

**Goals:**

- Maintain consistent ASF CI post 2023 fixes
- Align entire project community on single CI codebase (see [CASSANDRA-18137](#))
- Facilitate contributors running CI on private hardware / private cloud if desired

**For a CI run to qualify a patch, it must adhere to:**

- Hardware constraints: (CPU count, max RAM, free disk) [per suite](#)
- Software execution env: ant, [build scripts](#), env ([pytest](#), [CCM params](#), utest params, etc)
- Multiplexing (400 runs? TBD) newly added or changed tests
- Reporting format:
  - Either the Jenkins output from the full reference scripts, or:
  - A Summary page showing:
    - i. For each test suite
      - 1. Hardware constraints for containers (CPU count and arch, OS, kernel version, mem, disk)
      - 2. Count of tests passed
      - 3. Count of tests failed
      - 4. Count of any tests run repeatedly due to change or addition
      - 5. Total runtime
    - ii. For each test in each suite
      - 1. Test name
      - 2. Start time
      - 3. End time
      - 4. Total runtime
      - 5. Pass/fail

**Acceptable approaches from least to most work / maintenance:**

1. Use the in-tree build scripts being added to `./build` as of [CASSANDRA-18133](#)
  - a. Docker images w/env
  - b. Transient Jenkins server generating results
2. Use the docker images provided but custom orchestration
  - a. Requires building bespoke [result reporting](#)
3. Use the build scripts (contents of `./build` w/out `./build/docker`)
  - a. Requires building bespoke env inheriting scripts
  - b. Requires building bespoke [result reporting](#)

**Related reading:**

- [CASSANDRA-18137: Repeatable cassandra-a.o](#)
- [CASSANDRA-18133: in-tree build scripts](#)
- [CASSANDRA-18130: Log hardware and container params during test runs to help troubleshoot intermittent failures](#)

## Implementation Details

### Meta Constraints (all to be revised as we learn):

- Specific list of **builds** (to be enumerated) work on all supported JDK's
- Test suites **run** and are all green on the latest supported JDK
  - Note: We do this because the JDK team keeps locking down access to internals that we've relied on for years, so we see new and unique RuntimeException's on new JDK's we wouldn't find on older
- **Checkstyle** / **linting** on same version of JDK as upstream (likely lowest supported)
- NUM\_TOKENS: the default cassandra.yaml config value (currently 16)
- Logical CPU: 4 for all test suites (docker containers, etc)
- Drive space: 100GB free space for each docker container split run
- No single test should take > 5GB of disk space

### Required test suites and their resource constraints (as of 6/30/23):

- **NOTE:** Currently authoritatively defined in [.build/docker/run-tests.sh](#)
- **NOTE:** Resource Constraints are <= values; ASF CI has the following configured for different test suites, so if you run them in some other environment you need to put in a good-faith effort to confirm that the tests you've authored complete within the timeout given the CPU and Memory available in the ASF CI env. The goal is for tests passing locally to be a very strong signal that we expect them to likewise pass in the ASF env, barring subtle env differences, JDK differences, or test scheduling surprises
- **NOTE:** The following requirements reflect trunk as of 6/2023 in build.xml:

```
<property name="test.timeout" value="480000" />
<property name="test.memory.timeout" value="480000" />
<property name="test.long.timeout" value="600000" />
<property name="test.burn.timeout" value="60000000" />
<property name="test.distributed.timeout" value="900000" />
<property name="test.simulation.timeout" value="1800000" />
```

- in-jvm unit tests:
  - Memory: 16G
  - Timeout: 8 minutes
- fqltool-test
  - [fqltool](#)-build-test
  - Memory: 1G
  - Timeout: 1min
- stress-test
  - Memory: 1G
  - Timeout: 1min
- python dtests (standard + upgrade):
  - Memory: 16G
  - CCM Heap: 1024M
  - CCM Heap newsize: 512M
  - Timeout: 10 minutes (dtest.py::Tester.assert\_log\_had\_msg flaky rerun timer)
- python cqlsh tests:

- Memory: 8G
  - CCM Heap: 1024M
  - CCM Heap newsize: 512M
  - Timeout: 10 minutes
- Test-jvm-dtest:
  - Memory: 16G
  - Timeout: 15 minutes
- Test-jvm-upgrade-dtest:
  - Memory: 6G
  - Timeout: 15 minutes
- long tests:
  - Memory: 6G
  - Timeout: 10 minutes