

Comparison of web frameworks

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This is a comparison of notable **web frameworks**.

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General

Basic information about each framework.

ASP.NET

Project	Current stable version	Release date	License
ASP.NET Dynamic Data			
Base One Foundation Component Library (BFC)	7.44 (dormant)	2013-07-19	Proprietary
Component-based Scalable Logical Architecture (CSLA)	4.6.30	2016-02-01 ^[1]	MIT
MonoRail	2.1 (dormant)	2011-03-17 ^[2]	Apache
OpenRasta	2.1.0.83282449	2011-09-28	MIT

C

Project	Current stable version	Release date	License
Saetta Web Server	1.4.15 ^[3]	2015-12-23	Proprietary

C++

Project	Current stable version	Release date	License
CppCMS	1.0.5	2014-10-30 ^[4]	LGPL, Proprietary
Poco	1.7.3	2016-05-02 ^[5]	Boost Software License
Tntnet	2.2.1	2014-01-17 ^[6]	LGPL
Wt	3.3.6	2016-07-15 ^[7]	GPL, Proprietary

ColdFusion Markup Language (CFML)

Project	Current stable version	Release date	License
CFWheels	1.4.5	2016-03-30	Apache v2
ColdBox Platform	4.0.0	2015-01-22	Apache v2
ColdSpring	1.2	2008-09-12	Apache v2
Fusebox	5.5.2	2012-05-08	Apache
Mach-II	1.8.1	2010-09-20	GPLv3 with Classpath exception
Model-Glue	3.1.299	2010-03-05	Apache

Common Lisp

Project ↕	Current stable version ↕	Release date ↕	License ↕
Caveman2	2.4.0	2015-06-05 ^[8]	LLGPL ^[9]

D

Project ↕	Current stable version ↕	Release date ↕	License ↕
vibe.d	0.7.30	2016-10-31 ^[10]	MIT License

Haskell

Project ↕	Current stable version ↕	Release date ↕	License ↕
Happstack	7.0	2012-03-29	BSD-3
Snap	0.13	2014-05-06	BSD-3
Yesod	1.4.1	2014-11-23 ^[11]	MIT License

Java

Project ↕	Current stable version ↕	Release date ↕	License ↕
Apache Click	2.3.0 (retired)	2011-03-27	Apache 2.0
Apache OFBiz	13.07.03	2016-04-04	Apache 2.0
Apache Shale	1.0.4 (retired)	2007-12-19	Apache
Apache Sling	8	2015-10-16	Apache 2.0
Apache Struts 2	2.5	2016-05-09	Apache 2.0
Apache Tapestry	5.4.1	2016-03-16	Apache
Apache Wicket	7.4.0	2016-07-21	Apache 2.0
AppFuse	3.5.0	2015-02-20	Apache 2.0
Brutos Framework	2.0	2015-06-30	Apache 2.0
Eclipse RAP	3.1 M4	2015-12-22	Eclipse
FormEngine	2.0.1 (dormant)	2012-05-08	Proprietary
Grails	3.1.4	2016-03-16	Apache
Google Web Toolkit	2.8.0	2016-10-20	Apache 2.0
Hamlets	1.7.1 (dormant)	2012-06-29	BSD
ItsNat	1.4	2015-09-18	GNU LGPL, proprietary
JavaServer Faces (Mojarra)	2.2.8	2016-05-30	CDDL, GNU GPL 2, Apache 2.0
JBoss Seam	3.1.0 final (discontinued)	2012-01-13	GNU LGPL
Jspix-bay	2.1	2015-12-23	Apache 2.0
JVx	2.4	2015-12-23	Apache 2.0
OpenLaszlo	4.9.0 (dormant)	2010-10-21	CPL
OpenXava	5.5	2016-04-27	GNU LGPL
Oracle ADF	12.1.3.0	2014-06-26	Oracle Technology Network Developer License
Play	2.5.9	2016-10-08	Apache 2.0
RIFE	1.6.1 (unmaintained)	2007-07-14	CDDL, GNU LGPL
Spark	2.5	2016-05-03	Apache
Spring	4.3.5	2016-12-21	Apache 2.0
Stripes	1.6.0	2015-07-23	Apache
Takes	0.32.7	2016-04-03	MIT
Vaadin	7.6.6	2016-05-12	Apache 2.0
VRaptor	4.2.0-RC4	2016-05-09	Apache 2.0
Wavemaker	8.2 ^[12]	2016-06-07	Apache
WebObjects	5.4.3 (discontinued)	2008-09-15	Proprietary
WebWork	2.2.6 (unmaintained)	2007-07-21	Apache
ztemplates	2.4.0 (dormant)	2011-09-11	Apache

