

Testing & Releasing Elasticsearch & the Elastic Stack

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<> Code

! Issues 1,934

Pull requests 312

Actions

Projects 1

Security

Insights

Settings

Branch: master

Commits on Oct 26, 2019

Wrap ResponseException in AssertionError in ILM/CCR tests (#48489) ...



gwbrown committed 2 days ago

Verified



94fe480



Commits on Oct 25, 2019

Refresh should not acquire readLock (#48414) ...



dnhatn committed 2 days ago

Verified



379e847



Add slices to delete and update by query in HLRC (#48420) ...



hub-cap committed 2 days ago

Verified



27c1902



[DOCS] Remove extraneous comma in Enrich Stats API's JSON response (#...)



ycombinator authored and jrodewig committed 2 days ago



93ecb9b



Mute RestClientMultipleHostsIntegTests.testCancelAsyncRequests (#48535) ...



tlrx committed 2 days ago

Verified



1744f1f



Upgrade to Netty 4.1.43 (#48484) ...



tbrooks8 committed 2 days ago

Verified



d084b93





Download Elasticsearch

Want it hosted? Deploy on Elastic Cloud. [Get Started »](#)

Version: 7.4.1

Release date: October 23, 2019

License: **Elastic License**

Downloads: [WINDOWS sha asc](#)

[MACOS sha asc](#)

[LINUX sha asc](#)

[DEB sha asc](#)

[RPM sha asc](#)

[MSI \(BETA\) sha asc](#)

Package Managers: Install with **yum, dnf, or zypper**

Install with **apt-get**

Install with **homebrew**

Containers: Run with **Docker**

Notes: Running on Kubernetes? Try **Elastic Cloud on Kubernetes** (alpha) or the Elasticsearch **Helm Chart** (beta).

This default distribution is governed by the Elastic License, and includes the **full set of free features**.

View the detailed release notes [here](#).

Not the version you're looking for? View **past releases**.

The pure Apache 2.0 licensed distribution is available [here](#).

The distribution that's not bundled with a JDK is available [here](#).

You can obtain the source code for the bundled JDK [here](#).

Ready? Let's do this thing.

If you're brand new to Elastic, jump to our [quick-start guide](#).
We can [host Elasticsearch and Kibana for you](#), too.



Elasticsearch

Distributed, RESTful search and analytics.

[Launch on Elastic Cloud](#)[Download](#)

Kibana

Visualize your data. Navigate the Stack.

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Beats

Collect, parse, and ship in a lightweight fashion.

[Download](#)

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[Download](#)

APM

Find performance bottlenecks in your applications.

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Elastic Cloud



Elastic Cloud Enterprise

applications.

using an intuitive interface.

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Download

Download



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ES-Hadoop

Quickly query and get insight into your big data.

