

Improved Concurrency Previously, MongoDB operations that required the JavaScript interpreter had to acquire a lock, and a single `mongod` could only run a single JavaScript operation at a time. The switch to V8 improves concurrency by permitting multiple JavaScript operations to run at the same time.

Modernized JavaScript Implementation (ES5) The 5th edition of [ECMAScript](#)⁷⁹⁴, abbreviated as ES5, adds many new language features, including:

- standardized [JSON](#)⁷⁹⁵,
- [strict mode](#)⁷⁹⁶,
- [function.bind\(\)](#)⁷⁹⁷,
- [array extensions](#)⁷⁹⁸, and
- getters and setters.

With V8, MongoDB supports the ES5 implementation of Javascript with the following exceptions.

Note: The following features do not work as expected on documents **returned from MongoDB queries**:

- `Object.seal()` throws an exception on documents returned from MongoDB queries.
- `Object.freeze()` throws an exception on documents returned from MongoDB queries.
- `Object.preventExtensions()` incorrectly allows the addition of new properties on documents returned from MongoDB queries.
- `enumerable` properties, when added to documents returned from MongoDB queries, are not saved during write operations.

See [SERVER-8216](#)⁷⁹⁹, [SERVER-8223](#)⁸⁰⁰, [SERVER-8215](#)⁸⁰¹, and [SERVER-8214](#)⁸⁰² for more information.

For objects that have not been returned from MongoDB queries, the features work as expected.

Removed Non-Standard SpiderMonkey Features V8 does **not** support the following *non-standard* [SpiderMonkey](#)⁸⁰³ JavaScript extensions, previously supported by MongoDB's use of SpiderMonkey as its JavaScript engine.

E4X Extensions V8 does not support the *non-standard* [E4X](#)⁸⁰⁴ extensions. E4X provides a native [XML](#)⁸⁰⁵ object to the JavaScript language and adds the syntax for embedding literal XML documents in JavaScript code.

You need to use alternative XML processing if you used any of the following constructors/methods:

- `XML()`
- `Namespace()`
- `QName()`

⁷⁹⁴<http://www.ecma-international.org/publications/standards/Ecma-262.htm>

⁷⁹⁵<http://www.ecma-international.org/ecma-262/5.1/#sec-15.12.1>

⁷⁹⁶<http://www.ecma-international.org/ecma-262/5.1/#sec-4.2.2>

⁷⁹⁷<http://www.ecma-international.org/ecma-262/5.1/#sec-15.3.4.5>

⁷⁹⁸<http://www.ecma-international.org/ecma-262/5.1/#sec-15.4.4.16>

⁷⁹⁹<https://jira.mongodb.org/browse/SERVER-8216>

⁸⁰⁰<https://jira.mongodb.org/browse/SERVER-8223>

⁸⁰¹<https://jira.mongodb.org/browse/SERVER-8215>

⁸⁰²<https://jira.mongodb.org/browse/SERVER-8214>

⁸⁰³<https://developer.mozilla.org/en-US/docs/SpiderMonkey>

⁸⁰⁴<https://developer.mozilla.org/en-US/docs/E4X>

⁸⁰⁵https://developer.mozilla.org/en-US/docs/E4X/Processing_XML_with_E4X