JavaScript

Project ↕	Current stable version ↕	Release date ↕	License ↕
AngularJS	1.5.0	2016-02-05	MIT License
Backbone.js	1.3.3	2016-04-05	MIT License
Ember.js	2.8.0	2016-09-08	MIT License
Express.js	4.14.0	2016-06-16	MIT License
KnockoutJS	3.2.0	2014-08-12	MIT License
Meteor	1.4	2016-07-25	MIT License
OpenUI5	1.26.8	2015-03-10	Apache 2.0 License by SAP
React	15.1.0	2016-05-20	3-Clause BSD with Facebook addendum (not OSI-approved)
Unified.js	14.0	2014-04-01	BSD (component only) & proprietary

Scala

Project	Current stable version	Release date	License
Play!	2.4.3	2015-09-07	Apache 2.0
Lift	2.6	2015-01-11	Apache 2.0
Scalatra	2.3.0	2014-06-11	BSD

Perl

Project	Current stable version	Release date	License
Catalyst	5.90112	2016-07-25	Artistic, GPL
Dancer	1.3202	2015-11-07	Artistic, GPL
Mason	2.24 ^[13]	2015-05-16	Artistic, GPL
Maypole	2.13 (dormant)	2008-04-18	Artistic, GPL
Mojolicious	7.03	2016-08-17	Artistic

PHP

Project	Start date	Current stable version	Release date	License
Agavi	2005-05	1.0.8 ^[14]	2015-06-29	LGPL
Banshee	2008-10-04	5.2 ^[15]	2016-02-21	Banshee (http://www.banshee-php.org/license)
CakePHP	2005-08	3.3.10 ^[16]	2016-12-11	MIT
CodeIgniter	2006-02-28	3.0.6 ^[17]	2016-03-21	MIT
Fat-Free	2009-09	3.6.0 ^[18]	2016-11-19	GPLv3
FuelPHP	2011-08	1.8 ^[19]	2016-04-09	MIT
Gyroscope	2008-11-20	8.8.0	2016-04-17	BSD
Kajona	2006	5.0 ^[20]	2016-05-25	LGPLv2
Kohana	2007-07	3.3.5 ^[21]	2016-03-10	BSD
Laravel	2011-06-11	5.3.18 ^[22]	2016-10-08	MIT
Lithium	2009-10	1.0.2 ^[23]	2016-08-27	BSD
Nette Framework	2006-01 ^[24]	2.4.0 ^[25]	2016-05-03	New BSD, GPLv2, GPLv3 ^[26]
Phalcon	2012-11-14	3.0.1 ^[27]	2016-08-24	BSD
PRADO	2004-01	3.3.2 ^[28]	2016-08-23	New BSD ^[29]
Silex	2011-09	2.0.0 ^[30]	2016-05-18	MIT
SilverStripe	2007-02-03	3.1.15 ^[31]	2015-09-18	BSD
Smart.Framework	2015-02-01	2.3.7.2 ^[32]	2016-09-27	BSD
Symfony	2005-10	3.2.1 ^[33]	2016-12-13	MIT
TYPO3 Flow	2011-10	3.3.4 ^[34]	2016-09-29	LGPLv3
Zend Framework	2006-03	3.0.0 ^[35]	2016-06-28	New BSD

