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Version 3.1.9[**¶**](#30j0zll)

Release Date: Jun 12, 2018

* **Security**
  + Updated [URL Helper](http://docs.google.com/helpers/url_helper.html) function [auto\_link()](http://docs.google.com/helpers/url_helper.html#auto_link) to add rel="noopener" to generated links in order to prevent tab hijacking.
  + Fixed a possible session fixation vulnerability where the [Session Library](http://docs.google.com/libraries/sessions.html) enabled session.use\_strict\_mode but it didn’t actually do anything (thanks to Aamer Shah, Prasanna Kumar).
* General Changes
  + Updated [Query Builder](http://docs.google.com/database/query_builder.html) method limit() to allow 0 values.
  + Updated [Email Library](http://docs.google.com/libraries/email.html) and [Form Validation Library](http://docs.google.com/libraries/form_validation.html) to discard the results of failed idn\_to\_ascii() calls while validating e-mail addresses.

Bug fixes for 3.1.9[**¶**](#1fob9te)

* Fixed a regression (#5448) - [Query Builder](http://docs.google.com/database/query_builder.html) methods like(), or\_like() (and siblings) didn’t apply *dbprefix* or identifier escaping.
* Fixed a regression (#5462) - [Query Builder](http://docs.google.com/database/query_builder.html) methods like(), or\_like() (and siblings) produced incorrect SQL syntax when used with 'before' as the third parameter.
* Fixed a bug (#5516) - [HTML Helper](http://docs.google.com/helpers/html_helper.html) functions [img()](http://docs.google.com/helpers/html_helper.html#img), [link\_tag()](http://docs.google.com/helpers/html_helper.html#link_tag) would output results with double slashes if a prefix slash was included in their path inputs.

Version 3.1.8[**¶**](#3znysh7)

Release Date: Mar 22, 2018

* **Security**
  + Updated [Security Library](http://docs.google.com/libraries/security.html) method xss\_clean() to also filter JavaScript tag functions.
  + Fixed a bug where [Security Library](http://docs.google.com/libraries/security.html) method xss\_clean() didn’t check for parentheses around JavaScript’s document.
* General Changes
  + Updated [Email Library](http://docs.google.com/libraries/email.html) to always negotiate between TLS 1.0, 1.1, 1.2 when possible (PHP 5.6+) for SMTP connections.
  + Updated [Database Library](http://docs.google.com/database/index.html) method version() to exclude suffixes to the main version numbers with the ‘postgre’ driver.

Bug fixes for 3.1.8[**¶**](#2et92p0)

* Fixed a bug where [Form Validation Library](http://docs.google.com/libraries/form_validation.html), [Email Library](http://docs.google.com/libraries/email.html) tried to use INTL\_IDNA\_VARIANT\_UTS46 when it was undeclared.
* Fixed a bug where [Query Builder](http://docs.google.com/database/query_builder.html) methods where(), having() treated values passed to them as arbitrary SQL.
* Fixed a bug (#5423) - [Database Library](http://docs.google.com/database/index.html) method insert\_id() failed due to incorrect server version parsing with the ‘postgre’ driver.
* Fixed a bug (#5425) - [XML-RPC Library](http://docs.google.com/libraries/xmlrpc.html) produced an error message related to count() on PHP 7.2.
* Fixed a bug (#5434) - [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) attempted to chmod() while rendering images with the dynamic\_output option.
* Fixed a bug (#5435) - [Database Results](http://docs.google.com/database/results.html) method field\_data() hid info about one field if limit() was previously used with the ‘oci8’ driver.

Version 3.1.7[**¶**](#tyjcwt)

Release Date: Jan 13, 2018

* General Changes
  + Updated [Form Validation Library](http://docs.google.com/libraries/form_validation.html) rule valid\_email to use INTL\_IDNA\_VARIANT\_UTS46 for non-ASCII domain names.
  + Updated [Email Library](http://docs.google.com/libraries/email.html) to use INTL\_IDNA\_VARIANT\_UTS46 for non-ASCII domain names.
  + Updated [Loader Library](http://docs.google.com/libraries/loader.html) method model() to log both CI\_Model class loading and individual models’ initialization.
  + Updated [Pagination Library](http://docs.google.com/libraries/pagination.html) to preserve previously set attributes while calling initialize().
  + Updated [Cache Library](http://docs.google.com/libraries/caching.html) to automatically add items to cache on increment(), decrement() calls for missing keys.
  + Deprecated usage of [CAPTCHA Helper](http://docs.google.com/helpers/captcha_helper.html) function [create\_captcha()](http://docs.google.com/helpers/captcha_helper.html#create_captcha) with parameters other than $data.

Bug fixes for 3.1.7[**¶**](#3dy6vkm)

* Fixed a regression (#5276) - [Database Utilities](http://docs.google.com/database/utilities.html) method backup() generated incorrect INSERT statements with the ‘mysqli’ driver.
* Fixed a regression where [Database Results](http://docs.google.com/database/results.html) method field\_data() returned incorrect type names.
* Fixed a bug (#5278) - [URL Helper](http://docs.google.com/helpers/url_helper.html) function [auto\_link()](http://docs.google.com/helpers/url_helper.html#auto_link) didn’t detect trailing slashes in URLs.
* Fixed a regression (#5282) - [Query Builder](http://docs.google.com/database/query_builder.html) method count\_all\_results() breaks ORDER BY clauses for subsequent queries.
* Fixed a bug (#5279) - [Query Builder](http://docs.google.com/database/query_builder.html) didn’t account for already escaped identifiers while applying database name prefixes.
* Fixed a bug (#5331) - [URL Helper](http://docs.google.com/helpers/url_helper.html) function [auto\_link()](http://docs.google.com/helpers/url_helper.html#auto_link) converted e-mail addresses starting with ‘www.’ to both “url” and “email” links.
* Fixed a bug where $config['allow\_get\_array'] defaulted to FALSE if it didn’t exist in the config file.
* Fixed a bug (#5379) - [Session Library](http://docs.google.com/libraries/sessions.html) would incorrectly fail to obtain a lock that it already has on PHP 7 with the ‘memcached’ driver.

Version 3.1.6[**¶**](#1t3h5sf)

Release Date: Sep 25, 2017

* **Security**
  + Fixed a potential object injection in [Cache Library](http://docs.google.com/libraries/caching.html) ‘apc’ driver when save() is used with $raw = TRUE (thanks to Tomas Bortoli).
* General Changes
  + Deprecated [Cache Library Library](http://docs.google.com/libraries/caching.html) driver ‘apc’.
  + Updated the [Session Library](http://docs.google.com/libraries/sessions.html) ‘redis’, ‘memcached’ drivers to reduce the potential of a locking race conditions.

Bug fixes for 3.1.6[**¶**](#4d34og8)

* Fixed a bug (#5164) - [Loader Library](http://docs.google.com/libraries/loader.html) method library() ignored requests to load libraries previously assigned to super-object properties named differently than the library name.
* Fixed a bug (#5168) - [Query Builder](http://docs.google.com/database/query_builder.html) method count\_all\_results() produced erroneous queries on Microsoft SQL Server when ORDER BY clauses are cached.
* Fixed a bug (#5128) - [Profiler](http://docs.google.com/general/profiling.html) didn’t wrap $\_SESSION and configuration arrays in <pre> tags.
* Fixed a bug (#5183) - [Database Library](http://docs.google.com/database/index.html) method is\_write\_type() didn’t return TRUE for MERGE statements.
* Fixed a bug where [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) didn’t escape image source paths passed to NetPBM as shell arguments.
* Fixed a bug (#5236) - [Query Builder](http://docs.google.com/database/query_builder.html) methods limit(), offset() break SQL Server 2005, 2008 queries with "<tablename>".\* in the SELECT clause.
* Fixed a bug (#5243) - [Database Library](http://docs.google.com/database/index.html) method version() didn’t work with the ‘pdo/dblib’ driver.
* Fixed a bug (#5246) - [Database transactions](http://docs.google.com/database/transactions.html) status wasn’t reset unless trans\_complete() was called.
* Fixed a bug (#5260) - [Database Utilities](http://docs.google.com/database/utilities.html) method backup() generated incorrect INSERT statements with the ‘mysqli’ driver.
* Fixed a bug where [Database Results](http://docs.google.com/database/results.html) method field\_data() didn’t parse field types with the ‘mysqli’ driver.

Version 3.1.5[**¶**](#2s8eyo1)

Release Date: Jun 19, 2017

* **Security**
  + [Form Validation Library](http://docs.google.com/libraries/form_validation.html) rule valid\_email could be bypassed if idn\_to\_ascii() is available.
* General Changes
  + Updated [Form Helper](http://docs.google.com/helpers/form_helper.html) function [form\_label()](http://docs.google.com/helpers/form_helper.html#form_label) to accept HTML attributes as a string.

Bug fixes for 3.1.5[**¶**](#17dp8vu)

* Fixed a bug (#5070) - [Email Library](http://docs.google.com/libraries/email.html) didn’t properly detect 7-bit encoding.
* Fixed a bug (#5084) - [XML-RPC Library](http://docs.google.com/libraries/xmlrpc.html) errored because of a variable name typo.
* Fixed a bug (#5108) - [Inflector Helper](http://docs.google.com/helpers/inflector_helper.html) function [singular()](http://docs.google.com/helpers/inflector_helper.html#singular) didn’t properly handle ‘quizzes’.
* Fixed a regression (#5131) - private controller methods triggered PHP errors instead of a 404 response.
* Fixed a bug (#5150) - [Database Forge](http://docs.google.com/database/forge.html) method modify\_column() triggered an error while renaming columns with the ‘oci8’, ‘pdo/oci’ drivers.
* Fixed a bug (#5155) - [Query Builder](http://docs.google.com/database/query_builder.html) method count\_all\_results() returned incorrect result for queries using LIMIT, OFFSET.

Version 3.1.4[**¶**](#3rdcrjn)

Release Date: Mar 20, 2017

* **Security**
  + Fixed a header injection vulnerability in [common function](http://docs.google.com/general/common_functions.html) [set\_status\_header()](http://docs.google.com/general/common_functions.html#set_status_header) under Apache (thanks to Guillermo Caminer from [Flowgate](https://flowgate.net/)).
  + Fixed byte-safety issues in [Encrypt Library](http://docs.google.com/libraries/encrypt.html) (DEPRECATED) when mbstring.func\_overload is enabled.
  + Fixed byte-safety issues in [Encryption Library](http://docs.google.com/libraries/encryption.html) when mbstring.func\_overload is enabled.
  + Fixed byte-safety issues in [compatibility functions](http://docs.google.com/general/compatibility_functions.html) password\_hash(), hash\_pbkdf2() when mbstring.func\_overload is enabled.
  + Updated [Encrypt Library](http://docs.google.com/libraries/encrypt.html) (DEPRECATED) to call mcrypt\_create\_iv() with MCRYPT\_DEV\_URANDOM.
* General Changes
  + Updated the [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) to work-around an issue with some JPEGs when using GD.

Bug fixes for 3.1.4[**¶**](#26in1rg)

* Fixed a regression (#4975) - [Loader Library](http://docs.google.com/libraries/loader.html) couldn’t handle objects passed as view variables.
* Fixed a bug (#4977) - [Loader Library](http://docs.google.com/libraries/loader.html) method helper() could accept any character as a filename extension separator.
* Fixed a regression where the [Session Library](http://docs.google.com/libraries/sessions.html) would fail on a session\_regenerate\_id(TRUE) call with the ‘database’ driver.
* Fixed a bug (#4987) - [Query Builder](http://docs.google.com/database/query_builder.html) caching didn’t keep track of table aliases.
* Fixed a bug where [Text Helper](http://docs.google.com/helpers/text_helper.html) function ascii\_to\_entities() wasn’t byte-safe when mbstring.func\_overload is enabled.
* Fixed a bug where CI\_Log, CI\_Output, CI\_Email and CI\_Zip didn’t handle strings in a byte-safe manner when mbstring.func\_overload is enabled.
* Fixed a bug where [Session Library](http://docs.google.com/libraries/sessions.html) didn’t read session data in a byte-safe manner when mbstring.func\_overload is enabled.
* Fixed a bug (#4990) - [Profiler](http://docs.google.com/general/profiling.html) didn’t close <pre> tags it generated.
* Fixed a bug (#4990) - [Profiler](http://docs.google.com/general/profiling.html) didn’t HTML-escape quotes for $\_SESSION variables.
* Fixed a bug where [Input Library](http://docs.google.com/libraries/input.html) method set\_cookie() didn’t allow its *httponly* and *secure* parameters to be overriden to FALSE.
* Fixed a bug (#5006) - [common function](http://docs.google.com/general/common_functions.html) [get\_mimes()](http://docs.google.com/general/common_functions.html#get_mimes) didn’t load *application/config/mimes.php* if an environment specific config exists.
* Fixed a bug (#5006) - [common function](http://docs.google.com/general/common_functions.html) [remove\_invisible\_characters()](http://docs.google.com/general/common_functions.html#remove_invisible_characters) didn’t remove URL-encoded 0x7F.
* Fixed a bug (#4815) - [Database Library](http://docs.google.com/database/index.html) stripped URL-encoded sequences while escaping strings with the ‘mssql’ driver.
* Fixed a bug (#5044) - [HTML Helper](http://docs.google.com/helpers/html_helper.html) function [img()](http://docs.google.com/helpers/html_helper.html#img) didn’t accept data: URI schemes for the image source.
* Fixed a bug (#5050) - [Database Library](http://docs.google.com/database/index.html) tried to access an undefined property in a number of error handling cases.
* Fixed a bug (#5057) - [Database](http://docs.google.com/database/index.html) driver ‘postgre’ didn’t actually apply extra options (such as ‘connect\_timeout’) to its DSN.

Version 3.1.3[**¶**](#lnxbz9)

Release Date: Jan 09, 2017

* **Security**
  + Fixed an XSS vulnerability in [Security Library](http://docs.google.com/libraries/security.html) method xss\_clean().
  + Fixed a possible file inclusion vulnerability in [Loader Library](http://docs.google.com/libraries/loader.html) method vars().
  + Fixed a possible remote code execution vulnerability in the [Email Library](http://docs.google.com/libraries/email.html) when ‘mail’ or ‘sendmail’ are used (thanks to Paul Buonopane from [NamePros](https://www.namepros.com/)).
  + Added protection against timing side-channel attacks in [Security Library](http://docs.google.com/libraries/security.html) method csrf\_verify().
  + Added protection against BREACH attacks targeting the CSRF token field generated by [Form Helper](http://docs.google.com/helpers/form_helper.html) function [form\_open()](http://docs.google.com/helpers/form_helper.html#form_open).
* General Changes
  + Deprecated $config['allow\_get\_array'].
  + Deprecated $config['standardize\_newlines'].
  + Deprecated [Date Helper](http://docs.google.com/helpers/date_helper.html) function [nice\_date()](http://docs.google.com/helpers/date_helper.html#nice_date).

Bug fixes for 3.1.3[**¶**](#35nkun2)

* Fixed a bug (#4886) - [Database Library](http://docs.google.com/database/index.html) didn’t differentiate bind markers inside double-quoted strings in queries.
* Fixed a bug (#4890) - [XML-RPC Library](http://docs.google.com/libraries/xmlrpc.html) didn’t work on PHP 7.
* Fixed a regression (#4887) - [File Uploading Library](http://docs.google.com/libraries/file_uploading.html) triggered fatal errors due to numerous PHP distribution channels (XAMPP and cPanel confirmed) explicitly disabling ext/fileinfo by default.
* Fixed a bug (#4679) - [Input Library](http://docs.google.com/libraries/input.html) method ip\_address() didn’t properly resolve $config['proxy\_ips'] IPv6 addresses.
* Fixed a bug (#4902) - [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) processing via ImageMagick didn’t work.
* Fixed a bug (#4905) - [Loader Library](http://docs.google.com/libraries/loader.html) didn’t take into account possible user-provided directory paths when loading helpers.
* Fixed a bug (#4916) - [Session Library](http://docs.google.com/libraries/sessions.html) with sess\_match\_ip enabled was unusable for IPv6 clients when using the ‘database’ driver on MySQL 5.7.5+.
* Fixed a bug (#4917) - [Date Helper](http://docs.google.com/helpers/date_helper.html) function [nice\_date()](http://docs.google.com/helpers/date_helper.html#nice_date) didn’t handle YYYYMMDD inputs properly.
* Fixed a bug (#4923) - [Session Library](http://docs.google.com/libraries/sessions.html) could execute an erroneous SQL query with the ‘database’ driver, if the lock attempt times out.
* Fixed a bug (#4927) - [Output Library](http://docs.google.com/libraries/output.html) method get\_header() returned the first matching header, regardless of whether it would be replaced by a second set\_header() call.
* Fixed a bug (#4844) - [Email Library](http://docs.google.com/libraries/email.html) didn’t apply escapeshellarg() to the while passing the Sendmail -f parameter through popen().
* Fixed a bug (#4928) - the bootstrap file didn’t check if *config/constants.php* exists before trying to load it.
* Fixed a bug (#4937) - [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) method initialize() didn’t translate *new\_image* inputs to absolute paths.
* Fixed a bug (#4941) - [Query Builder](http://docs.google.com/database/query_builder.html) method order\_by() didn’t work with ‘RANDOM’ under the ‘pdo/sqlite’ driver.
* Fixed a regression (#4892) - [Query Builder](http://docs.google.com/database/query_builder.html) method update\_batch() didn’t properly handle identifier escaping.
* Fixed a bug (#4953) - [Database Forge](http://docs.google.com/database/forge.html) method create\_table() didn’t update an internal tables list cache if it exists but is empty.
* Fixed a bug (#4958) - [Query Builder](http://docs.google.com/database/query_builder.html) method count\_all\_results() didn’t take into account cached ORDER BY clauses.
* Fixed a bug (#4804) - [Query Builder](http://docs.google.com/database/query_builder.html) method insert\_batch() could fail if the input array pointer was modified.
* Fixed a bug (#4962) - [Database Force](http://docs.google.com/database/forge.html) method alter\_table() would fail with the ‘oci8’ driver.
* Fixed a bug (#4457) - [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) method get\_image\_properties() didn’t detect invalid images.
* Fixed a bug (#4765) - [Email Library](http://docs.google.com/libraries/email.html) didn’t send the User-Agent header without a prior call to clear().

Version 3.1.2[**¶**](#1ksv4uv)

Release Date: Oct 28, 2016

* **Security**
  + Fixed a number of new vulnerabilities in [Security Library](http://docs.google.com/libraries/security.html) method xss\_clean().
* General Changes
  + Allowed PHP 4-style constructors (Matching\_name::Matching\_name() methods) to be used as routes, if there’s a \_\_construct() to override them.

Bug fixes for 3.1.2[**¶**](#44sinio)

* Fixed a regression (#4874) - [Session Library](http://docs.google.com/libraries/sessions.html) didn’t take into account session.hash\_bits\_per\_character when validating session IDs.
* Fixed a bug (#4871) - [Query Builder](http://docs.google.com/database/query_builder.html) method update\_batch() didn’t properly handle identifier escaping.
* Fixed a bug (#4884) - [Query Builder](http://docs.google.com/database/query_builder.html) didn’t properly parse field names ending in ‘is’ when used inside WHERE and HAVING statements.
* Fixed a bug where CI\_Log, CI\_Output, CI\_Email and CI\_Zip didn’t handle strings in a byte-safe manner when mbstring.func\_overload is enabled.

Version 3.1.1[**¶**](#2jxsxqh)

Release Date: Oct 22, 2016

* **Security**
  + Fixed a flaw in [Security Library](http://docs.google.com/libraries/security.html) method entity\_decode() (used by xss\_clean()) that affects HTML 5 entities when using PHP 5.3.
* General Changes
  + Added E\_PARSE to the list of error levels detected by the shutdown handler.
  + Updated [Inflector Helper](http://docs.google.com/helpers/inflector_helper.html) [is\_countable()](http://docs.google.com/helpers/inflector_helper.html#is_countable) with more words.
  + Updated [common function](http://docs.google.com/general/common_functions.html) [set\_status\_header()](http://docs.google.com/general/common_functions.html#set_status_header) with new status codes from IETF RFCs [2817](https://tools.ietf.org/html/rfc2817) (426) and [6585](https://tools.ietf.org/html/rfc6585) (428, 429, 431, 511).

Bug fixes for 3.1.1[**¶**](#z337ya)

* Fixed a bug (#4732) - [Session Library](http://docs.google.com/libraries/sessions.html) triggered errors while writing data for a newly-created sessions with the ‘memcached’ driver.
* Fixed a regression (#4736) - [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) processing via ImageMagick didn’t work.
* Fixed a bug (#4737) - [Query Builder](http://docs.google.com/database/query_builder.html) didn’t add an OFFSET when LIMIT is zero or unused.
* Fixed a regression (#4739) - [Email Library](http://docs.google.com/libraries/email.html) doesn’t properly separate attachment bodies from headers.
* Fixed a bug (#4754) - [Unit Testing Library](http://docs.google.com/libraries/unit_testing.html) method result() didn’t translate res\_datatype.
* Fixed a bug (#4759) - [Form Validation](http://docs.google.com/libraries/form_validation.html), [Trackback](http://docs.google.com/libraries/trackback.html) and [XML-RPC](http://docs.google.com/libraries/xmlrpc.html) libraries treated URI schemes in a case-sensitive manner.
* Fixed a bug (#4762) - [Cache Library](http://docs.google.com/libraries/caching.html) ‘file’ driver method get\_metadata() checked TTL time against mtime instead of the cache item’s creation time.
* Fixed a bug where [File Uploading Library](http://docs.google.com/libraries/file_uploading.html) generated error messages on PHP 7.1.
* Fixed a bug (#4780) - [compatibility function](http://docs.google.com/general/compatibility_functions.html) hex2bin() didn’t reject inputs of type “resource”.
* Fixed a bug (#4787) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) method valid\_email() triggered E\_WARNING when input emails have empty domain names.
* Fixed a bug (#4805) - [Database](http://docs.google.com/database/index.html) driver ‘mysqli’ didn’t use the MYSQLI\_CLIENT\_SSL\_DONT\_VERIFY\_SERVER\_CERT flag properly.
* Fixed a bug (#4808) - [Database](http://docs.google.com/database/index.html) method is\_write\_type() only looked at the first line of a queries using RETURNING with the ‘postgre’, ‘pdo/pgsql’, ‘odbc’ and ‘pdo/odbc’ drivers.
* Fixed a bug where [Query Builder](http://docs.google.com/database/query_builder.html) method insert\_batch() tried to execute an unsupported SQL query with the ‘ibase’ and ‘pdo/firebird’ drivers.
* Fixed a bug (#4809) - [Database](http://docs.google.com/database/index.html) driver ‘pdo/mysql’ didn’t turn off AUTOCOMMIT when starting a transaction.
* Fixed a bug (#4822) - [CAPTCHA Helper](http://docs.google.com/helpers/captcha_helper.html) didn’t clear expired PNG images.
* Fixed a bug (#4823) - [Session Library](http://docs.google.com/libraries/sessions.html) ‘files’ driver could enter an infinite loop if mbstring.func\_overload is enabled.
* Fixed a bug (#4851) - [Database Forge](http://docs.google.com/database/forge.html) didn’t quote schema names passed to its create\_database() method.
* Fixed a bug (#4863) - [HTML Table Library](http://docs.google.com/libraries/table.html) method set\_caption() was missing method chaining support.
* Fixed a bug (#4843) - [XML-RPC Library](http://docs.google.com/libraries/xmlrpc.html) client class didn’t set a read/write socket timeout.
* Fixed a bug (#4865) - uncaught exceptions didn’t set the HTTP Response status code to 500 unless display\_errors was turned On.
* Fixed a bug (#4830) - [Session Library](http://docs.google.com/libraries/sessions.html) didn’t take into account the new session INI settings in PHP 7.1.

Version 3.1.0[**¶**](#3j2qqm3)

Release Date: July 26, 2016

* **Security**
  + Fixed an SQL injection in the ‘odbc’ database driver.
  + Updated [set\_realpath()](http://docs.google.com/helpers/path_helper.html#set_realpath) [Path Helper](http://docs.google.com/helpers/path_helper.html) function to filter-out php:// wrapper inputs.
  + Officially dropped any kind of support for PHP 5.2.x and anything under 5.3.7.
* General Changes
  + Updated [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) to validate *width* and *height* configuration values.
  + Updated [Encryption Library](http://docs.google.com/libraries/encryption.html) to always prefer random\_bytes() when it is available.
  + Updated [Session Library](http://docs.google.com/libraries/sessions.html) to log ‘debug’ messages when using fallbacks to *session.save\_path* (php.ini) or ‘sess\_use\_database’, ‘sess\_table\_name’ settings.
  + Added a ‘LONGTEXT’ to ‘STRING’ alias to [Database Forge](http://docs.google.com/database/forge.html) for the ‘cubrid’, ‘pdo/cubrid’ drivers.
  + Added ‘TINYINT’, ‘MEDIUMINT’, ‘INT’ and ‘BIGINT’ aliases to ‘NUMBER’ to [Database Forge](http://docs.google.com/database/forge.html) for the ‘oci8’, ‘pdo/oci’ drivers.
  + [password\_hash()](http://docs.google.com/general/compatibility_functions.html#password_hash) [compatibility function](http://docs.google.com/general/compatibility_functions.html) changes:
    - Changed salt-generation logic to prefer random\_bytes() when it is available.
    - Changed salt-generation logic to prefer direct access to */dev/urandom* over openssl\_random\_pseudo\_bytes().
    - Changed salt-generation logic to error if openssl\_random\_pseudo\_bytes() sets its $crypto\_strong flag to FALSE.

Bug fixes for 3.1.0[**¶**](#1y810tw)

* Fixed a bug where [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) didn’t escape image source paths passed to ImageMagick as shell arguments.
* Fixed a bug (#861) - [Database Forge](http://docs.google.com/database/forge.html) method create\_table() incorrectly accepts field width constraints for MSSQL/SQLSRV integer-type columns.
* Fixed a bug (#4562) - [Cache Library](http://docs.google.com/libraries/caching.html) didn’t check if Memcached::quit() is available before calling it.
* Fixed a bug (#4563) - [Input Library](http://docs.google.com/libraries/input.html) method request\_headers() ignores $xss\_clean parameter value after first call.
* Fixed a bug (#4605) - [Config Library](http://docs.google.com/libraries/config.html) method site\_url() stripped trailing slashes from relative URIs passed to it.
* Fixed a bug (#4613) - [Email Library](http://docs.google.com/libraries/config.html) failed to send multiple emails via SMTP due to “already authenticated” errors when keep-alive is enabled.
* Fixed a bug (#4633) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) ignored multiple “callback” rules for empty, non-required fields.
* Fixed a bug (#4637) - [Database](http://docs.google.com/database/index.html) method error() returned FALSE with the ‘oci8’ driver if there was no error.
* Fixed a bug (#4647) - [Query Builder](http://docs.google.com/database/query_builder.html) method count\_all\_results() doesn’t take into account GROUP BY clauses while deciding whether to do a subquery or not.
* Fixed a bug where [Session Library](http://docs.google.com/libraries/sessions.html) ‘redis’ driver didn’t properly detect if a connection is properly closed on PHP 5.x.
* Fixed a bug (#4583) - [Email Library](http://docs.google.com/libraries/email.html) didn’t properly handle inline attachments in HTML emails.
* Fixed a bug where [Database](http://docs.google.com/database/index.html) method db\_select() didn’t clear metadata cached for the previously used database.
* Fixed a bug (#4675) - [File Helper](http://docs.google.com/helpers/file_helper.html) function [delete\_files()](http://docs.google.com/helpers/file_helper.html#delete_files) treated symbolic links as regular directories.
* Fixed a bug (#4674) - [Database](http://docs.google.com/database/index.html) driver ‘dblib’ triggered E\_WARNING messages while connecting.
* Fixed a bug (#4678) - [Database Forge](http://docs.google.com/database/forge.html) tried to use unsupported IF NOT EXISTS clause when creating tables on Oracle.
* Fixed a bug (#4691) - [File Uploading Library](http://docs.google.com/libraries/file_uploading.html) method data() returns wrong ‘raw\_name’ when the filename extension is also contained in the raw filename.
* Fixed a bug (#4679) - [Input Library](http://docs.google.com/libraries/input.html) method ip\_address() errors with a matching $config['proxy\_ips'] IPv6 address.
* Fixed a bug (#4695) - [User Agent Library](http://docs.google.com/libraries/user_agent.html) didn’t load the *config/user\_agents.php* file when there’s no User-Agent HTTP request header.
* Fixed a bug (#4713) - [Query Builder](http://docs.google.com/database/query_builder.html) methods insert\_batch(), update\_batch() could return wrong affected rows count.
* Fixed a bug (#4712) - [Email Library](http://docs.google.com/libraries/email.html) doesn’t sent RSET to SMTP servers after a failure and while using keep-alive.
* Fixed a bug (#4724) - [Common function](http://docs.google.com/general/common_functions.html) [is\_https()](http://docs.google.com/general/common_functions.html#is_https) compared the X-Forwarded-Proto HTTP header case-sensitively.
* Fixed a bug (#4725) - [Common function](http://docs.google.com/general/common_functions.html) [remove\_invisible\_characters()](http://docs.google.com/general/common_functions.html#remove_invisible_characters) searched case-sensitively for URL-encoded characters.