Download



JDBC Client

A JDBC driver for Elasticsearch

Download



ODBC Client

An ODBC driver for Elasticsearch

Download



X-Pack

Only for versions 6.2 and older

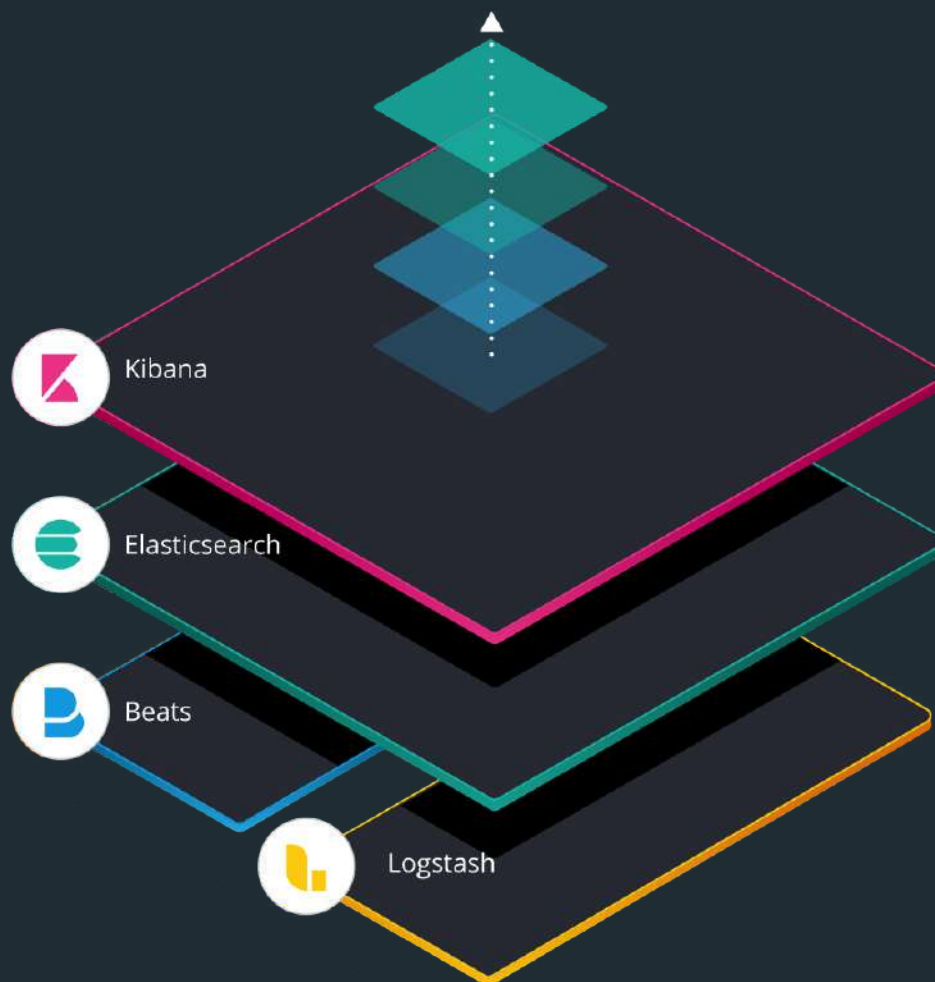
Install

Today's goal

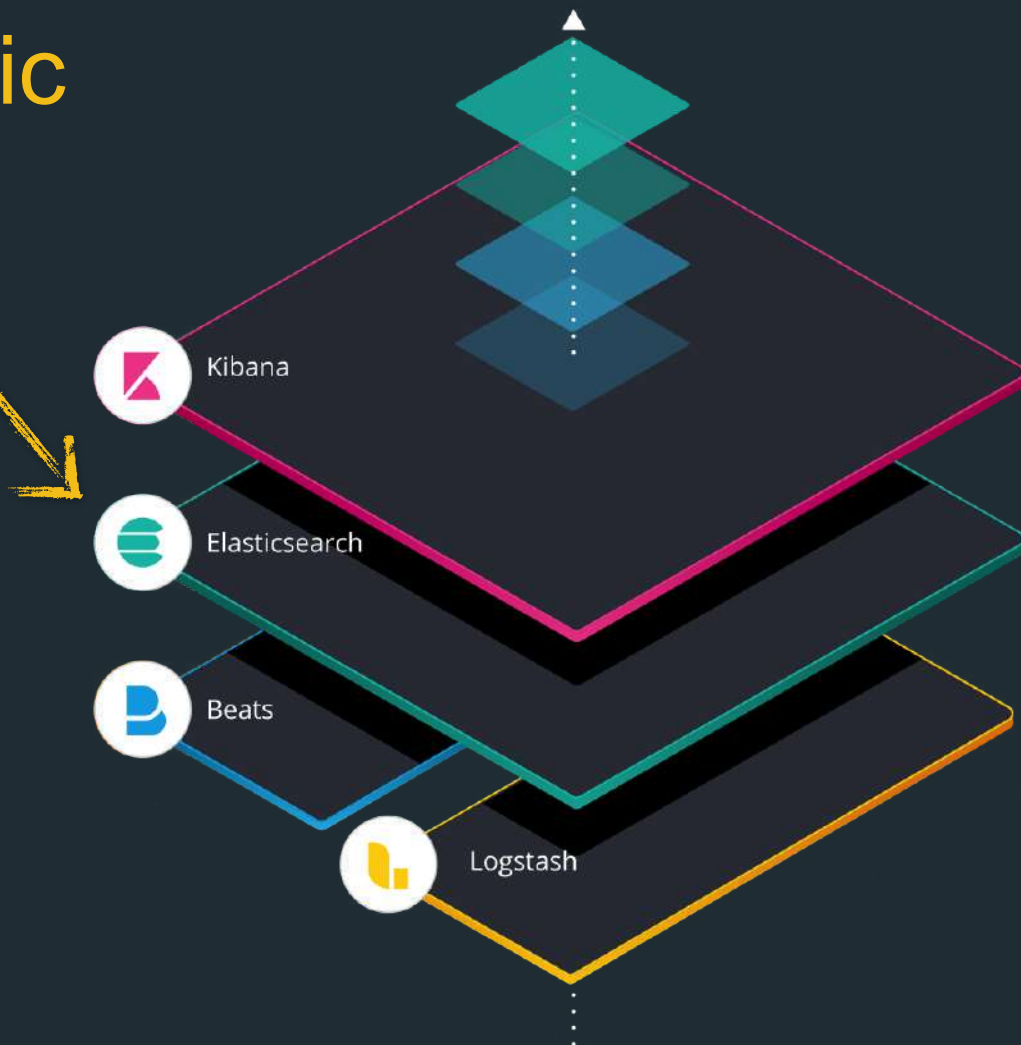
**Transfer Elasticsearch testing & automation
knowledge into your own project**



elastic



main topic



Elasticsearch in 10 seconds

- 🌿 Search Engine (FTS, Analytics, Geo), real-time
- 🌿 Distributed, scalable, highly available, resilient
- 🌿 Interface: HTTP & JSON
- 🌿 Heart of the Elastic Stack



Agenda

- 🍷 Unit Testing
- 🍷 Integration Testing
- 🍷 Package Testing
- 🍷 BWC Testing
- 🍷 Documentation Testing
- 🍷 CI: OS/JVM Testing
- 🍷 Releasing

Unit Testing

ESTestcase



ESTestCase

```
41 public class DateFormatterTests extends ESTestCase
42
43     public void testWeekBasedDates() {
44         // as per WeekFields.ISO first week starts on Monday and has minimum 4 days
45         DateFormatter dateFormatter = DateFormatter.forPattern("YYYY-ww");
46
```



ESTestCase

```
41 public class DateFormatterTests extends ESTestCase {
```

```
42
```

```
43 pu
```

```
44
```

```
45
```

```
46
```

```
153 /**
154  * Base testcase for randomized unit testing with Elasticsearch
155  */
156 @Listeners({
157     ReproduceInfoPrinter.class,
158     LoggingListener.class
159 })
160 @ThreadLeakScope(Scope.SUITE)
161 @ThreadLeakLingering(linger = 5000) // 5 sec lingering
162 @TimeoutSuite(millis = 20 * TimeUnits.MINUTE)
163 @LuceneTestCase.SuppressSysoutChecks(bugUrl = "we log a lot on purpose")
164 // we suppress pretty much all the lucene codecs for now, except asserting
165 // assertingcodec is the winner for a codec here: it finds bugs and gives clear exceptions.
166 @SuppressCodecs({
167     "SimpleText", "Memory", "CheapBastard", "Direct", "Compressing", "FST50", "FSTOrd50",
168     "TestBloomFilteredLucenePostings", "MockRandom", "BlockTree0rds", "LuceneFixedGap",
169     "LuceneVarGapFixedInterval", "LuceneVarGapDocFreqInterval", "Lucene5"
170 })
171 @LuceneTestCase.SuppressReproduceLine
172 public abstract class ESTestCase extends LuceneTestCase {
```

as minimum 4 days
YY-ww");

ESTestCase

41 public class DateFormatterTests extends ESTestCase {

42

43

44

45

46



```
198 @RunWith(RandomizedRunner.class)
199 @TestMethodProviders({
200     LuceneJUnit3MethodProvider.class,
201     JUnit4MethodProvider.class
202 })
203 @Listeners({
204     RunListenerPrintReproduceInfo.class,
205     FailureMarker.class
206 })
207 @SeedDecorators({MixWithSuiteName.class}) // See LUCENE-3995 for rationale.
208 @ThreadLeakScope(Scope.SUITE)
209 @ThreadLeakGroup(Group.MAIN)
210 @ThreadLeakAction({Action.WARN, Action.INTERRUPT})
211 @ThreadLeakLingering(linger = 20000) // Wait long for leaked threads to complete before failure. zk needs this.
212 @ThreadLeakZombies(Consequence.IGNORE_REMAINING_TESTS)
213 @TimeoutSuite(millis = 2 * TimeUnits.HOUR)
214 @ThreadLeakFilters(defaultFilters = true, filters = {
215     QuickPatchThreadsFilter.class
216 })
217 @TestRuleLimitSysouts.Limit(
218     bytes = TestRuleLimitSysouts.DEFAULT_LIMIT,
219     hardLimit = TestRuleLimitSysouts.DEFAULT_HARD_LIMIT)
220 public abstract class LuceneTestCase extends Assert {
```

ESTestCase

```
84  /**
85   * A {@link Runner} implementation for running randomized test cases with
86   * predictable and repeatable randomness.
87   *
88   * <p>Supports the following JUnit4 features:
89   * <ul>
90   *   <li>{@link BeforeClass}-annotated methods (before all tests of a class/superclass),</li>
91   *   <li>{@link Before}-annotated methods (before each test),</li>
92   *   <li>{@link Test}-annotated methods,</li>
93   *   <li>{@link After}-annotated methods (after each test),</li>
94   *   <li>{@link AfterClass}-annotated methods (after all tests of a class/superclass),</li>
95   *   <li>{@link Rule}-annotated fields implementing {@link org.junit.rules.MethodRule}
96   *       and {@link TestRule}.</li>
97   * </ul>
98   *
```

```
22072 public abstract class LuceneTestCase extends Assert {
```