Python

Project	Current stable version	Release date	License
Bottle	0.12.9	2015-10-24 ^[36]	MIT
BlueBream	1.0 (dormant)	2011-01-18	ZPL
CherryPy	10.0.0	2017-01-20 ^[37]	BSD
CubicWeb	3.22.2	2016-02-23 ^[38]	LGPL
Django	1.10.5	2017-01-04 ^[39]	BSD
Flask	0.12	2016-12-21 ^[40]	BSD
Grok	2.8 (dormant)	2013-02-14 ^[41]	ZPL
Nagare	0.4.1 (dormant)	2012-01-18	BSD
Pyjs	0.8.1a (dormant)	2012-05-06	Apache
Pylons	1.0.2 (dormant)	2015-07-21	BSD
Pyramid	1.7	2016-05-19 ^[42]	BSD
TACTIC	4.4.0.v0v	2016-05-19 ^[43]	EPL
Tornado	4.3	2015-11-06 ^[44]	Apache
TurboGears	2.3.8	2016-03-06 ^[45]	MIT, LGPL
web2py	2.14.6	2016-05-10 ^[46]	LGPL3
Webware	1.1.1 (dormant)	2013-01-18	Python
Zope 2	2.13.23	2015-06-29 ^[47]	ZPL

Ruby

Project	Current stable version	Release date	License
Camping	2.1 (dormant)	2010-08-20	MIT
Padrino	0.13.2	2016-05-09 ^[48]	MIT
Ruby on Rails	5.0.1	2016-12-21 ^[49]	MIT
Sinatra	1.4.7	2016-01-24 ^[50]	MIT
Merb	1.1.3 (dormant)	2010-07-10	MIT
PureMVC	2.0.4 (dormant)	2008-08-14	CC +Attribution

Others

Project	Language	Current stable version	Release date	License
AIDA/Web	Smalltalk	6.7	2014-09-14	MIT
Application Express	PL/SQL	5.0.3	2015-12-21	Proprietary freeware
Flex	ActionScript, MXML	4.14	2015-02-03	Apache
Grails	Groovy (JVM)	2.4.4	2014-10-28	Apache
Kepler	Lua	1.1.1 (dormant)	2009-03-11	MIT
Morfik	C#, BASIC, Pascal, Java	3.0.8.1	2010-12-13	Proprietary freeware
Ocsigen	OCaml	4.2	2015-07-21 ^[51]	LGPL
Opa	Opa	1.1.1	2013-04-16 ^[52]	MIT and AGPL
OpenACS	Tcl	5.7.0	2011-07-17	GPL
Seaside	Smalltalk	3.2.0 ^[53]	2016-05-06	MIT

Comparison of features

C++

Project	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)
CppCMS	Yes	Yes	Push	Yes	CppDB	No	No	Yes	Yes	Yes	Yes
Tntnet	Yes	No	No	Yes	Tntdb	No	No	No	Yes	No	No
Wt	Yes	Yes	Push & Pull	Yes	Wt::Dbo	Boost.test		Yes	Yes	No	Yes

ColdFusion Markup Language (CFML)

Project	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)
ColdBox Platform	Yes	Yes	Push-pull	Yes	CF ORM	Yes via TestBox, MockBox	via plugin	Yes	CFML	Yes	Yes
Fusebox	via CF or any JavaScript library	optional	Push	CFML	via lexicons for Transfer, Reactor	via other testing frameworks	No	via plugins	CFML	via lexicon for ColdSpring	No
Mach-II	via CF or any JavaScript library	Yes	Push	via plugin	CF ORM	via other testing frameworks	No	via plugins	CFML	ColdSpring	
Model-Glue	via CF or any JavaScript library	Yes	Push	CFML	CF ORM	via other testing frameworks	No	via plugins	CFML	ColdSpring	

Common Lisp

Project	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)
Caveman2	No	-	-	No	via third-party packages like Postmortem, Mito	Prove	via third-party packages like Postmortem, Mito	No	Yes	Yes	No

