

Phpunit Test Documentation

SaltOS 4.0 r2006

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Contents

1	Phpunit Libraries	16
1.1	Autoload file for the unit tests	16
1.1.1	Importing namespaces	16
1.1.2	Main autoloader code	16
1.2	Unit test helper functions	16
1.2.1	Importing namespaces	16
1.2.2	Test PCOV start helper	16
1.2.3	Test PCOV stop helper	16
1.2.4	Test WEB helper	17
1.2.5	Test CLI helper	17
1.2.6	Get Mime helper	17
1.2.7	External tests	17
2	Phpunit Code	18
2.1	Test actions	18
2.1.1	Importing namespaces	18
2.1.2	Loading helper function	18
2.1.3	Main class of this unit test	18
2.1.4	actions test	18
2.2	Test addlog	18
2.2.1	Importing namespaces	18
2.2.2	Loading helper function	19
2.2.3	Main class of this unit test	19
2.2.4	addlog test	19
2.2.5	adderror test	19
2.3	Test apache	19
2.3.1	Importing namespaces	19
2.3.2	Main class of this unit test	19
2.3.3	addlog test	19
2.4	Test apps	20
2.4.1	Importing namespaces	20
2.4.2	Loading helper function	20

2.4.3	Main class of this unit test	20
2.4.4	apps test	20
2.4.5	app test	20
2.4.6	list test	20
2.5	Test array	20
2.5.1	Importing namespaces	20
2.5.2	Loading helper function	21
2.5.3	Main class of this unit test	21
2.5.4	array test	21
2.6	Test ascii	21
2.6.1	Importing namespaces	21
2.6.2	Loading helper function	21
2.6.3	Main class of this unit test	21
2.6.4	ascii test	21
2.7	Test authupdate	21
2.7.1	Importing namespaces	22
2.7.2	Loading helper function	22
2.7.3	Main class of this unit test	22
2.7.4	authupdate test	22
2.8	Test cli customers	22
2.8.1	Importing namespaces	22
2.8.2	Loading helper function	22
2.8.3	Main class of this unit test	22
2.8.4	Authtoken	22
2.8.5	Create	23
2.8.6	Insert	23
2.8.7	List	23
2.8.8	View	23
2.8.9	Edit	23
2.8.10	Upgrade	23
2.8.11	Delete	23
2.9	Test cli invoices	24
2.9.1	Importing namespaces	24

2.9.2	Loading helper function	24
2.9.3	Main class of this unit test	24
2.9.4	Authtoken	24
2.9.5	Create	24
2.9.6	Insert	24
2.9.7	List	24
2.9.8	View	25
2.9.9	Edit	25
2.9.10	Upgrade	25
2.9.11	Delete	25
2.10	Test cli tokens (first part)	25
2.10.1	Importing namespaces	25
2.10.2	Loading helper function	25
2.10.3	Main class of this unit test	25
2.10.4	Authtoken	26
2.10.5	Checktoken	26
2.10.6	Deauthtoken	26
2.10.7	Checktoken ko	26
2.11	Test color	26
2.11.1	Importing namespaces	26
2.11.2	Loading helper function	26
2.11.3	Main class of this unit test	26
2.11.4	color test	27
2.12	Test common	27
2.12.1	Importing namespaces	27
2.12.2	Loading helper function	27
2.12.3	Main class of this unit test	27
2.12.4	common test	27
2.13	Test config	27
2.13.1	Importing namespaces	27
2.13.2	Loading helper function	27
2.13.3	Main class of this unit test	28
2.13.4	config test	28

2.14	Test control	28
2.14.1	Importing namespaces	28
2.14.2	Loading helper function	28
2.14.3	Main class of this unit test	28
2.14.4	control test	28
2.14.5	log test	28
2.14.6	version test	28
2.14.7	indexing test	29
2.15	Test cron	29
2.15.1	Importing namespaces	29
2.15.2	Loading helper function	29
2.15.3	Main class of this unit test	29
2.15.4	Wait cron	29
2.15.5	cron	29
2.16	Test customers	29
2.16.1	Importing namespaces	29
2.16.2	Loading helper function	30
2.16.3	Main class of this unit test	30
2.16.4	customers test	30
2.17	Test database drivers	30
2.17.1	Importing namespaces	30
2.17.2	Loading helper function	30
2.17.3	Main class of this unit test	30
2.17.4	Helper	30
2.17.5	Last Insert Id helper	31
2.17.6	PDO MySQL driver	31
2.17.7	MySQL improved driver	32
2.17.8	PDO SQLite driver	32
2.17.9	SQLite3 driver	32
2.17.10	PDO mssql driver	32
2.17.11	Database driver	32
2.18	Test datetime	32
2.18.1	Importing namespaces	32

2.18.2	Main class of this unit test	33
2.18.3	datetime test	33
2.19	Test dbschema	33
2.19.1	Importing namespaces	33
2.19.2	Loading helper function	33
2.19.3	Main class of this unit test	33
2.19.4	dbschema test	33
2.19.5	sql test	33
2.20	Test emails	33
2.20.1	Importing namespaces	34
2.20.2	Loading helper function	34
2.20.3	Main class of this unit test	34
2.20.4	emails test	34
2.21	Test error	34
2.21.1	Importing namespaces	34
2.21.2	Loading helper function	34
2.21.3	Main class of this unit test	34
2.21.4	error function test	34
2.22	Test exec	35
2.22.1	Importing namespaces	35
2.22.2	Main class of this unit test	35
2.22.3	exec test	35
2.23	Test export	35
2.23.1	Importing namespaces	35
2.23.2	Loading helper function	35
2.23.3	Main class of this unit test	35
2.23.4	Get data	36
2.23.5	export xml test	36
2.23.6	export csv test	36
2.23.7	export xlsx test	36
2.23.8	export xls test	36
2.23.9	export ods test	36
2.23.10	//~ * export bytes test	36

2.23.11	export edi test	37
2.23.12	export json test	37
2.23.13	tree2array test	37
2.23.14	getkeys test	37
2.23.15	external exec	37
2.24	Test file	37
2.24.1	Importing namespaces	37
2.24.2	Loading helper function	37
2.24.3	Main class of this unit test	38
2.24.4	file test	38
2.25	Test files	38
2.25.1	Importing namespaces	38
2.25.2	Loading helper function	38
2.25.3	Main class of this unit test	38
2.25.4	files test	38
2.25.5	notes test	38
2.25.6	fileslog test	38
2.26	Test gc	39
2.26.1	Importing namespaces	39
2.26.2	Loading helper function	39
2.26.3	Main class of this unit test	39
2.26.4	gc exec	39
2.26.5	gc upload	39
2.26.6	gc upload	39
2.27	Test gdlb	39
2.27.1	Importing namespaces	39
2.27.2	Loading helper function	40
2.27.3	Main class of this unit test	40
2.27.4	gdlb test	40
2.28	Test getdata	40
2.28.1	Importing namespaces	40
2.28.2	Loading helper function	40
2.28.3	Main class of this unit test	40

