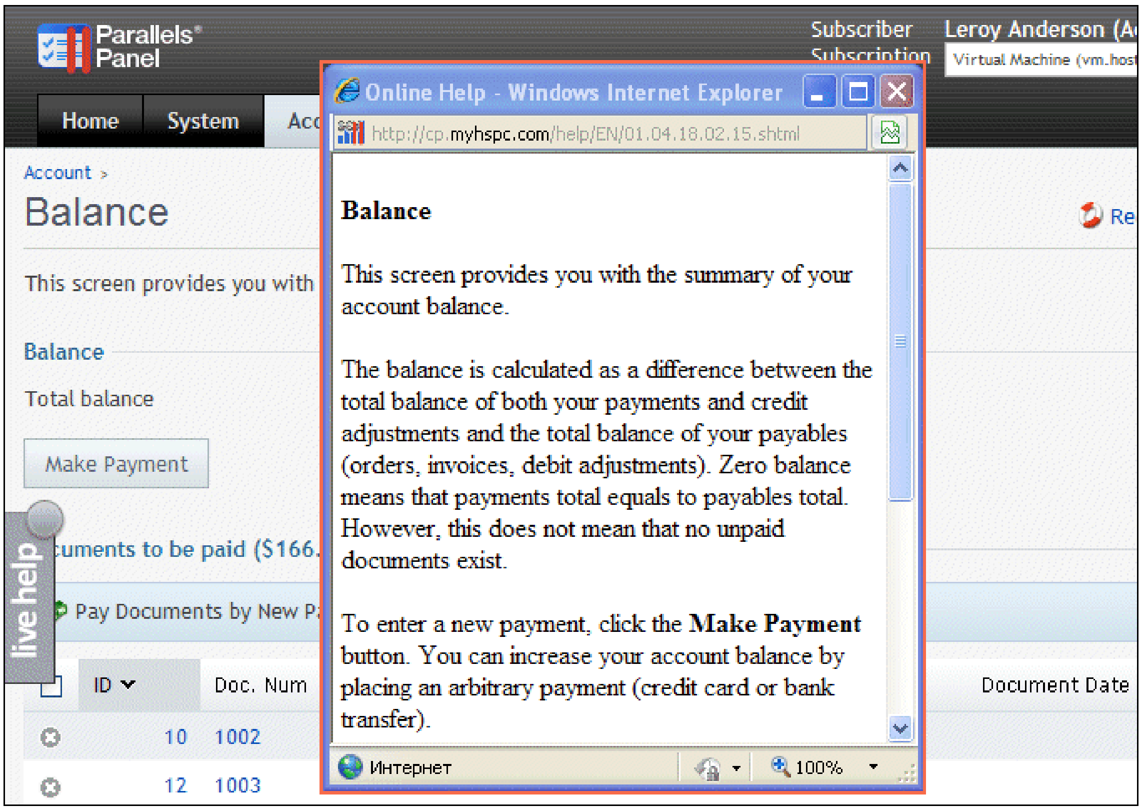
Screens Customization Overview

You can customize any of Parallels Business Automation - Standard screens in a way that suits your needs.

The following customization types are available:

- Template based customization (on page 162). Allows customizing Control Panel frames and dashboards.
- Screen aliases based customization (on page 162). Applicable to Provider and Reseller Control Centers screens only. Allows customizing any of PCC or RCC screens.
- Adding, hiding or changing interface items in the Control Panel dashboards by means of CP customization module (on page 177).
- Screen ID based customization (on page 189). Applicable to Control Panel screens.Allows customizing the screens displaying objects properties, lists of objects and the like - all screens accessible by clicking on CP dashboards items.
- Editing the context help for any of the Parallels Business Automation - Standard screens. Context help files are located in the `/var/opt/hspc-root/help/` and sorted by language packs directories. Help files names exactly match its screen ID.

  Context help opens after clicking **Help** link at the Control Panel top:



Balance

This screen provides you with the summary of your account balance.

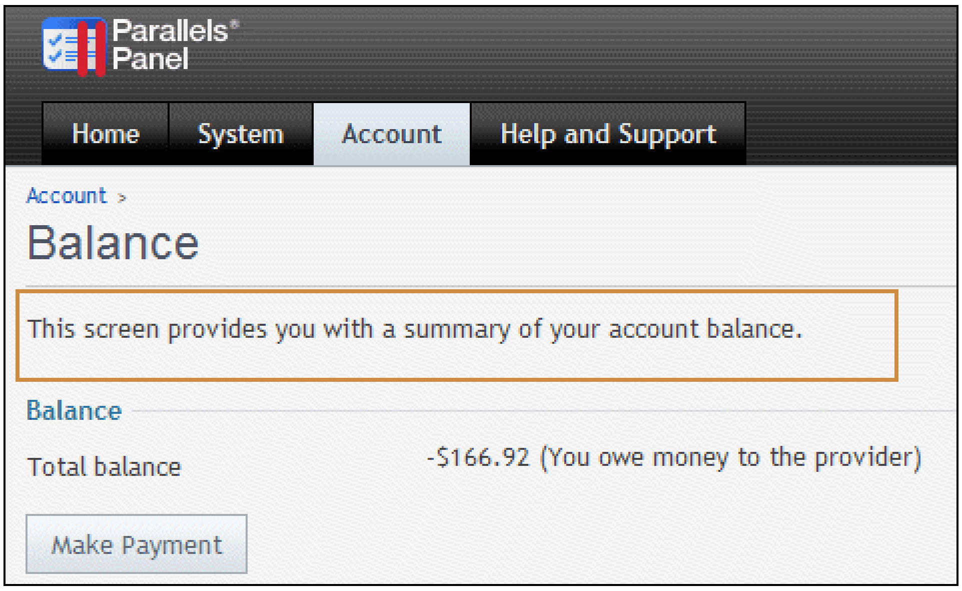
The balance is calculated as a difference between the total balance of both your payments and credit adjustments and the total balance of your payables (orders, invoices, debit adjustments). Zero balance means that payments total equals to payables total. However, this does not mean that no unpaid documents exist.

To enter a new payment, click the **Make Payment** button. You can increase your account balance by placing an arbitrary payment (credit card or bank transfer).

:

- Editing the on-screen help bars for the Control Panels your customers use. Onscreen help files are located in the `/var/opt/hspc-root/hints/` and sorted by language packs directories. Help files names exactly match its screen ID.

  Onscreen help is embossed on most of Control Panel screen and provides short hints:



This screen provides you with a summary of your account balance.

Total balance -$166.92 (You owe money to the provider)

Warning: Please carefully follow both the directories structure and naming conventions offered below to store your customization. Otherwise the customized files will be overwritten after the next Parallels Business Automation - Standard update installation. Do not customize files inside the original directories because such changes will be also lost after the Parallels Business Automation - Standard update installation.

We strongly recommend to copy into the custom directories only the files that you really customize. Do not copy the surrounding template files into the custom directories. Considerable number of template files in custom directories can result in the necessity for a lot of extra checks during Parallels Business Automation - Standard upgrade installation, because during upgrade each template in custom directories is checked in respect to compatibility with a new Parallels Business Automation - Standard version.

Customized files should be stored in the single subdirectory created specially:

`/var/opt/hspc-root/`	Parallels Business Automation - Standard base directory defined by HSPCROOT_ROOT parameter in *hspc.conf* file.
`/var/opt/hspc-root/custom/`	Parallels Business Automation - Standard customization base directory.
`/var/opt/hspc-root/custom/template/`	The subdirectory containing customized templates.
`/var/opt/hspc-root/custom/help/`	The subdirectory containing customized context help files.
`/var/opt/hspc-root/custom/hints/`	The subdirectory containing customized onscreen help files.
`/var/opt/hspc-root/custom/screen/`	The subdirectory containing screen ID based customization files.
`/var/opt/hspc-root/custom/localization/`	The subdirectory containing the language pack customization files.

It is also possible to perform the account-specific and language-specific customization. Such customization can be applied to screen templates, context help, and onscreen help only.

The account-specific customization calls for creation of the following subdirectories in `/var/opt/hspc-root/custom/template/`, `/var/opt/hspc-root/custom/help/`, and `/var/opt/hspc-root/custom/hints/`:

`default/`	The directory to put templates customized for all Providers
`1/`	The directory to put templates customized for Provider only
`RESELLER_ID/`	The directory to put templates customized for particular Reseller, where *RESELLER_ID* represents a Reseller Account ID.

Example 1:

To customize screen templates for a particular reseller account (let us assume that this reseller account ID is 123), it is necessary to:

1. Create a subdirectory 123/ under the `/var/opt/hspc-root/custom/template/` directory.
2. Under the `/var/opt/hspc-root/custom/template/123` directory, *create subdirectories that exactly follow the path to the original files you want to customize*. For example, if you want to customize store frontpage templates, that are originally located in `/var/opt/hspc-root/template/HSPC/EM/Plans/`, you must create the `HSPC/EM/Plans/` subdirectory under the 123/ directory and put the customized files there.

   Thus, following our example, the final path for customized store frontpage templates must be:

   ```
   /var/opt/hspc-root/custom/template/123/HSPC/EM/Plans/
   ```

   Always create the corresponding subdirectories for customized files to let your customization be applied.

Example 2:

To perform the language-specific customization, you should create the subdirectory named by the language two-letter abbreviation, e.g., EN/ for English, FR/ - for French, etc. For example,

```
/var/opt/hspc-root/custom/hints/FR/
```

to store the customized onscreen help files in French. And to store the french customization for your Provider account only:

```
/var/opt/hspc-root/custom/hints/1/FR/
```

To perform the language dependent customization for a particular Reseller account (for example, with account ID 127), you should create the directory:

```
/var/opt/hspc-root/custom/hints/127/FR/
```

For example, In accordance with the rules outlined above, the location of the custom on-screen help file for all French customers of the Reseller with account ID 127 on page with screen ID 01.04.18.02.16 should be the following:

```
/var/opt/hspc-root/custom/hints/127/FR/01.04.18.02.16.html
```

The procedure of customization file lookup looks as follows:

- Parallels Business Automation - Standard searches through the default subdirectory for the Reseller language specific customization:

```
/var/opt/hspc-root/custom/hints/127/FR/01.04.18.02.16.html
```

- If customization file was not found, the Parallels Business Automation - Standard searches in the Reseller language specific directory, but in this case, not in the custom language directory (FR/) but in the directory that corresponds to the default language used by Provider. For example if the default language used by Provider is English, then the customized file will be searched in the following directory:

```
/var/opt/hspc-root/custom/hints/127/EN/01.04.18.02.16.html
```

- If customization file was not found in the Reseller language-specific directory, then just the Reseller-specific directory is checked:

```
/var/opt/hspc-root/custom/hints/127/01.04.18.02.16.html
```

- If the customization file is still not found, then the Parallels Business Automation - Standard searches in the default directory for French customized onscreen help:

```
/var/opt/hspc-root/custom/hints/fr/01.04.18.02.16.html
```

- If the customization file is not found again, then the Parallels Business Automation - Standard searches in the default directory for the customized onscreen help in the default language used by Provider (for example, a Provider uses English):

```
/var/opt/hspc-root/custom/hints/en/01.04.18.02.16.html
```

- Finally, the Parallels Business Automation - Standard searches in the default directory used for customized onscreen help:

```
/var/opt/hspc-root/custom/hints/01.04.18.02.16.html
```

Template Based Customization

Most of elements used at Parallels Business Automation - Standard screens can be customized using the screen aliases (in Provider and Reseller Control Centers) or screen IDs (both PCC/RCC and Control Panel) based approaches. This method is reliable and absolutely safe.

However, some elements of Parallels Business Automation - Standard graphical interface cannot be customized using screen aliases or screen ID based method. For example, login pages, links at tabs, some documents used in specific accounting plug-ins.

Templates are widely used in Parallels Business Automation - Standard interface. The template files *.tmpl and *.html are stored in different directories under `/var/opt/hspc-root/template` or `/var/opt/hspc-root/skins` directory.

The name of a template used at a Parallels Business Automation - Standard screen can be found from a page HTML source code. Alternatively, it is possible to find the needed template file by localization string IDs used at the screen you want to customize.

Similarly to the other customization, to prevent the customized templates from having been re-written during Parallels Business Automation - Standard upgrade installation, the customized templates must be placed into the `/var/opt/hspc-root/custom/`<*path to original template location*> directory.

For example, if the path to the Russian accounting documents is

```
/var/opt/hspc-root/template/HSPC/ACC/Plugin/Ru/UI/
```

then the customized templates are to be placed into the

```
/var/opt/hspc-root/custom/template/HSPC/ACC/Plugin/Ru/UI/
```

directory.

Warning: The same template can be used in a number of Parallels Business Automation - Standard screens and in most cases it is actually used. This means that a single customized template may emerge at a number of Parallels Business Automation - Standard pages. Please be very careful when customizing templates.

Customizing Vendor Control Center (PCC/RCC)

Components Repository

Below we describe how to add or customize Parallels Business Automation - Standard screens using the XML Components Repository.

Components Repository Structure and Files

Parallels Business Automation - Standard Component Repository Configuration is presented as a set of XML documents with the structure described below.

All configuration files are located in one directory and named arbitrary, but with `.xml` extension and in a valid format.

Parallels Business Automation - Standard Component Repository Configuration offers the following vision of Parallels Business Automation - Standard logical structure (in descending order):

director
First level grouping set with power limited to a reasonable number for main menu to be observable.

manager
Second level grouping set usually based on independent lines of work.

screen
Atomic element of structure, any webpage: a dashboard, an edit form, a wizard step, whatever.

Screens can be nested within other screens to form any URIs and navigation paths. Screens nested within screens do not have entries in main menu, could be presented only by higher level nodes.

Nodes have the following attributes:

`title_id (default: alias)`Localization ID of component's external name; `string(id => 'title_id')` visually appears in site path, main menu and so on. See note for `set_node_context($)` interface below.

`alias` String unique throughout the configuration; unambiguously identifies a node for direct referencing. Used when inserting other nodes on-the-fly, filling some parameters with default value, etc.

`id` Number unique on its level; forms a uri (as well as Screen ID) as a concatenation of higher level nodes' id and this id. If id is not set for a node, it is set automatically to some of spare values (incrementally).

`class` Name of handler class.

`method` Name of handler method from `class`.

`filter` Name of static filter function (on page 164) from class. Defines on what conditions an element must be shown. If present, a function is run with `node_descriptor` (see below) as a parameter on menu tree creation or a screen lookup. Should return a non-zero result for a node to be visible and accessible, otherwise a node is hidden. Value of `filtered_out` property of `node_descriptor` is set to 1 in case `filter` property presented and filter method return zero result on call to `node()`. Thus, other modules don't have to handle `filter` property but just check `filtered_out`.

`groups` Security groups as comma separated list. Refer to Security Manager documentation for details.

`icon (default: alias)` Component's page icon.

`before` `IDREF` to some node's `alias.` Points to node of the same logical level to insert a new node before it.

`helper` Topic ID of corresponding helper's page.

`ssl` SSL mode for node. If presents, the parameter's value (on or off) specifies whether to force enabled or disabled SSL for this node (the corresponding 'force SSL' option must be enabled in provider's configuration).

Each configuration XML document has `root` as its root element and nodes of any level as its children. Use the `before` attribute to point to exact place for a node insertion.

All optional parameters are inherited from higher level nodes.

Files

Location

All configuration files must be located in one directory. Currently it is

```
/var/opt/hspc-data/Core/CompRep
```

Defaults

Main configuration file must be named `_.xml`.

Order

Files are sorted in alphabetical order before reading. Use it for organizing sequences of dependent configuration blocks.

Inheritance

To add a record to a block, reproduce the whole nesting scheme of the block, using the only alias parameter for matching of parent nodes, and place the record inside the scheme. If a record with such alias already exists, the old record is overrode.

The filter Function Sample

```
sub filter {
      my $node = shift;
      if ($node->{alias} eq 'node_alias1') {
            return tell_us_whether_to_show_this_node();
      } elsif ($node->{alias} eq 'node_alias2') {
            return get_some_option() == 'some_value';
      }
      return 1;
}
```

New Component Sample

Parallels Business Automation - Standard Components Repository provides an opportunity of creating new screens in Parallels Business Automation - Standard.

Important: To get a new screen displayed not only in Provider Control Center, but in Reseller Control Center as well, set the reseller permissions. Go to Configuration Director > Security Manager > Setup and select the Reseller Permissions tab. To grant permissions for reseller to view the new screen, put a tick in the check box next to the new screen name and click OK.

The very first thing you need to do to create a new screen is adding your xml file with definition of a new screen. This definition consists of an entry in menu hierarchy, a perl class name and a method of this class, which will be responsible for forming a new page content.

After this, you need to code your perl class and provide specified method in it. Place the package with this class so perl can find it (you can check search directory seeing content of your `@INC` variable):

```
/usr/bin/perl -V
```

Finally, to let a new screen appear in Parallels Business Automation - Standard, restart the last thing to do One thing that remains new screen arriving is hspcd restart:

```
/etc/init.d/hspcd restart
```

Note: If you want to add a number of screens one-by-one, you can do without restarting hspcd each time you want a new screen to appear in the Parallels Business Automation - Standard interface. To this effect, edit the Parallels Business Automation - Standard configuration file `/etc/hspc/hspc.conf`. Set COMPREP_NOCACHE=1, save changes and restart hspcd. After this new components start appearing in the interface right after you add a new screen definition. However, this degrades the Parallels Business Automation - Standard performance. Thus, when you finish with new components addition, set the COMPREP_NOCACHE=0 in `/etc/hspc/hspc.conf` and restart hspcd.

Now we describe a simple example demonstrating how you can add a new screen.

Place following xml file:

```
<root>
      <director alias="account_director">
            <manager alias="customer_manager">
                  <screen alias="custom_component"
                        method="some_teaser" class="Custom::Component"
                        icon="icon_hp" title_id="pdct_mgr_uc"
                        filter="filter"
                  />
            </manager>
      </director>
</root>
```

into the

`/var/opt/hspc-data/Core/CompRep/cc/account_director_custom.xml`

file.

The director and manager tags were copied from the original account_director.xml, they are already shown in Parallels Business Automation - Standard menu entries (you can see them in Provider Control Center, they are Account Director and Account Director > Customer Manager accordingly.

The new entry is the `screen` tag. It defines

- alias for screen: `custom_component`;
- method of this perl class that will form the page content: `some_teaser`;
- perl class: `Custom::Component`; We describe the perl class later in this topic.
- icon and title for the screen, (we take here already existed examples); As for the screen title, so you can achieve it customizing language packs. Just add the id of your customized string in the screen tag:

```
<screen alias="custom_component" ... title="YOUR_CUSTOMIZED_STRING_ID" />
```

For more information about customizing strings please refer to the corresponding SDK topic (on page 215), where you can know out how to specify a string ID and assign a text value to this string ID.

- filter function, this function manages the screen visibility in the interface. The filter function is needed only if you want to set a strict rules for a screen visibility. If you want a screen to be visible all the time, do not define this function.

Place the following perl class definition into the

`/usr/lib/perl5/site_perl/5.8.8/Custom/Component.pm`

file:

```
package Custom::Component;

use strict;

use HSPC::Application;
use HSPC::WebPage;

## draw page for custom component
## < returns:
## { STATUS => ..., CONTENT => ... } structure
sub some_teaser {
       my $class = shift;
       my $page = HSPC::WebPage->new();
       $page->title();
       $page->tab();
       $page->statuses();

        $page->post_info_text (
              title           => 'custom_component_title',
              content         => 'custom_component_under_construction'
        );

        return      {
              STATUS => 'OK',
              CONTENT      => $page->get_content()
       };
}


## check if screen is needed to be shown
## < returns:
## TRUE -- if screen is needed to be shown, FALSE -- otherwise
```

```
sub filter {
      return 1 if $ENV{SHOW_CUSTOM_COMPONENT};
}

1;
```

Note: Don't forget to check that `/usr/lib/perl5/site_perl/5.8.8/` directory is in your `@INC` paths.

Now you need to restart hspcd in order to make changes available.

If everything is ok, you will see a new entry under the Account Director > Customer Manager menu in Provider Control Center.

Now let's focus on the perl module Custom::Component.

The main thing that this module must provide, is the `some_teaser` method, which has been specified as `method` option in the `screen` tag in our xml example). The return value of this method is the following reference on a hash with entries:

- "STATUS" - possible values: "OK", "ERROR", "REDIRECT", "CUSTOM", "POSTED";
- "CONTENT" - the web page source that is needed to be shown, used if STATUS is "OK" or "CUSTOM";
- "ERROR" - error number, used if STATUS is "ERROR";

Here are the examples illustrating how to use different return values:

STATUS "OK":

```
return { STATUS => "OK", CONTENT => "CONTENT ..." }
```

Normal page is shown in this case.

STATUS "ERROR":

```
return { STATUS => "ERROR", ERROR => 403 }
```

Notify about error.

STATUS "REDIRECT":

```
$ENV{system_obj}->{redirect_local} = 'some_local_URL';
$ENV{system_obj}->{redirect} = 'some_URL';
return {STATUS => 'REDIRECT'};
```

Use one of the environment variables (`redirect_local` or `redirect`) to initiate a local (to one of your site pages) or internal (to other website pages) redirection respectively. For example, if your new custom page is a screen form, let say New Object, then you can use local redirect: after a 'New Object' form is filled and then follows the click on the Save button - a local redirect brings you on the page with the list of such Objects, as this is done in Parallels Business Automation - Standard for new Accounts, new payments, and so on. Then it is necessary to specify in the Component.pm module:

```
$ENV{system_obj}->{redirect_local} = 'some_local_URL';

return {STATUS => 'REDIRECT'};
```

If you use an internal redirect, for example on some other website, then it is necessary to write the following:

```
$ENV{system_obj}->{redirect} = 'full_resirect_URL';

return {STATUS => 'REDIRECT'};
```

Of course, words some_local_URL and full_resirect_URL must be replaced with real path or real full URL.

STATUS "CUSTOM":

```
return {STATUS => 'CUSTOM', CONTENT => 'some_content'}
```

Almost the same as STATUS "OK", the only difference is that no http headers will be added. They are to be added manually.

STATUS "POSTED":

```
return {STATUS => 'POSTED'}
```

Nothing will be output at all. System will assume that both headers and content will be output manually.

CONTENT of the returned page can be formed as you would like it to be. Parallels Business Automation - Standard GUI methods are not used in this case, but you need to provide localized content. The easiest way to do this is the following:

Use the `string` method from `HSPC::Localization` package. In this case, the module described above will look as following:

(# cat /usr/lib/perl5/site_perl/5.8.8/Custom/Component.pm):

```
package Custom::Component;

use strict;

use HSPC::Console;
use HSPC::WebPage;
use HSPC::Localization qw(string);

## draw page for custom component
## < returns:
## { STATUS => ..., CONTENT => ... } structure
sub some_teaser {
	my $class = shift;
	my $page = HSPC::WebPage->new();
	$page->title();
	$page->tab();
	$page->statuses();

	  $page->post_info_text (
		title		=> string( 'custom_component_title' ),
		content		=> string( 'custom_component_under_construction' )
	  );

	  return	{
		STATUS => 'OK',
		CONTENT	=> $page->get_content()
	};
}


## check if screen is needed to be shown
## < returns:
```

```
## TRUE -- if screen is needed to be shown, FALSE -- otherwise
sub filter {
      return 1;
}

1;
```

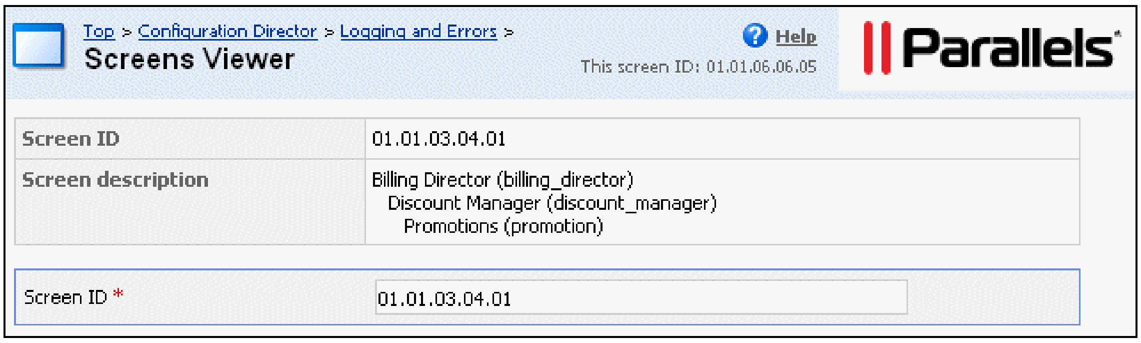
--snap

Please note, that string IDs used as arguments for string method must be valid. These IDs can belong to already existing strings in Parallels Business Automation - Standard or customized ones. In the latter case, please provide customization for all languages your system will support (on page 215).

Screen Aliases Based Customization in Control Centers

Together with screen IDs, the Control Centers screens have alphabetical names called *aliases*. Screen alias is not shown anywhere on a screen, but exactly an alias defines a particular screen in a Control Center hierarchy.

You can find a screen alias by clicking on screen ID. For example, screen ID is 01.01.03.04.01 (in our example, this is Billing Director > Discount Manager > Promotions):


Top > Configuration Director > Logging and Errors >
Screens Viewer
Help
This screen ID: 01.01.06.06.05
Parallels

Screen ID	01.01.03.04.01
Screen description	Billing Director (billing_director) Discount Manager (discount_manager) Promotions (promotion)

Screen ID * 01.01.03.04.01

Screen alias in this case is shown in brackets and its value is `promotion`.

Please pay attention to the fact that the full nesting structure, in accordance with the Control Center menu structure, is shown for a target screen.

How customization is applied: Customization is applied in a cumulative order - starting from a 'child' screen and up to a 'parent' screen. Parent screens customization affects all the child ones. First, the ending screen module is parsed (in our example, this is the `promotion` screen, if customization is found, it is applied, then the parent screens are parsed: first `discount_manager`, then `billing_director`. If customization is found for these screens, it is added to a previously found one. Customization found for a 'parent' screens is applied to all the child screens. For example, if you customize the `discount_manager` screen, this customization will be applied to all screens under the Discount Manager. Thus, to customize a group of screens, use a Manager or a Director alias as a customization module name.

You can customize any screen in Provider or Reseller Control Center by writing a customization module for the corresponding screen. The name of a module should follow the screen alias.

For example, for the screen with ID 01.01.01.01 (Account Director > Customer Manager > Customers) with screen alias `customers` the module name should be `customers.pm`.

PBAS Control Centers components nesting level and belonging are also reflected in their screen IDs. Any screen ID consists of five digits:

Component	Product ID	Tool ID	Director ID	Manager ID	Screen
Director	Constant. Always must be 01	Constant. 01 for PCC, 02 for RCC	Director ID	00	00
Manager on a second nesting level			Director ID	Manager ID	00
Component under a Manager or other component without nested ones.			Director ID or component ID	Manager ID or component ID	Component ID

Control Center Screen Customization Module Sample

A special method called `customize` should be defined in a customization module.

This method should accept an HTML text as an argument and return the customized HTML text to be sent to a client browser. This method will be called right before sending out an HTML page to a client.

Example: Customizing screen in Provider Control Center

We customize the Support > Contacts screen. Screen ID is 01.01.09.10.00. By clicking on screen ID we discover screen alias. The screen alias is `support_tab_con`. Thus, the customization module must be named by its alias and placed here::

`/var/opt/hspc-root/custom/screen/support_tab_con.pm`

Module text:

```
package HSPC::Custom::Screen::support_tab_con;
use strict;
use HSPC::Custom::Screen;
sub customize {
        my ($stream, $alias) = @_;
        ## insert the message
        my $msg = "This message was inserted by screen alias customization in
PCC.<br>\n";
        $stream = $msg . $stream;
        ## return customized text
        return $stream;
}#/customize
1;
```

After you will place the customization module into the right directory, you will need to restart hspcd for changes to take effect:

```
/etc/init.d/hspcd restart
```

If everything goes right, you will see This message was inserted by screen alias customization in PCC. message at the top of the Support screen.

Customizing Customer Control Panel

Control Panel Screen Structure

The Control Panel screen consists of the two main parts:

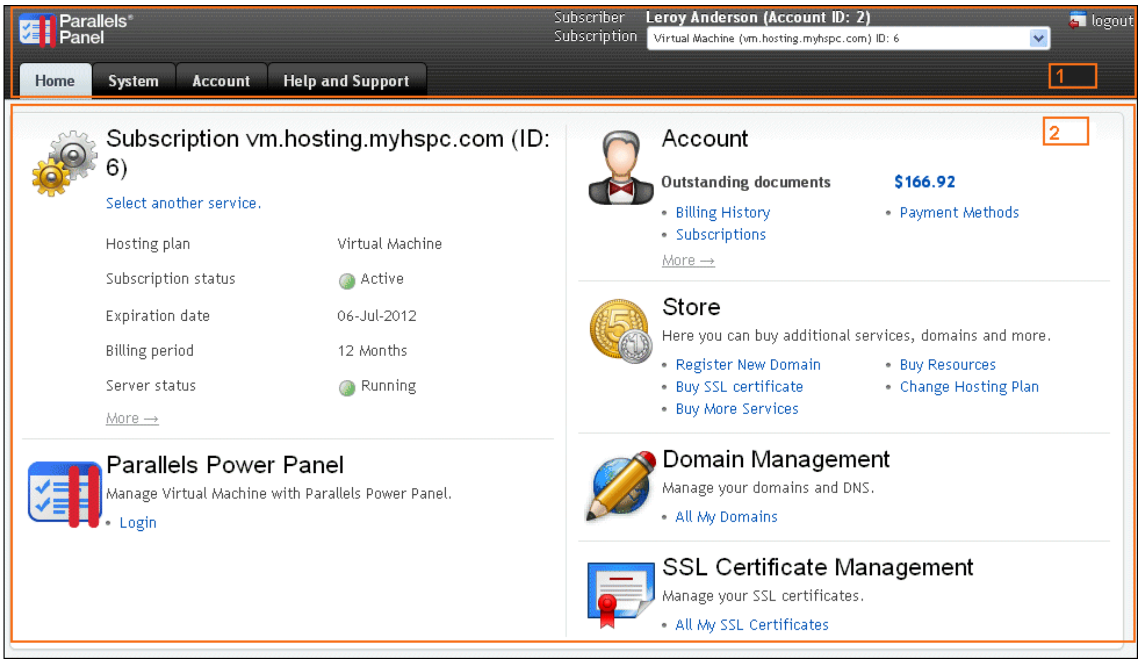
- **Top frame** (1) that displays the following:
    - Logotype
    - Tabs
    - Subscription selector
    - Logout link

Set of tabs shown on the top frame differs depending on the type of the subscription selected.

Top frame can be customized by means of template based customization (on page 162). Top frame template is located here:

```
/var/opt/hspc-
root/skins/panel/template/HSPC/CP/Visual/top_frame.tmpl
```

- **Main frame** (2) that displays links to services according to the selected subscription and the selected tab.


Parallels Panel
Subscriber Leroy Anderson (Account ID: 2)
Subscription Virtual Machine (vm.hosting.myhspc.com) ID: 6
logout
Home
System
Account
Help and Support
1
2

Subscription vm.hosting.myhspc.com (ID: 6)

Select another service.

Hosting plan	Virtual Machine
Subscription status	Active
Expiration date	06-Jul-2012
Billing period	12 Months
Server status	Running

More →

Parallels Power Panel

Manage Virtual Machine with Parallels Power Panel.

- Login

Account

Outstanding documents $166.92

- Billing History
- Subscriptions
- Payment Methods

More →

Store

Here you can buy additional services, domains and more.

- Register New Domain
- Buy SSL certificate
- Buy More Services
- Buy Resources
- Change Hosting Plan

Domain Management

Manage your domains and DNS.

- All My Domains

SSL Certificate Management

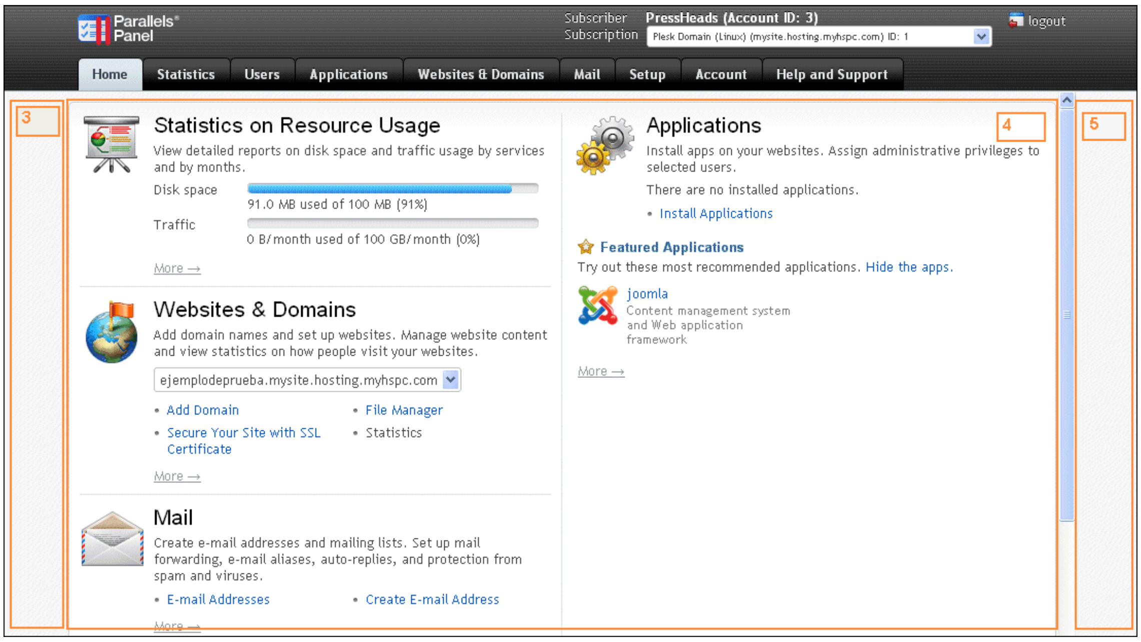
Manage your SSL certificates.

- All My SSL Certificates

For Parallels Plesk Panel (Plesk) and Parallels Operations Automation (POA) subscriptions the **Main frame** parts aside letting Plesk or POA original panel be shown on center. Thus, in this case the Main frame appears to be subdivided into three areas:

- **Left frame** (3) that belongs to PBAS and can be customized.
- **Service specific frame** (4) that displays original Plesk or POA panel that opens in PBAS Control Panel window and thus, it should be customized on Plesk or POA side, if needed.
- **Right frame** (5) that also belongs to PBAS and can be customized.

Note: Beginning with Pesk 11, left and right frames are not drawn in Customer Control Panel. Instead, only original Plesk panel is drawn in PBAS frame. UI customization for Plesk 11 is possible for top frame only.



Statistics on Resource Usage

View detailed reports on disk space and traffic usage by services and by months.

Disk space 91.0 MB used of 100 MB (91%)

Traffic 0 B/month used of 100 GB/month (0%)

More →

Websites & Domains

Add domain names and set up websites. Manage website content and view statistics on how people visit your websites.

ejemplodeprueba.mysite.hosting.myhspc.com

- Add Domain
- File Manager
- Secure Your Site with SSL Certificate
- Statistics

More →

Mail

Create e-mail addresses and mailing lists. Set up mail forwarding, e-mail aliases, auto-replies, and protection from spam and viruses.

- E-mail Addresses
- Create E-mail Address

More →

Applications

Install apps on your websites. Assign administrative privileges to selected users.

There are no installed applications.

- Install Applications

Featured Applications

Try out these most recommended applications. Hide the apps.

joomla
Content management system and Web application framework

More →

Left and Right frames can be customized by means of template based customization (on page 162). Left and Right frames templates are located here:

`/var/opt/hspc-root/skins/panel/template/HSPC/CP/Visual/leftframe.tmpl` - Left frame (3).

`/var/opt/hspc-root/skins/panel/template/HSPC/CP/Visual/rightframe.tmpl` - Right frame (5).

Note: If you want your customization be shown for all subscription types (for example PVC, Plesk, and POA), you will need to customize Main Frame and Left or Right frames, because Main frame is replaced with service area for Plesk and POA subscriptions.

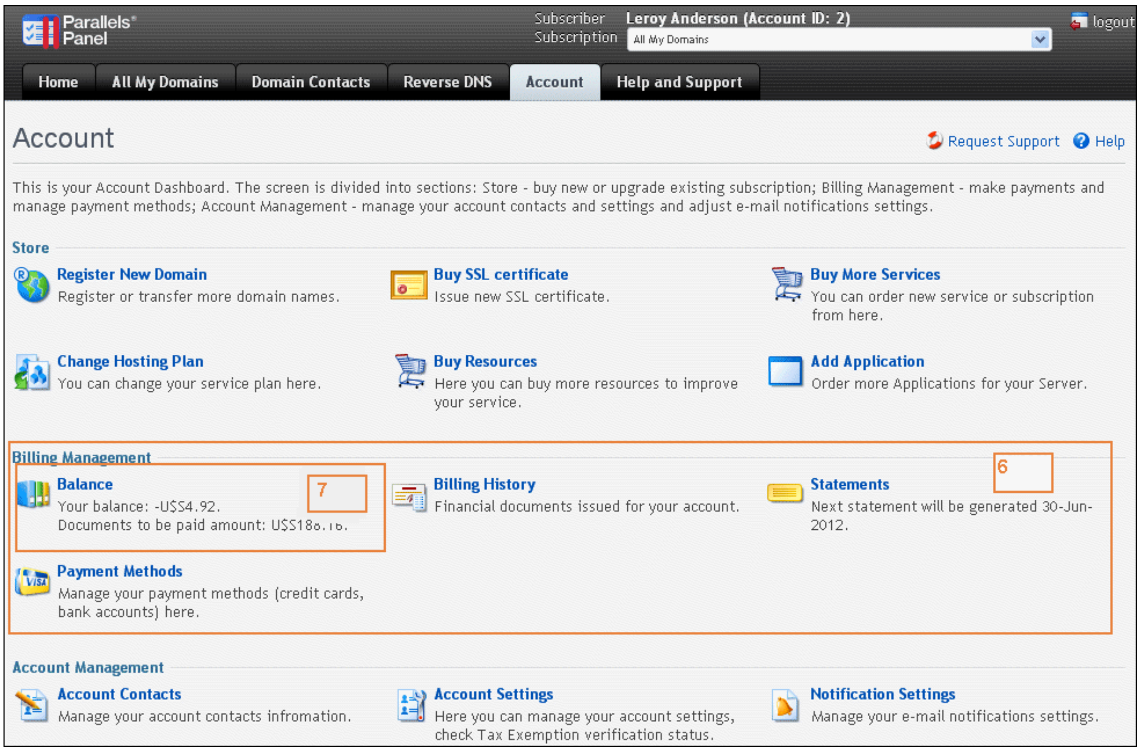
Depending on the selected tab and type of the subscription, the Main frame area of the Control Panel displays different types of interface elements:

- **Home** (2). The Home tab is selected. The Subscription type selected is non Plesk or POA. This screen can be customized by means of the template based customization. Original template location is:

  ```
  /var/opt/hspc-
  root/skins/panel/template/HSPC/CP/Menu/home.tmpl
  ```
- **Dashboard**. The Account, Help and Support, or System tab. This screen can be customized either by one of the following ways:
  - Template based customization. Original template location:

  ```
  /var/opt/hspc-
  root/skins/panel/template/HSPC/CP/Menu/dash.tmpl
  ```
  - CP customization module (on page 177).

Control Panel *dashboards* are shown under the Account, Help and Support tabs and also under the System tab. The Account dashboard is shown on the screenshot below:



Account

This is your Account Dashboard. The screen is divided into sections: Store - buy new or upgrade existing subscription; Billing Management - make payments and manage payment methods; Account Management - manage your account contacts and settings and adjust e-mail notifications settings.

Store

Register New Domain
Register or transfer more domain names.

Buy SSL certificate
Issue new SSL certificate.

Buy More Services
You can order new service or subscription from here.

Change Hosting Plan
You can change your service plan here.

Buy Resources
Here you can buy more resources to improve your service.

Add Application
Order more Applications for your Server.

Billing Management

Balance
Your balance: -US$4.92.
Documents to be paid amount: US$188.16.

Billing History
Financial documents issued for your account.

Statements
Next statement will be generated 30-Jun-2012.

Payment Methods
Manage your payment methods (credit cards, bank accounts) here.

Account Management

Account Contacts
Manage your account contacts infromation.

Account Settings
Here you can manage your account settings, check Tax Exemption verification status.

Notification Settings
Manage your e-mail notifications settings.

Dashboard consists of *sections* (6). For example, Store, Billing Management, Account Management are sections of the Account dashboard.

Dashboard sections contain *items* (7). For example, Balance, Billing History, Payment Methods are items in the Billing Management section. Dashboard elements can be added or hidden using customization module (on page 178). See also: Control Panel Dashboard IDs Table (on page 179).

- **The rest of CP screens** that can be reached clicking on dashboards' items, such as lists of objects or objects details, can be customized by means of screen ID based customization (on page 189).

Control Panel Top Frame and Tabs Customization

Tabs can be customized by means of the Top frame template. Top frame template is located here:

```
/var/opt/hspc-
root/skins/panel/template/HSPC/CP/Visual/top_frame.tmpl
```

Example: Hide Domain Contacts tab:

1. Copy the template to custom location:

   ```
   /var/opt/hspc-
   root/custom/template/HSPC/CP/Visual/top_frame.tmpl
   ```

2. Discover the Domain Contacts tab ID:

   a Log in to Control Panel and select All my domains from the subscription selector located at the CP top frame to the right. View HTML code of the Top frame.

   b Search for the sample: `Domain Contacts`. The surrounding code contains tab ID:

```
<li class id="system_domains_domconts">
      <a
onclick="topTab(this);showButtonIndicator(this);doSubmit('/cp/index.cgi/subscr
iption/domconts','main');" href="javascript:void(0)"
      <span>Domain Contacts</span></a>
</li>
```

   Tab ID is `system_domains_domconts`.

   c Open the file:

   ```
    /var/opt/hspc-
   root/custom/template/HSPC/CP/Visual/top_frame.tmpl.
   ```

   Search for the following sample:

```
{
        foreach my $m ( @{$menu} ) {
               my $url = $m->{url} || "/cp/index.cgi/top/zone,$m->{tab}";
                my $name = $m->{title};
                my $tab = $m->{tab};
                $OUT .= qq{
                                                <li class="" id="$tab">
                                                        <a
onclick="topTab(this);showButtonIndicator(this);doSubmit('$url','main');"
href="javascript:void(0)"><span>$name</span></a>
                                                </li>};
        }
}
```

d Add the string "`next if ($tab eq 'system_domains_domconts');`" so that the code looks as follows:

```
{
        foreach my $m ( @{$menu} ) {
               my $url = $m->{url} || "/cp/index.cgi/top/zone,$m->{tab}";
                my $name = $m->{title};
                my $tab = $m->{tab};
                next if ($tab eq 'system_domains_domconts');
                $OUT .= qq{
                                                <li class="" id="$tab">
                                                        <a
onclick="topTab(this);showButtonIndicator(this);doSubmit('$url','main');"
href="javascript:void(0)"><span>$name</span></a>
                                                </li>};
        }
}
```

The added string skips the Domain Contacts tab, so that it is not rendered.

e Save the changes. Refresh the Control Panel screen to see the customization result.

