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# **moban Documentation**

***Release 0.3.10***

**Onni Software Ltd.**

**Feb 15, 2019**



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**Issues** <http://github.com/moremoban/moban/issues>

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**moban** brings the high performance template engine (JINJA2) for web into static text generation. It is used in pyexcel project to keep documentation consistent across the documentations of individual libraries.



# CHAPTER 1

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## Installation

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You can install it via pip:

```
$ pip install moban
```

or clone it and install it:

```
$ git clone http://github.com/moremoban/moban.git
$ cd moban
$ python setup.py install
```





## CHAPTER 2

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### Quick start

---

```
$ export HELLO="world"
$ moban "{{HELLO}}"
Warning: Both data.yml and ../../moban.cd/data.yml does not exist
Warning: Attempting to use environment vars as data...
Templating {{HELLO}}... to moban.output
Templated 1 file.
$ cat moban.output
world
```

Or simply

```
$ HELLO="world" moban "{{HELLO}}"
```

A bit formal example:

```
$ moban -c data.yml -t my.template
$ cat moban.output
```

Given data.yml as:

```
hello: world
```

and my.template as:

```
{{hello}}
```

moban.output will contain:

```
world
```

Please note that data.yml will take precedence over environment variables.

[the tutorial](#) has more use cases.



## CHAPTER 3

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### Usage

---

```
usage: moban [-h] [-cd CONFIGURATION_DIR] [-c CONFIGURATION]
             [-td [TEMPLATE_DIR [TEMPLATE_DIR ...]]] [-t TEMPLATE] [-o OUTPUT]
             [-f] [-m MOBANFILE]
             [template]
```

Yet another jinja2 cli **command for** static text generation

positional arguments:

template                    string templates

optional arguments:

-h, --help                    show this **help** message and **exit**

-cd CONFIGURATION\_DIR, --configuration\_dir CONFIGURATION\_DIR  
                              the directory **for** configuration file lookup

-c CONFIGURATION, --configuration CONFIGURATION  
                              the dictionary file. **if** not present, moban  
                              will try to use environment vars as data

-td [TEMPLATE\_DIR [TEMPLATE\_DIR ...]], --template\_dir [TEMPLATE\_DIR [TEMPLATE\_DIR ..  
→.]]  
                              the directories **for** template file lookup

-t TEMPLATE, --template TEMPLATE  
                              the template file. this overrides any targets  
                              defined in a custom moban file

-o OUTPUT, --output OUTPUT  
                              the output file

--template\_type TEMPLATE\_TYPE  
                              the template type, default is jinja2

-f                             force moban to template all files despite of  
                              .moban.hashes

--exit-code                   tell moban to change **exit** code

-m MOBANFILE, --mobanfile MOBANFILE  
                              custom moban file

## 3.1 Exit codes

By default:

- 0 : no error
- 1 : error occurred

With *-exit-code*:

- 0 : no changes
- 1 : has changes
- 2 : error occurred

## CHAPTER 4

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### Built-in Filters

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#### 4.1 split\_length

It breaks down the given string into a fixed length paragraph. Here is the syntax:

```
{% for line in your_string | split_length(your_line_with) %}
{{line}}
{% endfor %}
```

It is used to keep changelog formatted in [CHANGELOG.rst.jjs](#) in [pypi-mobans](#) project

#### 4.2 github\_expand

It expands simple hashtags into github issues. Here is the syntax:

```
{{ your_github_string | github_expand }}
```

It makes it easy to mention github reference in change log in all projects. Here is the place it is applied: [CHANGELOG.rst.jjs](#) in [pypi-mobans](#) project

Here is Grammar in the changelog.yml:

```
=====
Syntax      Meaning
=====
`#1`        moban issues 1
`PR#1`      moban pull request 1
`pyexcel#1` other project issues 1
`pyexcel#PR#1` other project pull request 1
=====
```

More details can be found in [moban's changelog.yml](#)

## 4.3 *repr*

Returns a single quoted string in the templated file

#### 5.1 *exists*

Test if a file exists or not





Please clone the moban repository as the data mentioned in the tutorial are stored in examples folder.