Version 3.0.6[**¶**](#4i7ojhp)

Release Date: March 21, 2016

* General Changes
  + Added a destructor to [Cache Library](http://docs.google.com/libraries/caching.html) ‘memcached’ driver to ensure that Memcache(d) connections are properly closed.
  + Deprecated [Form Validation Library](http://docs.google.com/libraries/form_validation.html) method prep\_for\_form().

Bug fixes for 3.0.6[**¶**](#2xcytpi)

* Fixed a bug (#4516) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) always accepted empty array inputs.
* Fixed a bug where [Session Library](http://docs.google.com/libraries/sessions.html) allowed accessing $\_SESSION values as class properties but isset() didn’t work on them.
* Fixed a bug where [Form Validation Library](http://docs.google.com/libraries/form_validation.html) modified the $\_POST array when the data being validated was actually provided via set\_data().
* Fixed a bug (#4539) - [Migration Library](http://docs.google.com/libraries/migration.html) applied migrations before validating that all migrations within the requested version range are valid.
* Fixed a bug (#4539) - [Migration Library](http://docs.google.com/libraries/migration.html) triggered failures for migrations that are out of the requested version range.

Version 3.0.5[**¶**](#1ci93xb)

Release Date: March 11, 2016

* Core
  + Changed [Loader Library](http://docs.google.com/libraries/loader.html) to allow $autoload['drivers'] assigning with custom property names.
  + Changed [Loader Library](http://docs.google.com/libraries/loader.html) to ignore variables prefixed with ‘\_ci\_’ when loading views.
* General Changes
  + Updated the [Session Library](http://docs.google.com/libraries/sessions.html) to produce friendlier error messages on failures with drivers other than ‘files’.
* [Query Builder](http://docs.google.com/database/query_builder.html)
  + Added a $batch\_size parameter to the insert\_batch() method (defaults to 100).
  + Added a $batch\_size parameter to the update\_batch() method (defaults to 100).

Bug fixes for 3.0.5[**¶**](#3whwml4)

* Fixed a bug (#4391) - [Email Library](http://docs.google.com/libraries/email.html) method reply\_to() didn’t apply Q-encoding.
* Fixed a bug (#4384) - [Pagination Library](http://docs.google.com/libraries/pagination.html) ignored (possible) *cur\_page* configuration value.
* Fixed a bug (#4395) - [Query Builder](http://docs.google.com/database/query_builder.html) method count\_all\_results() still fails if an ORDER BY condition is used.
* Fixed a bug (#4399) - [Query Builder](http://docs.google.com/database/query_builder.html) methods insert\_batch(), update\_batch() produced confusing error messages when called with no data and *db\_debug* is enabled.
* Fixed a bug (#4401) - [Query Builder](http://docs.google.com/database/query_builder.html) breaks WHERE and HAVING conditions that use IN() with strings containing a closing parenthesis.
* Fixed a regression in [Form Helper](http://docs.google.com/helpers/form_helper.html) functions [set\_checkbox()](http://docs.google.com/helpers/form_helper.html#set_checkbox), [set\_radio()](http://docs.google.com/helpers/form_helper.html#set_radio) where “checked” inputs aren’t recognized after a form submit.
* Fixed a bug (#4407) - [Text Helper](http://docs.google.com/helpers/text_helper.html) function [word\_censor()](http://docs.google.com/helpers/text_helper.html#word_censor) doesn’t work under PHP 7 if there’s no custom replacement provided.
* Fixed a bug (#4415) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) rule **valid\_url** didn’t accept URLs with IPv6 addresses enclosed in square brackets under PHP 5 (upstream bug).
* Fixed a bug (#4427) - [CAPTCHA Helper](http://docs.google.com/helpers/captcha_helper.html) triggers an error if the provided character pool is too small.
* Fixed a bug (#4430) - [File Uploading Library](http://docs.google.com/libraries/file_uploading.html) option **file\_ext\_tolower** didn’t work.
* Fixed a bug (#4431) - [Query Builder](http://docs.google.com/database/query_builder.html) method join() discarded opening parentheses.
* Fixed a bug (#4424) - [Session Library](http://docs.google.com/libraries/sessions.html) triggered a PHP warning when writing a newly created session with the ‘redis’ driver.
* Fixed a bug (#4437) - [Inflector Helper](http://docs.google.com/helpers/inflector_helper.html) function [humanize()](http://docs.google.com/helpers/inflector_helper.html#humanize) didn’t escape its $separator parameter while using it in a regular expression.
* Fixed a bug where [Session Library](http://docs.google.com/libraries/sessions.html) didn’t properly handle its locks’ statuses with the ‘memcached’ driver.
* Fixed a bug where [Session Library](http://docs.google.com/libraries/sessions.html) triggered a PHP warning when writing a newly created session with the ‘memcached’ driver.
* Fixed a bug (#4449) - [Query Builder](http://docs.google.com/database/query_builder.html) method join() breaks conditions containing IS NULL, IS NOT NULL.
* Fixed a bug (#4491) - [Session Library](http://docs.google.com/libraries/sessions.html) didn’t clean-up internal variables for emulated locks with the ‘redis’ driver.
* Fixed a bug where [Session Library](http://docs.google.com/libraries/sessions.html) didn’t clean-up internal variables for emulated locks with the ‘memcached’ driver.
* Fixed a bug where [Database](http://docs.google.com/database/index.html) transactions didn’t work with the ‘ibase’ driver.
* Fixed a bug (#4475) - [Security Library](http://docs.google.com/libraries/security.html) method strip\_image\_tags() preserves only the first URL character from non-quoted *src* attributes.
* Fixed a bug where [Profiler Library](http://docs.google.com/general/profiling.html) didn’t apply htmlspecialchars() to all displayed inputs.
* Fixed a bug (#4277) - [Cache Library](http://docs.google.com/libraries/caching.html) triggered fatal errors if accessing the Memcache(d) and/or Redis driver and they are not available on the system.
* Fixed a bug where [Cache Library](http://docs.google.com/libraries/caching.html) method is\_supported() logged an error message when it returns FALSE for the APC and Wincache drivers.

Version 3.0.4[**¶**](#2bn6wsx)

Release Date: January 13, 2016

* General Changes
  + Updated [Security Library](http://docs.google.com/libraries/security.html) method get\_random\_bytes() to use PHP 7’s random\_bytes() function when possible.
  + Updated [Encryption Library](http://docs.google.com/libraries/security.html) method create\_key() to use PHP 7’s random\_bytes() function when possible.
* [Database](http://docs.google.com/database/index.html)
  + Added support for OFFSET-FETCH with Oracle 12c for the ‘oci8’ and ‘pdo/oci’ drivers.
  + Added support for the new MYSQLI\_CLIENT\_SSL\_DONT\_VERIFY\_SERVER\_CERT constant from [PHP 5.6.16](https://secure.php.net/ChangeLog-5.php#5.6.16) for the ‘mysqli’ driver.

Bug fixes for 3.0.4[**¶**](#qsh70q)

* Fixed a bug (#4212) - [Query Builder](http://docs.google.com/database/query_builder.html) method count\_all\_results() could fail if an ORDER BY condition is used.
* Fixed a bug where [Form Helper](http://docs.google.com/helpers/form_helper.html) functions [set\_checkbox()](http://docs.google.com/helpers/form_helper.html#set_checkbox), [set\_radio()](http://docs.google.com/helpers/form_helper.html#set_radio) didn’t “uncheck” inputs on a submitted form if the default state is “checked”.
* Fixed a bug (#4217) - [Config Library](http://docs.google.com/libraries/config.html) method base\_url() didn’t use proper formatting for IPv6 when it falls back to $\_SERVER['SERVER\_ADDR'].
* Fixed a bug where [CAPTCHA Helper](http://docs.google.com/helpers/captcha_helper.html) entered an infinite loop while generating a random string.
* Fixed a bug (#4223) - [Database](http://docs.google.com/database/index.html) method simple\_query() blindly executes queries without checking if the connection was initialized properly.
* Fixed a bug (#4244) - [Email Library](http://docs.google.com/libraries/email.html) could improperly use “unsafe” US-ASCII characters during Quoted-printable encoding.
* Fixed a bug (#4245) - [Database Forge](http://docs.google.com/database/forge.html) couldn’t properly handle SET and ENUM type fields with string values.
* Fixed a bug (#4283) - [String Helper](http://docs.google.com/helpers/string_helper.html) function [alternator()](http://docs.google.com/helpers/string_helper.html#alternator) couldn’t be called without arguments.
* Fixed a bug (#4306) - [Database](http://docs.google.com/database/index.html) method version() didn’t work properly with the ‘mssql’ driver.
* Fixed a bug (#4039) - [Session Library](http://docs.google.com/libraries/sessions.html) could generate multiple (redundant) warnings in case of a read failure with the ‘files’ driver, due to a bug in PHP.
* Fixed a bug where [Session Library](http://docs.google.com/libraries/sessions.html) didn’t have proper error handling on PHP 5 (due to a PHP bug).
* Fixed a bug (#4312) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) didn’t provide error feedback for failed validation on empty requests.
* Fixed a bug where [Database](http://docs.google.com/database/index.html) method version() returned banner text instead of only the version number with the ‘oci8’ and ‘pdo/oci’ drivers.
* Fixed a bug (#4331) - [Database](http://docs.google.com/database/index.html) method error() didn’t really work for connection errors with the ‘mysqli’ driver.
* Fixed a bug (#4343) - [Email Library](http://docs.google.com/libraries/email.html) failing with a *“More than one ‘from’ person”* message when using *sendmail*.
* Fixed a bug (#4350) - [Loader Library](http://docs.google.com/libraries/loader.html) method model() logic directly instantiated the CI\_Model or MY\_Model classes.
* Fixed a bug (#4337) - [Database](http://docs.google.com/database/index.html) method query() didn’t return a result set for queries with the RETURNING statement on PostgreSQL.
* Fixed a bug (#4362) - [Session Library](http://docs.google.com/libraries/sessions.html) doesn’t properly maintain its state after ID regeneration with the ‘redis’ and ‘memcached’ drivers on PHP 7.
* Fixed a bug (#4349) - [Database](http://docs.google.com/database/index.html) drivers ‘mysql’, ‘mysqli’, ‘pdo/mysql’ discard other sql\_mode flags when “stricton” is enabled.
* Fixed a bug (#4349) - [Database](http://docs.google.com/database/index.html) drivers ‘mysql’, ‘mysqli’, ‘pdo/mysql’ don’t turn off STRICT\_TRANS\_TABLES on MySQL 5.7+ when “stricton” is disabled.
* Fixed a bug (#4374) - [Session Library](http://docs.google.com/libraries/sessions.html) with the ‘database’ driver could be affected by userspace [Query Builder](http://docs.google.com/database/query_builder.html) conditions.

Version 3.0.3[**¶**](#3as4poj)

Release Date: October 31, 2015

* **Security**
  + Fixed an XSS attack vector in [Security Library](http://docs.google.com/libraries/security.html) method xss\_clean().
  + Changed [Config Library](http://docs.google.com/libraries/config.html) method base\_url() to fallback to $\_SERVER['SERVER\_ADDR'] when $config['base\_url'] is empty in order to avoid *Host* header injections.
  + Changed [CAPTCHA Helper](http://docs.google.com/helpers/captcha_helper.html) to use the operating system’s PRNG when possible.
* [Database](http://docs.google.com/database/index.html)
  + Optimized [Database Utility](http://docs.google.com/database/utilities.html) method csv\_from\_result() for speed with larger result sets.
  + Added proper return values to [Database Transactions](http://docs.google.com/database/transactions.html) method trans\_start().

Bug fixes for 3.0.3[**¶**](#1pxezwc)

* Fixed a bug (#4170) - [Database](http://docs.google.com/database/index.html) method insert\_id() could return an identity from the wrong scope with the ‘sqlsrv’ driver.
* Fixed a bug (#4179) - [Session Library](http://docs.google.com/libraries/sessions.html) doesn’t properly maintain its state after ID regeneration with the ‘database’ driver on PHP 7.
* Fixed a bug (#4173) - [Database Forge](http://docs.google.com/database/forge.html) method add\_key() didn’t allow creation of non-PRIMARY composite keys after the “bugfix” for #3968.
* Fixed a bug (#4171) - [Database Transactions](http://docs.google.com/database/transactions.html) didn’t work with nesting in methods trans\_begin(), trans\_commit(), trans\_rollback().
* Fixed a bug where [Database Transaction](http://docs.google.com/database/transactions.html) methods trans\_begin(), trans\_commit(), trans\_rollback() ignored failures.
* Fixed a bug where all [Database Transaction](http://docs.google.com/database/transactions.html) methods returned TRUE while transactions are actually disabled.
* Fixed a bug where [common function](http://docs.google.com/general/common_functions.html) [html\_escape()](http://docs.google.com/general/common_functions.html#html_escape) modified keys of its array inputs.
* Fixed a bug (#4192) - [Email Library](http://docs.google.com/libraries/email.html) wouldn’t always have proper Quoted-printable encoding due to a bug in PHP’s own mb\_mime\_encodeheader() function.

Version 3.0.2[**¶**](#49x2ik5)

Release Date: October 8, 2015

* **Security**
  + Fixed a number of XSS attack vectors in [Security Library](http://docs.google.com/libraries/security.html) method xss\_clean() (thanks to Frans Rosén from [Detectify](https://detectify.com/)).
* General Changes
  + Updated the *application/config/constants.php* file to check if constants aren’t already defined before doing that.
  + Changed [Loader Library](http://docs.google.com/libraries/loader.html) method model() to only apply ucfirst() and not strtolower() to the requested class name.
  + Changed [Config Library](http://docs.google.com/libraries/config.html) methods base\_url(), site\_url() to allow protocol-relative URLs by passing an empty string as the protocol.

Bug fixes for 3.0.2[**¶**](#2p2csry)

* Fixed a bug (#2284) - [Database](http://docs.google.com/database/index.html) method protect\_identifiers() breaks when [Query Builder](http://docs.google.com/database/query_builder.html) isn’t enabled.
* Fixed a bug (#4052) - [Routing](http://docs.google.com/general/routing.html) with anonymous functions didn’t work for routes that don’t use regular expressions.
* Fixed a bug (#4056) - [Input Library](http://docs.google.com/libraries/input.html) method get\_request\_header() could not return a value unless request\_headers() was called beforehand.
* Fixed a bug where the [Database Class](http://docs.google.com/database/index.html) entered an endless loop if it fails to connect with the ‘sqlsrv’ driver.
* Fixed a bug (#4065) - [Database](http://docs.google.com/database/index.html) method protect\_identifiers() treats a traling space as an alias separator if the input doesn’t contain ‘ AS ‘.
* Fixed a bug (#4066) - [Cache Library](http://docs.google.com/libraries/caching.html) couldn’t fallback to a backup driver if the primary one is Memcache(d) or Redis.
* Fixed a bug (#4073) - [Email Library](http://docs.google.com/libraries/email.html) method send() could return TRUE in case of an actual failure when an SMTP command fails.
* Fixed a bug (#4086) - [Query Builder](http://docs.google.com/database/query_builder.html) didn’t apply *dbprefix* to LIKE conditions if the pattern included spaces.
* Fixed a bug (#4091) - [Cache Library](http://docs.google.com/libraries/caching.html) ‘file’ driver could be tricked into accepting empty cache item IDs.
* Fixed a bug (#4093) - [Query Builder](http://docs.google.com/database/query_builder.html) modified string values containing ‘AND’, ‘OR’ while compiling WHERE conditions.
* Fixed a bug (#4096) - [Query Builder](http://docs.google.com/database/query_builder.html) didn’t apply *dbprefix* when compiling BETWEEN conditions.
* Fixed a bug (#4105) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) didn’t allow pipe characters inside “bracket parameters” when using a string ruleset.
* Fixed a bug (#4109) - [Routing](http://docs.google.com/general/routing.html) to *default\_controller* didn’t work when *enable\_query\_strings* is set to TRUE.
* Fixed a bug (#4044) - [Cache Library](http://docs.google.com/libraries/caching.html) ‘redis’ driver didn’t catch RedisException that could be thrown during authentication.
* Fixed a bug (#4120) - [Database](http://docs.google.com/database/index.html) method error() didn’t return error info when called after query() with the ‘mssql’ driver.
* Fixed a bug (#4116) - [Pagination Library](http://docs.google.com/libraries/pagination.html) set the wrong page number on the “data-ci-pagination-page” attribute in generated links.
* Fixed a bug where [Pagination Library](http://docs.google.com/libraries/pagination.html) added the ‘rel=”start”’ attribute to the first displayed link even if it’s not actually linking the first page.
* Fixed a bug (#4137) - [Error Handling](http://docs.google.com/general/errors.html) breaks for the new Error exceptions under PHP 7.
* Fixed a bug (#4126) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) method reset\_validation() discarded validation rules from config files.

Version 3.0.1[**¶**](#147n2zr)

Release Date: August 7, 2015

* Core
  + Added DoS mitigation to [hash\_pbkdf2()](http://docs.google.com/general/compatibility_functions.html#hash_pbkdf2) [compatibility function](http://docs.google.com/general/compatibility_functions.html).
* Database
  + Added list\_fields() support for SQLite (‘sqlite3’ and ‘pdo\_sqlite’ drivers).
  + Added SSL connection support for the ‘mysqli’ and ‘pdo\_mysql’ drivers.
* Libraries
  + [File Uploading Library](http://docs.google.com/libraries/file_uploading.html) changes:
    - Changed method set\_error() to accept a custom log level (defaults to ‘error’).
    - Errors “no\_file\_selected”, “file\_partial”, “stopped\_by\_extension”, “no\_file\_types”, “invalid\_filetype”, “bad\_filename” are now logged at the ‘debug’ level.
    - Errors “file\_exceeds\_limit”, “file\_exceeds\_form\_limit”, “invalid\_filesize”, “invalid\_dimensions” are now logged at the ‘info’ level.
  + Added ‘is\_resource’ to the available expectations in [Unit Testing Library](http://docs.google.com/libraries/unit_testing.html).
* Helpers
  + Added Unicode support to [URL Helper](http://docs.google.com/helpers/url_helper.html) function [url\_title()](http://docs.google.com/helpers/url_helper.html#url_title).
  + Added support for passing the “extra” parameter as an array to all [Form Helper](http://docs.google.com/helpers/form_helper.html) functions that use it.
* Core
  + Added support for defining a list of specific query parameters in $config['cache\_query\_string'] for the [Output Library](http://docs.google.com/libraries/output.html).
  + Added class existence and inheritance checks to CI\_Loader::model() in order to ease debugging in case of name collisions.

Bug fixes for 3.0.1[**¶**](#3o7alnk)

* Fixed a bug (#3733) - Autoloading of libraries with aliases didn’t work, although it was advertised to.
* Fixed a bug (#3744) - Redis [Caching](http://docs.google.com/libraries/caching.html) driver didn’t handle authentication failures properly.
* Fixed a bug (#3761) - [URL Helper](http://docs.google.com/helpers/url_helper.html) function [anchor()](http://docs.google.com/helpers/url_helper.html#anchor) didn’t work with array inputs.
* Fixed a bug (#3773) - db\_select() didn’t work for MySQL with the PDO [Database](http://docs.google.com/database/index.html) driver.
* Fixed a bug (#3771) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) was looking for a ‘form\_validation\_’ prefix when trying to translate field name labels.
* Fixed a bug (#3787) - [FTP Library](http://docs.google.com/libraries/ftp.html) method delete\_dir() failed when the target has subdirectories.
* Fixed a bug (#3801) - [Output Library](http://docs.google.com/libraries/output.html) method \_display\_cache() incorrectly looked for the last modified time of a directory instead of the cache file.
* Fixed a bug (#3816) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) treated empty string values as non-existing ones.
* Fixed a bug (#3823) - [Session Library](http://docs.google.com/libraries/sessions.html) drivers Redis and Memcached didn’t properly handle locks that are blocking the request for more than 30 seconds.
* Fixed a bug (#3846) - [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) method image\_mirror\_gd() didn’t properly initialize its variables.
* Fixed a bug (#3854) - field\_data() didn’t work properly with the Oracle (OCI8) database driver.
* Fixed a bug in the [Database Utility Class](http://docs.google.com/database/utilities.html) method csv\_from\_result() didn’t work with a whitespace CSV delimiter.
* Fixed a bug (#3890) - [Input Library](http://docs.google.com/libraries/input.html) method get\_request\_header() treated header names as case-sensitive.
* Fixed a bug (#3903) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) ignored “unnamed” closure validation rules.
* Fixed a bug (#3904) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) ignored “named” callback rules when the field is empty and there’s no ‘required’ rule.
* Fixed a bug (#3922) - [Email](http://docs.google.com/libraries/email.html) and [XML-RPC](http://docs.google.com/libraries/xmlrpc.html) libraries could enter an infinite loop due to [PHP bug #39598](https://bugs.php.net/bug.php?id=39598).
* Fixed a bug (#3913) - [Cache Library](http://docs.google.com/libraries/caching.html) didn’t work with the direct $this->cache->$driver\_name->method() syntax with Redis and Memcache(d).
* Fixed a bug (#3932) - [Query Builder](http://docs.google.com/database/query_builder.html) didn’t properly compile WHERE and HAVING conditions for field names that end with “and”, “or”.
* Fixed a bug in [Query Builder](http://docs.google.com/database/query_builder.html) where delete() didn’t properly work on multiple tables with a WHERE condition previously set via where().
* Fixed a bug (#3952) - [Database](http://docs.google.com/database/index.html) method list\_fields() didn’t work with SQLite3.
* Fixed a bug (#3955) - [Cache Library](http://docs.google.com/libraries/caching.html) methods increment() and decrement() ignored the ‘key\_prefix’ setting.
* Fixed a bug (#3963) - [Unit Testing Library](http://docs.google.com/libraries/unit_testing.html) wrongly tried to translate filenames, line numbers and notes values in test results.
* Fixed a bug (#3965) - [File Uploading Library](http://docs.google.com/libraries/file_uploading.html) ignored the “encrypt\_name” setting when “overwrite” is enabled.
* Fixed a bug (#3968) - [Database Forge](http://docs.google.com/database/forge.html) method add\_key() didn’t treat array inputs as composite keys unless it’s a PRIMARY KEY.
* Fixed a bug (#3715) - [Pagination Library](http://docs.google.com/libraries/pagination.html) could generate broken link when a protocol-relative base URL is used.
* Fixed a bug (#3828) - [Output Library](http://docs.google.com/libraries/output.html) method delete\_cache() couldn’t delete index page caches.
* Fixed a bug (#3704) - [Database](http://docs.google.com/database/index.html) method stored\_procedure() in the ‘oci8’ driver didn’t properly bind parameters.
* Fixed a bug (#3778) - [Download Helper](http://docs.google.com/helpers/download_helper.html) function [force\_download()](http://docs.google.com/helpers/download_helper.html#force_download) incorrectly sent a *Pragma* response header.
* Fixed a bug (#3752) - $routing['directory'] overrides were not properly handled and always resulted in a 404 “Not Found” error.
* Fixed a bug (#3279) - [Query Builder](http://docs.google.com/database/query_builder.html) methods update() and get\_compiled\_update() did double escaping on the table name if it was provided via from().
* Fixed a bug (#3991) - $config['rewrite\_short\_tags'] never worked due to function\_exists('eval') always returning FALSE.
* Fixed a bug where the [File Uploading Library](http://docs.google.com/libraries/file_uploading.html) library will not properly configure its maximum file size unless the input value is of type integer.
* Fixed a bug (#4000) - [Pagination Library](http://docs.google.com/libraries/pagination.html) didn’t enable “rel” attributes by default if no attributes-related config options were used.
* Fixed a bug (#4004) - [URI Class](http://docs.google.com/libraries/uri.html) didn’t properly parse the request URI if it contains a colon followed by a digit.
* Fixed a bug in [Query Builder](http://docs.google.com/database/query_builder.html) where the $escape parameter for some methods only affected field names.
* Fixed a bug (#4012) - [Query Builder](http://docs.google.com/database/query_builder.html) methods where\_in(), or\_where\_in(), where\_not\_in(), or\_where\_not\_in() didn’t take into account previously cached WHERE conditions when query cache is in use.
* Fixed a bug (#4015) - [Email Library](http://docs.google.com/libraries/email.html) method set\_header() didn’t support method chaining, although it was advertised.
* Fixed a bug (#4027) - [Routing](http://docs.google.com/general/routing.html) with HTTP verbs only worked if the route request method was declared in all-lowercase letters.
* Fixed a bug (#4026) - [Database Transactions](http://docs.google.com/database/transactions.html) always rollback if any previous query() call fails.
* Fixed a bug (#4023) - [String Helper](http://docs.google.com/helpers/string_helper.html) function increment\_string() didn’t escape its $separator parameter.