2.28.4	getdata test	40
2.29	Test gettext	40
2.29.1	Importing namespaces	41
2.29.2	Loading helper function	41
2.29.3	Main class of this unit test	41
2.29.4	gettext test	41
2.30	Test help	41
2.30.1	Importing namespaces	41
2.30.2	Loading helper function	41
2.30.3	Main class of this unit test	41
2.30.4	help test	41
2.31	Test html	42
2.31.1	Importing namespaces	42
2.31.2	Loading helper function	42
2.31.3	Main class of this unit test	42
2.31.4	html test	42
2.32	Test IDs	42
2.32.1	Importing namespaces	42
2.32.2	Main class of this unit test	42
2.32.3	IDs test	42
2.33	Test image	43
2.33.1	Importing namespaces	43
2.33.2	Loading helper function	43
2.33.3	Main class of this unit test	43
2.33.4	barcode test	43
2.33.5	qrcode test	43
2.33.6	captcha test	43
2.33.7	score test	43
2.34	Test import	44
2.34.1	Importing namespaces	44
2.34.2	Loading helper function	44
2.34.3	Main class of this unit test	44
2.34.4	import xml test	44

2.34.5	import csv test	44
2.34.6	import xlsx test	44
2.34.7	import xls test	44
2.34.8	import ods test	45
2.34.9	import bytes test	45
2.34.10	import edi test	45
2.34.11	import json test	45
2.34.12	import helper test	45
2.34.13	external exec	45
2.35	Test indexing	45
2.35.1	Importing namespaces	45
2.35.2	Loading helper function	46
2.35.3	Main class of this unit test	46
2.35.4	indexing test	46
2.36	Test inset	46
2.36.1	Importing namespaces	46
2.36.2	Loading helper function	46
2.36.3	Main class of this unit test	46
2.36.4	inset test	46
2.37	Test invoices	46
2.37.1	Importing namespaces	47
2.37.2	Loading helper function	47
2.37.3	Main class of this unit test	47
2.37.4	invoices test	47
2.38	Test log	47
2.38.1	Importing namespaces	47
2.38.2	Main class of this unit test	47
2.38.3	log test	47
2.39	Test math	47
2.39.1	Importing namespaces	48
2.39.2	Loading helper function	48
2.39.3	Main class of this unit test	48
2.39.4	math test	48

2.40	Test memory	48
2.40.1	Importing namespaces	48
2.40.2	Main class of this unit test	48
2.40.3	memory test	48
2.41	Test mime	48
2.41.1	Importing namespaces	49
2.41.2	Loading helper function	49
2.41.3	Main class of this unit test	49
2.41.4	mime test	49
2.42	Test nssdb	49
2.42.1	Importing namespaces	49
2.42.2	Loading helper function	49
2.42.3	Main class of this unit test	49
2.42.4	nssdb test	49
2.42.5	certs test	50
2.42.6	actions test	50
2.43	Test output	50
2.43.1	Importing namespaces	50
2.43.2	Loading helper function	50
2.43.3	Main class of this unit test	50
2.43.4	output test	50
2.43.5	colorize test	50
2.44	Test password	51
2.44.1	Importing namespaces	51
2.44.2	Loading helper function	51
2.44.3	Main class of this unit test	51
2.44.4	password test	51
2.45	Test pdf	51
2.45.1	Importing namespaces	51
2.45.2	Loading helper function	51
2.45.3	Main class of this unit test	51
2.45.4	pdf test	52
2.46	Test perms	52

2.46.1	Importing namespaces	52
2.46.2	Loading helper function	52
2.46.3	Main class of this unit test	52
2.46.4	Authtoken	52
2.46.5	perms test	52
2.47	Test ping	52
2.47.1	Importing namespaces	53
2.47.2	Loading helper function	53
2.47.3	Main class of this unit test	53
2.47.4	ping test	53
2.48	Test push	53
2.48.1	Importing namespaces	53
2.48.2	Loading helper function	53
2.48.3	Main class of this unit test	53
2.48.4	push	53
2.49	Test random	54
2.49.1	Importing namespaces	54
2.49.2	Main class of this unit test	54
2.49.3	random test	54
2.50	Test mime	54
2.50.1	Importing namespaces	54
2.50.2	Main class of this unit test	54
2.50.3	replace test	54
2.51	Test roundcube library	54
2.51.1	Importing namespaces	55
2.51.2	Main class of this unit test	55
2.51.3	html2text	55
2.52	Test semaphore	55
2.52.1	Importing namespaces	55
2.52.2	Loading helper function	55
2.52.3	Main class of this unit test	55
2.52.4	semaphore test	55
2.53	Test server	55

2.53.1	Importing namespaces	56
2.53.2	Loading helper function	56
2.53.3	Main class of this unit test	56
2.53.4	server test	56
2.54	Test sql	56
2.54.1	Importing namespaces	56
2.54.2	Loading helper function	56
2.54.3	Main class of this unit test	56
2.54.4	SQL test	56
2.55	Test strings	57
2.55.1	Importing namespaces	57
2.55.2	Main class of this unit test	57
2.55.3	strings test	57
2.56	Test mime	57
2.56.1	Importing namespaces	57
2.56.2	Main class of this unit test	57
2.56.3	strtr test	57
2.57	Test system	57
2.57.1	Importing namespaces	58
2.57.2	Loading helper function	58
2.57.3	Main class of this unit test	58
2.57.4	system test	58
2.58	Test tokens	58
2.58.1	Importing namespaces	58
2.58.2	Main class of this unit test	58
2.58.3	Tokens test	58
2.59	Test unoconv	58
2.59.1	Importing namespaces	59
2.59.2	Loading helper function	59
2.59.3	Main class of this unit test	59
2.59.4	Pdf test helper	59
2.59.5	Txt test helper	59
2.59.6	unoconv test	59

2.59.7	ocr test	59
2.59.8	commands test	59
2.60	Test upload	60
2.60.1	Importing namespaces	60
2.60.2	Loading helper function	60
2.60.3	Main class of this unit test	60
2.60.4	Authtoken	60
2.60.5	Addfiles	60
2.60.6	Delfiles	60
2.60.7	Human size	60
2.61	Test users	61
2.61.1	Importing namespaces	61
2.61.2	Loading helper function	61
2.61.3	Main class of this unit test	61
2.61.4	Authtoken	61
2.61.5	users test	61
2.61.6	browser test	61
2.61.7	geoip test	61
2.61.8	security test	62
2.62	Test users	62
2.62.1	Importing namespaces	62
2.62.2	Loading helper function	62
2.62.3	Main class of this unit test	62
2.62.4	days test	62
2.62.5	users test	62
2.62.6	groups test	62
2.63	Test version	63
2.63.1	Importing namespaces	63
2.63.2	Main class of this unit test	63
2.63.3	version test	63
2.64	Test web customers	63
2.64.1	Importing namespaces	63
2.64.2	Loading helper function	63