Java

Project	Language	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)
Apache Click	Java	jQuery	Page oriented	Pull	Yes	Hibernate, Cayenne	Yes		pluggable	Velocity, JSP	Cached templates	Built-in validation
Apache OFBiz	Java, Groovy, XML,	jQuery	Yes	Push-pull	Yes	Entity Engine (Internal kind of ORM, not really ORM, notably used by Atlassian Jira)	JUnit	Entity Engine Tools, Data File Tool, CSV Parser, Apache POI	Internal Security framework based on OWASP	Freemarker (Recommended), Velocity (Support Available), JSP (Support Available)	Internal Cache Maintenance with Distributed Cache Clearing for clusters	Server side validation, Client Side Validation (jQuery)
Apache Sling	Java	Yes	Yes	Push-pull		Uses JCR content repository			Yes	Yes	Yes	
Apache Struts	Java	Yes	Yes	Push-pull	Yes	Yes	Unit tests			Yes		Yes
Apache Tapestry	Java	Prototype, jQuery	Yes	Pull	Yes	JPA, Hibernate, Cayenne	Selenium, TestNG, JUnit		Spring Security, Shiro	Yes	with extensions	Native or Bean Validation
Apache Wicket	Java	Extensions for YUI, ExtJS, more	No (Modular event-driven)	Pull	Yes	with extensions	Mock objects, unit and integration tests via extension		Yes	Yes	Yes	Yes
FormEngine	Java	Yes			Yes	own connector API						Ajax validation on server and form state update
Grails	Groovy	Yes	Yes	Push	Yes	GORM, Hibernate	Unit tests, integration test, functional test	multiple plugins: autobase, dbmigrate, more	Spring Security, ^[54] Apache Shiro ^[55]	Yes	Yes	Yes
ItsNat	Java	Yes	event driven	Push	using Java i18n		external, built-in		pluggable	pure HTML-SVG	page caching	normal Java
JavaServer Faces	Java	Yes	Yes	Pull	Yes	JPA, Hibernate and any other Java EE ORM framework	JUnit		Yes	Facelets, JSP	Yes	Native validators, integration with Bean Validation
Project	Language	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)
JBoss Seam	Java	Yes	Yes	Pull	Yes	JPA, Hibernate	JUnit, TestNG		JAAS integration, Drools, Hibernate Filters, OpenID, CAPTCHA	Facelets	JBoss Cache, Ehcache	Hibernate Validator
JspX-bay	Java	Yes	Page oriented			Own API			JAAS integration	Master-content pages		Yes, Internal UI validation controls
JVx WebUI	Java	Yes	Model Driven		Yes	Yes, pluggable	JUnit		Yes	Single sourcing		Yes, pluggable
OpenXava	Java	Yes	Model Driven		Yes	JPA, Hibernate, EJB2 CMP	JUnit	Hibernate tools	uses JSR-168 portal security	UI is automatically generated	uses portal and JPA caching	Yes
Play	Java, Scala	Yes	Yes	Push-pull	Yes	JPA, Hibernate	JUnit, Selenium	Yes	via Core Security module	Yes	Yes	Server-side validation
RIFE	Java	DWR	Yes	Push-pull	Yes	Yes	Out of container testing		Yes	Yes	Integration with Terracotta	Yes
Spring	Java	Yes	Yes	Push	Yes	Hibernate, iBatis, more	Mock objects, unit tests		Spring Security (formerly Acegi)	JSP, Commons Tiles, Velocity, Thymeleaf, more	Ehcache, more	Commons validator, Bean Validation
Stripes	Java	Yes	Yes	Pull	Yes	JPA, Hibernate	Yes		framework extension	Yes		Yes
Vaadin	Java	GWT		Push-pull	Yes	Yes	Yes			Yes		Yes
Wavemaker	JavaScript (client), Java (server)	Dojo Toolkit	Yes	Push	Dojo Toolkit	Hibernate	JUnit	Hibernate	Spring Security (formerly Acegi), role-based access control	Dojo Toolkit	Dojo Toolkit	Regular expression, schema-driven validation
Project	Language	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)
WebObjects	Java	Yes	Yes	Push-pull	Yes	EOF	WJUnit (JUnit), TestNG, Selenium	in Project WONDER		Yes	Yes	Yes
ztemplates	Java JDK 1.5 or newer	integrates YUI, Google, etc., with annotations	Yes	Push, multiple actions per URL	standard Java	use any J2EE ORM framework	Unit tests		annotation based	Velocity, FreeMarker, JSP, others pluggable		Ajax validation on server and form state update (YUI, JSON)
Google Web Toolkit	Java, JavaScript	Yes			Yes	JPA with RequestFactory	JUnit (too early), jsUnit (too difficult), Selenium (best)	via Java	Yes			Bean Validation
ZK	Java, ZUML	jQuery	Yes	Push-pull	Yes	any J2EE ORM framework	JUnit.ZATS (http://www.zkoss.org/product/zats)	HibernateUtil, SpringUtil	Spring Security	Macro components & composition	Yes	client, server