Customizing Main Frame

Main frame can be customized by means of template based customization. Possible templates are:

- **Right and left frames**. Original templates location:

  `/var/opt/hspc-root/skins/panel/template/HSPC/CP/Visual/leftframe.tmpl`

  `/var/opt/hspc-root/skins/panel/template/HSPC/CP/Visual/rightframe.tmpl`

- **Dashboards**. Original template location:

  `/var/opt/hspc-root/skins/panel/template/HSPC/CP/Menu/dash.tmpl`

- **Home**. Original template location:

  `/var/opt/hspc-root/skins/panel/template/HSPC/CP/Menu/home.tmpl`

- **Other screens**. Original template location:

  `/var/opt/hspc-root/skins/panel/template/site_7/HSPC/Site/Layout/service_default.tmpl`

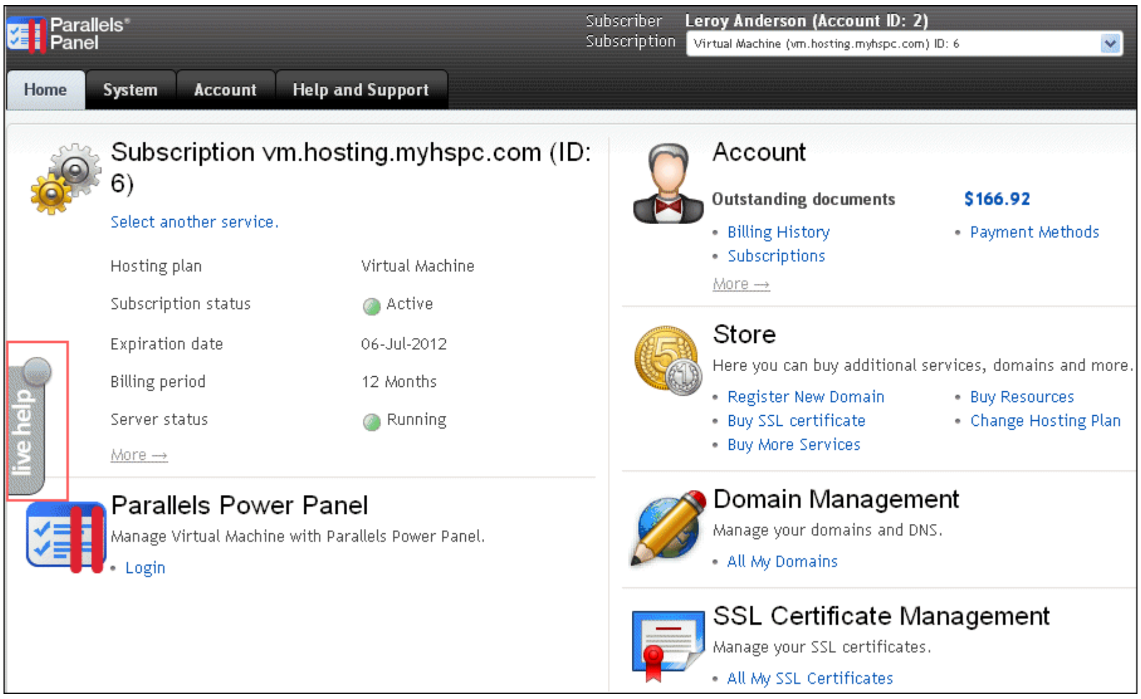
Before starting customization, copy the templates to customization directories. To get the custom path, drop `/skins/panel` directories and create the `/custom` directory instead. For example:

`/var/opt/hspc-root/custom/template/HSPC/CP/Menu/home.tmpl`

Example: Add site badge to Control Panel main frame.

1. Get site badge code. If you would like to add a site badge to CP main frame, for example Kayako live chat or Twitter, you can generate the needed code at their websites using tag generator.
2. Add code to template. Open the template and search for the `<body` tag. Insert your code inside the `body` tag.
3. Save the changes and refresh the screen to view the customization.

The customized screen will look as follows (for example, we added the Kayako live chat):



Leroy Anderson (Account ID: 2)
Virtual Machine (vm.hosting.myhspc.com) ID: 6

Subscription vm.hosting.myhspc.com (ID: 6)
Select another service.

Hosting plan	Virtual Machine
Subscription status	Active
Expiration date	06-Jul-2012
Billing period	12 Months
Server status	Running

More →

Parallels Power Panel
Manage Virtual Machine with Parallels Power Panel.
- Login

Account
Outstanding documents $166.92
- Billing History
- Payment Methods
- Subscriptions

More →

Store
Here you can buy additional services, domains and more.
- Register New Domain
- Buy Resources
- Buy SSL certificate
- Change Hosting Plan
- Buy More Services

Domain Management
Manage your domains and DNS.
- All My Domains

SSL Certificate Management
Manage your SSL certificates.
- All My SSL Certificates

Note: If you want to show your customization for all types of subscriptions in CP, then you need to add your custom code to all the four templates mentioned above.

Customizing Control Panel Dashboard

This section describes how you can add, delete, or customize the interface elements available in the Parallels Business Automation - Standard Control Panel user interface.

Control Panel Dashboard Customization Module Location

The CP dashboard customization file is named `CP.pm` and located under the directory:

```
/var/opt/hspc-root/custom/dash
```

To customize the Control Panel dashboard, it is needed to add a custom code in the `CP.pm` file. The method called `customize` is to be used.

The basic methods are:

- `add_item_to_section` used to add an item or a section
- `delete_menu_item` or `delete_menu_section` used to remove an item or a section respectively.

Below we will show what you should add to this function in order to customize dashboard controls.

Access Method

The HSPC::CP::Menu package is used for Control Panel dashboards.

To add items to an existing section of the dashboard or to add a new section and items to a dashboard, use the `add_item_to_section` method.

Input parameters are:

Required parameters:

- menu – menu
- section_id – id of section. This is unique section ID. If section with specified ID not found it will be created.
- section_tab – control panel tab (available values are: `system`, `account`, `help`)
- items – items for adding (reference to array of hashes)

Optional parameters:

- section_title – section title. Require only if section not yet exists
- dup_mode – action for duplicate items: 'skip' or 'replace'. This parameter specifies what to do if one (or several) passed items are already exists in the menu. If “dup_mode” not present or undefined the method returns error message “duplicate_item_id”. If the value is “skip” the method will not return error and will not add duplicate items to the menu. If the value is “replace” the method will replace existing item(s).

Return value:

- undef (if success) or error message (if something goes wrong).

This method will create a new section if the passed `section_id` does not match any of the existing sections IDs. Please refer to the Control Panel Dashboard IDs Table (on page 179) for full list of section and item IDs used in the Control Panel.

Important: If you are sure that section ID does not exist, always specify the “section_title” parameter in order to give a title for a newly created section. If the title was not passed, the method uses “NoName” as a section title.

Control Panel Dashboard IDs

Below is the List of common dashboards IDs. You can examine the raw dashboard structure to learn more about sections and items IDs.

ID	Type
person_header	section
person_header_head	item
person_header_title	item
person_header_logout	item
person_management	section
person_management_head	item

person_manage_profile	item
person_email	section
person_email_head	item
person_email_openwebmail	item
account_header	section
account_header_head	item
account_header_title	item
account_header_change	item
account_management	section
account_management_head	item
account_account_management_contacts	item
account_account_management_settings	item
billing_management	section
billing_management_head	item
billing_management_balance	item
billing_management_history	item
billing_management_subscrs	item
account_billing_management_orders	item
billing_management_statements	item
billing_management_creditcards	item
campaigns_management	section
campaigns_list	item
campaign_sales	item
site_header	section
site_header_head	item
site_header_title	item
site_header_change	item
site_header_new	item
site_website_management	section
site_website_management_head	item
site_website_management_settings	item

site_website_management_files	item
site_website_management_stat	item
upgrade_header	section
upgrade_header_head	item
upgrade_header_hosting_plan	item
upgrade_header_buy_resources	item
upgrade_header_add_application	item
upgrade_header_registar_domain	item
system_subscr_header	section
system_subscr_header_head	item
system_subscr_header_title	item
system_subscr_header_change	item
system_subscr_header_upgrade_my_hosting_plan	item
system_subscr_header_buy_new_hp	item
system_server_mgmt	section
system_server_mgmt_head	item
system_server_mgmt_info	item
system_server_mgmt_apache	item
system_server_mgmt_fm	item
system_server_mgmt_proftpd	item
system_server_mgmt_webmin	item
system_server_mgmt_backup	item
system_dbmanagement	section
system_dbmanagement_head	item
system_dbmanagemnt_mysql	item
system_ftp	section
system_ftp_head	item
system_ftp_account	item
system_ugm	section
system_ugm_head	item
system_ugm_users	item

system_ugm_groups	item
system_ve_services	section
system_ve_services_head	item
system_ve_services_list	item
system_ve_sevices_log_files	item
system_mail_mgmt	section
system_mail_mgmt_head	item
system_mail_mgmt_server_link	item
system_mail_mgmt_mailboxes_link	item
system_mail_mgmt_forwards_link	item
system_mail_mgmt_maillists_link	item
system_mail_mgmt_spam_filters_link	item
system_pc_dash_tools	section
system_pc_dash_tools_preferences	item
system_pc_dash_tools_skeleton	item
system_pc_dash_tools_logo	item
system_pc_dash_tools_edit	item
system_pc_dash_tools_extras	item
system_pc_dash_tools_custom_buttons	item
system_pc_dash_tools_manage	item
system_pc_dash_tools_ip_pool	item
system_pc_dash_tools_limits	item
system_pc_dash_tools_new_domain	item
system_pc_dash_tools_domain_templates	item
system_pc_dash_tools_permissions	item
system_pc_dash_tools_report	item
system_pc_dash_tools_traffic	item
site_mail_mgmt	section
site_mail_mgmt_head	item
site_mail_mgmt_mailboxes_link	item
site_mail_mgmt_forwards_link	item
domains	section
system_domains_domains	item

system_domains_domconts	item
site_other	section
site_other_head	item
site_other_crontab	item
site_other_testadd	item
help_header	section
help_header_head	item
help_main_doc	item
help_main_support	item
help_main_ftse	item
help_main_ts	item

Samples

Below are code samples for basic use cases.

Add New Section

The example offered below illustrates how to create a new section and add items to this section. Below is a custom code to be added to the `CP.pm` (on page 178) file.

```
       ## add new item to existing section
       ##
       my $menu_tab = 'system';
       my $section_id = 'system_test_section';

       #######################################################
       ## create new section and add two items to it
       ##
       my $items = [];

       ## define items for addition
       push @$items, {
              title => "Test Item 1",
         title_desc => "The Item 1 Description",
              url_title => 'test_item1_URL_title',
              url => "/test_item1",
              icon => "icon_srvs",
              id => $menu_tab.'_test_section_testadd1',
              tab => $menu_tab,
       };
       push @$items, {
              title => "Test Item 2",
         title_desc => "The Item 2 Description",
              url_title => 'test_item2_URL_title',
              url => "/test_item2",
              icon => "icon_srvs",
              id => $menu_tab.'_test_section_testadd2',
              tab => $menu_tab,
       };
       ## add new section and items to it.
       my $error = HSPC::CP::Menu->add_item_to_section (
                     menu => $menu,
                     section_id => $section_id,
                     section_tab => $menu_tab,
                     section_title => 'Test section',
                     items => $items,
              );
```

In this example the “add_item_to_section” method adds a new section with ID 'system_test_section’. This new section will be visible at the Control Panel System tab with the “Test section” title and will contain two items inside.

In order to add a new menu item to existing section you have to know its ID. The list of section IDs is attached.

Add New Item to Existing Section

The example below illustrates how to add a new item to the existing section (for example, section ID='site_other'). Below is a custom code to be added to the `CP.pm` (on page 178) file.

```
       my $menu_tab = 'system';
       my $section_id = 'site_other';

       my $items = [];

       ## add new item to existing section
       ##
       my $menu_tab = 'site';
       my $section_id = 'site_other';

       my $items = [];
       ## define item for addition
       push @$items, {
              title => "Additional Element",
         title_desc => "Additional Element Description",
              url_title => 'URL title of additional element',
              url => "/additional_element",
              icon => "icon_srvs",
              id => 'site_other_testadd',
              tab => $menu_tab,
       };
       ## add item.
       my $error = HSPC::CP::Menu->add_item_to_section (
                     menu => $menu,
                     section_id => $section_id,
                     section_tab => $menu_tab,
                     items => $items,
              );
```

Replace Item in Existing Section

This section advises how to replace the existing item with a new one. Below is a custom code to be added to the CP.pm (on page 178) file.

The code example replaces the “Crontab” item in “Site” tab with a new one.

```
      my $menu_tab = 'site';
      my $section_id = 'site_other';

      my $items = [];

      #########################################################
      ## replace the Crontab item (id=’site_other_crontab’)
      ## to a new item
      ##

      $menu_tab = "site";
      my $item_id = 'site_other_crontab';
      push @$items, {
             title => "Replaced Test Item2",
        title_desc => "The Item 2 Description",
             url_title => 'replaced_test_item2',
             url => "/replaced_test_item2",
             icon => "icon_srvs",
             id => $item_id,
             tab => $menu_tab,
      };

      ## replace item
      my $error = HSPC::CP::Menu->add_item_to_section (
                    menu => $menu,
                    section_id => $section_id,
                    section_tab => $menu_tab,
                    items => $items,
                    dup_mode => 'replace',
             );
```

Delete Item and Section

To delete a menu or a dashboard item or section, use the “delete_menu_item” or “delete_menu_section” methods respectively. Below is a custom code to be added to the `CP.pm` (on page 178) file.

The example below illustrates how these methods can be used.

```
      ## delete menu item
      my $error = HSPC::CP::Menu->delete_menu_item (
                    menu => $menu,
                    item_id => $item_id,
             );

      ## delete menu section
      my $error = HSPC::CP::Menu->delete_menu_section (
                    menu => $menu,
                    section_id => $section_id,
             );
```

The full source code of the example is attached (on page 187).

Full Source Code of the HSPC::Custom::Menu::CP

Below is the full source code of the example package HSPC::Custom::Menu::CP.

```
package HSPC::Custom::Menu::CP;

use strict;

use HSPC::CP::Menu;
use HSPC::Logger qw(sw_die);

##------------------------------------------------------------------------------
## >>  class
## =>> menu : ref to array
sub customize {
	my ($self,%h) = @_;
	sw_die('menu => undefined') unless $h{menu};
	my $menu = $h{menu};

	##
	## add new item to existing section
	##
	my $menu_tab = 'site';
	my $section_id = 'site_other';

	my $items = [];
	## define item for addition
	push @$items, {
		title => "Additional Element",
	  title_desc => "The element description",
		url_title => 'URL title of additional element',
		url => "/additional_element",
		icon => "icon_srvs",
		id => 'site_other_testadd',
		tab => $menu_tab,
	};
	## add item.
	my $error = HSPC::CP::Menu->add_item_to_section (
			menu => $menu,
			section_id => $section_id,
			section_tab => $menu_tab,
			items => $items,
		);


	#########################################################
	## create new section and add two items to it
	##
	$section_id = 'site_test_section';
	$items = [];
	## define items for addition
	push @$items, {
		title => "Test Item 1",
		url_title => 'test_item1_URL_title',
		url => "/test_item1",
		icon => "icon_srvs",
		id => $menu_tab.'_test_section_testadd1',
		tab => $menu_tab,
	};
	push @$items, {
		title => "Test Item 2",
		url_title => 'test_item2_URL_title',
		url => "/test_item2",
		icon => "icon_srvs",
		id => $menu_tab.'_test_section_testadd2',
		tab => $menu_tab,
	};
```

```
       ## add new section and items to it.
       my $error = HSPC::CP::Menu->add_item_to_section (
                     menu => $menu,
                     section_id => $section_id,
                     section_tab => $menu_tab,
                     section_title => 'Test section',
                     items => $items,
              );


       #########################################################
       ## replace the last element in previously added section
       ## to a new item
       ##

       ## define item for replace (this element will replace the testadd2
element)
       $menu_tab = "site";
       my $item_id = 'site_hekima_testadd2';
       push @$items, {
              title => "Replaced Test Item2",
              url_title => 'replaced_test_item2',
              url => "/replaced_test_item2",
              icon => "icon_srvs",
              id => $item_id,
              tab => $menu_tab,
       };

       ## replace item
       my $error = HSPC::CP::Menu->add_item_to_section (
                     menu => $menu,
                     section_id => $section_id,
                     section_tab => $menu_tab,
                     items => $items,
                     dup_mode => 'replace',
              );

       ##
       ## delete menu item
       ##
       my $error = HSPC::CP::Menu->delete_menu_item (
                     menu => $menu,
                     item_id => $item_id,
              );

       ##
       ## delete menu section
       ##
       my $error = HSPC::CP::Menu->delete_menu_section (
                     menu => $menu,
                     section_id => $section_id,
              );

       return 1;
}

1;
```

Control Panel Screens Customization Using Screen IDs

All Parallels Business Automation - Standard screens have the unique screen ID that consists of five numbers divided with dots (e.g.,). You can find the screen ID by viewing the source code of the screen and searching by the 'screen' keyword.

You can customize PBAS Control Panel screens by writing a customization module for the corresponding screen.

For Control Panel screens, the name of a customization module should follow the screen ID but with dots replaced with underscores (e.g., for screen with ID 01.04.20.01.05 the module name should be 01_04_20_01_05.pm).

Important: Please carefully follow both the directories structure and naming conventions outlined earlier (on page 157) to store your customized files.

A special method called `customize` should be defined in a customization module. This method should accept an HTML text as an argument and return the customized HTML text to be sent to a client browser. This method will be called right before sending out an HTML page to a client.

A special API is provided to facilitate screens customization.

Customization API Methods

In this paragraph we explain how you can discover the name of CP screen element

Here we introduce a notion of *control* that should be understood as one of the elements at the screen (e.g., an editable field, a checkbox, an option button, form heading, etc.).

The following four methods are available and automatically exported from the HSPC::Custom::Screen module:

- `sw_cu_insert_before` - insert a custom text before some control;
- `sw_cu_insert_after` - insert a custom text after some control;
- `sw_cu_replace` - replace a control with custom text;
- `sw_cu_find` - find a control, return a control HTML text.

Methods `sw_cu_insert_before`, `sw_cu_insert_after`, and `sw_cu_replace` accept the following arguments:

- `ctrl_type` - type of the control (see below for details)
- `ctrl_id` - ID of the control
- `stream` - original HTML text
- `custom_text` - custom text

and return the customized HTML text.

The `sw_cu_find` method accepts the following arguments:

- `ctrl_type` - type of the control (see below for details)
- `ctrl_id` - ID of the control
- `stream` - original HTML text

and returns the control HTML text.

The customization module should be placed in the following directory:

```
/var/opt/hspc-root/custom/screen/
```

The following controls' types are available for customization:

General page controls:

- path - path at the very top of the page
- title - title of the page shown right below path
- top_link - top links like Help (id 'open_help'), Add Comment (id 'add_comment'), etc
- page_description - page description shown in Control Panel
- tabs - page tabs (id = 'item')
- page_title - the whole page header including tabs and everything above

Listing page controls:

- paging - paging bar above lists (includes page numbers and switches number of items per page)

- actions_bar - the bar at the bottom of the screen that allows performing actions over Containers (create, start, stop, etc.)
- browse - the whole listing section starting from column names and till the last row of the list
- frequency_bar - bar for setting up time frequency (shown in Billing Manager - Reports - Summary - Aged A/R Reports)
- ranges_bar - bar for setting up date/time range (for instance, it is shown in the Action Log)
- search_bar - search bar shown right above the list; it includes both the Search and the Filter options

Edit form controls:

- cell_title - field title
- cell_check - checkbox
- cell_combo - drop-down menu or combo-box (i.e, a drop-down menu with ability both to select one of pre-defined variants or type a new one)
- cell_datetime - several drop-down boxes and input fields for setting up a date/time (e.g., in Promotion edit form or in Tax Rates)
- cell_file - file upload
- cell_input - input field where you can type something
- cell_textarea - text area field, i.e., an input field for several strings
- cell_list - multi-select box with button add/remove like in "Available Card Types" in payment plug-ins settings
- cell_lists2 - two multi-select boxes with '<<' and '>>' buttons and optional Up/Down buttons
- cell_period - input field and select box with Minute/Hour/Day/Month
- cell_popup - input field with button which opens the popup window
- cell_radio - radio button
- edit_open - the entire form

Other controls:

- form - the whole edit form (e.g., a form for editing a Promotion properties)
- view - the whole view form (e.g., a form for viewing a Promotion properties)
- button - any button on the screen.

Discovering Screen ID and the Name of Screen Element to Customize

Discover Screen ID

To know out the screen ID, view the scren HTML code and search for the word screen. You will get the sample as:

```
 <!--This screen ID: 01.04.25.03.01-->
```

Discover Screen Element Name

Internally, the Parallels Business Automation - Standard marks all of the elements (i.e., controls) on the page with the special metatags:

```
<!-- TAG type="X" id="Y" -->
```

and

```
<!-- /TAG type="X" id="Y" -->
```

where "X" represents the type of control (e.g., "cell_combo" or "cell_check") and "Y" represents the control ID. The control ID is an alphabetical identifier that explicitly identifies a particular control and allows you to explicitly define a particular field you want to customize since an edit form can include several controls of the same type. For example, in the Account Settings form in the Control Panel My Account zone, there are several controls of cell_combo type: State (US or Canada), State (other countries), and Country. If you want to customize the Country field, you need to use the cell_combo control with the address_country ID. We provide the example of the Country field customization module (on page 194).

The metatags mentioned above allow you to fetch the name of control and customize it using the facilities described in this section. By default, all the metatags are removed from an HTML output right before sending an HTML to a client browser. However, if you want to see these tags, you can temporary disable the metatags automated removal by turning on the setting Do not remove metatags from page content in PCC -> Configuration Director -> Miscellaneous Settings > Inteface Settings.

➢ *To know out the type and ID if the control you want to customize:*

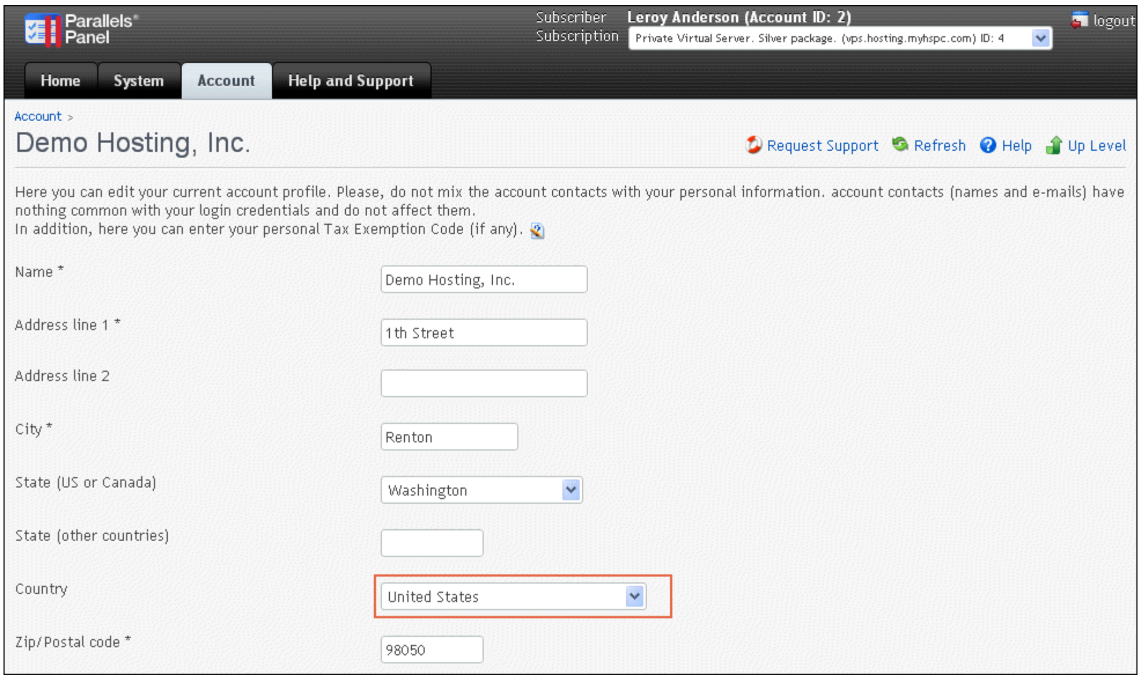
1. Turn on the Do not remove metatags from page content setting as this described above
2. Go to the screen you want to customize, right-click somewhere on the screen and select the View Source option from the context menu that appears.
3. In the HTML code, look for the needed metatag.

For example, let us look at the piece of HTML code describing the Account Settings form (Edit screen) under the Account tab in the Control Panel:

```
<!-- TAG type="cell_combo" id="address__country" -->
<select name="address__country" class=SWs width=""  >
<option value="AF" >Afghanistan</option>
<option value="AL" >Albania</option>
<option value="DZ" >Algeria</option>
<option value="AS" >American Samoa</option>
<option value="AD" >Andorra</option>
```

....

The needed element is the Country drop-down menu:



Subscriber Leroy Anderson (Account ID: 2)
Subscription Private Virtual Server. Silver package. (vps.hosting.myhspc.com) ID: 4

Account >

Demo Hosting, Inc.

Here you can edit your current account profile. Please, do not mix the account contacts with your personal information. account contacts (names and e-mails) have nothing common with your login credentials and do not affect them.
In addition, here you can enter your personal Tax Exemption Code (if any).

Name *	Demo Hosting, Inc.
Address line 1 *	1th Street
Address line 2	
City *	Renton
State (US or Canada)	Washington
State (other countries)	
Country	United States
Zip/Postal code *	98050

Customizing a Single Screen Form

Let us consider the module used to customize the **Account Settings** form in the Control Panel -> **Account** tab - **Account Management** section - **Account Settings** - Edit (screen ID 01.04.18.02.16).

The location of the customization module is the following:

```
/var/opt/hspc-root/custom/screen/01_04_18_02_16.pm
```

The text of the customization module is the following:

```
package HSPC::Custom::Screen::01_04_18_02_16;
use HSPC::Custom::Screen;
sub customize {
my ($stream) = @_;

## replace countries drop-down with read-only text "USA"
$stream = sw_cu_replace(
ctrl_id => 'address__country',
ctrl_type => 'cell_combo',
stream => $stream,
custom_text=> 'USA'.
'<input type=hidden name="address__country"
value="US">',
);

## remove "State (Other countries)" field name
$stream = sw_cu_replace(
ctrl_id => ' address__state_alt',
ctrl_type => 'cell_title',
stream => $stream,
custom_text=> '',
);

## remove "State (Other countries)" input field
$stream = sw_cu_replace(
ctrl_id => ' address__state_alt',
ctrl_type => 'cell_input',
stream => $stream,
custom_text=> '',
);


## find cancel button
my $cancel = sw_cu_find(
ctrl_id => ' btn_cancel',
ctrl_type => 'button',
stream => $stream,
);

## add "disable" property to the button tag
$cancel =~ s/<input/<input disabled/;

## disable cancel button
$stream = sw_cu_replace(
ctrl_id => ' btn_cancel',
ctrl_type => 'button',
stream => $stream,
custom_text=> $cancel,
);

# return customized text
return $stream;
}
1;
```

Customizing a Group of Screens

You can also apply the same customization to a group of screens. For example, you can apply customization to all pages with screen IDs beginning with 01.04.18 - this corresponds to all screens accessible from the Account tab in the Control Panel. Let us consider how you can insert a banner at the top of every screen under the Account tab.

The location of the customization module is the following:

`/var/opt/hspc-root/custom/screen/01_04_18.pm`

The text of the customization module is the following:

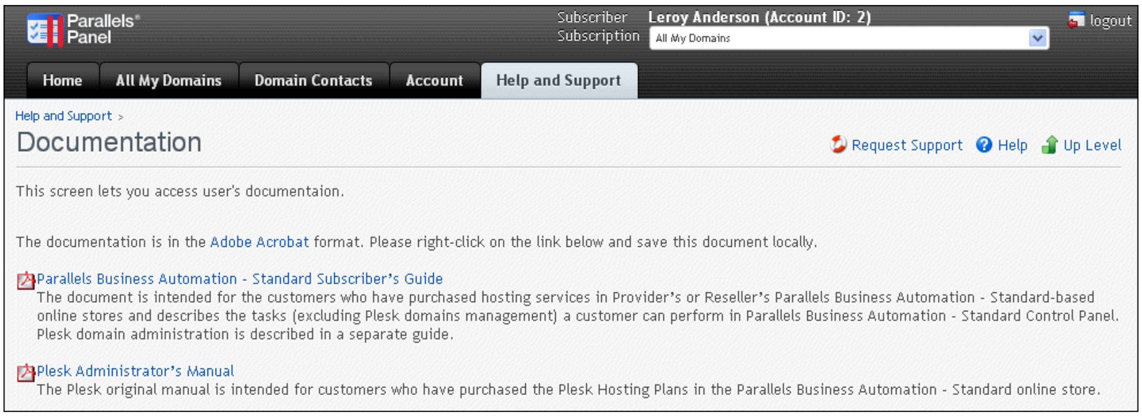
```
package HSPC::Custom::Screen::01_04_18;
use HSPC::MT::Core;
sub customize {
my ($stream) = @_;
# banner HTML code
my $banner = <<BANNER;
<a href="http://www.mycompany.com">
<img src="/images/mybanner.gif" hspace=5></a><br>
BANNER

## add banner at the top of the page
$stream = $banner.$stream;
# return customized text
return $stream;
}
1;
```

Examples of Screen ID Based Customization

Example 1: Change Content of the Documentation Screen.

The default content of CP Documentation screen is following:



Documentation

This screen lets you access user's documentaion.

The documentation is in the Adobe Acrobat format. Please right-click on the link below and save this document locally.

Parallels Business Automation - Standard Subscriber's Guide
The document is intended for the customers who have purchased hosting services in Provider's or Reseller's Parallels Business Automation - Standard-based online stores and describes the tasks (excluding Plesk domains management) a customer can perform in Parallels Business Automation - Standard Control Panel. Plesk domain administration is described in a separate guide.

Plesk Administrator's Manual
The Plesk original manual is intended for customers who have purchased the Plesk Hosting Plans in the Parallels Business Automation - Standard online store.

To customize:

1. Discover the screen ID (on page 192). Documentation screen ID is 01.04.25.03.01.
2. Place the customization module to the custom directory:

   `/var/opt/hspc-root/custom/screen/01_04_25_03_01.pm`

3. Add the following code to the customization module:

```
package HSPC::Custom::Screen::01_04_25_03_01;

use strict;
use HSPC::Custom::Screen;

sub customize
{
        my ($stream) = @_;

        my $new_content=<<CONTENT;
##########################
## Put your new content for Documentation page here, as is.
########################
<p> My custom content is placed here.
</p>
CONTENT

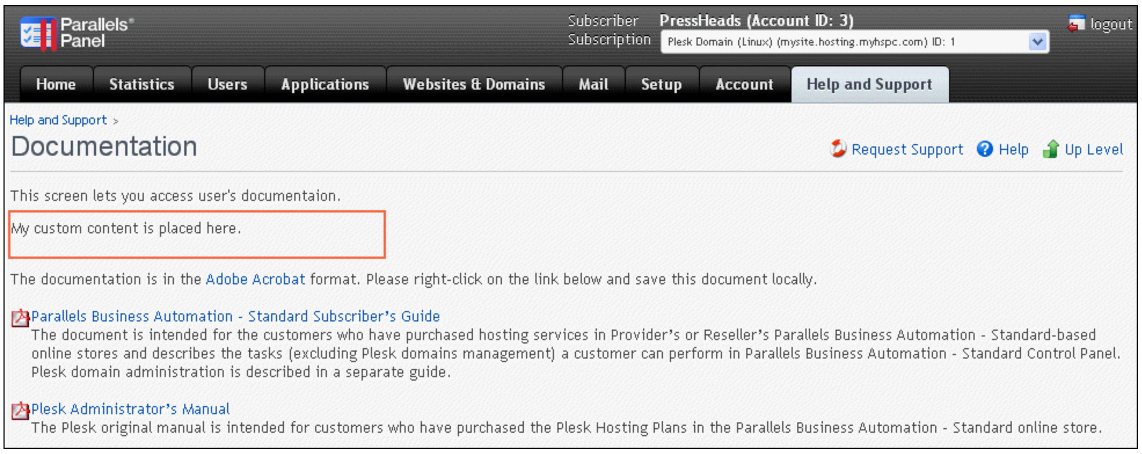
        $stream =~ s/<!-- \/Page description --
>((.|\n)*)<\/td><\/tr><\/table>/$new_content/m;
        return $stream;
}#/customize

1;
```

4. Save the changes to customization module and restart `hspcd` to apply customization:

   `/etc/init.d/hspcd restart`

The customized content for Documentation page looks as follows:



Documentation

This screen lets you access user's documentaion.

My custom content is placed here.

The documentation is in the Adobe Acrobat format. Please right-click on the link below and save this document locally.

Parallels Business Automation - Standard Subscriber's Guide
The document is intended for the customers who have purchased hosting services in Provider's or Reseller's Parallels Business Automation - Standard-based online stores and describes the tasks (excluding Plesk domains management) a customer can perform in Parallels Business Automation - Standard Control Panel. Plesk domain administration is described in a separate guide.

Plesk Administrator's Manual
The Plesk original manual is intended for customers who have purchased the Plesk Hosting Plans in the Parallels Business Automation - Standard online store.

Example 2: Hide the Request Subscription Termination link from the subscription details screen.

1. Discover the screen ID (on page 192). Subscription details screen ID is 01.04.18.14.01.
2. Place the customization module to the custom directory:

   `/var/opt/hspc-root/custom/screen/01_04_18_14_01.pm`

3. Add the following code to the customization module:

```
package HSPC::Custom::Screen::01_04_18_14_01;

use strict;
use HSPC::Custom::Screen;
use Data::Dumper;

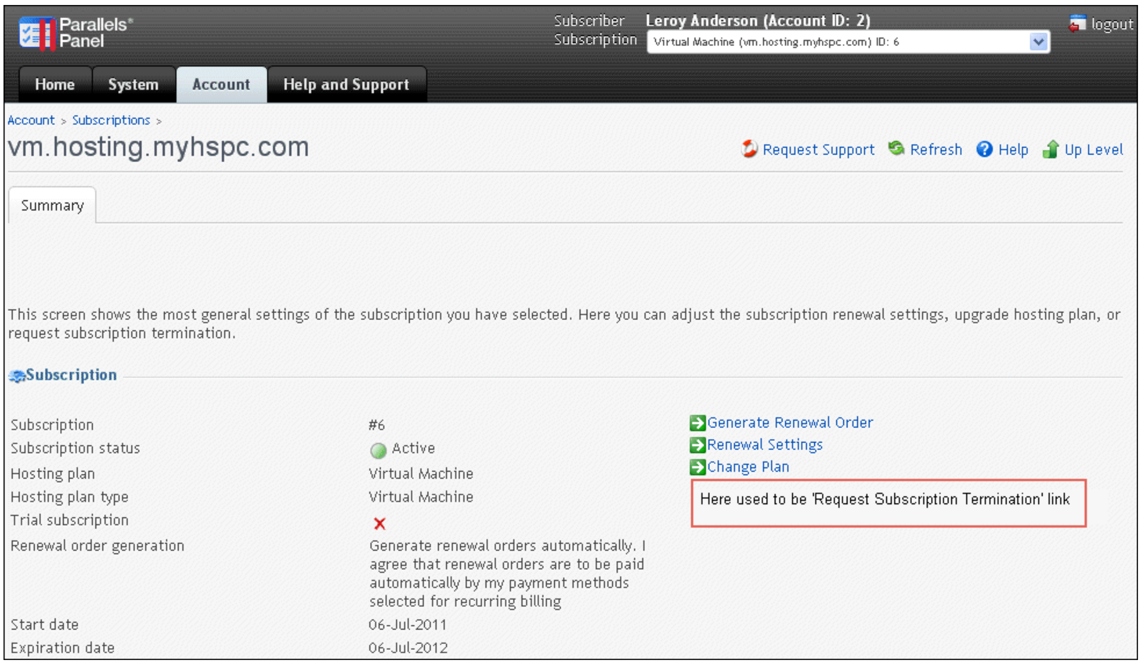
sub customize
{
                my ($stream) = @_;
warn Dumper(\%ENV);

                $stream =~ s/<td(.*)request_subscr_termination(.*)<\/td>//g;
                return $stream;
}#/customize

1;
```

4. Save the changes to customization module and restart `hspcd` to apply customization (see item 4 from Example 1).

The customized screen will look as follows:


Parallels® Panel
Subscriber Leroy Anderson (Account ID: 2)
Subscription Virtual Machine (vm.hosting.myhspc.com) ID: 6
logout
Home
System
Account
Help and Support
Account > Subscriptions >
Request Support
Refresh
Help
Up Level
Summary

vm.hosting.myhspc.com

This screen shows the most general settings of the subscription you have selected. Here you can adjust the subscription renewal settings, upgrade hosting plan, or request subscription termination.

Subscription

Subscription	#6
Subscription status	Active
Hosting plan	Virtual Machine
Hosting plan type	Virtual Machine
Trial subscription	✗
Renewal order generation	Generate renewal orders automatically. I agree that renewal orders are to be paid automatically by my payment methods selected for recurring billing
Start date	06-Jul-2011
Expiration date	06-Jul-2012

Generate Renewal Order
Renewal Settings
Change Plan

Here used to be 'Request Subscription Termination' link

Customizing Help Bar in Control Panel

If needed, you can provide additional help for each screen of the Control Panels your customers use. To this effect, log in to the Control Panel (your management node name with /cp tool iD) using one of the logins of your Provider Account (as a staff member). In this case, at every Control Panel screen (excluding dashboards) a special icon appears at the upper right corner of the screen.

Click **Help** at the screen you want to add a help topic for. The pop-up window with the help bar text appears. Type in the text and click the **Update** button.

Adding New Fields to Accounts Registration Form

The set of fields used in customer or reseller accounts registration forms in Parallels Business Automation - Standard graphical interface is composed with a glance to a typical and widely used scope of data required for personal authorization. These fields allow entering not only an account owner personal data, but also some specific attributes like VAT number. In some cases it is needed to add more attributes to account registration forms.

The API described below allows adding custom attributes to accounts, which results in appearance of new fields in accounts' registration forms. In Parallels Business Automation - Standard, such an additional attributes are called *extended attributes*. Extended attributes can be added not only to accounts, but also to documents and some other Parallels Business Automation - Standard objects, but this requires a special API. In this document we describe extended attributes usage in accounts, because this kind of customization is mostly in demand among our customers.

Each extended attribute presents a specific data of a particular type (integer, boolean, string) and particular access permissions to this data (read/write, read-only, no access). The type of data defines the type of input field in account registration form (input field, checkbox, etc.).

The API allows specifying the following:

- The type of an account (or a particular account) to which a custom field should be added
- The access permissions for the custom field. Such as, whether the field is visible or not, is it editable or read-only.
- The mask, to verify the value of the custom field, or own verifier function.
- The default value for each of the account types for each of the attributes.

The set of Accounting plug-ins shipped with Parallels Business Automation - Standard is the example of extended attributes usage. In this case, extended attributes allow adding to accounts profile the data required for Parallels Business Automation - Standard billing to match a country-specific accounting.

The type of an object, to which the extended attribute is assigned (provider account, reseller account, customer account) must be passed on an extended attribute registration.

If needed, you can create a placeholder for a custom extended attribute (on page 214).

Extended Attributes Objects

Extended attributes are assigned to the following types of objects:

- Provider account
- Reseller account
- Customer account

The types of objects, to which an extended attribute is assigned, are passed during the extended attribute registration in Parallels Business Automation - Standard.

Custom Extended Attribute Code Samples

An extended attribute module creates and registers an attribute. Web presentation is automatically provided by the other Parallels Business Automation - Standard modules as soon as an attribute is registered. There is no need to change the Components Repository configuration file since no new screens are added.

The following parameters are used in an extended attribute module:

- `vendor_id` - ID of the account that adds an extended attribute.
- `name` - extended attribute internal name assigned in Parallels Business Automation - Standard. This name is used to find an attribute.
- `title_id` - the string ID, i.e., an extended attribute name to be shown on the screen. The string must be added to `strings.xml` file (on page 215) and then the string ID specified there must be used in extended attribute module.
- `base_type` - the type of extended attribute value:
  - `HSPC::Core::Type::String` - a string,
  - `HSPC::Core::Type::Int` - an integer value,
  - `HSPC::Core::Type::Bool` - a boolean value (yes/no).
- `vendor_data_access` and `customer_data_access` - access permissions for vendor and customer in web interface:
  - `SW_EXT_ATTR_RW_ACCESS` - an attribute value can be viewed and edited from web interface
  - `SW_EXT_ATTR_RO_ACCESS` - an attribute value can be viewed only from web interface
  - `SW_EXT_ATTR_NO_ACCESS` - an attribute value cannot be viewed from web interface and can be managed only internally.

- `plugin_id` - an extended attribute relation to an Accounting plug-in. The value of this parameter must be 0 if this is a standalone attribute or corresponding Accounting plug-in ID if an attribute is to be included into a particular Accounting plug-in.
- `verificator_mask` – the regular expression pattern used by the default verifier function to check the attribute value.
- `verificator` – the full qualified name of the own verifier function to use it instead of the default one.
- `obj_types` - the types of objects an extended attribute can be assigned:

Object Type	Object Name
Provider account	SW_OBJTYPE_CORE_HSP
Reseller account	SW_OBJTYPE_CM_RESELLER
Customer account	SW_OBJTYPE_AM_CUSTOMER
Virtuozzo Container Subscription	SW_OBJTYPE_BM_SUBSCR_VE
Domain Subscription	SW_OBJTYPE_BM_SUBSCR_DOMAIN
Virtuozzo Dedicated Node Subscription	SW_OBJTYPE_BM_SUBSCR_HW_VZ
Dedicated Server Subscription	SW_OBJTYPE_BM_SUBSCR_HW_GENERIC
Dedicated Plesk Server Subscription	SW_OBJTYPE_BM_SUBSCR_HW_PLESK
Plesk Domain Subscription	SW_OBJTYPE_BM_SUBSCR_PLESK_SHARED
Plesk Client Subscription	SW_OBJTYPE_BM_SUBSCR_PLESK_CLIENT
Plesk Virtual Node Subscription	SW_OBJTYPE_BM_SUBSCR_VE_PLESK
Miscellaneous Subscription	SW_OBJTYPE_BM_SUBSCR_MISC

Example 1 Creates the extended attribute named `app_logins2` of the "string" type, visible/editable from the web interface for the provider and read-only for customers with the default values for each account type and mask used to verify the attribute values. Attention: The default values should match the `verificator_mask`!

```
#!/usr/bin/perl

use strict;

use HSPC::MT::Core::ExtAttrFactory;
use HSPC::MT::Core::ExtAttrType;
use HSPC::MT::Core::Constants qw(SW_HSP SW_HSP_ID SW_OBJTYPE_CORE_HSP
SW_OBJTYPE_CM_RESELLER SW_OBJTYPE_AM_CUSTOMER SW_OBJTYPE_BM_SUBSCR_VE
SW_OBJTYPE_BM_SUBSCR_DOMAIN SW_OBJTYPE_BM_SUBSCR_HW_VZ
SW_OBJTYPE_BM_SUBSCR_HW_GENERIC SW_OBJTYPE_BM_SUBSCR_HW_PLESK
SW_OBJTYPE_BM_SUBSCR_PLESK_SHARED SW_OBJTYPE_BM_SUBSCR_PLESK_CLIENT
SW_OBJTYPE_BM_SUBSCR_VE_PLESK SW_OBJTYPE_BM_SUBSCR_MISC SW_EXT_ATTR_RW_ACCESS
 SW_EXT_ATTR_NO_ACCESS SW_EXT_ATTR_RO_ACCESS);
```

```
my $ext_attr_type =
HSPC::MT::Core::ExtAttrFactory->find_ext_attr_type_by_name(
vendor_id => 1,
name => 'app_logins2',
);
unless( $ext_attr_type ) {
$ext_attr_type = HSPC::MT::Core::ExtAttrType->new();
$ext_attr_type->name('app_logins2'); ## internal unique name
$ext_attr_type->title_id( 'app_logins2' ); ## string_id to show in web
interface
$ext_attr_type->base_type('HSPC::Core::Type::String');
$ext_attr_type->plugin_id( 0 );
$ext_attr_type->vendor_id( 1 );
}
$ext_attr_type->vendor_data_access( SW_EXT_ATTR_RW_ACCESS );
$ext_attr_type->customer_data_access( SW_EXT_ATTR_RO_ACCESS );
$ext_attr_type->obj_types( [
{'obj_type'      => &SW_OBJTYPE_CORE_HSP,
 'default_value' => 'superboss'
},
{'obj_type'      => &SW_OBJTYPE_CM_RESELLER,
 'default_value' => 'principal'
},
{'obj_type'      => &SW_OBJTYPE_AM_CUSTOMER,
'default_value'  => 'stranger'
}
] );
$ext_attr_type->verificator_mask(‘[a-zA-Z]{6,10}’);
$ext_attr_type->save();
```

Example 2 Provides the own verifier function. You should create the own perl module for the verifier function. Save this module in the directory, where perl can find it. Using the `verificator_mask` is up to you. The code is the same as in the **Example 1** except for the line, that you should add before the attribute save:

```
$ext_attr_type->verificator(‘HSPC::MyVerificator::verifier’);
```

Below is the sample of the custom verifier module. The verifier function should return the localized error string if the verification has failed and undef if it has passed successfully.

```
package HSPC:: MyVerificator;

use strict;

sub verifier {
       my $data = shift;
       my $mask = shift;
       if ($data->value !~ /^[a-zA-Z]{5,9}$/) {
             return "Valid value must be of 5 to 9 chars length";
       }
       return undef;
}
1;
```

Example 3 Updates the extended attribute named `app_logins2` for a particular account with ID 4, prints the old and new values. The new value is set to 'new value of app_logins2 attribute'.

```
#!/usr/bin/perl
use strict;
use HSPC::MT::Core::ExtAttrFactory;
use HSPC::MT::Core::Constants qw(
      SW_OBJTYPE_AM_CUSTOMER
);
my $ext_attr = HSPC::MT::Core::ExtAttrFactory->find_ext_attr(
      obj_type => SW_OBJTYPE_AM_CUSTOMER,
      obj_id => 4, ## account_no of customer
      name => 'app_logins2'
);
if ( $ext_attr ) {
      print 'Old value: '. $ext_attr->value_obj->value()."\n";
      $ext_attr->value_obj->set_value('new value of app_logins2 attribute');
      print 'New value: '. $ext_attr->value_obj->value()."\n";
      $ext_attr->save();
}
else {
        my $ext_attr_type = HSPC::MT::Core::ExtAttrFactory-
>find_ext_attr_type_by_name(
                vendor_id => 1,
                name => 'app_logins2'
        );

        my $ext_attr =
          HSPC::MT::Core::ExtAttrFactory->make_ext_attr_by_type(
                type => $ext_attr_type );

        $ext_attr->obj_type(SW_OBJTYPE_AM_CUSTOMER);
        $ext_attr->obj_id($acc_id);
        $ext_attr->value_obj->set_value('new value of app_logins2 attribute');
        $ext_attr->save();
}
```

Extending E-Mail Notification Templates

Placeholders are special expressions used in Parallels Business Automation - Standard in e-mail notification templates and print forms.