2.64.3	Main class of this unit test	63
2.64.4	AuthToken	63
2.64.5	Create	64
2.64.6	Insert	64
2.64.7	List	64
2.64.8	View	64
2.64.9	Edit	64
2.64.10	Upgrade	64
2.64.11	Delete	64
2.65	Test web invoices	65
2.65.1	Importing namespaces	65
2.65.2	Loading helper function	65
2.65.3	Main class of this unit test	65
2.65.4	AuthToken	65
2.65.5	Create	65
2.65.6	Insert	65
2.65.7	List	65
2.65.8	View	66
2.65.9	Edit	66
2.65.10	Upgrade	66
2.65.11	Delete	66
2.66	Test web tokens (first part)	66
2.66.1	Importing namespaces	66
2.66.2	Loading helper function	66
2.66.3	Main class of this unit test	66
2.66.4	AuthToken	67
2.66.5	Checktoken	67
2.66.6	Deauth token	67
2.66.7	Checktoken ko	67
2.67	Test XML	67
2.67.1	Importing namespaces	67
2.67.2	Loading helper function	67
2.67.3	Main class of this unit test	67

2.67.4	XML test	68
2.68	Test YAML	68
2.68.1	Importing namespaces	68
2.68.2	Main class of this unit test	68
2.68.3	YAML test	68
2.69	Test zindex	68
2.69.1	Importing namespaces	68
2.69.2	Loading helper function	68
2.69.3	Main class of this unit test	68
2.69.4	zindex test	69

1 Phpunit Libraries

1.1 Autoload file for the unit tests

```
lib/autoload.php
```

This file contains the code that initialize the unit tests

1.1.1 Importing namespaces

```
use PHPUnit\Framework\Assert;
```

1.1.2 Main autoloader code

This code emulates the index.php by loading all autoload files except the zindex.php, initialize the timer and the random generator

1.2 Unit test helper functions

```
lib/utestlib.php
```

This file contains the functions used by the web and cli unit tests to get the coverage, too contains the pcov and mime helpers.

1.2.1 Importing namespaces

```
use SebastianBergmann\CodeCoverage\Data\RawCodeCoverageData;
```

1.2.2 Test PCOV start helper

```
function test_pcov_start(): void
```

This function puts the flag needed to enable the pcov feature, to do it, the function creates a void file and puts permissions to allow that other procs can write inside of it

1.2.3 Test PCOV stop helper

```
function test_pcov_stop($index): void
```

This function gets the contents of the coverage file and removes it, too, it does all needed things to append the collected coverage to the current unit test coverage instance

- @index => index used to get the backtrace, it depends from where you are calling this function, generally is 2 but in some cases you need to use another value like 1.

1.2.4 Test WEB helper

```
function test_web_helper($rest, $data, $token, $lang)
```

This function performs the action defined by the rest verb sending the data if it is provided and using the token for authentication actions.

As you can see in the code, the function detects if data is provided and send the request using GET or POST, in addition, an application/json content-type header is send when POST is used.

The token is sent using the TOKEN header to be used in the authentication process.

- @rest => The rest request, like update/customers/3
- @data => The data used as json in the SaltOS app
- @token => The token used if authentication is required

1.2.5 Test CLI helper

```
function test_cli_helper($rest, $data, $token, $lang, $user)
```

This function allow to execute SaltOS using the CLI SAPI, to do it, the function detects if data is provided, and executes the command and getting the output of the execution. If data exists, then the contents are stored in a file and passed the contents of the file to the stdin of the php process to emulate the input channel used by the apache server.

As an example, this functions tries to execute the command using the follow formula:

- 1) php index.php \$rest
- 2) cat /tmp/input | php index.php \$rest

In addition, the token field is used to define the TOKEN environment variable that is used by SaltOS as variable to emulate the TOKEN used by the apache for authenticate the SaltOS app.

- @rest => The rest request, like update/customers/3
- @data => The data used as json in the SaltOS app
- @token => The token used if authentication is required

1.2.6 Get Mime helper

```
function get_mime($buffer): string
```

This function returns the content type of the contents of the buffer

- @buffer => the contents that you want to check

1.2.7 External tests

```
function test_external_exec($test_file, $error_file, $error_words): void
```

This function tries to execute external php that triggers special conditions such as errors, that are not allowed from the phpunit tests

- @test_file => the file that must be executed
- @error_file => the file that must contains the error_words
- @error_words => the words that must exists in the error_file

2 Phunit Code

2.1 Test actions

test_actions.php

This test performs some tests to validate the correctness of the actions functions

2.1.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.1.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.1.3 Main class of this unit test

```
final class test_actions extends TestCase
```

2.1.4 actions test

```
public function test_actions(): void
```

This test performs some tests to validate the correctness of the actions functions

2.2 Test addlog

test_add.php

This test performs some tests to validate the correctness of the addlog functions

2.2.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.2.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.2.3 Main class of this unit test

```
final class test_add extends TestCase
```

2.2.4 addlog test

```
public function test_addlog(): void
```

This test performs some tests to validate the correctness of the addlog functions

2.2.5 adderror test

```
public function test_adderror(): void
```

This test performs some tests to validate the correctness of the adderror functions

2.3 Test apache

```
test_apache.php
```

This test performs some tests to validate the correctness of the apache configuration

2.3.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.3.2 Main class of this unit test

```
final class test_apache extends TestCase
```

2.3.3 addlog test

```
public function test_apache(): void
```

This test performs some tests to validate the correctness of the apache configuration, the main idea is that the path saltos/code4 of the web server must point to the web directory.

2.4 Test apps

```
test_apps.php
```

This test performs some tests to validate the correctness of the apps functions

2.4.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.4.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.4.3 Main class of this unit test

```
final class test_apps extends TestCase
```

2.4.4 apps test

```
public function test_apps(): void
```

This test performs some tests to validate the correctness of the apps functions

2.4.5 app test

```
public function test_app(): void
```

This test performs some tests to validate the correctness of the app functions

2.4.6 list test

```
public function test_list(): void
```

This test performs some tests to validate the correctness of the list functions

2.5 Test array

```
test_array.php
```

This test performs some tests to validate the correctness of the array functions

2.5.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.5.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.5.3 Main class of this unit test

```
final class test_array extends TestCase
```

2.5.4 array test

```
public function test_array(): void
```

This test performs some tests to validate the correctness of the array functions

2.6 Test ascii

```
test_ascii.php
```

This test performs some tests to validate the correctness of the ascii functions

2.6.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.6.2 Loading helper function

```
require_once 'php/lib/ascii.php';
```

This file contains the needed function used by the unit tests

2.6.3 Main class of this unit test

```
final class test_ascii extends TestCase
```

2.6.4 ascii test

```
public function test_ascii(): void
```

This test performs some tests to validate the correctness of the ascii functions

2.7 Test authupdate

```
test_authupdate.php
```

This test performs some tests to validate the correctness of the authupdate functions

2.7.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.7.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.7.3 Main class of this unit test

```
final class test_authupdate extends TestCase
```

2.7.4 authupdate test

```
public function test_authupdate(): void
```

This test performs some tests to validate the correctness of the authupdate functions

2.8 Test cli customers

```
test_cli_customers.php
```

This test performs all actions of the customers app such as: create, insert, list, view, edit, update and delete, using the cli sapi interface

2.8.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.8.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.8.3 Main class of this unit test

```
final class test_cli_customers extends TestCase
```

2.8.4 Authtoken

```
public function test_authtoken(): array
```

This function executes the authtoken rest request, and must get the json with the valid token to continue in the next unit tests

2.8.5 Create

```
public function test_create(array $json): array
```

This function execute the creates rest request, and must to get the json with the layout without data

2.8.6 Insert

```
public function test_insert(array $json): array
```

This function execute the insert rest request, to do it send the json with the data that they want to insert and must to get the json with the status and the create_id.

