

## Foreman - Bug #13574

### Plugins with Setting subclasses raise super: no superclass method `load\_defaults' error

02/05/2016 05:15 AM - Dominic Cleal

<b>Status:</b>	Closed	
<b>Priority:</b>	Normal	
<b>Assignee:</b>	Dominic Cleal	
<b>Category:</b>	Plugin integration	
<b>Target version:</b>	1.11.0	
<b>Difficulty:</b>		<b>Fixed in Releases:</b>
<b>Triaged:</b>		<b>Found in Releases:</b> Nightly
<b>Bugzilla link:</b>		<b>Red Hat JIRA:</b>
<b>Pull request:</b>	<a href="https://github.com/foreman/foreman/pull/3159">https://github.com/foreman/foreman/pull/3159</a>	

#### Description

Plugins that add a Setting subclass and load it through an initialiser are failing to run tests, raising the following error during startup:

```
21:11:54 + bundle exec rake jenkins:unit TESTOPTS=-v
21:12:00 rm -rf jenkins/reports/unit/
21:12:03 DEPRECATION WARNING: You are using a deprecated behavior, it will be removed in version 1
.13,
21:12:03 Initializing plugins using :after => :finish_hook in your engine is deprecated. It delays
the load of some assets in Sprockets. If you are the plugin author, please change your plugin eng
ine initializer to use :before => :finisher_hook or after_initialize. Affected initializer name i
s foreman_bootdisk.register_plugin. (called from each at /var/lib/workspace/workspace/test_plugin_
matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/config/initializers/assets_paths.rb:10)
21:12:03 rake aborted!
21:12:03 NoMethodError: super: no superclass method `load_defaults' for #<Class:0x00000002d13e48>
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activerecord-4.1.5/lib/active_re
cord/dynamic_matchers.rb:26:in `method_missing'
21:12:03 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/fore
man/app/models/setting/general.rb:5:in `load_defaults'
21:12:03 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/fore
man/config/initializers/foreman.rb:21:in `each'
21:12:03 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/fore
man/config/initializers/foreman.rb:21:in `<top (required)>'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_s
upport/dependencies.rb:241:in `load'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_s
upport/dependencies.rb:241:in `block in load'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_s
upport/dependencies.rb:232:in `load_dependency'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_s
upport/dependencies.rb:241:in `load'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/engine.
rb:648:in `block in load_config_initializer'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_s
upport/notifications.rb:161:in `instrument'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/engine.
rb:647:in `load_config_initializer'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/engine.
rb:612:in `block (2 levels) in <class:Engine>'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/engine.
rb:611:in `each'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/engine.
rb:611:in `block in <class:Engine>'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/initial
izable.rb:30:in `instance_exec'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/initial
izable.rb:30:in `run'
```

```
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/initializable.rb:55:in `block in run_initializers'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/initializable.rb:44:in `each'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/initializable.rb:44:in `tsort_each_child'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/initializable.rb:54:in `run_initializers'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/application.rb:300:in `initialize!'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/railtie.rb:194:in `public_send'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/railtie.rb:194:in `method_missing'
21:12:03 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/config/environment.rb:5:in `'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_support/dependencies.rb:247:in `require'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_support/dependencies.rb:247:in `block in require'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_support/dependencies.rb:232:in `load_dependency'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_support/dependencies.rb:247:in `require'
21:12:03 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/test/test_helper.rb:20:in `block in <top (required)>'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/spork-1.0.0rc4/lib/spork.rb:24:in `prefork'
21:12:03 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/test/test_helper.rb:9:in `'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_support/dependencies.rb:247:in `require'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_support/dependencies.rb:247:in `block in require'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_support/dependencies.rb:232:in `load_dependency'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_support/dependencies.rb:247:in `require'
21:12:03 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/test/unit/application_mailer_test.rb:1:in `'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_support/dependencies.rb:247:in `require'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_support/dependencies.rb:247:in `block in require'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_support/dependencies.rb:232:in `load_dependency'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/activesupport-4.1.5/lib/active_support/dependencies.rb:247:in `require'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/test_unit/sub_test_task.rb:114:in `block (3 levels) in define'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/test_unit/sub_test_task.rb:114:in `each'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/test_unit/sub_test_task.rb:114:in `block (2 levels) in define'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/test_unit/sub_test_task.rb:113:in `each'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/gems/railties-4.1.5/lib/rails/test_unit/sub_test_task.rb:113:in `block in define'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/bin/ruby_executable_hooks:15:in `eval'
21:12:03 /usr/local/rvm/gems/ruby-2.1.5@test_plugin_matrix-3/bin/ruby_executable_hooks:15:in `'
21:12:03 Tasks: TOP => jenkins:unit => test:units
21:12:03 (See full trace by running task with --trace)
```

They all started failing between Jan 28, 2016 9:42 PM and Jan 31, 2016 3:54 AM. I can't narrow down any commit on Foreman develop that causes it, suggesting something external (like a gem). 1.10-stable seems unaffected.

It can be reproduced locally by deleting the test DB and running rake test.

