Angular 1.4.0 - jaracimrman-existence

Release Announcement

Angular 1.4.0 has arrived! This is a truly community driven release.

The new release brings many feature enhancements and performance improvements and was designed to contain only limited number of breaking changes that don't affect mainstream usage. We expect the migration from Angular 1.3 to 1.4 to be smooth and the list of breaking changes is documented in the [migration doc](https://docs.angularjs.org/guide/migration#migrating-from-1-3-to-1-4).

We started work on 1.4 in November last year. The major features and issues that we worked on were guided by an analysis of feedback from developers using the framework in real projects. The planning was done in public, see the [planning spreadsheet](https://drive.google.com/open?id=1F4JmM25GeaVWLv7oaJrmfFZoE8ioepqNZQKd6xx_Jc4&authuser=0) and [video of the planning meeting](https://www.youtube.com/watch?v=Uae9_8aFo-o). The weekly meeting minutes [are available online](https://docs.google.com/document/d/1xKEbydyUEOQ_gTbcbxy_k2myctG8EiVbeMgLgXTxIc0/edit).

# New Features

In over 400 commits, we have continually improved the docs, fixed more than 100 bugs and added over 30 features. Here is a rundown of the new things you can benefit from in this release.

## Animation

Animations received a complete refactoring implemented by Matias. This code overhaul is backwards compatible, except for a small number of [documented api changes](https://docs.angularjs.org/guide/migration#migrating-from-1-3-to-1-4). This refactoring makes it possible to imperatively control CSS-based transitions/keyframes via a new service called **$animateCss**. We can now also animate elements across pages via animation anchoring. This refactoring has also allowed us to fix numerous reported bugs that were difficult to fix with the previous code base and it has a set a solid foundation to extend **ngAnimate** down the road.

* Complete refactor of internal animation code ([c8700f04](https://github.com/angular/angular.js/commit/c8700f04fb6fb5dc21ac24de8665c0476d6db5ef))
* CSS-driven Javascript animations ([see docs](https://code.angularjs.org/snapshot/docs/api/ngAnimate#css-js-animations-together))
* Better support for animation callback events ([see docs](https://docs.angularjs.org/api/ngAnimate#callbacks-and-promises))
* Move elements between views with animation anchoring ([see docs](https://code.angularjs.org/snapshot/docs/api/ngAnimate#animation-anchoring-via-ng-animate-ref-))
* Provide support for animations on elements outside of **$rootElement** via **$animate.pin()** ([e41faaa2](https://github.com/angular/angular.js/commit/e41faaa2a155a42bcc66952497a6f33866878508))

## $http

Pawel did some great work fixing annoying outstanding issues in the $http service and also implemented a mechanism for providing custom URL parameter serialization, so now it is easy to connect to end-points that expect parameters to follow the jQuery-style parameter serialization.

* support custom params serializers (including a new jQuery-style serializer) ([6c8464ad](https://github.com/angular/angular.js/commit/6c8464ad14dd308349f632245c1a064c9aae242a), [#3740](https://github.com/angular/angular.js/issues/3740), [#7429](https://github.com/angular/angular.js/issues/7429), [#9224](https://github.com/angular/angular.js/issues/9224), [#11461](https://github.com/angular/angular.js/issues/11461))
* provide a config object as an argument to header functions ([d435464c](https://github.com/angular/angular.js/commit/d435464c51d3912f56cfc830d86bfc64a1578327), [#7235](https://github.com/angular/angular.js/issues/7235), [#10622](https://github.com/angular/angular.js/issues/10622))

## Internationalization

## Chirayu worked hard on improving i18n support for Angular apps. The first piece of this work was to provide a new ngMessageFormat module that supports the ICU MessageFormat interpolation syntax.

* extend interpolation with MessageFormat like syntax ([1e58488a](https://github.com/angular/angular.js/commit/1e58488ad65abf7031bab5813523bb9d86dbd28c), [#11152](https://github.com/angular/angular.js/issues/11152))
* Add **FIRSTDAYOFWEEK** and **WEEKENDRANGE** properties in the ngLocale data ([3d149c7f](https://github.com/angular/angular.js/commit/3d149c7f20ffabab5a635af9ddcfc7105112ab4a))

## Compiler related

To complement our push towards more use of `**controller as**` syntax in our component directives, Caitlin added support for binding a directive's element attributes straight onto the directive's controller.