Having been inserted in the addressee fields or a message template text, a placeholder automatically drops appropriate value to the actual text generated.

Parallels Business Automation - Standard offers a wide range of placeholders, but if you think you need new ones, you can add them using the API provided.

Note: To replace or customize an existing placeholder, create a placeholder with the same name. To restore the default placeholder, remove a custom one.

Placeholders can be used for a single value insertion (customer name or a hosting plan name) or for inserting a table with an order or other documents details (vector placeholders). You can add placeholders of both types.

Placeholder Creation Tools

To create custom placeholders, it is necessary to add a definition of a custom placeholder into the file:

```
/var/opt/hspc-root/custom/EV/PlaceHolder.pm
```

This file contains a hash:

```
PLACEHOLDERS=>{
};
```

To add new placeholder, add a placeholder key into this hash and a function below the hash.

A placeholder key has the following structure:

```
customer.newplaceholdername=>{
      method=>phmethodname,
      explain_id=>"new_placeholder",
      is_vector=>1|0,
      obj_type_id=>'HSPC::MT::Core::Customer',
      def_value=>
      attrs=>[
            {attribute=>'attr_name',
            ph_type=>0-6,
            align=>1-3,
            length=>10,
            explain=>'Its value of ..',
            def_value=>'Default value',
            col_name=>'Colname intable',
            }
      ]
},
```

The table below explains every string in a placeholder key:

Placeholder Key Text	Description
customer.newplaceholdername=>{	A placeholder name as it will be displayed in Parallels Business Automation - Standard interface. The first word before a dot is the name of object a placeholder will be used for. The second word after a dot is the placeholder key, similarly to printable forms key, it is used to distinguish placeholders created for the same object. **Note**: In this example, the placeholder is to be added for the object *customer*. In the actual code, you must replace the word *customer* with the object name you are creating a placeholder for. The object types that can be used are enlisted at the end of this section.

method=>phmethodname,	The call of a function that defines what a placeholder must insert into a text. In this example, the function name is *phmethodname*. The function itself must be added into the `PlaceHolder.pm` file below the hash.
explain_id=>"new_placeholder",	A placeholder description shown in the interface. A placeholder description text is specified using a string ID. In this case, this string ID must be correctly specified in the strings.xml file located in a Language Pack customization directory (on page 215). In this example, the string ID is new_placeholder.
is_vector=>1|0,	Is it a vector a placeholder (1) or not (0). A placeholder inserts some text or a value into the text. Vector placeholders insert a block of data into the text, like order or invoice itemization. Thus, vector placeholders often have additional attributes. We describe these attributes later (see the *attrs* parameter description)
obj_type_id=>'HSPC::MT::Core::Customer',	The class a placeholder belongs to. A class defines a particular object subtype (for example, type of an account) a placeholder will be available for. For example, you can create a placeholder available for all customers (specify the parent class HSPC::MT::Core::AbstractAccount) or for customer accounts only (HSPC::MT::Core::Customer), or for resellers only (HSPC::MT::Core::Reseller). For the detailed description of classes and objects relation please refer to the table at the end of this section.
def_value=>	The default value for a scalar placeholder. Default value is needed for testing, to provide a value that a placeholder inserts into a text.
attrs=>[	This string and all the strings below are to be added ONLY if you are adding a vector placeholder and this placeholder has additional attributes. Each attribute is described by a separate parameters block in
{attribute=>'attr_name',	The name of a vector placeholder attribute. In this example the name is *attr_name*. Replace it with the name you need.
ph_type=>0,	The type of an attribute value format: You can refer to HSPC::MT::EV::TmplParse. Replace 0 in our example with one of formats (a digit from 0 to 6). Shortly, format types are: ▪ 0 - none. ▪ 1 - integer value. ▪ 2 - non-integer value with fractional part. ▪ 3 - money (short currency name will be added) ▪ 4 - money (long currency name will be added)

	▪ 5 - time period (show time period in days or months or years) ▪ 6 - date format. ▪ 7 - add a percent sign. ▪ 8 - adjust data size (Kb into Mb, Mb into Gb, etc)
align=>1,	A table column alignment (in our example. left alignment is used): ▪ 1 - left. ▪ 2 - center. ▪ 3- right.
length=>10,	Column width in characters. In this example it is 10 characters.
explain=>'The value of',	Placeholder attribute short description shown in interface. In this example, the description is *The value of* .
def_value=>'Default value',	This is an optional parameter that allows filling a table in the message preview with some values. In this example the default value is *Default value*. If you do not want to use default values, skip this parameter.
col_name=>'Colname in table',	The name of column in the table where an attribute value is displayed.
}	
]	
}	

The function is like:

```
sub phmethodname {
      my $account = shift;
      ....
      return $ph_value;
}
```

Parallels Business Automation - Standard Objects You Can Create Placeholders For:

- os_template - Virtuozzo OS template
- template - Virtuozzo application template
- statement - statement
- invoice - invoice (debit or credit)
- payment - payment (online or offline) or a credit adjustment
- order - order
- subscription - subscription
- hp - hosting plan
- translog - transaction
- provider - provider or reseller
- customer - customer or reseller (as provider's customer)
- person - a registered person (assigned to an account or not)
- domain - domain
- store - HSP store
- providerconfig - provider configuration
- license - sellable license
- hnlicense - Parallels Virtuozzo Containers license
- mnlicense - Parallels Business Automation - Standard license
- plesklicense - Plesk license
- campaign - marketing campaign
- ds - dedicated server
- hw - hardware node
- traffclass - traffic class
- ve - Virtuozzo Container
- ticket - trouble ticket
- ticket_ev - trouble ticket event

Object defines the general object type a placeholder is available for (for example, subscription or payment). And a class allows to filter a placeholder availability down to a particular type of object.

For example, in the Control Center > Configuration Director > Event Manager > Events when you create an e-mail notification for an event that involves a subscription object, you can select whether to add an action (notification in this case) for all subscription types or for a particular subscription type.

If you add an action just for Subscription (i.e., all subscriptions), you will see placeholders available for the HSPC::MT::Billing::Subscription_base class. And if you add an action for a particular subscription type (domain, for example), you will see placeholders available both for the HSPC::MT::Billing::Subscription_base class and some additional placeholders available for domain subscriptions, i.e., for HSPC::MT::Billing::Subscription_domain class only.

Thus, for notifications created for each type of subscription you can use a basic placeholders set and a specific placeholders that are not available for subscriptions of the other types.

Parallels Business Automation - Standard Classes and Objects Relation:

Class Name	**Object Name**	**Particular object(s) a placeholder is available for use in notifications**
HSPC::MT::AD::OSTemplate	os_template	All Virtuozzo OS templates
HSPC::MT::AD::Template	template	All Virtuozzo application templates.
HSPC::MT::Billing::Ar_statement	statement	Statements
HSPC::MT::Billing::Bill	invoice	Invoices
HSPC::MT::Billing::Payment	payment	All payments types, credit invoices, and credit adjustments
HSPC::MT::Billing::CreditAdjustment	payment	Credit adjustments
HSPC::MT::Billing::CreditInvoice	payment	Credit invoices
HSPC::MT::Billing::OffLinePayment	payment	Offline payments
HSPC::MT::Billing::OnLinePayment	payment	Online payments
HSPC::MT::Billing::Order	order	All orders for all types of subscriptions and one-time fee orders.
HSPC::MT::Billing::Order_dm	order	Domain subscription orders
HSPC::MT::Billing::Order_hw_generic	order	
HSPC::MT::Billing::Order_hw_vz	order	
HSPC::MT::Billing::Order_misc	order	Miscellaneous subscriptions orders
HSPC::MT::Billing::Order_onetime	order	One-time fee orders
HSPC::MT::Billing::Order_ve	order	Virtuozzo Container subscription orders.
HSPC::MT::Billing::Order_ve_pleskserver	order	Plesk Virtual Node subscription orders.
HSPC::MT::Billing::Subscription_base	subscription	All types of subscriptions.

HSPC::MT::Billing::Subscription_domain	subscription	Domain subscription only
HSPC::MT::Billing::Subscription_hw_generic	subscription	
HSPC::MT::Billing::Subscription_hw_vz	subscription	
HSPC::MT::Billing::Subscription_misc	subscription	Miscellaneous subscriptions only.
HSPC::MT::Billing::Subscription_ve	subscription	Virtuozzo Container subscriptions only.
HSPC::MT::Billing::Subscr_ve_pleskserver	subscription	Plesk Virtual Node subscriptions only.
HSPC::MT::BM::HP	hp	All types of hosting plans.
HSPC::MT::BM::HP::DMGen	hp	Domain registration hosting plans.
HSPC::MT::BM::HP::DSGen	hp	Dedicated server hosting plans.
HSPC::MT::BM::HP::HNVZ	hp	Dedicated Virtuozzo node hosting plans.
HSPC::MT::BM::HP::MiscGen	hp	Miscellaneous hosting plans.
HSPC::MT::BM::HP::PleskClient	hp	Plesk Client hosting plans.
HSPC::MT::BM::HP::PleskDomain	hp	Plesk Domain hosting plans.
HSPC::MT::BM::HP::PleskServer	hp	Dedicated Plesk node hosting plans.
HSPC::MT::BM::HP::VEGen	hp	Virtuozzo Container hosting plans.
HSPC::MT::BM::HP::VEPleskHN	hp	Plesk Virtual Node hosting plans.
HSPC::MT::BM::Order::PleskClient	order	Orders on Plesk Client.
HSPC::MT::BM::Order::PleskDomain	order	Orders on Plesk Domain.
HSPC::MT::BM::Order::PleskServer	order	Orders on Plesk Dedicated Node.
HSPC::MT::BM::Subscription::PleskClientSubscription	subscription	Plesk Client subscriptions.
HSPC::MT::BM::Subscription::PleskDomainSubscription	subscription	Plesk Domain subscriptions.
HSPC::MT::BM::Subscription::PleskServerSubscription	subscription	Plesk Dedicated Node subscriptions.
HSPC::MT::CCP::TransLog	translog	All transactions (both credit card and bank transfer).

HSPC::MT::Core::AbstractAccount	customer	All accounts (both customer and reseller).
HSPC::MT::Core::Reseller	customer if reseller is considered as provider's customer, or provider is reseller is considered as customer's vendor	Reseller account.
HSPC::MT::Core::HSP	provider	HSP provider
HSPC::MT::Core::Customer	customer	Customer accounts only.
HSPC::MT::Core::Person	person	Persons registered in Parallels Business Automation - Standard.
HSPC::MT::Core::Reseller	customer	Reseller accounts only.
HSPC::MT::DM::Domain	domain	Domains.
HSPC::MT::EM::Store	store	Store.
HSPC::MT::GM::ProviderConfig	providerconfig	Provider configuration.
HSPC::MT::LM::AbstractLicense	license	All types of licenses.
HSPC::MT::LM::HN	hnlicense	Parallels Virtuozzo Containers licenses only.
HSPC::MT::LM::MN	mnlicense	Parallels Business Automation - Standard licenses only.
HSPC::MT::LM::Plesk	plesklicense	Plesk licenses only.
HSPC::MT::MM::Campaign	campaign	Marketing campaigns.
HSPC::MT::OM::DS	ds	Dedicated servers.
HSPC::MT::OM::HN	hw	Hardware Nodes.
HSPC::MT::OM::TraffClass	traffclass	Traffic classes.
HSPC::MT::OM::VE	ve	Virtuozzo Containers.
HSPC::MT::PP::BT::TransLog	translog	Bank transfer transactions only.

HSPC::MT::PP::TransLog	translog	Credit card transactions only.
HSPC::MT::UM::TS::Ticket	ticket	Trouble tickets.
HSPC::MT::UM::TS::TicketEvent	ticket_ev	Trouble ticket events (like "Ticket was rejected by Mail Gate" etc.).

Custom Placeholders Samples

Below is the example of the `PlaceHolder.pm` file that contains two customized placeholders:

- A placeholder that inserts a customer administrative contact name.

  Customization:

  Placeholder calls the `cname` function and adds the `custom` string both before and after a placeholder value. In preview it will look like `custom name! custom`, where `name!` is the default value of placeholder used for preview only.
- A vector placeholder that inserts a table with an invoice details.

  Customization:

  Placeholder calls the `ctable` function and adds a row named `Custom Service` to the table.

Important: A placeholder description shown in the graphical interface is defined using the string ID via the `explain_id` parameter. In this case, the string ID must be correctly specified in the strings.xml file located in the Language Pack customization directory (on page 215). In the examples below,

```
package HSPC::Custom::EV::PlaceHolder;


use constant PLACEHOLDERS=>{
'customer.admin_name'=>{
method=>'cname',
ph_type=>0,
is_vector=>0,
def_value=>'name!',
obj_type_id=>'HSPC::MT::Core::AbstractAccount',
explain_id=>"my_placeholder"
},
'invoice.doc_det'=>{
method=>'ctable',ph_type=>0,
is_vector=>1,
explain_id=>"my_vector_placeholder",
obj_type_id=>'HSPC::MT::Billing::Bill',
attrs=>[
{
attribute=>'comment',
ph_type=>0,
align=>1,
length=>25,
col_name=>'CustName',
explain_id=>"my_custom_string",
def_value=>'Value',
},
{
attribute=>'amount',
ph_type=>3,
align=>2,
length=>5,
col_name=>"Total",
explain_id=>"ev_ph_invoice_doc_det_amount",
def_value=>"12",
},
{
attribute=>'discount',
ph_type=>7,
align=>2,
length=>8,
col_name=>'Discount',
explain_id=>"ev_ph_invoice_doc_det_discount",
def_value=>"10",
},
{
attribute=>'duration',
ph_type=>0,
align=>2,
length=>11,
explain_id=>"ev_ph_invoice_doc_det_duration",
col_name=>"Duration",
def_value=>'1 Month',
},
{
attribute=>'quantity',
ph_type=>0,
align=>2,
length=>8,
col_name=>"Quantity",
explain_id=>"ev_ph_invoice_doc_det_quantity",
def_value=>'4',
},
{
attribute=>'rate',
ph_type=>4,
align=>2,
length=>7,
explain_id=>"ev_ph_invoice_doc_det_rate",
col_name=>"Price",
def_value=>"2",
},
{
attribute=>'tax_amount',
ph_type=>3,
align=>2,
length=>5,
explain_id=>"tax_amount_uc",
col_name=>"Tax Amount",
def_value=>"7",
},
{
attribute=>'tax_rate',
ph_type=>7,
align=>2,
length=>5,
explain_id=>"tax_rate_uc",
col_name=>"Tax Rate",
def_value=>'10%',
},
{
attribute=>'unit',
ph_type=>0,
align=>2,
length=>5,
explain_id=>"ev_ph_invoice_doc_det_unit",
col_name=>"Units",
def_value=>'MB',
}
]
}
};##

sub cname {
my $acc = shift;
return "custom ".$acc->admin_name()." custom";
}

sub ctable {
my $bill = shift;
my $r = $bill->get_ar_doc_details_print();
push @{$r},{comment=>'Custom Service', quantity=>10,
unit=>'units',rate=>'myrate',duration=>'10', discount=>10, amount=>5};
return $r;
}


1;
```

Note: The `comment` attribute of a vector placeholder serves for showing the name of a billed item. For example, an application name or domain registration.

Creating Placeholders for Custom Extended Attributes

If you have created a new extended attribute (on page 199) that allows adding some specific data to an account profile, you can create a custom placeholder for this attribute and make it possible to insert this additional data in e-mail notifications.

To create a placeholder for custom extended attribute, please place a placeholder key into the

`/var/opt/hspc-root/custom/EV/PlaceHolder.pm`

file as this described earlier in this guide (on page 204).

Important Notes on creating placeholders for custom extended attributes:

Objects a placeholder must be created for. Since custom extended attributes are created for account objects (Provider, Reseller, or Customer), the object name a placeholder must be created for can be either `customer` (a customer or a reseller as provider's customer) or `provider` (provider or reseller as customer's vendor).

Extended attribute name to be specified:The only parameter to be passed to a placeholder key is an extended attribute name defined in an extended attribute module by the `name` parameter. In the extended attribute sample (on page 200) offered in this document we have used the name `custom_ext_attribute`. In the example below we create a custom placeholder for this very attribute.

Placeholder type: Extended attributes have a single value, they are not presented as tables (like order details, for example). Thus, placeholders for extended attributes must be not of a vector type. Specify `is_vector=>0` in the placeholder key. In addition, for non-vector placeholder you do not need the `attrs` block in the placeholder key.

Example of placeholder for extended attribute (object type is customer):

```
PLACEHOLDERS=>{
customer.customextattribute=>{
       method=>ext_attr,
       explain=>'Placeholder for custom extended attribute',
       is_vector=>0,
       obj_type_id=>'HSPC::MT::Core::Customer',
       def_value=>'test_value'
}
};
sub ext_attr {
my $account = shift;
my $name = 'custom_ext_attribute';
require HSPC::MT::Core::ExtAttrFactory;
my $value = HSPC::MT::Core::ExtAttrFactory->find_ext_attr(
obj_type=>$account->obj_type_id(),
obj_id =>$account->id(),
name =>$name
);
return $value;
}
```

Customizing Language Packs

Parallels Business Automation - Standard supports a number of interface languages. You can know about language packs (http://www.parallels.com/en/products/hspcomplete/lp/) set and download a language pack at the official Parallels website.

Below we describe how you can customize or add any localization string for any of the language packs you use in Parallels Business Automation - Standard.

The same approach is used to add a new language pack. (on page 225)

Language packs can be customized using the XML strings.

Language Pack Customization Tools

At first, we tell how a language pack works and then describe how you can customize localization strings.

How a Language Pack Works

A language pack strings are stored in XML files located at your Management Node.

Localization files directories

Localization files for each language pack are stored in a special directories, each set of files in a separate directory. The common path for such directories is

```
/var/opt/hspc-root/i18n
```

and further, each language pack is stored in a separate directory named by the two-letter language identification string in accordance with the ISO 639 (http://www.loc.gov/standards/iso639-2/php/code_list.php) language codes, so the directory name is `EN` for the English language pack, `DE` - for the German one, etc. All the country-code directory names should be in upper-case.

For example, the English language pack is stored in the

```
/var/opt/hspc-root/i18n/EN
```

directory. And the German language pack is stored in the

```
/var/opt/hspc-root/i18n/DE
```

directory, and so on.

Localization pack files

The localization files are always stored in directories described above. However, some files containing localization strings come from a language pack and some do not. Let's puzzle it out.

Each language pack includes the following basic files:

- `language.xml` - the file that contains a language pack definition. Without definition, a language pack does not work. This file consists of the standard tags and is required for each language pack.
- `strings.xml` - the main localization file for a given language pack. Contains all commonly used strings.
- `ev_subject.xml` - strings for e-mail notifications subject. These strings are used in Event Manager.
- `countries.xml` - the default strings for countries' names.
- `states_ca.xml` - the default strings for Canadian states' names.
- `states_us.xml` - the default strings for US states' names.

Additional XML files in a localization directory that can be added not during a localization pack installation, but by some other Parallels Business Automation - Standard modules, for example during Control Panels or plug-ins installation:

- Plug-ins are shipped as a separate modules independent from Parallels Business Automation - Standard functionality. Thus, localization strings for each plug-in are included into a plug-in RPM. Localization for plug-ins in separate files named by plug-in names and other non-commonly used modules. Localization file for pug-ins are included in a plug-in RPM. Localization files for plug-ins appear in a language pack directory as soon as a plug-in is installed. For example, file containing localization strings for eNom domain registration plug-n is named `hspc-plugin-dm-enom.xml`.
- Commonly used strings for payment plug-ins in the `hspc-pp.xml` file.
- The `cp_left_menu.xml` file containing strings for the Control Panel left menu used for Plesk subscriptions management. Since the Plesk original controls and options are used in the Parallels Business Automation - Standard Control Panel when Plesk client or Plesk domain subscriptions are managed, the special file for these strings localization is provided.

Note: When XML files containing localization for some language are added, a corresponding directory named by a language two-letter code is created. However, this does not mean that Parallels Business Automation - Standard will use this language as a localization pack, because Parallels Business Automation - Standard 'does not know' about a language until a language definition file is placed into a language pack directory.

Parallels Business Automation - Standard loads the localization files on startup and uses them in accordance with personal interface settings of a user logged in to the Parallels Business Automation - Standard.

What's in a localization file

Localization files are not encrypted, and represented in a native language encoding, so anyone can see which string IDs and values are used in Parallels Business Automation - Standard.

For example the XML file containing strings for the Dummy plug-in looks like (in this example, strings are shown in part, the missing ones are replaced with ...):

```
<?xml version="1.0" encoding="iso-8859-1"?>
<strings lang="en" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="strings.xsd">

<string>
<id>dm_dummy_no_reglock</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Dummy plug-in doesn't have the registrar lock operating ability.</val>
</string>

<string>
<id>dm_dummy</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Dummy</val>
</string>

<string>
<id>dm_dummy_mode_tr</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Domain lookup mode (for Transfer)</val>
</string>

<string>
<id>dm_dummy_mode</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Domain lookup mode (for Registration)</val>
</string>

...

</strings>
```

The <strings> tag opens and closes the localization file and has the following parameter:

- lang - the required parameter specifying the language. The lang value is a two-letters lower-case language identification, according to ISO 639. For example,

  <strings lang="en" > for English localization.

The format for a localization string is the following (for example, we consider the English localization):

String	Description
<string>	A string description starts.
<id>string_id</id>	The <id> tag contains a string alphanumerical identifier (ID). The string-id can be replaced with any combination of letters, digits, or underscores (A-Z, a-z, 0-9, _). This must be the one line, without line breaks.
<c>comment</c>	The <c> tag contains a free-form comment to a string. Letters, digits, spaces and any other symbols can be used in a comment. This must be the one line, without line breaks. Usually, a string comment is a path to a component a string is used for, for example, PCC | Domain Manager | Dummy plugin.
<val>string</val>	This tag contains a string value, i.e., a text to be shown on the screen.

</string>	A string description is finished.

How to Customize Localization Strings

Customized strings MUST be placed into a specially created directory called `custom/i18n/` under the `/var/opt/hspc-root/` directory. Then the directory named by a two-letter language code (in upper-case) is to be added under the `/var/opt/hspc-root/custom/i18n/` directory. As you can see, the directories structure for customized strings is similar to a basic language pack path, but for customization, the `custom/` directory is to be added.

Custom strings placed into a customization directory are not re-wrote during upgrade installation. So, if you are adding a new language pack (as described later in this guide), it is reasonable to add a language definition XML file into a basic directory, and then place the new language pack files under a customization directory `custom\`, to protect a new language pack from corrupting in case of upgrades installation.

The `strings.xml` files are the main localization files for any language pack. We recommend to create the `strings.xml` file in the customization directory, which is upgrade-safe.

Strings can be added by placing the `strings.xml` file containing new or customized strings into the

`/var/opt/hspc-root/custom/i18n/`*country_code*`/`

directory (where the *country_code* must be replaced with the ISO 639 two-letter code of the country you are customizing the language pack).

Note: You can create several files containing custom localization. For example, separate files for plug-ins. However, custom strings containing in strings.xml have higher priority. Thus, you can place custom strings for non-commonly used objects in strings.xml, one-by-one.

Language Pack Customization Sample

To customize a string, add a record with the same string ID into the customization file. To add a new string, add a record with new string ID into the customization file.

For example, you want to customize the Dummy domain registration plug-in localization strings for English language.

Open the `/var/opt/hspc-root/i18n/EN/hspc-plugin-dm-dummy.xml` file. You can see all the strings used in Parallels Business Automation - Standard interface for this plug-in:

```
<?xml version="1.0" encoding="iso-8859-1"?>
<strings lang="en" convert_to_utf="0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="strings.xsd">

<string>
<id>dm_dummy_no_reglock</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Dummy plug-in doesn't have the registrar lock operating ability.</val>
</string>

<string>
<id>dm_dummy</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Dummy</val>
</string>

<string>
<id>dm_dummy_mode_tr</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Domain lookup mode (for Transfer)</val>
</string>

<string>
<id>dm_dummy_mode</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Domain lookup mode (for Registration)</val>
</string>

<string>
<id>dm_dummy_avail</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Always available</val>
</string>

<string>
<id>dm_dummy_occ</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Always unavailable</val>
</string>

<string>
<id>dm_dummy_use_whois</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Check using whois server</val>
</string>

<string>
<id>dm_dummy_not_conf</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Not configured</val>
```

```
</string>

<string>
<id>dm_dummy_sup_reg</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Always reject domains registration. Domains can be marked as 'Registered'
only manually.</val>
</string>

<string>
<id>dm_dummy_sup_tr</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Always reject domains transfer. Domains can be marked as 'Registered'
only manually.</val>
</string>

<string>
<id>dm_dummy_sup_ns_sync</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Always report error on NS synchronization. Name servers will never be
marked as 'Synchronized with the Registrar'.</val>
</string>

<string>
<id>dm_dummy_common_error</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Error occurred during the domain registration. Refer to the Action Log
for details</val>
</string>

<string>
<id>dm_dummy_err_cant_find_domain_with_id</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Cannot find domain '%domain_id%'</val>
</string>

<string>
<id>dm_dummy_err_suppressed_reg</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Domain registration via Dummy plug-in could not be completed. You should
turn off the "Always reject domains registration" option in order to register
domain or mark it as 'Registered' manually.</val>
</string>

<string>
<id>dm_dummy_err_suppressed_tr</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>Domain transfer via Dummy plug-in could not be completed. You should turn
off the "Always reject domains transfer" option in order to transfer domain or
mark it as 'Registered' manually.</val>
</string>

<string>
<id>dm_dummy_err_suppressed_ns_sync</id>
<c>PCC | Domain Manager| Dummy plugin</c>
<val>NS synchronization via Dummy plug-in could not be completed. You should
turn off the "Always report error on NS synchronization option" in order to
mark name servers as 'Synchronized with the Registrar'.</val>
</string>

</strings>
```

➢ ***To customize the domain registration error message (string ID is dm_dummy_common_error) for example, as "Domain registration has failed. See Action Log for details.":***

1. Create a new file named `strings.xml`.
2. Copy the string into this new file and customize its value:

```
<?xml version="1.0" encoding="iso-8859-1"?>

<strings lang="en" convert_to_utf="0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:noNamespaceSchemaLocation="strings.xsd">


<string>

<id>dm_dummy_common_error</id>

<c>PCC | Domain Manager| Dummy plugin</c>

<val>Domain registration has failed. See Action Log for details.</val>

</string>


</strings>
```

3. Put the customization file `strings.xml` into the directory:
   `/var/opt/hspc-root/custom/i18n/EN/`
4. Restart hspcd for changes to take effect:

```
/etc/init.d/hspcd restart
```

CHAPTER 5

Integration with External Helpdesk

Parallels Business Automation - Standard is integrated with external Helpdesks:

- Cerberus
- Kayako Fusion

In This Chapter

External Helpdesk API

Parallels Business Automation - Standard interaction with external trouble ticket systems is implemented via the SOAP protocol, using an open Application Programming Interface (API).

The Parallels Business Automation - Standard - External Helpdesk integration is implemented as two modules:

- Parallels Business Automation - Standard side module (SOAP client) built in Parallels Business Automation - Standard. The Parallels Business Automation - Standard side module is common for all Helpdesk systems.
- Helpdesk-side module (SOAP server) must be placed to a Helpdesk SOAP server.

Messages are sent from the Parallels Business Automation - Standard side module to an external Helpdesk as SOAP envelopes. SOAP is an open protocol and thus, no secret data is passed. However, each envelope is protected with a security HTTP header generated using the secret phrase set by you to prevent intrusions and fake envelopes from unauthorized sources.

If you would like to use secure HTTP protocol for communication between Parallels Business Automation - Standard and an external Helpdesk server, you can enable SSL for Helpdesk-side module only. Please, refer to the SOAP::Lite documentation available from CPAN (http://www.cpan.org/) for detailed instructions on enabling the Parallels Business Automation - Standard side SOAP::Lite to support SSL.

Note: The Crypt::SSLeay module is included in Parallels Business Automation - Standard distribution.

External HelpDesk side module - SOAP server

`greet()`

Function checks if required tables exist and creates them if needed, i.e. performs initial installation, if it hasn't been done yet.

Returns identification string of HelpDesk system for displaying in Parallels Business Automation - Standard Control Centers.

`alter_contacts(contacts)`

Function retrieves data required to alter records in HelpDesk database from a person contacts structure that contains the following fields:

`id` (person ID in Parallels Business Automation - Standard)

`email`

`prefix`

`first_name`

`insertion`

`middle_name`

`last_name`

`suffix`

`accounts` (comma separated list of person's account names)

HelpDesk side must check each record in respect to its conformity with its internal Parallels Business Automation - Standard to HelpDesk mapping to define whether to insert a new record or update an existing one.

Returns the number of altered records.

`list_contacts()`

Function returns all records from HelpDesk database mapped from Parallels Business Automation - Standard database as an array of Parallels Business Automation - Standard record IDs.

Returns list of IDs already synchronized with Parallels Business Automation - Standard.

`init_session(id, ip, act)`

Function initializes new session for account identified by Parallels Business Automation - Standard ID `id` and visitor's IP address `ip` (e.g. for protecting a session) and action code `act` (could be `add` for ticket creation page or `list` for tickets list) and returns session URL which is either HelpDesk native URL for processing session or additional HelpDesk-specific module shipped with Parallels Business Automation - Standard. Thus, pointing user to this URL guarantees transparent login to page according to action code.

Returns redirection URL for logging in to an External Helpdesk from Parallels Business Automation - Standard Control Panels.

Parallels Business Automation - Standard side - SOAP client

According to SOAP server design, SOAP client doesn't depend on HelpDesk type and relies on common configuration options for all HelpDesk types.

Security

Security of communication is guaranteed using the following technique:

- HelpDesk side: HTTP-header `Security` is checked for validity against MD5 (hex) digest of envelope plus HSPC_SECRET concatenation, and connection is accepted only on positive check.
- Parallels Business Automation - Standard side includes `HSPC_SECRET` option on HelpDesk plug-in setup page (in Provider (or Reseller) Control Center **Support Manager - Setup**). Provider must set `HSPC_SECRET` to the same value for both Parallels Business Automation - Standard and HelpDesk sides. Parallels Business Automation - Standard side: each SOAP envelope is concatenated with HSPC_SECRET to produce a base for Security HTTP-header, which is MD5 (hex) digest of this concatenation:

```
$header = md5_hex($envelope . $HSPC_SECRET)
```

Thus, no intruder could send fake SOAP requests without knowing HSPC_SECRET. Besides, scheme implementation is too easy to be impossible for almost any language.

Sample

The sample Kayako SupportSuite HelpDesk side module shipped with Parallels Business Automation - Standard is located in the SDK archive in the `samples/external_helpdesk` directory.

CHAPTER 6

Adding New Language Pack

This chapter outlines the rules and standards applied to translation of Parallels Business Automation - Standard interface, help files and other materials.

Following our instructions you can add a new language pack.

In This Chapter

Parallels Business Automation - Standard Translation Capabilities

Parallels Business Automation - Standard can be completely translated into another language. Translation process consists of two main steps - "Translation of Interface" and "Translation of Help files".

Translation of interface includes:

- translation of labels and messages shown in the interface;
- translation of e-mail notifications subject templates;
- translation of tool-tips shown for menu items in the Control Panel;
- translation of onscreen hints shown on each page in the Control Panel.

Translation of help files includes:

- translation of help pages shown in the pop-up windows in the Control Panel;
- translation of PDF guides;
- translation of help pages shown in the online HTML help in Provider and Reseller Control Centers.

The basics of language pack management as well as both files and directories structure are described earlier in this guide (on page 215). Please read this subsection.

Important: Custom strings placed into a customization directory are not re-wrote during upgrade installation. So, if you are adding a new language pack (as described later in this guide), it is reasonable to add a language definition XML file and empty basic XML files into a language pack basic directory, and then place the new language pack files into a customization directory, to protect a new language pack from corrupting in case of upgrades installation.

Each language is identified by 2-letter identification string (e.g., the English language corresponds to the “en” string). This string is widely used in the Parallels Business Automation - Standard database, in names of the directories where translation files are located, etc. Please refer to the ISO 639 (http://www.loc.gov/standards/iso639-2/php/code_list.php) regarding correct 2-letter language codes.

Preparing Directories and Files for New Language Pack

A language pack directory structure and basic files are described in details earlier in this guide, in the subsection telling about existing language packs customization (on page 215). Please read this subsection, it will help you to understand how a language pack works.

➢ *To prepare the place for a new language pack:*

1. Create the directory for new language pack. For example, to create directory for Chinese localization, the following directory is to be created at the server that runs Parallels Business Automation - Standard:

   `/var/opt/hspc-root/i18n/ZH`

2. Create language pack files in this directory:

- `language.xml` - the file that contains a language pack definition. Without a definition, a language pack does not work. This file consists of the standard tags and is required for each language pack. You can copy the language.xml file from any other language pack and edit this file.
- `strings.xml` - the main localization file for a given language pack. Contains all commonly used strings.
- `ev_subject.xml` - strings for e-mail notifications subject. These strings are used in Event Manager.
- `countries.xml` - the default strings for countries' names.
- `states_ca.xml` - the default strings for Canadian states' names.
- `states_us.xml` - the default strings for US states' names.

1. Edit the language.xml file. The tags used in this file are described in the Example (on page 230).
2. Edit the other language pack files. Insert the XML header and the <strings> tag (in this sample, we follow our example with Chinese language and assign `zh` value to the `lang` parameter). Please specify the needed language code:

```
<?xml version="1.0" encoding="iso-8859-1"?>
<strings lang="zh" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="strings.xsd">
</strings>
```

   Important: Now you can start adding strings localization definitions. You can copy-paste them from the English files and translate strings' values. However, if the same language pack will be available with future Parallels Business Automation - Standard releases, your localization will be re-written during upgrade installation. To ensure that your localization will stay in place after upgrades installation, it is better to store the strings in a customization directory

   `/var/opt/hspc-root/custom/i18n/`*country_code*`/`

   In this case, your language pack strings will be considered as customization and thus, they will be not touched in case of upgrades.

➢ ***To protect your localization from re-writing after upgrades installation:***

1. Leave the language definition file `language.xml` in the language pack directory. Leave the empty localization files (prepared as described above, item 4) in the language pack directory.
2. Create the customization directory (let us go on with our example - Chinese language):

   `/var/opt/hspc-root/custom/i18n/ZH`
3. Copy the localization files except for the language definition file `language.xml` into this customization directory.
4. Add strings' definitions into files stored in the customization directory.

The format for a localization string is the following:

String	Description
<string>	A string description starts.
<id>string_id</id>	The <id> tag contains a string alphanumerical identifier (ID). The string-id can be replaced with any combination of letters, digits, or underscores (A-Z, a-z, 0-9, _). This must be the one line, without line breaks.
<c>comment</c>	The <c> tag contains a free-form comment to a string. Letters, digits, spaces and any other symbols can be used in a comment. This must be the one line, without line breaks.
<val>string</val>	This tag contains a string value, i.e., a text to be shown on the screen.
</string>	A string description finished.

Translating Interface

You can translate all the Parallels Business Automation - Standard interface elements including:

- General labels, i.e., everything that composes the static screens content (names of fields, textboxes, menus, option buttons, list titles, etc.)
- Messages, i.e., all the system messages and warnings that appear on Parallels Business Automation - Standard screens.
- ToolTips, i.e., descriptive information displayed in popup boxes when you hover the mouse pointer over links, images, or other screen elements.
- Onscreen hints that can be shown on each screen in the Control Panel.

Translating General Labels and Messages

Below we describe how to translate the Parallels Business Automation - Standard general localization. In general, the translation consists of the following steps:

- Place a new XML file containing strings for a new language pack into a special directory.
- Prepare for a new language presentation in the Parallels Business Automation - Standard interface:
  - Add a string containing a language name into the language localization file. This allows selecting a new language via the Parallels Business Automation - Standard web-based interface.
  - Specify a new language by adding a new language definition file.

Adding a new Translation

As a translation source, we recommend to use the English files, because the English localization in Parallels Business Automation - Standard is the basic and thus, it is the most full one.

We describe the procedure of a new language pack addition using the example. For example, let us consider how to translate the Parallels Business Automation - Standard interface into the Chinese language.

Create a special directory for a new localization

First of all, create a separate subdirectory to store a new localization file. Create a new directory named by a corresponding two-letter country code (upper-case), in our example with Chinese language, the directory must be named ZH:

```
/var/opt/hspc-root/i18n/ZH
```

Save the translated XML files (strings.xml, countries.xml, states_ca.xml, and states_us.xml into the newly created directory (for Chinese, `/var/opt/hspc-root/i18n/ZH`).

Edit the language definition

The language definition is a special file located in the

```
/var/opt/hspc-root/i18n/<Language_code>/language.xml
```

file.

The language definition makes a language available for Parallels Business Automation - Standard interface. Namely, a language can be selected as a personal setting, as a default language, and as a personal notifications language.

For example, for the French language:

```
<language id="fr" title="French" ready="1">
<title_id>lang_fr_uc</title_id>
<flag_icon_id>flag_fr</flag_icon_id>
<charset>iso-8859-1</charset>
<utf8_map>ISO_8859-1</utf8_map>
<dateformat>%d-%b-%Y</dateformat>
<datetimeformat>%d-%b-%Y, %H:%M</datetimeformat>
<timeformat>%H:%M</timeformat>
<posixlocale>fr_FR.ISO-8859-1</posixlocale>
</language>
```

To add a language definition, just add the special strings block into the `language.xml` file and place this file into the language pack directory. Since string blocks are almost similar, you can copy and paste any of the language definition blocks and then edit it to match a particular language.

Below we consider our example with Chinese language.

String	Description

<language id="zh" title="Chinese" ready="1">	The tag that opens a language definition block. Change the id value into the corresponding two-letter country code, lower-case. In out example, the id must be "zh" for China.

<title_id>lang_zh_uc</title_id>	The <title_id> tag contains the ID of the localization string in the corresponding strings.xml file. Please. make sure that the strings.xml for Chinese language contains the string (if needed, correct the string ID:
	<string>
	    <id>lang_zh_uc</id>
	    <c>interface language name</c>
	    <zh>中文</zh>
	</string>

<flag_icon_id>flag_zh</flag_icon_id>	The language flag icon ID. To use this option, please, contact your vendor.
<charset>iso-8859-1</charset>	The default character set used for a language.
<utf8_map>ISO_8859-1</utf8_map>	The special charset option for UTF-8.
<dateformat>%d-%b-%Y</dateformat>	The format the date is shown in the interface.

<datetimeformat>%d-%b-%Y, %H:%M</datetimeformat>	The format the date-time is shown in the interface.
<timeformat>%H:%M</timeformat>	The format the time is shown in the interface.
<posixlocale>zh_ZH.ISO-8859-1</posixlocale>	Posix locale for a language.
</language>	The language definition block closed.

Finally, restart web server at your Management Node to load the newly added language:

Now restart web server, so Parallels Business Automation - Standard will load newly created localization file.

```
/etc/init.d/hspcd restart
```

Please make the new language available. To this effect log in to the Provider Control Center and go to the System Director - Configuration Manager - Interface Settings.

Now you will see the new language in the drop-down menu on the login form. Please select this new language to see all your changes in the interface translation immediately after you logging in to the Parallels Business Automation - Standard tools.

When you translate new strings, please do not forget to restart the web server every time you want to see your changes in the interface.

Translating ToolTips for Menu Items

Text messages for tooltips are stored in XML files located under the

`/var/opt/hspc-root/tool-tips/country_code`

directory, where `country_code` is to be replaced with a two-letter country code in upper-case according to the ISO 639 (http://www.loc.gov/standards/iso639-2/php/code_list.php) standard.

1. First of all, create the subdirectory under `/var/opt/hspc-root/tool-tips/` with the name that is similar to the relevant two-letter language code. We shall go on with the example used earlier in this guide and below we consider translation into Chinese language:

```
[root@47 root]# cd /var/opt/hspc-root/tool-tips/

[root@47 tool-tips]# mkdir ZH
```

2. Please copy XML files into the newly created subdirectory.

```
[root@47 tool-tips]# cp *.xml ZH/
```

3. Finally, please translate tool-tips text message.

Each XML file contains typical blocks, such as:

```
<tip id="billing_management_statements" data="View statements" />
```

where:

- `billing_management_statements` – is the unique ID of the tool-tip;
- `View statements` – the text that appears in the tooltip box and has to be translated.

Therefore, you need to go through each XML file and replace each text that corresponds to the "`data`" parameter with the string in the new language. Other data (including formatting) should not be changed.

You can see the result of your translation in the Customer Control Panel if you will hover the mouse pointer to a menu item and hold it for a while.

Note 1: Please make sure you've turned on "Show tool tips on menu items" option in the Provider Control Center under the Configuration Director - Miscellaneous Settings - Interface Settings.

Note 2: Restart of web server is not needed to see changes made to the tool-tips translation.

Translating the On-Screen Hints

On-screen hints are stored as HTML files included in each page of the Control Panel. All these HTML files are located under the `/var/opt/hspc-root/hints/` directory. Name of the hint file consists of the screen ID of the page this hint is shown on.

1. First of all, create the subdirectory under `/var/opt/hspc-root/hints/` with the name that is similar to the two-letter language code. Again, we will continue with the example used before in this guide and below we consider translation to Chinese language:

```
[root@47 root]# cd /var/opt/hspc-root/hints/
```

```
[root@47 hints]# mkdir ZH
```

2. Please copy HTML files into the newly created subdirectory.

```
[root@47 hints]# cp *.html ZH/
```

3. Finally, please translate the content of HTML hint-files. Please do not change HTML formatting while translating.

You can see the result of your translation immediately in the Customer Control Panel.