2.8.7 List

```
public function test_list(array $json): array
```

This function execute the list rest request, to do it send the json with the search that they want to use in the list filter and receives the json with the data used to populate the table.

2.8.8 View

```
public function test_view(array $json): array
```

This function execute the view rest request, intended to retrieve the detail of the app with the layout needed to render it.

2.8.9 Edit

```
public function test_edit(array $json): array
```

This function execute the view rest request, intended to retrieve the detail of the app with the layout needed to render it.

2.8.10 Upgrade

```
public function test_update(array $json): array
```

This function execute the update rest request, to do it send the json with the data that they want to update and must to get the json with the status and the updated_id.

2.8.11 Delete

```
public function test_delete(array $json): void
```

This function execute the delete rest request, they must to get the json with the status and the deleted_id.

2.9 Test cli invoices

```
test_cli_invoices.php
```

This test performs all actions of the invoices app such as: create, insert, list, view, edit, update and delete, using the cli sapi interface

2.9.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.9.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.9.3 Main class of this unit test

```
final class test_cli_invoices extends TestCase
```

2.9.4 Authtoken

```
public function test_authtoken(): array
```

This function execute the authtoken rest request, and must to get the json with the valid token to continue in the nexts unit tests

2.9.5 Create

```
public function test_create(array $json): array
```

This function execute the creates rest request, and must to get the json with the layout without data

2.9.6 Insert

```
public function test_insert(array $json): array
```

This function execute the insert rest request, to do it send the json with the data that they want to insert and must to get the json with the status and the create_id.

2.9.7 List

```
public function test_list(array $json): array
```

This function execute the list rest request, to do it send the json with the search that they want to use in the list filter and receives the json with the data used to populate the table.

2.9.8 View

```
public function test_view(array $json): array
```

This function execute the view rest request, intended to retrieve the detail of the app with the layout needed to render it.

2.9.9 Edit

```
public function test_edit(array $json): array
```

This function execute the view rest request, intended to retrieve the detail of the app with the layout needed to render it.

2.9.10 Upgrade

```
public function test_update(array $json): array
```

This function execute the update rest request, to do it send the json with the data that they want to update and must to get the json with the status and the updated_id.

2.9.11 Delete

```
public function test_delete(array $json): void
```

This function execute the delete rest request, they must to get the json with the status and the deleted_id.

2.10 Test cli tokens (first part)

```
test_cli_tokens.php
```

This test performs some part of the actions related with the tokens such as authtoken and checktoken, using the cli sapi interface

2.10.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.10.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.10.3 Main class of this unit test

```
final class test_cli_tokens extends TestCase
```

2.10.4 Authtoken

```
public function test_authtoken(): array
```

This function execute the authtoken rest request, and must to get the json with the valid token to continue in the nexts unit tests

2.10.5 Checktoken

```
public function test_checktoken(array $json): array
```

This function execute the checktoken rest request, and must to get the json with the ok about the valid token that you are trying to check

2.10.6 Deauthtoken

```
public function test_deauthtoken(array $json): array
```

This function execute the deauthtoken rest request, and must to get the json with the ok about the valid token that you are deauthenticate

2.10.7 Checktoken ko

```
public function test_checktoken_ko(array $json): void
```

This function execute the checktoken rest request, and must to get the json with the ko about the invalid token that you are trying to check

2.11 Test color

```
test_color.php
```

This test performs some tests to validate the correctness of the color feature

2.11.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.11.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.11.3 Main class of this unit test

```
final class test_color extends TestCase
```

2.11.4 color test

```
public function test_color(): void
```

This test performs some tests to validate the correctness of the color feature

2.12 Test common

```
test_common.php
```

This test performs some tests to validate the correctness of the common functions

2.12.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.12.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.12.3 Main class of this unit test

```
final class test_common extends TestCase
```

2.12.4 common test

```
public function test_common(): void
```

This test performs some tests to validate the correctness of the common functions

2.13 Test config

```
test_config.php
```

This test performs some tests to validate the correctness of the config functions

2.13.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.13.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.13.3 Main class of this unit test

```
final class test_config extends TestCase
```

2.13.4 config test

```
public function test_config(): void
```

This test performs some tests to validate the correctness of the config functions

2.14 Test control

```
test_control.php
```

This test performs some tests to validate the correctness of the control functions

2.14.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.14.2 Loading helper function

```
require_once 'php/lib/control.php';
```

This file contains the needed function used by the unit tests

2.14.3 Main class of this unit test

```
final class test_control extends TestCase
```

2.14.4 control test

```
public function test_control(): void
```

This test performs some tests to validate the correctness of the control functions

2.14.5 log test

```
public function test_log(): void
```

This test performs some tests to validate the correctness of the log functions

2.14.6 version test

```
public function test_version(): void
```

This test performs some tests to validate the correctness of the version functions

2.14.7 indexing test

```
public function test_indexing(): void
```

This test performs some tests to validate the correctness of the indexing functions

2.15 Test cron

```
test_cron.php
```

This test performs some tests to validate the correctness of the cron functions

2.15.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.15.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.15.3 Main class of this unit test

```
final class test_cron extends TestCase
```

2.15.4 Wait cron

```
private function wait_cron(): void
```

This function waits 10 seconds until all cron processes are running

2.15.5 cron

```
public function test_cron(): void
```

This test performs some tests to validate the correctness of the cron functions

2.16 Test customers

```
test_customers.php
```

This test performs some tests to validate the correctness of the customers functions

2.16.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.16.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.16.3 Main class of this unit test

```
final class test_customers extends TestCase
```

2.16.4 customers test

```
public function test_customers(): void
```

This test performs some tests to validate the correctness of the customers functions

2.17 Test database drivers

```
test_database.php
```

2.17.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.17.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.17.3 Main class of this unit test

```
final class test_database extends TestCase
```

2.17.4 Helper

```
private function test_helper($obj): void
```

This function executes the follow queries and checks the correctness of the driver by comparing the results with the expected results.