## 6.1 Level 1 Jinja2 on command line

*moban* reads data in yaml format, renders a template file in jinja2 format and outputs it to *moban.output*. By default, it looks for *data.yml* as its data file, but it will fallback to environment variables if a data file cannot be found

### 6.1.1 Evaluation

Please clone the moban project and install moban:

```
$ git clone https://github.com/chfw/moban.git $ cd moban $ python setup.py install
```

Then go to *docs/level-1-jinja2-cli*. here are different commands to evaluate it:

```
moban -c data.yml -t a.template
```

'moban.output' is the generated file.

```
moban -c data.yml -t a.template -o my.output
```

*-o my.output* will override the default name

---

**Note:** You may simply type the short form:

```
moban -t a.template
```

because moban looks for *data.yml* by default

---

## 6.2 Level 2: template inheritance

Template inheritance is a feature in Jinja2. This example show how it was done. *a.template* inherits *base.jj2*, which is located in *.moban.td*, the default template directory.

### 6.2.1 Evaluation

Please go to *docs/level-2-template-inheritance*, here is the command to launch it:

```
moban -c data.yaml -t a.template
```

*a.template* inherits *.moban.td/base.jj2*.

## 6.3 Level 3: data override

What *moban* brings on the table is data inheritance by introducing *overrides* key word in the yaml file:

```
overrides: data.base.yaml
....
```

And *.moban.cd* is the default directory where the base data file can be placed.

### 6.3.1 Evaluation

Please change directory to *docs/level-3-data-override* directory.

In this example, *data.yaml* overrides *.moban.cd/data.base.yaml*, here is the command to launch it:

```
moban -c data.yaml -t a.template
```

'moban.output' is the generated file:

```
=====header=====
world
shijie
=====footer=====
```

## 6.4 Level 4: single command

If you use *moban* regularly and operates over a number of files, you may consider write a *.moban.yml*, which is a mini script file that commands *moban* to iterate through a number of files

### 6.4.1 Evaluation

Please go to *docs/level-4-single-command* directory.

Here is the *.moban.yml*, which replaces the command in level 3:

```
targets:
  - a.output: a.template
```

where *targets* should lead an array of dictionaries.

Here is how to launch it .. code-block:: bash

```
moban
```

‘a.output’ is the generated file:

```
=====header=====

world

shijie

=====footer=====
```

## 6.5 Level 5: custom configuration

With *.moban.yml*, you can even change default data directory *.moban.cd* and default template directory *.moan.td*. Read this example:

```
configuration:
  configuration_dir: 'custom-config'
  template_dir:
    - custom-templates
    - cool-templates
    - '.'
targets:
  - a.output: a.template
```

where *configuration* lead a dictionary of key words:

1. *configuration\_dir* - the new configuration directory
2. *template\_dir* - an array of template directories

### 6.5.1 Evaluation

Please go to *docs/level-5-custom-configuration* directory.

Here is the command to launch it:

```
moban
```

‘a.output’ is the generated file:

```
=====header=====

world

shijie
```

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```
this demonstrations jinja2's include statement

=====footer=====
```

## 6.6 Level 6: Complex Configuration

On top of level 5, you could have a common template, where data and output change. In the following example:

```
configuration:
  configuration_dir: 'custom-config'
  template_dir:
    - custom-templates
    - cool-templates
    - '.'
  template: a.template
targets:
  - output: a.output
    configuration: data.yml
  - output: a.output2
    configuration: data2.yml
```

where *template* under *configuration* needs a template file, which will be a default template across *targets*. And in this example, the expand form of *targets* is illustrated:

```
{ "output": 'an output file', "configuration": 'data file', "template": "the template file"
}
```

### 6.6.1 Evaluation

Please go to *docs/level-6-complex-configuration* directory.

Here is the command to launch it:

```
moban
```

'a.output' is the generated file:

```
=====header=====

world

shijie

this demonstrations jinja2's include statement

=====footer=====
```

*a.output2* is:

```
=====header=====

world2
```

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```
shijie

this demonstrations jinja2's include statement

=====footer=====
```