#### Related issues:

Related to Foreman - Bug #14954: Stop auditing the default field in settings	Rejected	
Blocks Foreman - Refactor #13409: Remove maintain_test_schema! Rails initializer	Closed	01/27/2016

#### Associated revisions

##### Revision 683e3a06 - 02/08/2016 04:52 AM - Dominic Cleal

fixes #13574 - remove DB access from Setting class scope

Plugins tend to register an initialiser before config/initializers/ to require their own Setting subclasses. This loads them before config/initializers/foreman.rb, which calls load\_defaults on each known Setting class. When loading Setting in a test environment or without a database yet, the class was getting partially loaded once due to a DB call in validates\_lengths\_from\_database 0.4.0 and also in the audited :only call.

When partially loaded, the Setting.load\_defaults method wasn't defined, so calling `super` from a subclass failed:

```
NoMethodError: super: no superclass method `load_defaults' for #<Class:0x00000002d13e48>;  
  gems/activerecord-4.1.5/lib/active_record/dynamic_matchers.rb:26:in `method_missing'  
  app/models/setting/general.rb:5:in `load_defaults'
```

In v1fd 0.5.0, the DB call was removed and it failed on audited instead. Changing the audited options prevents that DB call and so the class now loads just once on both 0.4.0 and 0.5.0. This also removes the need for the hack in plugin initialisers to check if Setting.table\_exists? before loading their subclass as class loading is reliable.

#### History

##### #1 - 02/05/2016 05:52 AM - Dominic Cleal

validates\_lengths\_from\_database was updated from 0.4.0 to 0.5.0 in that period (er, with a patch from me). Downgrading the gem fixes it, but I think it's probably a bug in Foreman. Probably doesn't affect 1.10-stable as Rails 3 initialisation is a bit different to 4.

##### #2 - 02/05/2016 10:59 AM - Dominic Cleal

Plugins that are calling Setting.table\_exists? during an initializer (that runs before config\_initializers, i.e. test DB setup and config/initializers/foreman.rb) are causing the Setting class to get partially loaded.

On 0.4.0 it was luckily getting reloaded later somehow, but this was actually indicated in the logs (should be a clue that not all was right before either) because the constants are loaded twice:

```
21:45:42 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/app/models/setting.rb:7: warning: already initialized constant Setting::TYPES  
21:45:42 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/app/models/setting.rb:7: warning: previous definition of TYPES was here  
21:45:42 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/app/models/setting.rb:8: warning: already initialized constant Setting::FROZEN_ATTRS  
21:45:42 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/app/models/setting.rb:8: warning: previous definition of FROZEN_ATTRS was here  
21:45:42 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/app/models/setting.rb:9: warning: already initialized constant Setting::NONZERO_ATTRS  
21:45:42 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/app/models/setting.rb:9: warning: previous definition of NONZERO_ATTRS was here  
21:45:42 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/app/models/setting.rb:10: warning: already initialized constant Setting::BLANK_ATTRS  
21:45:42 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/app/models/setting.rb:10: warning: previous definition of BLANK_ATTRS was here  
21:45:42 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/app/models/setting.rb:11: warning: already initialized constant Setting::URI_ATTRS  
21:45:42 /var/lib/workspace/workspace/test_plugin_matrix/database/sqlite3/ruby/2.1/slave/fast/foreman/app/models/setting.rb:11: warning: previous definition of URI_ATTRS was here
```

On 0.4.0 it was perhaps failing to load the class at first because validates\_lengths\_from\_database was attempting to access the table and failing.

On 0.5.0, v1fd no longer does this, but the audited gem still does because we're using the audited :only option (with :except it doesn't). They're both accessing the non-existent DB, but now it's resulting in the Setting class only getting partially loaded and then not functioning properly later (and not being loaded twice either).

If the plugin setting initialisers were called between config/initializers/0\_maintain\_test\_schema and foreman.rb then they'd probably load OK, but that's

tricky to specify. A better API for registering settings classes might have helped.

Changing the audited call to avoid the DB call would let the class load reliably (e.g. use `:except` instead of `:only`). It also stops it getting partially loaded and would prevent the duplicate constant warnings on v1fd 0.4.0. It also means that plugins can still require `_dependency` on their Setting subclasses and they will safely load without Setting ever being half-loaded - they can even remove the `Setting.table_exists?` check from the initialiser I think.

**#3 - 02/05/2016 12:11 PM - The Foreman Bot**

- Status changed from *Assigned* to *Ready For Testing*
- Pull request <https://github.com/theforeman/foreman/pull/3159> added

**#4 - 02/08/2016 03:34 AM - Dominic Cleal**

- Blocks Refactor #13409: *Remove maintain\_test\_schema! Rails initializer* added

**#5 - 02/08/2016 05:01 AM - Dominic Cleal**

- Status changed from *Ready For Testing* to *Closed*
- % Done changed from 0 to 100

Applied in changeset [683e3a06f9d42255d93613cd01e357a18cc89ba0](#).

**#6 - 05/09/2016 03:08 AM - Dominic Cleal**

- Related to Bug #14954: *Stop auditing the default field in settings* added