Compatibility Testing

What is Software Compatibility

Software compatibility can refer to the capacity of two systems to work together without making any changes to support each other. Software Compatibility is the interoperability between any two software applications.

Example: We can open files created from WordPad using a Notepad too. So, the file is compatible.

What is Software Compatibility Testing?

In a compatibility test, we check whether the application, website or system under test is compatible with different environments like web browsers, hardware platforms, databases, operating systems, networks, mobile devices, different versions, configurations, screen resolutions etc.

Compatibility testing helps us develop software applications with the ability to work seamlessly across various platforms and hardware without any issues. We can understand the behavior of the application in different environments and uncover hidden bugs in other interfaces.

Some examples of applications that we can access through both mobile and PC with native applications and websites are Amazon, Flipkart, Myntra, Facebook, YouTube, LinkedIn etc.

Compatibility Testing Process

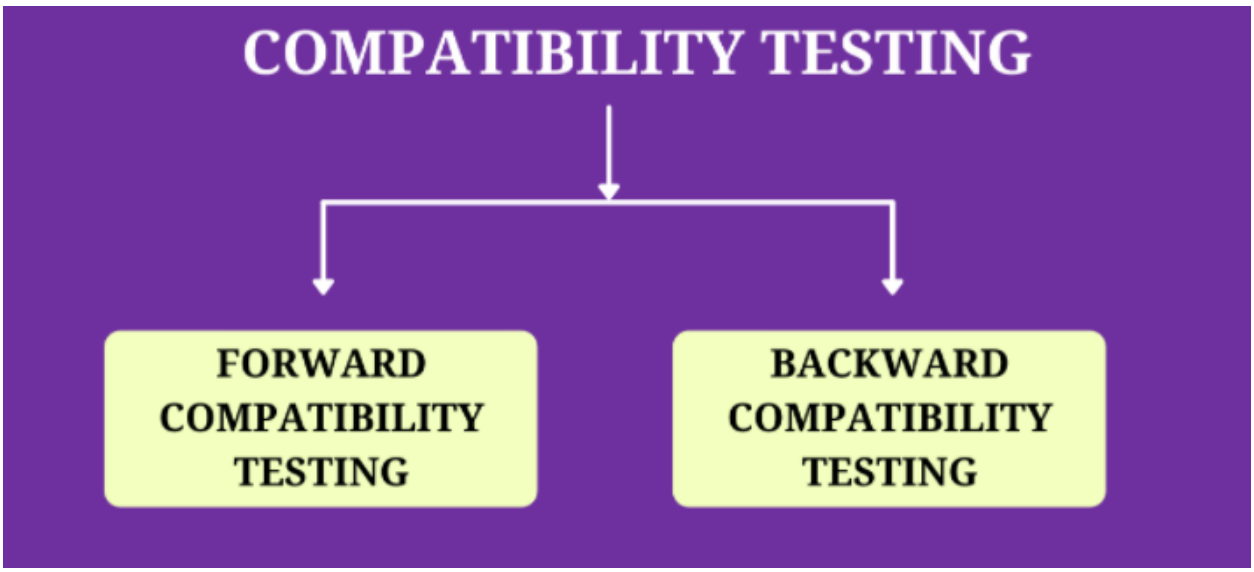
We have to follow the below steps initially before starting the compatibility test:

- Determine which platforms we are going to use for executing the test.
- Design a device compatibility matrix.
- Make a clear illustration of how the application behaves in various environments.

- Now we can initiate the test environment and begin our compatibility testing across different platforms, networks and devices.
- Note down the behavior of the software, report issues and get them fixed.
- Repeat the entire process until the quality of the software is satisfactory.

Types of Software Compatibility Testing

In software compatibility tests we test different dimensions of the software products, trying different permutations and combinations would help us understand the behavior of the software.



#1. Hardware Compatibility Testing

Here we test the software product on various hardware configurations to verify its compatibility and make sure that it works on them in the desired manner.

#2. Operating System Compatibility Testing

Here we test the software by running it in different operating systems like Windows, Mac, Linux, etc. thoroughly.

#3. Software Compatibility Testing

Here we check the compatibility of our application with other software.

Example: If a photo editing software has the feature to download the picture after editing, users should be able to open and view the image from the gallery of their device.

#4. Network Compatibility Testing

Here we check the performance of the software in various types of the network like Wi-Fi, 3G, 4G, 5G etch for various parameters like speed, bandwidth etc.

#5. Browser Compatibility Testing

Here we verify the application for cross-browser compatibility. We check the responsiveness of the website in different screen resolutions. We test the application in various browsers such as Chrome, Firefox, Edge, Internet Explorer etc.

#6. Device Compatibility Testing

Here we check the compatibility of the application with different types of devices like USB, Bluetooth, SD Card, printer, and others.

#7. Mobile Compatibility Testing

Here we test the compatibility of the software in different mobile devices with different operating systems such as Android, iOS, windows etc.

#8. Version Compatibility Testing

Software versions get updated often; your application needs to be compatible with the updated software version.

#9. Real-life Experience

I used to work on a project where the application was primarily used in iPhone and iPad devices. So whenever there is a software upgrade in iOS, my entire team would start upgrading the OS and plan for regression testing for the live version of the application. I tested our application in the Night mode feature.

Backward Compatibility Testing

In this type of compatibility testing, we test our application to check whether it is compatible with older versions and platforms.

Here we check whether the new version of the software is compatible with the older version of the software.

Tester knows all the previous versions and configurations, so it is more predictable and easier to execute.

Example: Let's take an example of a Gaming. User has purchased a PS4 gaming console a few years ago. He purchased a game that was released last week. This new game should be compatible with the old device, i.e testers in the gaming team would have verified backward compatibility for PS4 devices.

Forward Compatibility Testing

Here we test the application to verify whether it is compatible with new and upcoming versions of hardware and software.

Forward Compatibility Testing is a bit hard to predict, as we are not aware of the new changes in the new version.

Example: Let's say we have already created an application that runs smoothly. Suddenly Apple has launched a new update in their iPhones. Now we have to test our application in that new updated version of the iPhone to check if there are any new issues because of the update.

Common Compatibility Testing Defects

When we test the software application on various platforms and devices, we will find a lot of bugs. Here is a list of commonly found bugs while performing compatibility testing.

- User interface issue, look and feel of the application.
- Font size issue.
- Alignment issue

- CSS style and color issue
- Broken or incomplete table
- Scroll bar-related issue
- Overlap in content and label
- Layout/Frame issue

Tools for Compatibility Testing

We can perform Compatibility Testing both through manual execution and automation. Here is a list of popular compatibility testing tools available in the market

- Cross-browser testing
- Ghost lab
- Browserstack
- Lambda test
- Ranorex

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Muntasir Abdullah Mizan
muntasir.abdullah01@gmail.com