JavaScript

Project	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)
AngularJS	XHR, JSONP (http://docs.angularjs.org/api/ng/service/\$http)	Yes		i18n and l10n (http://docs.angularjs.org/guide/i18n)		Karma (unit testing) (http://docs.angularjs.org/guide/unit-testing), Protractor (end-to-end testing) (http://docs.angularjs.org/guide/e2e-testing)		Content Security Policy (CSP) (http://docs.angularjs.org/api/ng/directive/ngCsp), XSRF (http://docs.angularjs.org/api/ng/service/\$http#json-vulnerability-protection)	Templates (http://docs.angularjs.org/guide/templates)	Caching (http://docs.angularjs.org/api/ng/type/\$cacheFactory.Cache)	Form validation (front-end) (http://docs.angularjs.org/guide/forms)
EmberJS	Yes	Yes		Yes	Ember Data (http://emberjs.com/blog/2014/08/18/ember-data-1-0-beta-9-released.html)	QUnit (http://emberjs.com/guides/testing/)			Handlebars (http://emberjs.com/guides/templates/handlebars-basics/)		
qooxdoo	Yes	Data binding (http://manual.qooxdoo.org/current/pages/data_binding.html)		i18n (http://manual.qooxdoo.org/current/pages/development/internationalization.html)		Testrunner (http://manual.qooxdoo.org/current/pages/development.html#testing)					Form Validation (http://manual.qooxdoo.org/current/pages/gui_toolkit/ui_form_handling.html#validation)
SproutCore	Yes	Yes									
Wakanda	Yes	Yes	Push & Pull		Native Object NoSQL DB (http://doc.wakanda.org/home2.en.html#Wakanda-Server-Side-Concepts/Wakanda-Datastore-Model.200-715080.en.html)	CommonJS Unit Testing (http://wiki.commonjs.org/wiki/Unit_Testing/1.0) YUI Test Service (http://doc.wakanda.org/Writing-Unit-Tests-in-Wakanda.300-959974.en.html)		Data Security and Access Control (http://doc.wakanda.org/home2.en.html#Data-Security-and-Access-Control/Data-Security-and-Access-Control.100-725848.en.html)		Storage (application storage, user storage, sessionStorage) (http://doc.wakanda.org/home2.en.html#Storage/Storage.100-941570.en.html)	

Perl

Project	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)
Catalyst	Toolkit-independent (REST & JSON support, specific plugins for Prototype JavaScript Framework, more)	Yes	Push in its most common usage	Yes	DBIx::Class, Rose::DB::Object, more	Supports Perl testing standards, Test Anything Protocol (TAP)	?	ACL-based, external engines, more	Template::Toolkit, HTML::Template, HTML::Mason, PHP and any extant Perl template engine	Cache, Memcached, shared memory, more	HTML::FormHandler HTML::FormFu, HTML::FormValidator, more
Dancer	Yes	Yes	Push	Yes	DBIx::Class, ORMesque	Yes	?	?	Template::Toolkit, HTML::Mason, Text::MicroTemplate, any extant Perl template engine	Cache, Memcached, shared memory, more	DataFu, any extant Perl form validation software
Mason	?	?	?	?	?	?	?	?	?	?	?
Maypole	?	?	?	?	?	?	?	?	?	?	?
Mojolicious	Toolkit-independent (REST & JSON support)	No explicit model support though commonly used as MVC	Push	Yes	Commonly used with DBIx::Class	Test::Mojo	?	Signed session cookie	Built-in Perl templating, Template::Toolkit and several others via plugins	?	Not explicitly, use any Perl Modules