The tests that performs are the follow:

- SELECT GROUP_CONCAT(a) test FROM (SELECT 1 a UNION SELECT 2 a UNION SELECT 3 a) a;
- SELECT REPLACE('abc', 'b', 'c') test

- SELECT LPAD('123', '5', '0') test
- SELECT CONCAT('a', 'b', 'c') test
- SELECT CONCAT_WS(',', 'a', 'b', 'c', null, true, false) test
- SELECT UNIX_TIMESTAMP('2024-02-01 12:34:56') test
- SELECT FROM_UNIXTIME(1706787296) test
- SELECT YEAR('2024-02-01 12:34:56') test
- SELECT MONTH('2024-02-01 12:34:56') test
- SELECT WEEK('2024-02-01 12:34:56', 1) test
- SELECT TRUNCATE(1.2345, 2) test
- SELECT DAY('2024-02-01 12:34:56') test
- SELECT DAYOFYEAR('2024-02-01 12:34:56') test
- SELECT DAYOFWEEK('2024-02-01 12:34:56') test
- SELECT HOUR('2024-02-01 12:34:56') test
- SELECT MINUTE('2024-02-01 12:34:56') test
- SELECT SECOND('2024-02-01 12:34:56') test
- SELECT MD5('fortuna') test
- SELECT REPEAT('abc', 3) test
- SELECT FIND_IN_SET(3, '1,2,3,4,5') test
- SELECT FIND_IN_SET(6, '1,2,3,4,5') test
- SELECT FIND_IN_SET(3, '12345') test
- SELECT IF(true, 'ok', 'ko') test
- SELECT IF(false, 'ok', 'ko') test
- SELECT IF(null, 'ok', 'ko') test
- SELECT POW(2, 8) test
- SELECT DATE_FORMAT('2024-02-01 12:34:56', '%Y-%m-%d %H:%i:%s') test
- SELECT NOW() test

2.17.5 Last Insert Id helper

```
private function last_insert_id_helper($obj): void
```

This function is intended to check the correctness of the last_insert_id feature implemented in each database driver.

2.17.6 PDO MySQL driver

```
public function test_pdo_mysql(): void
```

This function checks the correctness of the sqlite3 driver by creating a database connection, sending queries validating the expected results and closing the connection.

2.17.7 MySQL improved driver

```
public function test_mysqli(): void
```

This function checks the correctness of the sqlite3 driver by creating a database connection, sending queries validating the expected results and closing the connection.

2.17.8 PDO SQLite driver

```
public function test_pdo_sqlite(): void
```

This function checks the correctness of the sqlite3 driver by creating a database connection, sending queries validating the expected results and closing the connection.

2.17.9 SQLite3 driver

```
public function test_sqlite3(): void
```

This function checks the correctness of the sqlite3 driver by creating a database connection, sending queries validating the expected results and closing the connection.

2.17.10 PDO mssql driver

```
private function test_pdo_mssql(): void
```

This function checks the correctness of the sqlserver driver by creating a database connection, sending queries validating the expected results and closing the connection.

2.17.11 Database driver

```
public function test_database(): void
```

This function checks the correctness of the database driver by creating a database connection, sending queries validating the expected results and closing the connection.

2.18 Test datetime

```
test_datetime.php
```

This test performs some tests to validate the correctness of the datetime functions

2.18.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```


2.18.2 Main class of this unit test

```
final class test_datetime extends TestCase
```

2.18.3 datetime test

```
public function test_datetime(): void
```

This test performs some tests to validate the correctness of the datetime functions

2.19 Test dbschema

```
test_dbschema.php
```

This test performs some tests to validate the correctness of the dbschema functions

2.19.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.19.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.19.3 Main class of this unit test

```
final class test_dbschema extends TestCase
```

2.19.4 dbschema test

```
public function test_dbschema(): void
```

This test performs some tests to validate the correctness of the dbschema functions

2.19.5 sql test

```
public function test_sql(): void
```

This test performs some tests to validate the correctness of the sql functions

2.20 Test emails

```
test_emails.php
```

This test performs some tests to validate the correctness of the emails functions

2.20.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.20.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.20.3 Main class of this unit test

```
final class test_emails extends TestCase
```

2.20.4 emails test

```
public function test_emails(): void
```

This test performs some tests to validate the correctness of the emails functions

2.21 Test error

```
test_error.php
```

This test performs some tests to validate the correctness of the error functions

2.21.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.21.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.21.3 Main class of this unit test

```
final class test_error extends TestCase
```

2.21.4 error function test

```
public function test_error(): void
```

This test performs some tests to validate the correctness of the error functions

2.22 Test exec

```
test_exec.php
```

This test performs some tests to validate the correctness of the exec functions

2.22.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.22.2 Main class of this unit test

```
final class test_exec extends TestCase
```

2.22.3 exec test

```
public function test_exec(): void
```

This test performs some tests to validate the correctness of the exec functions

2.23 Test export

```
test_export.php
```

This test performs some tests to validate the correctness of the export functions

2.23.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.23.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.23.3 Main class of this unit test

```
final class test_export extends TestCase
```

2.23.4 Get data

```
private function get_data($nohead, $length): array
```

This function tries to create an array with rows using the numbers.csv file as source, it is able to add or remove the head row and to select the size of the result array of rows

- @nohead => the nohead field used in the import_file function
- @length => the size of the rows array

2.23.5 export xml test

```
public function test_export_xml(): void
```

This test performs some tests to validate the correctness of the export functions

2.23.6 export csv test

```
public function test_export_csv(): void
```

This test performs some tests to validate the correctness of the export functions

2.23.7 export xlsx test

```
public function test_export_xlsx(): void
```

This test performs some tests to validate the correctness of the export functions

2.23.8 export xls test

```
public function test_export_xls(): void
```

This test performs some tests to validate the correctness of the export functions

2.23.9 export ods test

```
public function test_export_ods(): void
```

This test performs some tests to validate the correctness of the export functions

2.23.10 //~ * export bytes test

```
//~ public function test_export_bytes(): void
```

//~ * This test performs some tests to validate the correctness //~ * of the export functions

2.23.11 export edi test

```
public function test_export_edi(): void
```

This test performs some tests to validate the correctness of the export functions

2.23.12 export json test

```
public function test_export_json(): void
```

This test performs some tests to validate the correctness of the export functions

2.23.13 tree2array test

```
public function test_export_tree2array(): void
```

This test performs some tests to validate the correctness of the tree2array function

2.23.14 getkeys test

```
public function test_export_getkeys(): void
```

This test performs some tests to validate the correctness of the getkeys function

2.23.15 external exec

```
public function test_export_external(): void
```

This test performs some tests to validate the correctness of the external exec

2.24 Test file

```
test_file.php
```

This test performs some tests to validate the correctness of the file functions

2.24.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.24.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.24.3 Main class of this unit test

```
final class test_file extends TestCase
```

2.24.4 file test

```
public function test_file(): void
```

This test performs some tests to validate the correctness of the file functions

2.25 Test files

```
test_files.php
```

This test performs some tests to validate the correctness of the files feature

2.25.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.25.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.25.3 Main class of this unit test

```
final class test_files extends TestCase
```

2.25.4 files test

```
public function test_files(): void
```

This test performs some tests to validate the correctness of the files feature

2.25.5 notes test

```
public function test_notes(): void
```

This test performs some tests to validate the correctness of the notes feature

2.25.6 fileslog test

```
public function test_fileslog(): void
```

This test performs some tests to validate the correctness of the fileslog feature

2.26 Test gc

```
test_gc.php
```

This test performs some tests to validate the correctness of the gc functions

2.26.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.26.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.26.3 Main class of this unit test

```
final class test_gc extends TestCase
```