Random methods

```
public void testRandomStringLength() {  
    String randomString = randomAlphaOfLength(10);  
    assertThat(randomString.length(), is(10));  
  
    boolean randomBoolean = randomBoolean();  
    assertThat(randomBoolean, is(anyOf(is(true), is(false))));  
  
    final Integer randomInt = randomFrom(1, 22, 11, 41, 58);  
    assertThat(randomInt, is(allOf(greaterThanOrEqualTo(1), lessThanOrEqualTo(58))));  
  
    final int randomIntBetween = randomIntBetween(1, 10);  
    assertThat(randomIntBetween, is(allOf(greaterThanOrEqualTo(1), lessThanOrEqualTo(10))));  
  
    final long nonNegativeLong = randomNonNegativeLong();  
    assertThat(nonNegativeLong, is(greaterThanOrEqualTo(0L)));  
  
    final ZoneId zoneId = randomZone();  
    assertThat(ZoneId.getAvailableZoneIds(), hasItem(zoneId.toString()));  
  
    final Locale locale = randomLocale(random());  
    assertThat(Arrays.asList(Locale.getAvailableLocales()), hasItem(locale));  
}
```

Random methods

```
public void testRandomStringLength() {  
    String randomString = randomAlphaOfLength(10);  
    assertThat(randomString.length(), is(10));  
}
```



Random methods

```
public void testRandomStringLength() {  
    String randomString = randomAlphaOfLength(10);  
    assertThat(randomString.length(), is(10));  
}
```

```
public void testRandomStringLength() {  
    String randomString = randomAlphaOfLength(10);  
    assertThat(randomString.length(), is(Integer.MAX_VALUE));  
}
```



Randomization Example

```
private int add (int a, int b) {  
    assert a > 0;  
    assert b > 0;  
    return a + b;  
}
```



Randomization Example

```
private int add (int a, int b) {  
    assert a > 0;  
    assert b > 0;  
    return a + b;  
}
```

```
public void testAdd() {  
    assertThat(add(1, 1), is(2));  
    assertThat(add(2, 2), is(4));  
}
```



Randomization Example

```
private int add (int a, int b) {  
    assert a > 0;  
    assert b > 0;  
    return a + b;  
}
```

```
public void testAdd() {  
    final int a = randomIntBetween(0, Integer.MAX_VALUE);  
    final int b = randomIntBetween(0, Integer.MAX_VALUE);  
    assertThat(add(a, b), allOf(greaterThanOrEqualTo(a), greaterThanOrEqualTo(b)));  
}
```

Randomization Example

```
private int add (int a, int b) {  
    assert a > 0;  
    assert b > 0;  
    return a + b;  
}
```

```
@Repeat(iterations = 1000)  
public void testAdd() {  
    final int a = randomIntBetween(0, Integer.MAX_VALUE);  
    final int b = randomIntBetween(0, Integer.MAX_VALUE);  
    assertThat(add(a, b), allOf(greaterThanOrEqualTo(a), greaterThanOrEqualTo(b)));  
}
```

Randomization Example

```
private int add (int a, int b) {  
    assert a > 0;  
    assert b > 0;  
    return a + b;  
}
```

```
@Repeat(iterations = 1000)  
public void testAdd() {  
    final int a = randomIntBetween(0, Integer.MAX_VALUE);  
    final int b = randomIntBetween(0, Integer.MAX_VALUE);  
    assertThat(add(a, b), allOf(greaterThanOrEqualTo(a), greaterThanOrEqualTo(b)));  
}
```

java.lang.AssertionError:

Expected: (a value equal to or greater than <1667057423>
and a value equal to or greater than <1800656534>)
but: a value equal to or greater than <1667057423>
<-827253339> was less than <1667057423>

Randomization Example

```
private int add (int a, int b) {  
    assert a > 0;  
    assert b > 0;  
    return a + b;  
}
```

```
@Repeat(iterations = 1000)  
public void testAdd() {  
    final int a = randomIntBetween(0, Integer.MAX_VALUE);  
    final int b = randomIntBetween(0, Integer.MAX_VALUE);  
    assertThat(add(a, b), allOf(greaterThanOrEqualTo(a), greaterThanOrEqualTo(b)));  
}
```

```
REPRODUCE WITH: ./gradlew ':server:test'  
--tests "de.spinscale.MyTest.testAdd"  
-Dtests.seed=EC29A319F9128F9A  
-Dtests.locale=pl-PL  
-Dtests.timezone=America/St_Kitts
```



Randomization Example

```
private int add (int a, int b) {  
    assert a > 0;  
    assert b > 0;  
    return a + b;  
}
```

```
@Seed("EC29A319F9128F9A")  
public void testAdd() {  
    final int a = randomIntBetween(0, Integer.MAX_VALUE);  
    final int b = randomIntBetween(0, Integer.MAX_VALUE);  
    assertThat(add(a, b), allOf(greaterThanOrEqualTo(a), greaterThanOrEqualTo(b)));  
}
```

ESTestCase goodies

- 🍄 Thread leak detection
- 🍄 Change log level for single test/package
- 🍄 Checks for excessive sysout/err writes
- 🍄 Test method order is randomized
- 🍄 Test class order is randomized
- 🍄 Deprecation logging checks
- 🍄 No inflight search contexts



Integration Testing

YAML ftw!



HTTP Integration tests

- 🌿 Run tests against Elasticsearch HTTP interface
- 🌿 Tests are written in YAML
- 🌿 API definition is written in JSON
- 🌿 `ESClientYamlSuiteTestCase` to extend
- 🌿 All official clients are using the same spec to guarantee feature parity

API definition

```
{
  "get": {
    "documentation": {
      "url": "https://www.elastic.co/guide/en/elasticsearch/reference/master/docs-get.html",
      "description": "Returns a document."
    },
    "stability": "stable",
    "url": {
      "paths": [
        {
          "path": "/{index}/_doc/{id}",
          "methods": [
            "GET"
          ],
          "parts": {
            "id": {
              "type": "string",
              "description": "The document ID"
            },
            "index": {
              "type": "string",
              "description": "The name of the index"
            }
          }
        }
      ]
    },
    "params": {
      "preference": {
        "type": "string",
        "description": "Specify the node or shard the operation should be performed on (default: random)"
      },
      ...
    }
  }
}
```

Test definition

```
---  
"Basic":  
  
  - do:  
    index:  
      index: test_1  
      id: 中文  
      body: { "foo": "Hello: 中文" }  
  
  - do:  
    get:  
      index: test_1  
      id: 中文  
  
  - match: { _index: test_1 }  
  - match: { _id: 中文 }  
  - match: { _source: { foo: "Hello: 中文" } }
```

More integration testing

- 🌿 Test against kerberos/samba/openldap/shibboleth-idp using docker and docker-compose
- 🌿 S3 integration testing using minio (via docker-compose)
- 🌿 Testing the docker image via docker-compose

Package Testing

Containers



Elasticsearch: A lot of flavours

🍷 tar.gz, zip, deb, rpm

🍷 apt / yum repositories

🍷 docker images

🍷 osx brew tap

🍷 Windows MSI

🍷 helm chart, ECK (K8s operator)

🍷 puppet, ansible, chef



Testing packages

- 🍄 Use vagrant to download/install distributions
- 🍄 ubuntu-1604, ubuntu-1804, debian-8, debian-9, centos-6, centos-7, oel-6, oel-7, fedora-28, fedora-29, opensuse-42, sles-12, rhel-8, windows-2012r2, windows-2016

Testing packages

- 🐿 bats is used for testing
- 🐿 bats: bash automated testing
- 🐿 package installation/start/stop/uninstall
- 🐿 Long term plan: Moving away from bats to java tests

<https://github.com/elastic/elasticsearch/tree/master/qa/os>

BWC Testing

You get an upgrade, everyone gets an upgrade!