PHP

Project	Language	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)
Banshee	PHP 5	Yes, native and JQuery	Yes	Push	Yes	Yes	No	No	Yes	Yes, XSLT	Yes	Yes
CakePHP 1 & 2	PHP >= 5.2	Prototype, script.aculo.us, jQuery, jQuery UI, MooTools, MooTools More	Yes	Push	Yes	Active record pattern (CakePHP 1.x), data mapper pattern (CakePHP 2.x)	Unit tests, object mocking, fixtures, code coverage, memory analysis with SimpleTest and Xdebug PHPUnit (cakephp 2.0)	Yes	ACL-based	Themes, layouts, views, elements	Memcache, Redis, XCache, APC, File	Validation, security
CakePHP 3	PHP >= 5.4	Any	Yes	Yes, Push & Cells	Yes	ORM, Data Mapper Pattern, SQL Relational Algebra Abstraction Layer	Unit tests, object mocking, fixtures, code coverage, memory analysis with PHPUnit and Xdebug and Continuous Integration via Travis	Yes	CRUD based, ACL-based, Multiple Plugins	Themes, Layouts, Cells, Views, Elements, Plugins for Twig, Bootstrap, etc.	Memcache, Redis, XCache, APC, File	Validation via Contexts (Table (DAO), Entity (VO) & Controller), CSRF Protection
CodeIgniter	PHP >= 5.2.4	Any	Yes	Push	Mostly ^[56]	Third party only	Ready for next release	Yes	Yes	Yes	Yes	Yes
Drupal	PHP	jQuery, jQuery UI, more	PAC	N/A	Yes	Optional module	SimpleTest	Yes	Yes	Yes	Memcache, APC, Varnish, more	Yes
Fat-Free Framework	PHP	Any	MVC, RMR	Push-pull	Yes	Data mappers for SQL, MongoDB, Flat-File	Built-in	Yes	Yes	Yes	APC, Memcache, XCache, WinCache, and Filesystem	Yes
FuelPHP	PHP >= 5.3.x	Yes	MVC, HMVC	Push	Yes	Yes	PHPUnit	Yes	Yes, Plugins available	Yes, Plugins available	File, Redis, Memcache, more	Yes
Fusebox	PHP	Yes	Not mandatory	Push	No, custom	?	?	?	Multiple plugins available	?	?	via qforms or built in PHP validation
Gyroscope	PHP >= 5.4	nano.js, replaceable ^[58]	LCHH	Push-pull	Mostly	Data-source agnostic	No	Built-in Schema comparison tool and UDF editor	ACL-based, replaceable	Implementation-specific; helper functions and theme templates available	APC, Memcache	Yes
Joomla	?	Yes	Plugin	?	?	?	?	?	?	?	?	?
Kajona	PHP >= 5.5	Any	Yes	Push	Yes	Yes	PHPUnit, Selenium, Jasmine	Yes	Yes	Yes	APC, Database, File	Yes