2.26.4 gc exec

```
public function test_gc_exec(): void
```

This test performs some tests to validate the correctness of the gc functions

2.26.5 gc upload

```
public function test_gc_upload(): void
```

This test performs some tests to validate the correctness of the gc functions

2.26.6 gc upload

```
public function test_gc_trash(): void
```

This test performs some tests to validate the correctness of the gc functions

2.27 Test gdlb

```
test_gdlb.php
```

This test performs some tests to validate the correctness of the gdlb feature

2.27.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.27.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.27.3 Main class of this unit test

```
final class test_gdlib extends TestCase
```

2.27.4 gdlib test

```
public function test_gdlib(): void
```

This test performs some tests to validate the correctness of the gdlib feature

2.28 Test getdata

```
test_getdata.php
```

This test performs some tests to validate the correctness of the getdata functions

2.28.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.28.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.28.3 Main class of this unit test

```
final class test_getdata extends TestCase
```

2.28.4 getdata test

```
public function test_getdata(): void
```

This test performs some tests to validate the correctness of the getdata functions

2.29 Test gettext

```
test_gettext.php
```

This test performs some tests to validate the correctness of the gettext functions

2.29.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.29.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.29.3 Main class of this unit test

```
final class test_gettext extends TestCase
```

2.29.4 gettext test

```
public function test_gettext(): void
```

This test performs some tests to validate the correctness of the gettext functions

2.30 Test help

```
test_help.php
```

This test performs some tests to validate the correctness of the help functions

2.30.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.30.2 Loading helper function

```
require_once 'php/lib/help.php';
```

This file contains the needed function used by the unit tests

2.30.3 Main class of this unit test

```
final class test_help extends TestCase
```

2.30.4 help test

```
public function test_help(): void
```

This test performs some tests to validate the correctness of the help functions

2.31 Test html

```
test_html.php
```

This test performs some tests to validate the correctness of the html functions

2.31.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.31.2 Loading helper function

```
require_once 'apps/emails/php/html.php';
```

This file contains the needed function used by the unit tests

2.31.3 Main class of this unit test

```
final class test_html extends TestCase
```

2.31.4 html test

```
public function test_html(): void
```

This test performs some tests to validate the correctness of the html functions

2.32 Test IDs

```
test_ids.php
```

This test performs some tests to validate the correctness of the check_ids feature

2.32.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.32.2 Main class of this unit test

```
final class test_ids extends TestCase
```

2.32.3 IDs test

```
public function test_ids(): void
```

This test performs some tests to validate the correctness of the check_ids feature

2.33 Test image

```
test_image.php
```

This test performs some tests to validate the correctness of the barcode, qrcode, captcha and score features

2.33.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.33.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.33.3 Main class of this unit test

```
final class test_image extends TestCase
```

2.33.4 barcode test

```
public function test_barcode(): void
```

This test performs some tests to validate the correctness of the barcode feature

2.33.5 qrcode test

```
public function test_qrcode(): void
```

This test performs some tests to validate the correctness of the qrcode feature

2.33.6 captcha test

```
public function test_captcha(): void
```

This test performs some tests to validate the correctness of the captcha feature

2.33.7 score test

```
public function test_score(): void
```

This test performs some tests to validate the correctness of the score feature

2.34 Test import

```
test_import.php
```

This test performs some tests to validate the correctness of the import functions

2.34.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.34.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.34.3 Main class of this unit test

```
final class test_import extends TestCase
```

2.34.4 import xml test

```
public function test_import_xml(): void
```

This test performs some tests to validate the correctness of the import functions

2.34.5 import csv test

```
public function test_import_csv(): void
```

This test performs some tests to validate the correctness of the import functions

2.34.6 import xlsx test

```
public function test_import_xlsx(): void
```

This test performs some tests to validate the correctness of the import functions

2.34.7 import xls test

```
public function test_import_xls(): void
```

This test performs some tests to validate the correctness of the import functions

2.34.8 import ods test

```
public function test_import_ods(): void
```

This test performs some tests to validate the correctness of the import functions

2.34.9 import bytes test

```
public function test_import_bytes(): void
```

This test performs some tests to validate the correctness of the import functions

2.34.10 import edi test

```
public function test_import_edi(): void
```

This test performs some tests to validate the correctness of the import functions

2.34.11 import json test

```
public function test_import_json(): void
```

This test performs some tests to validate the correctness of the import functions

2.34.12 import helper test

```
public function test_import_helper(): void
```

This test performs some tests to validate the correctness of the import functions

2.34.13 external exec

```
public function test_import_external(): void
```

This test performs some tests to validate the correctness of the external exec

2.35 Test indexing

```
test_indexing.php
```

This test performs some tests to validate the correctness of the indexing functions

2.35.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.35.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.35.3 Main class of this unit test

```
final class test_indexing extends TestCase
```

2.35.4 indexing test

```
public function test_indexing(): void
```

This test performs some tests to validate the correctness of the indexing functions

2.36 Test iniset

```
test_iniset.php
```

This test performs some tests to validate the correctness of the iniset functions

2.36.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.36.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.36.3 Main class of this unit test

```
final class test_iniset extends TestCase
```

2.36.4 iniset test

```
public function test_iniset(): void
```

This test performs some tests to validate the correctness of the iniset functions

2.37 Test invoices

```
test_invoices.php
```

This test performs some tests to validate the correctness of the invoices functions

2.37.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.37.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.37.3 Main class of this unit test

```
final class test_invoices extends TestCase
```

2.37.4 invoices test

```
public function test_invoices(): void
```

This test performs some tests to validate the correctness of the invoices functions

2.38 Test log

```
test_log.php
```

This test performs some tests to validate the correctness of the log functions

2.38.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.38.2 Main class of this unit test

```
final class test_log extends TestCase
```

2.38.3 log test

```
public function test_log(): void
```

This test performs some tests to validate the correctness of the log functions

2.39 Test math

```
test_math.php
```

This test performs some tests to validate the correctness of the math functions

2.39.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.39.2 Loading helper function

```
require_once 'php/lib/math.php';
```

This file contains the needed function used by the unit tests

2.39.3 Main class of this unit test

```
final class test_math extends TestCase
```

2.39.4 math test

```
public function test_math(): void
```

This test performs some tests to validate the correctness of the math functions

2.40 Test memory

```
test_memory.php
```

This test performs some tests to validate the correctness of the memory functions

2.40.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.40.2 Main class of this unit test

```
final class test_memory extends TestCase
```

2.40.3 memory test

```
public function test_memory(): void
```

This test performs some tests to validate the correctness of the memory functions

2.41 Test mime

```
test_mime.php
```

This test performs some tests to validate the correctness of the mime functions

2.41.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.41.2 Loading helper function

```
require_once 'apps/emails/php/html.php';
```

This file contains the needed function used by the unit tests

2.41.3 Main class of this unit test

```
final class test_mime extends TestCase
```

2.41.4 mime test

```
public function test_mime(): void
```

This test performs some tests to validate the correctness of the mime functions

2.42 Test nssdb

```
test_nssdb.php
```

This test performs some tests to validate the correctness of the nssdb functions

2.42.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.42.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.42.3 Main class of this unit test

```
final class test_nssdb extends TestCase
```