BWC Testing

- 🌿 Upgrades must be supported and tested!
- 🌿 Full cluster restart
- 🌿 Rolling restarts between minor versions
- 🌿 Rolling restarts from the latest old major version to the current major version, i.e. **6.8.4** to **7.4.1**

Rolling upgrade tests



Rolling upgrade tests



Rolling upgrade tests

upgrade

7.4.x

6.8.x

6.8.x



Rolling upgrade tests

7.4.x

6.8.x

6.8.x



Rolling upgrade tests

7.4.x

6.8.x

6.8.x



Rolling upgrade tests



Rolling upgrade tests

7.4.x

7.4.x

6.8.x



Rolling upgrade tests



Rolling upgrade tests



Rolling upgrade tests



Documentation Testing

Y'all doing this, right?



Documentation Testing

- 🌿 All documentation is written in asciidoc
- 🌿 Fire up a test cluster
- 🌿 Extract snippets from documentation
- 🌿 Run snippets against cluster
- 🌿 Optionally: check response contents



Sample snippet

```
[source, console]
```

```
GET twitter/_doc/0
```

```
// TEST[setup:twitter]
```

Get API



edit

Retrieves the specified JSON document from an index.

```
GET twitter/_doc/0
```

[Copy as cURL](#)

[View in Console](#)



Sample snippet

```
[source,console-result]
```

```
-----  
{  
  "_index" : "twitter",  
  "_id" : "0",  
  "_version" : 1,  
  "_seq_no" : 10,  
  "_primary_term" : 1,  
  "found" : true,  
  "_source" : {  
    "user" : "kimchy",  
    "date" : "2009-11-15T14:12:12",  
    "likes" : 0,  
    "message" : "trying out Elasticsearch"  
  }  
}
```

```
-----  
// TESTRESPONSE[s/"_seq_no" : \d+/"_seq_no" : $body._seq_no/ s/"_primary_term" :  
1/"_primary_term" : $body._primary_term/]
```

build.gradle FTW

One build system to rule them all



All you need is gradle

- 🌿 Elasticsearch uses gradle for everything
- 🌿 All tests can be triggered via gradle
- 🌿 Try to reduce dependency external tools



PR testing

Immediate feedback...

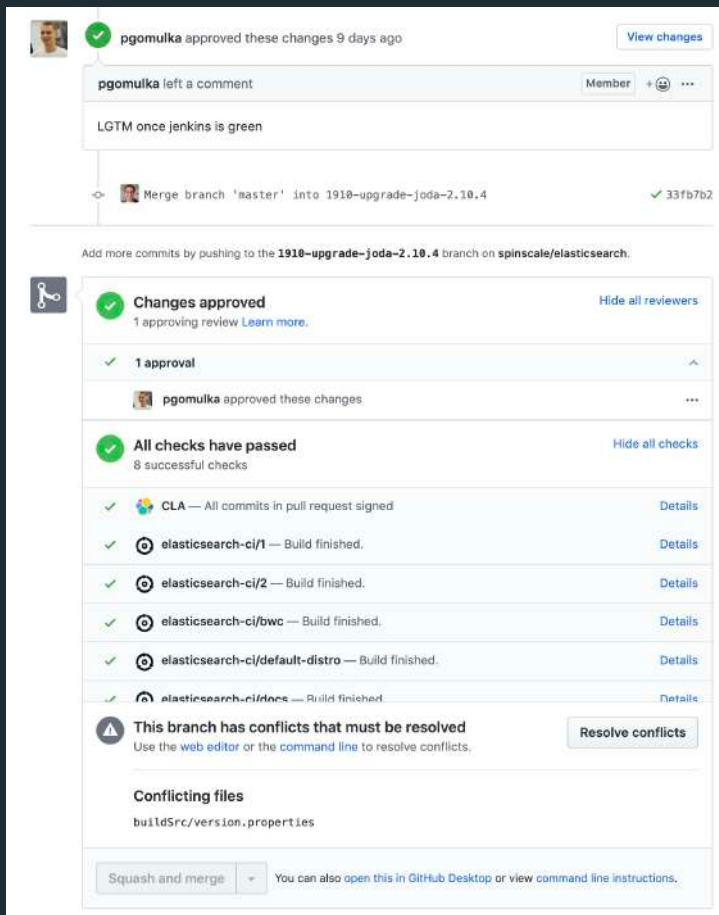


Github PR testing

- 🌿 Every commit to an open PR triggers a build
- 🌿 Trigger test run via github
- 🌿 Trigger merge and test run via github



Github PR testing



This screenshot shows a GitHub Pull Request interface. At the top, a user named 'pgomulka' has approved the changes, with a 'View changes' link. Below this, a comment from 'pgomulka' states 'LGTM once jenkins is green'. A merge button indicates the branch 'master' is being merged into '1910-upgrade-joda-2.10.4' with commit hash '33fb7b2'. A message prompts the user to add more commits by pushing to the '1910-upgrade-joda-2.10.4' branch on the 'spinscale/elasticsearch' repository.

Changes approved [Hide all reviewers](#)
1 approving review [Learn more.](#)

1 approval

pgomulka approved these changes. ...

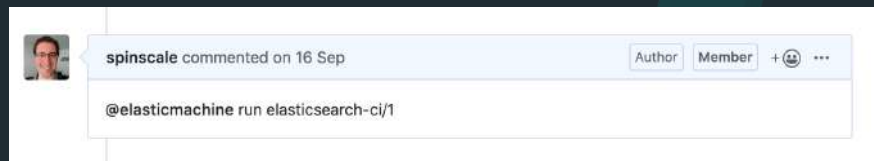
All checks have passed [Hide all checks](#)
8 successful checks

- ✓ **CLA** — All commits in pull request signed. [Details](#)
- ✓ **elasticsearch-ci/1** — Build finished. [Details](#)
- ✓ **elasticsearch-ci/2** — Build finished. [Details](#)
- ✓ **elasticsearch-ci/bwc** — Build finished. [Details](#)
- ✓ **elasticsearch-ci/default-dist** — Build finished. [Details](#)
- ✓ **elasticsearch-ci/docs** — Build finished. [Details](#)

This branch has conflicts that must be resolved [Resolve conflicts](#)
Use the [web editor](#) or the [command line](#) to resolve conflicts.