## 6.7 Level 7: Custom jinja filters, tests and globals

Level 7 example demonstrates advanced plugin capabilities of moban. The following moban file had *plugin\_dir* specified:

```
configuration:
  template_dir:
    - my-templates
  plugin_dir:
    - custom-jj2-plugin
  configuration: data.yml
targets:
  - filter.output: filter.jj2
  - test.output: test.jj2
```

Where *custom-jj2-plugin* is a directory holding all jinja2 filters, tests and globals. Under it, there are 4 files:

```
__init__.py    filter.py    test.py    global.py
```

It is very important to have *\_\_init\_\_.py*, otherwise, it will NOT work. Other three files are named to show case the feature. You can choose whichever name you prefer, as long as you and your team could make sense of the names.

### 6.7.1 Evaluation

Please go to *docs/level-7-use-custom-jinja2-filter-test-n-global* directory,

Here is the command to launch it:

```
$ moban
Templating filter.jj2 to filter.output
Templating test.jj2 to test.output
Templating global.jj2 to global.output
Templated 3 files.
Everything is up to date!
```

Please examine individual template and its associated plugin for more details.

## 6.8 Level 8: Pass a folder full of templates

We already know that in moban file, you can pass on a dictionary in targets section, and it apply the template. The assumption was that the template parameter is a file. Now, what if the parameter is a directory?

When you pass a directory with full of templates, moban will also assume the target is a directory and will generate the output there. When saving the files, it will remove its file suffices automatically.

## 6.9 level 9: moban dependency as pypi package

Why not enable template reuse? Once a template is written somewhere by somebody, as long as it is good and useful, it is always to reuse it, isn't it? DRY principle kicks in.

Now with moban, it is possible to package up your mobans/templates into a pypi package and distribute it to the world of moban.

Here are the sample file:

```
requires:
  - pypi-mobans
configuration:
  template_dir:
    - "pypi-mobans:templates"
  configuration: config.yml
targets:
  - mytravis.yml: travis.yml.jj2
  - test.txt: demo.txt.jj2
```

where *requires* lead to a list of pypi packages. The short syntax is:

```
requires:
  - python-package-name
```

When you refer to it in configuration section, here is the syntax:

```
configuration:
  - template_dir:
    - "python-package-name:relative-folder-inside-the-package"
```

Note: when you do not have relative directory, please keep semi-colon:

```
configuration:
  template_dir:
    - "python-package-name:"
```

### 6.9.1 Alternative syntax

The alternative syntax is:

```
requires:
  - type: pypi
    name: pypi-mobans
...
```

## 6.10 level 10: moban dependency as git repo

Since the support to have a pypi package as dependency, the pro user of moban find it more useful to have git repo so that the changes to static content could get propagate as it happens using git push and git pull.

For now, github.com, gitlab.com and bitbucket.com are supported. Pull request is welcome to add or improve this feature.

Here are the sample file:

```
requires:
  - https://github.com/moremoban/pypi-mobans
configuration:
  template_dir:
    - "pypi-mobans:templates"
    - local
  configuration: config.yml
targets:
  - mytravis.yml: travis.yml.jj2
  - test.txt: demo.txt.jj2
```

where *requires* lead to a list of pypi packages. And when you refer to it, as in level-9 section, please use “pypi-mobans:”

### 6.10.1 Alternative syntax when submodule exists

The alternative syntax is:

```
requires:
  - type: git
    url: https://github.com/your-git-url
    submodule: true
    branch: your_choice_or_default_branch_if_not_specified
...
```

## 6.11 Level 11: use handlebars

moban is extensible via lml. Charlie Liu through Google Code-in 2018 has kindly contributed moban-handlebars plugin.

### 6.11.1 Evaluation

Please go to *docs/level-11-use-handlebars* directory. You will have to:

```
$ pip install moban-handlebars
```

Here is the *.moban.yml*, which replaces *jj2* with handlebars files in level 4:

```
targets:
  - a.output: a.template.handlebars
  - b.output: base.hbs
```

where *targets* should lead an array of dictionaries, *requires* installs moban-handlebars extension. You can provide file suffixes: “.handlebars” or “.hbs” to your handlebars template.