2.42.4 nssdb test

```
public function test_nssdb(): void
```

This test performs some tests to validate the correctness of the nssdb functions

2.42.5 certs test

```
public function test_certs(): void
```

This test performs some tests to validate the correctness of the certs functions

2.42.6 actions test

```
public function test_actions(): void
```

This test performs some tests to validate the correctness of the certs functions

2.43 Test output

```
test_output.php
```

This test performs some tests to validate the correctness of the output functions

2.43.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.43.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.43.3 Main class of this unit test

```
final class test_output extends TestCase
```

2.43.4 output test

```
public function test_output(): void
```

This test performs some tests to validate the correctness of the output functions

2.43.5 colorize test

```
public function test_colorize(): void
```

This test performs some tests to validate the correctness of the colorize functions

2.44 Test password

```
test_password.php
```

This test performs some tests to validate the correctness of the password functions

2.44.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.44.2 Loading helper function

```
require_once 'php/lib/password.php';
```

This file contains the needed function used by the unit tests

2.44.3 Main class of this unit test

```
final class test_password extends TestCase
```

2.44.4 password test

```
public function test_password(): void
```

This test performs some tests to validate the correctness of the password functions

2.45 Test pdf

```
test_pdf.php
```

This test performs some tests to validate the correctness of the pdf functions

2.45.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.45.2 Loading helper function

```
require_once 'php/lib/pdf.php';
```

This file contains the needed function used by the unit tests

2.45.3 Main class of this unit test

```
final class test_pdf extends TestCase
```

2.45.4 pdf test

```
public function test_pdf(): void
```

This test performs some tests to validate the correctness of the pdf functions

2.46 Test perms

```
test_perms.php
```

This test performs some tests to validate the correctness of the perms functions

2.46.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.46.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.46.3 Main class of this unit test

```
final class test_perms extends TestCase
```

2.46.4 Authtoken

```
public function test_authtoken(): array
```

This function execute the authtoken rest request, and must to get the json with the valid token to continue in the nexts unit tests

2.46.5 perms test

```
public function test_perms(array $json): void
```

This test performs some tests to validate the correctness of the perms functions

2.47 Test ping

```
test_ping.php
```

This test performs some tests to validate the correctness of the ping feature

2.47.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.47.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.47.3 Main class of this unit test

```
final class test_ping extends TestCase
```

2.47.4 ping test

```
public function test_ping(): void
```

This test performs some tests to validate the correctness of the ping feature

2.48 Test push

```
test_push.php
```

This test performs some tests to validate the correctness of the push functions

2.48.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.48.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.48.3 Main class of this unit test

```
final class test_push extends TestCase
```

2.48.4 push

```
public function test_push(): void
```

This test performs some tests to validate the correctness of the push functions

2.49 Test random

```
test_random.php
```

This test performs some tests to validate the correctness of the random functions

2.49.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.49.2 Main class of this unit test

```
final class test_random extends TestCase
```

2.49.3 random test

```
public function test_random(): void
```

This test performs some tests to validate the correctness of the random functions

2.50 Test mime

```
test_replace.php
```

This test performs some tests to validate the correctness of the str_replace instead of the preg_replace

2.50.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.50.2 Main class of this unit test

```
final class test_replace extends TestCase
```

2.50.3 replace test

```
public function test_replace(): void
```

This test performs some tests to validate the correctness of the str_replace_assoc instead of the replace function

2.51 Test roundcube library

```
test_roundcube.php
```

2.51.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.51.2 Main class of this unit test

```
final class test_roundcube extends TestCase
```

2.51.3 html2text

```
public function test_html2text(): void
```

This function checks the correctness of the html2text method provided by the roundcube library.

2.52 Test semaphore

```
test_semaphore.php
```

This test performs some tests to validate the correctness of the semaphore functions

2.52.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.52.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.52.3 Main class of this unit test

```
final class test_semaphore extends TestCase
```

2.52.4 semaphore test

```
public function test_semaphore(): void
```

This test performs some tests to validate the correctness of the semaphore functions

2.53 Test server

```
test_server.php
```

This test performs some tests to validate the correctness of the server functions

2.53.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.53.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.53.3 Main class of this unit test

```
final class test_server extends TestCase
```

2.53.4 server test

```
public function test_server(): void
```

This test performs some tests to validate the correctness of the server functions

2.54 Test sql

```
test_sql.php
```

This test performs some tests to validate the correctness of the sql functions

2.54.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.54.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.54.3 Main class of this unit test

```
final class test_sql extends TestCase
```

2.54.4 SQL test

```
public function test_sql(): void
```

This function performs some tests to validate the correctness of the sql functions

2.55 Test strings

```
test_strings.php
```

This test performs some tests to validate the correctness of the strings functions

2.55.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.55.2 Main class of this unit test

```
final class test_strings extends TestCase
```

2.55.3 strings test

```
public function test_strings(): void
```

This test performs some tests to validate the correctness of the strings functions

2.56 Test mime

```
test_strtr.php
```

This test performs some tests to validate the correctness of the str_replace_assoc instead of the strtr function

2.56.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.56.2 Main class of this unit test

```
final class test_strtr extends TestCase
```

2.56.3 strtr test

```
public function test_strtr(): void
```

This test performs some tests to validate the correctness of the str_replace_assoc instead of the strtr function

2.57 Test system

```
test_system.php
```

This test performs some tests to validate the correctness of the system functions

2.57.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.57.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.57.3 Main class of this unit test

```
final class test_system extends TestCase
```

2.57.4 system test

```
public function test_system(): void
```

This test performs some tests to validate the correctness of the system functions

2.58 Test tokens

```
test_tokens.php
```

This test performs some tests to validate the correctness of the token generator and the token format checker

2.58.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.58.2 Main class of this unit test

```
final class test_tokens extends TestCase
```

2.58.3 Tokens test

```
public function test_tokens(): void
```

This function performs some tests to validate the correctness of the token generator and the token format checker

2.59 Test unoconv

```
test_unoconv.php
```

This test performs some tests to validate the correctness of the unoconv functions

2.59.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.59.2 Loading helper function

```
require_once 'php/lib/unoconv.php';
```

This file contains the needed function used by the unit tests

2.59.3 Main class of this unit test

```
final class test_unoconv extends TestCase
```

2.59.4 Pdf test helper

```
private function test_pdf($input): void
```

This function tries to do the test with unoconv2pdf, checks that the input not exists and the output exists to validate the correctness of the function

- @input => the input file to use in the test

2.59.5 Txt test helper

```
private function test_txt($input): void
```

This function tries to do the test with unoconv2txt, checks that the input not exists and the output exists to validate the correctness of the function

- @input => the input file to use in the test

2.59.6 unoconv test

```
public function test_unoconv(): void
```

This test performs some tests to validate the correctness of the unoconv functions

2.59.7 ocr test

```
public function test_ocr(): void
```

This test performs some tests to validate the correctness of the ocr functions

2.59.8 commands test

```
public function test_commands(): void
```

This test performs some tests to validate the correctness of the commands functions

2.60 Test upload

```
test_upload.php
```

This test performs some tests to validate the correctness of the upload functions

2.60.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.60.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.60.3 Main class of this unit test

```
final class test_upload extends TestCase
```

2.60.4 Authtoken

```
public function test_authtoken(): array
```

This function execute the authtoken rest request, and must to get the json with the valid token to continue in the nexts unit tests