Conflicting files
buildSrc/version.properties

[Squash and merge](#) You can also [open this in GitHub Desktop](#) or view [command line instructions](#).



This screenshot shows a comment from the user 'spinscale', posted on 16 Sep. The comment text is '@elasticsearch run elasticsearch-ci/1'. The interface includes 'Author' and 'Member' buttons, along with a reaction icon and a menu icon.

spinscale commented on 16 Sep

[Author](#) [Member](#) +👍 ...

@elasticsearch run elasticsearch-ci/1



This screenshot shows another comment from the user 'spinscale', posted 18 days ago. The comment text is '@elasticsearch run elasticsearch-ci/2'. The interface includes 'Author' and 'Member' buttons, along with a reaction icon and a menu icon.

spinscale commented 18 days ago

[Author](#) [Member](#) +👍 ...

@elasticsearch run elasticsearch-ci/2

Verification after merge



H.O.M.E.R. APP 00:17

Hey @danh, the following build did not succeed after a recent push which included your changes:

[elastic / elasticsearch # 7.x - intake part 2 #1840](#)

Changes:

[2e3db51](#) Do not reference values for filtered settings (#48066) (#48518)

Test failures:

[RegressionIT » testStopAndRestart](#)

[RegressionIT » classMethod](#)

Please reply to this message to acknowledge receipt.

CI setup

JVM/OS matrix based testing



People

Build History

Project Relationship

Check File Fingerprint

Open Blue Ocean

Build Queue (8)

elastic / elasticsearch # master - intake bwc

elastic / elasticsearch # master - intake part 2

elastic / elasticsearch # master - intake part 1

elastic / elasticsearch # master - intake bwc

elastic / elasticsearch # master - intake part 2

elastic / elasticsearch # master - intake part 1

elastic / elasticsearch # pull-request - Windows packaging tests matrix » windows-2019

elastic / elasticsearch # pull-request - oss-distro docs

Build Executor Status

master

1 Idle

2 Idle

3 Idle

4 Idle

5 Idle

6 Idle

7 Idle

8 Idle

9 Idle

10 Idle

11 Idle

12 Idle

13 Idle

All

Docs

Elasticsearch

Elasticsearch 6.8

Elasticsearch 7.4

Elasticsearch 7.5

Elasticsearch 7.x

Elasticsearch Hadoop

Elasticsearch master

Lucene

Machine Learning

Main

S	W	Name ↓	Last Success	Last Failure	Last Duration
		elastic / elasticsearch # 5.0 - docs check	N/A	4 mo 22 days - #1	59 sec
		elastic / elasticsearch # 5.1 - docs check	N/A	4 mo 22 days - #1	25 sec
		elastic / elasticsearch # 5.2 - docs check	N/A	4 mo 22 days - #1	24 sec
		elastic / elasticsearch # 5.3 - docs check	N/A	3 days 18 hr - #3	33 sec
		elastic / elasticsearch # 5.4 - docs check	N/A	3 days 18 hr - #4	30 sec
		elastic / elasticsearch # 5.5 - docs check	N/A	1 mo 1 day - #5	27 sec
		elastic / elasticsearch # 6.0 - docs check	29 days - #6	N/A	10 min
		elastic / elasticsearch # 6.1 - docs check	29 days - #7	N/A	7 min 41 sec
		elastic / elasticsearch # 6.2 - docs check	29 days - #9	N/A	7 min 40 sec
		elastic / elasticsearch # 6.3 - docs check	8 days 9 hr - #20	8 days 13 hr - #19	8 min 12 sec
		elastic / elasticsearch # 6.4 - docs check	15 days - #22	8 days 11 hr - #26	5 min 55 sec
		elastic / elasticsearch # 6.5 - docs check	8 days 14 hr - #31	N/A	7 min 14 sec
		elastic / elasticsearch # 6.6 - docs check	8 days 19 hr - #38	N/A	7 min 18 sec
		elastic / elasticsearch # 6.7 - docs check	N/A	9 days 9 hr - #10	1 min 1 sec
		elastic / elasticsearch # 6.8 - backwards compatibility matrix	2 hr 9 min - #244	1 day 18 hr - #239	40 min
		elastic / elasticsearch # 6.8 - branch consistency	3 hr 44 min - #144	8 days 3 hr - #136	2 min 7 sec
		elastic / elasticsearch # 6.8 - default distribution backwards compatibility matrix	6 hr 5 min - #238	2 days 14 hr - #231	45 min
		elastic / elasticsearch # 6.8 - default-distro	1 hr 27 min - #429	16 hr - #427	20 min
		elastic / elasticsearch # 6.8 - encryption at rest	5 hr 43 min - #192	3 days 5 hr - #186	2 hr 17 min
		elastic / elasticsearch # 6.8 - intake	1 day 17 hr - #165	2 days 3 hr - #161	1 hr 31 min
		elastic / elasticsearch # 6.8 - matrix.java.periodic	1 day 23 hr - #282	11 hr - #285	2 hr 55 min
		elastic / elasticsearch # 6.8 - oss-distro (docs)	1 hr 42 min - #429	N/A	6 min 58 sec
		elastic / elasticsearch # 6.8 - packaging tests	21 hr - #543	7 days 0 hr - #526	3 hr 25 min
		elastic / elasticsearch # 6.8 - periodic	1 day 18 hr - #707	9 days 18 hr - #699	2 hr 39 min