Note 1: Restart of web server is not needed to see changes made to the hints translation.

Note 2: Please use "Screen Viewer" available in the Provider Control Center: System Director - Support Manager to lookup the location of a particular page by its screen ID.

Translating Help Files

This chapter describes how to translate the context HTML help that is available in Parallels Business Automation - Standard tools by clicking on the Help link at the upper-right corner of each screen.

Translating the Context Help Pages for Control Panel

Context help pages for Control Panel are stored as SHTML files under directory

`/var/opt/hspc-root/help/`

Help files are named exactly by the numerical screen ID of the Control Panl screen a help topic is shown on.

1. First of all, create the subdirectory under `/var/opt/hspc-root/help/` with the name similar to the relevant two-letter language code. Again, we will continue with the example used before in this guide and below we consider translation to Chinese language:

```
[root@47 root]# cd /var/opt/hspc-root/help/

[root@47 screens]# mkdir ZH
```

2. Please copy SHTML files into newly created subdirectory.

```
[root@47 screens]# cp *.shtml ZH/
```

3. Finally, translate content of help files. Please do not change HTML formatting while translating.

You can see the result of your translation immediately in the Customer Control Panel by clicking on the Help link at the upper right corner of each page.

Note: Restart of web server is not needed to see changes made to the hints translation.

Translating the Online Help Pages for Control Centers

Online help pages for Control Centers are stored as HTML files under the directory

`/var/opt/hspc-root/help_cc/`

Names of the help files consist of several words related to the subject of particular help page concatenated with underscores.

1. First of all, create subdirectory under /var/opt/hspc-root/help_cc/ with the name similar to the relevant two-letter language code. Again, we will continue with the example used before in this guide and below we consider translation to Chinese language:

```
[root@47 root]# cd /var/opt/hspc-root/help_cc/

[root@47 help_cc]# mkdir ZH
```

2. Please copy HTML files into newly created subdirectory.

```
[root@47 screens]# cp *.htm ZH/
```

3. Finally, translate content of help files. Please do not change HTML formatting while translating.

You can see the result of your translation immediately in the Provider Control Center by clicking on the **Help** link at the upper right corner of each page.

Note: Restart of web server is not needed to see changes to the translation of the help files.

Translating Printable Documentation

Please contact your Parallels sales representative to get the Microsoft Word version of Parallels Business Automation - Standard user documentation.

The PDF files themselves are located under the `/var/opt/hspc-root/doc/` directory. You can create the subdirectory named similarly to the two-letter language code and put the translated PDF guides there.

CHAPTER 7

Plug-Ins Development

This chapter describes how to develop new pluggable modules (plug-ins) for anti-fraud screening, payments processing (both online and bank account payment and payment methods), SSL certificates provisioning, promotions, domain registration, and name servers registration.

In This Chapter

Plug-Ins Toolkit Methods

The methods that belong to the HSPC::PluginToolkit::General are used in the PM, PP, and DM plug-ins toolkit are:

string

argparam

uriparam

geo_get_countries

geo_get_states

geo_get_country_name

geo_get_state_name

last_month_day

geo_get_states_us

geo_get_states_ca

split_date_string

str_to_time

datetime_gmt_now

compare_dates

encode_base64

decode_base64

encode_base64_safe

log

log_debug

HSPC::PluginToolkit::Translit namespace:

translit - transliterate data from a specified encoding (the encoding table identifier is passed as a constant) into ASCII, additional options - delete non ASCII characters in a source data (either all or a particular ones)

translit_utf - transliterate data from UTF into ASCII.

log_warn

throw_exception

Anti-Fraud Plug-ins

Typical Anti-Fraud plug-in consists of the following.

Two perl modules

For, example, modules for the Dummy anti-fraud plug-in are named as follows:

Graphical representation:

HSPC::Fraud::Plugin::Dummy

This module is responsible for plug-ins' configuration screens representation.

Middle Tier module (MT-module):

HSPC::MT::Fraud::Plugin::Dummy

This module is responsible for input data checking and per-vendor plug-in's configurations.

Modules' names include a plug-in ID in the form of a text constant. For the Dummy anti-fraud plug-in this ID is Dummy. For the other anti-fraud plug-ins the string IDs are the following:

Plug-In Name	Plug-In ID
Country Black List	BlackCountry
IP Black List	BlackIPs
Phone Black List	BlackPhone
Credit Card Black List	CardNumber
Credit Card Validation	CreditCard
Email Check	EmailCheck
Email Black List	EmailList
IP Country	IPCountry
Domain Name Black List	IPLookup
Phone Country	PhoneCountry
Proxy Check	ProxyCheck
Try Count	TryCount
USA Phone	USAPhone
ZIP Check	ZIPCheck

Post-Installation Configuration Script

The post-installation configuration script creates a necessary storage for a plug-in internal use and fills it with an initial data. After this the script registers a new plug-in in Parallels Business Automation - Standard Anti-Fraud System. If there is a need to install some third-party software, this script installs it as well.

Please, refer to the Package Structure (on page 252) for the complete list of files included in an anti-fraud plug-in distribution.

Graphical Representation

We describe the graphical representation module using the example of the Dummy anti-fraud plug-in.

```
package HSPC::Fraud::Plugin::Dummy;
use strict;

use HSPC::SystemLib;
use HSPC::WebSystemLib;
use HSPC::Fraud::Plugin::Abstract;
use HSPC::Localization;
```

Mark this class as a child of **HSPC::Fraud::Plugin::Abstract**.

```
use base 'HSPC::Fraud::Plugin::Abstract';
```

Provide constant:

```
use constant SMHDM => [ 1, 60, 3600, 86400, 2592000];
```

This constant defines custom tabs for the plug-in in addition to a predefined one(s). If the Dummy plug-in consists of only one tab, it is placed in the LAYOUT-array.

```
my @LAYOUT = (
        {
                caption => string('afmp_dummy_tab_title'),
                page_id => 'dummy',
                edit => {
                        handler => sub {my ($l) = @_; $l->_edit_handler},
                        alias   => "fraud_plugin_tab_dummy_act_edit",
                },
                view => {
                        handler => sub {my ($l) = @_; $l->_view_handler},
                        alias   => "fraud_plugin_tab_dummy",
                },
                update => {
                        handler => sub {my ($l) = @_; $l->_update_handler},
                },
        },
);
```

Each LAYOUT's member consists of fields:

- **caption** - Title for a tab (text placed on a tab).
- **page_id** - Used in URL as reference to a tab (for internal use only, you should take care of not using already allocated ID in current layout).
- **edit** -This item represents **Edit** for the tab.
- **view** - This item represents **View** for the tab.
- **update** - Update the method introduced here to be called after clicking the **Save** button on the **Edit** screen.

Each item enlisted above has the fields:

- **handler** - anonymous method definition, where we show the layout method for drawing a current screen.
- **alias** – component repository alias name (on page 162).

As you can correctly conclude, for **update** item you can leave the **alias** field empty.

The new constructor creates a new visual plug-ins' instance and adds to predefined tabs a new one defined above.

```
sub new {
   my $class = shift;

   my $obj = $class->SUPER::new(@_);

   if ($obj) {
       push @{$obj->layout}, @LAYOUT;
   }

   return $obj;
}
```

```
sub _edit_handler {
        my $self = shift;
        my $page = $self->page || sw_die("page undefined");
        my $data = $self->data || sw_die("data undefined");

        $self->header(title => $data->name);

        $page->edit_open(
                form_url => $page->get_browse_url
                                  . $self->url_ext(
                                                  act => 'edit',
                                                  tab => $self-
>cur_page,
                                                  id  => $data->id
                                          )
        );

        $page->edit_view_combo(
                title_id      => 'afmp_dummy_result',
                view_name     => 'dummy_result',
                value         => $data->dummy_result,
                no_default    => 1,
                options       => $data->get_result_options,
        );

        my $has_no_score = ($data->score < 0) ? 1 : 0;

        $page->{edit_enable_views}->{score} = $page->{edit_enable_views}-
>{score_factor} = ! $has_no_score;
        $page->edit_view_check(
                full_row      => 1,
                title_id      => 'afmp_dummy_has_no_score',
                view_name     => 'has_no_score',
                value         => $has_no_score,
                enable_views  => ['score', 'score_factor', ],
                disable_views => ['score', 'score_factor', ],
        );
        $page->edit_view_input(
                title         => string('afmp_dummy_score'),
                view_name     => 'score',
                max_length    => 10,
                value         => $data->score,
        );

        $page->edit_view_input(
                title         => string('afmp_dummy_score_factor'),
                view_name     => 'score_factor',
                max_length    => 10,
                value         => $data->score_factor,
        );
        $page->row_close();
        $page->cell_text(value => string('afmp_dummy_async_desc'));
        $page->row_close();

        $page->edit_view_input(
                title         => string('afmp_dummy_count'),
                view_name     => 'max_count',
                max_length    => 10,
                value         => $data->max_count,
        );

        $page->edit_view_period(
                title         => string('afmp_dummy_period'),
                view_name     => 'period',
                max_length    => 10,
                value         => $data->period,
                type       => 'period',
        );

        $page->edit_view_period(
                title         => string('afmp_dummy_lim'),
                view_name     => 'lim',
                max_length    => 10,
                value         => $data->lim,
                type       => 'period',
        );

        $page->edit_close;
}

sub _view_handler {
        my $self = shift;
        my $page = $self->page or sw_die('page undefined');
        my $data = $self->data or sw_die('data undefined');

        $self->header(title => $data->name);

        $page->view_info_header();

        $page->view_info_text(
                title_id => 'afmp_dummy_result',
                value => string($data->result_str),
        );

        my $has_no_score = ($data->score < 0);
        $page->view_info_text(
                full_row      => 1,
                title_id => 'afmp_dummy_has_no_score',
                value    => $has_no_score,
                type     => 'bool'
        );

        if (! $has_no_score) {
                $data->score(0) if ($data->score < 0);
                $page->view_info_text(
                        title_id => 'afmp_dummy_score',
                        value => $data->score,
                );

                $page->view_info_text(
                        title_id => 'afmp_dummy_score_factor',
                        value => $data->score_factor,
                );
        }

        $page->view_info_text(
                title          => string('afmp_dummy_count'),
                value          => $data->max_count,
        );

        $page->view_info_text(
                title_id => 'afmp_dummy_period',
                value => $data->period,
                type       => 'period',
        );

        $page->view_info_text(
                title_id => 'afmp_dummy_lim',
                value => $data->lim,
                type       => 'period',
        );

        $page->view_info_footer();
        $page->view_info_button(
                url_ext => $self->url_ext(act => 'edit', tab => $self-
>cur_page, id => $data->id),
                show_cancel   => 1,
                show_edit     => 1,
        );
}
```

_update_handler used in the **update** item can return string, in this case the plug-in data will not be changed and the string looking like "Red Banner Text" will appear on the **View** screen.

```
sub _update_handler {
        my $self = shift;
        my $data = $self->data or sw_die("data undefined");

        my $result = sw_argparam('dummy_result');

        $data->dummy_result(sw_argparam('dummy_result'));

        my $has_no_score = sw_argparam('has_no_score');
        my $score = sw_argparam('score');
        my $score_factor = sw_argparam('score_factor');
        return string('afmp_dummy_score_factor_must_nonnegative') if
$score_factor < 0;
        if ($has_no_score) {
                $score = -1;
        } else {
                return string('afmp_dummy_score_must_nonnegative') if $score <
0;
                $data->score_factor($score_factor);
        }
        $data->score($score);
        my $max_count = sw_argparam('max_count');
        my $number_period = sw_argparam('number_period');
        my $interval_period = sw_argparam('interval_period');
        my $number_lim = sw_argparam('number_lim');
        my $interval_lim = sw_argparam('interval_lim');

        $data->max_count($max_count);
        $data->period($number_period * SMHDM()->[$interval_period]);
        $data->lim($number_lim * SMHDM()->[$interval_lim]);

        return undef;
}
```

And each perl module must return true value in its last operand:

```
1;
```

Middle Tier Module

We describe the Middle Tier (MT) module using the example of the Dummy plug-in. We list the whole MT module for the Dummy plug-in with comments inline.

Header

```
#
# This file contains middletier methods
# of class HSPC::MT::Fraud::Plugin::Dummy
package HSPC::MT::Fraud::Plugin::Dummy;
use strict;
```

All modules we are going to use:

```
use HSPC::SystemLib;
use HSPC::WebSystemLib;
use HSPC::MT::Fraud::Constants qw(:all);
```

Include the Data::Dumper which is useful for debugging.

```
use Data::Dumper;
```

Declare here the parent class for the current one:

```
use base qw(HSPC::MT::Fraud::Plugin::Abstract HSPC::MT::Fraud::Service);
```

Avoid the use of a magic string/numeric values. Use constants defined here!

Profile Hash

Declare constants:

```
use constant PLUGIN_NAME          => 'Dummy';
use constant DUMMY_RETURN_OPTIONS => {
        &FRAUD_CODE_ERROR      => 'afmp_dummy_error_result',
        &FRAUD_CODE_MATCHED    => 'afmp_dummy_matched_result',
        &FRAUD_CODE_NOTMATCHED => 'afmp_dummy_notmatched_result'
};

use constant DEFAULT_TYPE => [
        &FRAUD_ACTION_TYPE_ALERT,    &FRAUD_ACTION_TYPE_BONUS,
        &FRAUD_ACTION_TYPE_PROHIBIT, &FRAUD_ACTION_TYPE_NEED_APPROVAL,
        &FRAUD_ACTION_TYPE_APPROVE,
];
use constant DEFAULT_TYPE_ASYNC => [
        &FRAUD_ACTION_TYPE_ALERT, &FRAUD_ACTION_TYPE_BONUS,
        &FRAUD_ACTION_TYPE_NEED_APPROVAL,
];
use constant DEFAULT_CHECK => sub {
        my $p = shift;
        my %h = @_;
        my ($d, $c, $v) = ($h{conf}, $h{cond}, $h{value});
        $p->_check_handler(conf => $d, cond => $c, value => $v);
};
```

Core profile hash, which defines all the options and behavior of the plug-in:

```
use constant CONDITIONS => {
        dummy_login => {
                activity  => &FRAUD_ACTIVITY_LOGIN,
                name      => 'afm_cond_dummy_login',
                types     => DEFAULT_TYPE(),
                check     => DEFAULT_CHECK(),
                proc_type => FRAUD_PROC_TYPE_NORMAL(),
        },
        dummy_newacc => {
                activity  => &FRAUD_ACTIVITY_ACCOUNT_REG,
                name      => 'afm_cond_dummy_regacc',
                types     => DEFAULT_TYPE(),
                check     => DEFAULT_CHECK(),
                proc_type => FRAUD_PROC_TYPE_NORMAL(),
        },
        dummy_neword => {
                activity  => &FRAUD_ACTIVITY_NEW_ORDER_CREATION,
                name      => 'afm_cond_dummy_new_order_place',
                types     => DEFAULT_TYPE(),
                check     => DEFAULT_CHECK(),
                proc_type => FRAUD_PROC_TYPE_NORMAL(),
        },
        dummy_reneword => {
                activity  => &FRAUD_ACTIVITY_RECURRING_ORDER_CREATION,
                name      => 'afm_cond_dummy_renew_order_place',
                types     => DEFAULT_TYPE(),
                check     => DEFAULT_CHECK(),
                proc_type => FRAUD_PROC_TYPE_NORMAL(),
        },
        dummy_newpm => {
                activity  => &FRAUD_ACTIVITY_UNCHECK_PAYMENT_METHOD,
                name      => 'afm_cond_dummy_new_paymethod',
                types     => DEFAULT_TYPE(),
                check     => DEFAULT_CHECK(),
                proc_type => FRAUD_PROC_TYPE_NORMAL(),
        },
        dummy_apprpm => {
                activity  => &FRAUD_ACTIVITY_APPROVED_PAYMENT_METHOD,
                name      => 'afm_cond_dummy_approved_paymethod',
                types     => DEFAULT_TYPE(),
                check     => DEFAULT_CHECK(),
                proc_type => FRAUD_PROC_TYPE_NORMAL(),
        },
        dummy_newacc_async => {
                activity  => &FRAUD_ACTIVITY_ACCOUNT_REG,
                name      => 'afm_cond_dummy_regacc_async',
                types     => DEFAULT_TYPE_ASYNC(),
                check     => DEFAULT_CHECK(),
                proc_type => FRAUD_PROC_TYPE_ASYNC(),
        },
        dummy_neword_async => {
                activity  => &FRAUD_ACTIVITY_NEW_ORDER_CREATION,
                name      => 'afm_cond_dummy_new_order_place_async',
                types     => DEFAULT_TYPE_ASYNC(),
                check     => DEFAULT_CHECK(),
                proc_type => FRAUD_PROC_TYPE_ASYNC(),
        },
        dummy_reneword_async => {
                activity  => &FRAUD_ACTIVITY_RECURRING_ORDER_CREATION,
                name      => 'afm_cond_dummy_renew_order_place_async',
                types     => DEFAULT_TYPE_ASYNC(),
                check     => DEFAULT_CHECK(),
                proc_type => FRAUD_PROC_TYPE_ASYNC(),
        },
        dummy_newpm_async => {
                activity  => &FRAUD_ACTIVITY_UNCHECK_PAYMENT_METHOD,
                name      => 'afm_cond_dummy_new_paymethod_async',
                types     => DEFAULT_TYPE_ASYNC(),
                check     => DEFAULT_CHECK(),
                proc_type => FRAUD_PROC_TYPE_ASYNC(),
        },
        dummy_apprpm_async => {
                activity  => &FRAUD_ACTIVITY_APPROVED_PAYMENT_METHOD,
                name      => 'afm_cond_dummy_approved_paymethod_async',
                types     => DEFAULT_TYPE_ASYNC(),
                check     => DEFAULT_CHECK(),
                proc_type => FRAUD_PROC_TYPE_ASYNC(),
        },
};
```

Here:

- *dummy_login/dummy_newacc/etc.* - condition keys for internal structure organization. Each condition has its own unique key.
- *activity* (scalar/reference to array of scalars) - defines chains that current condition supports.
- *types* (scalar/reference to array of scalars) - defines the action types a given condition supports.
- *name* - string_id of a title to be shown in the 'New Rule' wizard. The Select Condition screen.
- *check* - magic code-string, the only thing you should pay attention to is a method name mentioned here. You should define this method below in your code.
- *proc_type* - shows the type of condition (synchronous\asynchronous)

Class Info

```
use constant CLASS_INFO => {
        props => {
                'id'           => {col => 'id',           table => 'data', key
=> 1},
                'vendor_id'    => {col => 'vendor_id',    table => 'data', key
=> 1},
                'dummy_result' => {col => 'dummy_result', table => 'data'},
                'score'        => {col => 'score',        table => 'data'},
                'score_factor' => {col => 'score_factor', table => 'data'},
                'max_count'    => {col => 'max_count',    table => 'data'},
                'period'       => {col => 'period',       table => 'data'},
                'lim'          => {col => 'lim',          table => 'data'},
        },
        tables => {
                'data'   => {name => 'fraud_plugin_dummy', replace => 1},
                'plugin' => {
                        name       => 'fraud_plugin',
                        replace    => 1,
                        delete     => 1,
                        rel_table  => 'data',
                        join_where =>
                                'plugin.id=data.id AND
plugin.vendor_id=data.vendor_id'
                },
        }
};
```

Check Handler

Below is the object-method mentioned in profile-hash. It takes three parameters:

- cond - Condition key to define that condition started this method.
- value - Value hash. For more information, please refer to the Anti-Fraud Manager Value structure (see page 251). In addition, the value parameter includes the references to the current rule-object, chain-object, and activity type.
- conf - plug-in specific rule configuration hash.

```
sub _check_handler {
        my $self  = shift;
        my %h     = @_;
        my $cond  = $h{cond} or sw_die('data undefined');
        my $conf  = $h{conf};     ##|| sw_die("conf undefined");
        my $value = $h{value};    ##|| sw_die("value undefined");
#       my $details = {};
        my $code;
        my $descr;

        $code = $self->dummy_result();

        if ($cond =~ /_async$/) {
                sw_die('either max_count or limit must be positive')
                        unless $self->max_count() > 0 || $self->lim() > 0;
                $self->set_async(
                        score  => ($self->score() >= 0) ? $self->score : 0,
                        descr  => 'afm_postponed_result',
                );
                return;
        } elsif (&FRAUD_CODE_ERROR      == $code) {
                $descr      = 'afmp_dummy_error_result';
        } elsif (&FRAUD_CODE_MATCHED    == $code) {
                $code       = &FRAUD_CODE_SCORE if $self->score() >= 0;
                $descr      = 'afmp_dummy_matched_result';
        } elsif (&FRAUD_CODE_NOTMATCHED == $code) {
                $descr      = 'afmp_dummy_notmatched_result';
        }
        $self->set_result(
                score      => ($self->score() >= 0) ? $self->score : 0,
                code       => $code,
                descr      => $descr,
        );

        return;
}
```

Result that is set in the object consists of three parts:

1. score - this value is returned by plug-in and will be multiplied by corresponding coefficient (set in plugin's config);
2. code - result code of plugin execution, possible values:

   FRAUD_CODE_MATCHED - plug-in matched the data for the corresponding rule (e.g. country is blacklisted)

   FRAUD_CODE_NOTMATCHED - plugin did not match anything for the corresponding rule

   FRAUD_CODE_ERROR - error has occurred during the plug-in execution

   FRAUD_CODE_POSTPONED - plug-in is asynchronous - result has not arrived yet

FRAUD_CODE_SCORE - plug-in matched the data for the corresponding rule (e.g. country is blacklisted), and it also returned some value that will take part in score recounting

3. descry – description of return value.

Post-Install Method

If a plug-in needs some extra action just after installation, developer should define the post_install method. Here is an example illustrating how to install the list object for the plug-ins managing 'Black' lists.

This method must be defined only in the blacklist (IP Black List, Phone Black List etc.) plug-in.

```
 sub post_install {
   my $self = shift;
   my $list;
   my $error;

   ## find_install_list method makes an attempt to find already installed list
   ## for the plugin/vendor. If it fails (in the case when the plugin was not
installed before),
   ## the method installs new one.
   $list = HSPC::MT::Fraud::Factory->find_install_list(
       plugin_id => $self->id,
       vendor_id => $self->vendor_id,
       name      => &PLUGIN_NAME,
       condition => 'account_in_stop_list',
   );

  ## Optional action. We can transfer error (if any) to $self->error to
  ## have an ability to view errors from caller method.
  $error = HSPC::MT::Fraud::Factory->error;

   if (!$list || $error) {
       $error = "Cannot install list for TLDList Fraud Plugin."
       . ($error ? " Error: $error" : "");
       $self->error($error);
   } else {
       $self->list_id($list->id());
   }

   return;
}
1;
```

Post-Installation Configuration Script

We use the example of the Dummy anti-fraud plug-in. Below is the listing of `hspc-config-fraud-plugin-dummy` script with comments inline.

```
#!/usr/bin/perl
## $Id: AntiFraudAPI,v 1.1 2006/05/17 12:53:53 cvs Exp $
#
#
# Parallels Business Automation - Standard Fraud Prevention System Dummy
plugin
# post-installation configuration script
#
# Remarks:
# It is safe to run this script more than once,
# since it checks everything before any modifications.
#


use strict;

use HSPC::Console;
use HSPC::WebDB;
use HSPC::SystemLib;
use HSPC::MT::Core::Constants;
use HSPC::MT::Fraud::Factory;

# 'install' or 'remove'
my $mode = $ARGV[0];

# print help screen
unless ($mode eq 'install' || $mode eq 'remove') {
        print "Usage: hspc-config-fraud-plugin-dummy [ install | remove
]\n\n";

        exit 1;
}

if ($mode eq 'install') {

## new table format, must delete old one
## ane create new table for storing plugin configuration
        select_run(q{DROP TABLE IF EXISTS fraud_plugin_dummy});
        select_run(q{
                CREATE TABLE IF NOT EXISTS fraud_plugin_dummy(
            vendor_id       int(11) NOT NULL,
            id              varchar(100) NOT NULL,
            name            varchar(32),
            dummy_result    int(11),
            score           int(11) default -1,
            score_factor    float,
            max_count       int(11) default 0,
            period          varchar(100),
            lim             int(11),
            PRIMARY KEY (vendor_id,id)
        ) ENGINE=InnoDB
        });

        HSPC::MT::Fraud::Factory->install_plugin(
                id           => "Dummy",
                name         => "Dummy Plugin",
                score        => -1,
                score_factor => 1.0,
                max_count        => 0,
                period       => 5,
                lim          => 300,
        );

        ## register plugin
} elsif ($mode eq 'remove') {
        ## unregister plugin
}
```

Here is an agreement to not drop or clean up the table `fraud_plugin_dummy` during plug-ins deinstallation. This script is used in the spec file responsible for RPM creation, so if we place the cleaning code here, after each rpm-update of the plug-in, we will get an empty configurations for all vendors (both provider and their resellers) who have configured it.

```
exit 0;
```

Attention: `HSPC::MT::Fraud::Factory->install_plugin` method uses a string constant as a value for id input parameter (this is Plug-in ID). This string constant MUST be equal to the last chunk without '::' of MT/GUI modules names.

Anti-Fraud Manager Value Structure

Anti-Fraud Manager (AFM) uses a unified VALUE data structure. This structure includes all parameters to be checked by an AFM Filter. This structure must have a predefined format so that any of AFM plug-ins could know where the data to be verified is located.

These data-objects are composed as hash with keys:

Payment with Unchecked Payment Method and

Payment with Approved Payment Method

- order - Object order.
- account - Object account.
- address - Object address.
- paymethod - Object paymethod.

New Order Creation and Recurring Order Creation

- order – Object order.
- address - Object address.
- account - Object account.

Login Filter

- address - Object address.
- account - Object account.

Component repository configuration files

./hspc-fraud-plugin-dummy/comprep/commerce_director_fraud_plugin_dummy.xml:

```
<root>
        <director alias="commerce_director">
                <manager alias="fraud_manager">
                        <screen alias="fraud_plugins">
                                <screen alias="fraud_plugin">
                                        <screen
alias="fraud_plugin_tab_dummy"/>
                                        <screen
alias="fraud_plugin_tab_dummy_act_edit"/>
                                </screen>
                        </screen>
                </manager>
        </director>
</root>
```

Anti-Fraud Plug-In Package Structure

Below we have inserted the example of the Dummy anti-fraud plug-in.

Localization:

`./hspc-fraud-plugin-dummy/i18n/EN/hspc-config-fraud-plugin-dummy.xml`

Graphical representation. Module HSPC::Fraud::Plugin::Dummy

`./hspc-fraud-plugin-dummy/lib/Fraud/Plugin/Dummy.pm`

Middle Tier module. Module HSPC::MT::Fraud::Plugin::Dummy

`./hspc-fraud-plugin-dummy/lib/MT/Fraud/Plugin/Dummy.pm`

Other mandatory files required for an anti-fraud plug-in building/installation:

`./hspc-fraud-plugin-dummy/lib/Makefile`

`./hspc-fraud-plugin-dummy/lib/Makefile.PL`

`./hspc-fraud-plugin-dummy/i18n/Makefile`

`./hspc-fraud-plugin-dummy/Makefile`

`./hspc-fraud-plugin-dummy/build.sh`

`./hspc-fraud-plugin-dummy/hspc-config-fraud-plugin-dummy`

`./hspc-fraud-plugin-dummy/hspc-fraud-plugin-dummy.spec`

`./hspc-fraud-plugin-dummy/comprep/commerce_director_fraud_plugin_dummy.xml`

Payment Plug-Ins Development

In PBAS payments are processed using external payment gateways. The way payments are processed vary depending on a payment gateway. Therefore, the PBAS API is designed to support a variety of payment processing schemes, such as direct and redirect payments, bank transfers. A particular implementation of a payment processing scheme for a particular payment gateway is called *payment plug-in*.

Below we describe how to develop a new payment plug-in.

The code samples for Dummy Online Payment plug-in and Dummy Bank Transfer Payment plug-in are available in the `samples/plugins/hspc-plugin-pp-op-dummy` and `samples/plugins/hspc-plugin-pp-bt-dummy` SDK directories respectively.

Payment Plug-Ins Types

To support a variety of payment processing schemes, PBAS API allows implementing the plug-ins both for the custom payment method and the custom payment processing logic.

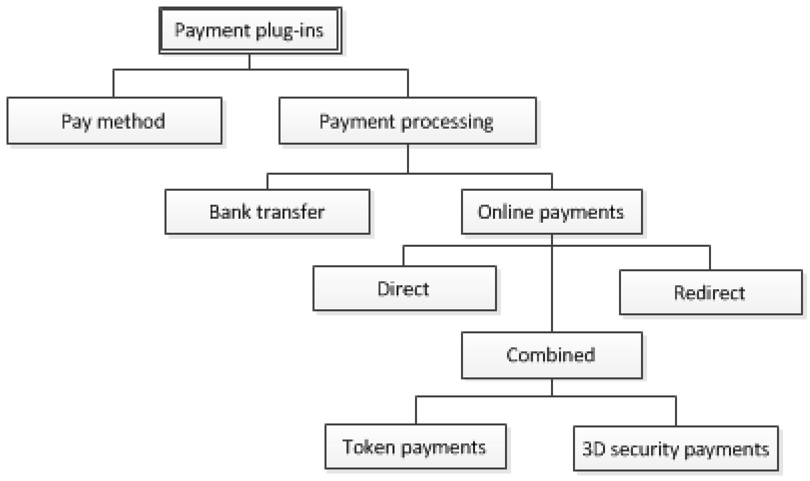
Thus, the main types of payment plug-ins are:

- The plug-in for means of payment called *payment method*. Typically, this plug-in renders the forms to add, vew, and edit a payment method data in PBAS UI, passes the list of supported payment method types, validates the entered payment method data. Depending on the desired scheme of payment, you may need a payment method plug-in or may do without it.

  Payment method plug-in is needed for direct online payment, when payment method data is stored in PBAS. As for credit cards, PBAS has a predefined list of supported credit card types; if you will use direct payment scheme and pay with one of these card types, there is no need to develop the special payment method module. We describe built-in card types later in the Online Direct Payment section of this guide. Only if a payment gateway requires for a specific type of payment method, it is needed to develop a special module for the payment method.

- The plug-in for payment processing scheme called *payment processing plug-in*. This plug-in carries the main part of payment processing logic.

The diagram below represents the variety of payment plug-in types supported by PBAS API:



Below we describe the types of payment plug-ins in details.

- **Payment method plug-in**. Defines the data structures to render a payment method UI form to add or edit, collect the data, and validate the payment method data entered.

  There is one predefined built-in payment method in PBAS:

  - **Credit Card (pm-op-ccard)**. A common credit card handled in a common way. If your plug-in will use credit cards, there is no need to develop a payment method plug-in. Supported types of credit cards are selected for the payment plug-in from its UI configuration form.

  If you need other payment method types, for example tokens or some specific credit card forms or special logic in credit card storage and processing , you'll need to develop a payment method plug-in for your new payment plug-in.

- **Payment plug-in**. Implements payment processing logic. The following types of payment processing can be implemented using PBAS API:

  - **Offline Payment by Bank Transfer**. The plug-in only generates the batch of payments and provider should manually send this batch to the bank. The batch typically contains payments amount and bank accounts data; other details are up to the bank specific requirements. Therefore, each of the bank transfer plug-ins uses a *specific payment method plug-in* that brings the needed data fields to bank's batch.

  - **Online Payment Direct**. Payers are not redirected to the payment gateway, payment method data is entered on PBAS side (online store or CP). Payment method data is stored encrypted on PBAS side. The plug-in sends payment request via security channel to Payment Gateway in background. Payment gateway response that contains transaction details is received by a plug-in in background as well. Such plug-ins allow charging customers automatically for recurring payments.

  - **Online Payment Redirect**. The plug-in uses no payment methods, because payers are redirected to payment gateway secure page, where they enter payment information. Transaction details are returned by payment gateway to the plug-in after some time. Since no payment method data is stored in PBAS, these plug-ins do not allow charging customers automatically for recurring payments.

- **Online Payment Combined Redirect+ Direct**. The examples of such a scheme are plug-is that support 3D Secure check and token plug-ins. In this case both direct and redirect transactions are performed.
  - 3D Security. To process payments with 3D security check, a customer enters credit card data on PBAS side (Store or CP), then the plug-in in background sends request to payment gateway; payment gateway returns its 3D authentication page redirect URL. After this, a customer is redirected to the bank 3D secure authentication page to enter his/her bank authorization data; when ready, customer is returned back to PBAS. Then PBAS again sends background request to bank to complete payment. Typically, such plug-ins allow charging customers automatically for recurring payments, but sometimes recurring payments are not possible, because 3D security check may be required each time a customer makes payment.
  - Token Plug-Ins. Tokenization is a technology that replaces a credit card number with a token in a transaction. The token is supposed to prevent the theft of the credit card number during transmission and storage of a transaction. Tokenization simplifies the requirements of the PCI DSS, as system that no longer stores or processes sensitive data is removed from the scope of the PCI audit. In this scheme, the first transaction is performed with redirect to the payment gateway page, where customer enters payment method data. Payment gateway returns only token to be stored in PBAS and to be used for further payments. Such plug-in allows charging customers automatically for recurring payments.

Payment Plug-In Packaging

To install a new payment plug-in, it is first needed to build it and as a result, get a plug-in RPM package. As a rule, one payment plug-in is packaged in one RPM. If a payment method is used by only one payment plug-in, it is recommended to package a payment method and a payment plug-in in one RPM package.

To correctly build the plug-in, you need to create a particular directories structure (on page 256) and correctly place the needed plug-in files among these directories.

Typically, the RPM package should be named as follows:

```
hspc-plugin-(pm or pp)-(op or bt)-plugin_name.rpm
```

hspc-plugin A standard prefix used for all plug-ins.	**pm** - payment method only	**op** - any type of online payment plug-in	**plugin_name.rpm** Any unique name that corresponds to the payment gateway name.
	OR	OR	
	pp - payment processing plug-in or both payment and payment method plug-in	**bt** - bank transfer plug-in or both bank transfer and payment method (typically, both)	

For example:

- `hspc-plugin-pp-op-myonlinepay` - Online payment plug-in that may have own payment method.
- `hspc-plugin-pp-bt-mybank` - Bank transfer plug-in that typically has own payment method.
- `hspc-plugin-pm-op-specialcard` - Online payment method.

Payment Plug-In Directories Structure and Files

The root directory in the payment plug-in package should be named exactly as the RPM name (on page 255), but without extension.

Prerequisites: The `rpmbuild` utility shall be installed at your plug-in build system

Before build, a payment plug-in directory structure basically looks as follows (the `version` file should be placed at the same level as the root directory, see the details below):

Directory:	Contains:
./	Makefiles, spec files, build files.
i18n/	XML files containing the plug-in localization strings
lib/	Perl modules
MT/Plugin/PM/	Payment method internal logic module (on page 263).*
MT/Plugin/PP/	Payment plug-in internal logic module
Plugin/PM/	Payment method UI presentation module (on page 261).*
Plugin/PP/	Payment plug-in UI presentation module.
template/	HTML templates for plug-in configuration forms. In addition, this directory contains payment plug-in online help files used in PCC/RCC.

* Not needed if default payment method (op-ccard) is used.

The plug-in localization strings in XML file should be presented in the standard format, same as for PBAS language pack (on page 227).

You can use the source code of the Dummy plug-in and make changes according to you needs. Bellow we describe in details the plug-in directory content and possible changes, which you need to make.

- The `version` file that contains the number of PBAS build for which you will use your new plug-in.

  Create the `version` file and place it on the same level as the plug-in root directory. Specify the number of PBAS build in the `version` file. To found the PBAS build number, log in to PCC and click **Support** on the left menu. Select the **Contacts** tab. For example, you can see **Build ID 4.3-50**. Then the content of the `version` file shall look as follows:

  ```
  HSPC_VERSION=4.3

  HSPC_RELEASE=50
  ```

- The plug-in root directory content:
  - `build.sh` - the shell script, used to build the plug-in RPM. In most cases there is no need to change anything in this file, you can take is as it is used for the Dummy plug-in. Remember that the `rpmbuild` utility shall be installed at your plug-in build environment to build RPMs.
  - RPM specification, the `.spec` file.

    Rename the .spec file. For example, if your new plug-in name is package name is `hspc-plugin-pp-op-mypayment`, then the `.spec` file shall be renamed accordingly `hspc-plugin-pp-op-mypayment.spec.`

    Change the `.spec` file contents. Specify your new plug-in name and other relevant information instead of the specified for the in dummy package in the following sections:

    `Name`

    `Summary`

    `Copyright`

    `%description`

    `%post`

    `%preun`

    `%attr(-, root, root)`
  - `Makefile`. Describes how to build RPM and which files should be packed to RPM. In general cases, no changes are needed. The sample Makefile includes `/i18n`, `/lib`, and `/template` directories in the plug-in package. For build RPM you should run ./build.sh without parameters.
- The `i18n` directory content:
  - `Makefile`. No changes are needed to this file.
  - Directories named by two-letter ISO language codes; each directory contains the plug-in localization strings in `.xml` files. The `.xml` file(s) containing localization can have any name, but we recommend to rename `.xml` files by the plug-in package name, for example, `hspc-plugin-pp-op-mypayment.xml`. Drop the directories for the languages you do not use for your plug-in. Leave here only the directories for languages you really use for your plug-in localization.
- The `lib` directory content:
  - `Makefile`, `Makefile.PL` - make files used to build Perl modules, no changes are needed.
  - `MT` and `Plugin` directories - contain the plug-in Perl modules, later in this guide we describe in details how to develop own Perl modules.
- The `template` directory content:
  - `Makefile` - contains specification where to install the plug-in templates. It is recommend to install templates to /var/opt/hspc-root/template/HSPC/Plugin/PP/<plugin_id>, where <plugin_id> is your plug-in name composed according to the naming rules (on page 258).

    Change the plug-in installation directory PLUGIN_PATH into $(HSPC_TEMPLATE)/HSPC/Plugin/PP/`<plugin_id>`/

- Directories containing the plug-in context help files with name of language (EN). Inside HTML files for help for following actions: about, edit, new, view.
- Template files for UI configuration screens edit, view.

Payment Plug-In Modules and Their Name Spaces

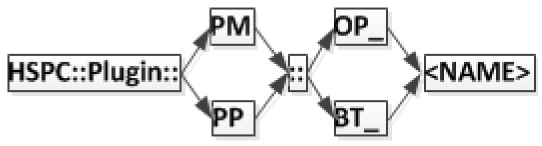
It is necessary to have one module for graphical presentation and one for a plug-in specific logic. To work correctly in PBAS, Perl modules should contain correctly defined name spaces for the plug-in internal logic and graphical presentation:

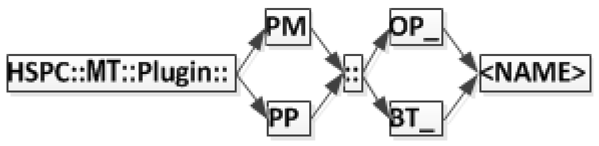
- `HSPC::MT::Plugin::<plugin_type>::<plugin_id>` responsible for the payment gateway specific logic, composing and parsing request, converting gateway specific data into PBAS format.
- `HSPC::Plugin::<plugin_type>::<plugin_id>` responsible for the plug-in presentation level, configuration form, edit and view forms.

Where:

- `<plugin_type>` – the type of the plug-in:
  - PP - payment plug-in
  - PM – payment method plug-in
- `<plugin_id>` - the plug-in name. It should be composed according to the rules:
  - Specific prefixes should be used for classes naming:
    - OP_ - for online payment methods.
    - BT_ - for bank transfer methods.
  - **Important**: A plug-in ID must contain only one underscore that divides a payment plug-in type definition OP or BT from a plug-in name, otherwise, a plug-in name will be recognized incorrectly.

The figure below illustrates the name spaces naming rules:





The modules files should be named in a same way as the plug-in ID in name spaces: concatenation of a payment method type prefix and a plug-in name:

```
lib/MT/Plugin/<plugin_type>/<plugin_id>.pm
```

Example 1. For the online payment method plug-in named CCardSimple, the classes should be named as follows:

- HSPC::Plugin::PM::OP_CCardSimple for presentation level,
- HSPC::MT::Plugin::PM::OP_CCardSimple for payment method data validation and plug-in specific logic.

In file system:

- `lib/Plugin/PM/OP_CCardSimple.pm`
- `lib/MT/Plugin/PM/OP_CCardSimple.pm`

Example 2: For the bank transfer payment method plug-in named BANKSimple, the classes should be named as follows:

- HSPC::Plugin::PM::BT_BANKSimple for presentation level,
- HSPC::MT::Plugin::PM::BT_BankSimple for payment method data validation and plug-in specific logic.

In file system:

- `lib/Plugin/PM/BT_BANKSimple.pm`
- `lib/MT/Plugin/PM/BT_BANKSimple.pm`

Note: Bank transfer always needs a special module for payment method, because each bank may have specific requirements for batch file format.

Implementation Details

In this section we describe the common points of payment plug-ins implementation. This intro is useful for the plug-in developer because it brings a general understanding, what should be done for a payment plug-in without respect to its type.

Any payment plug-in should consist of two modules:

- Graphical presentation.
- Logic.

Each of these two modules should be named according to the payment plug-in type (on page 258), include the functions that are specific for the plug-in type and external modules used by the plug-in.

The interaction between PBAS core and a payment plug-in is performed as follows:

- PBAS core calls the plug-in functions when a certain data or action is needed from the plug-in to process a transaction. Basing on the set of functions implemented in the plug-in modules, PBAS defines which operations are supported by the plug-in.
- Upon PBAS core call, the functions of the plug-in logic module return the relevant data to PBAS core (such as supported payment types and currencies), make internal actions, or make external requests to a payment gateway.

When the payment plug-in functions are called by PBAS, the plug-in may call any external Perl modules available in the system or special Perl modules implemented in PBAS for plug-ins and called `PluginToolkit:`

- `HSPC::PluginToolkit::General` - the standard toolkit functions used in Payment Method plug-ins as well all in Payment and Domain Manager plug-ins.
- `HSPC::PluginToolkit::PP` - the functions used in payment plug-ins, for example to generate callback URL.
- `HSPC::PluginToolkit::HTMLTemplate` - the functions used to parse HTML template, if the plug-in uses HTML templates for graphical presentation.

The functions of the plug-in graphical presentation module are used to generate UI forms used for the plug-in configuration (Add, Edit, View), validate the data entered and render online help for the plug-in.

HTML code for the plug-in UI forms and online help is generated using the `parse_template` function that belongs to the `HTMLTemplate` toolkit.

```
$html = parse_template(
      path => __PACKAGE__,
      name => 'op_chinabank_view.tmpl',
      data => {
      merchant_id => $config->{merchant_id},
      }
);
```

Later in this guide we describe the functions that should be implemented in the plug-in modules and the returned values, depending on the desired plug-in functionality.

Payment Method Plug-Ins

Payment method modules are used by the direct payment plug-ins, which require that a payment method data is stored in PBAS and allow charging customers automatically for recurring payments.

Payment Method UI Presentation Module

This module is used to generate HTML code for payment methods UI forms (Add, Edit, View). The following methods should be implemented in the payment method presentation module:

- add_form (on page 261)
- view_form (on page 262)
- edit_form (on page 262)
- collect_data (on page 262)
- get_help_page (on page 263)

add_form

The method returns HTML code for the "New Payment Method" UI form.

Parameters passed to the function:

- secure_data
- public_data
- type
- expire_date
- name
- allowed_types
- keep_secure_code
- help_js

Returns: Raw HTML code used to render the Add Payment Method form. This code will be concatenated with the standard part of the UI form generated by PBAS framework.

Note: If a payment method plug-in does not use the UI form for new payment method addition (for example, token card methods) , but instead uses a gateway original form shown in a frame, then the `add_form` function is not needed. `view_form` and `edit_form` functions are used later to render a payment method view/edit forms.

view_form

The method returns the HTML code for the View screen that shows the payment method attributes defined in the plug-in.

