|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Node 8** | **Node 10** | **Node 12** | **Node 14** |
| terra-toolkit (uses WDIO V4) | Supported | Supported | Not Supported | Not Supported |
| terra-functional-testing V1 (uses WDIO V6) | Not Supported | Supported | Supported | Supported |
| terra-functional-testing V2 (uses WDIO V7) | Not Supported | Not Supported | Supported | Supported |

* Terra-functional-testing (WDIO)
* Capabilities
  + The [test:wdio](https://github.cerner.com/Igneous/app-management-js/blob/0.10.0/package.json#L138) script is for running WDIO test locally.
  + The [test:wdio:local](https://github.cerner.com/Igneous/app-management-js/blob/0.10.0/package.json#L139) script is for running WDIO test against the remote selenium grid (grid314.test.devcernerpowerchart.com).
  + Tests can run against different browsers (excluding FF for now), themes, locales, form factors.
  + Commands
    - [Terra.validates.accessibility()](https://engineering.cerner.com/terra-ui/dev_tools/cerner-terra-toolkit-docs/terra-functional-testing/about#terravalidatesaccessibility)– performs accessibility only
    - [Terra.validates.screenshot()](https://engineering.cerner.com/terra-ui/dev_tools/cerner-terra-toolkit-docs/terra-functional-testing/about#terravalidatesscreenshot) – performs screenshots only
    - [Terra.validates.element()](https://engineering.cerner.com/terra-ui/dev_tools/cerner-terra-toolkit-docs/terra-functional-testing/about#terravalidateselement) – performs both accessibility and screenshots
      * A11y rules, selector, mismatchTolerance
    - [Terra.hideInputCaret()](https://engineering.cerner.com/terra-ui/dev_tools/cerner-terra-toolkit-docs/terra-functional-testing/about#terrahideinputcaret) – Can be used to hide blinking caret to avoid flaky tests.
* Things to look out for:
  + Screenshot name must be unique per test file to avoid screenshot file name collision.
  + Dependency updates may cause screenshot mismatches because those new dependency versions may have visual changes. Inspect the screenshot differences. If mismatch is expected, it is safe to update the reference screenshot(s) with the latest.
  + Avoid direct query of internal DOM elements if possible. It is possible that the markup of those elements can be changed without advance notice and could break the test.
  + Should use [waitForDisplayed()](https://webdriver.io/docs/api/element/waitForDisplayed) to ensure view is presented and ready before capturing screenshots.
  + Screenshot folder structures:
    - **reference** – the reference screenshots used to compare with the screenshots generated from the current test run.
    - **latest** – screenshots generated from the current test run. Used to compare with the reference screenshots.
    - **diff** – screenshots in here shows mismatches found between the latest and reference screenshots.
    - **error** – whenever an error occurs during the test execution, an error screenshot of the test page is generated at the time when the error occurs. This can be helpful for troubleshooting.
* Future Enhancement
  + [Nexus screenshots storage](https://pages.github.cerner.com/orion/docs/doc/docs/nexus-wdio-screenshots-mirgation/about) (not yet released).
* Resources
  + <https://engineering.cerner.com/terra-ui/dev_tools/cerner-terra-toolkit-docs/terra-functional-testing/about>
  + <https://engineering.cerner.com/terra-ui/dev_tools/cerner-terra-toolkit-docs/terra-functional-testing/wdio-services/terra-service>
  + <https://engineering.cerner.com/terra-ui/dev_tools/cerner-terra-toolkit-docs/terra-functional-testing/upgrade-guides/version-1-upgrade-guide>