



Angular (web framework)

Angular (also referred to as "**Angular 2+**")^[4] is a TypeScript-based, free and open-source single-page web application framework led by the Angular Team at Google and by a community of individuals and corporations. Angular is a complete rewrite from the same team that built AngularJS.

Differences between Angular and AngularJS

Google designed Angular as a ground-up rewrite of AngularJS.

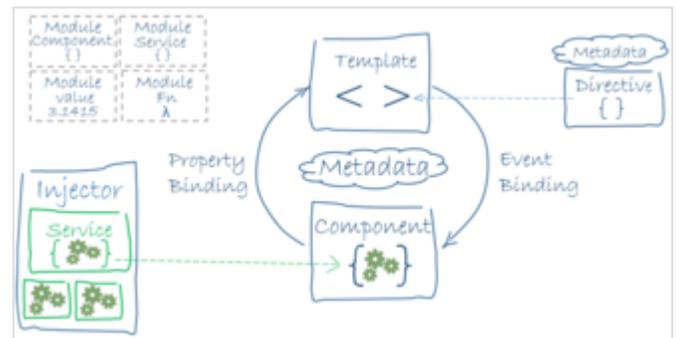
- Angular does not have a concept of "scope" or controllers; instead, it uses a hierarchy of components as its primary architectural characteristic.^[5]
- Angular has a different expression syntax, focusing on " [] " for property binding, and " () " for event binding^[6]
- Modularity – much core functionality has moved to modules
- Angular recommends the use of Microsoft's TypeScript language, which introduces the following features:
 - Static typing, including Generics
 - Type annotations
- Dynamic loading
- Asynchronous template compilations
- Iterative callbacks provided by RxJS.
- Support to run Angular applications on servers.

History

Angular 2.0 was announced at the ng-Europe conference 22–23 October 2014.^{[7][8]} The drastic changes in the 2.0 version created considerable controversy among developers.^[9] On April 30, 2015, the Angular developers announced that Angular 2 moved from Alpha to Developer Preview.^[10] Angular 2 moved to Beta in December 2015,^[11] and the first release candidate was published in May 2016.^[12] The final version was released on 14 September 2016.

Angular

	
Developer(s)	<u>Google</u>
Initial release	2.0 / 14 September 2016 ^[1]
Stable release	17.0.7 ^[2]  / 13 December 2023
Preview release	17.1.0-next.0 / 15 November 2023 ^[3]
Repository	<u>Angular Repository</u> (https://github.com/angular/angular)
Written in	<u>TypeScript</u> , <u>JavaScript</u>
Platform	<u>Web platform</u>
Type	<u>Web framework</u>
License	<u>MIT License</u>
Website	<u>angular.io</u> (https://angular.io/)



Architecture of an Angular application., services, and dependency injection.

The final version was released on 14 September 2016.

On 13 December 2016 Angular 4 was announced, skipping 3 to avoid confusion due to the misalignment of the router package's version which was already distributed as v3.3.0.^[13] The final version was released on 23 March 2017.^[14]

Features in version 4.3:

- Introducing **HttpClient**, a smaller, easier-to-use, and more powerful library for making HTTP Requests.
- New **router life cycle** events for Guards and Resolvers. Four new events: **GuardsCheckStart**, **GuardsCheckEnd**, **ResolveStart**, **ResolveEnd** join the existing set of life cycle events such as **NavigationStart**.
- Conditionally **disable** animations.

Angular 6 was released on 4 May 2018.^[15] This is a major release focused less on the underlying framework and more on the toolchain and on making it easier to move quickly with Angular in the future, like ng update, ng add, Angular Elements, Angular Material + CDK Components, Angular Material Starter Components, CLI Workspaces, Library Support, Tree Shakable Providers, Animations Performance Improvements, and RxJS v6.