Here is how to launch it .. code-block:: bash

```
moban
```

In practice, the following use cases were found interesting to go along with.

## 6.12 Misc 1: copying templates

With *.moban.yml*, you can copy templates to your destination.

Please be aware that, your templates and template folder have to be inside declared template folders. It does not copy any file or folder.

Here is example moban file for copying:

```
configuration:
  template_dir:
    - template-sources
copy:
  - simple.file.copy: file-in-template-sources-folder.txt
  - "misc-1-copying/can-create-folder/if-not-exists.txt": file-in-template-sources-
↪folder.txt
  - "test-dir": dir-for-copying
  - "test-recursive-dir": dir-for-recursive-copying/**
```

template copy does:

1. copies any template inside pre-declared template directory to anywhere. moban will create directory if needed.
1. copies any directory to anywhere. If “\*\*” is followed, moban attempts to do recursive copying.

For more complex use case, please look at [its usage in pyexcel project](#)



## 7.1 Development guide

### 7.1.1 Jinja2 extensions for Moban

Since version 0.2, mobanfile supports an extra field *plugin\_dir*, along with *template\_dir*. When you put your own jinja2 filters, tests and globals in your moban repo, you can let moban know about them via this keyword.

Importantly, you have to have `__init__.py` file in your *plugin\_dir*. Otherwise, your plugins will NOT be loaded.

#### Jinja2 Filter

#### Jinja2 Test

#### Jinja2 Globals

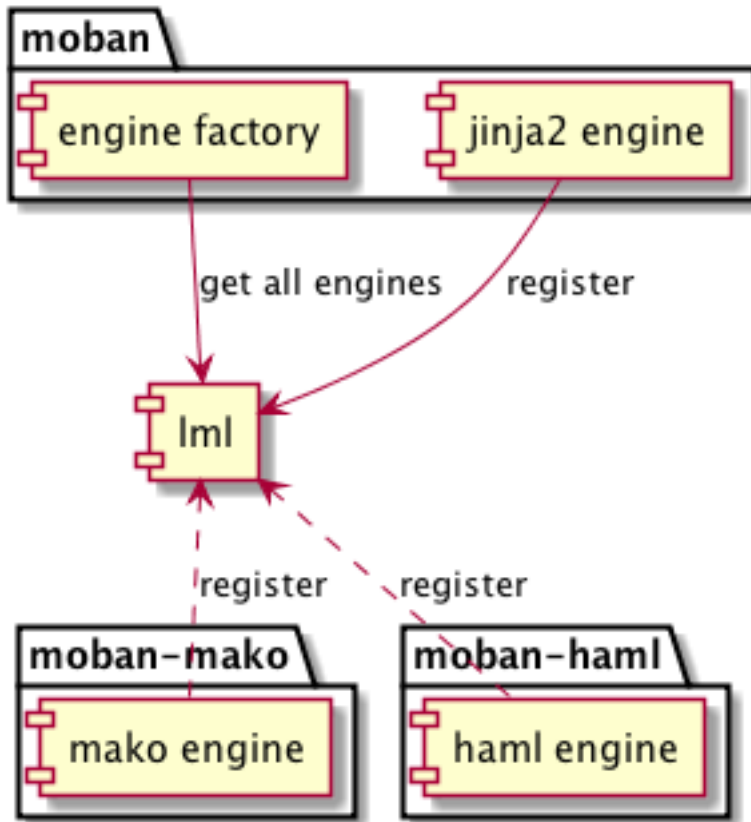
```
@patch("moban.plugins.PluginManager.load_me_now", return_value=FakeEngine)
def test_default_mako_type(_): # fake mako
    engine = ENGINES.get_engine("fake", [], "")
    assert engine.engine_cls.__name__ == "FakeEngine"

@raises(exceptions.NoThirdPartyEngine)
def test_unknown_template_type():
    ENGINES.get_engine("unknown_template_type", [], "")
```

It is possible to write an installable package including your own jinja2 filters, tests and globals. Please email me for more details.

### 7.1.2 Template engine extension for Moban

moban version 0.2 started using `lml` to employ loose couple plugins. Other template engines, such as marko, haml can be plugged into moban seamless.