1720003038583668 (offline)		elastic / elasticsearch # master - default distribution backwards compatibility matrix	2 hr 53 min - #237	2 days 10 hr - #230	17 min
1 elastic / elasticsearch-hadoop # 7.4 - periodic #57		elastic / elasticsearch # master - default-distro	3 hr 27 min - #429	9 days 19 hr - #400	17 min
elasticsearch-ci-immutable-debian-9-1572000917005254531 (offline)		elastic / elasticsearch # master - editor configs	4 min 58 sec - #2476	N/A	3 min 0 sec
1 elastic / elasticsearch # 7.x - unix compatibility => debian-9& &immutable #345		elastic / elasticsearch # master - encryption at rest	5 hr 19 min - #208	2 days 17 hr - #203	1 hr 7 min
elasticsearch-ci-immutable-docs-1572003592957050084 (offline)		elastic / elasticsearch # master - g1gc	2 hr 2 min - #430	2 days 18 hr - #422	1 hr 0 min
1 elastic / elasticsearch # PR - docs pull request #7916		elastic / elasticsearch # master - intake	1 hr 3 min - #1098	3 hr 12 min - #1094	43 min
elasticsearch-ci-immutable-fedora-29-157200637758442052 (offline)		elastic / elasticsearch # master - macrobenchmark - periodic - group - 1	15 hr - #171	7 days 15 hr - #164	13 hr
1 elastic / elasticsearch # 7.x - unix compatibility => fedora-29& &immutable #345		elastic / elasticsearch # master - macrobenchmark - periodic - group - 2	15 hr - #190	7 days 15 hr - #183	14 hr
elasticsearch-ci-immutable-fedora-29-1572002126358559047 (offline)		elastic / elasticsearch # master - matrix.java.periodic	3 days 19 hr - #279	7 hr 44 min - #286	1 hr 9 min
1 elastic / elasticsearch # master - intake part 2 #1990		elastic / elasticsearch # master - microbenchmark - periodic	10 hr - #143	N/A	1 hr 31 min
elasticsearch-ci-immutable-fedora-29-1572002171758036900 (offline)		elastic / elasticsearch # master - oss-distro (docs)	5 hr 38 min - #428	2 days 13 hr - #421	11 min
1 elastic / elasticsearch # pull-request - default distro tests #9412		elastic / elasticsearch # master - packaging tests	11 hr - #489	2 days 11 hr - #487	7 hr 4 min
elasticsearch-ci-immutable-fedora-29-1572003427657004674 (offline)		elastic / elasticsearch # master - periodic	16 hr - #711	2 days 17 hr - #709	1 hr 0 min
1 elastic / elasticsearch # master - request-1 #9654		elastic / elasticsearch # master - release tests	11 hr - #495	3 hr 33 min - #496	1 hr 6 min
elasticsearch-ci-immutable-light-1571988611255741290 (offline)		elastic / elasticsearch # master - third party tests	2 hr 57 min - #162	28 days - #125	8 min 0 sec
1 elastic / elasticsearch # 7.4 platform support matrix #112		elastic / elasticsearch # master packaging matrix	3 hr 25 min - #72	2 days 19 hr - #64	40 min
elasticsearch-ci-immutable-light-157199383222006535 (offline)		elastic / elasticsearch # master platform support matrix	2 mo 10 days - #90	5 hr 59 min - #230	12 hr
1 elastic / elasticsearch # 7.5 platform support matrix #18		elastic / elasticsearch # pull-request - default distro tests	30 min - #9411	36 min - #9410	18 min
elasticsearch-ci-immutable-light-1572000782887883767 (offline)		elastic / elasticsearch # pull-request - docs check	5 hr 17 min - #3443	16 hr - #3441	9 min 5 sec
1 elastic / elasticsearch # 7.x platform support matrix #229		elastic / elasticsearch # pull-request - hwc	20 days - #7	N/A	1 min 29 sec
		elastic / elasticsearch # pull-request - oss-distro docs	21 min - #11086	38 min - #11084	9 min 44 sec
		elastic / elasticsearch # pull-request - packaging tests matrix	19 hr - #50	1 hr 5 min - #51	39 min
		elastic / elasticsearch # pull-request - packaging tests sample matrix	47 min - #1383	38 min - #1385	34 min
		elastic / elasticsearch # pull-request - precommit	3 mo 17 days - #19	4 mo 13 days - #4	8 min 13 sec
		elastic / elasticsearch # pull-request-1	32 min - #9651	24 min - #9652	29 min
		elastic / elasticsearch # pull-request-2	46 min - #9690	37 min - #9692	27 min
		elastic / elasticsearch # pull-request-bwc	33 min - #9493	37 min - #9492	15 min

Icon: S M L

 **People**

 **Build History**

 **Project Relationship**

 **Check File Fingerprint**

 **Open Blue Ocean**

Filtered Build Queue

No builds in the queue.

Build Executor Status

master

1 Idle

2 Idle

3 Idle

4 Idle

5 Idle

6 Idle

7 Idle

8 Idle

9 Idle

10 Idle

11 Idle

12 Idle

13 Idle

14 Idle

15 Idle

[elastic / elasticsearch # 7.4 - windows compatibility](#)

#112

[elastic / elasticsearch # 7.5 - windows compatibility](#)

#18

[elastic / elasticsearch # 7.x - unix compatibility](#)

#345

[elastic / elasticsearch # 7.x - windows compatibility](#)

#213

[elastic / elasticsearch # pull](#)

All	Docs	Elasticsearch	Elasticsearch 6.8	Elasticsearch 7.4	Elasticsearch 7.5	Elasticsearch 7.x	Elasticsearch Hadoop	Elasticsearch master	Lucene	Machine Learning	Main
S	W	Name ↓	Last Success	Last Failure	Last Duration						
		elastic / elasticsearch # master - backwards compatibility matrix	1 hr 58 min - #242	1 day 17 hr - #237	13 min						
		elastic / elasticsearch # master - branch consistency	4 hr 34 min - #144	12 days - #132	3 min 14 sec						
		elastic / elasticsearch # master - default distribution backwards compatibility matrix	3 hr 2 min - #237	2 days 11 hr - #230	17 min						
		elastic / elasticsearch # master - default-distro	3 hr 36 min - #429	9 days 19 hr - #400	17 min						
		elastic / elasticsearch # master - editor configs	13 min - #2476	N/A	3 min 0 sec						
		elastic / elasticsearch # master - encryption at rest	5 hr 27 min - #208	2 days 17 hr - #203	1 hr 7 min						
		elastic / elasticsearch # master - g1gc	2 hr 10 min - #430	2 days 18 hr - #422	1 hr 0 min						
		elastic / elasticsearch # master - intake	1 hr 11 min - #1098	3 hr 21 min - #1094	43 min						
		elastic / elasticsearch # master - macrobenchmark - periodic - group - 1	15 hr - #171	7 days 15 hr - #164	13 hr						
		elastic / elasticsearch # master - macrobenchmark - periodic - group - 2	15 hr - #190	7 days 15 hr - #183	14 hr						
		elastic / elasticsearch # master - matrix java periodic	3 days 19 hr - #279	7 hr 53 min - #286	1 hr 9 min						
		elastic / elasticsearch # master - microbenchmark - periodic	10 hr - #143	N/A	1 hr 31 min						
		elastic / elasticsearch # master - oss-distro (docs)	5 hr 46 min - #428	2 days 13 hr - #421	11 min						
		elastic / elasticsearch # master - packaging tests	11 hr - #489	2 days 11 hr - #487	7 hr 4 min						
		elastic / elasticsearch # master - periodic	17 hr - #711	2 days 17 hr - #709	1 hr 0 min						
		elastic / elasticsearch # master - release tests	11 hr - #495	3 hr 41 min - #496	1 hr 6 min						
		elastic / elasticsearch # master - third party tests	3 hr 5 min - #162	28 days - #125	8 min 0 sec						
		elastic / elasticsearch # master packaging matrix	3 hr 33 min - #72	2 days 19 hr - #64	40 min						
		elastic / elasticsearch # master platform support matrix	2 mo 10 days - #90	6 hr 8 min - #230	12 hr						

Icon: [S](#) [M](#) [L](#)

[Legend](#)  [Atom feed for all](#)  [Atom feed for failures](#)  [Atom feed for just latest builds](#)

- Back to Project
- Status
- Changes
- Console Output
- View Build Information
- Parameters
- Environment Variables
- Git Build Data
- Test Result**
- Open Blue Ocean
- Embeddable Build Status
- Previous Build

