

# **Augeas Extension for Config5**

**Stefan Walter**

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# Chapter 1. Introduction

## 1.1. Overview

The Augeas Extension provides the `augeas` change which adds the capability to Config5 to modify configuration files via Augeas (see <http://augeas.net> [<http://augeas.net/>]). It operates only on existing files and complements the built-in `copy`, `truncate` and `append` changes which manage the complete content of a file.

Using the `augeas` change it is possible modify single values in structured configuration files that are supported by Augeas. All values can be processed with substitutions.

To use this extension it is recommended to study the functionality of Augeas and **augtool**.

## 1.2. Examples

The following examples illustrate the basic usage of this extension.

### 1.2.1. Change Grub Timeout

The following sample spec file shows how to set the grub default timeout using the `set` action of the `augeas` change:

```
RedHatEnterpriseServer:
  augeas set /files/etc/grub.conf/timeout 10
```

The path `/files/etc/grub.conf/timeout` is the path of the option to set in the `augeas` tree.

### 1.2.2. Hide Grub Menu

To hide the grub boot menu the `insert` action of the `augeas` change can be used as shown in the following sample spec file:

```
RedHatEnterpriseServer:
  augeas insert hiddenmenu before /files/etc/grub.conf/password
```

This adds a new `augeas` node for the grub option `hiddenmenu` in the tree before the given path.

### 1.2.3. Show Grub Menu

To show the grub boot menu the grub `hiddenmenu` option can be removed with the `remove` action of the `augeas` change as shown in the following sample spec file:

```
RedHatEnterpriseWorkstation:
  augeas remove /files/etc/grub.conf/hiddenmenu
```

### 1.2.4. Replace OS Titles in Grub

A Windows installation will typically get the title `Other` when grub is installed. The following sample spec file shows how to replace this to `Windows`:

```
RedHatEnterpriseWorkstation:
  augeas replace /files/etc/grub.conf/title[*] Other Windows
```

---

# Chapter 2. Installation and Customization

## 2.1. Installation

This extension is contained in the archive `extensions/augeas.tgz` which is part of the Config5 distribution. Simply extract this archive in the `deploy` directory.

### 2.1.1. Files

The following files are included in the archive:

- `etc/extensions.d/augeas.pl`
- `lib/perl/Config5/Change/Extensions/Augeas.pm`
- `lib/perl/Config5/Action/Extensions/Augeas.pm`

## 2.2. Settings

This extension does not have any configurable settings.

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# Chapter 3. Changes

## 3.1. Changes

This extension provides the `augeas` change which has four distinct actions: `set`, `remove`, `insert` and `replace`. These actions directly map to functions of the Augeas API.

### 3.1.1. augeas set

The `set` action of the `augeas` change will set the value of a given node in the Augeas tree.

Synopsis	<code>augeas [-bntT] set <i>path</i> <i>value</i></code>
----------	--

The parameter `path` is the path of the node in the Augeas tree, `value` is the value to set it to. If the node does not exist it will be created.

If either contains a white space it must be quoted. Substitutions passed down from the class definition are applied to `value` unless the `-b` flag is used.

#### Example 3.1. Set

```
sample:
  augeas set /files/etc/sysconfig/network-scripts/ifcfg-eth0/IPV6ADDR "[% info_ip6 %]"
```

### 3.1.2. augeas remove

The `remove` action of the `augeas` change will remove all nodes in the tree that match a given path in the Augeas tree.

Synopsis	<code>augeas [-ntT] remove <i>path</i></code>
----------	---

The parameter `path` is the path of the node to remove in the tree to remove. It may be a path pattern to remove multiple nodes.

#### Example 3.2. Remove

```
sample:
  augeas remove /files/etc/grub.conf/*/savedefault
```

### 3.1.3. augeas insert

The `insert` action of the `augeas` change will insert a node before or after a given path in the Augeas tree.

Synopsis	<code>augeas [-ntT] insert <i>name</i> before after <i>path</i></code>
----------	--

The keyword `before` and `after` indicate if the node is created immediately before or after the node specified by the `path` parameter. To insert multiple nodes `path` may be specified as a path pattern. The nodes will all be named as specified with the parameter `name`.

If either contains a white space it must be quoted.

#### Example 3.3. Insert

```
sample:
  augeas insert savedefault before /files/etc/grub.conf/*/root
  augeas insert savedefault before /files/etc/grub.conf/*/rootnoverify
```

### 3.1.4. augeas replace

The `replace` action of the `augeas` change will replace the value of the node with a given path in the Augeas tree.

Synopsis	<code>augeas [-bntT] replace <i>path</i> <i>value</i></code>
----------	--

The parameter `path` is the path of the node to replace. It may be a path pattern to replace multiple nodes. The value of the nodes will be set to the parameter `value`.

If either contains a white space it must be quoted. Substitutions passed down from the class definition are applied to `value` unless the `-b` flag is used.

#### Example 3.4. Replace

```
sample:
  replace /files/etc/default/useradd/HOME /home /local/home
```

## 3.2. Configuration Application

This extension is only loaded if an `augeas` change is used.



### Important

Loading the Augeas Extension may take a second or two because Augeas loads all of its lenses on load.

### 3.2.1. Phase

The `augeas` changes are applied in the `configure` phase.

### 3.2.2. Order

All `augeas` changes of a pass are applied in the order the changes are encountered during the parsing of the `spec` files.

### 3.2.3. Application

All `augeas` changes of a pass are applied in one commit.

### 3.2.4. Trigger Flag

The trigger flag for triggered changes is set when an `augeas` change needs to be applied.

### 3.2.5. Root Directory

All `augeas` changes are applied relative to the path of the root system information item.



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# Appendix A. Error Messages

## A.1. Configuration Data Errors

Configuration data errors are fatal, no changes will be done to the system.

Invalid action '*...*' in ...

The action must be `set`, `insert`, `remove` or `replace`.

Invalid location '*...*' in ...

The location for an insert action must be `before` or `after`.

## A.2. Configuration Application Errors

The following errors are reported for changes as they are applied but do not interrupt the application of other changes.

Failed to *action* path *path* in ...

The change could not be registered with the Augeas system. Typically the specified path does not exist in the Augeas tree.

Augeas failed to commit changes

The commit of one or more changes to the filesystem failed.