Version 3.0.0[**¶**](#23ckvvd)

Release Date: March 30, 2015

* License
  + CodeIgniter has been relicensed with the [MIT License](http://opensource.org/licenses/MIT), eliminating its old proprietary licensing.
* General Changes
  + PHP 5.1.6 is no longer supported. CodeIgniter now requires PHP 5.2.4 and recommends PHP 5.4+ or newer to be used.
  + Changed filenaming convention (class file names now must be Ucfirst and everything else in lowercase).
  + Changed the default database driver to ‘mysqli’ (the old ‘mysql’ driver is DEPRECATED).
  + $\_SERVER['CI\_ENV'] can now be set to control the ENVIRONMENT constant.
  + Added an optional backtrace to php-error template.
  + Added Android to the list of user agents.
  + Added Windows 7, Windows 8, Windows 8.1, Android, Blackberry, iOS and PlayStation 3 to the list of user platforms.
  + Added Fennec (Firefox for mobile) to the list of mobile user agents.
  + Ability to log certain error types, not all under a threshold.
  + Added support for pem, p10, p12, p7a, p7c, p7m, p7r, p7s, crt, crl, der, kdb, rsa, cer, sst, csr Certs to mimes.php.
  + Added support for pgp, gpg, zsh and cdr files to mimes.php.
  + Added support for 3gp, 3g2, mp4, wmv, f4v, vlc Video files to mimes.php.
  + Added support for m4a, aac, m4u, xspf, au, ac3, flac, ogg, wma Audio files to mimes.php.
  + Added support for kmz and kml (Google Earth) files to mimes.php.
  + Added support for ics Calendar files to mimes.php.
  + Added support for rar, jar and 7zip archives to mimes.php.
  + Updated support for xml (‘application/xml’) and xsl (‘application/xml’, ‘text/xsl’) files in mimes.php.
  + Updated support for doc files in mimes.php.
  + Updated support for docx files in mimes.php.
  + Updated support for php files in mimes.php.
  + Updated support for zip files in mimes.php.
  + Updated support for csv files in mimes.php.
  + Added Romanian, Greek, Vietnamese and Cyrilic characters in *application/config/foreign\_characters.php*.
  + Changed logger to only chmod when file is first created.
  + Removed previously deprecated SHA1 Library.
  + Removed previously deprecated use of $autoload['core'] in *application/config/autoload.php*. Only entries in $autoload['libraries'] are auto-loaded now.
  + Removed previously deprecated EXT constant.
  + Updated all classes to be written in PHP 5 style, with visibility declarations and no var usage for properties.
  + Added an Exception handler.
  + Moved error templates to *application/views/errors/* and made the path configurable via $config['error\_views\_path'].
  + Added support non-HTML error templates for CLI applications.
  + Moved the Log class to *application/core/*
  + Global config files are loaded first, then environment ones. Environment config keys overwrite base ones, allowing to only set the keys we want changed per environment.
  + Changed detection of $view\_folder so that if it’s not found in the current path, it will now also be searched for under the application folder.
  + Path constants BASEPATH, APPPATH and VIEWPATH are now (internally) defined as absolute paths.
  + Updated email validation methods to use filter\_var() instead of PCRE.
  + Changed environment defaults to report all errors in *development* and only fatal ones in *testing*, *production* but only display them in *development*.
  + Updated *ip\_address* database field lengths from 16 to 45 for supporting IPv6 address on [Trackback Library](http://docs.google.com/libraries/trackback.html) and [Captcha Helper](http://docs.google.com/helpers/captcha_helper.html).
  + Removed *cheatsheets* and *quick\_reference* PDFs from the documentation.
  + Added availability checks where usage of dangerous functions like eval() and exec() is required.
  + Added support for changing the file extension of log files using $config['log\_file\_extension'].
  + Added support for turning newline standardization on/off via $config['standardize\_newlines'] and set it to FALSE by default.
  + Added configuration setting $config['composer\_autoload'] to enable loading of a [Composer](https://getcomposer.org) auto-loader.
  + Removed the automatic conversion of ‘programmatic characters’ to HTML entities from the [URI Library](http://docs.google.com/libraries/uri.html).
  + Changed log messages that say a class or file was loaded to “info” level instead of “debug”, so that they don’t pollute log files when $config['log\_threshold'] is set to 2 (debug).
* Helpers
  + [Date Helper](http://docs.google.com/helpers/date_helper.html) changes include:
    - Added an optional third parameter to [timespan()](http://docs.google.com/helpers/date_helper.html#timespan) that constrains the number of time units displayed.
    - Added an optional parameter to [timezone\_menu()](http://docs.google.com/helpers/date_helper.html#timezone_menu) that allows more attributes to be added to the generated select tag.
    - Added function [date\_range()](http://docs.google.com/helpers/date_helper.html#date_range) that generates a list of dates between a specified period.
    - Deprecated standard\_date(), which now just uses the native date() with [DateTime constants](http://php.net/manual/en/class.datetime.php#datetime.constants.types).
    - Changed [now()](http://docs.google.com/helpers/date_helper.html#now) to work with all timezone strings supported by PHP.
    - Changed [days\_in\_month()](http://docs.google.com/helpers/date_helper.html#days_in_month) to use the native cal\_days\_in\_month() PHP function, if available.
  + [URL Helper](http://docs.google.com/helpers/url_helper.html) changes include:
    - Deprecated *separator* options **dash** and **underscore** for function [url\_title()](http://docs.google.com/helpers/url_helper.html#url_title) (they are only aliases for ‘-‘ and ‘\_’ respectively).
    - [url\_title()](http://docs.google.com/helpers/url_helper.html#url_title) will now trim extra dashes from beginning and end.
    - [anchor\_popup()](http://docs.google.com/helpers/url_helper.html#anchor_popup) will now fill the *href* attribute with the URL and its JS code will return FALSE instead.
    - Added JS window name support to the [anchor\_popup()](http://docs.google.com/helpers/url_helper.html#anchor_popup) function.
    - Added support for menubar attribute to the [anchor\_popup()](http://docs.google.com/helpers/url_helper.html#anchor_popup).
    - Added support (auto-detection) for HTTP/1.1 response codes 303, 307 in [redirect()](http://docs.google.com/helpers/url_helper.html#redirect).
    - Changed [redirect()](http://docs.google.com/helpers/url_helper.html#redirect) to choose the **refresh** method only on IIS servers, instead of all servers on Windows (when **auto** is used).
    - Changed [anchor()](http://docs.google.com/helpers/url_helper.html#anchor), [anchor\_popup()](http://docs.google.com/helpers/url_helper.html#anchor_popup), and [redirect()](http://docs.google.com/helpers/url_helper.html#redirect) to support protocol-relative URLs (e.g. *//ellislab.com/codeigniter*).
  + [HTML Helper](http://docs.google.com/helpers/html_helper.html) changes include:
    - Added more doctypes.
    - Changed application and environment config files to be loaded in a cascade-like manner.
    - Changed [doctype()](http://docs.google.com/helpers/html_helper.html#doctype) to cache and only load once the doctypes array.
    - Deprecated functions nbs() and br(), which are just aliases for the native str\_repeat() with   and <br /> respectively.
  + [Inflector Helper](http://docs.google.com/helpers/inflector_helper.html) changes include:
    - Changed [humanize()](http://docs.google.com/helpers/inflector_helper.html#humanize) to allow passing an input separator as its second parameter.
    - Changed [humanize()](http://docs.google.com/helpers/inflector_helper.html#humanize) and [underscore()](http://docs.google.com/helpers/inflector_helper.html#underscore) to utilize [mbstring](http://php.net/mbstring), if available.
    - Changed [plural()](http://docs.google.com/helpers/inflector_helper.html#plural) and [singular()](http://docs.google.com/helpers/inflector_helper.html#singular) to avoid double pluralization and support more words.
  + [Download Helper](http://docs.google.com/helpers/download_helper.html) changes include:
    - Added an optional third parameter to [force\_download()](http://docs.google.com/helpers/download_helper.html#force_download) that enables/disables sending the actual file MIME type in the Content-Type header (disabled by default).
    - Added a work-around in [force\_download()](http://docs.google.com/helpers/download_helper.html#force_download) for a bug Android <= 2.1, where the filename extension needs to be in uppercase.
    - Added support for reading from an existing file path by passing NULL as the second parameter to [force\_download()](http://docs.google.com/helpers/download_helper.html#force_download) (useful for large files and/or safely transmitting binary data).
  + [Form Helper](http://docs.google.com/helpers/form_helper.html) changes include:
    - [form\_dropdown()](http://docs.google.com/helpers/form_helper.html#form_dropdown) will now also take an array for unity with other form helpers.
    - [form\_prep()](http://docs.google.com/helpers/form_helper.html#form_prep) is now DEPRECATED and only acts as an alias for [common function](http://docs.google.com/general/common_functions.html) [html\_escape()](http://docs.google.com/general/common_functions.html#html_escape).
    - [set\_value()](http://docs.google.com/helpers/form_helper.html#set_value) will now also accept a third argument, allowing to turn off HTML escaping of the value.
  + [Security Helper](http://docs.google.com/helpers/security_helper.html) changes include:
    - [do\_hash()](http://docs.google.com/helpers/security_helper.html#do_hash) now uses PHP’s native hash() function (supporting more algorithms) and is deprecated.
    - [strip\_image\_tags()](http://docs.google.com/helpers/security_helper.html#strip_image_tags) is now an alias for the same method in the [Security Library](http://docs.google.com/libraries/security.html).
  + [Smiley Helper](http://docs.google.com/helpers/smiley_helper.html) changes include:
    - Deprecated the whole helper as too specific for CodeIgniter.
    - Removed previously deprecated function js\_insert\_smiley().
    - Changed application and environment config files to be loaded in a cascade-like manner.
    - The smileys array is now cached and loaded only once.
  + [File Helper](http://docs.google.com/helpers/file_helper.html) changes include:
    - [set\_realpath()](http://docs.google.com/helpers/path_helper.html#set_realpath) can now also handle file paths as opposed to just directories.
    - Added an optional paramater to [delete\_files()](http://docs.google.com/helpers/file_helper.html#delete_files) to enable it to skip deleting files such as *.htaccess* and *index.html*.
    - Deprecated function read\_file() - it’s just an alias for PHP’s native file\_get\_contents().
  + [String Helper](http://docs.google.com/helpers/string_helper.html) changes include:
    - Deprecated function repeater() - it’s just an alias for PHP’s native str\_repeat().
    - Deprecated function trim\_slashes() - it’s just an alias for PHP’s native trim() (with a slash as its second argument).
    - Deprecated randomization type options **unique** and **encrypt** for funcion [random\_string()](http://docs.google.com/helpers/string_helper.html#random_string) (they are only aliases for **md5** and **sha1** respectively).
  + [CAPTCHA Helper](http://docs.google.com/helpers/captcha_helper.html) changes include:
    - Added *word\_length* and *pool* options to allow customization of the generated word.
    - Added *colors* configuration to allow customization for the *background*, *border*, *text* and *grid* colors.
    - Added *filename* to the returned array elements.
    - Updated to use imagepng() in case that imagejpeg() isn’t available.
    - Added **font\_size** option to allow customization of font size.
    - Added **img\_id** option to set id attribute of captcha image.
  + [Text Helper](http://docs.google.com/helpers/text_helper.html) changes include:
    - Changed the default tag for use in [highlight\_phrase()](http://docs.google.com/helpers/text_helper.html#highlight_phrase) to <mark> (formerly <strong>).
    - Changed [character\_limiter()](http://docs.google.com/helpers/text_helper.html#character_limiter), [word\_wrap()](http://docs.google.com/helpers/text_helper.html#word_wrap) and [ellipsize()](http://docs.google.com/helpers/text_helper.html#ellipsize) to utilize [mbstring](http://php.net/mbstring) or [iconv](http://php.net/iconv), if available.
  + [Directory Helper](http://docs.google.com/helpers/directory_helper.html) [directory\_map()](http://docs.google.com/helpers/directory_helper.html#directory_map) will now append DIRECTORY\_SEPARATOR to directory names in the returned array.
  + [Array Helper](http://docs.google.com/helpers/array_helper.html) [element()](http://docs.google.com/helpers/array_helper.html#element) and [elements()](http://docs.google.com/helpers/array_helper.html#elements) now return NULL instead of FALSE when the required elements don’t exist.
  + [Language Helper](http://docs.google.com/helpers/language_helper.html) [lang()](http://docs.google.com/helpers/language_helper.html#lang) now accepts an optional list of additional HTML attributes.
  + Deprecated the [Email Helper](http://docs.google.com/helpers/email_helper.html) as its valid\_email(), send\_email() functions are now only aliases for PHP native functions filter\_var() and mail() respectively.
* Database
  + DEPRECATED the ‘mysql’, ‘sqlite’, ‘mssql’ and ‘pdo/dblib’ (also known as ‘pdo/mssql’ or ‘pdo/sybase’) drivers.
  + Added **dsn** configuration setting for drivers that support DSN strings (PDO, PostgreSQL, Oracle, ODBC, CUBRID).
  + Added **schema** configuration setting (defaults to *public*) for drivers that might need it (currently used by PostgreSQL and ODBC).
  + Added **save\_queries** configuration setting to *application/config/database.php* (defaults to TRUE).
  + Removed **autoinit** configuration setting as it doesn’t make sense to instantiate the database class but not connect to the database.
  + Added subdrivers support (currently only used by PDO).
  + Added an optional database name parameter to db\_select().
  + Removed protect\_identifiers() and renamed internal method \_protect\_identifiers() to it instead - it was just an alias.
  + Renamed internal method \_escape\_identifiers() to escape\_identifiers().
  + Updated escape\_identifiers() to accept an array of fields as well as strings.
  + MySQL and MySQLi drivers now require at least MySQL version 5.1.
  + Added a $persistent parameter to db\_connect() and changed db\_pconnect() to be an alias for db\_connect(TRUE).
  + db\_set\_charset() now only requires one parameter (collation was only needed due to legacy support for MySQL versions prior to 5.1).
  + db\_select() will now always (if required by the driver) be called by db\_connect() instead of only when initializing.
  + Replaced the \_error\_message() and \_error\_number() methods with error(), which returns an array containing the last database error code and message.
  + Improved version() implementation so that drivers that have a native function to get the version number don’t have to be defined in the core DB\_driver class.
  + Added capability for packages to hold *config/database.php* config files.
  + Added MySQL client compression support.
  + Added encrypted connections support (for *mysql*, *sqlsrv* and PDO with *sqlsrv*).
  + Removed [Loader Class](http://docs.google.com/libraries/loader.html) from Database error tracing to better find the likely culprit.
  + Added support for SQLite3 database driver.
  + Added Interbase/Firebird database support via the *ibase* driver.
  + Added ODBC support for create\_database(), drop\_database() and drop\_table() in [Database Forge](http://docs.google.com/database/forge.html).
  + Added support to binding arrays as IN() sets in query().
  + [Query Builder](http://docs.google.com/database/query_builder.html) changes include:
    - Renamed the Active Record class to Query Builder to remove confusion with the Active Record design pattern.
    - Added the ability to insert objects with insert\_batch().
    - Added new methods that return the SQL string of queries without executing them: get\_compiled\_select(), get\_compiled\_insert(), get\_compiled\_update(), get\_compiled\_delete().
    - Added an optional parameter that allows to disable escaping (useful for custom fields) for methods join(), order\_by(), where\_in(), or\_where\_in(), where\_not\_in(), or\_where\_not\_in(), insert(), insert\_batch().
    - Added support for join() with multiple conditions.
    - Added support for *USING* in join().
    - Added support for *EXISTS* in where().
    - Added seed values support for random ordering with order\_by(seed, 'RANDOM').
    - Changed limit() to ignore NULL values instead of always casting to integer.
    - Changed offset() to ignore empty values instead of always casting to integer.
    - Methods insert\_batch() and update\_batch() now return an integer representing the number of rows affected by them.
    - Methods where(), or\_where(), having() and or\_having() now convert trailing = and <>, != SQL operators to IS NULL and IS NOT NULL respectively when the supplied comparison value is NULL.
    - Added method chaining support to reset\_query(), start\_cache(), stop\_cache() and flush\_cache().
    - Added an optional second parameter to count\_all\_results() to disable resetting of QB values.
  + [Database Results](http://docs.google.com/database/results.html) changes include:
    - Added a constructor to the DB\_result class and moved all driver-specific properties and logic out of the base DB\_driver class to allow better abstraction.
    - Added method unbuffered\_row() for fetching a row without prefetching the whole result (consume less memory).
    - Renamed former method \_data\_seek() to data\_seek() and made it public.
  + Improved support for the MySQLi driver, including:
    - OOP style usage of the PHP extension is now used, instead of the procedural aliases.
    - Server version checking is now done via mysqli::$server\_info instead of running an SQL query.
    - Added persistent connections support for PHP >= 5.3.
    - Added support for configuring socket pipe connections.
    - Added support for backup() in [Database Utilities](http://docs.google.com/database/utilities.html).
    - Changed methods trans\_begin(), trans\_commit() and trans\_rollback() to use the PHP API instead of sending queries.
  + Improved support of the PDO driver, including:
    - Added support for create\_database(), drop\_database() and drop\_table() in [Database Forge](http://docs.google.com/database/forge.html).
    - Added support for list\_fields() in [Database Results](http://docs.google.com/database/results.html).
    - Subdrivers are now isolated from each other instead of being in one large class.
  + Improved support of the PostgreSQL driver, including:
    - pg\_version() is now used to get the database version number, when possible.
    - Added db\_set\_charset() support.
    - Added support for optimize\_table() in [Database Utilities](http://docs.google.com/database/utilities.html) (rebuilds table indexes).
    - Added boolean data type support in escape().
    - Added update\_batch() support.
    - Removed limit() and order\_by() support for *UPDATE* and *DELETE* queries as PostgreSQL does not support those features.
    - Added a work-around for dead persistent connections to be re-created after a database restart.
    - Changed db\_connect() to include the (new) **schema** value into Postgre’s **search\_path** session variable.
    - pg\_escape\_literal() is now used for escaping strings, if available.
  + Improved support of the CUBRID driver, including:
    - Added DSN string support.
    - Added persistent connections support.
    - Improved list\_databases() in [Database Utility](http://docs.google.com/database/utilities.html) (until now only the currently used database was returned).
  + Improved support of the MSSQL and SQLSRV drivers, including:
    - Added random ordering support.
    - Added support for optimize\_table() in [Database Utility](http://docs.google.com/database/utilities.html).
    - Added escaping with *QUOTE\_IDENTIFIER* setting detection.
    - Added port handling support for UNIX-based systems (MSSQL driver).
    - Added *OFFSET* support for SQL Server 2005 and above.
    - Added db\_set\_charset() support (MSSQL driver).
    - Added a *scrollable* property to enable configuration of the cursor to use (SQLSRV driver).
    - Added support and auto-detection for the SQLSRV\_CURSOR\_CLIENT\_BUFFERED scrollable cursor flag (SQLSRV driver).
    - Changed default behavior to not use SQLSRV\_CURSOR\_STATIC due to performance issues (SQLSRV driver).
  + Improved support of the Oracle (OCI8) driver, including:
    - Added DSN string support (Easy Connect and TNS).
    - Added support for drop\_table() in [Database Forge](http://docs.google.com/database/forge.html).
    - Added support for list\_databases() in [Database Utilities](http://docs.google.com/database/utilities.html).
    - Generally improved for speed and cleaned up all of its components.
    - num\_rows() is now only called explicitly by the developer and no longer re-executes statements.
  + Improved support of the SQLite driver, including:
    - Added support for replace() in [Query Builder](http://docs.google.com/database/query_builder.html).
    - Added support for drop\_table() in [Database Forge](http://docs.google.com/database/forge.html).
  + [Database Forge](http://docs.google.com/database/forge.html) changes include:
    - Added an optional second parameter to drop\_table() that allows adding the **IF EXISTS** condition, which is no longer the default.
    - Added support for passing a custom database object to the loader.
    - Added support for passing custom table attributes (such as ENGINE for MySQL) to create\_table().
    - Added support for usage of the *FIRST* clause in add\_column() for MySQL and CUBRID.
    - Added partial support for field comments (MySQL, PostgreSQL, Oracle).
    - Deprecated add\_column()’s third method. *AFTER* clause should now be added to the field definition array instead.
    - Overall improved support for all of the drivers.
  + [Database Utility](http://docs.google.com/database/utilities.html) changes include:
    - Added support for passing a custom database object to the loader.
    - Modified the class to no longer extend [Database Forge](http://docs.google.com/database/forge.html), which has been a deprecated behavior for awhile.
    - Overall improved support for all of the drivers.
    - Added *foreign\_key\_checks* option to MySQL/MySQLi backup, allowing statement to disable/re-enable foreign key checks to be inserted into the backup output.
* Libraries
  + Added a new [Encryption Library](http://docs.google.com/libraries/encryption.html) to replace the old, largely insecure [Encrypt Library](http://docs.google.com/libraries/encrypt.html).
  + [Encrypt Library](http://docs.google.com/libraries/encrypt.html) changes include:
    - Deprecated the library in favor of the new [Encryption Library](http://docs.google.com/libraries/encryption.html).
    - Added support for hashing algorithms other than SHA1 and MD5.
    - Removed previously deprecated sha1() method.
  + [Session Library](http://docs.google.com/libraries/sessions.html) changes include:
    - Completely re-written the library to use self-contained drivers via $config['sess\_driver'].
    - Added ‘files’, ‘database’, ‘redis’ and ‘memcached’ drivers (using ‘files’ by default).
    - Added $config['sess\_save\_path'] setting to specify where the session data is stored, depending on the driver.
    - Dropped support for storing session data in cookies (which renders $config['sess\_encrypt\_cookie'] useless and is therefore also removed).
    - Dropped official support for storing session data in databases other than MySQL and PostgreSQL.
    - Changed table structure for the ‘database’ driver.
    - Added a new **tempdata** feature that allows setting userdata items with expiration time (mark\_as\_temp(), tempdata(), set\_tempdata(), unset\_tempdata()).
    - Changed method keep\_flashdata() to also accept an array of keys.
    - Changed methods userdata(), flashdata() to return an array of all userdata/flashdata when no parameter is passed.
    - Deprecated method all\_userdata() - it is now just an alias for userdata() with no parameters.
    - Added method has\_userdata() that verifies the existence of a userdata item.
    - Added *debug* level log messages for key events in the session validation process.
    - Dropped support for the *sess\_match\_useragent* option.
  + [File Uploading Library](http://docs.google.com/libraries/file_uploading.html) changes include:
    - Added method chaining support.
    - Added support for using array notation in file field names.
    - Added **max\_filename\_increment** and **file\_ext\_tolower** configuration settings.
    - Added **min\_width** and **min\_height** configuration settings for images.
    - Added **mod\_mime\_fix** configuration setting to disable suffixing multiple file extensions with an underscore.
    - Added the possibility pass **allowed\_types** as an array.
    - Added an $index parameter to the method data().
    - Added a $reset parameter to method initialize().
    - Removed method clean\_file\_name() and its usage in favor of [Security Library](http://docs.google.com/libraries/security.html)’s sanitize\_filename().
    - Removed method mimes\_types().
    - Changed CI\_Upload::\_prep\_filename() to simply replace all (but the last) dots in the filename with underscores, instead of suffixing them.
  + [Calendar Library](http://docs.google.com/libraries/calendar.html) changes include:
    - Added method chaining support.
    - Added configuration to generate days of other months instead of blank cells.
    - Added auto-configuration for *next\_prev\_url* if it is empty and *show\_prev\_next* is set to TRUE.
    - Added support for templating via an array in addition to the encoded string.
    - Changed method get\_total\_days() to be an alias for [Date Helper](http://docs.google.com/helpers/date_helper.html) [days\_in\_month()](http://docs.google.com/helpers/date_helper.html#days_in_month).
  + [Cart Library](http://docs.google.com/libraries/cart.html) changes include:
    - Deprecated the library as too specific for CodeIgniter.
    - Added method remove() to remove a cart item, updating with quantity of 0 seemed like a hack but has remained to retain compatibility.
    - Added method get\_item() to enable retrieving data for a single cart item.
    - Added unicode support for product names.
    - Added support for disabling product name strictness via the $product\_name\_safe property.
    - Changed insert() method to auto-increment quantity for an item when inserted twice instead of resetting it.
    - Changed update() method to support updating all properties attached to an item and not to require ‘qty’.
  + [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) changes include:
    - The initialize() method now only sets existing class properties.
    - Added support for 3-length hex color values for *wm\_font\_color* and *wm\_shadow\_color* properties, as well as validation for them.
    - Class properties *wm\_font\_color*, *wm\_shadow\_color* and *wm\_use\_drop\_shadow* are now protected, to avoid breaking the text\_watermark() method if they are set manually after initialization.
    - If property *maintain\_ratio* is set to TRUE, image\_reproportion() now doesn’t need both width and height to be specified.
    - Property *maintain\_ratio* is now taken into account when resizing images using ImageMagick library.
    - Added support for maintaining transparency for PNG images when watermarking.
    - Added a **file\_permissions** setting.
  + [Form Validation Library](http://docs.google.com/libraries/form_validation.html) changes include:
    - Added method error\_array() to return all error messages as an array.
    - Added method set\_data() to set an alternative data array to be validated instead of the default $\_POST.
    - Added method reset\_validation() which resets internal validation variables in case of multiple validation routines.
    - Added support for setting error delimiters in the config file via $config['error\_prefix'] and $config['error\_suffix'].
    - Internal method \_execute() now considers input data to be invalid if a specified rule is not found.
    - Removed method is\_numeric() as it exists as a native PHP function and \_execute() will find and use that (the **is\_numeric** rule itself is deprecated since 1.6.1).
    - Native PHP functions used as rules can now accept an additional parameter, other than the data itself.
    - Updated method set\_rules() to accept an array of rules as well as a string.
    - Fields that have empty rules set no longer run through validation (and therefore are not considered erroneous).
    - Added rule **differs** to check if the value of a field differs from the value of another field.
    - Added rule **valid\_url**.
    - Added rule **in\_list** to check if the value of a field is within a given list.
    - Added support for named parameters in error messages.
    - [Language](http://docs.google.com/libraries/language.html) line keys must now be prefixed with **form\_validation\_**.
    - Added rule **alpha\_numeric\_spaces**.
    - Added support for custom error messages per field rule.
    - Added support for callable rules when they are passed as an array.
    - Added support for non-ASCII domains in **valid\_email** rule, depending on the Intl extension.
    - Changed the debug message about an error message not being set to include the rule name it is about.
  + [Caching Library](http://docs.google.com/libraries/caching.html) changes include:
    - Added Wincache driver.
    - Added Redis driver.
    - Added a *key\_prefix* option for cache IDs.
    - Updated driver is\_supported() methods to log at the “debug” level.
    - Added option to store raw values instead of CI-formatted ones (APC, Memcache).
    - Added atomic increment/decrement feature via increment(), decrement().
  + [E-mail Library](http://docs.google.com/libraries/email.html) changes include:
    - Added a custom filename parameter to attach() as $this->email->attach($filename, $disposition, $newname).
    - Added possibility to send attachment as buffer string in attach() as $this->email->attach($buffer, $disposition, $newname, $mime).
    - Added possibility to attach remote files by passing a URL.
    - Added method attachment\_cid() to enable embedding inline attachments into HTML.
    - Added dsn (delivery status notification) option.
    - Renamed method \_set\_header() to set\_header() and made it public to enable adding custom headers.
    - Successfully sent emails will automatically clear the parameters.
    - Added a *return\_path* parameter to the from() method.
    - Removed the second parameter (character limit) from internal method \_prep\_quoted\_printable() as it is never used.
    - Internal method \_prep\_quoted\_printable() will now utilize the native quoted\_printable\_encode(), imap\_8bit() functions (if available) when CRLF is set to “rn”.
    - Default charset now relies on the global $config['charset'] setting.
    - Removed unused protected method \_get\_ip() ([Input Library](http://docs.google.com/libraries/input.html)’s ip\_address() should be used anyway).
    - Internal method \_prep\_q\_encoding() now utilizes PHP’s *mbstring* and *iconv* extensions (when available) and no longer has a second ($from) argument.
    - Added an optional parameter to print\_debugger() to allow specifying which parts of the message should be printed (‘headers’, ‘subject’, ‘body’).
    - Added SMTP keepalive option to avoid opening the connection for each send() call. Accessible as $smtp\_keepalive.
    - Public method set\_header() now filters the input by removing all “\r” and “\n” characters.
    - Added support for non-ASCII domains in valid\_email(), depending on the Intl extension.
  + [Pagination Library](http://docs.google.com/libraries/pagination.html) changes include:
    - Deprecated usage of the “anchor\_class” setting (use the new “attributes” setting instead).
    - Added method chaining support to initialize() method.
    - Added support for the anchor “rel” attribute.
    - Added support for setting custom attributes.
    - Added support for language translations of the *first\_link*, *next\_link*, *prev\_link* and *last\_link* values.
    - Added support for $config['num\_links'] = 0 configuration.
    - Added $config['reuse\_query\_string'] to allow automatic repopulation of query string arguments, combined with normal URI segments.
    - Added $config['use\_global\_url\_suffix'] to allow overriding the library ‘suffix’ value with that of the global $config['url\_suffix'] setting.
    - Removed the default   from a number of the configuration variables.
  + [Profiler Library](http://docs.google.com/general/profiling.html) changes include:
    - Database object names are now being displayed.
    - The sum of all queries running times in seconds is now being displayed.
    - Added support for displaying the HTTP DNT (“Do Not Track”) header.
    - Added support for displaying $\_FILES.
  + [Migration Library](http://docs.google.com/libraries/migration.html) changes include:
    - Added support for timestamp-based migrations (enabled by default).
    - Added $config['migration\_type'] to allow switching between *sequential* and *timestamp* migrations.
  + [XML-RPC Library](http://docs.google.com/libraries/xmlrpc.html) changes include:
    - Added the ability to use a proxy.
    - Added Basic HTTP authentication support.
  + [User Agent Library](http://docs.google.com/libraries/user_agent.html) changes include:
    - Added check to detect if robots are pretending to be mobile clients (helps with e.g. Google indexing mobile website versions).
    - Added method parse() to allow parsing a custom user-agent string, different from the current visitor’s.
  + [HTML Table Library](http://docs.google.com/libraries/table.html) changes include:
    - Added method chaining support.
    - Added support for setting table class defaults in a config file.
  + [Zip Library](http://docs.google.com/libraries/zip.html) changes include:
    - Method read\_file() can now also alter the original file path/name while adding files to an archive.
    - Added support for changing the compression level.
  + [Trackback Library](http://docs.google.com/libraries/trackback.html) method receive() will now utilize iconv() if it is available but mb\_convert\_encoding() is not.
* Core
  + [Routing](http://docs.google.com/general/routing.html) changes include:
    - Added support for multiple levels of controller directories.
    - Added support for per-directory *default\_controller* and *404\_override* classes.
    - Added possibility to route requests using HTTP verbs.
    - Added possibility to route requests using callbacks.
    - Added a new reserved route (*translate\_uri\_dashes*) to allow usage of dashes in the controller and method URI segments.
    - Deprecated methods fetch\_directory(), fetch\_class() and fetch\_method() in favor of their respective public properties.
    - Removed method \_set\_overrides() and moved its logic to the class constructor.
  + [URI Library](http://docs.google.com/libraries/uri.html) changes include:
    - Added conditional PCRE UTF-8 support to the “invalid URI characters” check and removed the preg\_quote() call from it to allow more flexibility.
    - Renamed method \_filter\_uri() to filter\_uri().
    - Changed method filter\_uri() to accept by reference and removed its return value.
    - Changed private methods to protected so that MY\_URI can override them.
    - Renamed internal method \_parse\_cli\_args() to \_parse\_argv().
    - Renamed internal method \_detect\_uri() to \_parse\_request\_uri().
    - Changed \_parse\_request\_uri() to accept absolute URIs for compatibility with HTTP/1.1 as per RFC2616 <http://www.ietf.org/rfc/rfc2616.txt>.
    - Added protected method \_parse\_query\_string() to URI paths in the the **QUERY\_STRING** value, like \_parse\_request\_uri() does.
    - Changed URI string detection logic to always default to **REQUEST\_URI** unless configured otherwise or under CLI.
    - Removed methods \_remove\_url\_suffix(), \_explode\_segments() and moved their logic into \_set\_uri\_string().
    - Removed method \_fetch\_uri\_string() and moved its logic into the class constructor.
    - Removed method \_reindex\_segments().
  + [Loader Library](http://docs.google.com/libraries/loader.html) changes include:
    - Added method chaining support.
    - Added method get\_vars() to the Loader to retrieve all variables loaded with $this->load->vars().
    - \_ci\_autoloader() is now a protected method.
    - Added autoloading of drivers with $autoload['drivers'].
    - $config['rewrite\_short\_tags'] now has no effect when using PHP 5.4 as <?= will always be available.
    - Changed method config() to return whatever CI\_Config::load() returns instead of always being void.
    - Added support for library and model aliasing on autoload.
    - Changed method is\_loaded() to ask for the (case sensitive) library name instead of its instance name.
    - Removed $\_base\_classes property and unified all class data in $\_ci\_classes instead.
    - Added method clear\_vars() to allow clearing the cached variables for views.
  + [Input Library](http://docs.google.com/libraries/input.html) changes include:
    - Deprecated the $config['global\_xss\_filtering'] setting.
    - Added method() to retrieve $\_SERVER['REQUEST\_METHOD'].
    - Added support for arrays and network addresses (e.g. 192.168.1.1/24) for use with the *proxy\_ips* setting.
    - Added method input\_stream() to aid in using **php://input** stream data such as one passed via PUT, DELETE and PATCH requests.
    - Changed method valid\_ip() to use PHP’s native filter\_var() function.
    - Changed internal method \_sanitize\_globals() to skip enforcing reversal of *register\_globals* in PHP 5.4+, where this functionality no longer exists.
    - Changed methods get(), post(), get\_post(), cookie(), server(), user\_agent() to return NULL instead of FALSE when no value is found.
    - Changed default value of the $xss\_clean parameter to NULL for all methods that utilize it, the default value is now determined by the $config['global\_xss\_filtering'] setting.
    - Added method post\_get() and changed get\_post() to search in GET data first. Both methods’ names now properly match their GET/POST data search priorities.
    - Changed method \_fetch\_from\_array() to parse array notation in field name.
    - Changed method \_fetch\_from\_array() to allow retrieving multiple fields at once.
    - Added an option for \_clean\_input\_keys() to return FALSE instead of terminating the whole script.
    - Deprecated the is\_cli\_request() method, it is now an alias for the new [is\_cli()](http://docs.google.com/general/common_functions.html#is_cli) common function.
    - Added an $xss\_clean parameter to method user\_agent() and removed the $user\_agent property.
    - Added property $raw\_input\_stream to access **php://input** data.
  + [Common functions](http://docs.google.com/general/common_functions.html) changes include:
    - Added function [get\_mimes()](http://docs.google.com/general/common_functions.html#get_mimes) to return the *application/config/mimes.php* array.
    - Added support for HTTP code 303 (“See Other”) in [set\_status\_header()](http://docs.google.com/general/common_functions.html#set_status_header).
    - Removed redundant conditional to determine HTTP server protocol in [set\_status\_header()](http://docs.google.com/general/common_functions.html#set_status_header).
    - Renamed \_exception\_handler() to \_error\_handler() and replaced it with a real exception handler.
    - Changed \_error\_handler() to respect php.ini *display\_errors* setting.
    - Added function [is\_https()](http://docs.google.com/general/common_functions.html#is_https) to check if a secure connection is used.
    - Added function [is\_cli()](http://docs.google.com/general/common_functions.html#is_cli) to replace the CI\_Input::is\_cli\_request() method.
    - Added function [function\_usable()](http://docs.google.com/general/common_functions.html#function_usable) to work around a bug in Suhosin <http://www.hardened-php.net/suhosin/>.
    - Removed the third ($php\_error) argument from function [log\_message()](http://docs.google.com/general/errors.html#log_message).
    - Changed internal function load\_class() to accept a constructor parameter instead of (previously unused) class name prefix.
    - Removed default parameter value of [is\_php()](http://docs.google.com/general/common_functions.html#is_php).
    - Added a second argument $double\_encode to [html\_escape()](http://docs.google.com/general/common_functions.html#html_escape).
    - Changed function [config\_item()](http://docs.google.com/general/common_functions.html#config_item) to return NULL instead of FALSE when no value is found.
    - Changed function [set\_status\_header()](http://docs.google.com/general/common_functions.html#set_status_header) to return immediately when run under CLI.
  + [Output Library](http://docs.google.com/libraries/output.html) changes include:
    - Added a second argument to method set\_content\_type() that allows setting the document charset as well.
    - Added methods get\_content\_type() and get\_header().
    - Added method delete\_cache().
    - Added configuration option $config['cache\_query\_string'] to enable taking the query string into account when caching.
    - Changed caching behavior to compress the output before storing it, if $config['compress\_output'] is enabled.
  + [Config Library](http://docs.google.com/libraries/config.html) changes include:
    - Changed site\_url() method to accept an array as well.
    - Removed internal method \_assign\_to\_config() and moved its implementation to *CodeIgniter.php* instead.
    - item() now returns NULL instead of FALSE when the required config item doesn’t exist.
    - Added an optional second parameter to both base\_url() and site\_url() that allows enforcing of a protocol different than the one in the *base\_url* configuration setting.
    - Added HTTP “Host” header character validation to prevent cache poisoning attacks when base\_url auto-detection is used.
  + [Security Library](http://docs.google.com/libraries/security.html) changes include:
    - Added $config['csrf\_regeneration'], which makes CSRF token regeneration optional.
    - Added $config['csrf\_exclude\_uris'], allowing for exclusion of URIs from the CSRF protection (regular expressions are supported).
    - Added method strip\_image\_tags().
    - Added method get\_random\_bytes() and switched CSRF & XSS token generation to use it.
    - Modified method sanitize\_filename() to read a public $filename\_bad\_chars property for getting the invalid characters list.
    - Return status code of 403 instead of a 500 if CSRF protection is enabled but a token is missing from a request.
  + [Language Library](http://docs.google.com/libraries/language.html) changes include:
    - Changed method load() to filter the language name with ctype\_alpha().
    - Changed method load() to also accept an array of language files.
    - Added an optional second parameter to method line() to disable error logging for line keys that were not found.
    - Language files are now loaded in a cascading style with the one in **system/** always loaded and overridden afterwards, if another one is found.
  + [Hooks Library](http://docs.google.com/general/hooks.html) changes include:
    - Added support for closure hooks (or anything that is\_callable() returns TRUE for).
    - Renamed method \_call\_hook() to call\_hook().
    - Class instances are now stored in order to maintain their state.
  + UTF-8 Library changes include:
    - UTF8\_ENABLED now requires only one of [Multibyte String](http://php.net/mbstring) or [iconv](http://php.net/iconv) to be available instead of both.
    - Changed method clean\_string() to utilize mb\_convert\_encoding() if it is available.
    - Renamed method \_is\_ascii() to is\_ascii() and made it public.
  + Log Library changes include:
    - Added a $config['log\_file\_permissions'] setting.
    - Changed the library constructor to try to create the **log\_path** directory if it doesn’t exist.
    - Added support for microseconds (“u” date format character) in $config['log\_date\_format'].
  + Added [compatibility layers](http://docs.google.com/general/compatibility_functions.html) for:
    - [Multibyte String](http://php.net/mbstring) (limited support).
    - [Hash](http://php.net/hash) (hash\_equals(), hash\_pbkdf2()).
    - [Password Hashing](http://php.net/password).
    - Standard Functions ``array\_column()`, array\_replace(), array\_replace\_recursive(), hex2bin(), quoted\_printable\_encode().
  + Removed CI\_CORE boolean constant from *CodeIgniter.php* (no longer Reactor and Core versions).
  + Added support for HTTP-Only cookies with new config option *cookie\_httponly* (default FALSE).
  + $config['time\_reference'] now supports all timezone strings supported by PHP.
  + Fatal PHP errors are now also passed to \_error\_handler(), so they can be logged.