Laravel	PHP >= 5.5.9	Any	Yes	Push	Yes	Yes	PHPUnit	Yes	Yes	Yes	APC, Database, File, Memcache, Redis	Yes
Lithium	PHP >= 5.3.6	Any	Yes	Push	Yes	Yes	Unit tests, builtin test framework or other independent	No	Yes, Plugins available	PHP, Twig Plugin available	Memcache, Redis, XCache, APC, File	Yes, with CSRF Protection and Form Signing
Nette Framework	PHP >= 5.3.0	Toolkit-independent	MVP	Push	Yes	Third party only	Yes	No	Yes	Yes	Yes	Yes
Phalcon	PHP >= 5.5	Any	Yes	Push	Yes	Yes	Yes	Yes	Yes	Volt	Yes	Yes
PRADO	PHP >= 5.3.0	Prototype, script.aculo.us, own components ^[59]	No	Push-pull	Yes	Data access objects (DAO), active record pattern, SQLMap data mapper	PHPUnit, SimpleTest (http://sourceforge.net/projects/simplest/), Selenium	No	Yes	XML-based, similar to ASP.NET ^[60]	APC, Database, eAccelerator, Memcached, XCache	Yes ^[61]
SilverStripe (Sapphire)	PHP >= 5.2	jQuery, jQuery UI	Yes	Push-pull	Yes	Active record pattern	Unit tests, Selenium	Automatic	incl. OpenID	Themes	Yes	Yes
Silex	PHP >= 5.3.9	Yes	Yes	Yes	Yes	Plugin exists (Doctrine)	Yes	No	Yes	PHP, Twig	Plugin exists	Yes
Smart.Framework	PHP >= 5.4.9	Yes	Yes	Yes	Yes	Yes (PostgreSQL, MySQL, SQLite, MongoDB, Solr, others via plugins)	Yes	No	Yes	Yes (Markers, Twig, others via plugins)	Yes (File, Redis, others via plugins)	Yes
Symfony	PHP 5	Prototype, script.aculo.us, Unobtrusive Ajax with UJS and PJS plugins	Yes	Push	Yes	Propel, Doctrine (YAML)	Yes	Plugin exists (alpha code)	Plugin	PHP, Twig	Yes	Yes
Symfony 2	PHP >= 5.3.3	Any	Yes	Push	Yes	Propel, Doctrine (YAML)	Yes	Plugin exists	Yes	PHP, Twig	Yes	Yes
TYPO3	PHP >= 5.5	Any	Yes	Push-pull	Yes	Yes	Yes	Partial	Yes	TYPO3 Fluid	Yes	Yes
Yii	PHP >= 5.1.0	jQuery, jQuery UI, own components, plugins	Yes	Push-pull	Yes	Data Access Objects (DAO), Active Record Pattern, Plugins (incl. Doctrine 2.0)	PHPUnit, Selenium	Yes	ACL-based, RBAC-based, plugins	PHP-based, PRADO-like, plugins	APC, Database, eAccelerator, File, Memcache, Redis, WinCache, XCache, Zend Platform	Yes
Zend Framework^[64]	PHP >= 5.3	Toolkit-independent	Yes	Push-pull	Yes	Table and row data gateway or Doctrine	Unit tests, PHP Unit or other independent	Yes	ACL-based	Yes	APC, Database, File, Memcache, Zend Platform	Yes

