Edit Extension for Config5

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Chapter 1. Introduction

1.1. Overview

The Edit Extension provides the `edit` change which adds simple line editing capabilities for text files to Config5. 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 edit change it is possible to add, remove or replace lines to a text file. The `remove` and `replace` actions support perl regular expressions for matching, the replaced line of a `replace` action is a constant string though. All strings can be processed with substitutions.

Typical files that are better modified with edit rather than full copy are for instance:

- `/etc/fstab`

- `/etc/passwd`

- `/etc/shadow`

The `edit` change is intended for unstructured text files where the line order does not matter. The Augeas Extension for Config5 is more suited for structured text files such as XML or INI files.

1.2. Examples

The following examples illustrate the basic usage of this extension.

1.2.1. Append Mount

Additional mounts can easily be added to `/etc/fstab` with `edit add`. A sample `spec` file for adding an NFS mount could look like this:

```
RedHatEnterpriseServer:
  edit add /etc/fstab "server:/share /mnt nfs hard,intr,bg,rw 0 0"
```

If the line is already present in /etc/fstab (it must exactly match the quoted line in the `spec` file, including any whitespace) it will not be added again.

1.2.2. Replace User `root` by `toor`

Changing the name user `root` to `toor` requires a line replacement in `/etc/passwd` and a modification of `/etc/shadow` which can be achieved with the following sample `spec` file:

```
RedHatEnterpriseServer:
  edit replace /etc/passwd ^root: toor:x:0:0:toor:/root:/bin/bash
  edit modify /etc/shadow ^root:(.*) toor:$1
```

1.2.3. Disable Grub Spash Screen

The splash screen of grub can easily be disabled by removing one line in `/boot/grub/grub.conf` as shown in the following sample `spec` file:

```
RedHatEnterpriseWorkstation:
  edit remove /boot/grub/grub.conf splashimage=.*
```

Chapter 2. Installation and Customization

2.1. Installation

This extension is contained in the archive `extensions/edit.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/edit.pl`

- `lib/perl/Config5/Change/Extensions/Edit.pm`

- `lib/perl/Config5/Action/Extensions/Edit.pm`

2.2. Settings

This extension does not have any configurable settings.

2.3. Configuration

In the default configuration all edit changes for the same file must be in the same feature. To change this behaviour add the following line to a file ending in `.pl` in the folder `deploy/etc/custom.d`:

```
$self->{change}->{phases}->{edit} = 'configure';
```

Chapter 3. Changes

3.1. Changes

This extension provides the `edit` change which has four distinct actions: `add`, `remove`, `replace` and `modify`.

3.1.1. edit add

The `add` action of the `edit` change will append a line if it is not present in the file yet.

Synopsis	edit [**-nbtT**] add *file line* [*regexp*]

The parameter *line* is the complete line that is appended if not present in the file yet. If the optional parameter regexp is present then the line is added if any line in the file matches the regular expression *regexp*. If either contains a white space it must be quoted. Substitutions passed down from the class definition are applied to both *line* and *regexp* unless the `-b` flag is used.

Example 3.1. Add Line

```
sample:
   edit add /etc/hosts "8.8.8.8 google-public-dns-a.google.com"
```

3.1.2. edit remove

The `remove` action of the `edit` change will remove any line that matches a regular expression.

Synopsis	edit [**-nbtT**] remove *file regexp*

The parameter *regexp* is the regular expression used for matching lines to be removed from the file. If the regular expression contains a white space it must be quoted. Substitutions passed down from the class definition are applied to *regexp* unless the `-b` flag is used.

Example 3.2. Remove Line

```
sample:
   edit remove /etc/my.cnf ^symbolic-links=0
```

3.1.3. edit replace

The `replace` action of the `edit` change will replace any line that matches a regular expression with a complete new line.

Synopsis	edit [**-nbtT**] replace *file regexp line*

The parameter *regexp* is the regular expression used for matching lines in the file to be replaced, the parameter *line* is the complete line that is used as replacement. If either contains a white space it must be quoted. Substitutions passed down from the class definition are applied to *regexp* and *line* unless the `-b` flag is used.

Example 3.3. Replace Line

```
sample:
   edit replace /etc/hosts ^127.0.0.1 "127.0.0.1 localhost [% info_fqhn %]"
```

3.1.4. edit modify

The `modify` action of the `edit` change will replace any part of a line that matches a regular expression.

Synopsis	edit [**-nbtT**] modify *file regexp replacement*

The parameter *regexp* is the regular expression used for matching lines to be modified in the file. The parameter *replacement* is the string that will replace the part of a line that matches *regexp*. If either contains a white space it must be quoted. Characters that are special in perl regular expressions and the forward slash (/) must be escaped with a backslash (\). Capture buffers ($1, $2, etc.) can be used in *replacement*.

Substitutions passed down from the class definition are applied to *regexp* and *replacement* unless the `-b` flag is used.

Example 3.4. Modify Line

```
sample:
   edit modify /etc/shadow ^root:(.*) toor:$1
```

3.2. Configuration Application

3.2.1. Phase

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

3.2.2. Order

All `edit` changes of a pass are ordered according to the *alphabetical order* of the file path and applied in this order.

3.2.3. Application

All changes for the same file are accumulated in each pass and written as a whole.

3.2.4. Trigger Flag

The the trigger flag for triggered changes is set when a line is effectively added, removed or replaced in a file.

3.2.5. Root Directory

This extension supports changed root directories, i.e., setting the root system information item to something other than `/`.

3.3. Additional Functionality

3.3.1. Reports

Files modified with edit changes are included in the output of **config5 --report files**.

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 `add`, `remove` or `replace`.
Invalid regular expression '…' in …	The regular expression of a `remove` or `replace` action is invalid.

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 … line in '*path*'	The line could not be added, removed or replaced in the referenced file. This error is typically reported if a file does not exist.