Bug fixes for 3.0[**¶**](#ihv636)

* Fixed a bug where unlink() raised an error if cache file did not exist when you try to delete it.
* Fixed a bug (#181) - a typo in the form validation language file.
* Fixed a bug (#159, #163) - [Query Builder](http://docs.google.com/database/query_builder.html) nested transactions didn’t work properly due to $\_trans\_depth not being incremented.
* Fixed a bug (#737, #75) - [Pagination](http://docs.google.com/libraries/pagination.html) anchor class was not set properly when using initialize method.
* Fixed a bug (#419) - [URL Helper](http://docs.google.com/helpers/url_helper.html) [auto\_link()](http://docs.google.com/helpers/url_helper.html#auto_link) didn’t recognize URLs that come after a word boundary.
* Fixed a bug (#724) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) rule **is\_unique** didn’t check if a database connection exists.
* Fixed a bug (#647) - [Zip Library](http://docs.google.com/libraries/zip.html) internal method \_get\_mod\_time() didn’t suppress possible “stat failed” errors generated by filemtime().
* Fixed a bug (#157, #174) - [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) method clear() didn’t completely clear properties.
* Fixed a bug where [Database Forge](http://docs.google.com/database/forge.html) method create\_table() with PostgreSQL database could lead to fetching the whole table.
* Fixed a bug (#795) - [Form Helper](http://docs.google.com/helpers/form_helper.html) [form\_open()](http://docs.google.com/helpers/form_helper.html#form_open) didn’t add the default form *method* and *accept-charset* when an empty array is passed to it.
* Fixed a bug (#797) - [Date Helper](http://docs.google.com/helpers/date_helper.html) [timespan()](http://docs.google.com/helpers/date_helper.html#timespan) was using incorrect seconds for year and month.
* Fixed a bug in [Cart Library](http://docs.google.com/libraries/cart.html) method contents() where if called without a TRUE (or equal) parameter, it would fail due to a typo.
* Fixed a bug (#406) - SQLSRV DB driver not returning resource on db\_pconnect().
* Fixed a bug in [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) method gd\_loaded() where it was possible for the script execution to end or a PHP E\_WARNING message to be emitted.
* Fixed a bug in the [Pagination library](http://docs.google.com/libraries/pagination.html) where when use\_page\_numbers=TRUE previous link and page 1 link did not have the same url.
* Fixed a bug (#561) - errors in [XML-RPC Library](http://docs.google.com/libraries/xmlrpc.html) were not properly escaped.
* Fixed a bug (#904) - [Loader Library](http://docs.google.com/libraries/loader.html) method initialize() caused a PHP Fatal error to be triggered if error level E\_STRICT is used.
* Fixed a hosting edge case where an empty $\_SERVER['HTTPS'] variable would evaluate to ‘on’.
* Fixed a bug (#154) - [Session Library](http://docs.google.com/libraries/sessions.html) method sess\_update() caused the session to be destroyed on pages where multiple AJAX requests were executed at once.
* Fixed a possible bug in [Input Libary](http://docs.google.com/libraries/input.html) method is\_ajax\_request() where some clients might not send the X-Requested-With HTTP header value exactly as ‘XmlHttpRequest’.
* Fixed a bug (#1039) - [Database Utilities](http://docs.google.com/database/utilities.html) internal method \_backup() method failed for the ‘mysql’ driver due to a table name not being escaped.
* Fixed a bug (#1070) - CI\_DB\_driver::initialize() didn’t set a character set if a database is not selected.
* Fixed a bug (#177) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) method set\_value() didn’t set the default value if POST data is NULL.
* Fixed a bug (#68, #414) - :Oracle’s escape\_str() didn’t properly escape LIKE wild characters.
* Fixed a bug (#81) - ODBC’s list\_fields() and field\_data() methods skipped the first column due to odbc\_field\_\*() functions’ index starting at 1 instead of 0.
* Fixed a bug (#129) - ODBC’s num\_rows() method returned -1 in some cases, due to not all subdrivers supporting the odbc\_num\_rows() function.
* Fixed a bug (#153) - E\_NOTICE being generated by getimagesize() in the [File Uploading Library](http://docs.google.com/libraries/file_uploading.html).
* Fixed a bug (#611) - SQLSRV’s error handling methods used to issue warnings when there’s no actual error.
* Fixed a bug (#1036) - is\_write\_type() method in the [Database Library](http://docs.google.com/database/index.html) didn’t return TRUE for RENAME queries.
* Fixed a bug in PDO’s \_version() method where it used to return the client version as opposed to the server one.
* Fixed a bug in PDO’s insert\_id() method where it could’ve failed if it’s used with Postgre versions prior to 8.1.
* Fixed a bug in CUBRID’s affected\_rows() method where a connection resource was passed to cubrid\_affected\_rows() instead of a result.
* Fixed a bug (#638) - db\_set\_charset() ignored its arguments and always used the configured charset instead.
* Fixed a bug (#413) - Oracle’s error handling methods used to only return connection-related errors.
* Fixed a bug (#1101) - [Database Result](http://docs.google.com/database/results.html) method field\_data() for ‘mysql’, ‘mysqli’ drivers was implemented as if it was handling a DESCRIBE result instead of the actual result set.
* Fixed a bug in Oracle’s [Database Forge](http://docs.google.com/database/forge.html) method \_create\_table() where it failed with AUTO\_INCREMENT as it’s not supported.
* Fixed a bug (#1080) - when using the SMTP protocol, [Email Library](http://docs.google.com/libraries/email.html) method send() was returning TRUE even if the connection/authentication against the server failed.
* Fixed a bug (#306) - ODBC’s insert\_id() method was calling non-existent function odbc\_insert\_id(), which resulted in a fatal error.
* Fixed a bug in Oracle’s [Database Result](http://docs.google.com/database/results.html) implementation where the cursor ID passed to it was always NULL.
* Fixed a bug (#64) - Regular expression in *DB\_query\_builder.php* failed to handle queries containing SQL bracket delimiters in the JOIN condition.
* Fixed a bug in the [Session Library](http://docs.google.com/libraries/sessions.html) where a PHP E\_NOTICE error was triggered by \_unserialize() due to results from databases such as MSSQL and Oracle being space-padded on the right.
* Fixed a bug (#501) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) method set\_rules() depended on count($\_POST) instead of actually checking if the request method ‘POST’ before aborting.
* Fixed a bug (#136) - PostgreSQL and MySQL’s escape\_str() method didn’t properly escape LIKE wild characters.
* Fixed a bug in [Loader Library](http://docs.google.com/libraries/loader.html) method library() where some PHP versions wouldn’t execute the class constructor.
* Fixed a bug (#88) - An unexisting property was used for configuration of the Memcache cache driver.
* Fixed a bug (#14) - [Database Forge](http://docs.google.com/database/forge.html) method create\_database() didn’t utilize the configured database character set.
* Fixed a bug (#23, #1238) - [Database Caching](http://docs.google.com/database/caching.html) method delete\_all() used to delete .htaccess and index.html files, which is a potential security risk.
* Fixed a bug in [Trackback Library](http://docs.google.com/libraries/trackback.html) method validate\_url() where it didn’t actually do anything, due to input not being passed by reference.
* Fixed a bug (#11, #183, #863) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) method \_execute() silently continued to the next rule, if a rule method/function is not found.
* Fixed a bug (#122) - routed URI string was being reported incorrectly in sub-directories.
* Fixed a bug (#1241) - [Zip Library](http://docs.google.com/libraries/zip.html) method read\_dir() wasn’t compatible with Windows.
* Fixed a bug (#306) - ODBC driver didn’t have an \_insert\_batch() method, which resulted in fatal error being triggered when insert\_batch() is used with it.
* Fixed a bug in MSSQL and SQLSrv’s \_truncate() where the TABLE keyword was missing.
* Fixed a bug in PDO’s trans\_commit() method where it failed due to an erroneous property name.
* Fixed a bug (#798) - [Query Builder](http://docs.google.com/database/query_builder.html) method update() used to ignore LIKE conditions that were set with like().
* Fixed a bug in Oracle’s and MSSQL’s delete() methods where an erroneous SQL statement was generated when used with limit().
* Fixed a bug in SQLSRV’s delete() method where like() and limit() conditions were ignored.
* Fixed a bug (#1265) - Database connections were always closed, regardless of the ‘pconnect’ option value.
* Fixed a bug (#128) - [Language Library](http://docs.google.com/libraries/language.html) did not correctly keep track of loaded language files.
* Fixed a bug (#1349) - [File Uploading Library](http://docs.google.com/libraries/file_uploading.html) method get\_extension() returned the original filename when it didn’t have an actual extension.
* Fixed a bug (#1273) - [Query Builder](http://docs.google.com/database/query_builder.html) method set\_update\_batch() generated an E\_NOTICE message.
* Fixed a bug (#44, #110) - [File Uploading Library](http://docs.google.com/libraries/file_uploading.html) method clean\_file\_name() didn’t clear ‘!’ and ‘#’ characters.
* Fixed a bug (#121) - [Database Results](http://docs.google.com/database/results.html) method row() returned an array when there’s no actual result to be returned.
* Fixed a bug (#319) - SQLSRV’s affected\_rows() method failed due to a scrollable cursor being created for write-type queries.
* Fixed a bug (#356) - [Database](http://docs.google.com/database/index.html) driver ‘postgre’ didn’t have an \_update\_batch() method, which resulted in fatal error being triggered when update\_batch() is used with it.
* Fixed a bug (#784, #862) - [Database Forge](http://docs.google.com/database/forge.html) method create\_table() failed on SQLSRV/MSSQL when used with ‘IF NOT EXISTS’.
* Fixed a bug (#1419) - [Driver Library](http://docs.google.com/general/creating_drivers.html) had a static variable that was causing an error.
* Fixed a bug (#1411) - the [Email Library](http://docs.google.com/libraries/email.html) used its own short list of MIMEs instead the one from *config/mimes.php*.
* Fixed a bug where php.ini setting *magic\_quotes\_runtime* wasn’t turned off for PHP 5.3 (where it is indeed deprecated, but not non-existent).
* Fixed a bug (#666) - [Output Library](http://docs.google.com/libraries/output.html) method set\_content\_type() didn’t set the document charset.
* Fixed a bug (#784, #861) - [Database Forge](http://docs.google.com/database/forge.html) method create\_table() used to accept constraints for MSSQL/SQLSRV integer-type columns.
* Fixed a bug (#706) - SQLSRV/MSSSQL [Database](http://docs.google.com/database/index.html) drivers didn’t escape field names.
* Fixed a bug (#1452) - [Query Builder](http://docs.google.com/database/query_builder.html) method protect\_identifiers() didn’t properly detect identifiers with spaces in their names.
* Fixed a bug where [Query Builder](http://docs.google.com/database/query_builder.html) method protect\_identifiers() ignored its extra arguments when the value passed to it is an array.
* Fixed a bug where [Query Builder](http://docs.google.com/database/query_builder.html) internal method \_has\_operator() didn’t detect BETWEEN.
* Fixed a bug where [Query Builder](http://docs.google.com/database/query_builder.html) method join() failed with identifiers containing dashes.
* Fixed a bug (#1264) - [Database Forge](http://docs.google.com/database/forge.html) and [Database Utilities](http://docs.google.com/database/utilities.html) didn’t update/reset the databases and tables list cache when a table or a database is created, dropped or renamed.
* Fixed a bug (#7) - [Query Builder](http://docs.google.com/database/query_builder.html) method join() only escaped one set of conditions.
* Fixed a bug (#1321) - CI\_Exceptions couldn’t find the *errors/* directory in some cases.
* Fixed a bug (#1202) - [Encrypt Library](http://docs.google.com/libraries/encrypt.html) encode\_from\_legacy() didn’t set back the encrypt mode on failure.
* Fixed a bug (#145) - [Database Class](http://docs.google.com/database/index.html) method compile\_binds() failed when the bind marker was present in a literal string within the query.
* Fixed a bug in [Query Builder](http://docs.google.com/database/query_builder.html) method protect\_identifiers() where if passed along with the field names, operators got escaped as well.
* Fixed a bug (#10) - [URI Library](http://docs.google.com/libraries/uri.html) internal method \_detect\_uri() failed with paths containing a colon.
* Fixed a bug (#1387) - [Query Builder](http://docs.google.com/database/query_builder.html) method from() didn’t escape table aliases.
* Fixed a bug (#520) - [Date Helper](http://docs.google.com/helpers/date_helper.html) function :php:func:nice\_date() failed when the optional second parameter is not passed.
* Fixed a bug (#318) - [Profiling Library](http://docs.google.com/general/profiling.html) setting *query\_toggle\_count* was not settable as described in the manual.
* Fixed a bug (#938) - [Config Library](http://docs.google.com/libraries/config.html) method site\_url() added a question mark to the URL string when query strings are enabled even if it already existed.
* Fixed a bug (#999) - [Config Library](http://docs.google.com/libraries/config.html) method site\_url() always appended $config['url\_suffix'] to the end of the URL string, regardless of whether a query string exists in it.
* Fixed a bug where [URL Helper](http://docs.google.com/helpers/url_helper.html) function [anchor\_popup()](http://docs.google.com/helpers/url_helper.html#anchor_popup) ignored the attributes argument if it is not an array.
* Fixed a bug (#1328) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) didn’t properly check the type of the form fields before processing them.
* Fixed a bug (#79) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) didn’t properly validate array fields that use associative keys or have custom indexes.
* Fixed a bug (#427) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) method strip\_image\_tags() was an alias to a non-existent method.
* Fixed a bug (#1545) - [Query Builder](http://docs.google.com/database/query_builder.html) method limit() wasn’t executed properly under Oracle.
* Fixed a bug (#1551) - [Date Helper](http://docs.google.com/helpers/date_helper.html) function [standard\_date()](http://docs.google.com/helpers/date_helper.html#standard_date) didn’t properly format *W3C* and *ATOM* standard dates.
* Fixed a bug where [Query Builder](http://docs.google.com/database/query_builder.html) method join() escaped literal values as if they were fields.
* Fixed a bug (#135) - PHP Error logging was impossible without the errors being displayed.
* Fixed a bug (#1613) - [Form Helper](http://docs.google.com/helpers/form_helper.html) functions [form\_multiselect()](http://docs.google.com/helpers/form_helper.html#form_multiselect), [form\_dropdown()](http://docs.google.com/helpers/form_helper.html#form_dropdown) didn’t properly handle empty array option groups.
* Fixed a bug (#1605) - [Pagination Library](http://docs.google.com/libraries/pagination.html) produced incorrect *previous* and *next* link values.
* Fixed a bug in SQLSRV’s affected\_rows() method where an erroneous function name was used.
* Fixed a bug (#1000) - Change syntax of $view\_file to $\_ci\_view\_file to prevent being overwritten by application.
* Fixed a bug (#1757) - [Directory Helper](http://docs.google.com/helpers/directory_helper.html) function [directory\_map()](http://docs.google.com/helpers/directory_helper.html#directory_map) was skipping files and directories named ‘0’.
* Fixed a bug (#1789) - [Database Library](http://docs.google.com/database/index.html) method escape\_str() escaped quote characters in LIKE conditions twice under MySQL.
* Fixed a bug (#395) - [Unit Testing Library](http://docs.google.com/libraries/unit_testing.html) method result() didn’t properly check array result columns when called from report().
* Fixed a bug (#1692) - [Database Class](http://docs.google.com/database/index.html) method display\_error() didn’t properly trace the possible error source on Windows systems.
* Fixed a bug (#1745) - [Database Class](http://docs.google.com/database/index.html) method is\_write\_type() didn’t return TRUE for LOAD queries.
* Fixed a bug (#1765) - [Database Class](http://docs.google.com/database/index.html) didn’t properly detect connection errors for the ‘mysqli’ driver.
* Fixed a bug (#1257) - [Query Builder](http://docs.google.com/database/query_builder.html) used to (unnecessarily) group FROM clause contents, which breaks certain queries and is invalid for some databases.
* Fixed a bug (#1709) - [Email](http://docs.google.com/libraries/email.html) headers were broken when using long email subjects and rn as CRLF.
* Fixed a bug where MB\_ENABLED constant was only declared if UTF8\_ENABLED was set to TRUE.
* Fixed a bug where the [Session Library](http://docs.google.com/libraries/sessions.html) accepted cookies with *last\_activity* values being in the future.
* Fixed a bug (#1897) - [Email Library](http://docs.google.com/libraries/email.html) triggered PHP E\_WARNING errors when *mail* protocol used and to() is never called.
* Fixed a bug (#1409) - [Email Library](http://docs.google.com/libraries/email.html) didn’t properly handle multibyte characters when applying Q-encoding to headers.
* Fixed a bug where [Email Library](http://docs.google.com/libraries/email.html) ignored its *wordwrap* setting while handling alternative messages.
* Fixed a bug (#1476, #1909) - [Pagination Library](http://docs.google.com/libraries/pagination.html) didn’t take into account actual routing when determining the current page.
* Fixed a bug (#1766) - [Query Builder](http://docs.google.com/database/query_builder.html) didn’t always take into account the *dbprefix* setting.
* Fixed a bug (#779) - [URI Class](http://docs.google.com/libraries/uri.html) didn’t always trim slashes from the *uri\_string* as shown in the documentation.
* Fixed a bug (#134) - [Database Caching](http://docs.google.com/database/caching.html) method delete\_cache() didn’t work in some cases due to *cachedir* not being initialized properly.
* Fixed a bug (#191) - [Loader Library](http://docs.google.com/libraries/loader.html) ignored attempts for (re)loading databases to get\_instance()->db even when the old database connection is dead.
* Fixed a bug (#1255) - [User Agent Library](http://docs.google.com/libraries/user_agent.html) method is\_referral() only checked if $\_SERVER['HTTP\_REFERER'] exists.
* Fixed a bug (#1146) - [Download Helper](http://docs.google.com/helpers/download_helper.html) function [force\_download()](http://docs.google.com/helpers/download_helper.html#force_download) incorrectly sent *Cache-Control* directives *pre-check* and *post-check* to Internet Explorer.
* Fixed a bug (#1811) - [URI Library](http://docs.google.com/libraries/uri.html) didn’t properly cache segments for uri\_to\_assoc() and ruri\_to\_assoc().
* Fixed a bug (#1506) - [Form Helpers](http://docs.google.com/helpers/form_helper.html) set empty *name* attributes.
* Fixed a bug (#59) - [Query Builder](http://docs.google.com/database/query_builder.html) method count\_all\_results() ignored the DISTINCT clause.
* Fixed a bug (#1624) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) rule **matches** didn’t property handle array field names.
* Fixed a bug (#1630) - [Form Helper](http://docs.google.com/helpers/form_helper.html) function [set\_value()](http://docs.google.com/helpers/form_helper.html#set_value) didn’t escape HTML entities.
* Fixed a bug (#142) - [Form Helper](http://docs.google.com/helpers/form_helper.html) function [form\_dropdown()](http://docs.google.com/helpers/form_helper.html#form_dropdown) didn’t escape HTML entities in option values.
* Fixed a bug (#50) - [Session Library](http://docs.google.com/libraries/sessions.html) unnecessarily stripped slashed from serialized data, making it impossible to read objects in a namespace.
* Fixed a bug (#658) - [Routing](http://docs.google.com/general/routing.html) wildcard **:any** didn’t work as advertised and matched multiple URI segments instead of all characters within a single segment.
* Fixed a bug (#1938) - [Email Library](http://docs.google.com/libraries/email.html) removed multiple spaces inside a pre-formatted plain text message.
* Fixed a bug (#122) - [URI Library](http://docs.google.com/libraries/uri.html) method ruri\_string() didn’t include a directory if one is used.
* Fixed a bug - [Routing Library](http://docs.google.com/general/routing.html) didn’t properly handle *default\_controller* in a subdirectory when a method is also specified.
* Fixed a bug (#953) - [post\_controller\_constructor hook](http://docs.google.com/general/hooks.html) wasn’t called with a *404\_override*.
* Fixed a bug (#1220) - [Profiler Library](http://docs.google.com/general/profiling.html) didn’t display information for database objects that are instantiated inside models.
* Fixed a bug (#1978) - [Directory Helper](http://docs.google.com/helpers/directory_helper.html) function [directory\_map()](http://docs.google.com/helpers/directory_helper.html#directory_map)’s return array didn’t make a distinction between directories and file indexes when a directory with a numeric name is present.
* Fixed a bug (#777) - [Loader Library](http://docs.google.com/libraries/loader.html) didn’t look for helper extensions in added package paths.
* Fixed a bug (#18) - [APC Cache](http://docs.google.com/libraries/caching.html) driver didn’t (un)serialize data, resulting in failure to store objects.
* Fixed a bug (#188) - [Unit Testing Library](http://docs.google.com/libraries/unit_testing.html) filled up logs with error messages for non-existing language keys.
* Fixed a bug (#113) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) didn’t properly handle empty fields that were specified as an array.
* Fixed a bug (#2061) - [Routing Class](http://docs.google.com/general/routing.html) didn’t properly sanitize directory, controller and function triggers with **enable\_query\_strings** set to TRUE.
* Fixed a bug - SQLSRV didn’t support escape\_like\_str() or escaping an array of values.
* Fixed a bug - [Database Results](http://docs.google.com/database/results.html) method list\_fields() didn’t reset its field pointer for the ‘mysql’, ‘mysqli’ and ‘mssql’ drivers.
* Fixed a bug (#2211) - [Migration Library](http://docs.google.com/libraries/migration.html) extensions couldn’t execute CI\_Migration::\_\_construct().
* Fixed a bug (#2255) - [Email Library](http://docs.google.com/libraries/email.html) didn’t apply *smtp\_timeout* to socket reads and writes.
* Fixed a bug (#2239) - [Email Library](http://docs.google.com/libraries/email.html) improperly handled the Subject when used with *bcc\_batch\_mode* resulting in E\_WARNING messages and an empty Subject.
* Fixed a bug (#2234) - [Query Builder](http://docs.google.com/database/query_builder.html) didn’t reset JOIN cache for write-type queries.
* Fixed a bug (#2298) - [Database Results](http://docs.google.com/database/results.html) method next\_row() kept returning the last row, allowing for infinite loops.
* Fixed a bug (#2236, #2639) - [Form Helper](http://docs.google.com/helpers/form_helper.html) functions [set\_value()](http://docs.google.com/helpers/form_helper.html#set_value), [set\_select()](http://docs.google.com/helpers/form_helper.html#set_select), [set\_radio()](http://docs.google.com/helpers/form_helper.html#set_radio), [set\_checkbox()](http://docs.google.com/helpers/form_helper.html#set_checkbox) didn’t parse array notation for keys if the rule was not present in the [Form Validation Library](http://docs.google.com/libraries/form_validation.html).
* Fixed a bug (#2353) - [Query Builder](http://docs.google.com/database/query_builder.html) erroneously prefixed literal strings with **dbprefix**.
* Fixed a bug (#78) - [Cart Library](http://docs.google.com/libraries/cart.html) didn’t allow non-English letters in product names.
* Fixed a bug (#77) - [Database Class](http://docs.google.com/database/index.html) didn’t properly handle the transaction “test mode” flag.
* Fixed a bug (#2380) - [URI Routing](http://docs.google.com/general/routing.html) method fetch\_method() returned ‘index’ if the requested method name matches its controller name.
* Fixed a bug (#2388) - [Email Library](http://docs.google.com/libraries/email.html) used to ignore attachment errors, resulting in broken emails being sent.
* Fixed a bug (#2498) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) rule **valid\_base64** only checked characters instead of actual validity.
* Fixed a bug (#2425) - OCI8 [database](http://docs.google.com/database/index.html) driver method stored\_procedure() didn’t log an error unless **db\_debug** was set to TRUE.
* Fixed a bug (#2490) - [Database Class](http://docs.google.com/database/queries.html) method query() returning boolean instead of a result object for PostgreSQL-specific *INSERT INTO … RETURNING* statements.
* Fixed a bug (#249) - [Cache Library](http://docs.google.com/libraries/caching.html) didn’t properly handle Memcache(d) configurations with missing options.
* Fixed a bug (#180) - [config\_item()](http://docs.google.com/general/common_functions.html#config_item) didn’t take into account run-time configuration changes.
* Fixed a bug (#2551) - [Loader Library](http://docs.google.com/libraries/loader.html) method library() didn’t properly check if a class that is being loaded already exists.
* Fixed a bug (#2560) - [Form Helper](http://docs.google.com/helpers/form_helper.html) function [form\_open()](http://docs.google.com/helpers/form_helper.html#form_open) set the ‘method=”post”’ attribute only if the passed attributes equaled an empty string.
* Fixed a bug (#2585) - [Query Builder](http://docs.google.com/database/query_builder.html) methods min(), max(), avg(), sum() didn’t escape field names.
* Fixed a bug (#2590) - [Common function](http://docs.google.com/general/common_functions.html) [log\_message()](http://docs.google.com/general/errors.html#log_message) didn’t actually cache the CI\_Log class instance.
* Fixed a bug (#2609) - [Common function](http://docs.google.com/general/common_functions.html) get\_config() optional argument was only effective on first function call. Also, it can now add items, in addition to updating existing items.
* Fixed a bug in the ‘postgre’ [database](http://docs.google.com/database/index.html) driver where the connection ID wasn’t passed to pg\_escape\_string().
* Fixed a bug (#33) - Script execution was terminated when an invalid cookie key was encountered.
* Fixed a bug (#2691) - nested [database](http://docs.google.com/database/index.html) transactions could end in a deadlock when an error is encountered with *db\_debug* set to TRUE.
* Fixed a bug (#2515) - \_exception\_handler() used to send the 200 “OK” HTTP status code and didn’t stop script exection even on fatal errors.
* Fixed a bug - Redis [Caching](http://docs.google.com/libraries/caching.html) driver didn’t handle connection failures properly.
* Fixed a bug (#2756) - [Database Class](http://docs.google.com/database/index.html) executed the MySQL-specific SET SESSION sql\_mode query for all drivers when the ‘stricton’ option is set.
* Fixed a bug (#2579) - [Query Builder](http://docs.google.com/database/query_builder.html) “no escape” functionality didn’t work properly with query cache.
* Fixed a bug (#2237) - [Parser Library](http://docs.google.com/libraries/parser.html) failed if the same tag pair is used more than once within a template.
* Fixed a bug (#2143) - [Form Validation Library](http://docs.google.com/libraries/form_validation.html) didn’t check for rule groups named in a *controller/method* manner when trying to load from a config file.
* Fixed a bug (#2762) - [Hooks Class](http://docs.google.com/general/hooks.html) didn’t properly check if the called class/function exists.
* Fixed a bug (#148) - [Input Library](http://docs.google.com/libraries/input.html) internal method \_clean\_input\_data() assumed that it data is URL-encoded, stripping certain character sequences from it.
* Fixed a bug (#346) - with $config['global\_xss\_filtering'] turned on, the $\_GET, $\_POST, $\_COOKIE and $\_SERVER superglobals were overwritten during initialization time, resulting in XSS filtering being either performed twice or there was no possible way to get the original data, even though options for this do exist.
* Fixed an edge case (#555) - [User Agent Library](http://docs.google.com/libraries/user_agent.html) reported an incorrect version Opera 10+ due to a non-standard user-agent string.
* Fixed a bug (#133) - [Text Helper](http://docs.google.com/helpers/text_helper.html) [ascii\_to\_entities()](http://docs.google.com/helpers/text_helper.html#ascii_to_entities) stripped the last character if it happens to be in the extended ASCII group.
* Fixed a bug (#2822) - fwrite() was used incorrectly throughout the whole framework, allowing incomplete writes when writing to a network stream and possibly a few other edge cases.
* Fixed a bug where [User Agent Library](http://docs.google.com/libraries/user_agent.html) methods accept\_charset() and accept\_lang() didn’t properly parse HTTP headers that contain spaces.
* Fixed a bug where *default\_controller* was called instad of triggering a 404 error if the current route is in a controller directory.
* Fixed a bug (#2737) - [XML-RPC Library](http://docs.google.com/libraries/xmlrpc.html) used objects as array keys, which triggered E\_NOTICE messages.
* Fixed a bug (#2771) - [Security Library](http://docs.google.com/libraries/security.html) method xss\_clean() didn’t take into account HTML5 entities.
* Fixed a bug (#2856) - ODBC method affected\_rows() passed an incorrect value to odbc\_num\_rows().
* Fixed a bug (#43) [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) method text\_watermark() didn’t properly determine watermark placement.
* Fixed a bug where [HTML Table Library](http://docs.google.com/libraries/table.html) ignored its *auto\_heading* setting if headings were not already set.
* Fixed a bug (#2364) - [Pagination Library](http://docs.google.com/libraries/pagination.html) appended the query string (if used) multiple times when there are successive calls to create\_links() with no initialize() in between them.
* Partially fixed a bug (#261) - UTF-8 class method clean\_string() generating log messages and/or not producing the desired result due to an upstream bug in iconv.
* Fixed a bug where CI\_Xmlrpcs::parseRequest() could fail if $HTTP\_RAW\_POST\_DATA is not populated.
* Fixed a bug in [Zip Library](http://docs.google.com/libraries/zip.html) internal method \_get\_mod\_time() where it was not parsing result returned by filemtime().
* Fixed a bug (#3161) - [Cache Library](http://docs.google.com/libraries/caching.html) methods increment(), decrement() didn’t auto-create non-existent items when using redis and/or file storage.
* Fixed a bug (#3189) - [Parser Library](http://docs.google.com/libraries/parser.html) used double replacement on key->value pairs, exposing a potential template injection vulnerability.
* Fixed a bug (#3573) - [Email Library](http://docs.google.com/libraries/email.html) violated [RFC5321](https://tools.ietf.org/rfc/rfc5321.txt) by sending ‘localhost.localdomain’ as a hostname.
* Fixed a bug (#3572) - CI\_Security::\_remove\_evil\_attributes() failed for large-sized inputs due to *pcre.backtrack\_limit* and didn’t properly match HTML tags.