Parameters passed to the function:

- secure_data
- public_data
- type
- expire_date
- name
- type_info
- keep_secure_code

Returns: Raw HTML code for UI form. This code will be concatenated with the standard part of the UI form generated by PBAS framework.

edit_form

The method returns HTML code for the Edit form for the payment method editable attributes defined in the plug-in.

Parameters passed to the function:

- secure_data
- public_data
- type
- expire_date
- name
- allowed_types
- keep_secure_code

Returns: Raw HTML code; this code will be concatenated with the standard part of the UI form generated by PBAS framework.

collect_data

The method collects data received through CGI parameters. This method is called during processing the result of the add or edit form.

Parameters passed to the function:

- secure_data
- public_data
- account_data
- only_public

Returned value: Reference to a Perl structure with collected data.

get_help_page

The optional method that returns content of help page. HTML help files are located in the template/<language_code> directory of the plug-in package. For example, English help files are located in the `template/EN` directory.

Parameters passed to this function:

- action
- language

Returns: Raw HTML code of the help page.

Payment Method Internal Logic Module

The methods used for payment method internal logic module are described below.

provided_payment_method_types

Mandatory method for all custom payment methods. Returns the array of supported payment method types.

Parameters: No input parameters.

Returns: array of supported payment methods types.

Example:

```
sub provided_payment_method_types {
      my $class = shift;
      return [
            {
                  type        => 'OP_Protx',
                  title_id    => 'pm_type_sagepay',
                  image_id    => 'sagepay_pm',
                  token_card  => 1,
            },
      ];
}
```

Output parameters description:

- `type` - the ID of the payment plug-in that uses this payment method.
- `title_id` - the ID of localization string displayed in PBAS UI as the name of payment system the method belongs. For example, 'Sagepay Payments'. String definition must be added to the XML file located in the i18n directory.
- `image_id` - the ID of the image used as payment method logo.
- `token_card` - the parameter that defines whether the payment method is treated as token or not:
    - 1 - yes, a payment method is token and it *cannot be added standalone*, without making a payment.
    - 0 - no, a payment method is not a token and it *can be added standalone,* without making a payment.

Note: The only difference between token and non-token payment methods consists in the ability of adding a payment method standalone, without making a payment. A standard credit card or a bank account can be added without making a payment, for future use. A token cannot be added without a payment, because transaction ID returned by a payment gateway is used to generate token ID.

get_paymethod_type

Mandatory method that returns the type of a payment method object. It makes sense to use this method only for the plug-ins that support several payment method types in one code and type of payment method can be defined only by analyzing of payment method properties. For example credit card type (Visa, Switch, etc.) can be defined basing on its number.

Passed parameters:

- secure_data
- public_data

Returns: type ID

title_id

Mandatory method that returns a string ID that defines localization name of a payment method attribute shown in PBAS UI. String definition must be added to the XML file localed in the i18n directory.

Parameters: No input parameters.

Returns: String ID, for example, `pm_paypal`:

```
sub title_id {
      return 'pm_type_paypal';
}
```

get_public_data

Mandatory method that returns reference to an array of public attributes of a payment method type. Public attributes are shown in PBAS UI.

Parameters: The array of public attributes. The attributes list depends on the payment system specific features.

Returns: Reference to the array of public attributes, for example:

For example:

```
my %public_data = (
             approved           => $h{data}->{approved},
             number_of_payments => $h{data}->{number_of_payments},
             total_amount       => $h{data}->{total_amount},
             currency_code      => $h{data}->{currency_code},
             max_total_amount   => $h{data}->{max_total_amount},
             sender_email       => $h{data}->{sender_email},
             expire_date        => $h{data}->{expire_date},
             pp_plugin_id       => $h{data}->{pp_plugin_id},
      );
```

get_secure_data

Mandatory method that returns the reference to an array of attributes of a payment method type that will be encrypted on the save operation.

Parameters: The array of secure attributes. The attributes list depends on the payment system specific features.

Returns: Reference to the array of secure attributes, for example:

For example:

```
my %secure_data = ( pkey => $h{data}->{pkey}, );
```

validate

Optional method that validates the values of payment method's attributes for correctness.

Parameters: The hash of attributes to be validated. The attributes list and validation logic depend on the payment system specific features. For example:

```
my %h = (
             expire_date => undef,
             secure_data => undef,
             public_data => undef,
             type        => undef,
             @_
      );
```

Returns: none

If validation error(s) occurred, then the `throw_exception` function should be called. For example:

```
throw_exception(
             type    => 'parameter',
             message => {string_id => 'error_no_number'}
      ) unless $h{secure_data}->{account_number};
```

The `throw_exception` function belongs to `HSPC::PluginToolkit::General`.

get_public_number

Mandatory method that returns public representation of a payment method identifier, for example, a part of a card number: ******2345.

Parameters: The hash(es) of a payment method secure and public attributes.

Returns: The string, a payment method number in public presentation.

get_secure_number

Mandatory method that returns full set of identification characters (secure number) of the payment method. For a credit card it may return full credit card number, for a bank account it may return concatenation of all account number fields (including bank code and branch identification number).

Parameters: The hash(es) of a payment method secure and public attributes.

Returns: The string presenting unique identifier of a payment method.

get_expiration_date

Optional method that returns an expiration date of a payment method in format of MM/YY.

Parameters: secure_data

Returns: string

delete

The optional method that is called when a payment method is deleted.

Parameters: The hash(es) of a payment method secure and public attributes.

Returns: none

get_custom_name

The optional method that returns the custom name of payment method type.

Example: The type of payment method called "SagePay token"; this method returned name can be "Visa" if the token is ID of the Visa credit card.

Parameters: The hash(es) of a payment method secure and public attributes.

Returned hash: { title_id => ‘’, image_id => ‘’}

Example of returned value:

```
return { title_id => 'ccpmp_type_v', image_id => 'visa_card' };
```

Payment Processing Plug-Ins

Payment Plug-In UI Presentation Module

This module is used to render the payment processing plug-in New, View, and Edit UI forms, as well as for the entered data validation.

The most of payment plug-ins standard settings are drawn by plug-ins framework. Only the plug-in specific settings, such as payment gateway URL(s) merchant ID password, are to be drawn by a plug-in itself. To this effect, use the tree methods described below.

view_form

The method is used to build the New and the View forms for the payment plug-in.

Parameters: configuration hash

Returned value: HTML code for the screen form.

For redirect plug-ins only. Common Referer URL:

Some payment gateways require that the payers are redirected to the payment gateway from the known referer URL only.

By default, the redirect payments in PBAS are processed in such a way, that the redirect plug-ins always get the common referer URL generated by PBAS core. First, all payers are redirected to the common URL, and only after this - further to the payment gateway page. As a result, all payers get the common referer URL, without respect to the original URL they came from (online store or Customer Control Panel).

As a part of the plug-in configuration, the common referer URL should be specified on the payment gateway side, in the Merchant Interface, so that the payers that come from this URL are recognized by the gateway and payment is allowed. Thus, it is reasonable to bring the common referer URL to the plug-in UI, so that it can be easily copied.

To get the common referer URL displayed in UI, on the plug-in View form, the plug-in developer should add the respective field to the plug-in View form template. To generate the referer URL, the special function `referer_url` is used. This function belongs to the HSPC::PluginToolkit::PP package.

edit_form

The method is used to build the Edit UI form for the payment plug-in.

Parameters: configuration hash.

Returned value: HTML code for the screen form.

collect_data

The method is used to restore and compose the parameters from user-defined form.

Parameters: none.

Returned value: configuration object to be saved.

If validation error(s) occurred, the `throw_exception` toolkit function that belongs to HSPC::PluginToolkit::General should be called. See the example of the function call in the `validate` method description (on page 266).

Payment Plug-In Internal Logic Module

This module takes the main load of payment processing: compose and send requests to payment gateway, parse payment gateway response and compose the answering request. This module also passes the information about supported transaction types, currencies, and payment methods.

The following basic functions should be implemented in any payment processing module:

- get_title (on page 279)
- get_supported_payment_method_types (on page 279)
- get currencies_supported (on page 280)

Other methods are specific for each plug-in.

All payment plug-in methods have a common input parameter - `config`. This parameter passes the plug-in specific configuration, i.e. the data entered into a plug-in configuration screen form.

All the functions with the `process_` prefix should return the resulting hash (on page 284).

For online payment plug-ins, different methods are to be realized in a plug-in module for different transaction types. Thus, it is not necessary to implement all of these methods, but only the ones that correspond to transaction types supported by a particular payment plug-in.

Direct Payment

Direct Online Payments are processed in real time using saved payments method. There are several operation types (also called transaction types) that are processed using Direct plug- ins:

- Sale - a single-step transaction without pre-authorization. Money are just withdrawn from a card.
- Credit - refund after funds have been settled, i.e. a transaction data have been passed from a payment gateway to an acquiring bank.
- Preauth - a purchase amount is reserved at a card and authorization is needed to withdraw money and finish a payment.
- PreauthReversal - a transaction is cancelled on the ‘Preauth’ stage, i.e., pre-authorized funds are released.
- Capture - withdraw the reserved amount after authorization.
- Capture Reversal–cancel a transaction on the ‘Capture’ stage, but before funds are settled.

To process each of the operations above the specific function is used. Such functions have the process_ prefix. All the functions with the process_ prefix should return the resulting hash (on page 284).

Implement only the methods that correspond to transaction types supported by the plug-in. If a function is not implemented in the plug-in, this means that such operation is not supported by the plug-in, and PBAS will never call such a function.

The following functions are used to implement direct online payment:

- process_preauthorize (on page 280)
- process_capture (on page 281)
- process_sale (on page 281)
- process_preauthorize_void (on page 281)
- process_capture_void (on page 281)
- process_credit (on page 281)
- process_check_status (on page 281)
- explain_avs (on page 282)

Notes about direct payments processing implementation:

- If funds capture is possible not right after preauthorize, but only in several seconds after.

  We recommend: to the resulting hash (on page 284) returned by `process_preauthorize` add NEXT_TRANSACTION_GAP that will define in seconds how the delay before `process_capture` should be called.

- If the payment status is unknown right after the payment is processed and thus the payment status should be checked later.

  We recommend: Implement the `process_check_status` function that will periodically request the payment gateway for payment status. To activate such status check for your plug-in, it is needed that one of the payment functions (either `process_preauthorize` or `process_sale`) return in the resulting hash (on page 284) the transaction STATUS = PENDING and the delay NEXT_TRANSACTION_GAP in seconds after which the status should be rechecked. Even if you want that the transaction status is checked right after the processing is started, set the NEXT_TRANSACTION_GAP to 1 to check the payment status one second later.

  Example:

```
…
     STATUS        => "PENDING",
     NEXT_TRANSACTION_GAP =>15,
…
```

- If AVS check status should be shown in Transaction log.

  We recommend: To the resulting hash add TRANSACTION_DETAILS with the key ccp_avs_code. In order to display the value of this key, implement the explain_avs function that will return the text value for address verification status.

Redirect Payment

Redirect plug-ins redirect a payer to the payment gateway web page, where a payer enters his/her payment method data. Payment is entirely done at the external gateway; PBAS only gets the payment status.

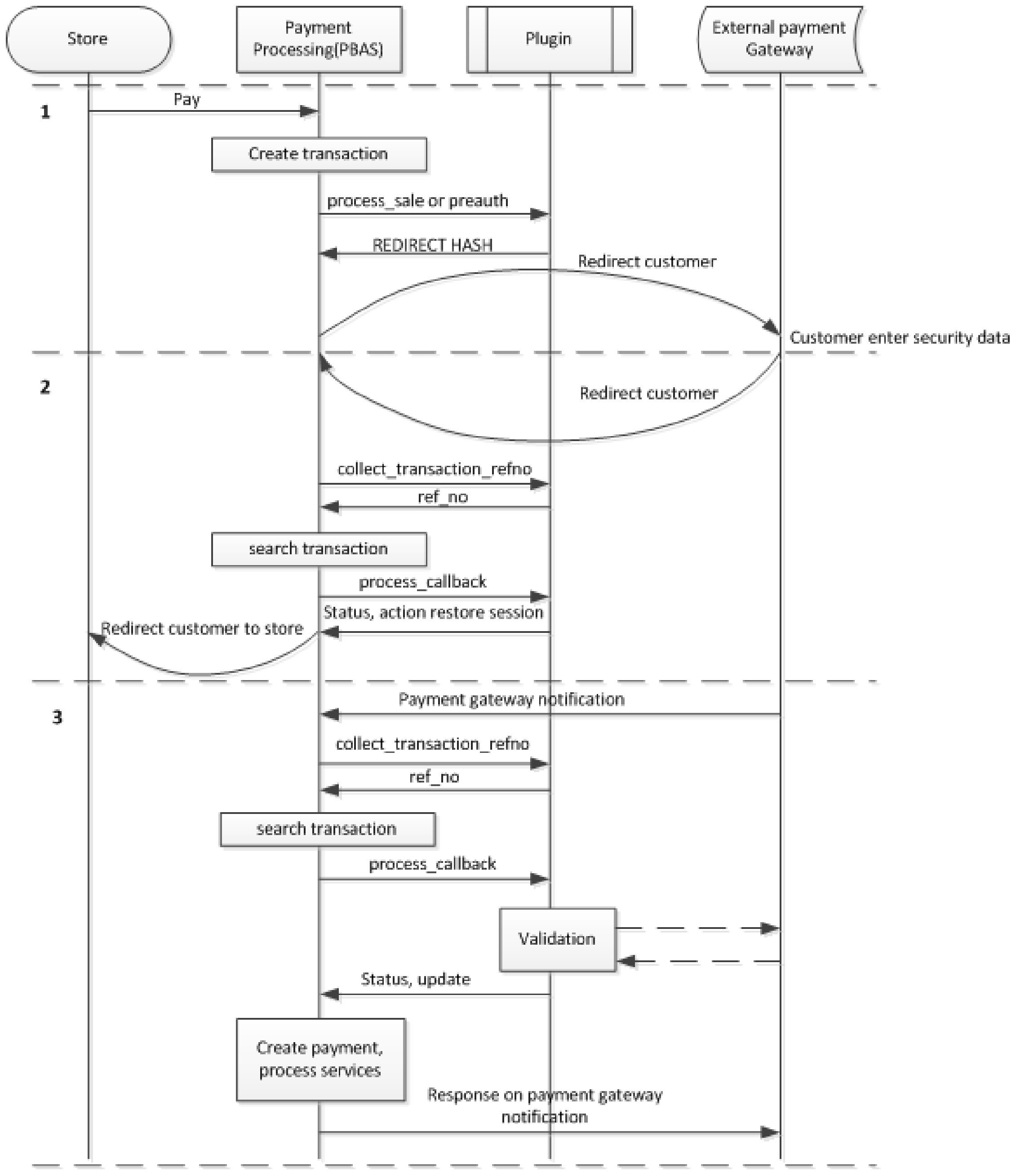
The functions that should be implemented in the redirect payment plug-in:

- process_preauthorize (on page 280) or process_sale (on page 281)

  Input parameters are the same as for the direct payment, excluding the information about the payment method.

- collect_transaction_refno (on page 283)
- process_callback (on page 282)
- Redirect plug-ins do not keep payment method data in PBAS. However the `get_supported_payment_method_types` (on page 279) method should be defined in the plug-in module and return the empty array of supported payment methods.

The diagram below illustrates the interaction between a typical redirect plug-in with PBAS core and external payment gateway.



The interaction consists of 3 steps:

Step 1. Initialize redirect.

When a customer clicks the Pay button in store or Control Panel, the PBAS core creates an empty transaction, generates its reference number, collects information about a payer and about provider, processes the payable document and initializes redirect.

When redirect is initialized, the plug-in returns to PBAS core the transaction status `REDIRECT` and the `REDIRECT_HASH` (on page 284). Mandatory parameters for `REDIRECT_HASH` (on page 284) are `url` and `attrs`. The `attrs` typically specifies the payment amount, payment reference number, currency, payer's name and other necessary data, depending on the payment gateway requirements. For example, most of payment gateways need *callback URL* to be passed with `attrs`, to know where to redirect a payer back.

Typically, two *callback URLs* are used:

- Result URL - to restore a customer session in PBAS.
- Notification URL - to get notification about payment status.

Note: In special cases, several callback URLs can be used, such as: for success notification, decline notification, successful session restore, session restore error, etc.

To generate the callback URL, the special function `callback_url` is used. This function belongs to the HSPC::PluginToolkit::PP package. The `callback_url` function uses hash as input parameters, converts the hash data into URI and returns the ready URL.

Example of callback_url usage:

```
callback_url(
      suffix => 'result',
      result =>‘approve’,
      ref_no =>“12345”,
);
```

With the input parameters specified above, the returned URL will look as follows:

```
http://management.node.com/hspc/common/02/template,ppplug/suf
fix,result/result,approve/ref_no,12345/
```

The returned URL is the concatenation of the PBAS management node hostname, the plug-in specific URI generated by PBAS core, and the URI converted from the `callback_url` input hash.

How to skip the redirect to the common referer URL. By default, PBAS core always generates the common referal URL for all redirect plug-ins. For details, refer to the description of the `view_form` method (on page 267) that is used in the payment plug-ins UI Presentation module. Beginning with PBAS 4.5.2, it is possible to override the PBAS default behavior and skip the redirect to the common referer URL. To this effect, the parameter `skip_common_url` should be passed to PBAS core with the plug-in `REDIRECT_HASH` (on page 284).

For each redirect PBAS creates a separate unique reference number; when payment gateway response is parsed, the transaction is identified by this reference. The reference number is passed as parameter together with the other data to the `process_preauthorize` or `process_sale` method. Reference number can be sent to the payment gateway in the two ways:

- As a payment gateway specific field, for example OrderID. The field should be passed as one of the values of the `attrs` key of the `REDIRECT_HASH` (on page 284).
- As a part of the callback URL, for example it should be added to the URL as: …/order_id,24hyuyh/… using the `callback_url` function.

If the format of the reference number generated by PBAS is not supported by the payment gateway (for example only digits are supported), the plug-in should generate the new reference number of the supported format and pass it as the `ref_no` key value in the `REDIRECT_HASH` (on page 284).

Example of the plug-in response for redirect:

```
return {
STATUS        => 'REDIRECT',
       REDIRECT_HASH => {
              url    =>"https://someurl",
              method => "POST",
              ref_no =>"12345",
              skip_common_url =>"1",
              attrs  => {
                     amount => 5,
                     currency =>"EUR",
                     ref_no =>"12345",
                     returl =>callback_url(
                            suffix =>"result",
                            result => "approve",
                            ref_no => "12345",
                     )
                 },
       },
};
```

As soon as PBAS core receives the `REDIRECT_HASH` (on page 284), it creates the HTTP form with the attributes provided by the plug-in and submits it to perform customer redirect to the common URL or directly to the external payment system.

Step 2. Restore session.

After a payer have entered his/her payment method details at external gateway web page, and the payment is processed, the external gateway redirects a payer back to PBAS using the Result URL passed by the plug-in during redirect initialization.

When PBAS core receives the redirect request from external gateway, it calls the special function `collect_transaction_refno` to fetch the transaction reference number from the Result URL or request details. Using this reference number, PBAS finds the needed transaction, the document being paid, payer data, and starts processing the callback.

To process the callback data, PBAS core calls the `process_callback` function. This function parses the returned URI parameters and validates these values, for example by MD5 checksum calculation or by requesting payment gateway confirmation, or in some other way. As the values are validated, the `process_callback` function returns the reference to the result hash.

Since the `process_callback` function is called for all types of callbacks, the result hash should include the data about the type of operation that follows the call: restore customer session or update the transaction status. To pass the type of action, the optional `ACTION` key is used.

Values of the ACTION key:

- `restore_session` - customer session will be restored and the URL will be generated to return the customer to the page, where payment has been initialized (online store or PBAS CP). The value of the `STATUS` key will be used to show the transaction status to the customer. Typically, if the transaction is initialized successfully, the `STATUS = "PENDING"` is passed. The payment processing keeps being pending in PBAS, waiting for the transaction status update, which typically is called after callback values validation.
- `update` - transaction status will be updated according to the STATUS key value passed in the result hash. The updated transaction status is reflected in PBAS transaction log. Customer session will not be restored.

Note: If the `ACTION` key value is not passed, then both actions will be performed: transaction status updated and session restored.

Example of the resulting hash:

```
{
	STATUS => "APPROVED",
	TRANSACTION_DETAILS  => $details,
	ACTION => "restore_session",
	TEXT   =>{ customer_message =>“Payment processed”},
}
```

Step 3. Update payment status.

External gateway notifies PAS core about finishing the payment in background. PBAS core then calls the plug-in function `collect_transaction_refno` to get the transaction reference number and then calls the `process_callback` function to get the resulting hash.

If the ACTION key in the resulting hash is set to 'update' or not set at all, PBAS core will update the status of the payment and provide the paid services if the payment has been successfully processed.

Important: Please be very careful with the returned ACTION = 'update'. Always implement all the possible validation of payment to avoid fraud.

Example of the resulting hash:

```
{
       STATUS => "APPROVED",
       TRANSACTION_DETAILS  => $details,
       ACTION => "update",
}
```

Examples of non-typical behavior of redirect payment plug-ins:

- If the callback URL should be defined once for the external payment gateway, in Merchant Interface. In this case there is no sense to put redirect URLs to REDIRECT_HASH. It is recommended to show these URLs in the plug-in UI configuration screen, so these URLs can be copied and then specified in the payment gateway Merchant Interface or passed to the payment gateway support.
- Some payment gateways accept payment from known URLs only; such URLs are called *Referral URL*. In this case, Referral URL should be the same for online store and CP. Thus, in this case it is necessary to pass your payment URL to the external payment gateway. To generate the Referral URL, the plug-in toolkit method `referral_url` should be called. It is recommended to show the Referral URL in the plug-in UI configuration form, so it can be copied and then specified in the payment gateway Merchant Interface or passed to the payment gateway support. The referral_url method belongs to the `HSPC::PluginToolkit::PP` namespace.
- External gateway can send notification only to one URL. In this case you should not set the ACTION key in the resulting hash to restore the session and update transaction status.
- Some payment gateways require that the callback response is sent in a special format. This special format can be returned using the CUSTOM_RESPONSE key in the resulting hash.

  Example, how to send special response in resulting hash:

```
sub process_callback {
…
return {
              ACTION              => 'update',
              CUSTOM_RESPONSE     =>
                            "Status=OK\r\n"
                              . 'RedirectURL='
                              . callback_url(
                                   suffix => 'result',
                                   ref_no => $ref_no,
                                   status => "ok"
                         ),
              TRANSACTION_DETAILS => $details,
}
}
```

- In some cases, the redirect to the external payment gateway cannot be processed by a conventional POST or GET form (for example, JavaScript should be executed). In this case you should paste the HTML code for redirect to the REDIRECT_HASH key content. Example:

```
my $redirect_hash = { content =>“<javascript>…</javascript>”, };

return {
       STATUS        => 'REDIRECT',
       REDIRECT_HASH => $redirect_hash,
};
```

3D Secure Payment

To implement 3D Secure payment scheme, it is necessary to redirect a payer to the secure bank page after he/she have entered payment method data in PBAS store or CP.

Step 1. Initialize redirect.

To initialize payment, PBAS core calls one of the two methods:

- process_preauthorize (on page 280), or
- process_sale (on page 281)

The plug-in sends request to the payment gateway or specialized 3D Secure service and receives 3D security parameters. Then the plug-in returns to PBAS core the 3DSECURE status and passes the 3D Secure parameters as TRANSACTION_DETAILS key values. Example:

```
{
      STATUS => '3DSECURE',
      TRANSACTION_DETAILS => {
            vps_3ds_url   => $details->{vps_3ds_url},
            vps_3ds_pareq => $details->{vps_3ds_pareq},
            vps_3ds_md    => $details->{vps_3ds_md},
      },
}
```

Step 2. Start redirect.

PBAS core starts redirect and gets the redirect parameters by calling the plug-in method `get_secure_data`. This method returns the values for 3D redirect saved in transaction details on the previous step. The `get_secure_data` method should return the following parameters:

- `url` - the URL of bank received from gate
- `pareq` - encrypts a 3D-Secure request message
- `md` - unique transaction code

Example:

```
sub get_3dsecure_data {
      my $self    = shift;
      my %h       = @_;
      my $details = $h{previous_transaction_data};
      return {
            url   => $details->{vps_3ds_url},
            pareq => $details->{vps_3ds_pareq},
            md    => $details->{vps_3ds_md},
      };
}
```

PBAS creates the following form for redirect to the bank page:

```
<FORM action="{$url}" method="POST">
<input type="hidden" name="PaReq" value="{$pares}">
<input type="hidden" name="MD" value="{$md}">
<input type="hidden" name="TermUrl" value="{$callback_url}">
</FORM>
```

- TermUrl - the PBAS URL, where customer should be returned from bank page after he/she is authenticated with 3D Secure. This URL is generated by PBAS core.

Step 3. Return to PBAS after authentication.

After the payer has entered the security data at the bank page, he/she is redirected back to PBAS. Unlike redirect plug-ins, the `collect_transaction_refno` function is not called, but the `process_callback` function is called.

The bank returns the result of 3D Security check as HTTP parameters, typically, as `PaReq` and `MD`. The plug-in should save these parameters to transaction details for future use and schedule the "check status" operation by returning the status `PENDING` and `NEXT_TRANSACTION_GAP`:

```
{
	STATUS               => 'PENDING',
	NEXT_TRANSACTION_GAP => 1,
	TRANSACTION_DETAILS  => {
		vps_3ds_pares =>argparam('PaRes'),
		vps_3ds_md    =>argparam('MD'),
	}
}
```

Step 4. Finalize payment.

PBAS core calls the `process_check_status` plug-in function, which passes the result of 3D security check to the payment gateway, receives the payment result, and returns the resulting hash with payment final status.

Token Payment

A token is a credit card ID that is used for payments instead of a credit card data. Card data is never stored in PBAS.

To create a token, a payer is redirected to the secure payment gateway page, where he/she enters the card data, then a payer is redirected back to PBAS and uses token for future payments. Thus, the first transaction is implemented as redirect, and all the further transactions are direct.

To get token payments working in store and CP, the special payment method with token_card => 1 (on page 264) should be implemented. Then this special payment should be specified in the payment processing module in the get_supported_payment_method_types (on page 279) function.

Step 1. Initialize payment.

To initialize payment, PBAS core calls one of the two methods:

- process_preauthorize (on page 280), or
- process_sale (on page 281)

These methods are called by PBAS either with payment method submitted or with out it.

If a payment method is passed, then the plug-in should work as direct: send request to the payment gateway, parse response and return the resulting hash.

If no payment method is passed, then the plug-in should work as redirect: return the REDIRECT status and redirect hash and wait for the callback from the payment gateway.

Step 2. Create token and finalize payment.

This step works in the same way as as redirect plug-in: parse response from payment gate - first, the collect_transaction_refno method is called, then the process_callback method is called. The plug-in should validate the callback data and return the resulting hash. To create a token in PBAS, the additional `ADD_NEW_METHOD` key is required in the returned result hash. For example:

```
return {
      ACTION              => 'update',
      STATUS              => 'APPROVED',
      TRANSACTION_DETAILS => $details,
      ADD_NEW_METHOD => {
             DATA => {
                    vendor_tx_code   =>argparam('VendorTxCode'),
                    vps_tx_id        =>argparam('VPSTxId'),
             },
             TYPE => "OP_Protx",
      },
};
```

- `TYPE` - indicate which type of payment method should be created (specify the payment method ID).
- `DATA` - the values used for token payment method creation.

Restore customer session as described earlier for the redirect plug-in. (on page 270)

In some cases, it is needed to change the saved token. To do this, the plug-in should return `ADD_NEW_METHOD` to the resulting hash once again. It is not possible to change the saved token using `process_callback`, but only in `process_preauthorize`, `process_sale`, or `process_check_status`.

Bank Transfer Payment

The bank transfer plug-in should include the three required methods:

- get_title (on page 279)
- get_supported_payment_method_types (on page 279)
- get currencies_supported (on page 280)

There is only one bank transfer specific method:

- process_batch_content (on page 282).

Functions Used for Payment Processing Plug-in

get_title

This method returns the name of the payment plug-in template. It should return the already localized value.

Input parameters: none.

Returned value: string.

get_supported_payment_method_types

The method defines payment method types supported by a plug-in.

This method should return non-empty value for plug-ins that require stored payment methods - the direct plug-ins.

For redirect plug-ins that do not store payment methods, this method should be defined in the plug-in module, but return an empty value.

Input parameters: none.

Returned value: reference to an array of payment method types supported by the plug-in. This can be IDs of credit card types predefined in PBAS or custom payment method(s) that we have implemented as a payment method plug-in.

The available list of supported payment methods will be returned by this method. The resulting list of supported payment methods will be selected at the moment of the plug-in configuration, in its UI form.

The types of credit cards predefined in PBAS:

ID	Type
'A'	Amex
'B'	CarteBlanche
'C'	Diner'sClub
'D'	Discover

'E'	enRoute
'J'	JCB
'L'	VisaElectron
'M'	MasterCard
'O'	Optima
'S'	Solo
'T'	VisaDebit/Delta
'V'	Visa
'W'	Maestro

The types of cards are identified with IDs (constants). For example:

```
sub get_supported_payment_method_types {
      return [
            'M','V','A','C',
            'OP_TestCard',
      ];
}
```

The get_supported_payment_method_types method may return the IDs of both predefined and custom payment methods. If you need to support the card type or other payment method not defined in the built-in payment method, then you should develop the payment method module. For example, for a token payment, you can return the standard card types supported for the first redirect transaction, and the custom token payment method type used for further direct payments.

get_currencies_supported

The method defines the ISO codes of currencies supported by the plug-in.

Input parameters: none.

Returned value: reference to an array of supported currency ISO codes.

Example:

```
sub get_currencies_supported {
      return [
            'ATS', 'BEF', 'CHF', 'CYP', 'DEM',
            'DKK', 'ESP', 'EUR', 'FIM', 'FRF', 'GBP',
            'GRD', 'IEP', 'ITL', 'MTL', 'NLG',
            'NOK', 'PTE', 'SEK', 'USD'
      ];
}
```

process_preauthorize

This method is responsible for processing a Preauthorize transaction with a payment gateway.

Input parameters: config, document_info, payment_method, account_info, transaction_id, transaction_amount, currency_iso.

Returned value: reference to a result hash.

process_capture

This method is responsible for processing a Capture transaction with a payment gateway.

Input parameters: config, document_info, payment_method, account_info, previous_transaction_data, transaction_id, transaction_amount, currency_iso.

Returned value: reference to a result hash.

process_sale

This method is responsible for processing a Sale transaction with a payment gateway.

Input parameters: config, document_info, payment_method, account_info, transaction_id, transaction_amount, currency_iso.

Returned value: reference to a result hash.

process_preauthorize_void

This method is responsible for processing a Preauthorize Reversal transaction with a payment gateway.

Input parameters: config, document_info, payment_method, account_info, previous_transaction_data, transaction_id, transaction_amount, currency_iso.

Returned value: reference to a result hash.

process_capture_void

This method is responsible for processing a Capture Reversal transaction with a payment gateway.

Input parameters: config, document_info, payment_method, account_info, previous_transaction_data, transaction_id, transaction_amount, currency_iso.

Returned value: reference to a result hash.

process_credit

This method is responsible for processing a Credit transaction with a payment gateway.

Input parameters: config, document_info, payment_method, account_info, previous_transaction_data, transaction_id, transaction_amount, currency_iso.

Returned value: reference to a result hash.

process_check_status

This method checks a transaction current status on a payment gateway.

Input parameters: config, previous_transaction_data, transaction_id.

Returned value: reference to a result hash.

explain_avs

The function returns the text value of address verification status.

Input parameter: avs_code

Returned value: string.

process_callback

This method gets a transaction_refno, parses it, identities a transaction (payment gateway, customer account, amount, etc.) and restores the information about a transaction from the Parallels Business Automation - Standard Transaction Log. In addition, this method is responsible for transaction verification (check whether the amount stored in transaction details in Parallels Business Automation - Standard matches the amount reported by a payment gateway, or check transaction by an MD5 signature, or perform any other check). This method also defines, what framework will be processed (restore_session or only update a transaction status) depending on a payment gateway response (customer redirect or payment accepted, or both).

Input parameters: document_info, payment_method, account_info, previous_transaction_data, transaction_id, transaction_amount, currency_iso.

Returned value: reference to a result hash.

process_batch_content

This method is used for bank transfer plug-ins and serves for building of a batch file content:

Input parameters:

- config - the configuration structure that has been generated by presentation part of the plug-in during plug-in configuration.
- transaction_list - reference to an array of hashes with details of document that is to be processed. Content of the hash is the following:
  - document_info – reference to a hash with details of document that is to be processed. See description of document_info in online payment plug-in description.
  - payment_method – reference to the hash described for online payment plug-in methods.
  - account_info – reference to a hash of customer account details. See description of account_info in online payment plug-in description.
  - transaction_id – current transaction id.
  - transaction_amount – amount of transaction.
  - currency_iso – ISO code of currency used for transaction.

- vendor_info – reference to a hash of customer account details. See description of account_info in online payment plug-in description.
- file_id – unique auto-incremented identification number of the batch file that is to be generated..

Returned value:

- reference to a result hash.

Return values description:

The format of the result hash returned by this method differs from the described above in the following way:

BATCH_CONTENT – (mandatory) scalar value that contains complete content of the newly generated batch file;

BATCH_FILE_NAME – (mandatory) scalar value that contains name of the file which content is in the value for the previous key;

`file_id` – unique auto-incremented identification number of the batch file that is to be generated.

collect_transaction_refno

This method parses a *transaction id* received from a payment gateway. This transaction id is not the same as a transaction identifier shown in Parallels Business Automation - Standard Transaction Log. Instead, it is a special complex reference number. By this identifier, a payment plug-in engine restores the information about a transaction and passes it to the `process_callback` method.

Required parameters: web-parameters from a payment gateway.

Returned value: transaction_refno.

Resulting Hash Returned by process_* Methods

Key	Type		Description
STATUS	String	Mandatory	Status of payment: APPROVED, FRAUD, DECLINED, PENDING, AUTHCALL, ERROR, REFUNDED, 3DSECURE, REDIRECT Some of the statuses tell PBAS core that to continue payment processing the additional actions are required - 3DSECURE, REDIRECT
APPROVAL_CODE	String	Optional	Authorization code, returned by bank
ADD_NEW_METHOD	Struct	Optional	If this structure is passed PBAS will try to add a new paymethod. Example: create a token after redirect. The format is described in details below this table.
TRANSACTION_DETAILS	Struct	Optional	The hash that will be associated with current transaction and will be represented back in unchanged form as the value of the previous_transaction_data parameter at the next call of transaction processing methods of the plug-in. Note: The TRANSACTION_DETAILS hash is also shown in web interface, in the transaction details form. The keys in this case are localization strings IDs.
NEXT_TRANSACTION_GAP	Int	Optional	The delay in seconds before transaction processing attempt will be repeated. If this key exists in the result

			hash and its value is greater than zero, then the next call of transaction processing method of the plug-in will be done no earlier than the period in seconds specified as value for this key.
TEXT	Struct	Optional	Reference to a hash with two keys: customer_message – contains text that will be shown to customer as status message, vendor_message – contains text that will be shown to vendor.
REDIRECT_HASH	Struct	Optional. Mandatory only if STATUS = REDIRECT	Provide information for redirect. Refer to the table below for the format description.
ACTION	String	Optional	Update or restore_session The action on callback processing to be performed by the plug-in. Refer to the Redirect plugin (on page 270) section for details.
CUSTOM_RESPONSE	String	Optional	Custom response to payment gate after receiving notification. Used for redirect plug-in.

ADD_NEW_METHOD format:

Key	Type	Description
TYPE	String	Paymethod ID.
DATA	Structure	Hash with the data for creation/update a paymethod.

REDIRECT_HASH format:

Key	Type		Description
url	String	Mandatory*	The URL where customer should be redirected.

content	String	Mandatory*	HTML code which will be shown to customer during payment.
attrs	Hash	Optional	Parameters and values which will be used for redirect.
iframe	Bool	Optional	If set to 1, PBAS online store and CP will show the URL in a frame. if not set or 0, the URL will be shown in the whole screen.
method	String	Optional	The method used to pass the data: GET, POST
ref_no	String	Optional	If ref_no is defined, this value will overwrite the reference number in PBAS for this value. Please refer to Redirect Payment (on page 270) section.
charset	String	Optional	Define charset in which all the form attributes should be decoded before redirect. If this parameter is not specified, then the text will be sent to a gateway secure payment page in the default encoding set in PBAS by that moment.
skip_common_url	Bool	Optional	Skip the default behavior of PBAS core, when payers are first redirected to the common URL and after this - further to the payment gateway. Common URL (on page 267) is generated by PBAS core. If this parameter is passed, payers are redirected to the payment gateway, and common URL redirect is skipped. This behavior is used for the cases, when payment gateway does not check the referer URL.

* Either url or content is mandatory, but not both.

Creating a New Promotion Plug-In

A promotion plug-in is a set of modules, which allow applying a discount to a customer subscription.

Introductory Notes About Promotion Plug-Ins

Promotions are discounts applied to hosting plans on a particular conditions. Promotions have a particular application period when a promotion is active and discount is offered. A customer who subscribes for a promoted hosting plan grants a discount.

For example, if a customer purchases a subscription for a particular period, he/she can get a discount for a part of his/her subscription period or free domain registration.

A promotion conditions are defined by:

- *General settings* that define the most of conditions of promotion application. General settings options are common for every promotion. You can vary a promotion settings in the frame of pre-defined options, but it's not possible to add a new option or remove an existing one. General settings define a promotion period, promotion activation conditions (by default, by coupon code, by agreement), number of accounts that can get a promotion (optionally) and how many times the same account can get a promotion.
- A set of discounts and bonuses (free domain registration, free subscription period). Each discount offering is a pluggable module, in other words, a *promotion plug-in*.

Thus, promotion plug-ins are modules that allow composing discounts included in a promotion. Each promotion plug-in can be enabled/disabled and configured separately. The main advantage of pluggable promotions is that you can easily vary the types and composition of discounts included in each promotion and create new promotion plug-ins that meet your needs in a best way.

By default, three types of promotion plug-ins are provided:

- Percent Discount. Discounts applied to all charge connected with subscription setup and renewal (hosting plan setup/recurring fees, applications setup/recurring fees, resource overusage fees, etc).
- Waiving domain registration fee. Providing a particular period os domain registration for free.
- Free subscription period. Granting a customer an additional free subscription period in addition to a purchased one.

Using the API described in this chapter you can create any discount/bonus offering. For example, on the basis of the Percent Discount plug-in you can create a new promotion plug-in that affects only a particular application recurring fees.

Important: Promotion Plug-Ins Application Order

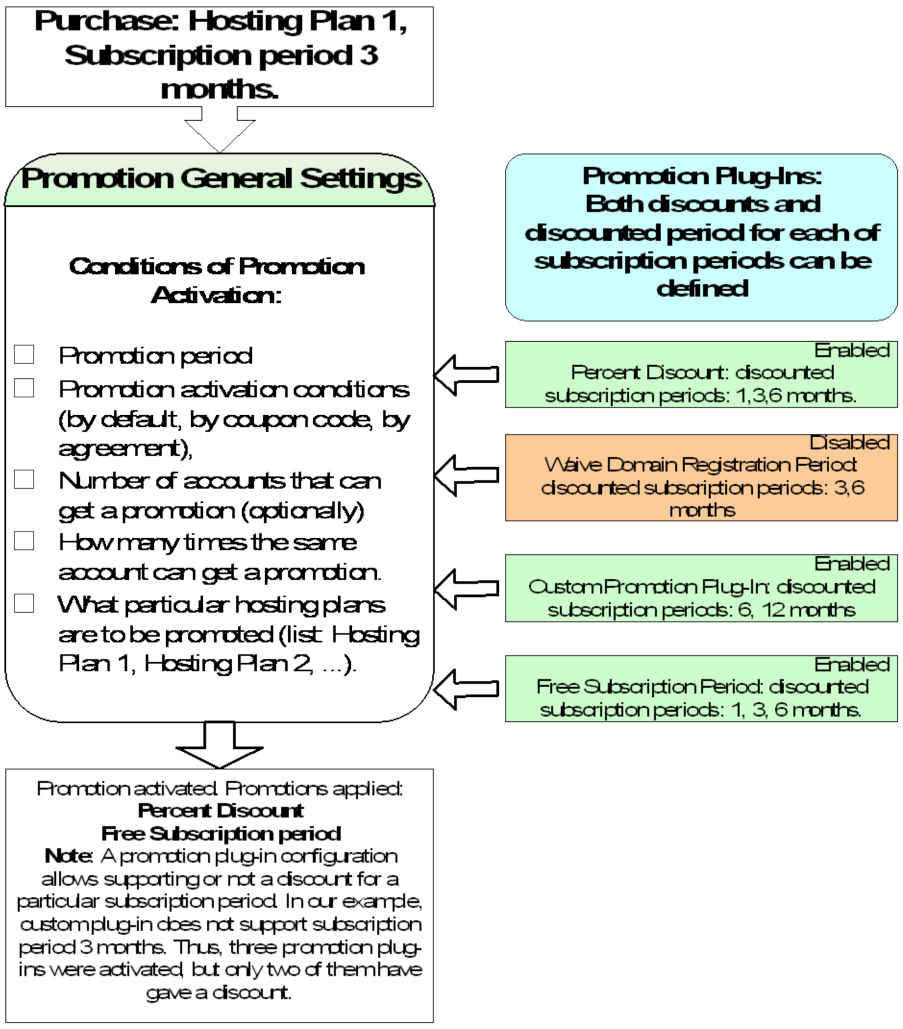
Each promotion plug-in provides its own discount and contributes to a total discount applied to a document amount. Thus, the order of promotion plug-in application does matter.

The order of promotion plug-ins application is defined by a plug-in *priority*. Priority is a positive number. The lower this number is, the higher is a plug-in priority. A plug-in with a lowest priority is applied first, and a plug-in with a greatest priority is applied last. The order of promotion plug-ins application is also reflected in web interface (a higher-priority plug-in configuration form is shown above the other plug-ins).

Promotion plug-in priority is defined in installer (on page 297) using the `apply_priority` parameter.

For correct discount calculation, the Free Subscription Period promotion plug-in MUST be always applied the last.

The scheme below illustrates how a promotion works:


Purchase: Hosting Plan 1, Subscription period 3 months.
Promotion General Settings
Conditions of Promotion Activation:
Promotion period
Promotion activation conditions (by default, by coupon code, by agreement),
Number of accounts that can get a promotion (optionally)
How many times the same account can get a promotion.
What particular hosting plans are to be promoted (list: Hosting Plan 1, Hosting Plan 2, ...).
Promotion Plug-Ins: Both discounts and discounted period for each of subscription periods can be defined
Enabled
Percent Discount: discounted subscription periods: 1,3,6 months.
Disabled
Waive Domain Registration Period: discounted subscription periods: 3,6 months
Enabled
Custom Promotion Plug-In: discounted subscription periods: 6, 12 months
Enabled
Free Subscription Period: discounted subscription periods: 1, 3, 6 months.
Promotion activated. Promotions applied:
Percent Discount
Free Subscription period
Note: A promotion plug-in configuration allows supporting or not a discount for a particular subscription period. In our example, custom plug-in does not support subscription period 3 months. Thus, three promotion plug-ins were activated, but only two of them have gave a discount.

Promotion Plug-Ins Objects and Their Naming Conventions

A ready-to-use promotion plug-in is an RPM package.

Promotion plug-ins are represented by objects of classes described below. These classes must be named accordingly. For example, for the plug-in named *SpecialPercent*, the classes should be named as follows:

HSPC::MT::BM::PromoPlugin::SpecialPercent responsible for applying a discount to a document.

HSPC::BM::PromoPlugin::SpecialPercent responsible for plug-in presentation.

The directories structure for a promotion plug-in modules is the following:

- `lib/BM/PromoPlugin/` contains module(s) responsible for presentation level of the plug-in.
- `lib/MT/BM/PromoPlugin/` contains module(s) responsible for applying a discount to a document.
- `comprep/` contains component repository configuration.
- `i18n/` contains directories with localization.