* allow using **bindToController** as object, support both new/isolate scopes ([35498d70](https://github.com/angular/angular.js/commit/35498d7045ba9138016464a344e2c145ce5264c1), [#10420](https://github.com/angular/angular.js/issues/10420), [#10467](https://github.com/angular/angular.js/issues/10467))

## Cookies

Shahar had stepped up to implement the much needed overhaul of the **ngCookies** module. The **$cookieStore** has been deprecated and its functionality moved over to the **$cookies** service, which now has a much cleaner interface. He also implemented the frequently requested feature to set cookie options for individual cookies as well as configuring the defaults via **$cookiesProvider**.

* **$cookies**:
  + allow passing cookie options ([92c366d2](https://github.com/angular/angular.js/commit/92c366d205da36ec26502aded23db71a6473dad7), [#8324](https://github.com/angular/angular.js/issues/8324), [#3988](https://github.com/angular/angular.js/issues/3988), [#1786](https://github.com/angular/angular.js/issues/1786), [#950](https://github.com/angular/angular.js/issues/950))
  + move logic into $cookies and deprecate $cookieStore ([38fbe3ee](https://github.com/angular/angular.js/commit/38fbe3ee8370fc449b82d80df07b5c2ed2cd5fbe), [#6411](https://github.com/angular/angular.js/issues/6411), [#7631](https://github.com/angular/angular.js/issues/7631))
* **$cookiesProvider**: provide path, domain, expires and secure options ([53c66369](https://github.com/angular/angular.js/commit/53c663699126815eabc2a3bc1e3bafc8b3874268))

## Form Related

Matias was at it again, this time adding dynamic message support to the ngMessages directive, which makes it much easier to display messages requested at runtime from the server.

* **ngMessages**: provide support for dynamic message resolution ([c9a4421f](https://github.com/angular/angular.js/commit/c9a4421fc3c97448527eadef1f42eb2f487ec2e0), [#10036](https://github.com/angular/angular.js/issues/10036), [#9338](https://github.com/angular/angular.js/issues/9338))

**ngOptions** was completely refactored to allow a number of annoying bugs to be fixed, it also now supports disabling an option using the `**disabled when**` syntax, thanks to Stephen Barker.

* **ngOptions**: add support for disabling an option ([da9eac86](https://github.com/angular/angular.js/commit/da9eac8660343b1cd9fdcf9d2d1bda06067142d7), [#638](https://github.com/angular/angular.js/issues/638), [#11017](https://github.com/angular/angular.js/issues/11017))

Shahar added improved support for specifying the timezone on date/time input elements that are using **ngModel**.

* **ngModel**: support conversion to timezone other than UTC ([0413bee8](https://github.com/angular/angular.js/commit/0413bee8cc563a6555f8d42d5f183f6fbefc7350), [#11005](https://github.com/angular/angular.js/issues/11005))

## jQuery related

Michel Boudreau worked with Michał to allow us to specify exactly which version of jQuery (if any) we want Angular to use. This option also allows developers to instruct Angular to always use [jqLite](https://docs.angularjs.org/api/ng/function/angular.element) even if jQuery is present on the page, which can significantly improve performance for applications that are doing a lot of DOM manipulation via Angular's templating engine.

* **ng-jq**: adds the ability to force jqLite or a specific jQuery version ([09ee82d8](https://github.com/angular/angular.js/commit/09ee82d84dcbea4a6e8d85903af82dcd087a78a7))

## Accessibility

Marcy Sutton continued to improve the accessibility of apps built with Angular with new features in the ngAria module:

* add button role to ngClick ([bb365070](https://github.com/angular/angular.js/commit/bb365070a3ed7c2d26056d378ab6a8ef493b23cc), [#9254](https://github.com/angular/angular.js/issues/9254), [#10318](https://github.com/angular/angular.js/issues/10318))
* add roles to custom inputs ([29cdaee2](https://github.com/angular/angular.js/commit/29cdaee2b6e853bc3f8882a00661698d146ecd18), [#10012](https://github.com/angular/angular.js/issues/10012), [#10318](https://github.com/angular/angular.js/issues/10318))

## Filters

We tweaked and improved a number of the filters. Shahar did some nice work to bring better timezone support to the date/time filters; Tamer Aydın helped to add a start index to the **limitTo** filter; Georgios completely rebuilt the **filter** filter to be able to compare with deep objects; and Quentin improved the support for infinity in the **number** filter.