Version 2.2.3[**¶**](#32hioqz)

Release Date: July 14, 2015

* Security
  + Removed a fallback to mysql\_escape\_string() in the ‘mysql’ database driver (escape\_str() method) when there’s no active database connection.

Version 2.2.2[**¶**](#1hmsyys)

Release Date: April 15, 2015

* General Changes
  + Added HTTP “Host” header character validation to prevent cache poisoning attacks when *base\_url* auto-detection is used.
  + Added *FSCommand* and *seekSegmentTime* to the “evil attributes” list in CI\_Security::xss\_clean().

Bug fixes for 2.2.2[**¶**](#41mghml)

* Fixed a bug (#3665) - CI\_Security::entity\_decode() triggered warnings under some circumstances.

Version 2.2.1[**¶**](#2grqrue)

Release Date: January 22, 2015

* General Changes
  + Improved security in xss\_clean().
  + Updated timezones in [Date Helper](http://docs.google.com/helpers/date_helper.html).

Bug fixes for 2.2.1[**¶**](#vx1227)

* Fixed a bug (#3094) - Internal method CI\_Input::\_clean\_input\_data() breaks encrypted session cookies.
* Fixed a bug (#2268) - [Security Library](http://docs.google.com/libraries/security.html) method xss\_clean() didn’t properly match JavaScript events.
* Fixed a bug (#3309) - [Security Library](http://docs.google.com/libraries/security.html) method xss\_clean() used an overly-invasive pattern to strip JS event handlers.
* Fixed a bug (#2771) - [Security Library](http://docs.google.com/libraries/security.html) method xss\_clean() didn’t take into account HTML5 entities.
* Fixed a bug (#73) - [Security Library](http://docs.google.com/libraries/security.html) method sanitize\_filename() could be tricked by an XSS attack.
* Fixed a bug (#2681) - [Security Library](http://docs.google.com/libraries/security.html) method entity\_decode() used the PREG\_REPLACE\_EVAL flag, which is deprecated since PHP 5.5.
* Fixed a bug (#3302) - Internal function get\_config() triggered an E\_NOTICE message on PHP 5.6.
* Fixed a bug (#2508) - [Config Library](http://docs.google.com/libraries/config.html) didn’t properly detect if the current request is via HTTPS.
* Fixed a bug (#3314) - SQLSRV [Database driver](http://docs.google.com/database/index.html)’s method count\_all() didn’t escape the supplied table name.
* Fixed a bug (#3404) - MySQLi [Database driver](http://docs.google.com/database/index.html)’s method escape\_str() had a wrong fallback to mysql\_escape\_string() when there was no active connection.
* Fixed a bug in the [Session Library](http://docs.google.com/libraries/sessions.html) where session ID regeneration occurred during AJAX requests.

Version 2.2.0[**¶**](#3fwokq0)

Release Date: June 2, 2014

* General Changes
  + Security: [Encrypt Library](http://docs.google.com/libraries/encrypt.html) method xor\_encode() has been removed. The Encrypt Class now requires the Mcrypt extension to be installed.
  + Security: The [Session Library](http://docs.google.com/libraries/sessions.html) now uses HMAC authentication instead of a simple MD5 checksum.

Bug fixes for 2.2.0[**¶**](#1v1yuxt)

* Fixed an edge case (#2583) in the [Email Library](http://docs.google.com/libraries/email.html) where Suhosin <http://www.hardened-php.net/suhosin/> blocked messages sent via mail() due to trailing newspaces in headers.
* Fixed a bug (#696) - make oci\_execute() calls inside num\_rows() non-committing, since they are only there to reset which row is next in line for oci\_fetch calls and thus don’t need to be committed.
* Fixed a bug (#2689) - [Database Force](http://docs.google.com/database/forge.html) methods create\_table(), drop\_table() and rename\_table() produced broken SQL for tge ‘sqlsrv’ driver.
* Fixed a bug (#2427) - PDO [Database driver](http://docs.google.com/database/index.html) didn’t properly check for query failures.
* Fixed a bug in the [Session Library](http://docs.google.com/libraries/sessions.html) where authentication was not performed for encrypted cookies.

Version 2.1.4[**¶**](#4f1mdlm)

Release Date: July 8, 2013

* General Changes
  + Improved security in xss\_clean().

Bug fixes for 2.1.4[**¶**](#2u6wntf)

* Fixed a bug (#1936) - [Migration Library](http://docs.google.com/libraries/migration.html) method latest() had a typo when retrieving language values.
* Fixed a bug (#2021) - [Migration Library](http://docs.google.com/libraries/migration.html) configuration file was mistakenly using Windows style line feeds.
* Fixed a bug (#1273) - E\_NOTICE being generated by [Query Builder](http://docs.google.com/database/query_builder.html)’s set\_update\_batch() method.
* Fixed a bug (#2337) - [Email Library](http://docs.google.com/libraries/email.html) method print\_debugger() didn’t apply htmlspecialchars() to headers.

Version 2.1.3[**¶**](#19c6y18)

Release Date: October 8, 2012

* Core
  + [Common function](http://docs.google.com/general/common_functions.html) is\_loaded() now returns a reference.

Bug fixes for 2.1.3[**¶**](#3tbugp1)

* Fixed a bug (#1543) - File-based [Caching](http://docs.google.com/libraries/caching.html) method get\_metadata() used a non-existent array key to look for the TTL value.
* Fixed a bug (#1314) - [Session Library](http://docs.google.com/libraries/sessions.html) method sess\_destroy() didn’t destroy the userdata array.
* Fixed a bug (#804) - [Profiler library](http://docs.google.com/general/profiling.html) was trying to handle objects as strings in some cases, resulting in *E\_WARNING* messages being issued by htmlspecialchars().
* Fixed a bug (#1699) - [Migration Library](http://docs.google.com/libraries/migration.html) ignored the $config['migration\_path'] setting.
* Fixed a bug (#227) - [Input Library](http://docs.google.com/libraries/input.html) allowed unconditional spoofing of HTTP clients’ IP addresses through the *HTTP\_CLIENT\_IP* header.
* Fixed a bug (#907) - [Input Library](http://docs.google.com/libraries/input.html) ignored *HTTP\_X\_CLUSTER\_CLIENT\_IP* and *HTTP\_X\_CLIENT\_IP* headers when checking for proxies.
* Fixed a bug (#940) - csrf\_verify() used to set the CSRF cookie while processing a POST request with no actual POST data, which resulted in validating a request that should be considered invalid.
* Fixed a bug (#499) - [Security Library](http://docs.google.com/libraries/security.html) where a CSRF cookie was created even if $config['csrf\_protection'] is set to FALSE.
* Fixed a bug (#1715) - [Input Library](http://docs.google.com/libraries/input.html) triggered csrf\_verify() on CLI requests.
* Fixed a bug (#751) - [Query Builder](http://docs.google.com/database/query_builder.html) didn’t properly handle cached field escaping overrides.
* Fixed a bug (#2004) - [Query Builder](http://docs.google.com/database/query_builder.html) didn’t properly merge cached calls with non-cache ones.

Version 2.1.2[**¶**](#28h4qwu)

Release Date: June 29, 2012

* General Changes
  + Improved security in xss\_clean().

Version 2.1.1[**¶**](#nmf14n)

Release Date: June 12, 2012

* General Changes
  + Fixed support for docx, xlsx files in mimes.php.
* Libraries
  + Further improved MIME type detection in the [File Uploading Library](http://docs.google.com/libraries/file_uploading.html).
  + Added support for IPv6 to the [Input Library](http://docs.google.com/libraries/input.html).
  + Added support for the IP format parameter to the [Form Validation Library](http://docs.google.com/libraries/form_validation.html).
* Helpers
  + url\_title() performance and output improved. You can now use any string as the word delimiter, but ‘dash’ and ‘underscore’ are still supported.

Bug fixes for 2.1.1[**¶**](#37m2jsg)

* Fixed a bug (#697) - A wrong array key was used in the [File Uploading Library](http://docs.google.com/libraries/file_uploading.html) to check for mime-types.
* Fixed a bug - form\_open() compared $action against site\_url() instead of base\_url().
* Fixed a bug - CI\_Upload::\_file\_mime\_type() could’ve failed if mime\_content\_type() is used for the detection and returns FALSE.
* Fixed a bug (#538) - Windows paths were ignored when using the [Image Manipulation Library](http://docs.google.com/libraries/image_lib.html) to create a new file.
* Fixed a bug - When database caching was enabled, $this->db->query() checked the cache before binding variables which resulted in cached queries never being found.
* Fixed a bug - CSRF cookie value was allowed to be any (non-empty) string before being written to the output, making code injection a risk.
* Fixed a bug (#726) - PDO put a ‘dbname’ argument in its connection string regardless of the database platform in use, which made it impossible to use SQLite.
* Fixed a bug - CI\_DB\_pdo\_driver::num\_rows() was not returning properly value with SELECT queries, cause it was relying on PDOStatement::rowCount().
* Fixed a bug (#1059) - CI\_Image\_lib::clear() was not correctly clearing all necessary object properties, namely width and height.

Version 2.1.0[**¶**](#1mrcu09)

Release Date: November 14, 2011

* General Changes
  + Callback validation rules can now accept parameters like any other validation rule.
  + Added html\_escape() to [Common functions](http://docs.google.com/general/common_functions.html) to escape HTML output for preventing XSS.
* Helpers
  + Added increment\_string() to [String Helper](http://docs.google.com/helpers/string_helper.html) to turn “foo” into “foo-1” or “foo-1” into “foo-2”.
  + Altered form helper - made action on form\_open\_multipart helper function call optional. Fixes (#65)
  + url\_title() will now trim extra dashes from beginning and end.
  + Improved speed of [String Helper](http://docs.google.com/helpers/string_helper.html)’s random\_string() method
* Database
  + Added a [CUBRID](http://www.cubrid.org/) driver to the [Database Driver](http://docs.google.com/database/index.html). Thanks to the CUBRID team for supplying this patch.
  + Added a PDO driver to the [Database Driver](http://docs.google.com/database/index.html).
  + Typecast limit and offset in the [Database Driver](http://docs.google.com/database/queries.html) to integers to avoid possible injection.
  + Added additional option ‘none’ for the optional third argument for $this->db->like() in the [Database Driver](http://docs.google.com/database/query_builder.html).
  + Added $this->db->insert\_batch() support to the OCI8 (Oracle) driver.
  + Added failover if the main connections in the config should fail
* Libraries
  + Changed $this->cart->insert() in the [Cart Library](http://docs.google.com/libraries/cart.html) to return the Row ID if a single item was inserted successfully.
  + Added support to set an optional parameter in your callback rules of validation using the [Form Validation Library](http://docs.google.com/libraries/form_validation.html).
  + Added a [Migration library](http://docs.google.com/libraries/migration.html) to assist with applying incremental updates to your database schema.
  + Driver children can be located in any package path.
  + Added max\_filename\_increment config setting for Upload library.
  + Added is\_unique to the [Form Validation library](http://docs.google.com/libraries/form_validation.html).
  + Added $config[‘use\_page\_numbers’] to the [Pagination library](http://docs.google.com/libraries/pagination.html), which enables real page numbers in the URI.
  + Added TLS and SSL Encryption for SMTP.
* Core
  + Changed private functions in CI\_URI to protected so MY\_URI can override them.
  + Removed CI\_CORE boolean constant from CodeIgniter.php (no longer Reactor and Core versions).

Bug fixes for 2.1.0[**¶**](#46r0co2)

* Fixed #378 Robots identified as regular browsers by the User Agent class.
* If a config class was loaded first then a library with the same name is loaded, the config would be ignored.
* Fixed a bug (Reactor #19) where 1) the 404\_override route was being ignored in some cases, and 2) auto-loaded libraries were not available to the 404\_override controller when a controller existed but the requested method did not.
* Fixed a bug (Reactor #89) where MySQL export would fail if the table had hyphens or other non alphanumeric/underscore characters.
* Fixed a bug (#105) that stopped query errors from being logged unless database debugging was enabled
* Fixed a bug (#160) - Removed unneeded array copy in the file cache driver.
* Fixed a bug (#150) - field\_data() now correctly returns column length.
* Fixed a bug (#8) - load\_class() now looks for core classes in APPPATH first, allowing them to be replaced.
* Fixed a bug (#24) - ODBC database driver called incorrect parent in \_\_construct().
* Fixed a bug (#85) - OCI8 (Oracle) database escape\_str() function did not escape correct.
* Fixed a bug (#344) - Using schema found in [Saving Session Data to a Database](http://docs.google.com/libraries/sessions.html), system would throw error “user\_data does not have a default value” when deleting then creating a session.
* Fixed a bug (#112) - OCI8 (Oracle) driver didn’t pass the configured database character set when connecting.
* Fixed a bug (#182) - OCI8 (Oracle) driver used to re-execute the statement whenever num\_rows() is called.
* Fixed a bug (#82) - WHERE clause field names in the DB update\_string() method were not escaped, resulting in failed queries in some cases.
* Fixed a bug (#89) - Fix a variable type mismatch in DB display\_error() where an array is expected, but a string could be set instead.
* Fixed a bug (#467) - Suppress warnings generated from get\_magic\_quotes\_gpc() (deprecated in PHP 5.4)
* Fixed a bug (#484) - First time \_csrf\_set\_hash() is called, hash is never set to the cookie (in Security.php).
* Fixed a bug (#60) - Added \_file\_mime\_type() method to the [File Uploading Library](http://docs.google.com/libraries/file_uploading.html) in order to fix a possible MIME-type injection.
* Fixed a bug (#537) - Support for all wav type in browser.
* Fixed a bug (#576) - Using ini\_get() function to detect if apc is enabled or not.
* Fixed invalid date time format in [Date helper](http://docs.google.com/helpers/date_helper.html) and [XMLRPC library](http://docs.google.com/libraries/xmlrpc.html).
* Fixed a bug (#200) - MySQL queries would be malformed after calling db->count\_all() then db->get().