It is necessary to have at least two modules named <PluginName>.pm (in our example, the module name is `SpecialPercent.pm`) in each of the two first directories to be HSPC compliant. For example, if you would like to develop new plug-in module Special Percent, you should have two modules with the same names placed in:

```
lib/BM/PromoPlugin/SpecialPercent.pm
```

```
lib/MT/BM/PromoPlugin/SpecialPercent.pm
```

Web Interface Module

The module responsible for web interface (presentation level) must contain the following methods:

- `sub teaser_view`: This method is responsible for displaying the plug-in settings when you click on a corresponding promotion in the plug-in list. If a plug-in is enabled, it shows a plug-in current settings view form, if a plug-in is disabled, it shows a bar with a plug-in name and the **Enable** button on it.
- `sub teaser_edit`: This method is responsible for displaying the plug-in configuration form when you click **Edit**, for changing the plug-in settings.
- `sub update`: This method is responsible for saving the data entered by you into the plug-in configuration form. In other words, this method saves the plug-in settings and displays the updated plug-in configuration.

Please note that in order to develop presentation for a promotion plug-in, you need to add corresponding localization strings into XML file. Alphabetical string IDs defined in this localization file are to be used in a new promotion plug-in presentation module.

The sample of the Percent Discount promotion plug-in presentation module and localization file is located in the

```
samples/plugins/hspc-promo-plug-in-percent
```

directory.

Middle Tier Module

The middle tier module is responsible for applying a promotion discount to a customer document total and for correct refund calculation for a discounted document.

Important: The following must be defined in the promotion plug-in middle tier module:

- The `PROMO_COMP_TYPE` constant that defines the alphabetical plug-in ID. This ID is necessary for successful plug-in registration and further usage in Parallels Business Automation - Standard. A promotion plug-in ID must consist of latin letters, underscores allowed, no spaces, length no greater that 64 characters.
- The `apply_to_doc()` function that applies a discount to a document total. The document item a discount is to be applied to is defined using the corresponding constant.

The sample of the Percent Discount middle tier module is located into the

```
samples/plugins/hspc-promo-plug-in-percent
```

directory.

The **Example** below illustrates how you should edit the `apply_to_doc` function in the middle tier module to get a promotion that provides a discount not for all applications included in a hosting plan, but only for MySQL application subscription fees. We call this new promotion plug-in *SpecialPercent*.

In the SpecialPercent promotion plug-in example, to define the order item the discount is to be applied to, we use the `TT_PROMO_APP_SUBSCR` constant.The full list of constants is attached (on page 295). In addition, to define the application a discount must be applied to, we use the Application ID (in our example, `mysql`) that you can easily find in Parallels Business Automation - Standard wen interface, for each installed application.

- For Virtuozzo applications, an application IDs are alphanumerical, they are shown under Service Director > Virtuozzo Manager > Applications. Application IDs are shown in the Package column.
- For Plesk applications, an application IDs are numerical and shown under Service Director > Plesk Manager > Applications. Application IDs are shown in the ID column.

Example of apply_to_doc function:

```
package HSPC::MT::BM::PromoPlugin::SpecialPercent;

use strict;

use HSPC::Logger qw(sw_atrace sw_die);
use HSPC::Math qw(percent percent_to_str);
use HSPC::Localization::Date qw(min_time);

use HSPC::Localization;

use HSPC::MT::Billing::Constants;
use HSPC::MT::BM::OrderPrice;

##---------------------------------------------------
## Constants
##---------------------------------------------------
use constant PROMO_COMP_TYPE => "special_percent";

## apply promotion component to order or bill
sub apply_to_doc {
	my $self = shift;
	my %h = (
		doc => undef,
		@_
	);

	my $trace = sw_atrace();

	my $doc = $h{doc} || sw_die("No document specified");

	my @detailes = @{$doc->doc_det};
	foreach my $det (@detailes) {
		my $promo_amount = 0;
		if ($prom_det->tran_type eq TT_PROMO_APP_SUBSCR && $prom_det-
>ref_id eq 'mysql') {
			$promo_amount = 1.00;
		}

		if (abs($promo_amount) >= 0.01 ) {
			## add detail
			my $prom_det = $doc->prepare_doc_det();
			$prom_det->tran_type( &TT_PROMO_APP_SUBSCR );
			$prom_det->gross_amount( $promouted->{amount} );
			$prom_det->ref_id( $det->ref_id );
			$prom_det->period( $promouted->{period} );
			$prom_det->amount( $prom_det->gross_amount );
			$prom_det->ext_info( $det->ext_info );
			$prom_det->set_comment(
				string => loc_string(
					'promotion_for',
					prom_name    => $self->promo_name,
					prom_item    => $det->comment_id || $det-
>comment,
					prom_percent => sw_percent_to_str(
$promouted->{percent} )
				)
			);
			$doc->add_det( det => $prom_det );

			{
				my $op = new HSPC::MT::BM::OrderPrice;
				$op->action(SP_ADD);
				$op->subj_type( $prom_det->tran_type );
				$op->price( $prom_det->amount );
				$op->rperiod( $prom_det->period );
```

```
                           $op->subj_key( $prom_det->ref_id || '' );
                           if ( $doc->order_type eq SW_BM_OT_RENEW ) {
                                  $op->start_time( $doc->subscr->end_date );
                                  $op->end_time(

       HSPC::MT::Billing::Datecalc::add_interval(
                                                 date     => $doc->subscr-
>end_date(),
                                                 interval => $op->rperiod
                                          )
                                  );
                           } elsif ($doc->order_type eq SW_BM_OT_UPDATE &&
!$doc->plan_id) {
                                  $op->start_time( sw_gmt_now() );
                           } else {
                                  ## otherwise start and end times will be
calculated while copy_from_doc
                           }
                           $op->set_comment( string => $det->comment_id ||
$det->comment );
                           $op->dev_comment( "Promotion detail" );

                           $doc->add_doc_subscr_price( price_obj => $op );
                    }
             }
       }

       $trace->addok();
       return undef;
}
1;
```

Constants

Constants module provides constants storage area shared by all modules related to promotions. Constants allow using friendly named variables instead of numbers or letters.

Constants allow defining what items of an order are to be discounted.

There is a number of constants and constant groups in the HSPC::MT::Billing::Constants module.

Note: It is necessary to include the HSPC::MT::Billing::Constants module into the plug-in being created.

Transaction types (tran_type) are used in ar_doc_det table. tran_type points on the type of item fee is in documents details and helps defining why ar_doc_det.amount is positive or negative. It can be negative for promotions items and in case of refund.

Constants:

```
use constant TT_HP_SETUP_FEE    => 'PS';    ## hosting plan setup fee
use constant TT_HP_SUBSCR_FEE   => 'PM';    ## hosting plan subscription fee
use constant TT_REFUND_HP       => 'DR';    ## refund for hosting plan
subscription fee
use constant TT_PROMO_HP_SUBSCR => 'PP';    ## promotion amount on hosting
plan subscription fee
use constant TT_PROMO_HP_SETUP  => 'PPSE';  ## promotion amount on hosting
plan setup fee

use constant TT_APP_SETUP_FEE    => 'FS';   ## application setup fee
use constant TT_APP_SUBSCR_FEE   => 'FM';   ## application subscription fee
use constant TT_REFUND_APP       => 'RA';   ## refund for application
subscription fee
use constant TT_PROMO_APP_SETUP  => 'PASE'; ## promotion amount on application
setup fee
use constant TT_PROMO_APP_SUBSCR => 'PA';   ## promotion amount on application
subscription fee

use constant TT_NRES_SETUP_FEE    => 'NRS'; ## Sitebuilder site setup fee and
licenses setup fee specified in a hosting plan
use constant TT_NRES_SUBSCR_FEE   => 'NRM'; ## Sitebuilder site subscription
fee and licenses subscription fee specified in a hosting plan
use constant TT_NRES_REFUND       => 'NRR'; ## refund for Sitebuilder site and
licenses subscription fee
use constant TT_PROMO_REFUND_NRES => 'PRNRM';## refund for promotion amount on
Sitebuilder site and licenses subscription fee

use constant TT_RES_USAGE_FEE    => 'RF';   ## resources fee
use constant TT_REFUND_RES       => 'RR';   ## refund for resources fee
use constant TT_PROMO_RES_SUBSCR => 'PR';   ## promotion amount on resources
fee

use constant TT_TRAF_USAGE_FEE    => 'TF';  ## traffic usage fee
use constant TT_TRAF_USAGE_REFUND => 'TR';  ## refund for traffic usage fee

use constant TT_ATTR_SUBSCR_FEE   => 'AU';  ## attribute subscription fee
use constant TT_ATTR_SETUP_FEE    => 'AE';  ## attribute setup fee
use constant TT_PROMO_ATTR_SUBSCR => 'PT';  ## promotion amount on attribute
subscription fee
use constant TT_PROMO_ATTR_SETUP  => 'PTSE';    ## promotion amount on
attribute setup fee
use constant TT_REFUND_ATTRIBUTE  => 'RT';      ## refund for attribute
subscription fee
```

```
use constant TT_DOMAIN_REG           => 'DB';   ## domain registration fee
use constant TT_DOMAIN_TRANSFER      => 'DT';   ## domain transfer fee

use constant TT_TAX                  => 'TT';   ## tax rate
use constant TT_MANUAL_ENTERED_VALUE => 'ME';   ## any custom value manually
entered for a document

use constant TT_FIN_CHARGE   => 'FC';   ## fine amount
use constant TT_CREDIT_ADJ   => 'CA';   ## credit adjustment amount
use constant TT_DEBIT_ADJ    => 'DA';   ## debit adjustment amount
use constant TT_OLINE_PAYM   => 'PO';   ## online payment amount
use constant TT_OFFLINE_PAYM => 'PF';   ## offline payment amount
```

Registering a Promotion Plug-In

A promotion plug-in installer creates or deletes a registry record about a new promotion plug-in in the Parallels Business Automation - Standard database.

Sample of the Percent Discount promotion plug-in installer is located in the

`samples/plugins/hspc-promo-plug-in-percent`

directory.

A promotion plug-in installer must be located in the

`lib/MT/BM/PromoPlugin/`

directory and named accordingly. For example, for for the new promotion plug-in *SpecialPercent*, the installer must be named `SpecialPercentInstaller.pm`.

Important:Defining a plug-in application order

As is was already mentioned in introduction to this chapter, the order of promotion plug-ins application is critical for correct discount calculation.

The order of promotion plug-ins application is defined by a plug-in *priority*. Priority is a positive number starting, for example, from 100 (highest priority) and up to a billion.

A plug-in with a lowest priority value is applied first, and a plug-in with a greatest priority value is applied last.

Promotion plug-in priority is defined in installer using the `apply_priority` parameter.

For correct discount calculation, the Free Subscription Period promotion plug-in MUST be always applied the last. By default, it has the greatest `apply_priority` value.

You can check the registered promotion plug-ins priority by MySQL request:

```
mysql> select * from promo_registry order by apply_priority;
```

promo_comp_type	apply_priority	name	mt_class	presenta
percent	100	Percent discount	HSPC::MT::BM::PromoPlugin::Percent	HSPC::BM
domainwaivee	200	Domain Waivee discount	HSPC::MT::BM::PromoPlugin::DomainWaivee	HSPC::BM ee
freeperiod	2000000000	Free period discount	HSPC::MT::BM::PromoPlugin::FreePeriod	HSPC::BM

`promo_comp_type` is a plug-in ID set in the Middle tier module.

`apply_priority` is a plug-in priority that defines its application order. As you can see, The Free Subscription period (freeperiod) plug-in has the greatest `apply_priority` value and will be applied the last. Assign smaller priorities to your custom plug-ins.

Example of the installer of the SpecialPercent promotion plug-in:

```
package HSPC::MT::BM::PromoPlugin::SpecialPercentInstaller;

use strict;
use HSPC::SystemLib;
use HSPC::WebDB;
use HSPC::MT::Billing::PromoRegistry;
use HSPC::MT::BM::PromoPlugin::SpecialPercent;

sub install_plugin {
	my $trace = sw_atrace();

	make_registry_record();

	$trace->addok();
	return undef;
};

sub deinstall_plugin {
	my $trace = sw_atrace();

	delete_registry_record();

	$trace->add();
	return undef;
};

sub delete_registry_record {
	my $trace = sw_atrace();

	my $trans = sw_atrans();

    my $plug_registry = HSPC::MT::Billing::PromoRegistry->new();
    $plug_registry-
>promo_comp_type(HSPC::MT::BM::PromoPlugin::Percent::PROMO_COMP_TYPE);
    $plug_registry->delete();

	$trans->commit();

	$trace->addok();
	return undef;
}

sub make_registry_record {
	my $trace = sw_atrace();

	my $trans = sw_atrans();

    my $plug_registry = HSPC::MT::Billing::PromoRegistry->new();
    $plug_registry-
>promo_comp_type(HSPC::MT::BM::PromoPlugin::Percent::PROMO_COMP_TYPE);
	$plug_registry->apply_priority(100); ## High priority. Should be applied
before freeperiod
    $plug_registry->name("Percent discount"); ## Not shown in interface
    $plug_registry->mt_class("HSPC::MT::BM::PromoPlugin::Percent");
    $plug_registry->presentation_class("HSPC::BM::PromoPlugin::Percent");
    $plug_registry->save();

	$trans->commit();

	$trace->addok();
	return undef;
}

1;
```

Domain Registration Plug-In Development Tools

This chapter describes the methods used in any domain registration plug-in. Some methods are optional (i.e., a plug-in can provide a given functionality or can work without it) and some are mandatory (i.e., any plug-in uses a given method).

The Dummy DM plug-in code sample is located in the `samples/plugins/hspc-plugin-dm-dummy` directory.

Domain Plug-In Namespaces

Namespace for modules responsible for a non-visual part of a domain plug-in is `HSPC::MT::Plugin::DM::<NAME>`.

Namespace for modules responsible for visual part (i.e., graphical presentation) of domain plug-in is `HSPC::Plugin::DM::<NAME>`.

Where `<NAME>` is a plug-in Template name, that normally should follow a domain registrar name, for example `eNom` or `OpenSRS`.

HSPC::MT::Plugin::DM Methods

The methods that belong to the HSPC::MT::Plugin::DM namespace are described below.

Domain Lookup

The methods responsible for domain lookup are described below.

check_register

`check_register` is an optional method.

A plug-in should use this method if it supports domains lookup via registrar API to check domains before registration. Otherwise this method should be dropped and Parallels Business Automation - Standard first tries to use the `check_transfer` method (on page 301) that also helps recognizing whether a domain is available for registration or not (if a domain is available for transfer, this means that a domain is already registered and thus a given domain name is already used). If the `check_transfer` method is not available, then a plug-in will use a standard lookup via whois.

Note: Some plug-ins cannot lookup domains, but may need to do some checks during lookup procedure (for domain name in test-mode, etc.). So they can implement this method, perform necessary checks, and return value 3 for necessary domains (see comments for output values).

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domains => ref to array of strings

Output:

- HASHREF of the type {domain => result}

  where result can be:

  - 0 - not available,
  - 1 - domain is available,
  - 2 - error during lookup,
  - 3 - lookup has been skipped by a plug-in (e.g. if plug-in cannot lookup domains via registrar API or skipped lookup due to its settings, etc.)

    For example: {'aaa.com' => 1, 'bbb.com' => 0, 'ccc.com' => 2, 'ddd.com' => 3}

can_check_register

The `can_check_register` method is optional.

This method is called before `check_register` to determine whether a plug-in uses registrar's API to check a domain for registration. It returns 1, if plug-in can lookup domains before registration. If result was 0, then Parallels Business Automation - Standard uses whois to check the domains.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domains => ref to array of strings

Output:

HASHREF of kind {'domain1' => 1, 'domain2' => 0}

check_transfer

The `check_transfer` method is optional.

If this method is not implemented, then Parallels Business Automation - Standard first tries to use the inverse result of the `check_register` method to check whether a given domain exists and then, if the `check_register` method is not available Parallels Business Automation - Standard will just inverse 'lookup_domain' result (as for a most of plug-ins needed). If a plug-in should perform some extra actions to check transferrability of domain, then it should use this method.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domains => ref to array of strings

Output:

HASHREF of kind {domain => result}

where result can be:

- 0 - not available,
- 1 - domain is available,
- 2 - error during lookup,
- 3 - lookup was skipped by plug-in (e.g. if plug-in cannot lookup domains via registrar API or skipped lookup due to its settings, etc.)

For example: {'aaa.com' => 1, 'bbb.com' => 0, 'ccc.com' => 2, 'ddd.com' => 3}

can_check_transfer

The `can_check_transfer` method is optional.

This method is called before `check_transfer` to determine whether a plug-in uses registrar's API to check a domain for transfer. It returns 1, if plug-in can lookup domains before transfer. If result was 0, then system uses whois to check the domains.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domains => ref to array of strings

Output:

- HASHREF of kind {'domain1' => 1, 'domain2' => 0}

Operations With Domains

Methods used for domains registration, transfer, and other operations related to domains management are described below.

register_domain

The `register_domain` method is mandatory.

The method registers a domain.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string
- period => int (years)
- nses => ARRAYREF ({hostname => 'ns1.domain.com', ip = '192.192.192.192'},...)
- contacts => HASHREF {type1 => HASHREF, type2 => HASHREF, ...},
- contacts_extdata => HASHREF {type1 => REF, type2 => REF, ...},
- contacts_ids => HASHREF {type1 => INT(SCALAR), type2 => INT(SCALAR), ...},
- domain_extdata => ARRAYREF (optional),

Output:

- is_success => 1 | 0,
- message => '', ## if is_success = 0
- domain_status => string, ## registered|registering|error

can_transfer_domain

The `can_transfer_domain` method is mandatory.

The method recognizes whether a plug-in supports transfer operation for a domain specified. (Usually transfer operation is forbidden for some specific TLDs).

Input :

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string

Output :

- 1 | 0

can_send_authcode

The `can_send_authcode` method is optional.

The method defines whether a plug-in supports sending the Auth Code required for domain transfer to a domain owner by e-mail.

Input :

- domain => string

Output :

- 1 | 0

send_authcode

The `send_authcode` method is optional.

The method requests registrar to send Auth Code to domain owner by e-mail. If registrar can do this (`registrar_has_own_api` = 1), then Auth Code is forwarded by registrar, and at this point the method finishes its actions. If registrar cannot send Auth Code to domain owner, the method requests registrar for domain owner name, e-mail, and Auth Code. Registrar passes the requested data to the plug-in, then PBAS sends Auth Code to domain owner using own notification system.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data method.
- domain => string

Output:

- is_success => 1 | 0,
- registrar_has_own_api => 1|0 (1 if registrar sends code to doman owner, 0 - if registrar cannot send code and Auth Code should be sent by PBAS)
- message => string, if is_success = 0
- registrant_email => string (real domain owner email address; should be returned if registrar_has_own_api = 0)
- registrant_name => string (real domain owner name; should be returned if registrar_has_own_api = 0)
- authcode => string (Auth Code to be sent to customer; should be returned if registrar_has_own_api = 0)

transfer_domain

The `transfer_domain` method is optional.

The method transfers a domain.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string
- period => int (years)
- nses => ARRAYREF ({hostname => 'ns1.domain.com', ip = '192.192.192.192'},...)
- contacts => HASHREF {type1 => HASHREF, type2 => HASHREF, ...},
- contacts_extdata => HASHREF {type1 => REF, type2 => REF, ...},
- contacts_ids => HASHREF {type1 => INT(SCALAR), type2 => INT(SCALAR), ...},
- domain_extdata => ARRAYREF (optional)

Output:

- is_success => 1 | 0,
- message => '', ## if is_success = 0
- domain_status => string, ## registered|transferring|error
- expire_date => (optional)

renew_domain

The `renew_domain` method is optional.

The method renews a domain registration.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string
- period => int (years) (optional)

Output:

- is_success => 1 | 0,
- message => '', ## if is_success = 0
- domain_status => string, ## registered|renewing|error
- expiration_date => (optional)

can_terminate_domain

The `can_terminate_domain` method is optional.

The method recognizes whether a plug-in supports domains registration termination for a specified domain. (Usually domain termination is forbidden for some specific TLDs).

Input :

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string

Output :

- 1 | 0

terminate_domain

The `terminate_domain` method is optional.

The method terminates a domain registration on a registrar's side (or sends a request for domain termination, if an operation is offline).

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string

Output:

- is_success => 1 | 0
- message => '', ## if is_success = 0
- domain_status => 'terminating|terminated'

get_domain_status

The `get_domain_status` method is optional.

The method is used for offline operations status check. When domain is in Registering, Transferring, or Renewing status, a periodical task calls a corresponding method, if available, and returns to Parallels Business Automation - Standard an actual domain status (for example, still in progress, operation cancelled, operation completed).

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string,
- action => 'register|transfer|renew|terminate|check_owner' - process identifier, passes an operation to be performed with a domain (registration, transfer, renewal,termination, ownership check). Ownership check allows checking whether a domain is managed by provider account on registrar or transferred away; this action is called before domain renewal.

Output:

- is_success => 1|0, if 0, this is an internal error and this error must not affect a domain status in Parallels Business Automation - Standard.
- message => string
- domain_status => 'registered|registering|transferred|transferring|renewed|renewing|terminated|terminating|transferred_away|error' (optional)

Note: If domain_status is not specified, then domain_status is not changed.

get_domain_details

The `get_domain_details` method is optional.

The method is used to get a domain registration information.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string

Output:

- is_success => 1 | 0,
- message => '', ## if is_success = 0
- registration_date => (optional)
- expiration_date => (optional)

get_domain_prices

The `get_domain_prices` method is optional.

The method gets the pricing information from a Registrar, if such an information is available.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- periods => HASHREF {domain1 => ARRAYREF [period1,period2,...], domain2 => ARRAYREF [period1,period2,...], ...}

Output:

- is_success => 1 | 0,
- message => string, ## if is_success = 0
- prices => HASHREF {domain1 => HASHREF {period1 => price1,period2 => price2,...}, domain2 => HASHREF {period1 => price1,period2 => price2,...}, ...}

Operations With Name Servers

The methods used for name servers management are described below.

register_ns

The `register_ns` method is optional.

The method adds a name server to the list of available name servers at registrar side.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- hostname => string
- ip => string

Output:

- is_success => 1 | 0
- message => string, ## if is_success=0

synchronize_domain_ns

The `synchronize_domain_ns` method is optional.

The method changes name servers set as primary ones for a delegated zone.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string
- nses => ARRAYREF ({hostname => 'ns1.domain.com', ip = '192.192.192.192'},...)

Output:

- is_success => 1 | 0,
- message => string, ## if is_success = 0

Operations With Contacts and Domain Extended Information

Plug-ins can work without contacts related methods. In this case Parallels Business Automation - Standard only can fetch a customer contact information from his/her account profile, draw a standard contacts form and pre-fill this form with customer contacts available in the database. However, in this case the additional contact information must be entered every time a domain is registered and, which is also important, contact data cannot be shared between different plug-ins. Generally, the contacts management can be implemented even internally in a plug-in, including contacts storage, drawing screen forms and other issues.

Parallels Business Automation - Standard provides a special facilities for plug-ins to store and manage contact information. This facility consists of the following:

- Standardized storage for contact information called *Base Contacts*. It consists of the standard set of fields (optional or mandatory, with a unified input format) supported by most of plug-ins. Having been saved in Parallels Business Automation - Standard database, Base Contacts can be used by a number of plug-ins and, in addition, are used for the Contacts screen form pre-filling. When a customer registers a domain, the Base Contacts are called by a customer account ID. A customer can have several Base Contacts blocks and select what one to use during domain registration. Other Base Contacts (if any) can be selected from the drop-down menu.

  Note: The plug-ins that require contact information within the Base Contacts only, can be implemented without any contacts-related visual methods - Parallels Business Automation - Standard will draw and pre-fill the form automatically.

- An additional contact information called *Extended Data*, which is usually Registrar-specific. Any additional data (and data specific presentation) required by a Registrar can be stored here. The Extended Data provides the flexibility for the contact data composition. Not only customer contacts can be stored as Extended Data, but the domain related data required by some registrars as well.

Contact Types

The possible Contact Types:

Type	Should be pre-filled from
owner	Parallels Business Automation - Standard Account General Information
admin	Parallels Business Automation - Standard Account Administrative Information
billing	Parallels Business Automation - Standard Account Billing Information
technical	Parallels Business Automation - Standard Account Technical Information

A plug-in informs about the Contact Types required by means of the `get_contact_types` (on page 312) method. The structure returned by this method is illustrated by the following example:

```
    return [
        { type => 'owner', title => 'Owner Contact' },
        { type => 'admin', title => 'Admin Contact' },
        { type => 'technical', title => 'Technical Contact' }
    ];
```

Base Contact Information

Base Contact fields:

Name	Type	Restrictions	Mandatory (default)	Description
is_corporate	bool	{0|1}	yes	Personal/Corporate Account
org_name	char		yes if is_corporate	Organization Name
fname	char		yes	First Name
lname	char		yes	Last Name
address	char		yes	Address Line
city	char		yes	City
state	char		yes	State
zip	char			ZIP/Postal Code
country	char	ISO 3166 country designation	yes	Country
email	char	Valid email address	yes	E-mail Address
phone	char	Parallels Business Automation - Standard phone number format	yes	Phone Number
fax	char	Parallels Business Automation - Standard phone number format		Fax Number

get_contact_types

The `get_contact_types` method is optional.

The method returns the arrayref of hashes {type_name => 'admin', type_title_id => 'admin_uc'} (?)

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string

Output:

- ARRAYREF of HASHREFS {type => AVAILABLE_TYPE, title => string}

Where AVAILABLE_TYPE is one string from following list: 'owner', 'admin', 'technical', 'billing', 'zone'.

validate_data

The `validate_dat`a method is optional.

The method checks whether all required fields have been filled according to a registrar rules.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string,
- action => string,
- contacts => HASHREF {'admin' => HASHREF, 'tech' => HASHREF, ...},
- contacts_extdata => HASHREF {'admin' => REF, 'tech' => REF, ...}
- domain_extdata => REF

Output:

- is_valid => 1 | 0 - if it is valid data.
- error_list => arrayref to hashes {form => contact|domain_extdata, contact_type => owner|admin|..., field => name , message => localized_message_string}, ## if is_valid = 0

update_contacts

The `update_contacts` method is optional.

The method is used to modify contact information at a registrar side.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => SCALAR
- contacts => HASHREF { owner => HASHREF, admin => HASHREF, ... }
- contacts_extdata => HASHREF { owner => REF, admin => REF, ... }
- contacts_ids => HASHREF { owner => INT(SCALAR), admin => INT(SCALAR), ... }

Output:

- is_success => 1 | 0
- error_list => arrayref to hashes {contact_type => owner|admin|..., message => error_mess_localiz_id}, ## if is_valid = 0

The `contacts` argument should contain all the contacts supported by a plug-in, These contacts can be obtained using the `get_contact_types` (on page 312) method.

Supporting 'WHOIS Privacy' Feature

When one registers a domain name, ICANN requires that his/her address, e-mail and phone number be published in the public WHOIS database which is available for anybody to view on the Web. Private Registration hides a customer personal information from public view and keeps this information private:

The methods that allow supporting a WHOIS information privacy service are described below.

can_idprotect

The `can_idprotect` method optional.

The method recognizes whether a plug-in supports WHOIS privacy service for a given domain.

Input :

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string

Output :

- 1 | 0

get_idprotect

The get_idprotect method is optional.

The method gets the WHOIS privacy setting for a domain name.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string

Output:

- is_success => 1|0,
- value => 1|0 ## if is_success = 1
- message => string, ## if is_success = 0

set_idprotect

The `set_idprotect` method is optional.

The method enables the whois privacy for a domain.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string,
- value => 1|0

Output:

- is_success => 1|0,
- message => string, ## if is_success=0

Supporting 'Lock Domain' Feature

The Registrar lock feature allows temporarily disallowing domains transfer from a registrar.

The methods used to support the 'Lock domain' feature are described below.

can_reglock

The `can_reglock` method is optional.

The method recognizes whether a plug-in supports registrar lock for a specified domain.

Input :

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string

Output :

- 1 | 0

get_reglock

The `get_reglock` method is optional.

The method is used to get the registrar lock setting for a domain name.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string

Output:

- is_success => 1|0,
- value => 1|0 ## if is_success = 1
- message => string, ## if is_success = 0

set_reglock

The `set_reglock` method is optional.

The method sets registrar lock for a given domain.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string,
- value => 1|0 =1 to lock, =0 to unlock.

Output:

- is_success => 1|0,
- message => string, ## if is_success=0

Supporting Offline Operations

The method(s) that allow supporting offline operations over domains described below.

process_callback

The `process_callback` method is optional.

The method processes an e-mail response received from registrar. An e-mail is caught by a gate in Parallels Business Automation - Standard and sent to an appropriate plug-in (plug-in is determined from callback e-mail).

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- data => string

Output:

- is_success => 1|0,
- message => string, ## if is_success=0
- domain => string,
- domain_status => 'registered|registering|error|...',
- expiration_date => datetime,
- registration_date => datetime,
- ns_synchronized => 1 | 0

HSPC::Plugin::DM Methods

The methods that belong to the HSPC::Plugin::DM namespace are described below.

Operations With Contact and Domain Extended Information

The methods used for visual part contacts and domain extended information management are described below.

view_contact_form

The `view_contact_form` method is optional.

The method draws a full view form for contacts including standard fields and extended contact fields ("contact extdata").

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string,
- action => string (optional),
- contact_type => string (e.g. 'admin' ...),
- contact => HASHREF,
- contact_extdata => REF

Output:

- HTML

edit_contact_form

The `edit_contact_form` method is optional.

The method draws a full edit form for contacts including standard fields and extended contact fields ('contact extdata').

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string,
- action => string (optional),
- contact_type => string (e.g. 'admin' ...),
- contact => HASHREF, (optional, if not empty, then it can be used for form fields pre-filling).
- contact_extdata => REF, (optional, if not empty, then it can be used for form fields pre-filling).
- error_list => arrayref (optional)

Output:

- HTML

view_contact_extdata_form

The `view_contact_extdata_form` method is optional.

The method draws a view form for contact extended data (this is needed for bulk domain registration, when minimum of input fields is preferred to be drawn).

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string,
- action => string,
- contact_type => string (e.g. 'admin' ...),
- contact => HASHREF,
- contact_extdata => REF,

Output:

- HTML

edit_contact_extdata_form

The `edit_contact_extdata_form` is optional.

The method draws an edit form for contacts extended data (this is needed for bulk domain registration, minimum of input fields are preferred tp be drawn).

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string,
- action => string,
- contact_type => string (e.g. 'admin' ...),
- contact_extdata => REF, (optional, if not empty, then it can be used for the form fields pre-filling).
- error_list => arrayref (optional)

Output:

- HTML

view_domain_extdata_form

The `view_domain_extdata_form` method is optional.

The method draws a view form for a domain extended data.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string,
- action => string,
- domain_extdata => REF

Output:

- HTML

edit_domain_extdata_form

The `edit_domain_extdata_form` method is optional.

The method draws an edit form for a domain extended data.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string,
- action => string,
- domain_extdata => REF, (optional, if not empty, then can be used for the form fields pre-fill).
- error_list => arrayref (optional)

Output:

- HTML

collect_contacts_data

The `collect_contacts_data` method is optional.

The method collects contacts data and contacts extended data from web parameters.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string
- action => string

Output:

- contacts => HASHREF (e.g. {owner => HASHREF, admin => HASHREF, ... })
- contacts_extdata => HASHREF (e.g. {owner => REF, admin => REF, ... })

collect_contact_extdata

The `collect_contact_extdata` method is optional.

The method collects contact extended data from web parameters.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string,
- action => string,
- contact_type => string (e.g. 'admin' ...),

Output:

- contact_extdata REF

collect_domain_extdata

The `collect_domain_extdata` method is optional.

The method collects domain data from web parameters.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- domain => string,
- action => string,

Output:

- domain_extdata => REF

DM Plug-In Installation and Configuration

The methods used for a domain plug-in registration are described below.

view_config_form

The `view_config_form` method is optional.

The method draws the view form for a plug-in configuration screen.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- config => REF

Output:

- HTML

edit_config_form

The `edit_config_form` method is optional.

The method draws the edit form for a plug-in configuration screen.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- config => REF
- error_list => arrayref (optional)

Output:

- HTML

collect_config_data

The `collect_config_data` method is optional.

The method collects data from a plug-in configuration screen.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- config => REF, which contains a plug-in configuration data.

Output:

- config => REF, which contains a new data collected from a plug-in configuration screen
- callback_email => string (optional)

Note:If it is planned to use incoming e-mails in a plug-in, then you should specify the output parameter 'callback_email' and implement the process_callback (on page 316) method in plug-in template.

validate_config_data

The `validate_config_data` method is optional.

The method collects data from a plug-in configuration screen.

Input:

- config => REF, this input parameter must be passed to all methods used for DM plug-ins development. This parameter passes a plug-in configuration data, which normally should include a visible data (a plug-in settings entered into a its configuration form) and non-visible data passed by a plug-in additionally. The structure of the data passed is defined by a plug-in developer in the collect_config_data (on page 323) method.
- config => REF

Output:

- is_valid => 1|0,
- error_list => arrayref to hashes {field => config_field_name, message => localized_message_string}, ## if is_valid = 0

Required Toolkit Methods

The toolkit methods needed for domain plug-ins are described below.

Common Functions

- HSPC::Plugin::Toolkit->log
- HSPC::Plugin::Toolkit->log_warn
- HSPC::Plugin::Toolkit->log_debug
- HSPC::Plugin::Toolkit->string

parse_template

HSPC::Plugin::Toolkit->parse_template

The function is used for HTML generation from a list of predefined templates or templates implemented in a plug-in.

Input:

- tmpl => string,
- data => HASHREF

Output:

- raw HTML

purify_fromxml_data

use HSPC::Plugin::Toolkit qw(purify_fromxml_data);

...

$plugindata=purify_fromxml_data($plugindata);

The function is used for clearing UTF8 flag from Perl variables.

Input:

- scalar

Output:

- scalar

DM Related Checking, Converting, Formatting Functions

- is_fqdn
- is_ascii_fqdn
- domain2utf
- domain2ascii
- extract_tld_from_domain
- extract_shortname_from_domain
- phone_as_e164/phone_string_as_e164
- check_pnonecountry, phone_like_de, phone_as_tollfree (?)
- is_idn_domain
- is_cc_tld
- phone_as_str
  Converts phone from internal format '7|095|1234567|123' into human readable format "+7 (095) 1234567 ext. 123"
  Input : phone_src (string)
  Output : converted phone
- get_contact_related_domains({domain=>string(mandatory), contact_type=>string(mandatory)})
  returns ARRAYREF of related domain names
- get_contact({domain=>string(mandatory), contact_type=>string(mandatory)})
  returns HASHREF {contact => HASHREF, contact_extdata => REF}
- set_contact_extdata({domain=>string, contact_type=>string(mandatory), contact_extdata=>REF(mandatory)})
  returns undef
- get_domain_extdata({domain=>string(mandatory)})
  returns domain extended data as HASHREF {domain_extdata => REF}
- set_domain_extdata({domain=>string, domain_extdata=>REF(mandatory)})
  returns undef
- make_login
- make_password
- whois_query (some common function(s) for: HSPC::MT::DM::WhoisClient->whois_query; HSPC::MT::DM::RegEngine->get_whois; HSPC::MT::DM->lookup_domain;)

get_domain_info

The method gets the domain related information that is needed for a plug-in from Parallels Business Automation - Standard database.

```
HSPC::PluginToolkit::DM->get_domain_info(
  domain => 'domain.org'
);
```

The `get_domain_info` method output result:

```
{
  domain => string,
  domain_status => string,
  registration_date => string,
  expiration_date => string,
  nses => arrayref of hashes [{ip => , hostname => }, ...]
}
```

Creating a New DNS Plug-In

DNS plug-in API allow adding a new method of name servers registration and management into Parallels Business Automation - Standard.

Introductory Notes About DNS Plug-In

DNS plug-in modules can be divided into three parts:

- Presentation module responsible for drawing plug-in settings screen and plug-in configuration screen,
- Middle tier module responsible for database interactions.

DNS Plug-In Objects and Their Naming Conventions

DNS plug-ins are represented by objects of classes enlisted below. For example, for the plug-in named Simple, the classes should be named as follows:

- HSPC::DM::NS::SlaveNS::Simple responsible for a plug-in presentation level.
- HSPC::MT::DM::NS::SlaveNS::Simple responsible for working with database and name server specific logic.

The ready DNS plug-in is an RPM package.

The directories structure is the following:

- `lib/DM/NS/SlaveNS/` contains module responsible for presentation level of the plug-in.
- `lib/MT/DM/NS/SlaveNS/` contains module responsible for work with database and nameserver specific logic.
- `comprep/` contains component repository configuration.
- `conf/` contains files for plug-in registering/removing.
- `i18n/` contains directories with localization.

It is necessary to have at least two modules named like <PluginName>.pm in each of the two first directories mentioned above for a plug-in to be HSPC compliant. For example, if you would like to develop a new plug-in module for *Simple* nameserver you must have two modules with the same names placed in:

```
lib/DM/NS/SlaveNS/Simple.pm

lib/MT/DM/NS/SlaveNS/Simple.pm
```

Registering a DNS Plug-In

Every DNS plug-in must be registered in Parallels Business Automation - Standard. Here are the sample scripts for plug-in register/remove:

Register a Plug-In:

```
#!/usr/bin/perl
use strict;

use HSPC::Console;
use HSPC::WebDB;
use HSPC::MT::DM::NS::SlaveNS::Simple;

my $type_id = &HSPC::MT::DM::NS::SlaveNS::SIMPLE::DM_NS_TYPE_SIMPLE;

select_run(qq|
	create table if not exists dm_ns_simple (
		ns_id int unsigned NOT NULL,
		root_passwd varchar(255),
		named_conf varchar(255),
		proto varchar(10) NOT NULL default '1,2',
		proto_new varchar(10),
		ssh_install_mode varchar(10) NOT NULL default 'password',
		to_connect_use_ip varchar(10) NOT NULL default '0',
		PRIMARY KEY (ns_id)
	) type=Innobase;
|);

select_run(qq|
	replace into dm_ns_type (
		ns_type_id,
		name,
		short_name,
		class,
		visual_class,
		is_manageable,
		allowed_for_resellers
	) values (
		'$type_id',
		'ssh_ns_type',
		'ssh_ns_type_sh',
		'HSPC::MT::DM::NS::SlaveNS::SIMPLE',
		'HSPC::DM::NS::SlaveNS::SIMPLE',
		1,
		1
	);|
);

where
·	DM_NS_TYPE_SIMPLE – constant defining plug-in type
·	dm_ns_simple – plug-in table name, containing name servers configuration
·	HSPC::MT::DM::NS::SlaveNS::SIMPLE – middle-tier class name
·	HSPC::DM::NS::SlaveNS::SIMPLE – representation class name
```

Remove a Plug-In:

```
#!/usr/bin/perl
use strict;

use HSPC::Console;
use HSPC::WebDB;
use HSPC::MT::DM::NS::SlaveNS::SIMPLE;

my $type_id = &HSPC::MT::DM::NS::SlaveNS::SIMPLE::DM_NS_TYPE_SIMPLE;
```

```
select_run(qq|delete from dm_ns_type where ns_type_id = '$type_id';|);
```

Web Interface Module

Let us consider the module responsible for web interface (presentation level) HSPC::DM::NS::SlaveNS::Simple. This module must contain the following methods:

- `sub form_ns` This method is responsible for displaying the name server configuration form when you click the **Edit** button at a name server settings screen, in other words, for changing the name server settings.
- `sub view_ns` This method is responsible for displaying the name server settings when you click on its name in the Name Servers list, in other words, for viewing the name server settings.
- `sub save_ns` This method saves name server settings.
- `sub is_reinstall_req` The method checks if significant parameters were changed during saving a server settings and returns 1 if a server is to be reinstalled.

form_ns()

The `form_ns` is responsible for displaying the name server configuration form when you click the **Edit** button at a name server settings screen **Service Director** > **Domain Manager** > **Name Servers** > select a name server, in other words, for changing a name server settings.

Input parameters are:

- `>> class object`
- `=>>page` - HSPC::WebPage object
- `=>>id` - name server ID

Return undef on success or error message on fail.

Example of method implementation:

```
sub form_ns {
       my $class = shift;
       my %h = (
           page => undef,
           id => undef,
           hostname => sw_param('hostname') || undef,
           title => sw_param('title') || undef,
           ip => sw_param('ip') || undef,
           is_available => sw_param('is_available') || undef,
           root_passwd => sw_param('root_passwd') || undef,
           named_conf => sw_param('named_conf') || undef,
           proto_new => sw_param('proto_new') || undef,
           to_connect_use_ip => sw_param('to_connect_use_ip') || undef,
           @_
       );
       my $page = $h{page};

       my $ns_obj;
       my $is_protected = 0;
       if ($h{id}){
              $ns_obj = HSPC::MT::DM->find_nameserver(id => $h{id});
              $is_protected = scalar grep {$_->{is_locked}} @{$ns_obj-
>nsset_list()};
              $page->edit_view_input(
                     title_id => 'title',
                     view_name => 'title',
                     value => $h{title} || $ns_obj->title(),
                     max_length => 55,
                     size => 20,
                     not_empty => 1,
              );

              $page->edit_view_check(
                     title_id => 'ns_is_avail',
                     view_name => 'is_available',
                     is_checked => $h{is_available} || $ns_obj->is_available()
? 1 : 0,
                     disabled => $is_protected,
                     value => 1
              );

              $page->edit_view_hidden(
                     view_name => 'id',
                     value => $ns_obj->id()
              );
       }
       $page->edit_view_input(
              title_id => 'hostname',
              view_name => 'hostname',
              value => $h{hostname} || ((ref $ns_obj) ? $ns_obj->utf_hostname()
: ''),
              max_length => 255,
              size => 15,
              not_empty => 1,
              disabled => $is_protected,
       );

       $page->edit_view_input(
              title_id => 'ip_address',
              view_name => 'ip',
              value => $h{ip} || ((ref $ns_obj) ? $ns_obj->ip() : ''),
              max_length => 15,
              size => 15,
              disabled => $is_protected,
              not_empty => 1,
       );

       $page->edit_view_check(
              title_id => 'to_connect_use_ip',
              view_name => 'to_connect_use_ip',
              is_checked => ($h{to_connect_use_ip}
                     || (ref $ns_obj && $ns_obj->to_connect_use_ip())) ? 1 : 0,
              value => 1,
       );

       {
              my $init_proto_new = $h{proto_new} ||
                     ((ref $ns_obj) ? $ns_obj->proto() : '');
              my $dbl_slash = '/'.'/';
              my $jvs_proto_store =
                     qq[
                            <script language="JavaScript">
                            <!--
                                   proto_keys_init = "$init_proto_new";
                                   proto_store = "$init_proto_new";
                            $dbl_slash-->
                            </script>
                     ];
              $page->edit_append(content => $jvs_proto_store);

              my $keys_checked =
                     (ref $ns_obj && ($ns_obj->ssh_install_mode() eq 'keys')) ?
1 : 0;

              $page->edit_view_info(value => string('ssh_install_mode'),
right_line => 1);
              {
                     $page->cell_radio(
                            view_name => 'ssh_install_mode',
                            value => 'keys',
                            align => 'left',
                            cols => 3,
                            is_checked => $keys_checked,
                            close => 0,
                            js_on_click => qq~proto_store =
document.getElementById('item').proto_new.value;
document.getElementById('item').proto_new.value = proto_keys_init~,
                            enable_views => [],
                            disable_views => [qw(root_passwd proto_new)],
                     );
                     $page->cell_text(
                            value => string('ssh_use_already_set_keys'),
                            open => 0,
                                align => 'left'
                        );
                        $page->row_close;
                }
                {
                        $page->cell_radio(
                                view_name => 'ssh_install_mode',
                                value => 'password',
                                align => 'left',
                                cols => 3,
                                is_checked => !$keys_checked,
                                close => 0,
                                js_on_click =>
qq~document.getElementById('item').proto_new.value = proto_store~,
                                enable_views => [qw(root_passwd proto_new)],
                                disable_views => [],
                        );
                        $page->cell_text(
                                value => string('ssh_use_root_pass'),
                                open => 0,
                                align => 'left'
                        );
                        $page->row_close;
                        $page->cell_skip(width => 20);
                        $page->edit_view_input(
                                title_id => 'password',
                                value => $h{root_passwd},
                                not_empty => 1,
                                view_name => 'root_passwd',
                                max_length => 100,
                                is_password => 1,
                                size => 15,
                        );
                        $page->row_close;
                        $page->cell_skip(width => 20);
                        $page->cell_text(value => string('ssh_proto'), is_aster =>
1);
                        $page->cell_skip(width => 60);
                        $page->cell_combo(
                                check_title_id => 'ssh_proto',
                                view_name => 'proto_new',
                                not_empty => 1,
                                value => $init_proto_new,
                                options => &PROTOS,
                                options_plain => 1
                        );
                        $page->row_close;
                }
        }
        $page->edit_view_hidden(
                        view_name => 'proto',
                        value => $h{proto} || ((ref $ns_obj)
                                ? $ns_obj->proto() : ''),
        );
        $page->edit_view_info(value => '', right_line => 1);
        $page->edit_view_input(
                title_id => 'named_conf',
                view_name => 'named_conf',
                value => $h{named_conf} || ((ref $ns_obj)
                        ? $ns_obj->named_conf() : '/etc/named.conf'),
                max_length => 255,
                size => 25,
                not_empty => 1,
        );

    return undef;
}
```

view_ns()

This method is responsible for displaying the name server settings when you click on its name in the Name Servers list, in other words, for viewing a name server settings at Service Director > Domain Manager > Name Servers > select a name server.

