Is your Application ready for Windows 10?

A QA perspective to ensure a flawless user experience
Windows: opening doors

Perhaps the single-most influential collaboration in computer software history, this GUI-based OS was introduced in 1985 and has been released in numerous versions ever since. The Windows OS has always had competition, some of which has been free, and some of which has had an edge in style. However, no other operating system is as well known to so many computer users all over the world or so consistently dominant in market share as Windows. Microsoft has maintained this position with a steady roll-out of new versions over the years. With the launch of Windows 10, Microsoft plans to fortify this position by taking advantage of the advances in the hardware world.

Microsoft is likely to create a significant impact in the enterprise segment for the following reasons:

- Convergence of form factors
- The launch of the Edge browser
- A single unified App store
The launch of Windows 10 is expected to have a highly positive impact on the PC market with a quick adoption rate. As Windows 10 is also moving into mobile, the adoption rate is projected to be higher than the average.

Windows 10's users share of all windows PC’s has raised 43% since December

64% of all Windows 10 Technical preview installations are on actual PCs

The Windows installed base is about 91% of the overall user population. Windows 10 is compatible with Win 7 and above, hence would see a 75% of users adoption rate.

The Convergence Journey

Microsoft’s succeeds in its vision of converging everything into one platform through Windows 10. With the “Universal App” approach, this would reshape the future of end-user computing. Windows 10 has fundamentally altered the Windows Core, resulting in a ubiquitous OS providing an unmatched end-user experience across every type of device used. The key improvements being:

- Delivering unique experiences across various form factors
- Maximizing developer investments and
- Driving scale through reach across a spectrum of devices

Another important introduction with this release is Microsoft Edge. This new browser supports a dual-engine approach with the modern rendering engine EdgeHTML and Trident (MSHTML) for older applications, with a seamless and transparent switch to the user. Some of the biggest advantages of this dual-engine approach are:

- Enables businesses to update to a modern engine for the web while running their mission critical enterprise applications designed for IE in Trident.
- Favors only essential security fixes that are made to Trident, minimizing code-churn and ensuring compatibility is preserved for enterprise sites.
Native Browser

Microsoft Edge is being launched with a prime objective of providing best-in-class experience to end-users. The browser will be featured in both PC and mobile devices. Edge is built on ‘state-of-the-art’ technology and would have a sizable impact on the future direction of the internet. Microsoft has apparently removed more than 220 thousand lines of codes and 300 interfaces, which worked under the hood of the earlier IR browsers and thereby what Edge offers is a simple and fastest browser experience which is likely to be a developer’s delight. Windows 10 will support JavaScript-based extensions, allowing third parties to customize views of Web pages and add new functionalities. Special feature such as Inking and sharing allows the user to capture and communicate with like-minded groups.

Edge works with both Google Chrome and Mozilla Firefox extensions with minimal code change.

What has changed?
- **Simplified search** with more accessibility.
- **Write on the web** – Edge lets you to take notes, write, doodle and highlight directly on the webpages (Web note).
- **Enhanced Reading Experience** with a strict ‘No’ to Advertisements and distractions; additionally, customization of preferred styles and fonts is included.

Dynamic duo: **Cortana and Microsoft Edge.** On-the-go personal assistant with Thoughts and Voice support to help you do things faster and easier.

- Microsoft Edge provides no support for VML, VB Script, Toolbars, BHOs, or ActiveX. **Now, Flash & PDF have been in built in Edge.**

Impact areas:
- Video and Images in the application might have to be checked for their compatibility in the newer version.
- Verification of security certificates.
- Scalable Vector Graphics (SVG) support would help in interactive and animations. Sites can upgrade to SVG images to avoid compatibility.
- Verification if security certificates would need to be reevaluated.
- Enterprise migration to be strategized from IE11 to Edge.
Continuum

With the users increasingly accessing applications over a hybrid platform such as laptop, tablet and mobile devices, Microsoft wants to make it easier to switch between either of the models to ensure continuous or extended work experience. Continuum, the latest feature from Microsoft would be enabling users to have a continuous experience across form factors.

