

## **COMPARISON OF WINDOWS 8.1 UPDATE AND WINDOWS 10**

Most of modern developments and researches of students and scientific staff of the technological universities are conducted with the help of computers. An operating system is software that manages computer hardware and software resources and provides common services for computer programs [1]. The commonest operating system used nowadays is Windows. There are two latest versions of Windows. They are Windows 8.1 Update and Windows 10 Technical Preview. To find out which OS is the most optimal for professional and everyday usage we will compare the features of both of them. We can find a lot of comparisons of Windows 7 and Windows 8 but there is quite a little comparisons of Windows 8.1 Update and Windows 10 Technical Preview. Let's consider some information about these operating systems in different categories. Both operating systems were tested on the same computer. The computer has Intel(R) Core(TM) i3-3120M CPU @ 2.50GHz, 4GB, 2 cores, 4 logical processes, RAM, NVidia 710M 1Gb RAM, Intel(R) HD Graphics 4000.

### **Performance results**

We used PCMark 7 to test both operating systems. PCMark 7 is a complete PC benchmarking solution for Windows 7 and Windows 8. It includes 7 tests combining more than 25 individual workloads covering storage, computation, image and video manipulation, web browsing and gaming. Specifically designed for the full range of PC hardware from netbooks and tablets to notebooks and desktops, PCMark 7 offers complete Windows PC performance testing for home and business use [2].

- Windows 8.1 Update scored 5736 points.
- Windows 10 Technical Preview scored 5914.

There is no critical difference between these results but we can say that Windows 10 Technical Preview could run some tasks faster than Windows 8.1 Update.

### **3D graphics performance**

To compare these characteristic we used 3DMark 11 with Performance option (1280x720, 720p) with a moderate load suitable for most gaming PCs. 3DMark 11 is a DirectX 11 video card benchmark test for measuring your PC's gaming performance. 3DMark 11 makes extensive use of DirectX 11 features including tessellation, compute shaders and multi-threading. Trusted by gamers worldwide to give accurate and unbiased results, 3DMark 11 consistently and reliably tests your PC's DirectX 11 performance under game-like loads [3].

The following results were obtained:

- Windows 8.1 Update scored 479 points.
- Windows 10 Technical Preview scored 482 points.

The results of these tests are almost identical. It is obvious that Windows 10 will perform 3D graphic better then Windows 8.1 Update and will have better FPS result in 3D graphic performance.

### **Boot time**

These test was performed on these operating systems before the installation of different kinds of software that could slow starting the operating system.

- Windows 8.1 Update took 18 seconds to start.
- Windows 10 Technical Preview started after 31 seconds.

As we can see Windows 8.1 Update started much faster than Windows 10 Technical Preview.

### **User interface**

Microsoft CEO Satya Nadella admits that his company has made mistakes in the user experience of Windows 8. But, according to Nadella, the company is making progress. Microsoft frankly admits that Windows 8 didn't have an optimal user experience, something consumer and enterprise users already found out [3]. So we can surely say, that Windows 10 is more user-friendly OS. There we can find out *start menu* like we saw in Windows 7 and *desktop mode* of Modern-UI apps.

### **Security**

Windows 8.1 Update and Windows 10 Technical Preview have built-in antivirus — Windows Defender and they get similar updates. But how it is good you can see from the reviews of different antiviruses. From the test of antiviruses by Comss.ru [3] we see that Windows Defender took only 24-th place. In this list of antiviruses there are at least 23 that are worth being chosen to protect your computer.

Taking into consideration all above mentioned we can state that it's better to choose Windows 10. It has better performance results, it's more comfortable for users and developers, it works faster than Windows 8.1 Update. Creators are going to add new features to Windows 10 and it will be more stable in a final build. As a result we can absolutely say that Windows 10 Technical Preview is better than Windows 8.1 and Windows 10 will be a good choice for home using or developing.

## **REFERENCES**

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