Input parameters are:

- >> `class object`
- =>> `page` – HSPC::WebPage object
- =>> `id` – Name server ID
- =>> `obj` – Name server object

Return undef on success or error message on fail.

Example of method implementation:

```
sub view_ns {
       my $self = shift;
       my %h = (
           page => undef,
           id => undef,
           obj => undef,
              @_
       );
       my $page = $h{page};
       my $ns_obj;
       if ($h{id}){
              $ns_obj = HSPC::MT::DM->find_nameserver(id => $h{id});
              sw_die ("NS #$h{id} not found") unless ($h{id} == $ns_obj->id());

       } elsif ($h{obj}) {
              $ns_obj = $h{obj};
       } else {
              sw_die ("NS id or obj should be specified");
       }

       $page->view_info_text (
              title_id => 'to_connect_use_ip',
              type => 'bool',
              value => $ns_obj->to_connect_use_ip(),
       );
       $page->view_info_text(
              title_id => 'named_conf',
              value => $ns_obj->named_conf(),
       );
       $page->view_info_text(
              title_id => 'ssh_proto',
              value => $ns_obj->proto(),
       );
       $page->edit_view_hidden(
              view_name => 'ssh_install_mode',
              value => $ns_obj->ssh_install_mode()
       );
       ## Name server properties can not be modified if belongs to locked NS
set
       my $is_protected = scalar grep {$_->{is_locked}} @{$ns_obj-
>nsset_list()};
       my $buttons = {
              show_edit => 1,
              show_delete => $is_protected ? 0 :  1,
              show_cancel => 1,
        };

        if ($ns_obj->status() == NS_STATUS_ERROR){
                push @{$buttons->{right_buttons}},[
                        'item_reinstall',
                        string('recreate'),
                        'SWIButtonX',
                        'submit',
                ];
        } elsif (
                $ns_obj->status() == &NS_STATUS_INSTALLED
                || $ns_obj->status() == &NS_STATUS_UNREACHABLE
        ){
                push @{$buttons->{right_buttons}},[
                        'check_status',
                        string('check_status'),
                        'SWIButtonX',
                        'submit',
                ];
        }

        return $buttons;
}
```

save_ns()

This method is responsible for saving name server data.

Input parameters are:

- >> `class object`
- =>> `page` – HSPC::WebPage object
- =>> `title` – Name server title
- =>> `id` – Name server ID
- =>> `ns_type` – Name server type
- =>> `provider_id` – Provider ID
- =>> `is_available` – node availability status
- =>> `policy` – Name server rights policy

Return ID of saved name server on success or undef on fail.

Here is an example of method implementation:

```
sub save_ns
{
       my $self = shift;
       my %h = (
              ## common params
           page => undef,
           id => undef,
              title => undef,
              ns_type => undef,
              provider_id => undef,
              is_available => undef,
              provider_id => undef,
              ## own params
              ip => sw_param('ip') || undef,
              hostname => sw_param('hostname') || undef,
              root_passwd => sw_param('root_passwd') || undef,
              ssh_install_mode => sw_param('ssh_install_mode') || undef,
              named_conf => sw_param('named_conf') || undef,
              proto => sw_param('proto') || undef,
              proto_new => sw_param('proto_new') || undef,
              to_connect_use_ip => sw_param('to_connect_use_ip') || 0,
              @_
       );
       my $page = $h{page};
       my $ns_obj;

       if($h{id}) {
              $ns_obj = HSPC::MT::DM->find_nameserver(id => $h{id});
       } else {
              $ns_obj = HSPC::MT::DM::NS::SlaveNS::SSH->new();
              $ns_obj->type_id($h{ns_type});
              $ns_obj->provider_id($h{provider_id});
              $ns_obj->status(&NS_STATUS_PENDING);
       }

       if($ns_obj->ip ne $h{ip}){
              my $ns_obj_chk = HSPC::MT::DM->find_nameserver(ip => $h{ip});
              if($ns_obj_chk){
                     error_ext (
                            mod => &MOD_DM,
                            smod => &SMOD_DM_NS,
                            err => 6,
                            params => {id => $ns_obj_chk->id}
                     );
              }
       }

       $h{hostname} = HSPC::MT::DM->domain2ascii(
              domain => $h{hostname}
       );

       my $domain_error = 0;
       if ($ENV{security_obj}->account_type() != &SW_HSP){
              ## Check for idn enabled
              $domain_error = HSPC::MT::DM::ToolsInt->check_domain(
                     domain => ('hostname'),
                     provider_id => $ENV{security_obj}->account_no,
              );
       }
       if ($domain_error) {
              error(MOD_OD_DM, 12);
              return undef;
       }

       $ns_obj->title($h{title});
       $ns_obj->hostname($h{hostname});
       $ns_obj->ip($h{ip});
       $ns_obj->is_available($h{is_available} ? 1 : 0);
       $ns_obj->named_conf($h{named_conf});
       $ns_obj->to_connect_use_ip($h{to_connect_use_ip});
       if ($h{proto}){
           ## edit already created ssh NS
           $ns_obj->proto($h{proto});
       } elsif (!$h{proto} and $h{proto_new}){
           ## create new ssh NS server
           ## so old protocol not exist, save new protocol
           $ns_obj->proto($h{proto_new});
       } else {
           $ns_obj->proto('2,1');
       }
       $ns_obj->root_passwd($h{root_passwd});
       $ns_obj->policy($h{policy});
       $ns_obj->ssh_install_mode($h{ssh_install_mode});

       ## if some errors happen
       return undef if last_error();
       my $res = $ns_obj->save();

       return (!last_error() && $ns_obj->id()) ? $ns_obj->id() : undef;
}
```

is_reinstall_ns()

The method checks if significant parameters were changed during saving and returns 1 if server is to be reinstalled.

Input parameters are:

- >> `class object`
- =>> `id` – Name server ID
- =>> Other name server specific parameters

Return 1 if reinstall is required or 0 otherwise.

Example of method implementation:

```
sub is_reinstall_req{
       my $self = shift;
       my %h = (
           id => undef,
              ip => sw_param('ip') || undef,
              hostname => sw_param('hostname') || undef,
              root_passwd => sw_param('root_passwd') || undef,
              named_conf => sw_param('named_conf') || undef,
              proto => sw_param('proto') || undef,
              @_
       );
       sw_die("is_reinstall_req(): NS ID expected") unless $h{id};
       my $ns_obj = HSPC::MT::DM->find_nameserver(id => $h{id});

       ## try to guess if we should reinstall NS or just save object
       ## Reinstall required if some of significant values are changed or
       ## NS status was ERROR

       my $reinstall_req = ($ns_obj->status() == &NS_STATUS_ERROR);
       unless ($reinstall_req){
              foreach my $item (qw|ip hostname root_passwd named_conf proto|){
                     $reinstall_req = ($ns_obj->$item ne $h{$item});
                     last if $reinstall_req;
              }
       }
       return $reinstall_req;
}
```

Middle Tier Module

We consider in details the module responsible for integration with the Commerce Director HSPC::MT::CCP::Plugins::CCard_Simple. This module has to contain a number of methods to be HSPC compliant. These methods are:

- `sub install` This method is called by Domain Manager during first-time installation.
- `sub sync_zones` This method synchronize specified zones.
- `sub check_is_reachable` The method checks if the name server is reachable from Parallels Business Automation - Standard node.

install()

This method is called by Domain Manager during first-time installation.

Input parameters are:

- >> class object

Method must return a Task Manager task ID on success, or 0 on success if task not needed, or undef on error.

```
sub install {
      my $self = shift;
      my $ns_id = $self->id();

      $self->status(&NS_STATUS_INSTALLING);
      $self->save();

      my $task_id = HSPC::TaskExec::task_add(
            descr => "VPS Name Server installation",
            class => "HSPC::MT::DM::NS::SlaveNS::VPS",
            method => "install_async_task",
            param => [id => $ns_id],
            priority => 128,
            timeout => 600,
            mutex => "install_ns_$ns_id"
      );
      return $task_id;
}
```

sync_zones()

This method synchronizes the specified zones.

Input parameters are:

- >> `class object`
- =>> `zones` – Array of zone names to be synchronized
- =>> `delete_old_zones` – Boolean, shows if old zones deleting is required

Method must return 1 on success, or 0 otherwise.

```
sub sync_zones {
        my $self = shift;
        my %arg = (
                zones => undef,
                delete_old_zones => 1,
             @_
        );
        my $file;
        my @remote_zone_files;
        my @zones = @{$arg{zones}};
        my $named_zones = HSPC::MT::DM::NS::NSTools->generate_named_zones(
                zones => \@zones
        );

        my $out;
        my @local_zone_files = map { $_ .= '.zone' } @zones;
        my $res = $self->__sh_exec(
                cmd => 'ls -la /'.$self->named_dir(),
                out => \$out
        );
        return 0 unless $res;

        @remote_zone_files = split ("\n", $out);
        ## filter only real zone files
        @remote_zone_files = grep /\.zone$/, @remote_zone_files;

        ## Remove old files from remote DNS host
        if ($arg{delete_old_zones}) {
                my @unlink_files;
                foreach $file (@remote_zone_files) {
                        unless (grep /^$file$/, @local_zone_files) {
                                push @unlink_files, $self->named_dir()."/$file";
                        }
                }
                $self->__unlink(@unlink_files);
        }

        ## Put zones list file and reload
        $self->__put_zoneslist_file(content => $named_zones);
        my $res = $self->__sh_exec(cmd => INITD.'named reload');
        return 0 unless $res;
}
```

check_is_reachable()

The method checks if the name server is reachable from Parallels Business Automation - Standard node.

Input parameters are:

- >> `class object`

Method must return 1 on success, or 0 otherwise.

```
sub check_is_reachable{
	my $self = shift;

	my $ve_gate;
	eval {
		$ve_gate = $self->__ve_gate();
	};
	if (!ref($ve_gate) || $@) {
		return 0;
	}

	if ($self->ve_obj()->status() eq
		&HSPC::MT::OM::VE::STATUS->{SW_VE_STATUS_RUNNING()})
	{
		return 1;
	}
	return 0;
}
```

SSL Certificate Plug-In Developmet Tools

This chapter describes the methods used in SSL certificate plug-ins. Some methods are optional (i.e., a plug-in can provide a given functionality or can work without it) and some are mandatory (i.e., any plug-in uses a given method).

SSL Certificate Plug-In Namespaces

The namespace for modules responsible for the non-visual part of an SSL certificate plug-in is `HSPC::MT::Plugin::SSL::<NAME>`.

The namespace for modules responsible for the visual part (i.e., graphical representation) of an SSL certificate plug-in is `HSPC::Plugin::SSL::<NAME>`.

Where `<NAME>` is a plug-in Template name, that normally should follow a SSL certificate authority name, for example `eNom` or `GeoTrust`.

Middle Tier Module

The methods that belong to the `HSPC::MT::Plugin::SSL` namespace (middle tier) are described below.

Common Parameter: plugin_config

Each of these methods is passed the `plugin_config` parameter. This parameter passes the plug-in configuration data. The structure of the data passed is defined by the plug-in developer in the `collect_data` method (on page 350).

Configuration Information

The methods responsible for retrieving configuration information are described below.

get_title

The `get_title` method is mandatory.

Input:

- `plugin_config=> HASHREF`.

Output:

- "Name of SSL Certificate Plug-In"

get_product_list

The `get_product_list` method is mandatory.

You can add extra SSL product names in the i18n/<language code>/<plug-in-name>.xml file, e.g.: i18n/EN/hspc-plugin-ssl-enom.xml. Remember they should start with "ssl_product_".

Input:

- `plugin_config=> HASHREF`.

Output:

- { internal_ssl_product_name => { name => "SSL product name", external => "Identifier as per the SSL registrar API", periods => [supported registration periods in years], bits => [supported number of bits] }

  For example: `{ geotrust_quickssl => { name => "GeoTrustQuickSSL", external => "Certificate-GeoTrust-QuickSSL", periods => [ 1, 2, 3, 4, 5 ], bits => [ 1024, 2048 ] } }`

get_price_list

The `get_price_list` method is mandatory.

The method returns the prices per supported SSL product for both new registration and renewal.

Input:

- `plugin_config=> HASHREF`.
- `product =>string`, the internal SSL product name, as received from get_product_list.

Output:

- { new =>price_for_new_registration, renew =>price_for_renewal, currency => currency code }

  For example: `{ new => 15, renew => 10, currency => “USD” }`

get_server_software_type_list

The `get_server_software_type_list` method is mandatory.

The method returns the supported server software types for a given product.

Input:

- `plugin_config=> HASHREF`.
- `product` =>string, the internal SSL product name, as received from get_product_list, for which to receive the supported server software types.

Output:

- { “external identifier as per the SSL registrar API” => “Name of server software type”, etc. }

  For example: `{ 1 => “Apache + ModSSL”, microsoft_iis_7 => “Microsoft IIS 7” }`

get_approver_email_list

The get_approver_email_list method is optional.

The method returns the supported email addresses for the SSL approval procedure. This method may be called in the validate_csr_data method.

Input:

- `plugin_config=> HASHREF`.
- `domain_name=>string`, the domain name for which the SSL certificate is being bought.

Output:

- `[ “email address 1”, “email address 2”, ]`

get_buttons

The `get_buttons` method is optional.

The method adds a button to PBAS GUI and by means of this button makes it possible to call custom methods from the module in Provider Control Center or Control Panel.

Input:

- `plugin_config=> HASHREF`.
- `product` =>string, the internal SSL product name, as received from get_product_list, for which to receive the supported server software types.
- `is_admin` => boolean, shows if the method is called by administrator.
- `ext_attr => HASHREF`, { “extended attribute 1” => value, “array of values” => [ ], etc. }

Output:

```
[

{

     command => name_of_the_method1,

     label => label1

},

{

     command => name_of_the_method2,

     label => label2

},

...

]
```

The method returns the list of hashes, where `{command}` contains the name of the function in the middle-tier module of the Plug-in and `{label}` is the name of the button which will be shown in Control Panel or Provider Control Center,

The `is_admin` input parameter is 0 for Control Panel and 1 for Provider Control Center, so the Plug-in developer can customize where the button must be shown.

update_ext_attr

The `update_ext_attr` method is optional.

The method is called while updating extended attributes for SSL certificate from Provider Control Center or Control Panel.

Input:

- `ext_attr => HASHREF`, { “extended attribute 1” => value, “array of values” => [ ], etc. }
- `product =>` string, the internal SSL product name, as received from get_product_list.
- `plugin_config=> HASHREF`.

Output:

```
{
     is_success => 1|0,
      error_message => text,
}
```

`error_message` is applied if the `{is_success}` is 0. The error message text will be shown in Provider Control Center or Control Panel as it is specified in the method output.

SSL Certificate Issuing

The methods described below are used to validate SSL configuration information and issue SSL certificates.

validate_csr_data

The `validate_csr_data` method is mandatory.

The method checks the supplied CSR data for validity.

Input:

- `plugin_config => HASHREF`.
- `product => string`, the internal SSL product name, as received from get_product_list, for which to receive the supported server software types.
- `csr_data => HASHREF, { country => string, state => string, city => string, organization_name => string, organizational_unit_name => string, common_name => string, email => string, bits => string }`

Output:

- `{ field_with_error => “Field with error: error description” }`

issue_certificate

The `issue_certificate` method is mandatory.

The method issues the certificate request to the registrar.

Input:

- `domain => string`, the domain name for which the SSL certificate is being bought.
- `product => string`, the internal SSL product name, as received from get_product_list.
- `period => integer`, the number of years to register the SSL certificate for.
- `private_key => string` (optional)
- `csr => string` (required if `csr_data` missing), the Certificate Signing Request (CSR) file
- `csr_data => HASHREF` (required if `csr` is missing), { country => string, state => string, city => string, organization_name => string, organizational_unit_name => string, common_name => string, email => string, bits => string }
- `approver_email => string` (optional), as per get_approver_email_list.
- `software_type (optional) => string`, the identifier of the server software type as per get_server_software_type_list.
- `ext_attr => HASHREF` (optional), { “extended attribute 1” => value, “array of values” => [ ], etc. }, as per extract_ext_attr.
- `contact_data => HASHREF` (optional), { contact_type => { contact_fname => “First Name”, etc. }, e.g. Admin => { fname => 'Peter', lname => 'Johnson' } }
- `plugin_config => HASHREF`.

Output:

- `{ status => OK|ERROR, error_message => “Error description”, ext_attr => {} }`

  The ext_attr value will be merged with the already existing extended attribute data. This can be used e.g. to store the ID generated by the registrar's API when later fetching the certificate.

check_available

The `check_available` method is mandatory.

The method is called regularly to chec if the requested SSL certificate is available. The method is first called after the number of days specified in the "Wait x days for issuance of SSL certificate" field in the SSL plug-in configuration. Checks are done hourly, until the number of days specified in the "Duration of checking SSL certificate availability" field in the SSL plug-in configuration has elapsed.

Input:

- `plugin_config => HASHREF`.
- `ext_attr => HASHREF`, { "extended attribute 1" => value, "array of values" => [ ], etc. }, this input parameter may contain the ID required to check availability, see also issue_certificate (on page 345).

Output:

- `{ status => OK|NOT_ISSUED|ERROR, error_message => "Error description" }`
  - Status 'OK' indicates the SSL certificate is available and can be fetched. The check no longer repeats.
  - Status 'NOT_ISSUED' indicates the SSL certificate is not yet available. The check repeats.
  - Status 'ERROR' indicates the check failed. The check no longer repeats, and the status of the SSL certificate is set to 'ERROR'.

fetch_certificate

The `fetch_certificate` method is mandatory.

The method fetches the SSL certificate from the registrar when it is available.

Input:

- `plugin_config => HASHREF`.
- `ext_attr => HASHREF`, { "extended attribute 1" => value, "array of values" => [ ], etc. }, this input parameter may contain the ID required to fetch the certificate.

Output:

- `{ status => OK|ERROR, error_message => "Error description", certbody => "Certificate body" }`
  - Status 'OK' indicates the SSL certificate was successfully fetched.
  - Status 'ERROR' indicates fetching the certificate failed. The status of the SSL certificate is set to 'ERROR'.
  - The `certbody` value contains the actual SSL certificate body.

renew_certificate

The `renew_certificate` method is mandatory.

The method issues a renewal request to the registrar. Note that the ext_attr input parameter contains the data returned by issue_certificate. This may e.g. be used to refer to the old order ID, stored during issuing.

Input:

- `domain => string`, the domain name for which the SSL certificate is being bought.
- `product => string`, the internal SSL product name, as received from get_product_list.
- `period => integer`, the number of years to register the SSL certificate for.
- `private_key => string` (optional)
- `csr => string` (required if `csr_data` missing), the Certificate Signing Request (CSR) file
- `csr_data => HASHREF` (required if `csr` is missing), { country => string, state => string, city => string, organization_name => string, organizational_unit_name => string, common_name => string, email => string, bits => string }
- `approver_email => string` (optional), as per get_approver_email_list.
- `software_type (optional) => string`, the identifier of the server software type as per get_server_software_type_list.
- `ext_attr => HASHREF` (optional), { “extended attribute 1” => value, “array of values” => [ ], etc. }, as per extract_ext_attr.
- `contact_data => HASHREF` (optional), { contact_type => { contact_fname => “First Name”, etc. }, e.g. Admin => { fname => 'Peter', lname => 'Johnson' } }
- `plugin_config => HASHREF`.

Output:

- `{ status => OK|ERROR, error_message => “Error description”, ext_attr => {} }`

  The `ext_attr` value will be merged with the already existing extended attribute data. This can be used e.g. to store the ID generated by the registrar's API when later fetching the certificate.

get_product_attributes

The `get_product_attributes` method is optional.

The method returns the attributes of the specified SSL product. There are two supported types of attributes: `server_count` and `wildcard`.

Input:

- `plugin_config=> HASHREF`.
- `product` =>string, the internal SSL product name, as received from get_product_list, for which to receive the supported server software types.

Output:

```
{

server_count => 0|1,

wildcard => 0|1,

}
```

If `server_count` attribute is set for some product type it means that **Number of servers** combobox will be shown in the store, so that buyer can specify the number of servers for which the requested SSL certificate will be issued. Generally it is the multiplier to the actual product price.

If `wildcard` attribute is set, then the wildcard prefix "*." will be applied to the domain name (common name) automatically if the user forgets to add this prefix himself, and in case the customer submits CSR, this CSR will be checked if this common domain name contains this wildcard prefix.

cancel_certificate

The `cancel_certificate` method is optional.

The method cancels a not completed certificate order.

Input:

- `ext_attr => HASHREF`, { “extended attribute 1” => value, “array of values” => [ ], etc. }
- `plugin_config=> HASHREF`.

Output:

```
{

    status => 'OK'|'ERROR',

    error_message => text,

}
```

`error_message` is applied if the `{status}` is '`ERROR`'. The error message text will be shown in Provider Control Center as it is specified in the method output.

Graphical Presentation Module

The methods that belong to the HSPC::Plugin::SSL namespace (the plug-in graphical presentation) are described below.

Common Parameters: config, plugin_config

Each of the visual part methods is passed the `config` or `plugin_config` parameter. These parameters pass the plug-in configuration data. The structure of the data passed is defined by the plug-in developer in the `collect_data` method (on page 350).

Plug-In Configuration

The methods described below are used for configuring the SSL certificate plug-in itself.

get_config_view

The `get_config_view` method is mandatory.

The method returns a view of the plug-in configuration.

Input:

- `config => HASHREF`.

Output:

- “<SSL certificate plug-in configuration information>”

get_config_form

The `get_config_form` method is mandatory.

The method returns the editing form for the plug-in configuration.

Input:

- `config => HASHREF`.

Output:

- “<SSL certificate plug-in configuration form and fields>”

validate_config_data

The `validate_config_data` method is mandatory.

The method checks the validity of the plug-in configuration data entered using the get_config_form method.

Input:

- `config => HASHREF`.

Output:

- { is_valid => 0|1, error_list => [error1, error2] }

collect_data

The `collect_data` method is mandatory.

The method collects the plug-in configuration data and returns it ready for storing.

Input:

- `config => HASHREF`.

Output:

- { configuration_option_1 => value1, etc. }

get_help_page

The `get_help_page` method is mandatory.

The method returns the help page based on the specified action.

Input:

- `config => HASHREF`.
- `action => string, “about”|”new”|”view”|”edit”`
- `language => string`, the language code of the help page

Output:

- “Help information in the specified language about the specified action.”

SSL Certificate Configuration

The methods described below are used for configuring the SSL certificates themselves.

get_contact_types

The `get_contact_types` method is mandatory.

The method returns the different internal contact types for the SSL certificate. If an SSL registrar does not support contact types, an empty list is returned. The internal contact types are listed in the internationalization file of the plug-in and always start with “ssl_type_”. The mapping to the contact types used by the SSL registrar can be placed where they are necessary, e.g. in the issue_certificate method.

Input:

- `plugin_config => HASHREF`.
- `product =>` string, the internal SSL product name, as received from get_product_list.

Output:

- [E.g. “admin”, “technical”, “billing”]

get_contact_view

The `get_contact_view` method is mandatory.

The method returns a view of the SSL certificate contact data.

Input:

- `plugin_config => HASHREF`.
- `prefix => string` (optional), the prefix used in the names of the form fields (see also get_contact_form)
- `product` => string, the internal SSL product name, as received from HSPC::MT::Plugin::SSL's get_product_list.
- `type` => string, as received from get_contact_types.
- `contact_data` => HASHREF, { contact_fname => “First Name”, etc. }, e.g. { fname => 'Peter', lname => 'Johnson' }

Output:

- “<SSL certificate contact information>”

get_contact_form

The `get_contact_form` method is mandatory.

The method returns the editing form for the SSL certificate contact data.

Input:

- `plugin_config => HASHREF`.
- `prefix => string` (optional), the prefix used in the names of the form fields. E.g., the "forename" field with prefix "domain_1" would be called "domain_1forename".
- `product => string`, the internal SSL product name, as received from HSPC::MT::Plugin::SSL's get_product_list.
- `type => string`, as received from get_contact_types.
- `contact_data => HASHREF`, { contact_fname => "First Name", etc. }, e.g. { fname => 'Peter', lname => 'Johnson' }

Output:

- "<SSL certificate contact form>"

collect_contacts

The `collect_contacts` method is mandatory.

The method collects all the contact data from the form_data parameter, as per the get_contact_form function, and returns it ready for storing in an SSL certificate object.

Input:

- `plugin_config => HASHREF`.
- `product =>` string, the internal SSL product name, as received from get_product_list
- `prefix => string` (optional), the prefix used in the names of the form fields (see also get_contact_form)
- `form_data => HASHREF`, the values filled out by the customer using the form from get_contact_form.

Output:

- { contact_type => { contact_fname => "First Name", etc. }, e.g. Admin => { fname => 'Peter', lname => 'Johnson' } }

validate_contact_form

The `validate_contact_form` method is mandatory.

The method checks the validity of the SSL certificate contact data entered using the get_contact_form method.

Input:

- `plugin_config => HASHREF`.
- `prefix => string` (optional), the prefix used in the names of the form fields (see also get_contact_form)
- `product => string`, the internal SSL product name, as received from HSPC::MT::Plugin::SSL's get_product_list.
- `type => string`, as received from get_contact_types.
- `contact_data => HASHREF`, { contact_fname => "First Name", etc. }, e.g. { fname => 'Peter', lname => 'Johnson' }

Output:

- { field_with_error => "Field with error: error description" }

get_ext_attr_view

The `get_ext_attr_view` method is mandatory.

The method returns a view of the SSL certificate extended attribute data.

Input:

- `plugin_config => HASHREF`.
- `prefix => string` (optional), the prefix used in the names of the form fields (see also get_ext_attr_form)
- `product => string`, the internal SSL product name, as received from HSPC::MT::Plugin::SSL's get_product_list
- `ext_attr => HASHREF`, { "extended attribute 1" => value, "array of values" => [ ], etc. }

Output:

- "<SSL certificate extended attribute information>"

get_ext_attr_form

The `get_ext_attr_form` method is mandatory.

The method returns the editing form for the SSL certificate extended attribute data.

Input:

- `plugin_config => HASHREF`.
- `prefix => string` (optional), the prefix used in the names of the form fields. E.g., the “forename” field with prefix “domain_1” would be called “domain_1forename”.
- `product => string`, the internal SSL product name, as received from HSPC::MT::Plugin::SSL's get_product_list
- `ext_attr => HASHREF`, { “extended attribute 1” => value, “array of values” => [ ], etc. }

Output:

- “<SSL certificate extended attribute form>”

collect_ext_attr

The `collect_ext_attr` method is mandatory.

The method collects the extended attribute data from the form_data parameter, as per the HSPC::Plugin::SSL's get_ext_attr_form function, and returns it ready for storing in an SSL certificate object.

Input:

- `plugin_config => HASHREF`.
- `prefix => string` (optional), the prefix used in the names of the form fields (see also get_ext_attr_form)
- `form_data => HASHREF`, the values filled out by the customer using the form from get_ext_attr_form.

Output:

- { “extended attribute 1” => value, “array of values” => [ ], etc. }

validate_ext_attr_form

The `validate_ext_attr_form` method is mandatory.

The method checks the validity of the SSL certificate extended attribute data entered using the get_ext_attr_form method.

Input:

- `plugin_config => HASHREF`.
- `prefix => string` (optional), the prefix used in the names of the form fields (see also get_ext_attr_form)
- `product => string`, the internal SSL product name, as received from HSPC::MT::Plugin::SSL's get_product_list.
- `ext_attr => HASHREF`, { “extended attribute 1” => value, “array of values” => [ ], etc. }

Output:

- { field_with_error => “Field with error: error description” }

Building New Plug-In

A ready to use plug-in is an RPM package. In this section we describe the final step of a new plug-in development - building a plug-in RPM.

After you have prepared modules and all the necessary files for a new plug-in, it is necessary to place these files into a special directory. The correct subdirectories structure and naming is important for successful plug-in build. Please, carefully follow the directories structure and general naming conventions described below. As an example, we'll take a Dummy Online Payment plug-in directories structure. The Dummy Online Payment plug-in sample is in the SDK directory `samples/plugins/hspc-plugin-pp-op-dummy/` so you can copy it and rename folders and files in a way you need. In addition, you will need to edit some files. We describe this procedure step-by-step. Let us assume that a new plug-in name is `myplugin`.

1. First of all, to build a plug-in, you need a `version` file. This text file contains a few strings that specify the Parallels Business Automation - Standard version a plug-in is built for. A version number is used in an output RPM package name. Thus, for a plug-in compatibility, a plug-in version does not matter, but the build script requires it. The Parallels Business Automation - Standard version must be specified in a special format. To know out the version of Parallels Business Automation - Standard you use, log in to Provider Control Center and click **Support** on the left menu. The Build ID will be shown in the right frame in the format Build ID <version>-<release>. In the `version` file, specify the version in the following way:

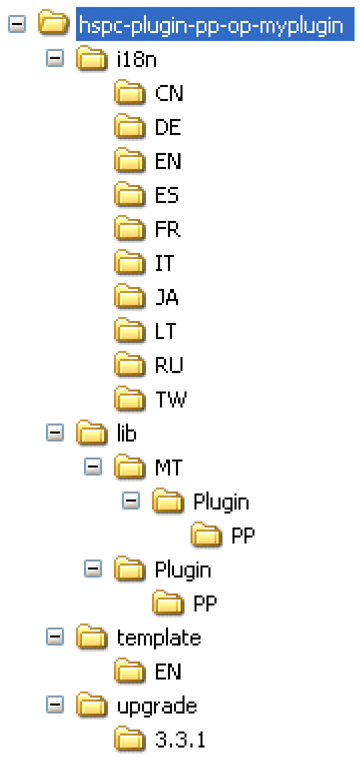
File contents, the example	Description
`HSPC_VERSION=3.3.1`	Specify the Parallels Business Automation - Standard version shown at the Support screen before hyphen.

`HSPC_RELEASE=00.114`	Specify the Parallels Business Automation - Standard release shown at the Support screen after hyphen.
`HSPC_TAGNAME="3.3 Service Pack 1"`	This is a required parameter for the build script, but its value does not matter. Type some phrase in quotation marks. For example, `3.3 With New Plug-In`, or `My Package`, or anything else. Do not leave it empty.

Important: The `version` file must be placed into a folder above a plug-in directory. For example:

```
D:/
   plug-in build/version
           hspc-plugin-pp-op-myplugin/
```

2. A plug-in directories structure should be the following:



```
hspc-plugin-pp-op-myplugin
    i18n
        CN
        DE
        EN
        ES
        FR
        IT
        JA
        LT
        RU
        TW
    lib
        MT
            Plugin
                PP
        Plugin
            PP
    template
        EN
    upgrade
        3.3.1
```

We've took the Dummy Online Payment plug-in structure as an example and renamed the plug-in directory.

The `i18n` directory includes the plug-in localization strings in XML files. In our example, `i18n` contains directories for languages officially supported in Parallels Business Automation - Standard. You can create as many custom language packs (on page 225) as you need. Remove the directories you do not need and add the ones you need. But in any case, there must be at least one directory for the language you use in Parallels Business Automation - Standard as a default one. Directories under `i18n` must be named exactly as ISO 2-letter country codes.

The `lib` directory contains the plug-in middle tier and presentation modules.

The `template` directory contains HTML help topics for the plug-in. Place help topics by language directories, like in `i18n`.

The `upgrade` directory is used to build upgrades, if you need to upgrade a plug-in, create a directory named by an upgrade version and place the upgrade scripts here and run the build script. If you just build a plug-in with no upgrades, leave the upgrade directory empty. But do not remove the upgrade directory thinking that it is redundant - it is required by the build script.

3. Now, an important step. You need to edit some files in the plug-in directory and specify an actual plug-in name in all files where it is needed. Please, be very attentive:
   - **a** Edit the `spec` file. All plug-in name entries must be replaced with your plug-in name, in our example, myplugin.
   - **b** Check and edit in the same way ALL the `Makefile` files in ALL subdirectories under the plug-in directory.
4. Download the `rpmbuild` utility compatible with OS you use and install it at your computer.
5. Run the `build.sh` script from the directory it is located.

CHAPTER 8

Tools

All tools are situated in the `tools` directory of SDK. Every tool has a README file, so you should check it first. Some tools have sample files which might be used for testing purposes.

Attention: tools act on behalf of provider, so, say, if you run domain registration, then domains are registered as if you have registered them from PCC.

In This Chapter

Bulk Domain Registration / Transfer

The tool is intended for mass domains registering. This tool is useful when you cannot use Import/Export tools for domain registration. This case can occur when you make new domain registrations / transfers using plug-in required ext data. You can learn more about ext data in Ext Data Description section.

The tool is located in `tools/hspc-domain-reg` directory.

Credit Card Import

This tool is designed for importing credit cards into Parallels Business Automation - Standard. The tool is located in the `tools/hspc-cc-import` directory.

Bank Accounts Import

This tool is designed for importing bank accounts into Parallels Business Automation - Standard. The tool is located in the `tools/hspc-ba-import` directory.

Migration from Parallels Plesk Billing

This tool helps you to migrate accounts and Plesk clients subscriptions from Parallels Plesk Billingl to Parallels Business Automation - Standard. The tool is located in the `tools/modernbill` directory.

Bulk Parallels Plesk Domains / Clients Resolving

This package is used for migrating / resolving data from Parallels Plesk to Parallels Business Automation - Standard. The tool can resolve accounts, Parallels Plesk domains and Parallels Plesk clients into Parallels Business Automation - Standard.

The tool is located in the `tools/hspc-plesk-resolver` directory.

Script Checking Domain Renewal Date Using WHOIS Information

The script can check whether all domains’ renewal dates in Parallels Business Automation - Standard match the renewal dates from the WHOIS database.

The tool is located in the `tools/hspc-correct-by-whois` directory.

Cleaning Tool

The tool is intended for cleaning all the test data from Parallels Business Automation - Standard after Parallels Business Automation - Standard configuring completion. Please make a fresh backup of Parallels Business Automation - Standard databases (aspc, ss, sk) before using the script.

Usage:

`/usr/sbin/hspc-clean.pl` FLAG[FLAG[...]]

Flags description:

[-] - no trace info

[+] - do not confirm deletion of elements

Name	Description
-	No trace info
+	Do not confirm deletion of items
P	[P]ersons
A	[A]ccounts
D	[D]ocuments
Y	pa[Y]ments
N	i[N]voices
J	debit ad[J]ustment
S	[S]ubscriptions
C	[C]reditcards
T	s[T]atements
H	[H]osting plans
R	[R]esellers
U	c[U]stomers
E	[E]vents
M	pro[M]otions

V	[V]irtual environments
W	hard[W]are nodes
O	d[O]mains
I	[I]ppool
m	credit ter[m]s
a	[a]ction log

Example:

`/usr/sbin/hspc-clean.pl RE` - erases resellers and events

DNS Synchronization Tool

The tool forces DNS zones synchronization.

Usage:

```
/usr/sbin/hspc-dns-sync.pl
```

Parallels Virtuozzo Containers Integration

The tools used to integrate Parallels Business Automation - Standard with Parallels Virtuozzo Containers technology are described in this section.

Virtuozzo Templates Installing Tool

You can use the Parallels Business Automation - Standard Provider Control Center (`/pcc`) web interface to install Virtuozzo templates. If you need to install many templates at once, you can use `/usr/sbin/hspcpkgctl.pl` script. The script can be ran in the mode when it recognizes and installs all the templates from the specified directory.

The hspcpkgctl.pl script handles generic operations of the Parallels Business Automation - Standard Application

Director. Using this script the following operations can be performed:

- Get information about a Virtuozzo template, i.e., read a template configuration from a source RPM file or from the Parallels Business Automation - Standard database
- Register and install OS or Application templates at the Parallels Business Automation - Standard Management Node
- Synchronize OS or Application templates with Virtuozzo Hardware Nodes
- Import OS/Application templates from Virtuozzo Hardware Nodes
- List OS/Application templates registered/installed over Parallels Business Automation - Standard

Usage:

/usr/sbin/hspcpkgctl.pl operation operation_arguments templates_directory

To get help:

/usr/sbin/hspcpkgctl.pl help_args

hspcpkgctl.pl {-h|--help}

hspcpkgctl.pl {-V|--version}

hspcpkgctl.pl -H OPERATION

To view a fill manual:

```
perldoc /usr/sbin/hspcpkgctl.pl
```

Operations:

`info` - print information about OS/application template

`install` - install OS/application template(s) on Management Node

`sync` - synchronize OS/application templates with Hardware Node(s)

`import` - import OS/application templates from Hardware Nodes

`list` - list OS/application templates on Management Node

`config` - show XML configuration file content for given template

Arguments:

-A Process ordinary application templates only.

-D|--distrib DISTRIB Distribution name for EZ templates, like 'fedora-core-4-x86'. Note that if -the D argument is specified, only EZ templates will be processed.

-H OPERATION Show help for given OPERATION.

-O Process OS templates only.

-V|--version Show script version.

--async Do operation using Task Manager where applicable. Script completes execution after all necessary tasks are scheduled.

-d|--dir DIR Full path to directory with Virtuozzo templates.

-f|--file FILE Full path to Virtuozzo template file.

-h|--help Show usage and exit.

-n|--nodes NID1 NID2 ...IDs of Virtuozzo Hardware Nodes registered in Parallels Business Automation - Standard.

-p|--package PKG1[/VER1] PKG2[/VER2] ...Process only templates with given packages and, optionally, configuration versions. If configuration version is not specified, default value '00000000' (eight zeros) will be taken.

--plain Show plain XML config. If not specified, output will be composed of several lines in a form of 'key: value'.

-t|--tmpl_id ID1 ID2 ...Process only templates with given IDs.

-item --quiet Work quietly - do not print any status messages to standard output.

-r Process directory recursively.

-u If template in process is upgrade to some existing template, default prices will be taken from the latest one. If option is not specified, default prices will be set to zero values.

Examples:

hspcpkgctl.pl install -d /tmp/templates

Installs all templates from given directory /tmp/templates.

hspcpkgctl.pl install -f /tmp/redhat-as4-x86-ez-3.0.0-2.swsoft.noarch.rpm

Installs single EZ OS template.

hspcpkgctl.pl list

List ordinary application templates. Each line of output is tab-separated list of the following template properties:

- Template ID
- Package
- Configuration version (8-digit one).
- Flag specifying if template is OS template (1/0).
- Flag specifying if template was installed on Management Node from source (1/0). '0' means template was imported from Hardware Node.
- EZ distribution. Empty for non-EZ templates.

Tools for Actions Execution over/in Container

The tool executes actions over/in the Container registered in Parallels Business Automation - Standard.

Usage:

`/usr/sbin/hspcvpsctl.pl` operation ve_id [options]

`/usr/sbin/hspcvpsctl.pl migrate` ve_id `--`dest_hw dest_hw_id [options]

`/usr/sbin/hspcvpsctl.pl tmpl-upgrade` ve_id [template_packages] [options]

Operations descriptions:

Operation	Description
start	Starts Container
stop	Stops Container
repair	Repairs Container
create	Creates Container
migrate	Migrates Container to destination hardware node
tmpl-upgrade	Upgrades specified templates in Container to required versions

Migration options:

Name	Value	Description
--dest_hw	dest_hw_id	Destination Hardware Node ID in Parallels Business Automation - Standard

Templates upgrade options:

Name	Value	Description
--tmpl	package/target_conf_version	Package and target conf version

General options:

Name	Description
-v , --version	Prints version
--verbose	Prints information about execution process
--async	Executes operations asynchronously

Using Data Import and Export Command Line Tools

The possibility of importing and exporting the billing data (accounts, financial documents, hosting plans) in/from Parallels Business Automation - Standard can considerably facilitate migration of customer's data and reduce cost. If you provide Virtuozzo Containers or/and Plesk domains to your customers and feel like it is the right time to automate your business, or in case you want to merge two Parallels Business Automation - Standard databases, you can import the customer billing data in Parallels Business Automation - Standard (or export data from Parallels Business Automation - Standard) without the need to use special plug-ins or other complex tools.

In addition, to control and bill traffic usage on dedicated servers, it is possible to import a special configuration of traffic classes and after this, import traffic statistics collected internally.

All you need is to represent the data as an XML structure and then run the import script with this XML file as a parameter. The script processes one XML file per one run. To convert the billing data containing in Parallels Business Automation - Standard database into XML, the Export script is provided. If you need to import the data into Parallels Business Automation - Standard from some other, non Parallels Business Automation - Standard database, you need to represent this data in the form of XML file manually or using some other tools. Examples of XML files are provided at the end of this chapter.

Note: Parallels Business Automation - Standard provides web-based tools for XML data import/export (Import-Export Manager in Provider Control Center). If you would like to, you can use this tool (please refer to the Parallels Business Automation - Standard Provider's guide fo more information or go to Provider Control Center and click Help link for detailed HTML help).

After the Parallels Business Automation - Standard installation, both import and export scripts location on your Management Node is `/usr/sbin/hspc-import.pl` and `/usr/sbin/hspc-export.pl` respectively.

Exporting Data into XML Files

Below we describe command line tools for exporting the billing data from the Parallels Business Automation - Standard database into XML file. Traffic classes and traffic statistics can be imported only.

Note: Parallels Business Automation - Standard provides web-based tools for XML data import/export (Import-Export Manager in Provider Control Center). If you would like to, you can use this tool (please refer to the Parallels Business Automation - Standard Provider's guide fo more information or go to Provider Control Center and click Help link for detailed HTML help).