Project	Language	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)
Zend Framework 2	PHP >= 5.3.3	Toolkit-independent	Yes	Push-pull	Yes	Table and row data gateway and Doctrine 2.0 for Zend Framework 2.0	Unit tests, PHP Unit or other independent	Yes	ACL-based	Yes	APC, Database, File, Memcache, Zend Platform	Yes

Python

Project	Language	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)	Pyt 3
Bottle	Python	-	-	-	-	Sqlalchemy (via plugins)	-	-	-	built-in, Mako, Jinja2, Cheetah	-	-	
CherryPy	Python	-	-	-	-	pluggable	-	-	-	pluggable	-	-	
Django	Python	Yes	Yes	Push	Yes	Yes	Yes	Yes	Yes	built-in, Jinja2, Mako, Cheetah	Yes	Yes	
Flask	Python	Yes	-	-	Yes	Sqlalchemy (via plugin)	via unittest	-	Yes	Jinja2	Yes	Yes	
Pyjs	Python, JavaScript	Yes	Use PureMVC Python version (compiled to JavaScript)	-	Yes	??, no direct data access	-	No	-	-	-	-	
Pylons	Python	helpers for Prototype and script.aculo.us	controller	Push	Yes	ORM-agnostic	via nose	depends on ORM	-	pluggable: Mako, Genshi, Myghty, Kid, more	Beaker cache (memory, memcached, file, databases)	preferred formencode	
Pyramid	Python	Yes	Yes	Push	Yes	ORM-agnostic	Yes	depends on ORM	Yes	pluggable: Chameleon, Genshi; Mako, more	Beaker cache (memory, memcached, file, databases)	preferred formencode	
TACTIC	Python	Yes	Yes	Pull	No	Yes	Yes	Yes	Yes	Mako	No	Yes	
Tornado	Python	See Advanced Async Example implements AJAX (http://ormado.readthedocs.org/en/latest/guide/structure.html)	-	-	-	-	-	-	-	-	-	-	Yes ww dov en/
TurboGears	Python	Toolkit-independent, provides support via JSON	Full stack, best-of-breed based	Push	Yes	SQLAlchemy	nose	SQLAlchemy-Migrate (http://code.google.com/p/sqlalchemy-migrate/)	Repoze.what & Repoze.who	pluggable: Genshi, more	Support for memcached, and any WSGI compliant system	ToscaWidgets, utilizing FormEncode (http://formencode.org)	
web2py	Python	Yes	Yes	Push	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Webware	Python	No	Optional	Pull	No	Yes	Yes	No	Yes	Yes	No	No	
BlueBream (Zope 3)	Python	via add-on products, e.g. Plone w/KSS	Yes	Pull	Yes	ZODB, SQLAlchemy	Unit tests, functional tests	ZODB generations	ACL-based	Yes	Yes	Yes	
Zope 2	Python	-	Yes	Pull	Yes	ZODB, SQLAlchemy	Unit tests	-	ACL-based	Yes	Yes	CMFFormController	

Ruby

Project	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)
Camping	No	Yes	Push	No	Active record pattern	via Mosquito	Yes	No	Yes	No	No
Ruby on Rails	Prototype, script.aculo.us, jQuery	ActiveRecord, Action Pack	Push	Yes	ActiveRecord	Unit Tests, Functional Tests and Integration Tests	Yes	Plug-in	Yes	Yes	Yes
Sinatra	No	Yes	Push	No	ORM-independent	rack-test	Yes	through a Rack middleware	Yes	through a Rack middleware	No

Others

Project	Language	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)
AIDA/Web	Smalltalk	Yes	Yes		Yes	Gemstone/S, GLORP, more	SUnit		Yes			Yes
Application Express	PL/SQL	Yes			Yes			Yes	Yes			Yes
Flex	ActionScript, MXML	Not by name but similar technology ^[65]					FlexUnit (http://opensource.adobe.com/wiki/display/flexunit/)					
Kepler	Lua		Yes									
Lift	Scala	Yes	Yes	Pull	Yes	Yes	ScalaTest, Selenium ^[66]	Yes	Yes	Yes	Yes	Yes
Ocsigen	OCaml	Yes									Yes	Yes
Opa	Opa	Yes			Yes	MongoDB			Yes	Yes	Yes	
OpenACS	Tcl	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Seaside	Smalltalk	jQuery, jQuery UI, Prototype, JavaScript Framework, script.aculo.us , more	Yes		Yes	GLORP, Gemstone/S, more	Unit tests, SUnit			No, intentionally		Magritte (http://www.lukas-renggli.ch/smalltalk/magritte)
Project	Language	Ajax	MVC framework	MVC push-pull	i18n & L10n?	ORM	Testing framework(s)	DB migration framework(s)	Security framework(s)	Template framework(s)	Caching framework(s)	Form validation framework(s)

See also

- Comparison of JavaScript frameworks
- Comparison of shopping cart software
- Content management system
- Java view technologies and frameworks
- List of content management frameworks
- List of content management systems
- List of rich Internet application frameworks
- List of web service frameworks
- Multiple phone web-based application framework

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