In order plugin other template engines, it is to write a lml plugin. The following is an example starting point for any template engine.

```
@PluginInfo(
    constants.TEMPLATE_ENGINE_EXTENSION, tags=["file", "extensions", "for", "your",
    ↪ "template"]
)
class Engine(object):
    def __init__(self, template_dirs):
        """
        A list template directories will be given to your engine class
        """

    def get_template(self, template_file):
        """
        Given a relative path to your template file, please return a templatable_
    ↪ thing that does
        the templating function in next function below
        """

    def apply_template(self, template, data, output):
        """
```

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```
    Given the template object from `get_template` function, and data as python_
↪dictionary,
    and output as intended output file, please return "utf-8" encoded string.
    """
```

After you will have finished the engine plugin, you can either place it in *plugin\_dir* in order to get it loaded, or make an installable python package. In the latter case, please refer to [yehua](#): doing that in less than 5 minutes.



### 8.1 0.3.10 - 3.2.2019

#### 8.1.1 Added

1. [#174](#): Store git cache in XDG\_CACHE\_DIR
2. [#107](#): Add -v to show current moban version
3. [#164](#): support additional data formats

#### 8.1.2 Updated

1. [#178](#): UnboundLocalError: local variable 'target' referenced before assignment
2. [#169](#): uses GitPython instead of barebone git commands

### 8.2 0.3.9 - 18-1-2019

#### 8.2.1 Updated

1. [#90](#): allow adding extra jinja2 extensions. *jinja2.ext.do*, *jinja2.ext.loopcontrols* are included by default. what's more, any other template engine are eligible for extension additions.
2. [#158](#): Empty file `base_engine.py` is finally removed

## 8.3 0.3.8 - 12-1-2019

### 8.3.1 Updated

1. #141: disable file permissions copy feature and not to check file permission changes on windows.
2. #154: introduce first ever positional argument for string base template.
3. #157: the exit code behavior changed. for backward compactibility please use `--exit-code`. Otherwise, moban will not tell if there is any changes.

## 8.4 0.3.7 - 6-1-2019

### 8.4.1 Updated

1. #146: added a low-setup usage mode via environment variables to moban
2. #148: include test related files in the package for package validation when distributing via linux system, i.e. OpenSuse

## 8.5 0.3.6 - 30-12-2018

### 8.5.1 Updated

1. #143: moban shall report permission error and continue the rest of the copying task.
2. #122: Since 0.3.6, moban is tested on windows and macos too, using azure build pipelines. It is already tested extensively on travis-ci on linux os.

## 8.6 0.3.5 - 10-12-2018

### 8.6.1 Updated

1. #37: moban will report line number where the value is empty and the name of mobanfile. Switch from pyyaml to ruamel.yaml.

## 8.7 0.3.4.1 - 28-11-2018

### 8.7.1 Updated

1. #137: missing contributors.rst file

## 8.8 0.3.4 - 18-11-2018

### 8.8.1 Added

1. global variables to store the target and template file names in the jinja2 engine
2. moban-handlebars is tested to work well with this version and above

### 8.8.2 Updated

1. Template engine interface has been clarified and documented

## 8.9 0.3.3 - 05-11-2018

### 8.9.1 Added

1. alternative and expanded syntax for requires, so as to accomodate github submodule recursive

## 8.10 0.3.2 - 04-11-2018

### 8.10.1 Added

1. *requires* shall support configuration dirs. In other words, configuration file could be stored in python package or git repository.

## 8.11 0.3.1 - 02-11-2018

### 8.11.1 Added

1. [#97](#): requires will clone a repo if given. Note: only github, gitlab, bitbucket for now

## 8.12 0.3.0 - 27-18-2018

### 8.12.1 Added

1. [#89](#): Install pypi-hosted mobans through requires syntax

### 8.12.2 Updated

1. [#96](#): Fix for FileNotFoundError for plugins
2. various documentation updates

### 8.12.3 Removed

1. #88: removed python 2.6 support