Test Result

4 failures , 9,081 skipped

337,382 tests				
Configuration Name	Duration	All	Failed	Skipped
ES_BUILD_JAVA=openjdk12_ES_RUNTIME_JAVA=java11.nodes=general-purpose	8 hr 13 min	41318	0	1243
ES_BUILD_JAVA=openjdk12_ES_RUNTIME_JAVA=java12.nodes=general-purpose	7 hr 23 min	40339	1	1076
ES_BUILD_JAVA=openjdk12_ES_RUNTIME_JAVA=openjdk12.nodes=general-purpose	8 hr 10 min	41318	0	1242
ES_BUILD_JAVA=openjdk12_ES_RUNTIME_JAVA=openjdk13.nodes=general-purpose	9 hr 16 min	41318	0	1240
ES_BUILD_JAVA=openjdk12_ES_RUNTIME_JAVA=openjdk14.nodes=general-purpose	4 hr 27 min	28726	1	454
ES_BUILD_JAVA=openjdk12_ES_RUNTIME_JAVA=zulu11.nodes=general-purpose	9 hr 7 min	41318	0	1243
ES_BUILD_JAVA=openjdk12_ES_RUNTIME_JAVA=zulu12.nodes=general-purpose	2 hr 48 min	21289	1	240
ES_BUILD_JAVA=openjdk12_ES_RUNTIME_JAVA=corretto11.nodes=general-purpose	7 hr 42 min	41318	0	1244
ES_BUILD_JAVA=openjdk12_ES_RUNTIME_JAVA=adoptopenjdk11.nodes=general-purpose	7 hr 34 min	40438	1	1099



Project elastic / elasticsearch # master - Unix packaging tests matrix

Project name: elastic+elasticsearch+master+multijob+packaging-tests-unix-next
Packaging tests for the Elasticsearch master branch.

Configurations

-  centos-6-packaging
-  centos-7-packaging
-  debian-8-packaging
-  debian-9-packaging
-  debian-10-packaging
-  fedora-29-packaging
-  opensuse-15-1-packaging
-  oraclelinux-6-packaging
-  oraclelinux-7-packaging
-  sles-12-packaging
-  sles-15-packaging
-  ubuntu-16.04-packaging
-  ubuntu-18.04-packaging



[Latest Test Result](#) (no failures)



CI stats

- 🌿 All active branches are tested
- 🌿 Every pull request commit gets tested
- 🌿 several thousand builds per day



Nightly benchmarks



Elasticsearch

We run benchmarks oriented on spotting performance regressions in metrics such as indexing throughput or garbage collection times.

Geonames

Indexing 11 million location documents and running various full text queries (match, function_score, ...) and aggregations.

Geopoint

Indexing 60 million location documents and running various geo-based queries (polygon, bounding box, distance, ...).

Percolator

Indexing 2 million AOL queries and running percolator queries against them.

PMC

Full text oriented benchmark measuring indexing performance and running queries and aggregations on a corpus of scientific papers.

NYC taxis

2015 taxi rides in New York measuring the performance for a large highly-structured data set.

Nested

Questions and answers from Stackoverflow measuring the performance for a nested data set.

HTTP logs

Web server logs from the 1998 football world cup to evaluate the performance for server logs.

NOAA

Weather data from NOAA measuring the performance of range fields.

