|  | **Selenium IDE** | **Selenium RC** | **WebDriver** |
| --- | --- | --- | --- |
| **BrowserSupport** | Mozilla Firefox | Mozilla FirefoxInternet ExplorerGoogle ChromeSafari OperaKonqueror Others | Internet Explorer versions 6 to 9, both 32 and 64-bit   Firefox 3.0, 3.5, 3.6, 4.0, 5.0, 6, 7 and above  (current version is 16.0.1)   Google Chrome 12.0.712.0 and above  (current version is 22.0.1229.94 m)   Opera 11.5 and above  (current version is 12.02)   Android - 2.3 and above for phones and tablets  (devices & emulators)   iOS 3+ for phones (devices & emulators) and 3.2+ for tablets (devices & emulators)   HtmlUnit 2.9 and above  (current version is 2.10) |
| **Operating System** | Windows Mac OS X Linux | Windows Mac OS XLinux Solaris | All operating systems where the browsers above can run. |

**A Comparison between Selenium and QTP**

**Quick Test Professional(QTP)**is a proprietary automated testing tool previously owned by the company **Mercury Interactive** before it was **acquired by Hewlett-Packard in 2006**. The Selenium Tool Suite has many advantages over  QTP (as of version 11) as detailed below -

Advantages of Selenium over QTP

|  |  |
| --- | --- |
| **Selenium** | **QTP** |
| **Open source**, **free to use**, and **free of charge.** | **Commercial**. |
| **Highly extensible** | Limited add-ons |
| Can run tests across **different browsers** | Can only run tests in **Firefox** , **Internet Explorer** and **Chrome** |
| Supports **various operating systems** | Can only be used in **Windows** |
| Supports **mobile devices** | Supports mobile device using 3rd party software |
| Can execute tests **while**the **browser is minimized** | Needs to have the application under test to be visible on the desktop |
| Can execute tests **in parallel**. | Can only execute in parallel but using Quality Center which is again a paid product. |

Advantages of QTP over Selenium

|  |  |
| --- | --- |
| **QTP** | **Selenium** |
| Can test **both web and desktop applications** | Can only test web applications |
| Comes with a **built-in object repository** | Has no built-in object repository |
| **Automates faster than Selenium** because it is a fully featured IDE. | Automates at a slower rate because it does not have a native IDE and only third party IDE can be used for development |
| Data-driven testing is easier to perform because **it has built-in global and local data tables**. | Data-driven testing is more cumbersome since you have to rely on the programming language's capabilities for setting values for your test data |
| **Can access controls within the browser**(such as the Favorites bar, Address bar, Back and Forward buttons, etc.) | Cannot access elements outside of the web application under test |
| Provides professional **customer support** | No official user support is being offered. |
| Has native capability to **export test data**into external formats | Has no native capability to export runtime data onto external formats |
| Parameterization Support is in built | Parameterization can be done via programming but is difficult to implement. |
| Test Reports are generated automatically | No native support to generate test /bug reports. |

Though clearly, QTP has more advanced capabilities, Selenium outweighs QTP in three main areas:

* **Cost**(because Selenium is completely free)
* **Flexibility**(because of a number of programming languages, browsers, and platforms it can support)
* **Parallel testing**(something that QTP is capable of but only with use of Quality Center)

**Summary:--**

* The entire Selenium Tool Suite is comprised of four components:
* **Selenium IDE**, a Firefox add-on that you can only use in creating relatively simple test cases and test suites.
* **Selenium Remote Control**, also known as **Selenium 1**, which is the first Selenium tool that allowed users to use programming languages in creating complex tests.
* **WebDriver**, the newer breakthrough that allows your test scripts to communicate directly to the browser, thereby controlling it from the OS level.
* **Selenium Grid**is also a tool that is used with Selenium RC to execute parallel tests across different browsers and operating systems.
* Selenium RC and WebDriver was merged to form **Selenium 2**.
* Selenium is more advantageous than QTP in terms of **costs and flexibility**. It also allows you to **run tests in parallel**, unlike in QTP where you are only allowed to run tests sequentially.

**HP UFT Versus QTP**  
  
**What is HP UFT 11.5?**

HP Unified Functional Testing 11.5 – It is combination of QTP (Quick Test Professional) and Service Test (ST) Tools. Using this tool we can automate GUI, API and Mobile applications functionality.

**HP UFT 11.5 New Features:-**

•    Updated IDE, it supports to work on multiple tests at the same time

•    HP Unified Functional Testing IDE supports for editing more than one action at the same time

•    New Recording Mode Insight Recording for GUI test, It enables us to record on any control (object) displayed on our screen, whether or not UFT recognizes the object’s technology and is able to retrieve its properties or activate its methods.

•    New Checkpoint (File Content Checkpoint) added in UFT 11.5, It is for checking File content.

•    New Output value (File Content Output value) Added in UFT 11.5 for capturing file content.

•    New GUI Testing Support for Qt and Adobe Flex Applications

**UFT User Interface:**

In UFT IDE 12 Menus are there but in QTP 11.00, 10 menus only

Removed menus are:

Insert, Automation, Debug Menus

Added Menus are:

Search, Design, Record, Run, ALM

**Advantages of UFT over QTP**

•    QTP only for Functional and Regression Testing of GUI( Windows based and Web) Applications.

•    UFT is Combination of QTP and Service Tools, It supports GUI and API Testing.

•    UFT has brand New IDE as per latest trends in IT Industry

•    Image / Control based Test Recording

•    Extended Support for Mobile Testing, write agnostic scripts, which once written can be used on multiple devices and test our scripts on simulators as well as real devices.