On 18 October 2018, Angular 7 was released. This version had updates regarding Application Performance, Angular Material & CDK, Virtual Scrolling, Improved Accessibility of Selects, now supports Content Projection using web standard for custom elements, and dependency updates regarding Typescript 3.1, RxJS 6.3, Node 10 (still supporting Node 8).^[16]

Angular 8 was released on 28 May 2019. Featuring Differential loading for all application code, Dynamic imports for lazy routes, Web workers, TypeScript 3.4 support, and Angular Ivy as an opt-in preview. Angular Ivy opt-in preview includes:^[17]

- Generated code that is easier to read and debug at runtime
- Faster re-build time
- Improved payload size
- Improved template type checking
- Backwards compatibility

Angular 17 was released on November 8, 2023. Some new features include the new Application builder, a new syntax for control flow, a reworked learning and documentation website, and more.^[18]

Naming



The rewrite of AngularJS was called "Angular 2", but this led to confusion among developers. To clarify, the Team announced that separate names should be used for each framework with "AngularJS" referring to the 1.X versions and "Angular" without the "JS" referring to versions 2 and up.^[19]

Version History

Version	Release date	New features	Notes [hide]
Angular 17	November 8 2023 ^[18]	Application builder, a new syntax for control flow, and a re-worked learning and documentation website. ^[18]	
Angular 16	03 May 2023	Partial hydration for Angular Universal's <u>Server-side rendering</u> , experimental Jest support, and <u>Esbuilt</u> -based build system for development servers.	
Angular 15	November 16, 2022		
Angular 14	2 June 2022	Typed forms, standalone components, and new primitives in the Angular CDK (component dev kit).	
Angular 13	4 November 2021 ^[20]		
Angular 12	12 May 2021 ^[21]	Deprecated support for Internet Explorer 11.	
Angular 11	11 November 2020 ^[22]		
Angular 10	24 June 2020 ^[23]	New Date Range Picker (Material UI library).	
Angular 9	6 February 2020	Improved build times, enabling <u>AOT</u> on by default	
Angular 8	28 May 2019	Differential loading for all application code, Dynamic imports for lazy routes, Web workers, TypeScript 3.4 support, and Angular Ivy as an opt-in preview. ^[17]	
Angular 7	18 October 2018	Updates regarding Application Performance, Angular Material & CDK, Virtual Scrolling, Improved Accessibility of Selects. Support for Content Projection using web standard for custom elements, and dependency updates regarding Typescript 3.1, RxJS 6.3 and Node 10. ^[16]	
Angular 6	4 May 2018 ^[15]		
Angular 5	1 November 2017 ^[24]	Support for <u>progressive web apps</u> , a build optimizer and improvements related to Material Design. ^[25]	
Angular 4.3		New router life cycle events for Guards and Resolvers.	Minor release, meaning that it contains no breaking changes and that it is a drop-in replacement for Angular 4.x.x.
Angular 4	23 March 2017 ^[14]		<u>Backward compatible</u> with Angular 2.

Angular 2	14 September 2016		
-----------	-------------------	--	--

Future releases

Since v9, the Angular team has moved all new applications to use the Ivy compiler and runtime. They will be working on Ivy to improve output bundle sizes and development speeds.^[26]

Each version is expected to be backward-compatible with the prior release. The Angular development team has pledged to do twice-a-year upgrades.

Support policy and schedule

All the major releases are supported for 18 months. This consists of 6 months of active support, during which regularly-scheduled updates and patches are released. It is then followed by 12 months of long-term support (LTS), during which only critical fixes and security patches are released.^[27]

Supported Angular Versions

Version	Status	Released	Active Ends	LTS Ends
^17.0.0	Active	Nov 08, 2023	May 08, 2024	May 15, 2025
^16.0.0	LTS	May 03, 2023	Nov 08, 2023	Nov 08, 2024
^15.0.0	LTS	Nov 18, 2022	May 03, 2023	May 18, 2024