2. removed python 3.3 support

## 8.13 0.2.4 - 14-07-2018

### 8.13.1 Added

1. #32: option 1 copy a directory without its subdirectories.
2. #30: command line template option is ignore when a moban file is present

## 8.14 0.2.3 - 10-07-2018

### 8.14.1 Added

1. #76: running moban as a module from python command
2. #32: copy a directory recursively
3. #33: template all files in a directory

## 8.15 0.2.2 - 16-06-2018

### 8.15.1 Added

1. #31: create directory if missing during copying

### 8.15.2 Updated

1. #28: if a template has been copied once before, it is skipped in the next moban call

## 8.16 0.2.1 - 13-06-2018

### 8.16.1 Updated

1. templates using the same template engine will be templated as a group
2. update lml dependency to 0.0.3



## 8.17 0.2.0 - 11-06-2018

### 8.17.1 Added

1. #18: file exists test
2. #23: custom jinja plugins
3. #26: repr filter
4. #47: allow the expansion of template engine
5. #58: allow template type per template

### 8.17.2 Updated

1. #34: fix plural message if single file is processed

## 8.18 0.1.4 - 29-May-2018

### 8.18.1 Updated

1. #21: targets become optional
2. #19: transfer symlink's target file's file permission under unix/linux systems
3. #16: introduce copy key word in mobanfile

## 8.19 0.1.3 - 12-Mar-2018

### 8.19.1 Updated

1. handle unicode on python 2

## 8.20 0.1.2 - 10-Jan-2018

### 8.20.1 Added

1. #13: strip off new lines in the templated file

## 8.21 0.1.1 - 08-Jan-2018

### 8.21.1 Added

1. the ability to present a long text as multi-line paragraph with a custom upper limit
2. speical filter expand github references: pull request and issues

3. [#15](#): fix templating syntax to enable python 2.6

## 8.22 0.1.0 - 19-Dec-2017

### 8.22.1 Added

1. [#14](#), provide shell exit code

## 8.23 0.0.9 - 24-Nov-2017

### 8.23.1 Added

1. [#11](#), recognize `.moban.yaml` as well as `.moban.yml`.
2. [#9](#), preserve file permissions of the source template.
3. `-m` option is added to allow you to specify a custom moban file. kinda related to issue 11.

### 8.23.2 Updated

1. use explicit version name: `moban_file_spec_version` so that `version` can be used by users. [#10](#) Please note: `moban_file_spec_version` is reserved for future file spec upgrade. For now, all files are assumed to be '1.0'. When there comes a new version i.e. 2.0, new moban file based on 2.0 will have to include `'moban_file_spec_version: 2.0'`

## 8.24 0.0.8 - 18-Nov-2017

### 8.24.1 Added

1. [#8](#), verify the existence of custom template and configuration directories. default `.moban.td`, `.moban.cd` are ignored if they do not exist.

### 8.24.2 Updated

1. Colorize error messages and processing messages. `crayons` become a dependency.

## 8.25 0.0.7 - 19-Jul-2017

### 8.25.1 Added

1. Bring the visibility of environment variable into jinja2 templating process: [#7](#)

## 8.26 0.0.6 - 16-Jun-2017

### 8.26.1 Added

1. added '-f' flag to force moban to template all files despite of .moban.hashes

### 8.26.2 Updated

1. moban will not template target file in the situation where the changes occurred in target file than in the source: the template file + the data configuration after moban has been applied. This new release will remove the change during mobanization process.

## 8.27 0.0.5 - 17-Mar-2017

### 8.27.1 Added

1. Create a default hash store when processing a moban file. It will save unnecessary file write to the disc if the rendered content is not changed.
2. Added summary reports

## 8.28 0.0.4 - 11-May-2016

### 8.28.1 Updated

1. Bug fix #5, should detect duplicated targets in *.moban.yml* file.

## 8.29 0.0.3 - 09-May-2016

### 8.29.1 Updated

1. Bug fix #4, keep trailing new lines

## 8.30 0.0.2 - 27-Apr-2016

### 8.30.1 Updated

1. Bug fix #1, failed to save utf-8 characters

## 8.31 0.0.1 - 23-Mar-2016

### 8.31.1 Added

1. Initial release

## CHAPTER 9

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### Indices and tables

---

- `genindex`
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