Version 2.0.3[**¶**](#2lwamvv)

Release Date: August 20, 2011

* Security
  + An improvement was made to the MySQL and MySQLi drivers to prevent exposing a potential vector for SQL injection on sites using multi-byte character sets in the database client connection. An incompatibility in PHP versions < 5.2.3 and MySQL < 5.0.7 with *mysql\_set\_charset()* creates a situation where using multi-byte character sets on these environments may potentially expose a SQL injection attack vector. Latin-1, UTF-8, and other “low ASCII” character sets are unaffected on all environments.  
    If you are running or considering running a multi-byte character set for your database connection, please pay close attention to the server environment you are deploying on to ensure you are not vulnerable.
* General Changes
  + Fixed a bug where there was a misspelling within a code comment in the index.php file.
  + Added Session Class userdata to the output profiler. Additionally, added a show/hide toggle on HTTP Headers, Session Data and Config Variables.
  + Removed internal usage of the EXT constant.
  + Visual updates to the welcome\_message view file and default error templates. Thanks to [danijelb](https://bitbucket.org/danijelb) for the pull request.
  + Added insert\_batch() function to the PostgreSQL database driver. Thanks to epallerols for the patch.
  + Added “application/x-csv” to mimes.php.
  + Fixed a bug where [Email library](http://docs.google.com/libraries/email.html) attachments with a “.” in the name would using invalid MIME-types.
* Helpers
  + Added an optional third parameter to heading() which allows adding html attributes to the rendered heading tag.
  + form\_open() now only adds a hidden (Cross-site Reference Forgery) protection field when the form’s action is internal and is set to the post method. (Reactor #165)
  + Re-worked plural() and singular() functions in the [Inflector helper](http://docs.google.com/helpers/inflector_helper.html) to support considerably more words.
* Libraries
  + Altered Session to use a longer match against the user\_agent string. See upgrade notes if using database sessions.
  + Added $this->db->set\_dbprefix() to the [Database Driver](http://docs.google.com/database/queries.html).
  + Changed $this->cart->insert() in the [Cart Library](http://docs.google.com/libraries/cart.html) to return the Row ID if a single item was inserted successfully.
  + Added $this->load->get\_var() to the [Loader library](http://docs.google.com/libraries/loader.html) to retrieve global vars set with $this->load->view() and $this->load->vars().
  + Changed $this->db->having() to insert quotes using escape() rather than escape\_str().

Bug fixes for 2.0.3[**¶**](#111kx3o)

* Added ENVIRONMENT to reserved constants. (Reactor #196)
* Changed server check to ensure SCRIPT\_NAME is defined. (Reactor #57)
* Removed APPPATH.’third\_party’ from the packages autoloader to negate needless file stats if no packages exist or if the developer does not load any other packages by default.
* Fixed a bug (Reactor #231) where Sessions Library database table example SQL did not contain an index on last\_activity. See [Upgrade Notes](http://docs.google.com/installation/upgrade_203.html).
* Fixed a bug (Reactor #229) where the Sessions Library example SQL in the documentation contained incorrect SQL.
* Fixed a bug (Core #340) where when passing in the second parameter to $this->db->select(), column names in subsequent queries would not be properly escaped.
* Fixed issue #199 - Attributes passed as string does not include a space between it and the opening tag.
* Fixed a bug where the method $this->cart->total\_items() from [Cart Library](http://docs.google.com/libraries/cart.html) now returns the sum of the quantity of all items in the cart instead of your total count.
* Fixed a bug where not setting ‘null’ when adding fields in db\_forge for mysql and mysqli drivers would default to NULL instead of NOT NULL as the docs suggest.
* Fixed a bug where using $this->db->select\_max(), $this->db->select\_min(), etc could throw notices. Thanks to w43l for the patch.
* Replace checks for STDIN with php\_sapi\_name() == ‘cli’ which on the whole is more reliable. This should get parameters in crontab working.

Version 2.0.2[**¶**](#3l18frh)

Release Date: April 7, 2011 Hg Tag: v2.0.2

* General changes
  + The [Security library](http://docs.google.com/libraries/security.html) was moved to the core and is now loaded automatically. Please remove your loading calls.
  + The CI\_SHA class is now deprecated. All supported versions of PHP provide a sha1() function.
  + constants.php will now be loaded from the environment folder if available.
  + Added language key error logging
  + Made Environment Support optional. Comment out or delete the constant to stop environment checks.
  + Added Environment Support for Hooks.
  + Added CI\_ Prefix to the [Cache driver](http://docs.google.com/libraries/caching.html).
  + Added [CLI usage](http://docs.google.com/general/cli.html) documentation.
* Helpers
  + Removed the previously deprecated dohash() from the [Security helper](http://docs.google.com/helpers/security_helper.html); use do\_hash() instead.
  + Changed the ‘plural’ function so that it doesn’t ruin the captalization of your string. It also take into consideration acronyms which are all caps.
* Database
  + $this->db->count\_all\_results() will now return an integer instead of a string.

Bug fixes for 2.0.2[**¶**](#206ipza)

* Fixed a bug (Reactor #145) where the Output Library had parse\_exec\_vars set to protected.
* Fixed a bug (Reactor #80) where is\_really\_writable would create an empty file when on Windows or with safe\_mode enabled.
* Fixed various bugs with User Guide.
* Added is\_cli\_request() method to documentation for [Input class](http://docs.google.com/libraries/input.html).
* Added form\_validation\_lang entries for decimal, less\_than and greater\_than.
* Fixed issue #153 Escape Str Bug in MSSQL driver.
* Fixed issue #172 Google Chrome 11 posts incorrectly when action is empty.

Version 2.0.1[**¶**](#4k668n3)

Release Date: March 15, 2011 Hg Tag: v2.0.1

* General changes
  + Added $config[‘cookie\_secure’] to the config file to allow requiring a secure (HTTPS) in order to set cookies.
  + Added the constant CI\_CORE to help differentiate between Core: TRUE and Reactor: FALSE.
  + Added an ENVIRONMENT constant in index.php, which affects PHP error reporting settings, and optionally, which configuration files are loaded (see below). Read more on the [Handling Environments](http://docs.google.com/general/environments.html) page.
  + Added support for [environment-specific](http://docs.google.com/libraries/config.html#config-environments) configuration files.
* Libraries
  + Added decimal, less\_than and greater\_than rules to the [Form validation Class](http://docs.google.com/libraries/form_validation.html).
  + [Input Class](http://docs.google.com/libraries/input.html) methods post() and get() will now return a full array if the first argument is not provided.
  + Secure cookies can now be made with the set\_cookie() helper and [Input Class](http://docs.google.com/libraries/input.html) method.
  + Added set\_content\_type() to [Output Class](http://docs.google.com/libraries/output.html) to set the output Content-Type HTTP header based on a MIME Type or a config/mimes.php array key.
  + [Output Class](http://docs.google.com/libraries/output.html) will now support method chaining.
* Helpers
  + Changed the logic for form\_open() in [Form helper](http://docs.google.com/helpers/form_helper.html). If no value is passed it will submit to the current URL.

Bug fixes for 2.0.1[**¶**](#2zbgiuw)

* CLI requests can now be run from any folder, not just when CD’ed next to index.php.
* Fixed issue #41: Added audio/mp3 mime type to mp3.
* Fixed a bug (Core #329) where the file caching driver referenced the incorrect cache directory.
* Fixed a bug (Reactor #69) where the SHA1 library was named incorrectly.

Version 2.0.0[**¶**](#1egqt2p)

Release Date: January 28, 2011 Hg Tag: v2.0.0

* General changes
  + PHP 4 support is removed. CodeIgniter now requires PHP 5.1.6.
  + Scaffolding, having been deprecated for a number of versions, has been removed.
  + Plugins have been removed, in favor of Helpers. The CAPTCHA plugin has been converted to a Helper and [documented](http://docs.google.com/helpers/captcha_helper.html). The JavaScript calendar plugin was removed due to the ready availability of great JavaScript calendars, particularly with jQuery.
  + Added new special Library type: [Drivers](http://docs.google.com/general/drivers.html).
  + Added full query-string support. See the config file for details.
  + Moved the application folder outside of the system folder.
  + Moved system/cache and system/logs directories to the application directory.
  + Added routing overrides to the main index.php file, enabling the normal routing to be overridden on a per “index” file basis.
  + Added the ability to set config values (or override config values) directly from data set in the main index.php file. This allows a single application to be used with multiple front controllers, each having its own config values.
  + Added $config[‘directory\_trigger’] to the config file so that a controller sub-directory can be specified when running \_GET strings instead of URI segments.
  + Added ability to set “Package” paths - specific paths where the Loader and Config classes should try to look first for a requested file. This allows distribution of sub-applications with their own libraries, models, config files, etc. in a single “package” directory. See the [Loader class](http://docs.google.com/libraries/loader.html) documentation for more details.
  + In-development code is now hosted at BitBucket .
  + Removed the deprecated Validation Class.
  + Added CI\_ Prefix to all core classes.
  + Package paths can now be set in application/config/autoload.php.
  + [Upload library](http://docs.google.com/libraries/file_uploading.html) file\_name can now be set without an extension, the extension will be taken from the uploaded file instead of the given name.
  + In [Database Forge](http://docs.google.com/database/forge.html) the name can be omitted from $this->dbforge->modify\_column()’s 2nd param if you aren’t changing the name.
  + $config[‘base\_url’] is now empty by default and will guess what it should be.
  + Enabled full Command Line Interface compatibility with config[‘uri\_protocol’] = ‘CLI’;.
* Libraries
  + Added a [Cache driver](http://docs.google.com/libraries/caching.html) with APC, memcached, and file-based support.
  + Added $prefix, $suffix and $first\_url properties to [Pagination library](http://docs.google.com/libraries/pagination.html).
  + Added the ability to suppress first, previous, next, last, and page links by setting their values to FALSE in the [Pagination library](http://docs.google.com/libraries/pagination.html).
  + Added [Security library](http://docs.google.com/libraries/security.html), which now contains the xss\_clean function, filename\_security function and other security related functions.
  + Added CSRF (Cross-site Reference Forgery) protection to the [Security library](http://docs.google.com/libraries/security.html).
  + Added $parse\_exec\_vars property to Output library.
  + Added ability to enable / disable individual sections of the [Profiler](http://docs.google.com/general/profiling.html)
  + Added a wildcard option $config[‘allowed\_types’] = ‘\*’ to the [File Uploading Class](http://docs.google.com/libraries/file_uploading.html).
  + Added an ‘object’ config variable to the XML-RPC Server library so that one can specify the object to look for requested methods, instead of assuming it is in the $CI superobject.
  + Added “is\_object” into the list of unit tests capable of being run.
  + Table library will generate an empty cell with a blank string, or NULL value.
  + Added ability to set tag attributes for individual cells in the Table library
  + Added a parse\_string() method to the [Parser Class](http://docs.google.com/libraries/parser.html).
  + Added HTTP headers and Config information to the [Profiler](http://docs.google.com/general/profiling.html) output.
  + Added Chrome and Flock to the list of detectable browsers by browser() in the [User Agent Class](http://docs.google.com/libraries/user_agent.html).
  + The [Unit Test Class](http://docs.google.com/libraries/unit_testing.html) now has an optional “notes” field available to it, and allows for discrete display of test result items using $this->unit->set\_test\_items().
  + Added a $xss\_clean class variable to the XMLRPC library, enabling control over the use of the Security library’s xss\_clean() method.
  + Added a download() method to the [FTP library](http://docs.google.com/libraries/ftp.html)
  + Changed do\_xss\_clean() to return FALSE if the uploaded file fails XSS checks.
  + Added stripslashes() and trim()ing of double quotes from $\_FILES type value to standardize input in Upload library.
  + Added a second parameter (boolean) to $this->zip->read\_dir(‘/path/to/directory’, FALSE) to remove the preceding trail of empty folders when creating a Zip archive. This example would contain a zip with “directory” and all of its contents.
  + Added ability in the Image Library to handle PNG transparency for resize operations when using the GD lib.
  + Modified the Session class to prevent use if no encryption key is set in the config file.
  + Added a new config item to the Session class sess\_expire\_on\_close to allow sessions to auto-expire when the browser window is closed.
  + Improved performance of the Encryption library on servers where Mcrypt is available.
  + Changed the default encryption mode in the Encryption library to CBC.
  + Added an encode\_from\_legacy() method to provide a way to transition encrypted data from CodeIgniter 1.x to CodeIgniter 2.x. Please see the [upgrade instructions](http://docs.google.com/installation/upgrade_200.html) for details.
  + Altered Form\_Validation library to allow for method chaining on set\_rules(), set\_message() and set\_error\_delimiters() functions.
  + Altered Email Library to allow for method chaining.
  + Added request\_headers(), get\_request\_header() and is\_ajax\_request() to the input class.
  + Altered [User agent library](http://docs.google.com/libraries/user_agent.html) so that is\_browser(), is\_mobile() and is\_robot() can optionally check for a specific browser or mobile device.
  + Altered [Input library](http://docs.google.com/libraries/input.html) so that post() and get() will return all POST and GET items (respectively) if there are no parameters passed in.
* Database
  + [database configuration](http://docs.google.com/database/configuration.html).
  + Added autoinit value to [database configuration](http://docs.google.com/database/configuration.html).
  + Added stricton value to [database configuration](http://docs.google.com/database/configuration.html).
  + Added database\_exists() to the [Database Utilities Class](http://docs.google.com/database/utilities.html).
  + Semantic change to db->version() function to allow a list of exceptions for databases with functions to return version string instead of specially formed SQL queries. Currently this list only includes Oracle and SQLite.
  + Fixed a bug where driver specific table identifier protection could lead to malformed queries in the field\_data() functions.
  + Fixed a bug where an undefined class variable was referenced in database drivers.
  + Modified the database errors to show the filename and line number of the problematic query.
  + Removed the following deprecated functions: orwhere, orlike, groupby, orhaving, orderby, getwhere.
  + Removed deprecated \_drop\_database() and \_create\_database() functions from the db utility drivers.
  + Improved dbforge create\_table() function for the Postgres driver.
* Helpers
  + Added convert\_accented\_characters() function to [text helper](http://docs.google.com/helpers/text_helper.html).
  + Added accept-charset to the list of inserted attributes of form\_open() in the [Form Helper](http://docs.google.com/helpers/form_helper.html).
  + Deprecated the dohash() function in favour of do\_hash() for naming consistency.
  + Non-backwards compatible change made to get\_dir\_file\_info() in the [File Helper](http://docs.google.com/helpers/file_helper.html). No longer recurses by default so as to encourage responsible use (this function can cause server performance issues when used without caution).
  + Modified the second parameter of directory\_map() in the [Directory Helper](http://docs.google.com/helpers/directory_helper.html) to accept an integer to specify recursion depth.
  + Modified delete\_files() in the [File Helper](http://docs.google.com/helpers/file_helper.html) to return FALSE on failure.
  + Added an optional second parameter to byte\_format() in the [Number Helper](http://docs.google.com/helpers/number_helper.html) to allow for decimal precision.
  + Added alpha, and sha1 string types to random\_string() in the [String Helper](http://docs.google.com/helpers/string_helper.html).
  + Modified prep\_url() so as to not prepend http:// if the supplied string already has a scheme.
  + Modified get\_file\_info in the file helper, changing filectime() to filemtime() for dates.
  + Modified smiley\_js() to add optional third parameter to return only the javascript with no script tags.
  + The img() function of the [HTML helper](http://docs.google.com/helpers/html_helper.html) will now generate an empty string as an alt attribute if one is not provided.
  + If CSRF is enabled in the application config file, form\_open() will automatically insert it as a hidden field.
  + Added sanitize\_filename() into the [Security helper](http://docs.google.com/helpers/security_helper.html).
  + Added ellipsize() to the [Text Helper](http://docs.google.com/helpers/text_helper.html)
  + Added elements() to the [Array Helper](http://docs.google.com/helpers/array_helper.html)
* Other Changes
  + Added an optional second parameter to show\_404() to disable logging.
  + Updated loader to automatically apply the sub-class prefix as an option when loading classes. Class names can be prefixed with the standard “CI\_” or the same prefix as the subclass prefix, or no prefix at all.
  + Increased randomness with is\_really\_writable() to avoid file collisions when hundreds or thousands of requests occur at once.
  + Switched some DIR\_WRITE\_MODE constant uses to FILE\_WRITE\_MODE where files and not directories are being operated on.
  + get\_mime\_by\_extension() is now case insensitive.
  + Added “default” to the list [Reserved Names](http://docs.google.com/general/reserved_names.html).
  + Added ‘application/x-msdownload’ for .exe files and ‘application/x-gzip-compressed’ for .tgz files to config/mimes.php.
  + Updated the output library to no longer compress output or send content-length headers if the server runs with zlib.output\_compression enabled.
  + Eliminated a call to is\_really\_writable() on each request unless it is really needed (Output caching)
  + Documented append\_output() in the [Output Class](http://docs.google.com/libraries/output.html).
  + Documented a second argument in the decode() function for the [Encrypt Class](http://docs.google.com/libraries/encrypt.html).
  + Documented db->close().
  + Updated the router to support a default route with any number of segments.
  + Moved \_remove\_invisible\_characters() function from the [Security Library](http://docs.google.com/libraries/security.html) to [common functions.](http://docs.google.com/general/common_functions.html)
  + Added audio/mpeg3 as a valid mime type for MP3.

Bug fixes for 2.0.0[**¶**](#3ygebqi)

* Fixed a bug where you could not change the User-Agent when sending email.
* Fixed a bug where the Output class would send incorrect cached output for controllers implementing their own \_output() method.
* Fixed a bug where a failed query would not have a saved query execution time causing errors in the Profiler
* Fixed a bug that was writing log entries when multiple identical helpers and plugins were loaded.
* Fixed assorted user guide typos or examples (#10693, #8951, #7825, #8660, #7883, #6771, #10656).
* Fixed a language key in the profiler: “profiler\_no\_memory\_usage” to “profiler\_no\_memory”.
* Fixed an error in the Zip library that didn’t allow downloading on PHP 4 servers.
* Fixed a bug in the Form Validation library where fields passed as rule parameters were not being translated (#9132)
* Modified inflector helper to properly pluralize words that end in ‘ch’ or ‘sh’
* Fixed a bug in xss\_clean() that was not allowing hyphens in query strings of submitted URLs.
* Fixed bugs in get\_dir\_file\_info() and get\_file\_info() in the File Helper with recursion, and file paths on Windows.
* Fixed a bug where Active Record override parameter would not let you disable Active Record if it was enabled in your database config file.
* Fixed a bug in reduce\_double\_slashes() in the String Helper to properly remove duplicate leading slashes (#7585)
* Fixed a bug in values\_parsing() of the XML-RPC library which prevented NULL variables typed as ‘string’ from being handled properly.
* Fixed a bug were form\_open\_multipart() didn’t accept string attribute arguments (#10930).
* Fixed a bug (#10470) where get\_mime\_by\_extension() was case sensitive.
* Fixed a bug where some error messages for the SQLite and Oracle drivers would not display.
* Fixed a bug where files created with the Zip Library would result in file creation dates of 1980.
* Fixed a bug in the Session library that would result in PHP error when attempting to store values with objects.
* Fixed a bug where extending the Controller class would result in a fatal PHP error.
* Fixed a PHP Strict Standards Error in the index.php file.
* Fixed a bug where getimagesize() was being needlessly checked on non-image files in is\_allowed\_type().
* Fixed a bug in the Encryption library where an empty key was not triggering an error.
* Fixed a bug in the Email library where CC and BCC recipients were not reset when using the clear() method (#109).
* Fixed a bug in the URL Helper where prep\_url() could cause a PHP error on PHP versions < 5.1.2.
* Added a log message in core/output if the cache directory config value was not found.
* Fixed a bug where multiple libraries could not be loaded by passing an array to load->library()
* Fixed a bug in the html helper where too much white space was rendered between the src and alt tags in the img() function.
* Fixed a bug in the profilers \_compile\_queries() function.
* Fixed a bug in the date helper where the DATE\_ISO8601 variable was returning an incorrectly formatted date string.

Version 1.7.2[**¶**](#2dlolyb)

Release Date: September 11, 2009 Hg Tag: v1.7.2

* Libraries
  + Added a new [Cart Class](http://docs.google.com/libraries/cart.html).
  + Added the ability to pass $config[‘file\_name’] for the [File Uploading Class](http://docs.google.com/libraries/file_uploading.html) and rename the uploaded file.
  + Changed order of listed user-agents so Safari would more accurately report itself. (#6844)
* Database
  + Switched from using gettype() in escape() to is\_\* methods, since future PHP versions might change its output.
  + Updated all database drivers to handle arrays in escape\_str()
  + Added escape\_like\_str() method for escaping strings to be used in LIKE conditions
  + Updated Active Record to utilize the new LIKE escaping mechanism.
  + Added reconnect() method to DB drivers to try to keep alive / reestablish a connection after a long idle.
  + Modified MSSQL driver to use mssql\_get\_last\_message() for error messages.
* Helpers
  + Added form\_multiselect() to the [Form helper](http://docs.google.com/helpers/form_helper.html).
  + Modified form\_hidden() in the [Form helper](http://docs.google.com/helpers/form_helper.html) to accept multi-dimensional arrays.
  + Modified form\_prep() in the [Form helper](http://docs.google.com/helpers/form_helper.html) to keep track of prepped fields to avoid multiple prep/mutation from subsequent calls which can occur when using Form Validation and form helper functions to output form fields.
  + Modified directory\_map() in the [Directory helper](http://docs.google.com/helpers/directory_helper.html) to allow the inclusion of hidden files, and to return FALSE on failure to read directory.
  + Modified the [Smiley helper](http://docs.google.com/helpers/smiley_helper.html) to work with multiple fields and insert the smiley at the last known cursor position.
* General
  + Compatible with PHP 5.3.0.
  + Modified [show\_error()](http://docs.google.com/general/errors.html) to allow sending of HTTP server response codes.
  + Modified [show\_404()](http://docs.google.com/general/errors.html) to send 404 status code, removing non-CGI compatible header() statement from error\_404.php template.
  + Added set\_status\_header() to the [Common functions](http://docs.google.com/general/common_functions.html) to allow use when the Output class is unavailable.
  + Added is\_php() to [Common functions](http://docs.google.com/general/common_functions.html) to facilitate PHP version comparisons.
  + Added 2 CodeIgniter “cheatsheets” (thanks to DesignFellow.com for this contribution).

Bug fixes for 1.7.2[**¶**](#sqyw64)

* Fixed assorted user guide typos or examples (#6743, #7214, #7516, #7287, #7852, #8224, #8324, #8349).
* Fixed a bug in the Form Validation library where multiple callbacks weren’t working (#6110)
* doctype helper default value was missing a “1”.
* Fixed a bug in the language class when outputting an error for an unfound file.
* Fixed a bug in the Calendar library where the shortname was output for “May”.
* Fixed a bug with ORIG\_PATH\_INFO that was allowing URIs of just a slash through.
* Fixed a fatal error in the Oracle and ODBC drivers (#6752)
* Fixed a bug where xml\_from\_result() was checking for a nonexistent method.
* Fixed a bug where Database Forge’s add\_column and modify\_column were not looping through when sent multiple fields.
* Fixed a bug where the File Helper was using ‘/’ instead of the DIRECTORY\_SEPARATOR constant.
* Fixed a bug to prevent PHP errors when attempting to use sendmail on servers that have manually disabled the PHP popen() function.
* Fixed a bug that would cause PHP errors in XML-RPC data if the PHP data type did not match the specified XML-RPC type.
* Fixed a bug in the XML-RPC class with parsing dateTime.iso8601 data types.
* Fixed a case sensitive string replacement in xss\_clean()
* Fixed a bug in form\_textarea() where form data was not prepped correctly.
* Fixed a bug in form\_prep() causing it to not preserve entities in the user’s original input when called back into a form element
* Fixed a bug in \_protect\_identifiers() where the swap prefix ($swap\_pre) was not being observed.
* Fixed a bug where the 400 status header sent with the ‘disallowed URI characters’ was not compatible with CGI environments.
* Fixed a bug in the typography class where heading tags could have paragraph tags inserted when using auto\_typography().

Version 1.7.1[**¶**](#3cqmetx)

Release Date: February 10, 2009 Hg Tag: 1.7.1

* Libraries
  + Fixed an arbitrary script execution security flaw (#6068) in the Form Validation library (thanks to hkk)
  + Changed default current page indicator in the Pagination library to use <strong> instead of <b>
  + A “HTTP/1.1 400 Bad Request” header is now sent when disallowed characters are encountered.
  + Added <big>, <small>, <q>, and <tt> to the Typography parser’s inline elements.
  + Added more accurate error reporting for the Email library when using sendmail.
  + Removed a strict type check from the rotate() function of the [Image Manipulation Class](http://docs.google.com/libraries/image_lib.html).
  + Added enhanced error checking in file saving in the Image library when using the GD lib.
  + Added an additional newline between multipart email headers and the MIME message text for better compatibility with a variety of MUAs.
  + Made modest improvements to efficiency and accuracy of explode\_name() in the Image lib.
* Database
  + Added where\_in to the list of expected arguments received by delete().
* Helpers
  + Added the ability to have optgroups in form\_dropdown() within the [form helper](http://docs.google.com/helpers/form_helper.html).
  + Added a doctype() function to the [HTML helper](http://docs.google.com/helpers/html_helper.html).
  + Added ability to force lowercase for url\_title() in the [URL helper](http://docs.google.com/helpers/url_helper.html).
  + Changed the default “type” of form\_button() to “button” from “submit” in the [form helper](http://docs.google.com/helpers/form_helper.html).
  + Changed redirect() in the URL helper to allow redirections to URLs outside of the CI site.
  + Updated get\_cookie() to try to fetch the cookie using the global cookie prefix if the requested cookie name doesn’t exist.
* Other Changes
  + Improved security in xss\_clean() to help prevent attacks targeting Internet Explorer.
  + Added ‘application/msexcel’ to config/mimes.php for .xls files.
  + Added ‘proxy\_ips’ config item to whitelist reverse proxy servers from which to trust the HTTP\_X\_FORWARDED\_FOR header to to determine the visitor’s IP address.
  + Improved accuracy of Upload::is\_allowed\_filetype() for images (#6715)

Bug fixes for 1.7.1[**¶**](#1rvwp1q)

* Database
  + Fixed a bug when doing ‘random’ on order\_by() (#5706).
  + Fixed a bug where adding a primary key through Forge could fail (#5731).
  + Fixed a bug when using DB cache on multiple databases (#5737).
  + Fixed a bug where TRUNCATE was not considered a “write” query (#6619).
  + Fixed a bug where csv\_from\_result() was checking for a nonexistent method.
  + Fixed a bug \_protect\_identifiers() where it was improperly removing all pipe symbols from items
* Fixed assorted user guide typos or examples (#5998, #6093, #6259, #6339, #6432, #6521).
* Fixed a bug in the MySQLi driver when no port is specified
* Fixed a bug (#5702), in which the field label was not being fetched properly, when “matching” one field to another.
* Fixed a bug in which identifers were not being escaped properly when reserved characters were used.
* Fixed a bug with the regular expression used to protect submitted paragraph tags in auto typography.
* Fixed a bug where double dashes within tag attributes were being converted to em dash entities.
* Fixed a bug where double spaces within tag attributes were being converted to non-breaking space entities.
* Fixed some accuracy issues with curly quotes in Typography::format\_characters()
* Changed a few docblock comments to reflect actual return values.
* Fixed a bug with high ascii characters in subject and from email headers.
* Fixed a bug in xss\_clean() where whitespace following a validated character entity would not be preserved.
* Fixed a bug where HTML comments and <pre> tags were being parsed in Typography::auto\_typography().
* Fixed a bug with non-breaking space cleanup in Typography::auto\_typography().
* Fixed a bug in database escaping where a compound statement (ie: SUM()) wasn’t handled correctly with database prefixes.
* Fixed a bug when an opening quote is preceded by a paragraph tag and immediately followed by another tag.
* Fixed a bug in the Text Helper affecting some locales where word\_censor() would not work on words beginning or ending with an accented character.
* Fixed a bug in the Text Helper character limiter where the provided limit intersects the last word of the string.
* Fixed a bug (#6342) with plural() in the Inflection helper with words ending in “y”.
* Fixed bug (#6517) where Routed URI segments returned by URI::rsegment() method were incorrect for the default controller.
* Fixed a bug (#6706) in the Security Helper where xss\_clean() was using a deprecated second argument.
* Fixed a bug in the URL helper url\_title() function where trailing periods were allowed at the end of a URL.
* Fixed a bug (#6669) in the Email class when CRLF’s are used for the newline character with headers when used with the “mail” protocol.
* Fixed a bug (#6500) where URI::A\_filter\_uri() was exit()ing an error instead of using show\_error().
* Fixed a bug (#6592) in the File Helper where get\_dir\_file\_info() where recursion was not occurring properly.
* Tweaked Typography::auto\_typography() for some edge-cases.