Angular versions v2 to v14 are no longer under support.^[28]

Libraries

Angular Material

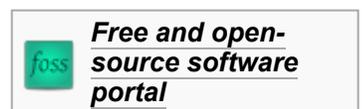
Angular Material is a UI component library that implements Material Design in Angular.^[29]

Angular Elements

In 2018, Angular 6 introduced Angular Elements that lets you package your Angular components as custom web elements, which are part of the web components set of web platform APIs.^[30]

See also

- React (software)
- Vue.js
- Svelte
- Comparison of JavaScript-based web frameworks



- Web framework

References

1. "Angular, version 2: proprioception-reinforcement" (<https://web.archive.org/web/20170312063434/http://angularjs.blogspot.com/2016/09/angular2-final.html>). *blogspot.com*. September 14, 2016. Archived from the original (<http://angularjs.blogspot.com/2016/09/angular2-final.html>) on 2017-03-12. Retrieved 2017-03-18.
2. "v17.0.7" (<https://github.com/angular/angular/releases/tag/17.0.7>). 13 December 2023. Retrieved 13 December 2023.
3. "angular/CHANGELOG.md" (<https://github.com/angular/angular/blob/master/CHANGELOG.md>). *GitHub*. Retrieved 2023-11-15.
4. "AngularJS and Angular 2+: a Detailed Comparison" (<https://www.sitepoint.com/angularjs-vs-angular/>). 6 April 2018.
5. "Angular Docs" (<https://angular.io/guide/architecture>). *angular.io*.
6. "What's the difference between AngularJS and Angular?" (<https://gorrion.io/blog/angularjs-vs-angular/>). *gorrion.io*. September 19, 2017. Retrieved 2018-01-28.
7. Hamilton, Coman (28 October 2014). "A sneak peek at the radically new Angular 2.0" (<https://jaxenter.com/angular-2-0-112094.html>). Retrieved 2015-10-21.
8. "Ng-Europe schedule" (<https://web.archive.org/web/20180430113923/https://2015.ngeurope.org/#schedule>). Archived from the original (<https://2015.ngeurope.org/#schedule>) on 2018-04-30. Retrieved 2018-04-29.
9. Hamilton, Coman (29 October 2014). "Angular 2.0 announcement backfires" (<https://jaxenter.com/angular-2-0-announcement-backfires-112127.html>). Retrieved 2015-10-21.
10. @angularjs (April 30, 2015). "Angular 2 moves from Alpha to Developer Preview! Dev guide and API docs now available at ... angular.io/docs/js/latest" (<https://twitter.com/angularjs/status/593797019258359809>) (Tweet). Retrieved 2015-10-21 – via [Twitter](#).
11. "Angular: Angular 2 Beta" (<https://web.archive.org/web/20151218005753/http://angularjs.blogspot.it/2015/12/angular-2-beta.html>). *angularjs.blogspot.it*. Archived from the original (<http://angularjs.blogspot.it/2015/12/angular-2-beta.html>) on 2015-12-18. Retrieved 2016-07-13.
12. "angular/angular" (<https://github.com/angular/angular/blob/master/CHANGELOG.md#200-rc0-2016-05-02>). *GitHub*. Retrieved 2016-05-04.
13. "Ok... let me explain: it's going to be Angular 4.0" (<https://web.archive.org/web/20171016014045/http://angularjs.blogspot.kr/2016/12/ok-let-me-explain-its-going-to-be.html>). *angularjs.blogspot.kr*. Archived from the original (<http://angularjs.blogspot.kr/2016/12/ok-let-me-explain-its-going-to-be.html>) on 2017-10-16. Retrieved 2016-12-14.
14. "Angular 4.0.0 Now Available" (<https://web.archive.org/web/20180108131700/http://angularjs.blogspot.ca/2017/03/angular-400-now-available.html>). *angularjs.blogspot.ca*. Archived from the original (<http://angularjs.blogspot.ca/2017/03/angular-400-now-available.html>) on 2018-01-08. Retrieved 2017-03-23.
15. "Version 6.0.0 of Angular Now Available" (<https://blog.angular.io/version-6-of-angular-now-available-cc56b0efa7a4>). Retrieved 4 May 2018.
16. Fluin, Stephen (2018-10-18). "Version 7 of Angular — CLI Prompts, Virtual Scroll, Drag and Drop and more" (<https://blog.angular.io/version-7-of-angular-cli-prompts-virtual-scroll-drag-and-drop-and-more-c594e22e7b8c>). *Angular Blog*. Retrieved 2019-06-07.
17. Fluin, Stephen (2019-02-08). "A plan for version 8.0 and Ivy" (<https://blog.angular.io/a-plan-for-version-8-0-and-ivy-b3318dfc19f7>). *Angular Blog*. Retrieved 2019-06-07.