* **number filter**: display Infinity symbol when number is **Infinity** ([51d67742](https://github.com/angular/angular.js/commit/51d6774286202b55ade402ca097e417e70fd546b), [#10421](https://github.com/angular/angular.js/issues/10421))
* **date/time filters**: support conversion to timezone other than UTC ([c6d8512a](https://github.com/angular/angular.js/commit/c6d8512a1d7345516d1bd9a039d81821b9518bff), [#10858](https://github.com/angular/angular.js/issues/10858))
* **limitTo filter**:
  + extend the filter to take a beginning index argument ([aaae3cc4](https://github.com/angular/angular.js/commit/aaae3cc4160417e6dad802ed9d9f6d5471821a87), [#5355](https://github.com/angular/angular.js/issues/5355), [#10899](https://github.com/angular/angular.js/issues/10899))
  + ignore limit when invalid ([a3c3bf33](https://github.com/angular/angular.js/commit/a3c3bf3332e5685dc319c46faef882cb6ac246e1), [#10510](https://github.com/angular/angular.js/issues/10510))
* **filter filter:**
  + compare object with custom **toString()** to primitive ([f8c42161](https://github.com/angular/angular.js/commit/f8c421617096a8d613f4eb6d0f5b098ee149c029), [#10464](https://github.com/angular/angular.js/issues/10464), [#10548](https://github.com/angular/angular.js/issues/10548))
  + correctly handle deep expression objects ([f7cf846045](https://github.com/angular/angular.js/commit/f7cf846045b1e2fb39c62e304c61b44d5c805e31), [#9597](https://github.com/angular/angular.js/pull/9757))
  + allow array like objects to be filtered ([1b0d0fd8](https://github.com/angular/angular.js/commit/1b0d0fd8d00b42dffd798845fe0947d594372613), [#11782](https://github.com/angular/angular.js/issues/11782), [#11787](https://github.com/angular/angular.js/issues/11787))

## Testing

* **ngMock**:
  + **$exceptionHandler**: log errors when rethrowing ([deb3cb4d](https://github.com/angular/angular.js/commit/deb3cb4daef0054457bd9fb8995829fff0e8f1e4), [#10540](https://github.com/angular/angular.js/issues/10540), [#10564](https://github.com/angular/angular.js/issues/10564))
  + **annotations**: cleanup $inject annotations after each test ([0baa17a3](https://github.com/angular/angular.js/commit/0baa17a3b7ad2b242df2b277b81cebdf75b04287) & [6ec59460](https://github.com/angular/angular.js/commit/6ec5946094ee92b820bbacc886fa2367715e60b4))
  + **$controller**: allow mock $controller service to set up controller bindings ([d02d0585](https://github.com/angular/angular.js/commit/d02d0585a086ecd2e1de628218b5a6d85c8fc7bd), [#9425](https://github.com/angular/angular.js/issues/9425), [#11239](https://github.com/angular/angular.js/issues/11239))
* **Travis**:
  + run unit tests on iOS 8 ([2cdb2016](https://github.com/angular/angular.js/commit/2cdb2016b9d89abfb5ab988b67d5f26f3bf21908), [#11479](https://github.com/angular/angular.js/issues/11479))
* **Benchmarks**:
  + add ngmodel benchmarks to largetable-bp ([b8dbdb0c](https://github.com/angular/angular.js/commit/b8dbdb0c5e2cd176c6d94d60f781cfc02e646592), [#11082](https://github.com/angular/angular.js/issues/11082))

## Miscellaneous

Other features and improvements that are part of this release include:

* **angular.merge:**
  + provide an alternative to angular.extend that merges 'deeply' ([c0498d45](https://github.com/angular/angular.js/commit/c0498d45feb913c318224ea70b5adf7112df6bac), [#10507](https://github.com/angular/angular.js/issues/10507), [#10519](https://github.com/angular/angular.js/issues/10519))
* **angular.Module:**
  + add decorator method for creating service decorators ([e57138d7](https://github.com/angular/angular.js/commit/e57138d7eff1210f99238c475fff57530bf0ab19), [#11305](https://github.com/angular/angular.js/issues/11305), [#11300](https://github.com/angular/angular.js/issues/11300))
* **$anchorScroll:**
  + allow scrolling to a specified element ([731c8b5e](https://github.com/angular/angular.js/commit/731c8b5e2d01a44aa91f967f1a6acbadb8005a8b), [#4568](https://github.com/angular/angular.js/issues/4568), [#9596](https://github.com/angular/angular.js/issues/9596))
* **ngClass:**
  + add support for conditional map within an array ([4588e627](https://github.com/angular/angular.js/commit/4588e627bb7238b2113241919b948d0e5166c76d), [#4807](https://github.com/angular/angular.js/issues/4807))
* **$timeout:**
  + allow fn to be an optional parameter ([5a603023](https://github.com/angular/angular.js/commit/5a60302389162c6ef45f311c1aaa65a00d538c66), [#9176](https://github.com/angular/angular.js/issues/9176))
  + pass additional arguments to the callback ([3a4b6b83](https://github.com/angular/angular.js/commit/3a4b6b83efdb8051e5c4803c0892c19ceb2cba50), [#10631](https://github.com/angular/angular.js/issues/10631))
* **$interval:** pass additional arguments to the callback ([4f1f9cfd](https://github.com/angular/angular.js/commit/4f1f9cfdb721cf308ca1162b2227836dc1d28388), [#10632](https://github.com/angular/angular.js/issues/10632))
* **$resource:**
  + include request context in error message ([266bc652](https://github.com/angular/angular.js/commit/266bc6520ba4d188dbc949643def102604f98905), [#11363](https://github.com/angular/angular.js/issues/11363))
* **Scope:**
  + remove history event handler when app is torn down ([d996305b](https://github.com/angular/angular.js/commit/d996305b4470f80fbb1cbddf54b7d10ffbb6ab47), [#9897](https://github.com/angular/angular.js/issues/9897), [#9905](https://github.com/angular/angular.js/issues/9905))
* **CommonJS:**
  + The new optional CommonJS support makes using Angular modules in environments like npm and browserify easier.

# Performance Improvements

Lucas proposed and implemented a complete rewrite of the Angular expression parser. The new parser is easier to maintain and up to 25% faster. On top of that change we have also speeded up scope watching, the compiler and **ngOptions**.

* **$parse:**
  + new and more performant parser ([0d42426](https://github.com/angular/angular.js/commit/0d424263ead16635afb582affab2b147f8e71626))
* **$compile:**
  + replace **forEach(controller)** with plain loops ([5b522867](https://github.com/angular/angular.js/commit/5b5228675f67c8f5e04c7183c3ef5e71cb2bf08b), [#11084](https://github.com/angular/angular.js/issues/11084))
  + avoid **.data** when fetching required controllers ([fa0aa839](https://github.com/angular/angular.js/commit/fa0aa83937378cf8fc720c38bcc5c78fc923624e))
* **ngOptions:**
  + only perform deep equality check on **ngModel** if using **track by** ([171b9f7f](https://github.com/angular/angular.js/commit/171b9f7f2339ef9047b8526b2c3f36bb58d14feb), [#11448](https://github.com/angular/angular.js/issues/11448), [#11447](https://github.com/angular/angular.js/issues/11447))
  + only watch labels if a **display** expression is specified ([51faaffd](https://github.com/angular/angular.js/commit/51faaffdbcc734c55d52ff6c42b386d5c90207ea))

# What's next?

There were two features that were pulled out of the 1.4 release. The component helper ([#10007](https://github.com/angular/angular.js/issues/10007)) and the component oriented hierarchical router. The main reason for this decision was that both of these deliverables were not ready for the important task of simplifying the migration path from Angular 1 to Angular 2. Rather than delay the 1.4 release further, we decided to move these two deliverables into the 1.5 release.

The 1.5 planning is already underway, with the router and component helper among the initial seeds. As before, the planning meeting will be published online. In this meeting the areas of focus and prioritization will be picked. At ng-conf we announced that the future focus of the 1.x releases will be migration path to Angular 2, so you can expect many of the deliverables to be in this area.

# Thanks

This Angular version is the first to be run by a much broader community oriented team, including many people from outside of the Google Angular team such as [Lucas](https://github.com/lgalfaso), [Martin](https://github.com/Narretz), [Shahar](https://github.com/shahata), [Pawel](https://github.com/pkozlowski-opensource), [Michał](https://github.com/mzgol), [Georgios](https://github.com/gkalpak) and [Jason](https://github.com/jbedard). These are people who are using Angular on a day-to-day basis in real, often large applications. They have worked tirelessly week after week to help get this release out. On top of these core team members, a number of other people from the community have contributed significant code to this release, or helped to review issues and pull requests. We'd like to thank them all.