Nightly benchmarks

Elasticsearch Benchmarks

Geonames

Geopoint

Percolator

PMC

NYC taxi

Nested

HTTP Logs

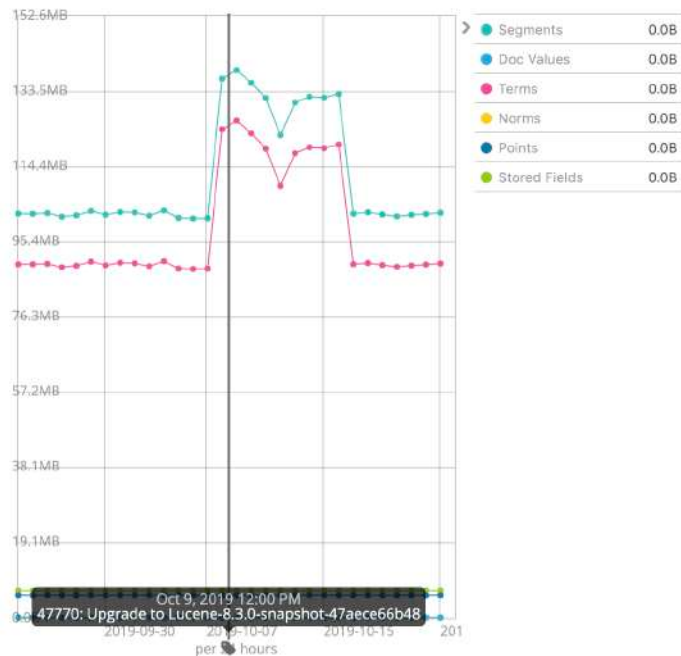
noaa



nightly-basic-http_logs-4g-default-latency

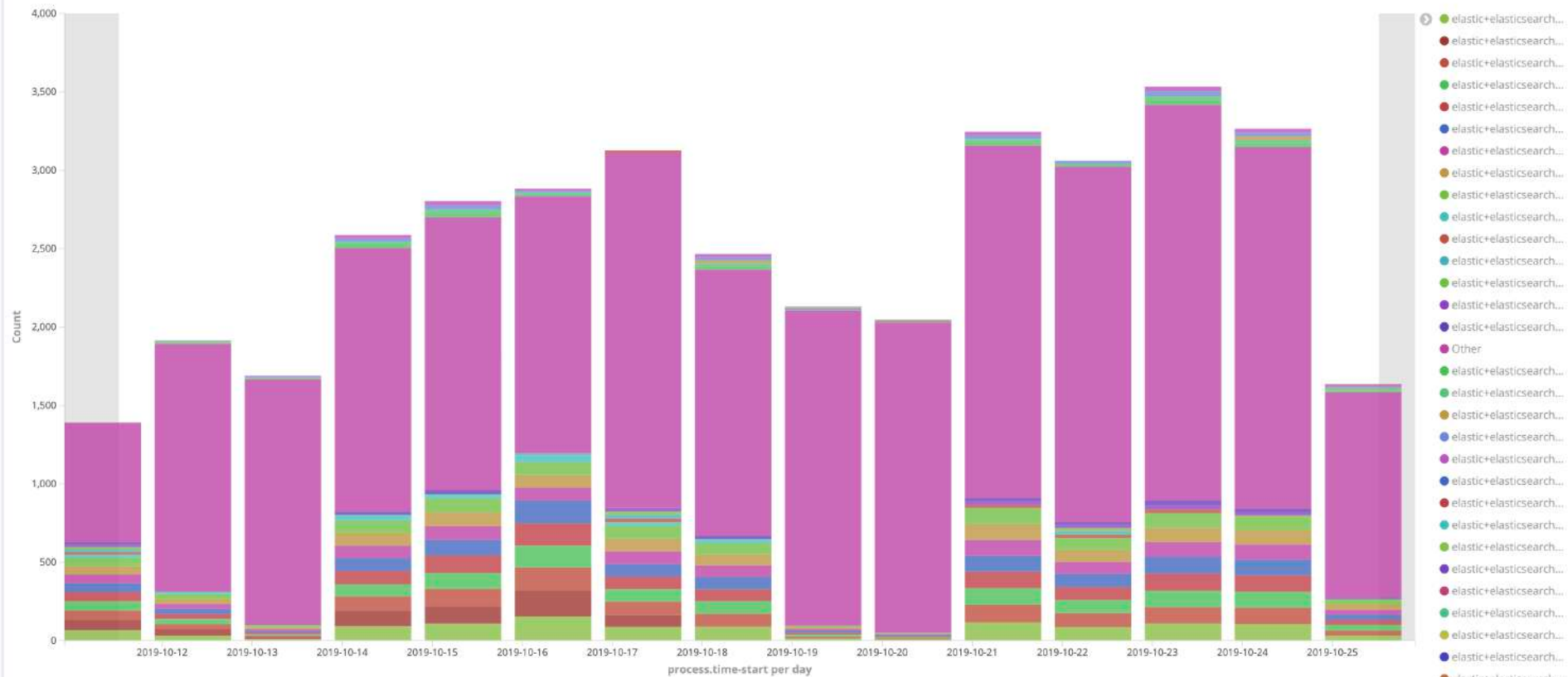


nightly-basic-http_logs-4g-segment-memory



CI stats

Alpar - Elasticsearch number of builds per day



Links

 <https://elasticsearch-ci.elastic.co>

 <https://kibana-ci.elastic.co>

 <https://logstash-ci.elastic.co>

 <https://beats-ci.elastic.co>

 <https://benchmarks.elastic.co/>

 <https://github.com/elastic/rally>



Release it!

Shipping products is



Embrace the difference

- ☁ Every product in the stack will test differently
- ☁ Java, JRuby, Ruby, Go, Javascript, TypeScript, Scala, .NET, perl, PHP, python, bash, Groovy, C++, Haskell, Clojure
- ☁ JSON, YAML, terraform, hcl

Everyone be ready!

- 🌿 Releases are time based
- 🌿 Every product's branch should be ready
- 🌿 Build of release candidate artifacts
- 🌿 Testing of these artifacts
- 🌿 Repeat until done across products: Fix all blockers
- 🌿 Releasing of those artifacts

Release manager

- 🌿 A person responsible for the release
- 🌿 Triggers the build of all artifacts
- 🌿 Performs follow up tasks for each team after a release

Trust the process!

- 🍄 Staged artifacts are the final release artifacts, no rebuilds!
- 🍄 Push artifacts to their final destinations
- 🍄 Official links, OSS sonatype, rubygems, docker images, package repositories

Trust the process!

- ☁ +200 artifacts are promoted to release bucket
- ☁ Using Tekton Pipelines instead of single process started on release manager machine
- ☁ promoting artifacts: 4x faster
- ☁ 3rd party promotion: 6x faster
- ☁ > 40 pods are doing a single release

More Work begins after releasing

🌿 website

🌿 communication

🌿 release blog posts

🌿 ensuring everything has been published



Support it!

Don't forget to phase out...



Products have a lifecycle

- 🍄 Stop supporting old products
- 🍄 Be consistent with support guarantees
- 🍄 Provide maintenance policy
- 🍄 Distinguish between end of life & fixing bugs



Elastic product end of life dates

We love all our products, but sometimes we must say goodbye to a release so that we can continue moving forward on future development and innovation. Our End of Life policy defines how long a given release is considered supported, as well as how long a release is considered still in active development or maintenance. We provide more information about **support policy**, **platform support**, and **support SLAs** separately.

Summary

The upshot is that we support each major release of our products for 18 months from the General Availability date, and we actively maintain the last minor release of the two most recent major branches of Elasticsearch, and compatible releases of Kibana, Beats, and Logstash. The rest of this document describes this philosophy in more details and provides concrete examples. Tables at the bottom of this page detail maintenance schedule for each of our supported products.

Types of releases

Major versions, such as 1.0.0, 2.0.0, 5.0.0, 6.0.0, and 7.0.0, provide us with an opportunity to introduce features and break backwards compatibility. Minor versions, such as 7.1.0 and 7.2.0, provide us with an opportunity to introduce features. Maintenance releases, such as 7.1.1 and 7.1.2, fix bugs only. Maintenance activity occurs on all releases, but we focus on the minor release stream (e.g., 7.1.x) to define how long we maintain a particular code line. Active maintenance of a minor release implies that we are fixing bugs and backporting some number of fixes into that code branch.

Maintenance policy

Our goal is to maintain the most recent minor release from the current major release stream and the most recent minor release from the prior major release stream. We have observed that some users upgrade frequently and stay up to date with our release stream. These users can stay with the latest minor release stream and obtain fixes with the maintenance releases they choose to deploy. For example, these users would follow our Elasticsearch releases with 7.0.0, 7.0.1, 7.2.0, etc.

We know that not all users upgrade as quickly as we release. For these users, we maintain the last minor of the prior major release series. For example, with Elasticsearch 6.x, we are maintaining the 6.8.x series. This allows these users to obtain fixes while making only minor changes to their running software. This last minor will be maintained until the release of the second subsequent major version. For example, Elasticsearch 6.8.x will be maintained until the GA release of Elasticsearch 8.0.0. At the release of Elasticsearch 8.0.0, we will continue to maintain the last 7.x series, and begin maintaining the 8.0.x minor series, then 8.1.x series, then 8.2.x series of minor releases.

From time to time we may backport fixes to other minor release streams. For example, a very serious security bug might be ported to multiple branches. We will use our discretion in deciding to do this, but expect it to be very infrequent.

Maintenance tables

5.3.x	2018-09-10	5.4.0
5.4.x	2018-11-04	5.5.0
5.5.x	2019-01-06	5.6.0
5.6.x	2019-03-11	7.0.0
6.0.x	2019-05-14	6.1.0
6.1.x	2019-06-13	6.2.0
6.2.x	2019-08-06	6.3.0
6.3.x	2019-12-13	6.4.0
6.4.x	2020-02-23	6.5.0
6.5.x	2020-05-14	6.6.0
6.6.x	2020-07-29	6.7.0
6.7.x	2020-09-26	6.8.0
6.8.x	2020-11-20	8.0.0
7.0.x	2020-10-10	7.1.0
7.1.x	2020-11-20	7.2.0
7.2.x	2020-12-25	7.3.0
7.3.x	2021-01-31	7.4.0
7.4.x	2021-04-01	7.5.0

Logstash forwarder

Logstash forwarder	EOL date	Maintained until
0.4.0	2016-11-07	Beats 1.0.0

Summary

Automate all the things!



Summary

- 🌿 Automate early, automate often
- 🌿 Automate your tests, all of them
- 🌿 Manual testing will still find bugs
- 🌿 Automate your releases
- 🌿 Ensure everyone can do a release
- 🌿 Non-technical aspects are much harder to automate

Thanks for listening!

Questions?

Alexander Reelsen
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alex@elastic.co



Warsaw

5 DECEMBER 2019

REGISTER

SEE AGENDA

Only 75 tickets available at the discounted early bird rate.



Thanks for listening!

Questions?

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