Version 1.7[**¶**](#4bvk7pj)

Release Date: October 23, 2008 Hg Tag: 1.7.0

* Libraries
  + Added a new [Form Validation Class](http://docs.google.com/libraries/form_validation.html). It simplifies setting rules and field names, supports arrays as field names, allows groups of validation rules to be saved in a config file, and adds some helper functions for use in view files. **Please note that the old Validation class is now deprecated**. We will leave it in the library folder for some time so that existing applications that use it will not break, but you are encouraged to migrate to the new version.
  + Updated the [Sessions class](http://docs.google.com/libraries/sessions.html) so that any custom data being saved gets stored to a database rather than the session cookie (assuming you are using a database to store session data), permitting much more data to be saved.
  + Added the ability to store libraries in subdirectories within either the main “libraries” or the local application “libraries” folder. Please see the [Loader class](http://docs.google.com/libraries/loader.html) for more info.
  + Added the ability to assign library objects to your own variable names when you use $this->load->library(). Please see the [Loader class](http://docs.google.com/libraries/loader.html) for more info.
  + Added controller class/method info to [Profiler class](http://docs.google.com/general/profiling.html) and support for multiple database connections.
  + Improved the “auto typography” feature and moved it out of the helper into its own [Typography Class](http://docs.google.com/libraries/typography.html).
  + Improved performance and accuracy of xss\_clean(), including reduction of false positives on image/file tests.
  + Improved [Parser class](http://docs.google.com/libraries/parser.html) to allow multiple calls to the parse() function. The output of each is appended in the output.
  + Added max\_filename option to set a file name length limit in the [File Upload Class](http://docs.google.com/libraries/file_uploading.html).
  + Added set\_status\_header() function to [Output class](http://docs.google.com/libraries/output.html).
  + Modified [Pagination](http://docs.google.com/libraries/pagination.html) class to only output the “First” link when the link for page one would not be shown.
  + Added support for mb\_strlen in the [Form Validation](http://docs.google.com/libraries/form_validation.html) class so that multi-byte languages will calculate string lengths properly.
* Database
  + Improved Active Record class to allow full path column and table names: hostname.database.table.column. Also improved the alias handling.
  + Improved how table and column names are escaped and prefixed. It now honors full path names when adding prefixes and escaping.
  + Added Active Record caching feature to “update” and “delete” functions.
  + Added removal of non-printing control characters in escape\_str() of DB drivers that do not have native PHP escaping mechanisms (mssql, oci8, odbc), to avoid potential SQL errors, and possible sources of SQL injection.
  + Added port support to MySQL, MySQLi, and MS SQL database drivers.
  + Added driver name variable in each DB driver, based on bug report #4436.
* Helpers
  + Added several new “setting” functions to the [Form helper](http://docs.google.com/helpers/form_helper.html) that allow POST data to be retrieved and set into forms. These are intended to be used on their own, or with the new [Form Validation Class](http://docs.google.com/libraries/form_validation.html).
  + Added current\_url() and uri\_segments() to [URL helper](http://docs.google.com/helpers/url_helper.html).
  + Altered auto\_link() in the [URL helper](http://docs.google.com/helpers/url_helper.html) so that email addresses with “+” included will be linked.
  + Added meta() function to [HTML helper](http://docs.google.com/helpers/html_helper.html).
  + Improved accuracy of calculations in [Number helper](http://docs.google.com/helpers/number_helper.html).
  + Removed added newlines (“\n”) from most form and html helper functions.
  + Tightened up validation in the [Date helper](http://docs.google.com/helpers/date_helper.html) function human\_to\_unix(), and eliminated the POSIX regex.
  + Updated [Date helper](http://docs.google.com/helpers/date_helper.html) to match the world’s current time zones and offsets.
  + Modified url\_title() in the [URL helper](http://docs.google.com/helpers/url_helper.html) to remove characters and digits that are part of character entities, to allow dashes, underscores, and periods regardless of the $separator, and to allow uppercase characters.
  + Added support for arbitrary attributes in anchor\_popup() of the [URL helper](http://docs.google.com/helpers/url_helper.html).
* Other Changes
  + Added [PHP Style Guide](http://docs.google.com/general/styleguide.html) to docs.
  + Added sanitization in xss\_clean() for a deprecated HTML tag that could be abused in user input in Internet Explorer.
  + Added a few openxml document mime types, and an additional mobile agent to mimes.php and user\_agents.php respectively.
  + Added a file lock check during caching, before trying to write to the file.
  + Modified Cookie key cleaning to unset a few troublesome key names that can be present in certain environments, preventing CI from halting execution.
  + Changed the output of the profiler to use style attribute rather than clear, and added the id “codeigniter\_profiler” to the container div.

Bug fixes for 1.7.0[**¶**](#2r0uhxc)

* Fixed bug in xss\_clean() that could remove some desirable tag attributes.
* Fixed assorted user guide typos or examples (#4807, #4812, #4840, #4862, #4864, #4899, #4930, #5006, #5071, #5158, #5229, #5254, #5351).
* Fixed an edit from 1.6.3 that made the $robots array in user\_agents.php go poof.
* Fixed a bug in the [Email library](http://docs.google.com/libraries/email.html) with quoted-printable encoding improperly encoding space and tab characters.
* Modified XSS sanitization to no longer add semicolons after &[single letter], such as in M&M’s, B&B, etc.
* Modified XSS sanitization to no longer strip XHTML image tags of closing slashes.
* Fixed a bug in the Session class when database sessions are used where upon session update all userdata would be errantly written to the session cookie.
* Fixed a bug (#4536) in backups with the MySQL driver where some legacy code was causing certain characters to be double escaped.
* Fixed a routing bug (#4661) that occurred when the default route pointed to a subfolder.
* Fixed the spelling of “Dhaka” in the timezone\_menu() function of the [Date helper.](http://docs.google.com/helpers/date_helper.html)
* Fixed the spelling of “raspberry” in config/smileys.php.
* Fixed incorrect parenthesis in form\_open() function (#5135).
* Fixed a bug that was ignoring case when comparing controller methods (#4560).
* Fixed a bug (#4615) that was not setting SMTP authorization settings when using the initialize function.
* Fixed a bug in highlight\_code() in the [Text helper](http://docs.google.com/helpers/text_helper.html) that would leave a stray </span> in certain cases.
* Fixed Oracle bug (#3306) that was preventing multiple queries in one action.
* Fixed ODBC bug that was ignoring connection params due to its use of a constructor.
* Fixed a DB driver bug with num\_rows() that would cause an error with the Oracle driver.
* Fixed MS SQL bug (#4915). Added brackets around database name in MS SQL driver when selecting the database, in the event that reserved characters are used in the name.
* Fixed a DB caching bug (4718) in which the path was incorrect when no URI segments were present.
* Fixed Image\_lib class bug #4562. A path was not defined for NetPBM.
* Fixed Image\_lib class bug #4532. When cropping an image with identical height/width settings on output, a copy is made.
* Fixed DB\_driver bug (4900), in which a database error was not being logged correctly.
* Fixed DB backup bug in which field names were not being escaped.
* Fixed a DB Active Record caching bug in which multiple calls to cached data were not being honored.
* Fixed a bug in the Session class that was disallowing slashes in the serialized array.
* Fixed a Form Validation bug in which the “isset” error message was being trigged by the “required” rule.
* Fixed a spelling error in a Loader error message.
* Fixed a bug (5050) with IP validation with empty segments.
* Fixed a bug in which the parser was being greedy if multiple identical sets of tags were encountered.

Version 1.6.3[**¶**](#1664s55)

Release Date: June 26, 2008 Hg Tag: v1.6.3

Version 1.6.3 is a security and maintenance release and is recommended for all users.

* Database
  + Modified MySQL/MySQLi Forge class to give explicit names to keys
  + Added ability to set multiple column non-primary keys to the [Forge class](http://docs.google.com/database/forge.html)
  + Added ability to set additional database config values in [DSN connections](http://docs.google.com/database/connecting.html) via the query string.
* Libraries
  + Set the mime type check in the [Upload class](http://docs.google.com/libraries/file_uploading.html) to reference the global mimes variable.
  + Added support for query strings to the [Pagination class](http://docs.google.com/libraries/pagination.html), automatically detected or explicitly declared.
  + Added get\_post() to the [Input class](http://docs.google.com/libraries/input.html).
  + Documented get() in the [Input class](http://docs.google.com/libraries/input.html).
  + Added the ability to automatically output language items as form labels in the [Language class](http://docs.google.com/libraries/language.html).
* Helpers
  + Added a [Language helper](http://docs.google.com/helpers/language_helper.html).
  + Added a [Number helper](http://docs.google.com/helpers/number_helper.html).
  + [Form helper](http://docs.google.com/helpers/form_helper.html) refactored to allow form\_open() and form\_fieldset() to accept arrays or strings as arguments.
* Other changes
  + Improved security in xss\_clean().
  + Removed an unused Router reference in \_display\_cache().
  + Added ability to [use xss\_clean() to test images](http://docs.google.com/libraries/input.html) for XSS, useful for upload security.
  + Considerably expanded list of mobile user-agents in config/user\_agents.php.
  + Charset information in the userguide has been moved above title for internationalization purposes (#4614).
  + Added “Using Associative Arrays In a Request Parameter” example to the [XMLRPC userguide page](http://docs.google.com/libraries/xmlrpc.html).
  + Removed maxlength and size as automatically added attributes of form\_input() in the [form helper](http://docs.google.com/helpers/form_helper.html).
  + Documented the language file use of byte\_format() in the [number helper](http://docs.google.com/helpers/number_helper.html).

Bug fixes for 1.6.3[**¶**](#3q5sasy)

* Added a language key for valid\_emails in validation\_lang.php.
* Amended fixes for bug (#3419) with parsing DSN database connections.
* Moved the \_has\_operator() function (#4535) into DB\_driver from DB\_active\_rec.
* Fixed a syntax error in upload\_lang.php.
* Fixed a bug (#4542) with a regular expression in the Image library.
* Fixed a bug (#4561) where orhaving() wasn’t properly passing values.
* Removed some unused variables from the code (#4563).
* Fixed a bug where having() was not adding an = into the statement (#4568).
* Fixed assorted user guide typos or examples (#4574, #4706).
* Added quoted-printable headers to Email class when the multi-part override is used.
* Fixed a double opening <p> tag in the index pages of each system directory.

Version 1.6.2[**¶**](#25b2l0r)

Release Date: May 13, 2008 Hg Tag: 1.6.2

* Active Record
  + Added the ability to prevent escaping in having() clauses.
  + Added rename\_table() into [DBForge](http://docs.google.com/database/forge.html).
  + Fixed a bug that wasn’t allowing escaping to be turned off if the value of a query was NULL.
  + DB Forge is now assigned to any models that exist after loading (#3457).
* Database
  + Added [Strict Mode](http://docs.google.com/database/transactions.html) to database transactions.
  + Escape behaviour in where() clauses has changed; values in those with the “FALSE” argument are no longer escaped (ie: quoted).
* Config
  + Added ‘application/vnd.ms-powerpoint’ to list of mime types.
  + Added ‘audio/mpg’ to list of mime types.
  + Added new user-modifiable file constants.php containing file mode and fopen constants.
  + Added the ability to set CRLF settings via config in the [Email](http://docs.google.com/libraries/email.html) class.
* Libraries
  + Added increased security for filename handling in the Upload library.
  + Added increased security for sessions for client-side data tampering.
  + The MySQLi forge class is now in sync with MySQL forge.
  + Added the ability to set CRLF settings via config in the [Email](http://docs.google.com/libraries/email.html) class.
  + [Unit Testing](http://docs.google.com/libraries/unit_testing.html) results are now colour coded, and a change was made to the default template of results.
  + Added a valid\_emails rule to the Validation class.
  + The [Zip class](http://docs.google.com/libraries/zip.html) now exits within download().
  + The [Zip class](http://docs.google.com/libraries/zip.html) has undergone a substantial re-write for speed and clarity (thanks stanleyxu for the hard work and code contribution in bug report #3425!)
* Helpers
  + Added a Compatibility Helper for using some common PHP 5 functions safely in applications that might run on PHP 4 servers (thanks Seppo for the hard work and code contribution!)
  + Added form\_button() in the [Form helper](http://docs.google.com/helpers/form_helper.html).
  + Changed the radio() and checkbox() functions to default to not checked by default.
  + Added the ability to include an optional HTTP Response Code in the redirect() function of the [URL Helper](http://docs.google.com/helpers/url_helper.html).
  + Modified img() in the [HTML Helper](http://docs.google.com/helpers/html_helper.html) to remove an unneeded space (#4208).
  + Modified anchor() in the [URL helper](http://docs.google.com/helpers/url_helper.html) to no longer add a default title= attribute (#4209).
  + The [Download helper](http://docs.google.com/helpers/download_helper.html) now exits within force\_download().
  + Added get\_dir\_file\_info(), get\_file\_info(), and get\_mime\_by\_extension() to the [File Helper](http://docs.google.com/helpers/file_helper.html).
  + Added symbolic\_permissions() and octal\_permissions() to the [File helper](http://docs.google.com/helpers/file_helper.html).
* Plugins
  + Modified captcha generation to first look for the function imagecreatetruecolor, and fallback to imagecreate if it isn’t available (#4226).
* Other Changes
  + Added ability for [xss\_clean()](http://docs.google.com/libraries/input.html) to accept arrays.
  + Removed closing PHP tags from all PHP files to avoid accidental output and potential ‘cannot modify headers’ errors.
  + Removed “scripts” from the auto-load search path. Scripts were deprecated in Version 1.4.1 (September 21, 2006). If you still need to use them for legacy reasons, they must now be manually loaded in each Controller.
  + Added a [Reserved Names](http://docs.google.com/general/reserved_names.html) page to the userguide, and migrated reserved controller names into it.
  + Added a [Common Functions](http://docs.google.com/general/common_functions.html) page to the userguide for globally available functions.
  + Improved security and performance of xss\_clean().

Bugfixes for 1.6.2[**¶**](#kgcv8k)

* Fixed a bug where SET queries were not being handled as “write” queries.
* Fixed a bug (#3191) with ORIG\_PATH\_INFO URI parsing.
* Fixed a bug in DB Forge, when inserting an id field (#3456).
* Fixed a bug in the table library that could cause identically constructed rows to be dropped (#3459).
* Fixed DB Driver and MySQLi result driver checking for resources instead of objects (#3461).
* Fixed an AR\_caching error where it wasn’t tracking table aliases (#3463).
* Fixed a bug in AR compiling, where select statements with arguments got incorrectly escaped (#3478).
* Fixed an incorrect documentation of $this->load->language (#3520).
* Fixed bugs (#3523, #4350) in get\_filenames() with recursion and problems with Windows when $include\_path is used.
* Fixed a bug (#4153) in the XML-RPC class preventing dateTime.iso8601 from being used.
* Fixed an AR bug with or\_where\_not\_in() (#4171).
* Fixed a bug with [xss\_clean()](http://docs.google.com/libraries/input.html) that would add semicolons to GET URI variable strings.
* Fixed a bug (#4206) in the Directory Helper where the directory resource was not being closed, and minor improvements.
* Fixed a bug in the FTP library where delete\_dir() was not working recursively (#4215).
* Fixed a Validation bug when set\_rules() is used with a non-array field name and rule (#4220).
* Fixed a bug (#4223) where DB caching would not work for returned DB objects or multiple DB connections.
* Fixed a bug in the Upload library that might output the same error twice (#4390).
* Fixed an AR bug when joining with a table alias and table prefix (#4400).
* Fixed a bug in the DB class testing the $params argument.
* Fixed a bug in the Table library where the integer 0 in cell data would be displayed as a blank cell.
* Fixed a bug in link\_tag() of the [URL helper](http://docs.google.com/helpers/url_helper.html) where a key was passed instead of a value.
* Fixed a bug in DB\_result::row() that prevented it from returning individual fields with MySQL NULL values.
* Fixed a bug where SMTP emails were not having dot transformation performed on lines that begin with a dot.
* Fixed a bug in display\_error() in the DB driver that was instantiating new Language and Exception objects, and not using the error heading.
* Fixed a bug (#4413) where a URI containing slashes only e.g. ‘http://example.com/index.php?//’ would result in PHP errors
* Fixed an array to string conversion error in the Validation library (#4425)
* Fixed bug (#4451, #4299, #4339) where failed transactions will not rollback when debug mode is enabled.
* Fixed a bug (#4506) with overlay\_watermark() in the Image library preventing support for PNG-24s with alpha transparency
* Fixed assorted user guide typos (#3453, #4364, #4379, #4399, #4408, #4412, #4448, #4488).

Version 1.6.1[**¶**](#34g0dwd)

Release Date: February 12, 2008 Hg Tag: 1.6.1

* Active Record
  + Added [Active Record Caching](http://docs.google.com/database/query_builder.html#ar-caching).
  + Made Active Record fully database-prefix aware.
* Database drivers
  + Added support for setting client character set and collation for MySQLi.
* Core Changes
  + Modified xss\_clean() to be more intelligent with its handling of URL encoded strings.
  + Added $\_SERVER, $\_FILES, $\_ENV, and $\_SESSION to sanitization of globals.
  + Added a [Path Helper](http://docs.google.com/helpers/path_helper.html).
  + Simplified \_reindex\_segments() in the URI class.
  + Escaped the ‘-‘ in the default ‘permitted\_uri\_chars’ config item, to prevent errors if developers just try to add additional characters to the end of the default expression.
  + Modified method calling to controllers to show a 404 when a private or protected method is accessed via a URL.
  + Modified framework initiated 404s to log the controller and method for invalid requests.
* Helpers
  + Modified get\_filenames() in the File Helper to return FALSE if the $source\_dir is not readable.

Bugfixes for 1.6.1[**¶**](#1jlao46)

* Deprecated is\_numeric as a validation rule. Use of numeric and integer are preferred.
* Fixed bug (#3379) in DBForge with SQLite for table creation.
* Made Active Record fully database prefix aware (#3384).
* Fixed a bug where DBForge was outputting invalid SQL in Postgres by adding brackets around the tables in FROM.
* Changed the behaviour of Active Record’s update() to make the WHERE clause optional (#3395).
* Fixed a bug (#3396) where certain POST variables would cause a PHP warning.
* Fixed a bug in query binding (#3402).
* Changed order of SQL keywords in the Profiler $highlight array so OR would not be highlighted before ORDER BY.
* Fixed a bug (#3404) where the MySQLi driver was testing if $this->conn\_id was a resource instead of an object.
* Fixed a bug (#3419) connecting to a database via a DSN string.
* Fixed a bug (#3445) where the routed segment array was not re-indexed to begin with 1 when the default controller is used.
* Fixed assorted user guide typos.

Version 1.6.0[**¶**](#43ky6rz)

Release Date: January 30, 2008

* DBForge
  + Added [DBForge](http://docs.google.com/database/forge.html) to the database tools.
  + Moved create\_database() and drop\_database() into [DBForge](http://docs.google.com/database/forge.html).
  + Added add\_field(), add\_key(), create\_table(), drop\_table(), add\_column(), drop\_column(), modify\_column() into [DBForge](http://docs.google.com/database/forge.html).
* Active Record
  + Added protect\_identifiers() in [Active Record](http://docs.google.com/database/query_builder.html).
  + All AR queries are backticked if appropriate to the database.
  + Added where\_in(), or\_where\_in(), where\_not\_in(), or\_where\_not\_in(), not\_like() and or\_not\_like() to [Active Record](http://docs.google.com/database/query_builder.html).
  + Added support for limit() into update() and delete() statements in [Active Record](http://docs.google.com/database/query_builder.html).
  + Added empty\_table() and truncate\_table() to [Active Record](http://docs.google.com/database/query_builder.html).
  + Added the ability to pass an array of tables to the delete() statement in [Active Record](http://docs.google.com/database/query_builder.html).
  + Added count\_all\_results() function to [Active Record](http://docs.google.com/database/query_builder.html).
  + Added select\_max(), select\_min(), select\_avg() and select\_sum() to [Active Record](http://docs.google.com/database/query_builder.html).
  + Added the ability to use aliases with joins in [Active Record](http://docs.google.com/database/query_builder.html).
  + Added a third parameter to Active Record’s like() clause to control where the wildcard goes.
  + Added a third parameter to set() in [Active Record](http://docs.google.com/database/query_builder.html) that withholds escaping data.
  + Changed the behaviour of variables submitted to the where() clause with no values to auto set “IS NULL”
* Other Database Related
  + MySQL driver now requires MySQL 4.1+
  + Added $this->DB->save\_queries variable to DB driver, enabling queries to get saved or not. Previously they were always saved.
  + Added $this->db->dbprefix() to manually add database prefixes.
  + Added ‘random’ as an order\_by() option , and removed “rand()” as a listed option as it was MySQL only.
  + Added a check for NULL fields in the MySQL database backup utility.
  + Added “constrain\_by\_prefix” parameter to db->list\_table() function. If set to TRUE it will limit the result to only table names with the current prefix.
  + Deprecated from Active Record; getwhere() for get\_where(); groupby() for group\_by(); havingor() for having\_or(); orderby() for order\_by; orwhere() for or\_where(); and orlike() for or\_like().
  + Modified csv\_from\_result() to output CSV data more in the spirit of basic rules of RFC 4180.
  + Added ‘char\_set’ and ‘dbcollat’ database configuration settings, to explicitly set the client communication properly.
  + Removed ‘active\_r’ configuration setting and replaced with a global $active\_record setting, which is more in harmony with the global nature of the behavior (#1834).
* Core changes
  + Added ability to load multiple views, whose content will be appended to the output in the order loaded.
  + Added the ability to [auto-load](http://docs.google.com/general/autoloader.html) [Models](http://docs.google.com/general/models.html).
  + Reorganized the URI and Routes classes for better clarity.
  + Added Compat.php to allow function overrides for older versions of PHP or PHP environments missing certain extensions / libraries
  + Added memory usage, GET, URI string data, and individual query execution time to Profiler output.
  + Deprecated Scaffolding.
  + Added is\_really\_writable() to Common.php to provide a cross-platform reliable method of testing file/folder writability.
* Libraries
  + Changed the load protocol of Models to allow for extension.
  + Strengthened the Encryption library to help protect against man in the middle attacks when MCRYPT\_MODE\_CBC mode is used.
  + Added Flashdata variables, session\_id regeneration and configurable session update times to the [Session class.](http://docs.google.com/libraries/sessions.html)
  + Removed ‘last\_visit’ from the Session class.
  + Added a language entry for valid\_ip validation error.
  + Modified prep\_for\_form() in the Validation class to accept arrays, adding support for POST array validation (via callbacks only)
  + Added an “integer” rule into the Validation library.
  + Added valid\_base64() to the Validation library.
  + Documented clear() in the [Image Processing](http://docs.google.com/libraries/image_lib.html) library.
  + Changed the behaviour of custom callbacks so that they no longer trigger the “required” rule.
  + Modified Upload class $\_FILES error messages to be more precise.
  + Moved the safe mode and auth checks for the Email library into the constructor.
  + Modified variable names in \_ci\_load() method of Loader class to avoid conflicts with view variables.
  + Added a few additional mime type variations for CSV.
  + Enabled the ‘system’ methods for the XML-RPC Server library, except for ‘system.multicall’ which is still disabled.
* Helpers & Plugins
  + Added link\_tag() to the [HTML helper.](http://docs.google.com/helpers/html_helper.html)
  + Added img() to the [HTML helper.](http://docs.google.com/helpers/html_helper.html)
  + Added ability to [“extend” Helpers](http://docs.google.com/general/helpers.html).
  + Added an [email helper](http://docs.google.com/helpers/email_helper.html) into core helpers.
  + Added strip\_quotes() function to [string helper](http://docs.google.com/helpers/string_helper.html).
  + Added reduce\_multiples() function to [string helper](http://docs.google.com/helpers/string_helper.html).
  + Added quotes\_to\_entities() function to [string helper](http://docs.google.com/helpers/string_helper.html).
  + Added form\_fieldset(), form\_fieldset\_close(), form\_label(), and form\_reset() function to [form helper](http://docs.google.com/helpers/form_helper.html).
  + Added support for external urls in form\_open().
  + Removed support for db\_backup in MySQLi due to incompatible functions.
  + Javascript Calendar plugin now uses the months and days from the calendar language file, instead of hard-coded values, internationalizing it.
* Documentation Changes
  + Added Writing Documentation section for the community to use in writing their own documentation.
  + Added titles to all user manual pages.
  + Added attributes into <html> of userguide for valid html.
  + Added [Zip Encoding Class](http://docs.google.com/libraries/zip.html) to the table of contents of the userguide.
  + Moved part of the userguide menu javascript to an external file.
  + Documented distinct() in [Active Record](http://docs.google.com/database/query_builder.html).
  + Documented the timezones() function in the [Date Helper](http://docs.google.com/helpers/date_helper.html).
  + Documented unset\_userdata in the [Session class](http://docs.google.com/libraries/sessions.html).
  + Documented 2 config options to the [Database configuration](http://docs.google.com/database/configuration.html) page.