2.60.5 Addfiles

```
public function test_addfiles(array $json): array
```

This function execute the addfiles rest request, and must to get the json with the correct data

2.60.6 Delfiles

```
public function test_delfiles(array $json): void
```

This function execute the delfiles rest request, and must to get the json with the correct data

2.60.7 Human size

```
public function test_human_size(): void
```

This function only try to execute the get_human_size function

2.61 Test users

```
test_user.php
```

This test performs some tests to validate the correctness of the users functions

2.61.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.61.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.61.3 Main class of this unit test

```
final class test_user extends TestCase
```

2.61.4 Authtoken

```
public function test_authtoken(): array
```

This function execute the authtoken rest request, and must to get the json with the valid token to continue in the nexts unit tests

2.61.5 users test

```
public function test_user(array $json): void
```

This test performs some tests to validate the correctness of the users functions

2.61.6 browser test

```
public function test_browser(): void
```

This test performs some tests to validate the correctness of the browser functions

2.61.7 geoip test

```
public function test_geoip(): void
```

This test performs some tests to validate the correctness of the geoip functions

2.61.8 security test

```
public function test_security(): void
```

This test performs some tests to validate the correctness of the security functions

2.62 Test users

```
test_users.php
```

This test performs some tests to validate the correctness of the users functions

2.62.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.62.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.62.3 Main class of this unit test

```
final class test_users extends TestCase
```

2.62.4 days test

```
public function test_days(): void
```

This test performs some tests to validate the correctness of the days functions

2.62.5 users test

```
public function test_users(): void
```

This test performs some tests to validate the correctness of the users functions

2.62.6 groups test

```
public function test_groups(): void
```

This test performs some tests to validate the correctness of the groups functions

2.63 Test version

```
test_version.php
```

This test performs some tests to validate the correctness of the version related functions

2.63.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.63.2 Main class of this unit test

```
final class test_version extends TestCase
```

2.63.3 version test

```
public function test_version(): void
```

This function performs some tests to validate the correctness of the version related functions

2.64 Test web customers

```
test_web_customers.php
```

This test performs all actions of the customers app such as: create, insert, list, view, edit, update and delete, using the apache sapi interface

2.64.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.64.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.64.3 Main class of this unit test

```
final class test_web_customers extends TestCase
```

2.64.4 Authtoken

```
public function test_authtoken(): array
```

This function execute the authtoken rest request, and must to get the json with the valid token to continue in the nexts unit tests

2.64.5 Create

```
public function test_create(array $json): array
```

This function execute the creates rest request, and must to get the json with the layout without data

2.64.6 Insert

```
public function test_insert(array $json): array
```

This function execute the insert rest request, to do it send the json with the data that they want to insert and must to get the json with the status and the create_id.

2.64.7 List

```
public function test_list(array $json): array
```

This function execute the list rest request, to do it send the json with the search that they want to use in the list filter and receives the json with the data used to populate the table.

2.64.8 View

```
public function test_view(array $json): array
```

This function execute the view rest request, intended to retrieve the detail of the app with the layout needed to render it.

2.64.9 Edit

```
public function test_edit(array $json): array
```

This function execute the view rest request, intended to retrieve the detail of the app with the layout needed to render it.

2.64.10 Upgrade

```
public function test_update(array $json): array
```

This function execute the update rest request, to do it send the json with the data that they want to update and must to get the json with the status and the updated_id.

2.64.11 Delete

```
public function test_delete(array $json): void
```

This function execute the delete rest request, they must to get the json with the status and the deleted_id.

2.65 Test web invoices

```
test_web_invoices.php
```

This test performs all actions of the invoices app such as: create, insert, list, view, edit, update and delete, using the apache sapi interface

2.65.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.65.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.65.3 Main class of this unit test

```
final class test_web_invoices extends TestCase
```

2.65.4 Authtoken

```
public function test_authtoken(): array
```

This function executes the authtoken rest request, and must get the json with the valid token to continue in the next unit tests

2.65.5 Create

```
public function test_create(array $json): array
```

This function executes the create rest request, and must get the json with the layout without data

2.65.6 Insert

```
public function test_insert(array $json): array
```

This function executes the insert rest request, to do it send the json with the data that they want to insert and must get the json with the status and the create_id.

2.65.7 List

```
public function test_list(array $json): array
```

This function executes the list rest request, to do it send the json with the search that they want to use in the list filter and receives the json with the data used to populate the table.

2.65.8 View

```
public function test_view(array $json): array
```

This function execute the view rest request, intended to retrieve the detail of the app with the layout needed to render it.

2.65.9 Edit

```
public function test_edit(array $json): array
```

This function execute the view rest request, intended to retrieve the detail of the app with the layout needed to render it.

2.65.10 Upgrade

```
public function test_update(array $json): array
```

This function execute the update rest request, to do it send the json with the data that they want to update and must to get the json with the status and the updated_id.

2.65.11 Delete

```
public function test_delete(array $json): void
```

This function execute the delete rest request, they must to get the json with the status and the deleted_id.

2.66 Test web tokens (first part)

```
test_web_tokens.php
```

This test performs some part of the actions related with the tokens such as authtoken and checktoken, using the apache sapi interface

2.66.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.66.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.66.3 Main class of this unit test

```
final class test_web_tokens extends TestCase
```

2.66.4 Authtoken

```
public function test_authtoken(): array
```

This function execute the authtoken rest request, and must to get the json with the valid token to continue in the nexts unit tests

2.66.5 Checktoken

```
public function test_checktoken(array $json): array
```

This function execute the checktoken rest request, and must to get the json with the ok about the valid token that you are trying to check

2.66.6 Deauthtoken

```
public function test_deauthtoken(array $json): array
```

This function execute the deauthtoken rest request, and must to get the json with the ok about the valid token that you are deauthenticate

2.66.7 Checktoken ko

```
public function test_checktoken_ko(array $json): void
```

This function execute the checktoken rest request, and must to get the json with the ko about the invalid token that you are trying to check

2.67 Test XML

```
test_xml.php
```

This test performs some tests to validate the correctness of the xml related functions

2.67.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.67.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.67.3 Main class of this unit test

```
final class test_xml extends TestCase
```

2.67.4 XML test

```
public function test_xml(): void
```

This function performs some tests to validate the correctness of the xml related functions

2.68 Test YAML

```
test_yaml.php
```

This test performs some tests to validate the correctness of the yaml related functions

2.68.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.68.2 Main class of this unit test

```
final class test_yaml extends TestCase
```

2.68.3 YAML test

```
public function test_yaml(): void
```

This function performs some tests to validate the correctness of the yaml related functions

2.69 Test zindex

```
test_zindex.php
```

This test performs some tests to validate the correctness of the zindex functions

2.69.1 Importing namespaces

```
use PHPUnit\Framework\TestCase;
```

2.69.2 Loading helper function

```
require_once 'lib/utestlib.php';
```

This file contains the needed function used by the unit tests

2.69.3 Main class of this unit test

```
final class test_zindex extends TestCase
```

2.69.4 zindex test

```
public function test_zindex(): void
```

This test performs some tests to validate the correctness of the zindex functions