18. Gechev, Minko (8 November 2023). "Introducing Angular v17" (<https://blog.angular.io/introducing-angular-v17-4d7033312e4b>). *Medium*. Angular Blog. Retrieved 12 November 2023.
19. "Angular: Branding Guidelines for AngularJS" (<https://web.archive.org/web/20170204142402/http://angularjs.blogspot.com/2017/01/branding-guidelines-for-angular-and.html>). Archived from the original (<http://angularjs.blogspot.com/2017/01/branding-guidelines-for-angular-and.html>) on 2017-02-04. Retrieved 2017-03-04.
20. Thompson, Mark (4 November 2021). "Angular v13 is now Available" (<https://blog.angular.io/angular-v13-is-now-available-cce66f7bc296>). *Angular Blog*. Retrieved 10 January 2022.
21. Thompson, Mark (2021-05-12). "Angular v12 is now available" (<https://blog.angular.io/angular-v12-is-now-available-32ed51bfd49>). *Medium*. Retrieved 2021-05-17.
22. "Version 11 of Angular Now Available" (<https://blog.angular.io/version-11-of-angular-now-available-74721b7952f7>). 4 December 2020.
23. "Version 10 of Angular Now Available" (<https://blog.angular.io/version-10-of-angular-now-available-78960babd41>). 25 June 2020.
24. Fluin, Stephen. "Version 5.0.0 of Angular Now Available" (<https://blog.angular.io/version-5-0-0-of-angular-now-available-37e414935ced>). Retrieved 2 November 2017.
25. "Angular 5 JavaScript framework delayed" (<https://www.infoworld.com/article/3225511/javascript/angular-5-javascript-framework-delayed.html>). 18 September 2017.
26. Fluin, Stephen (6 February 2020). "Version 9 of Angular Now Available — Project Ivy has arrived!" (<https://blog.angular.io/version-9-of-angular-now-available-project-ivy-has-arrived-23c97b63cfa3>). *blog.angular.io*. Retrieved 22 March 2022.
27. "Angular" (<https://angular.io/guide/releases#support-policy-and-schedule>). *angular.io*. Retrieved 2019-06-07.
28. "Angular" (<https://angular.io/guide/releases#support-policy-and-schedule>). *angular.io*. Retrieved 2022-06-10.
29. "Angular Material" (<https://material.angular.io/>). *material.angular.io*.
30. "How to create Angular 6 Custom Elements and Web Components" (<https://www.freecodecamp.org/news/how-to-create-angular-6-custom-elements-web-components-c88814dc6e0a/>). 29 September 2018.

External links

- [Official website \(https://angular.io\)](https://angular.io)
- [Archived website \(Angular 2\) \(https://v2.angular.io\)](https://v2.angular.io)

Retrieved from "[https://en.wikipedia.org/w/index.php?title=Angular_\(web_framework\)&oldid=1194326623](https://en.wikipedia.org/w/index.php?title=Angular_(web_framework)&oldid=1194326623)"

▪