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has_secure_password

Developers will find building their own authentication system much easier with Rails 3.1's `#has_secure_password` method. This particular method requires that the user model has a database attribute of "password_digest", which stores a password encrypted by BCrypt. Validations for the presence of password and its confirmation are included in the `#has_secure_password` method.

Consider the following example:

```
# create_users migration
class CreateUsers < ActiveRecord::Migration
  def change
    create_table :users do |t|
      t.string :email
      t.string :password_digest
      # ... and so on ...
    end
  end
end

# app/models/user.rb
class User < ActiveRecord::Base
  has_secure_password
end

# rails console

ruby-1.9.2-p180 :001 > user = User.new(:email => "email@example.com",
                                     :password => "really secure password!")
ruby-1.9.2-p180 :002 > user.save
=> true
ruby-1.9.2-p180 :003 > user.authenticate("wrong password")
=> false
ruby-1.9.2-p180 :004 > user.authenticate("really secure password!")
=> user
```

In this example, a model (User) which `#has_secure_password` has the `#authenticate` method added to it, which is used to check the validity of the user's password against a string supplied when calling the method. This method either returns false, or the user object if the password was correct.

While this addition isn't as full-featured as an authentication system such as [AuthLogic](#) or [Devise](#), it allows the developer to create a simple authentication system from scratch, and add features to it as needed.

Identity Map

In previous versions of Rails, if a developer retrieved two identical records from the database and assigned them into two different variables, two separate objects would be created in memory. This can have serious performance implications in certain circumstances. Rails 3.1 introduces a feature called "Identity Map" which ensures that, in cases where identical objects are retrieved from the database, the second value created in memory is simply a reference to the first, and not another full object.

For example, if Identity Map is enabled, the following scenario will prevent a second object from being created in memory:

```
# in a rails console
ruby-1.9.2-p180 :001 > u1 = User.find(1)
=> #<User ... >
ruby-1.9.2-p180 :001 > u2 = User.find(1)
=> #<User ... >
ruby-1.9.2-p180 :001 > u1.object_id == u2.object_id
=> true
```

New features of Rails 3.1



New in Rails 3.1
Reversible Migrations
`has_secure_password`

OPEN HEADLINES

The H is closing down

Hardware Hacks: Fire, alarms, touchable boards and NFC rings

GitHub gets smart over open source licences

NSS 3.15.1 brings TLS 1.2 support to Firefox

Second Android signature attack disclosed

One month left for the EclipseCon Europe 2013 call for papers

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Kernel Log: Coming in 3.10 (Part 4) - Drivers



Linux 3.10 will be able to use the video acceleration features offered by Radeon graphics cores. Systems with Intel graphics will wake from standby faster. Linux now has an input device driver for Apple's infrared receiver [more »](#)

The trouble with "Business Source"



The problem of creating funding in a new software business is a major one, and doubly so for open source based companies. Michael Widenius recently described his solution to the problem, "Business Source", claiming it delivers "most of the benefits of open source". The H took a look to see how that held up [more »](#)

Kernel Log: Coming in 3.10 (Part 3) - Infrastructure



Kernel developers have toned down an over-eager feature for protecting against the Samsung UEFI bug and added a function for reducing timer interrupt overhead. Improvements have also been made to Hyper-V support and instructions for reporting errors [more »](#)

Whatever happened to Google?

```
# With Identity Map disabled:
ruby-1.9.2-p180 :001 > u1.object_id == u2.object_id
=> false # two identical objects in memory - the second one is just
# wasting space!
```

Identity Map is disabled by default in Rails 3.1 because of some inconsistencies involving model relationships that are planned to be "ironed out" in a future release. Anyone wanting to use Identity Map should carefully examine the implications listed in the comments of the source code, and decide whether their application can use it safely and without too much refactoring overhead.

In Summary

Rails 3.1 has many useful features aimed at making its performance better in production, as well as simplifying the development process through better organisation and by providing better tools to the developer.

Rails 3.1 also contains additional features developers may find useful:

- Mountable Engines
- Custom Serializers
- Force SSL
- Custom Serializers for Serialized Attribute Storage

More Information

- Rails 3.1 Release Notes - guides.rubyonrails.org
- Rails 3.1 Overview - Railscasts.com
- Rails 3.1: Release Candidate - weblog.rubyonrails.org
- RailsConf 2011 Keynote by David Heinemeier Hansson
- CoffeeScript Basics by Ryan Bates (Railscasts.com)
- Sass Basics by Ryan Bates (Railscasts.com)
- rails/activemodel/lib/active_model/secure_password.rb
- ActiveRecord Identity Map

Should I Upgrade My App?

Upgrading can be a bit of a mixed bag – some things will need lots of refactoring, and others will simply work without any changes. Developers considering an upgrade should decide whether or not using the latest framework would be worth the development time and effort required. For example, Rails 3.1 will officially remove support for the :conditions hash option in Model#find, which will be used in the vast majority of queries in a 2.3.x application, requiring many changes to your application's codebase.