What has changed?

While there were stand-alone apps and browsers that could send files to other devices, continuum brings a whole new level of multi-tasking convenience to the user. Continuum pivots on optimizing the form factor with the following significant changes:

- **An Action center** that acts as a notification panel to help users get easier access to the desired mode.
- **Optimized touch interface** to make the user experience much lighter and easier.

Impact areas:

- Sharing information across multiple form factor needs vulnerability analysis
- Application compatibility across multiple form factors needs functional validation
- The security protocols to be ensured for device-device communication.

Universal apps

With the 'Universal Apps Platform', Windows 10 is the first OS from Windows to support the convergence of various operating systems and form factors with an aim to provide a consistent user experience. At the same time, it offers a unique and highly personalized approach across the windows family (including newer ones like HoloLens, Surface Hub, and IoT devices like the Raspberry Pi 2).

UAP is built on the Windows core and is a collection of contracts and versions. This helps developers to target where the app can run, thereby making it a developer’s paradise with a unified code - be it devices or the desktops - UAP makes it seamless.

What has changed?

- **Adaptive UX**, which includes optimized screen layout and appropriate user controls based on the devices.
- **Natural user inputs**: Apps can incorporate features such as natural speech, inking, gestures, and user gaze.
- **Cloud-based services for developers.** Easier access to expanded Cortana AI, OneDrive, and Application Insights. Leveraging Azure for better and faster deployment.
- **New rendering engine** in edge browser.

Impact areas:

- Unified code base helps developers by removing the need for testing across multiple devices.
- Functional and Compatibility to be ensured across form factors

Cortana

Microsoft is bringing its digital assistant Cortana to Windows 10 and for the first time to desktops. Cortana takes the form of a search box located right beside the 'Start' button allowing a user to search the web and the local computer, with the results popping up above the search box. Cortana can be used to perform simple searches and can also be used for much richer information, like flight statuses. It can also be used to send and dictate emails, control music, launch apps and read out notifications. With Cortana, Microsoft is foraying into Artificial Intelligence (AI) that continuously learns from the user behavior.

What has changed?

Cortana will replace and complement the existing search experience currently available.

Impact areas:

- Battery life in mobile devices.
- Redefined functionalities on accessibility.
- App-integration with the voice assistant.
Getting yourself ready for Windows 10

Ensuring applications work seamlessly in the new operating system requires a combination of tests. The following three step approach will help in defining the right QA strategy to be market-ready with a flawless app.

**Contextualization:**
Define the context in which your application will fit and its intended use - information, enterprise view or user centric. This is critical in evaluating the extensiveness of testing required.

**Checklist Mapping:**
Identify OS features that impact the application. The different testing types required to validate each feature have been provided in the subsequent section titled “Test Scenario Checklist”.

**Compatibility Validation:**
User profiling will establish the right combination of devices and browser combination to execute the tests. The documented test scenarios can be validated by using simulated data conditions and crowd-sourced user testing for real-life.
## Windows 10 Edge Features

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**Resources:**
http://blogs.windows.com/bloggingwindows/2015/06/01/hello-world-windows-10-available-on-july-29/
http://blogs.windows.com/blog/tag/windows-10/
https://dev.windows.com/en-us/getstarted/whats-new-windows-10
http://marketrealist.com/2015/01/microsofts-windows-10-will-likely-impact-pc-market/
http://www.c-sharpcorner.com/UploadFile/1f1f17b/architecture-of-windows-10/
http://www.c-sharpcorner.com/UploadFile/1f1f17b/architecture-of-windows-10/
To assist you in ensuring the compatibility of your web applications with this latest release of Windows, Cognizant fastest has launched an exclusive service line in its platform.

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