Bug fixes for Version 1.6.0[**¶**](#2iq8gzs)

* Fixed a bug (#1813) preventing using $CI->db in the same application with returned database objects.
* Fixed a bug (#1842) where the $this->uri->rsegments array would not include the ‘index’ method if routed to the controller without an implicit method.
* Fixed a bug (#1872) where word\_limiter() was not retaining whitespace.
* Fixed a bug (#1890) in csv\_from\_result() where content that included the delimiter would break the file.
* Fixed a bug (#2542)in the clean\_email() method of the Email class to allow for non-numeric / non-sequential array keys.
* Fixed a bug (#2545) in \_html\_entity\_decode\_callback() when ‘global\_xss\_filtering’ is enabled.
* Fixed a bug (#2668) in the [parser class](http://docs.google.com/libraries/parser.html) where numeric data was ignored.
* Fixed a bug (#2679) where the “previous” pagination link would get drawn on the first page.
* Fixed a bug (#2702) in \_object\_to\_array that broke some types of inserts and updates.
* Fixed a bug (#2732) in the SQLite driver for PHP 4.
* Fixed a bug (#2754) in Pagination to scan for non-positive num\_links.
* Fixed a bug (#2762) in the [Session library](http://docs.google.com/libraries/sessions.html) where user agent matching would fail on user agents ending with a space.
* Fixed a bug (#2784) $field\_names[] vs $Ffield\_names[] in postgres and sqlite drivers.
* Fixed a bug (#2810) in the typography helper causing extraneous paragraph tags when string contains tags.
* Fixed a bug (#2849) where arguments passed to a subfolder controller method would be incorrectly shifted, dropping the 3rd segment value.
* Fixed a bug (#2858) which referenced a wrong variable in the Image class.
* Fixed a bug (#2875)when loading plugin files as \_plugin. and not \_pi.
* Fixed a bug (#2912) in get\_filenames() in the [File Helper](http://docs.google.com/helpers/file_helper.html) where the array wasn’t cleared after each call.
* Fixed a bug (#2974) in highlight\_phrase() that caused an error with slashes.
* Fixed a bug (#3003) in the Encryption Library to support modes other than MCRYPT\_MODE\_ECB
* Fixed a bug (#3015) in the [User Agent library](http://docs.google.com/libraries/user_agent.html) where more than 2 languages where not reported with languages().
* Fixed a bug (#3017) in the [Email](http://docs.google.com/libraries/email.html) library where some timezones were calculated incorrectly.
* Fixed a bug (#3024) in which master\_dim wasn’t getting reset by clear() in the Image library.
* Fixed a bug (#3156) in Text Helper highlight\_code() causing PHP tags to be handled incorrectly.
* Fixed a bug (#3166) that prevented num\_rows from working in Oracle.
* Fixed a bug (#3175) preventing certain libraries from working properly when autoloaded in PHP 4.
* Fixed a bug (#3267) in the Typography Helper where unordered list was listed “un.
* Fixed a bug (#3268) where the Router could leave ‘/’ as the path.
* Fixed a bug (#3279) where the Email class was sending the wrong Content-Transfer-Encoding for some character sets.
* Fixed a bug (#3284) where the rsegment array would not be set properly if the requested URI contained more segments than the routed URI.
* Removed extraneous load of $CFG in \_display\_cache() of the Output class (#3285).
* Removed an extraneous call to loading models (#3286).
* Fixed a bug (#3310) with sanitization of globals in the Input class that could unset CI’s global variables.
* Fixed a bug (#3314) which would cause the top level path to be deleted in delete\_files() of the File helper.
* Fixed a bug (#3328) where the smiley helper might return an undefined variable.
* Fixed a bug (#3330) in the FTP class where a comparison wasn’t getting made.
* Removed an unused parameter from Profiler (#3332).
* Fixed a bug in database driver where num\_rows property wasn’t getting updated.
* Fixed a bug in the [upload library](http://docs.google.com/libraries/file_uploading.html) when allowed\_files wasn’t defined.
* Fixed a bug in word\_wrap() of the Text Helper that incorrectly referenced an object.
* Fixed a bug in Validation where valid\_ip() wasn’t called properly.
* Fixed a bug in Validation where individual error messages for checkboxes wasn’t supported.
* Fixed a bug in captcha calling an invalid PHP function.
* Fixed a bug in the cookie helper “set\_cookie” function. It was not honoring the config settings.
* Fixed a bug that was making validation callbacks required even when not set as such.
* Fixed a bug in the XML-RPC library so if a type is specified, a more intelligent decision is made as to the default type.
* Fixed an example of comma-separated emails in the email library documentation.
* Fixed an example in the Calendar library for Showing Next/Previous Month Links.
* Fixed a typo in the database language file.
* Fixed a typo in the image language file “suppor” to “support”.
* Fixed an example for XML RPC.
* Fixed an example of accept\_charset() in the [User Agent Library](http://docs.google.com/libraries/user_agent.html).
* Fixed a typo in the docblock comments that had CodeIgniter spelled CodeIgnitor.
* Fixed a typo in the [String Helper](http://docs.google.com/helpers/string_helper.html) (uniquid changed to uniqid).
* Fixed typos in the email Language class (email\_attachment\_unredable, email\_filed\_smtp\_login), and FTP Class (ftp\_unable\_to\_remame).
* Added a stripslashes() into the Upload Library.
* Fixed a series of grammatical and spelling errors in the language files.
* Fixed assorted user guide typos.

Version 1.5.4[**¶**](#xvir7l)

Release Date: July 12, 2007

* Added [custom Language files](http://docs.google.com/libraries/language.html) to the [autoload](http://docs.google.com/general/autoloader.html) options.
* Added stripslashes() to the \_clean\_input\_data() function in the [Input class](http://docs.google.com/libraries/input.html) when magic quotes is on so that data will always be un-slashed within the framework.
* Added array to string into the [profiler](http://docs.google.com/general/profiling.html).
* Added some additional mime types in application/config/mimes.php.
* Added filename\_security() method to [Input library](http://docs.google.com/libraries/input.html).
* Added some additional arguments to the [Inflection helper](http://docs.google.com/helpers/inflector_helper.html) singular() to compensate for words ending in “s”. Also added a force parameter to pluralize().
* Added $config[‘charset’] to the config file. Default value is ‘UTF-8’, used in some string handling functions.
* Fixed MSSQL insert\_id().
* Fixed a logic error in the DB trans\_status() function. It was incorrectly returning TRUE on failure and FALSE on success.
* Fixed a bug that was allowing multiple load attempts on extended classes.
* Fixed a bug in the bootstrap file that was incorrectly attempting to discern the full server path even when it was explicity set by the user.
* Fixed a bug in the escape\_str() function in the MySQL driver.
* Fixed a typo in the [Calendar library](http://docs.google.com/libraries/calendar.html)
* Fixed a typo in rpcs.php library
* Fixed a bug in the [Zip library](http://docs.google.com/libraries/zip.html), providing PC Zip file compatibility with Mac OS X
* Fixed a bug in router that was ignoring the scaffolding route for optimization
* Fixed an IP validation bug.
* Fixed a bug in display of POST keys in the [Profiler](http://docs.google.com/general/profiling.html) output
* Fixed a bug in display of queries with characters that would be interpreted as HTML in the [Profiler](http://docs.google.com/general/profiling.html) output
* Fixed a bug in display of Email class print debugger with characters that would be interpreted as HTML in the debugging output
* Fixed a bug in the Content-Transfer-Encoding of HTML emails with the quoted-printable MIME type
* Fixed a bug where one could unset certain PHP superglobals by setting them via GET or POST data
* Fixed an undefined function error in the insert\_id() function of the PostgreSQL driver
* Fixed various doc typos.
* Documented two functions from the [String helper](http://docs.google.com/helpers/string_helper.html) that were missing from the user guide: trim\_slashes() and reduce\_double\_slashes().
* Docs now validate to XHTML 1 transitional
* Updated the XSS Filtering to take into account the IE expression() ability and improved certain deletions to prevent possible exploits
* Modified the Router so that when Query Strings are Enabled, the controller trigger and function trigger values are sanitized for filename include security.
* Modified the is\_image() method in the Upload library to take into account Windows IE 6/7 eccentricities when dealing with MIMEs
* Modified XSS Cleaning routine to be more performance friendly and compatible with PHP 5.2’s new PCRE backtrack and recursion limits.
* Modified the [URL Helper](http://docs.google.com/helpers/url_helper.html) to type cast the $title as a string in case a numeric value is supplied
* Modified Form Helper form\_dropdown() to type cast the keys and values of the options array as strings, allowing numeric values to be properly set as ‘selected’
* Deprecated the use if is\_numeric() in various places since it allows periods. Due to compatibility problems with ctype\_digit(), making it unreliable in some installations, the following regular expression was used instead: preg\_match(“/[^0-9]/”, $n)
* Deprecated: APPVER has been deprecated and replaced with CI\_VERSION for clarity.

Version 1.5.3[**¶**](#3hv69ve)

Release Date: April 15, 2007

* Added array to string into the profiler
* Code Igniter references updated to CodeIgniter
* pMachine references updated to EllisLab
* Fixed a bug in the repeater function of [string helper](http://docs.google.com/helpers/string_helper.html).
* Fixed a bug in ODBC driver
* Fixed a bug in result\_array() that was returning an empty array when no result is produced.
* Fixed a bug in the redirect function of the [url helper](http://docs.google.com/helpers/url_helper.html).
* Fixed an undefined variable in Loader
* Fixed a version bug in the Postgres driver
* Fixed a bug in the textarea function of the form helper for use with strings
* Fixed doc typos.

Version 1.5.2[**¶**](#1x0gk37)

Release Date: February 13, 2007

* Added subversion information to the [downloads](http://docs.google.com/installation/downloads.html) page.
* Added support for captions in the [Table Library](http://docs.google.com/libraries/table.html)
* Fixed a bug in the [download\_helper](http://docs.google.com/helpers/download_helper.html) that was causing Internet Explorer to load rather than download
* Fixed a bug in the Active Record Join function that was not taking table prefixes into consideration.
* Removed unescaped variables in error messages of Input and Router classes
* Fixed a bug in the Loader that was causing errors on Libraries loaded twice. A debug message is now silently made in the log.
* Fixed a bug in the [form helper](http://docs.google.com/helpers/form_helper.html) that gave textarea a value attribute
* Fixed a bug in the [Image Library](http://docs.google.com/libraries/image_lib.html) that was ignoring resizing the same size image
* Fixed some doc typos.

Version 1.5.1[**¶**](#4h042r0)

Release Date: November 23, 2006

* Added support for submitting arrays of libraries in the $this->load->library function.
* Added support for naming custom library files in lower or uppercase.
* Fixed a bug related to output buffering.
* Fixed a bug in the active record class that was not resetting query data after a completed query.
* Fixed a bug that was suppressing errors in controllers.
* Fixed a problem that can cause a loop to occur when the config file is missing.
* Fixed a bug that occurred when multiple models were loaded with the third parameter set to TRUE.
* Fixed an oversight that was not unsetting globals properly in the input sanitize function.
* Fixed some bugs in the Oracle DB driver.
* Fixed an incorrectly named variable in the MySQLi result driver.
* Fixed some doc typos.

Version 1.5.0.1[**¶**](#2w5ecyt)

Release Date: October 31, 2006

* Fixed a problem in which duplicate attempts to load helpers and classes were not being stopped.
* Fixed a bug in the word\_wrap() helper function.
* Fixed an invalid color Hex number in the Profiler class.
* Fixed a corrupted image in the user guide.

Version 1.5.0[**¶**](#1baon6m)

Release Date: October 30, 2006

* Added [DB utility class](http://docs.google.com/database/utilities.html), permitting DB backups, CVS or XML files from DB results, and various other functions.
* Added [Database Caching Class](http://docs.google.com/database/caching.html).
* Added [transaction support](http://docs.google.com/database/transactions.html) to the database classes.
* Added [Profiler Class](http://docs.google.com/general/profiling.html) which generates a report of Benchmark execution times, queries, and POST data at the bottom of your pages.
* Added [User Agent Library](http://docs.google.com/libraries/user_agent.html) which allows browsers, robots, and mobile devises to be identified.
* Added [HTML Table Class](http://docs.google.com/libraries/table.html) , enabling tables to be generated from arrays or database results.
* Added [Zip Encoding Library](http://docs.google.com/libraries/zip.html).
* Added [FTP Library](http://docs.google.com/libraries/ftp.html).
* Added the ability to [extend libraries](http://docs.google.com/general/creating_libraries.html) and [extend core classes](http://docs.google.com/general/core_classes.html), in addition to being able to replace them.
* Added support for storing [models within sub-folders](http://docs.google.com/general/models.html).
* Added [Download Helper](http://docs.google.com/helpers/download_helper.html).
* Added [simple\_query()](http://docs.google.com/database/queries.html) function to the database classes
* Added [standard\_date()](http://docs.google.com/helpers/date_helper.html) function to the Date Helper.
* Added [$query->free\_result()](http://docs.google.com/database/results.html) to database class.
* Added [$query->list\_fields()](http://docs.google.com/database/metadata.html) function to database class
* Added [$this->db->platform()](http://docs.google.com/database/helpers.html) function
* Added new [File Helper](http://docs.google.com/helpers/file_helper.html): get\_filenames()
* Added new helper: [Smiley Helper](http://docs.google.com/helpers/smiley_helper.html)
* Added support for <ul> and <ol> lists in the [HTML Helper](http://docs.google.com/helpers/html_helper.html)
* Added the ability to rewrite [short tags](http://docs.google.com/general/alternative_php.html) on-the-fly, converting them to standard PHP statements, for those servers that do not support short tags. This allows the cleaner syntax to be used regardless of whether it’s supported by the server.
* Added the ability to [rename or relocate the “application” folder](http://docs.google.com/general/managing_apps.html).
* Added more thorough initialization in the upload class so that all class variables are reset.
* Added “is\_numeric” to validation, which uses the native PHP is\_numeric function.
* Improved the URI handler to make it more reliable when the $config[‘uri\_protocol’] item is set to AUTO.
* Moved most of the functions in the Controller class into the Loader class, allowing fewer reserved function names for controllers when running under PHP 5.
* Updated the DB Result class to return an empty array when $query->result() doesn’t produce a result.
* Updated the input->cookie() and input->post() functions in [Input Class](http://docs.google.com/libraries/input.html) to permit arrays contained cookies that are arrays to be run through the XSS filter.
* Documented three functions from the Validation class that were missing from the user guide: set\_select(), set\_radio(), and set\_checkbox().
* Fixed a bug in the Email class related to SMTP Helo data.
* Fixed a bug in the word wrapping helper and function in the email class.
* Fixed a bug in the validation class.
* Fixed a bug in the typography helper that was incorrectly wrapping block level elements in paragraph tags.
* Fixed a problem in the form\_prep() function that was double encoding entities.
* Fixed a bug that affects some versions of PHP when output buffering is nested.
* Fixed a bug that caused CI to stop working when the PHP magic \_\_get() or \_\_set() functions were used within models or controllers.
* Fixed a pagination bug that was permitting negative values in the URL.
* Fixed an oversight in which the Loader class was not allowed to be extended.
* Changed \_get\_config() to get\_config() since the function is not a private one.
* **Deprecated “init” folder**. Initialization happens automatically now. [Please see documentation](http://docs.google.com/general/creating_libraries.html).
* **Deprecated** $this->db->field\_names() USE $this->db->list\_fields()
* **Deprecated** the $config[‘log\_errors’] item from the config.php file. Instead, $config[‘log\_threshold’] can be set to “0” to turn it off.

Version 1.4.1[**¶**](#3vac5uf)

Release Date: September 21, 2006

* Added a new feature that passes URI segments directly to your function calls as parameters. See the [Controllers](http://docs.google.com/general/controllers.html) page for more info.
* Added support for a function named \_output(), which when used in your controllers will received the final rendered output from the output class. More info in the [Controllers](http://docs.google.com/general/controllers.html) page.
* Added several new functions in the [URI Class](http://docs.google.com/libraries/uri.html) to let you retrieve and manipulate URI segments that have been re-routed using the [URI Routing](http://docs.google.com/general/routing.html) feature. Previously, the URI class did not permit you to access any re-routed URI segments, but now it does.
* Added [$this->output->set\_header()](http://docs.google.com/libraries/output.html) function, which allows you to set server headers.
* Updated plugins, helpers, and language classes to allow your application folder to contain its own plugins, helpers, and language folders. Previously they were always treated as global for your entire installation. If your application folder contains any of these resources they will be used *instead* the global ones.
* Added [Inflector helper](http://docs.google.com/helpers/inflector_helper.html).
* Added element() function in the [array helper](http://docs.google.com/helpers/array_helper.html).
* Added RAND() to active record orderby() function.
* Added delete\_cookie() and get\_cookie() to [Cookie helper](http://docs.google.com/helpers/cookie_helper.html), even though the input class has a cookie fetching function.
* Added Oracle database driver (still undergoing testing so it might have some bugs).
* Added the ability to combine pseudo-variables and php variables in the template parser class.
* Added output compression option to the config file.
* Removed the is\_numeric test from the db->escape() function.
* Fixed a MySQLi bug that was causing error messages not to contain proper error data.
* Fixed a bug in the email class which was causing it to ignore explicitly set alternative headers.
* Fixed a bug that was causing a PHP error when the Exceptions class was called within the get\_config() function since it was causing problems.
* Fixed an oversight in the cookie helper in which the config file cookie settings were not being honored.
* Fixed an oversight in the upload class. An item mentioned in the 1.4 changelog was missing.
* Added some code to allow email attachments to be reset when sending batches of email.
* Deprecated the application/scripts folder. It will continue to work for legacy users, but it is recommended that you create your own [libraries](http://docs.google.com/general/libraries.html) or [models](http://docs.google.com/general/models.html) instead. It was originally added before CI had user libraries or models, but it’s not needed anymore.
* Deprecated the $autoload[‘core’] item from the autoload.php file. Instead, please now use: $autoload[‘libraries’]
* Deprecated the following database functions: $this->db->smart\_escape\_str() and $this->db->fields().

Version 1.4.0[**¶**](#2afmg28)

Release Date: September 17, 2006

* Added [Hooks](http://docs.google.com/general/hooks.html) feature, enabling you to tap into and modify the inner workings of the framework without hacking the core files.
* Added the ability to organize controller files [into sub-folders](http://docs.google.com/general/controllers.html). Kudos to Marco for suggesting this (and the next two) feature.
* Added regular expressions support for [routing rules](http://docs.google.com/general/routing.html).
* Added the ability to [remap function calls](http://docs.google.com/general/controllers.html) within your controllers.
* Added the ability to [replace core system classes](http://docs.google.com/general/core_classes.html) with your own classes.
* Added support for % character in URL.
* Added the ability to supply full URLs using the [anchor()](http://docs.google.com/helpers/url_helper.html) helper function.
* Added mode parameter to [file\_write()](http://docs.google.com/helpers/file_helper.html) helper.
* Added support for changing the port number in the [Postgres driver](http://docs.google.com/database/configuration.html).
* Moved the list of “allowed URI characters” out of the Router class and into the config file.
* Moved the MIME type array out of the Upload class and into its own file in the application/config/ folder.
* Updated the Upload class to allow the upload field name to be set when calling [do\_upload()](http://docs.google.com/libraries/file_uploading.html).
* Updated the [Config Library](http://docs.google.com/libraries/config.html) to be able to load config files silently, and to be able to assign config files to their own index (to avoid collisions if you use multiple config files).
* Updated the URI Protocol code to allow more options so that URLs will work more reliably in different environments.
* Updated the form\_open() helper to allow the GET method to be used.
* Updated the MySQLi execute() function with some code to help prevent lost connection errors.
* Updated the SQLite Driver to check for object support before attempting to return results as objects. If unsupported it returns an array.
* Updated the Models loader function to allow multiple loads of the same model.
* Updated the MS SQL driver so that single quotes are escaped.
* Updated the Postgres and ODBC drivers for better compatibility.
* Removed a strtolower() call that was changing URL segments to lower case.
* Removed some references that were interfering with PHP 4.4.1 compatibility.
* Removed backticks from Postgres class since these are not needed.
* Renamed display() to \_display() in the Output class to make it clear that it’s a private function.
* Deprecated the hash() function due to a naming conflict with a native PHP function with the same name. Please use dohash() instead.
* Fixed an bug that was preventing the input class from unsetting GET variables.
* Fixed a router bug that was making it too greedy when matching end segments.
* Fixed a bug that was preventing multiple discrete database calls.
* Fixed a bug in which loading a language file was producing a “file contains no data” message.
* Fixed a session bug caused by the XSS Filtering feature inadvertently changing the case of certain words.
* Fixed some missing prefixes when using the database prefix feature.
* Fixed a typo in the Calendar class (cal\_november).
* Fixed a bug in the form\_checkbox() helper.
* Fixed a bug that was allowing the second segment of the URI to be identical to the class name.
* Fixed an evaluation bug in the database initialization function.
* Fixed a minor bug in one of the error messages in the language class.
* Fixed a bug in the date helper timespan function.
* Fixed an undefined variable in the DB Driver class.
* Fixed a bug in which dollar signs used as binding replacement values in the DB class would be treated as RegEx back-references.
* Fixed a bug in the set\_hash() function which was preventing MD5 from being used.
* Fixed a couple bugs in the Unit Testing class.
* Fixed an incorrectly named variable in the Validation class.
* Fixed an incorrectly named variable in the URI class.
* Fixed a bug in the config class that was preventing the base URL from being called properly.
* Fixed a bug in the validation class that was not permitting callbacks if the form field was empty.
* Fixed a problem that was preventing scaffolding from working properly with MySQLi.
* Fixed some MS SQL bugs.
* Fixed some doc typos.

Version 1.3.3[**¶**](#pkwqa1)

Release Date: June 1, 2006

* Models do **not** connect automatically to the database as of this version. [More info here](http://docs.google.com/general/models.html).
* Updated the Sessions class to utilize the active record class when running session related queries. Previously the queries assumed MySQL syntax.
* Updated alternator() function to re-initialize when called with no arguments, allowing multiple calls.
* Fixed a bug in the active record “having” function.
* Fixed a problem in the validation class which was making checkboxes be ignored when required.
* Fixed a bug in the word\_limiter() helper function. It was cutting off the fist word.
* Fixed a bug in the xss\_clean function due to a PHP bug that affects some versions of html\_entity\_decode.
* Fixed a validation bug that was preventing rules from being set twice in one controller.
* Fixed a calendar bug that was not letting it use dynamically loaded languages.
* Fixed a bug in the active record class when using WHERE clauses with LIKE
* Fixed a bug in the hash() security helper.
* Fixed some typos.

Version 1.3.2[**¶**](#39kk8xu)

Release Date: April 17, 2006

* Changed the behavior of the validation class such that if a “required” rule is NOT explicitly stated for a field then all other tests get ignored.
* Fixed a bug in the Controller class that was causing it to look in the local “init” folder instead of the main system one.
* Fixed a bug in the init\_pagination file. The $config item was not being set correctly.
* Fixed a bug in the auto typography helper that was causing inconsistent behavior.
* Fixed a couple bugs in the Model class.
* Fixed some documentation typos and errata.

Version 1.3.1[**¶**](#1opuj5n)

Release Date: April 11, 2006

* Added a [Unit Testing Library](http://docs.google.com/libraries/unit_testing.html).
* Added the ability to pass objects to the **insert()** and **update()** database functions. This feature enables you to (among other things) use your [Model class](http://docs.google.com/general/models.html) variables to run queries with. See the Models page for details.
* Added the ability to pass objects to the [view loading function](http://docs.google.com/general/views.html): $this->load->view(‘my\_view’, $object);
* Added getwhere function to [Active Record class](http://docs.google.com/database/query_builder.html).
* Added count\_all function to [Active Record class](http://docs.google.com/database/query_builder.html).
* Added language file for scaffolding and fixed a scaffolding bug that occurs when there are no rows in the specified table.
* Added [$this->db->last\_query()](http://docs.google.com/database/queries.html), which allows you to view your last query that was run.
* Added a new mime type to the upload class for better compatibility.
* Changed how cache files are read to prevent PHP errors if the cache file contains an XML tag, which PHP wants to interpret as a short tag.
* Fixed a bug in a couple of the active record functions (where and orderby).
* Fixed a bug in the image library when realpath() returns false.
* Fixed a bug in the Models that was preventing libraries from being used within them.
* Fixed a bug in the “exact\_length” function of the validation class.
* Fixed some typos in the user guide

Version 1.3[**¶**](#48pi1tg)

Release Date: April 3, 2006

* Added support for [Models](http://docs.google.com/general/models.html).
* Redesigned the database libraries to support additional RDBMs (Postgres, MySQLi, etc.).
* Redesigned the [Active Record class](http://docs.google.com/database/query_builder.html) to enable more varied types of queries with simpler syntax, and advanced features like JOINs.
* Added a feature to the database class that lets you run [custom function calls](http://docs.google.com/database/call_function.html).
* Added support for [private functions](http://docs.google.com/general/controllers.html) in your controllers. Any controller function name that starts with an underscore will not be served by a URI request.
* Added the ability to pass your own initialization parameters to your [custom core libraries](http://docs.google.com/general/creating_libraries.html) when using $this->load->library()
* Added support for running standard [query string URLs](http://docs.google.com/general/urls.html). These can be optionally enabled in your config file.
* Added the ability to [specify a “suffix”](http://docs.google.com/general/urls.html), which will be appended to your URLs. For example, you could add .html to your URLs, making them appear static. This feature is enabled in your config file.
* Added a new error template for use with native PHP errors.
* Added “alternator” function in the [string helpers](http://docs.google.com/helpers/string_helper.html).
* Removed slashing from the input class. After much debate we decided to kill this feature.
* Change the commenting style in the scripts to the PEAR standard so that IDEs and tools like phpDocumenter can harvest the comments.
* Added better class and function name-spacing to avoid collisions with user developed classes. All CodeIgniter classes are now prefixed with CI\_ and all controller methods are prefixed with \_ci to avoid controller collisions. A list of reserved function names can be [found here](http://docs.google.com/general/controllers.html).
* Redesigned how the “CI” super object is referenced, depending on whether PHP 4 or 5 is being run, since PHP 5 allows a more graceful way to manage objects that utilizes a bit less resources.
* Deprecated: $this->db->use\_table() has been deprecated. Please read the [Active Record](http://docs.google.com/database/query_builder.html) page for information.
* Deprecated: $this->db->smart\_escape\_str() has been deprecated. Please use this instead: $this->db->escape()
* Fixed a bug in the exception handler which was preventing some PHP errors from showing up.
* Fixed a typo in the URI class. $this->total\_segment() should be plural: $this->total\_segments()
* Fixed some typos in the default calendar template
* Fixed some typos in the user guide

Version 1.2[**¶**](#2nusc19)

Release Date: March 21, 2006

* Redesigned some internal aspects of the framework to resolve scoping problems that surfaced during the beta tests. The problem was most notable when instantiating classes in your constructors, particularly if those classes in turn did work in their constructors.
* Added a global function named [get\_instance()](http://docs.google.com/general/ancillary_classes.html) allowing the main CodeIgniter object to be accessible throughout your own classes.
* Added new [File Helper](http://docs.google.com/helpers/file_helper.html): delete\_files()
* Added new [URL Helpers](http://docs.google.com/helpers/url_helper.html): base\_url(), index\_page()
* Added the ability to create your own [core libraries](http://docs.google.com/general/creating_libraries.html) and store them in your local application directory.
* Added an overwrite option to the [Upload class](http://docs.google.com/libraries/file_uploading.html), enabling files to be overwritten rather than having the file name appended.
* Added Javascript Calendar plugin.
* Added search feature to user guide. Note: This is done using Google, which at the time of this writing has not crawled all the pages of the docs.
* Updated the parser class so that it allows tag pars within other tag pairs.
* Fixed a bug in the DB “where” function.
* Fixed a bug that was preventing custom config files to be auto-loaded.
* Fixed a bug in the mysql class bind feature that prevented question marks in the replacement data.
* Fixed some bugs in the xss\_clean function

Version Beta 1.1[**¶**](#1302m92)

Release Date: March 10, 2006

* Added a [Calendaring class](http://docs.google.com/libraries/calendar.html).
* Added support for running [multiple applications](http://docs.google.com/general/managing_apps.html) that share a common CodeIgniter backend.
* Moved the “uri protocol” variable from the index.php file into the config.php file
* Fixed a problem that was preventing certain function calls from working within constructors.
* Fixed a problem that was preventing the $this->load->library function from working in constructors.
* Fixed a bug that occurred when the session class was loaded using the auto-load routine.
* Fixed a bug that can happen with PHP versions that do not support the E\_STRICT constant
* Fixed a data type error in the form\_radio function (form helper)
* Fixed a bug that was preventing the xss\_clean function from being called from the validation class.
* Fixed the cookie related config names, which were incorrectly specified as $conf rather than $config
* Fixed a pagination problem in the scaffolding.
* Fixed a bug in the mysql class “where” function.
* Fixed a regex problem in some code that trimmed duplicate slashes.
* Fixed a bug in the br() function in the HTML helper
* Fixed a syntax mistake in the form\_dropdown function in the Form Helper.
* Removed the “style” attributes form the form helpers.
* Updated the documentation. Added “next/previous” links to each page and fixed various typos.

Version Beta 1.0[**¶**](#3mzq4wv)

Release Date: February 28, 2006

First publicly released version.

[Next](http://docs.google.com/license.html)   [Previous](http://docs.google.com/helpers/xml_helper.html)

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