Both the 2.3.x and 3.0 branches of Rails will likely be maintained with security updates and bug fixes for quite a while, making upgrading less of a necessity and more of an opportunity. However, updates and bug fixes will inevitably cease for these versions one day, and the longer you wait before upgrading your application, the more work you will have to do (in theory) to update a codebase based on 2.3.x to, for example, 4.0 when it releases.

Upgrading can usually be done over the course of one or two consecutive sprints in most development cycles. For example, you may take your existing 2.3.x application to Rails 3 in one sprint (or set thereof), which will allow you to refactor many parts of the codebase, but maintain compatibility for older ActiveRecord usage (albeit deprecated). A secondary sprint could be done later, after adding additional features to keep users happy, for upgrading to 3.1. That sprint would likely involve changing a multitude of ActiveRecord usages, database migrations, and other details that may have been too numerous to handle in combination with changes from 2.3.x to 3.0.

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Also on The H:

Information leak in ZENworks Asset Management disclosed
 Rails 3.1 now available
 From Rails 2.3 to 3.0
 Rails and Merb to merge for Rails 3
 "Classic" Rails Screencast updated
 Ruby On Rails Security Guide published as free ebook



Although Google continues to support a variety of open projects and people, Glyn Moody notes that, following recent changes to Google Code and Google Talk, concern is growing that something fundamental has changed [more »](#)



What's new in SUSE Linux Enterprise 11 SP3



Service Pack 3 includes numerous enhancements for virtualisation and, by adding Secure Boot support and new drivers, beefs up support for newer hardware. There are also numerous enhancements relating to server storage and networking [more »](#)

What's new in Fedora 19



In a nod to fans of classic desktop interfaces, the new Fedora includes a MATE variant and classic mode for GNOME. Systemd now takes care of containers and assigning network names. New drivers support 3D acceleration in newer Radeon graphics cards [more »](#)

What's new in Linux 3.10



A second SSD caching framework and support for the new Radeons' video decoder are two of the most important enhancements in Linux 3.10, which is now out. This version also includes several new and improved drivers and a change to the network stack to speed up HTTP connections [more »](#)

Free Software post-PRISM



The news has been full of talk of spying, whistleblowing and data mining. Glyn Moody looks at how open source has been used to threaten freedom and privacy and how it could be used to



defend them [more »](#)

THE H SECURITY

Content Security Policy halts XSS in its tracks



Cross-site scripting (XSS) is one of the biggest problems faced by webmasters. The new Content Security Policy standard should finally provide some relief [more »](#)

Skype's ominous link checking: Facts and speculation



Our associate's discovery that URLs sent through Skype are then visited by Microsoft has caused quite a stir. A little more information has now emerged and leads to even more questions [more »](#)

Password protection for everyone



Those who heed well-intentioned recommendations and use a separate password for every service either require a photographic memory or the right techniques to keep the multitude of passwords under control [more »](#)

Two clicks for more privacy



"Like" buttons for Facebook, Google+ and Twitter present a privacy problem. A 2-click concept developed by heise online addresses this problem [more »](#)

THE H DEVELOPER

Java EE 7 at a glance



The next step for Java EE 6 was planned to be cloud support but the collapse of ambitious developer plans has meant Java EE 7 arrived with few fundamentally new aspects, representing more a consistent effort to round off existing features [more »](#)

Continuous database migration with Liquibase and Flyway



An application's version-controlled source code is stored in the repository. Why not that of the database? To reproduce arbitrary database states in development, test or production environments, two powerful Java libraries are at hand that can be seamlessly integrated into a build for an agile Continuous Delivery [more »](#)

Unit testing with Node.js



Consistent unit testing is a basic quality requirement in modern software development. Mocha is a framework for writing and executing such tests in Node.js [more »](#)

Ruby 2.0 - the 20th birthday present



On 24 February 2013, the Ruby community celebrated the 20th birthday of its programming language. Ruby 2.0, a new major release that includes various exciting new features, was released at the same time and The H looks at some of the major changes [more »](#)

HITS OF THE H

Linux Mint 15: A better Ubuntu for the desktop



The Linux Mint project has announced "the most ambitious release since the start of the project". Linux Mint 15 promises a focus on the desktop that Ubuntu has been neglecting lately. The H investigates whether the release delivers on these ambitions [more »](#)

What's new in Linux 3.9



The Linux kernel is finally able to use SSDs as hard-disk cache. Changes to the network subsystem promise to improve the way server jobs are distributed across multiple processor cores. Linux 3.9 also includes drivers for new AMD graphics chips and soon-expected Wi-Fi components from Intel [more »](#)

Replacing Google Reader



For a large number of internet users the current challenge is finding a replacement for Google Reader. The H's Fabian Scherschel has looked at the functionality that made Google Reader popular and the current best alternatives to the Reader experience [more »](#)

Attacking TrueCrypt



TrueCrypt is considered the software of choice for encrypting data. A small utility called TCHead systematically takes on this encryption [more »](#)

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