How Export Script Works

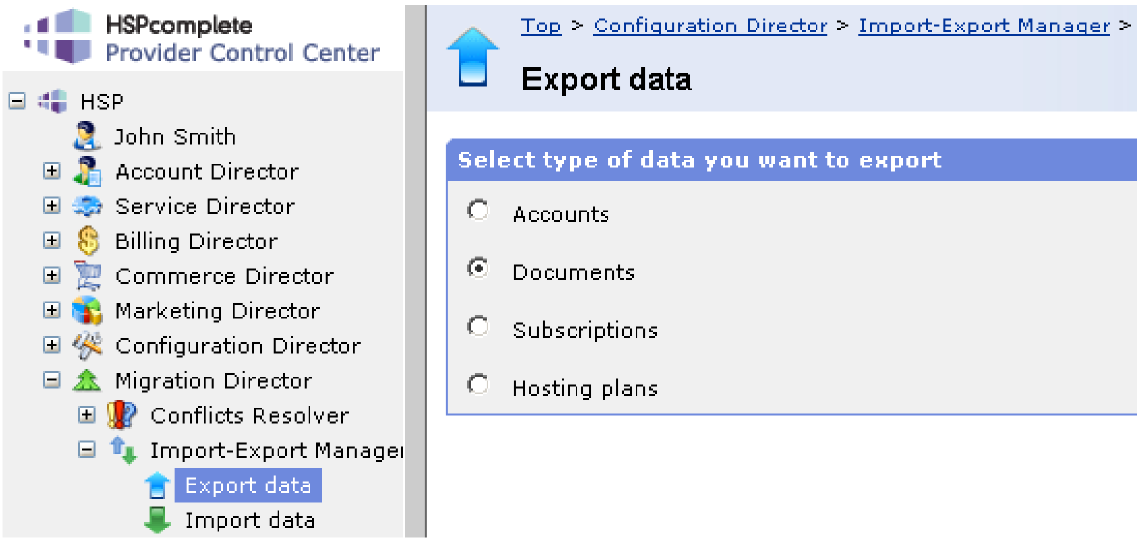
For the Export script to fetch the data, the indication of data type is necessary, so in the command line you must use the relevant key (described below) and either explicitly indicate the type of data to be exported or indicate the name of a special file called *filter* that includes information about the type of data to export and, as its name says, allows filtering a particular type of data (accounts, documents, etc.) down to a type, ID or ID range, and other parameters, depending on a type of data you are going to export.

If you do not specify the type of data to export, the Export script will not collect the data due to the input parameters incompleteness and just print you the help page.

The structure of a filter file is described later in this topic. However , if you are not sure, which tags to use, you can train using web-based tools.

When you export data using the web-based interface, filters are created automatically, while you pass a simple wizard that requires selecting the type of data and allows further filtering. In this case, the XML filter is created in accordance with your settings and the corresponding XML structure is added to the beginning of the resulting XML file. You can pass the wizard several times and take a look, what XML filters are produced by your selection. Later you can copy the filter block from an XML file, save it in a separate file, and this will be the filter you can use with the Export script in command line.

To train with filter files using the web interface, log in to the Provider Control Center, go to the Migration Director - Import-Export Manager and select Export Data from the Import-Export Manager submenu. You will be offered to select the type of data to export (in our example, Documents):

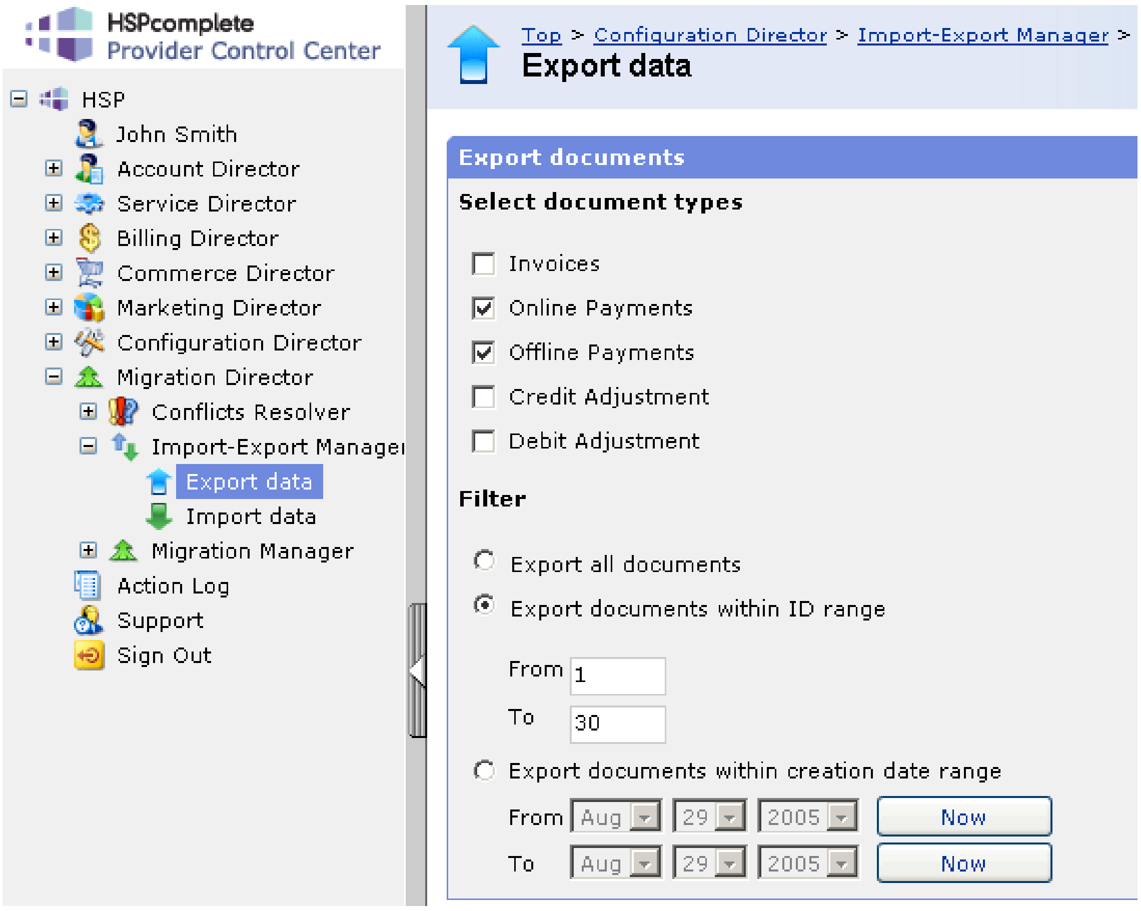


Export data

Select type of data you want to export

( ) Accounts
(●) Documents
( ) Subscriptions
( ) Hosting plans

After you click the Next button you will be offered to filter the selected data type:



Export data

Export documents

Select document types

[ ] Invoices
[✓] Online Payments
[✓] Offline Payments
[ ] Credit Adjustment
[ ] Debit Adjustment

Filter

( ) Export all documents
(●) Export documents within ID range

From 1
To 30

( ) Export documents within creation date range

From Aug 29 2005
To Aug 29 2005

For example, you have filtered documents by types (Online Payments and Offline Payments) and then set the additional filter to Export documents within ID range from 1 to 30.

After this, you can finish the wizard and save the resulting XML to your local computer. When you open this XML, you will see that the first block of the XML file inside the <data> tag is <filters>:

```
<filters>
	<objects_name>documents</objects_name>
	<filter>
		<property_name>type</property_name>
		<where>
			<in>PO,PF</in>
		</where>
	</filter>
	<filter>
		<property_name>id</property_name>
		<where>
		<start>1</start>
		<end>30</end>
		</where>
	</filter>
</filters>
```

Copy this block into a separate file, add the string

<?xml version="1.0" encoding="UTF-8"?>

to the beginning and save the file. You have a ready to use *filter* with the functionality you are clearly understand:

- The <objects_name> tag holds the information about the type of objects you have selected on the first screen of the export wizard (Documents, in our example), the <filter> tags hold the information about the further filtering you have set on the second screen of the wizard.
- The first <filter> tag holds the information about the type of documents to export (in our example, online payments - PO and offline payments - PF). This selection is required, without this basic filter the filter file will be not valid.
- The second filter tag is optional and have appeared because in our example, the option button in the Filter part of the form was set not to Export all documents, but to the documents ID range, which have resulted in creation of the additional <filter> block containing, in its turn, the property_name (id) and the IDs range specified using the <where> tag. Note that if the additional filter is set to All, i.e., you want to export all objects of the selected type, the second <filter> is omitted.

The Export script reads a filters file, exports data, converts it in XML format, saves and compresses (GZip) an XML file.

After the Parallels Business Automation - Standard installation, the export script location on your Management Node is

`/usr/sbin/hspc-export.pl`.

By default, the script places an XML file in the current directory. Errors, if any, are put in STDERR.

Command Line Syntax For Export Script

```
/usr/sbin/hspc-export.pl -f filters.xml
```

where `filters.xml` must be replaced with the actual name of a filter file, and `-f` is a key.

Or

```
/usr/sbin/hspc-export.pl -all accounts
```

where `-all` is the key and `accounts` is the data type specified explicitly.

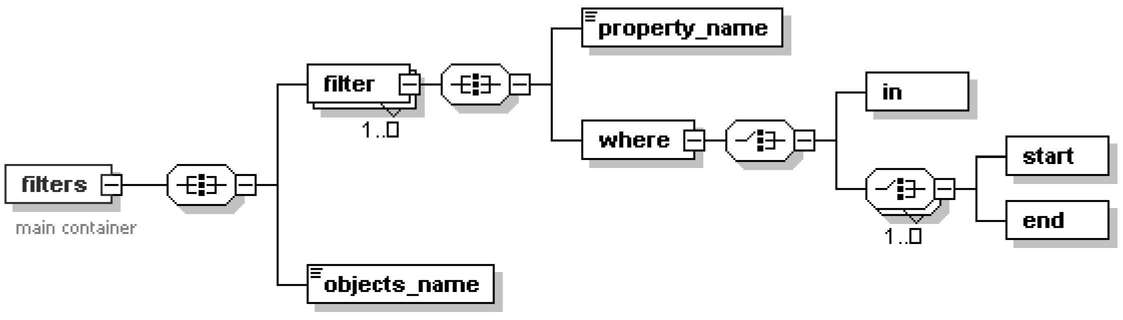
Export Script Keys

-h	see help page
-f	file with filters
-all	export all (parameters can be one of accounts, or documents, or subscriptions, or hosting plans)

If the filters.xml file is not defined, filters are got from STDIN.

Filter File Structure

When composing a filter, please carefully follow the filter file structure diagram:



Thus, the filter file structure is always looks like follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<filters>
	<objects_name> OBJECT </objects_name>
	<filter>
		<property_name> PROPERTY </property_name>
		<where>
			<!-- WHERE -->
		</where>
	</filter>
...
</filters>
```

Tag	Description
<filters>	The single tag that opens and closes the filter.
<objects_name>	The tag containing the information about the kind of objects to export: accounts,documents, subscriptions, or hosting plans. There can be only one kind of object specified in one filter file The kind of object inside the objects_name tag must be specified exactly as follows: ▪ `account` to filter accounts ▪ `document` to filter documents ▪ `subscription` to filter subscriptions ▪ `hp` to filter hosting plans.
<filter>	At least one filter tag must be in the filter file. This tag holds the information about the type of objects to export. Without the information about objects type the filter file is not valid. In general a filter file can contain two filter tags: ▪ The filter containing information about type of objects to export (type of documents, accounts, subscriptions, or hosting plans). ▪ The additional and optional filter that narrows the set of objects to be exported down to an ID range or creation date, or other property, depending on the type of objects.

<property_name>	The tag nested into any <filter> tag. The <property_name> tag specifies the filter itself: ▪ For the first and required <filter> tag, the <property_name> tag always contains the `type` word, which means that below in the <where> tag the type(s) of objects to be exported must be specified. ▪ For the second and optional <filter> tag, the <property_name> tag contains the type of additional filter: ▪ `id` to export objects within the pre-defined ID range or to export the selected objects by their IDs; ▪ `date` to export objects created between particular dates; ▪ `start_date` - for subscriptions only, to export subscriptions with particular subscription period start date; ▪ `end_date` - for subscriptions only, to export subscriptions with particular subscription period end date.
<where>	The tag that must be nested into any <filter> tag , below the <property_name> tag. The <where> tag contains a particular filter settings specified either in the <in> tag (if objects are filtered by IDs) or using the <start> <end> tags (if objects are filtered by creation date or ID range) nested into the <where> tag.
<in>	The tag nested into the <where> tag and containing the filter settings. The <in> tag is used in all cases except for filtering subscriptions by subscription period start or end date. In the latter case, the <date> For the first and required <filter> tag, the <in> tag contains the information about type(s) of object(s) to be exported. The object types must be specified in the form of special abbreviations, exactly as this written below, several object types must be specified in one string, divided by comma: ▪ For documents: `IN` - for invoices, `PO` for online payments, `PF` for offline payments, `CA` for credit adjustments, `DA` for debit adjustments, `CI` for credit invoices. ▪ For accounts: `customer` - for customer accounts, `reseller` - for reseller accounts, `res_customers` - for accounts of your resellers' customers. ▪ For hosting plans: `VE` - for Virtuozzo Container, `HN` - for Dedicated server, `HNVZ` - for Dedicated Parallels Virtuozzo Containers server, `MISC` - for Miscellaneous plans, `DM` - for Domain Registration, `PLSRV` - for Dedicated Plesk server, `PLCLT` - for Plesk Client, `PLDM` - for Plesk domain, `VEPLHN` - for Plesk Server in Virtuozzo Container plans. ▪ For subscriptions' types abbreviations are the same as for corresponding hosting plans. For the second and optional <filter> tag, the <in> tag contains particular filtering data: ▪ Object ID or IDs (in a string, divided by comma, for example, if filtering is by hosting plans or subscriptions selection).

<start> <end>	These tags are used instead of the <in> tag if filtering is by object ID range (first ID in the range is specified in the <start> tag, last ID in the range is specified in the <end> tag) or a subscription period start or end date (the time frame of subscription periods start or end date is specified similarly, using the <start> and <end> tags). In the latter case, the date format is year-month-day time, like YYYY-MM-DD hh:mm:ss (YYYY - year, MM - month, DD - date, hh - hour, mm - minute, ss - second)

Importing Billing Data in the Form of XML File

Below we describe command line tools for importing data in the form of XML file into Parallels Business Automation - Standard database.

Only accounts, documents, and hosting plans can be imported as an XML file. Subscriptions are imported using a special script that uses the Parallels Business Automation - Standard XML API (on page 374).

Note: Parallels Business Automation - Standard provides web-based tools for XML data import (Import-Export Manager in Provider Control Center). If you would like to, you can use this tool (please refer to the Parallels Business Automation - Standard Provider's guide fo more information or go to Provider Control Center and click Help link for detailed HTML help).

After the Parallels Business Automation - Standard installation, the import script location on your Management Node is `/usr/sbin/hspc-import.pl.`

The Import script reads an XML file that contains the data to be imported, imports data Parallels Business Automation - Standard database, after the XML file is validated and the data correctness is checked. Errors (if any) are put in STDERR.

Command line syntax:

```
/usr/sbin/hspc-import.pl [keys] file.xml
```

where file.xml must be replaced with the name of an actual xml file containing billing data to be imported.

Keys:

-h, --help	see help page

If an XML file is not defined the data is read from STDIN.

If something goes wrong, e.g., an XML structure is not valid, the script stops and rolls back all the changes made before an outage.

To prepare for the billing data import, you will need to create a set of relevant hosting plans in Parallels Business Automation - Standard to "move" customers to these hosting plans. When you create such hosting plans, you should take into account the fees, resources configuration, applications set, and all the other parameters of the subscription you are going to move to Parallels Business Automation - Standard for future management and billing.

When you create hosting plans in Parallels Business Automation - Standard, each of these plans gets the unique numerical identifier (ID) assigned automatically in Parallels Business Automation - Standard to all objects (including hosting plans). This ID should be indicated with the relevant tag in the XML file so that the import script could fetch the fees and other data from this hosting plan when creating the subscription.

The import script creates accounts and, for each account imported - one or more subscriptions that correspond to the preset Parallels Business Automation - Standard hosting plans. As a result, a customer obtains the "empty" Container or Plesk domain that is managed and billed by Parallels Business Automation - Standard. The personal customer data (websites, mailboxes, home directory contents, etc.) can be manually moved into a newly created Container or Plesk domain.

Importing Subscriptions Using XML API

Subscriptions import consists in placing a corresponding order an creating a new subscription after this order is completed. An order can be free or not, and this can be defined using the `is_free` parameter in the place_order function (on page 33) called in the subscription import script. The script is located in the `/usr/sbin` directory on the Management Node.

Example of subscription import script:

```
#!/usr/bin/perl
use strict;

# Below is the sample script for order generation based on Parallels Business
Automation - Standard XML API.
# Feel free to modify it according to inline comments and XML API
documentation.

my $order = place_order({
	hp_sid		=> 1,		# hosting plan series key
	account_id		=> 2,		# subscription owner
	period		=> 2592000,	# subscription period
	app_list		=> [],		# IDs of application templates to
include in order
	attribute_list	=> [],		# IDs of custom attributes to include
in order
	license_list	=> [],		# IDs of licenses to include in order
	login		=> [		# login parameters for order:
password, login, URL
		'password',
		'login',
		'URL',
	],
	domain_hash		=> {		# domain hash: per-domain
configuration hashes, 'ext_data' for registrar
		'domain.com'		=> {
			dm_action			=> 'dns_hosting',	# domain
action
			period			=> undef,			#
registration period in years
			dns_hosting			=> 1,			# is
DNS hosting enabled?
			is_default			=> 1,			# is
default domain in this order?
			hosting_destination => undef,			# ID of
subscription to assign domain to
			ns_list				=> [],
	# list of nameservers (non-empty disables DNS hosting!): [hostname, IP],
[hostname, IP], ...
			contact_hash		=> {},			# domain
contacts, 0 or undef to get from account contacts: { admin => NN, billing =>
undef, owner => undef }
			whois_privacy		=> 0,			# is WHOIS
privacy enabled?
		},
		ext_data				=> {},
	},
	for_trial		=> 0,		# is subscription trial?
	sb_plan			=> undef,	# Sitebuilder site ID for
provisioning
	description		=> 'Generated through XML API',
});
print "Order #$order->{id} has been successfully generated, provisioning
initiated.\n";
```

```
##############################################################################
##
# below is code for order generation, alter it *only* to archieve special
functionality

use SOAP::Lite ();

my $client;

sub place_order {
	my $order_details = shift;
	$order_details->{is_free} = 1;

	# place order and return its structure
	return $client->ns('HSPC/API/Billing/1.0')->place_order($order_details)-
>result;
}

BEGIN {
	# create XML API client object
	$client = SOAP::Lite
		->proxy('http://localhost:8080/hspc/xml-api')
		->on_fault(sub {
			print 'SOAP Fault: ' . $_[1]->faultcode . ' - ' . $_[1]-
>faultstring . "\n";
			exit(1);
		});

	# open session: receive session ID for provider
	my $sid = $client->ns('HSPC/API/1.0')->session_open({ account_id => 1
})->result->{session_id};

	# put session ID to outgoing requests' HTTP headers
	$client->transport->http_request->header('HSPC-SID' => $sid);
}

END {
	# close session
	$client->ns('HSPC/API/1.0')->session_close;
}
```

Examples of XML Files Used for Billing Data Import

Below are examples for XML files that can be used for data import in Parallels Business Automation - Standard.

Note: All types of data except hosting plans require the corresponding account information to be present in an XML file, because an account is the basic billing notion in Parallels Business Automation - Standard, and all the subscriptions and financial documents are bound to accounts.

Account Data in XML File

The example below includes absolutely al tags used to represent an account data. If you do not know what to write in one or another tag, you must leave such tags empty, but do not remove them from your XML file.

The account data can include information about documents and subscriptions existing for this account.

Note 1. Phone Number Format: Since phone numbers syntax may differ from country to country (for example, a country code can be written as +code or without +, or a regional code can be written in round brackets or without them, etc.), we recommend that you specify the phone and fax numbers in the unified format like

`country code|regional code|number|extension`.

and use not the tag like <admin_phone> for an account administrator phone number, but the special tag named like <admin_phone_src>.

Note 2. User Password Import:: The export script exports a user password exactly as it is stored in the Parallels Business Automation - Standard database, as a hash. The export script places a password hash into the <password_hash> tag and this is reflected in the example below. If you manually create an XML file to import an account data and use the <password_hash> tag to specify a user password, the import script considers this password as a hash and this results in the impossibility to view a user password in Parallels Business Automation - Standard web interface after import is finished. You can manually redefine a user password in XML file using the <password> tag, as this shown in the example below. In this case the password is actually redefined after import is finished with Parallels Business Automation - Standard database update and corresponding hash creation.

Example of XML account data:

```
<?xml version="1.0" encoding="utf-8"?>
<data>
	<account id="29">
		<admin_contact>
			<admin_suffix />
			<admin_lname>Smith</admin_lname>
			<admin_fname>John</admin_fname>
			<admin_mname />
			<admin_mobile />
			<admin_fax_src>|||</admin_fax_src>
			<admin_gender />
			<admin_email>john@mail.com</admin_email>
			<admin_phone_src>1|112|12312312|</admin_phone_src>
			<admin_mobile_src>|||</admin_mobile_src>
			<admin_fax />
			<admin_phone>+1 (112) 12312312</admin_phone>
			<admin_insertion />
			<admin_prefix />
		</admin_contact>
		<enroll_date>2005-07-28</enroll_date>
		<is_corporate>0</is_corporate>
		<status>active</status>
		<documents />
		<persons>
			<person id="17">
				<last_login>0000-00-00 00:00:00</last_login>
				<mname />
```

```
            <fname>John</fname>
            <created_by_acct_no>29</created_by_acct_no>
            <email>john@smith.com</email>
            <suffix />
            <address id="14">
                <fax_src>1|114|1234569|5678</fax_src>
                <status>0</status>
                <mobile>+1 (113) 1234567</mobile>
                <state />
                <city>London</city>
                <fax>+1 (114) 1234569 5678</fax>
                <id>14</id>
                <country>GB</country>
                <house_num />
                <mobile_src>1|113|1234567|</mobile_src>
                <house_suff />
                +64 21 555 2624+1 (112) 1234567 9876</phone>
                <address2 />
                <zip>12AA-BB34</zip>
                <state_alt />
                <phone_src>1|112|1234567|9876</phone_src>
                <address1>17, Baiker street</address1>
            </address>
            <id>17</id>
            <gender />
            <lang>en</lang>

<timezone>/usr/share/zoneinfo/Europe/London</timezone>
            <last_modified>2005-07-28 13:27:24</last_modified>
            <comment>Person&amp;apos;s comment</comment>
            <lname>Smith</lname>
    <password_hash>kfKawxdUOFfSSauxjlGXJXayGq8</password_hash>
    <password>1q2w3e</password>
            <roles>
                <role id="9">
                    <name>customer_adm_uc</name>
                    <id>9</id>
                    <account_type>3</account_type>
                    <description />
                    <admin_level>8</admin_level>
                </role>
            </roles>
            <skin_id>1</skin_id>
            <prefix>Mr.</prefix>
        </person>
    </persons>
    <address id="45">
        <fax_src>1|114|1234569|5678</fax_src>
        <status>2</status>
        <mobile>+1 (113) 1234568</mobile>
        <state />
        <city>London</city>
        <fax>+1 (114) 1234569 5678</fax>
        <id>45</id>
        <country>GB</country>
        <house_num />
        <mobile_src>1|113|1234568|</mobile_src>
        <house_suff />
        +64 21 555 2624+1 (112) 1234567 9876</phone>
        <address2 />
        <zip>12AA-BB34</zip>
        <state_alt />
        <phone_src>1|112|1234567|9876</phone_src>
        <address1>17, Baiker street</address1>
    </address>
    <id>29</id>
    <subscriptions />
```

```
                <name>John Smith Jr.</name>
                <technical_contact>
                        <technical_suffix />
                        <technical_insertion />
                        <technical_fax_src>|||</technical_fax_src>
                        <technical_phone>+1 (112) 12312312</technical_phone>
                        <technical_gender />
                        <technical_mname />
                        <technical_mobile />
                        <technical_email>jomnen@hhh7.com</technical_email>
                        <technical_mobile_src>|||</technical_mobile_src>
                        <technical_prefix />
                        <technical_fax />
                        <technical_phone_src>1|112|12312312|</technical_phone_src>
                        <technical_lname>Mnemonic 7</technical_lname>
                        <technical_fname>Johnny</technical_fname>
                </technical_contact>
                <tax_ex_status>0</tax_ex_status>
                <billing_contact>
                        <billing_gender />
                        <billing_lname>Mnemonic 7</billing_lname>
                        <billing_fax />
                        <billing_phone_src>1|112|12312312|</billing_phone_src>
                        <billing_phone>+1 (112) 12312312</billing_phone>
                        <billing_email>jomnen@hhh7.com</billing_email>
                        <billing_fname>Johnny</billing_fname>
                        <billing_insertion />
                        <billing_fax_src>|||</billing_fax_src>
                        <billing_suffix />
                        <billing_mname />
                        <billing_mobile_src>|||</billing_mobile_src>
                        <billing_prefix />
                        <billing_mobile />
                </billing_contact>
                <comment />
                <type>3</type>
                <tax_ex_number />
                <vendor_id>1</vendor_id>
                <vendor_name>Provider-Provider</vendor_name>
        </account>
</data>
```

Document Data in XML File

```
<?xml version="1.0" encoding="utf-8"?>
<data>
    <account id="29">
        <admin_contact>
            <admin_suffix />
            <admin_lname>Miles</admin_lname>
            <admin_fname>Johnny</admin_fname>
            <admin_mname />
            <admin_mobile />
            <admin_fax_src>|||</admin_fax_src>
            <admin_gender />
            <admin_email>jomnen@hhh7.com</admin_email>
            <admin_phone_src>1|112|12312312|</admin_phone_src>
            <admin_mobile_src>|||</admin_mobile_src>
            <admin_fax />
            <admin_phone>+1 (112) 12312312</admin_phone>
            <admin_insertion />
            <admin_prefix />
        </admin_contact>
        <enroll_date>2005-07-28</enroll_date>
        <is_corporate>0</is_corporate>
        <status>active</status>
        <documents>
            <document id="152">
                <docdetails>
                    <details>
                        <amount>0.8500</amount>
                        <count>1.000000</count>
                        <comment>Container 1 hosting plan
setup fee</comment>
                        <period>0</period>
                        <quantity />
                        <gross_amount>0.8500</gross_amount>
                        <discount>0.00</discount>
                    </details>
                    <details>
                        <amount>20.6700</amount>
                        <count>24.390000</count>
                        <comment>Container 1 hosting plan
monthly subscription fee</comment>
                        <period>63218880</period>
                        <quantity />
                        <gross_amount>20.6700</gross_amount>
                        <discount>0.00</discount>
                    </details>
                    <details>
                        <amount>-0.0000</amount>
                        <count>1.000000</count>
                        <comment>Sub-domain john.test1111.com
in provider domain</comment>
                        <period>0</period>
                        <quantity />
                        <gross_amount>0.0000</gross_amount>
                        <discount>0.00</discount>
                    </details>
                    <details>
                        <amount>3.8700</amount>
                        <count>1.000000</count>
                        <comment>+ NDS (18.00%)
included</comment>
                        <period>0</period>
                        <quantity />
                        <gross_amount>3.8700</gross_amount>
                        <discount>0.00</discount>
```

```
                           </details>
                    </docdetails>
                    <doc_num>1040</doc_num>
                    <doc_date>2005-07-28 13:41:02</doc_date>
                    <doc_type>IN</doc_type>
                    <due_date>2005-08-28 13:41:02</due_date>
                    <doc_status>O</doc_status>
                    <doc_status_prev />
                    <doc_balance>25.3900</doc_balance>
                    <id>152</id>
                    <doc_total>25.3900</doc_total>
             </document>
       </documents>
       <persons>
             <person id="17">
                    <last_login>0000-00-00 00:00:00</last_login>
                    <mname />
                    <fname>John</fname>
                    <created_by_acct_no>29</created_by_acct_no>
                    <email>john@smith.com</email>
                    <suffix />
                    <address id="14">
                           <fax_src>1|114|1234569|5678</fax_src>
                           <status>0</status>
                           <mobile>+1 (113) 1234567</mobile>
                           <state />
                           <city>London</city>
                           <fax>+1 (114) 1234569 5678</fax>
                           <id>14</id>
                           <country>GB</country>
                           <house_num />
                           <mobile_src>1|113|1234567|</mobile_src>
                           <house_suff />
                           +64 21 555 2624+1 (112) 1234567 9876</phone>
                           <address2 />
                           <zip>12AA-BB34</zip>
                           <state_alt />
                           <phone_src>1|112|1234567|9876</phone_src>
                           <address1>17, Baiker street</address1>
                    </address>
                    <id>17</id>
                    <gender />
                    <lang>en</lang>

<timezone>/usr/share/zoneinfo/Europe/London</timezone>
                    <last_modified>2005-07-28 13:27:24</last_modified>
                    <comment>Person&amp;apos;s comment</comment>
                    <lname>Smith</lname>

<password_hash>kfKawxdUOFfSSauxjlGXJXayGq8</password_hash>
                    <roles>
                           <role id="9">
                                  <name>customer_adm_uc</name>
                                  <id>9</id>
                                  <account_type>3</account_type>
                                  <description />
                                  <admin_level>8</admin_level>
                           </role>
                    </roles>
                    <skin_id>1</skin_id>
                    <prefix>Mr.</prefix>
             </person>
       </persons>
       <address id="45">
             <fax_src>1|114|1234569|5678</fax_src>
             <status>2</status>
             <mobile>+1 (113) 1234568</mobile>
```

```
            <state />
            <city>London</city>
            <fax>+1 (114) 1234569 5678</fax>
            <id>45</id>
            <country>GB</country>
            <house_num />
            <mobile_src>1|113|1234568|</mobile_src>
            <house_suff />
            +64 21 555 2624+1 (112) 1234567 9876</phone>
            <address2 />
            <zip>12AA-BB34</zip>
            <state_alt />
            <phone_src>1|112|1234567|9876</phone_src>
            <address1>17, Baiker street</address1>
        </address>
        <id>29</id>
        <subscriptions />
        <name>John Smith Jr.</name>
        <technical_contact>
            <technical_suffix />
            <technical_insertion />
            <technical_fax_src>|||</technical_fax_src>
            <technical_phone>+1 (112) 12312312</technical_phone>
            <technical_gender />
            <technical_mname />
            <technical_mobile />
            <technical_email>jomnen@hhh7.com</technical_email>
            <technical_mobile_src>|||</technical_mobile_src>
            <technical_prefix />
            <technical_fax />
            <technical_phone_src>1|112|12312312|</technical_phone_src>
            <technical_lname>Mnemonic 7</technical_lname>
            <technical_fname>Johnny</technical_fname>
        </technical_contact>
        <tax_ex_status>0</tax_ex_status>
        <billing_contact>
            <billing_gender />
            <billing_lname>Mnemonic 7</billing_lname>
            <billing_fax />
            <billing_phone_src>1|112|12312312|</billing_phone_src>
            <billing_phone>+1 (112) 12312312</billing_phone>
            <billing_email>jomnen@hhh7.com</billing_email>
            <billing_fname>Johnny</billing_fname>
            <billing_insertion />
            <billing_fax_src>|||</billing_fax_src>
            <billing_suffix />
            <billing_mname />
            <billing_mobile_src>|||</billing_mobile_src>
            <billing_prefix />
            <billing_mobile />
        </billing_contact>
        <comment />
        <type>3</type>
        <tax_ex_number />
        <vendor_id>1</vendor_id>
        <vendor_name>Provider-Provider</vendor_name>
    </account>
</data>
```

Example of XML File for Traffic Classes Import

Parallels Business Automation - Standard allows accounting traffic by different IP ranges called *traffic classes*.

A traffic class is a set of IP ranges for which traffic must be accounted and billed in accordance with prices and restrictions set for each particular IP range.

To be imported in Parallels Business Automation - Standard, traffic classes must be presented in the form of XML file. Below we describe all tags used for traffic classes description.

Tag	Description
`<data>`	The tag that always must open and close any XML file for data import in Parallels Business Automation - Standard.
`<traffclass>`	The tag that opens and closes a particular traffic class description. There can be several <traffclass> blocks inside the <data> tag.
`<id>`	A traffic class number. Please, do not mix with numerical ID assigned automatically to all objects in Parallels Business Automation - Standard (a traffic class gets only number). There can be up to 15 traffic classes in Parallels Business Automation - Standard. Thus, a traffic class number can vary from 1 to 15. Please note that class 1 and class 2 have special meanings and cannot be edited or removed from Parallels Business Automation - Standard. Class 1 defines the IP address range for which no accounting is done. Usually, it corresponds to the Virtuozzo Hardware Node subnet (the Node itself and its VEs). Class 2 is defined to match any IP address. It must be always present in the network classes definition file. Other classes should be defined after Class 2. They represent exceptions from the "matching-everything" rule of Class 2.
`<mode>`	A traffic class importing mode. This tag can contain one of the two values: ▪ `update` - in this mode, the IP ranges specified for a traffic class in XML file will be added to the existing ones, in case you are importing additional ranges for a traffic class already existing in Parallels Business Automation - Standard. **Warning**: The update mode means that ip-ranges from this file will be added further to the existing. No any range existing and overlapping checkup will be performed. ▪ `replace` - in this mode the IP ranges specified for a traffic class in XML file will replace the existing IP ranges. Existing IP ranges will be deleted and new IP ranges will be created.
`<name>`	This tag carries a short friendly name of a traffic class. This name just helps to recognize a class.
<description>	The tag that contains a detailed description (plain text) of a traffic class.
<range>	The tag that contains description of one IP range in a traffic class. There can be several ranges in a traffic class and thus, several <range> blocks can be inside the <traffclass> tag. The <range> tag contains: <ip>, <prefix>, <description>

<ip>	The starting IP address of an IP range.
<prefix>	The netmask in the bit form. For example 24 corresponds to the 255.255.255.0 netmask.
<description>	IP range description (plain text). Description can be empty.

Example of the XML file for traffic classes:

```
<?xml version="1.0" encoding="UTF-8"?>
<data xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xsi:noNamespaceSchemaLocation="import_class_info.xsd">
       <traffclass>
              <id>4</id>
              <mode>update</mode>
              <name>Name of traffic class #4</name>
              <description> Description of the traffic class.</description>
              <range>
                     <ip>66.6.6.0</ip>
                     <prefix>24</prefix>
                     <description>Desc. Can be empty</description>
              </range>
              <range>
                     <ip>75.0.0.0</ip>
                     <prefix>8</prefix>
                     <description>Desc. Can be empty</description>
              </range>
              <range>
                     <ip>120.12.0.0</ip>
                     <prefix>16</prefix>
              </range>
       </traffclass>
       <traffclass>
              <id>6</id>
              <mode>replace</mode>
              <name>Name of traffic class #6</name>
              <description> Description of the traffic class.</description>
              <range>
                     <ip>66.6.6.0</ip>
                     <prefix>24</prefix>
                     <description>Description can be empty.</description>
              </range>
              <range>
                     <ip>75.0.0.0</ip>
                     <prefix>8</prefix>
                     <description>Description can be empty.</description>
              </range>
              <range>
                     <ip>120.12.0.0</ip>
                     <prefix>16</prefix>
              </range>
       </traffclass>
</data>
```

Example of XML File for Traffic Statistics Import

Traffic usage statistics import is needed in case it is not possible for Parallels Business Automation - Standard to collect the needed traffic statistics automatically. For example, traffic statistics import can be used to control and bill traffic usage by dedicated servers, in the situation when traffic usage statistics are collected by some internal devices.

Below we describe all tags used in XML file to describe traffic usage statistics.

Tag	Description
`<data>`	The tag that always must open and close any XML file for data import in Parallels Business Automation - Standard.
`<trafficstat>`	The tag that contains traffic statistics description. There can be only one <trafficstat> container per one XML file describing traffic statistics. All traffic statistics description is placed inside this tag.
`<node>`	The tag that opens and closes the traffic statistics description for a particular server (node). All the tags described below are inside the <node> tag.
`<type>`	The type of a server in terms of Parallels Business Automation - Standard. The value inside this tag can be one of the following: ▪ `HN` - a node registered in Parallels Business Automation - Standard (e.g., Plesk node or Virtuozzo Node). ▪ `DS` - third-party dedicated server. ▪ `VE` - Virtuozzo Container. ▪ `PC` - Plesk Client ▪ `PD` - Plesk Domain
`<id>`	A server (node) numerical identifier (ID) assigned in Parallels Business Automation - Standard during registration.
`<data>`	The tag that contains description of one traffic statistics block. Contains: <interval>, <bytes>, <class>, <interface>.
`<interval>`	The tag that contains the starting and ending dates of traffic statistics collection period. Contains: <from>, <to>
`<from>`	Traffic statistics collection starting date and time.
`<to>`	Traffic statistics collection ending date and time.
`<bytes>`	Traffic statistics for the specified period. Contains: <in>, <out>.
`<in>`	Incoming traffic for the specified period, in bytes.
`<out>`	Outgoing traffic for the specified period, in bytes.

`<class>`	The number of traffic class the statistics was collected in. In terms of Parallels Business Automation - Standard, a traffic class number is called ID, but please do not mix this ID with numerical identifiers assigned to all objects in Parallels Business Automation - Standard. Traffic classes import is described in details earlier in this guide.
`<interface>`	The description of network adapter on a node traffic statistics was collected. You can use any denotation (e.g., eth0).

Example of XML file for traffic usage statistics import:

```
<?xml version="1.0" encoding="UTF-8"?>
<data xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xsi:noNamespaceSchemaLocation="import_traffic_stat.xsd">
<trafficstat>
    <node>
           <type>HN</type>
            <id>4</id>
            <data>
                <interval>
                    <from>2005-06-29 12:21:23</from>
                    <to>2005-06-29 14:01:12</to>
                </interval>
                <bytes>
                    <in>111111123</in>
                    <out>1111111223</out>
                </bytes>
                <class>2</class>
                <interface>eth0</interface>
            </data>
            <data>
                <interval>
                    <from>2005-06-29 15:00:23</from>
                    <to>2005-06-29 16:01:12</to>
                </interval>
                <bytes>
                    <in>11131111</in>
                    <out>1114541111</out>
                </bytes>
                <class>2</class>
                <interface>eth0</interface>
            </data>
            <data>
                <interval>
                    <from>2005-06-29 16:21:23</from>
                    <to>2005-06-29 17:01:12</to>
                </interval>
                <bytes>
                    <in>113411111</in>
                    <out>111321111</out>
                </bytes>
                <class>2</class>
                <interface>eth0</interface>
            </data>
            <data>
                <interval>
                    <from>2005-06-29 16:21:23</from>
                    <to>2005-06-29 17:01:12</to>
                </interval>
                <bytes>
                    <in>33411111</in>
                    <out>441321111</out>
                </bytes>
                <class>3</class>
                <interface>eth0</interface>
            </data>
            <data>
                <interval>
                    <from>2005-06-29 16:21:23</from>
                    <to>2005-06-29 17:01:12</to>
                </interval>
                <bytes>
                    <in>53411111</in>
                    <out>541321111</out>
                </bytes>
                <class>4</class>
                <interface>eth0</interface>
            </data>
        </node>
</trafficstat>
</data>
```

Import-Data Script

The possibility of importing the billing data (accounts and subscriptions) in Parallels Business Automation - Standard can considerably facilitate migration of customer's data and reduce cost. If you provide Virtuozzo Containers or/and Plesk domains to your customers and feel like it is the right time to automate your business, you can import the customer billing data in Parallels Business Automation - Standard without the need to use special plug-ins or other complex tools.

All you need is to represent your customers billing data as a simple XML structure and then run the import script provided with this XML file as a parameter. The script processes one XML file per one run.

After the Parallels Business Automation - Standard installation, the import script location on your Management Node is

`/usr/sbin/hspc-import/import.pl`.

The sample XML file (`example.xml`) you can use to check how the import script works is located in the same directory.

Thus, the command line syntax to run the import script is the following:

```
/usr/sbin/hspc-import/import.pl filename.xml
```

where `filename.xml` should be replaced with the actual name of XML file containing customer's billing data. Please always indicate the full path to the XML file in the command line.

If something goes wrong, e.g., an XML structure is not valid, the script stops and rolls back all the changes made before an outage.

To prepare for the billing data import, you will need to create a set relevant of hosting plans in Parallels Business Automation - Standard to "move" customers to these hosting plans. When you create such hosting plans, you should take into account the fees, resources configuration, applications set, and all the other parameters of the subscription you are going to move to Parallels Business Automation - Standard for future management and billing.

When you create hosting plans in Parallels Business Automation - Standard, each of these plans gets the unique numerical identifier (ID) assigned automatically in Parallels Business Automation - Standard to all objects (including hosting plans). This ID should be indicated with the relevant tag in the XML file so that the import script could fetch the fees and other data from this hosting plan when creating the subscription.

The import script creates accounts and, for each account, one or more subscriptions that correspond to the preset Parallels Business Automation - Standard hosting plans. As a result, a customer obtains the "empty" Virtuozzo Container or Plesk domain that is managed and billed by Parallels Business Automation - Standard. The personal customer data (websites, mailboxes, home directory contents, etc.) can be manually moved into a newly created Virtuozzo Container or Plesk domain.

The structure of XML file is very simple. All XML data is placed in the <DATA> tag that opens and closes the file. The <DATA> tag contains the set of <ACCOUNT> tags. The <DATA> tag can contain as many account data (placed inside the <ACCOUNT> tags) as you need to import in one run of the `import.pl` script. Every <ACCOUNT> tag contains the information about account itself.

Below we describe each tag in details.

- <DATA> - this tag contains all the data to be imported. This tag opens and closes the file containing the billing data to be imported.

Below we describe all the tags containing inside the <DATA> tag:

- <ACCOUNT> - this tag contains the information about an account itself and about all the subscriptions existing on this account. The XML file can contain the data on as many accounts as you need, each account described in the <ACCOUNT> tag, all the <ACCOUNT> tags are placed inside the single <DATA> tag.

  Now we describe all the tags that contain inside each of the <ACCOUNT> tags:

  - <ACC_NAME> - the name of an account should be specified inside this tag. This name is used for corporate accounts mostly and in this case, the name is the company name. For personal accounts the customer's name is used. However, how the imported account will be finally named depends upon the special data placed inside the <ACC_CORPORATE> tag (see description below).
  - <ACC_BALANCE> - the balance of the account.
  - <ACC_ADDRESS> - The part of the account owner postal address. This particular tag should contain the street and howse number. Note that you can specify two addresses.
  - <ACC_CITY> - Again, the part of an account owner postal address. Please specify the account owner city or town here.
  - <ACC_STATE> - Part of the account address. For USA and Canada addresses only, it is necessary to specify the State in this tag (use abbreviations). For NON US AND NON CANADA ADDRESSES, please DO NOT USE THIS TAG. In this case, please use another tag <ACC_STATEALT> to specify the State or district, etc.
  - <ACC_ZIP> - The account owner address zip code.
  - <ACC_COUNTRY> - The part of an account owner address. Please specify the country in the form of a two-chars country code. Please, follow the ISO 639 (http://www.loc.gov/standards/iso639-2/langcodes.html) standard.
  - <ACC_PHONE> - The account owner contact phone number in the format as *country code|local code|number|extention*.
  - <ACC_FNAME> - The account owner first name.
  - <ACC_LNAME> - The account owner last name.
  - <ACC_EMAIL> - The account owner e-mail address.
  - <ACC_CORPORATE> - This tag is intended to indicate whether the account is corporate (1) or personal (0). If you indicate 1 then the data placed inside the <ACC_NAME> tag will be used as the imported account name. If you indicate 1 then the account name will be composed of the data placed in the two tags <ACC_FNAME> and <ACC_LNAME>, which as a result will give the customer full name.

The example of XML file:

```
<DATA>
       <ACCOUNT>
              <ACC_NAME>Hosting Inc.</ACC_NAME>
              <ACC_BALANCE>10.45</ACC_BALANCE>
              <ACC_ADDRESS>One str., 2</ACC_ADDRESS>
              <ACC_CITY>Karson</ACC_CITY>
              <ACC_STATEALT>Distr of</ACC_STATEALT>
              <ACC_ZIP>141700</ACC_ZIP>
              <ACC_COUNTRY>US</ACC_COUNTRY>
              <ACC_PHONE>8|1|1292627|</ACC_PHONE>
              <ACC_FNAME>John</ACC_FNAME>
              <ACC_LNAME>Smith</ACC_LNAME
              <ACC_EMAIL>smith@mail.com</ACC_EMAIL>
              <ACC_CORPORATE>0</ACC_CORPORATE>
       </ACCOUNT>

       <ACCOUNT>

       . . .

       </ACCOUNT>
       . . .
</DATA>
```

Changes Description

Date	Revision	Changes Description
June 19, 1012	1.0	CP Customization methods updated according to PBAS v.4.2.

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