At the end of this chapter you will be able to:

1) Support and maintain the operating system.
2) Configure the suitable security options for your PC.
3) Recognize and identify the most common problems of the operating system.
4) Solve frequent problems related to the operating system through Windows 7 Activity Center.
5) Protect the system against potential errors and critical operations.

In this chapter you will find:

- What is the Windows 7 Activity Center?
- How to configure security options?
- How to provide suitable maintenance to the operating system?
- What kind of problems can you find in relation with the operating system?
- How to solve these problems?
When there is a problem in the operating system, it is difficult for users to make their job, and even sometimes, it may be obstructed because programs cannot be run nor other operations performed. Thus, it is important to know how to support the operating system and how to perform maintenance tasks that help to improve the PC’s performance.

In order to define it, we can say that the operating system support consists of being ready to face any difficulty that may arise knowing how to solve it.

Note that in last generation operating systems like Windows 7, this aspect is proactive and non-reactive. This means that the operating system anticipates problems, preventing them from happening. And if they happen, it provides very simple ways to solve them.

In this chapter you will learn how to get the most of these features in Windows 7, in order to assure proper functioning of your PC’s operating system.
CONCEPTUAL MAP OF THE CHAPTER
Chapter 6: Windows 7 Operating System Support

Windows 7 Activity Center

System maintenance is an essential task that every user in charge of a PC’s technical support must carry out. When a problem occurs at the operating system level, it is important to be able to identify and solve the problem in order to assure the proper performance of the device. Many times, when there is a problem with the PC, you—or one of your friends—decide to reboot it. In this way, it is difficult to detect the cause of the problem and too much time is wasted without solving it. So, in this chapter you will learn how to identify and solve problems, taking advantage of the features in Windows 7 that make this task easy. But you can also learn the ways to provide maintenance to the PC, taking a preventive action before the potential appearance of errors and problems.

Historically, solving problems in legacy operating systems was troublesome as the proper screen had to be found in order to solve the problem. The novelty in Windows 7 is its development based on the following premise: “fast and easy to use”. Based on this concept, users can access the Activity Center, where they can obtain detailed information of their PC’s status related to security, antivirus protection, product updates, and other important factors for the performance of the device.

To access this feature, you must type: “Activity Center” in the Windows 7 Start menu and the option to access will appear. Once in the screen, you can verify the different configurations that are divided in two categories:

- Security
- Maintenance

Did you know...?
...that the first operating system with Microsoft graphical environment was launched in 1985? It looked almost like this... what do you think?
Security Configurations

Before mentioning the different elements of a PC, we must take into account the basic classification between two types of components:

When you drop down the "Security" section in the Windows 7 Activity Center, you will find several configurations that aim to protect the system. These options are:

- **Network Firewall**
- **Windows Update**
- **Antivirus Protection**
- **Protection against Spyware and Unwanted Software**
- **Internet Security Configuration**
- **User Account Control**
- **Network Access Protection**

What is each configuration used for?

- **Network Firewall**

The network firewall is a Windows 7 component that will protect your PC when you are connected to the Internet. It is important to know that your PC must have the firewall on. Therefore, if you decide to disable the Windows 7 firewall, you must install and configure another one.
b Windows Update
It is a component that allows Windows 7 to stay updated. Microsoft continuously develops and distributes new features for its products and security updates. Enabling Windows Update assures you that the PC is running Windows 7 updated. **Microsoft recommends that this plug-in is enabled. If you decide to disable Windows Update, you should take the habit to manually update the PC, frequently.**

c Antivirus Protection
Among the items involved in the PC’s security, it is essential to have an updated antivirus. Today, the PC is exposed to the access of viruses that may harm your files and the operating system, risking their proper functioning. Therefore, Windows 7 will verify that the PC has an antivirus installed and that it is updated.

d Protection against Spyware and Unwanted Software
Besides viruses, there are other programs that can harm the PC, called **spyware** and unwanted software. Usually, these malicious programs are **installed without the owner of the PC’s consent**. In order to avoid these actions, you must have applications that prevent these behaviors. **Windows 7** comes with a component **Good news!**

If you do not have an antivirus installed in your PC, Microsoft offers Microsoft Security Essentials, a completely free program compatible with Windows 7 that you can download from this link: [www.microsoft.com/security_essentials](http://www.microsoft.com/security_essentials). In this way, your PC will be protected against potential risks by a reliable and free antivirus.
called **Windows Defender** which is in charge of mitigating these problems. It is important to understand that this program must also **be automatically updated so it downloads the latest definitions.** If you have **Windows Update** set up in the right way, **Windows Defender** will be automatically updated without the need of any additional task.

**Internet Security Configuration**

**Internet Explorer 8** has certain default security configurations to **prevent putting your PC at risk** when you surf the Internet. There are some programs that intentionally change these configurations to leave your PC in a more vulnerable situation. If this should happen, the **Activity Center** will notice and inform you, so you can perform the recommended actions.

**User Account Control**

The User Account Control is a new feature included in Windows 7. This function notifies the user **when some unexpected action is creating a risk in the PC.** Following we describe a hypothetical situation to understand this better: imagine that a malicious software is running in your PC, without your consent, and wants to install an application. At this moment, the **User**
Account Control feature will show you a screen where you must accept or reject the operation. In this way, you can see how you get greater security when working with Windows 7, as the system warns you before any change in your PC can take place.

Network Access Protection
This feature, used mainly in corporate environments, allows the system administrators to include even more security into their networks by setting a series of policies by which a PC can access the corporate network. This means that each PC running Windows 7 must go through a series of tests in order to be validated and authorized to join that network.

Review and have fun!
Solve the following acrostic

1. Software that gathers and transmits information from a PC without the user’s consent.
2. System of PCs interconnected in order to share resources.
3. Function of an antivirus in a PC.
4. Action necessary to keep the validity of programs.
5. Windows 7 component that protects the PC against viruses and malicious software.
6. Software necessary to protect the PC.
7. Action required to access a corporate network, assuring its security. (__________ to access a network)
8. Center that gathers all the detailed information of the PC related to security, antivirus protection, product update, etc. (__________ Center).
PC Maintenance Options
In the "Maintenance" section at the Activity Center, you can see the following options:

- **Search for solutions for the notified problems**
- **Backup Copy**
- **Search for updates**
- **Troubleshooting: system maintenance**

**Search for solutions for the notified problems**
When the PC has a problem, a file with its history and characteristics is generated. If it is set by the user, Windows 7 can send it online to Microsoft to find a solution and send it back. In this way, you may solve the problems that appear. It is important to know that when you send these error reports to Microsoft, no information that can identify the PC or the user is sent, in accordance with Microsoft Corporation’s privacy policy.

**Backup Copy**
In order to preserve the files in your PC, the Windows 7 Activity Center suggests and monitors the performance of Backup Copies. If you want to access the Backup Copy feature, you must type Backup in the Windows 7 Start menu. There, the Backup and Restore option will appear. Once there, you must click on **Setup Security Copy**. Then, you must select the drive to save the backup copy, and later you must choose if Windows will decide which files to copy or if you are going to do it.

**Warning!**
If the Windows 7 Activity Center has detected a problem in your PC, you can see that the corresponding icon in the notifications area in the taskbar appears with a cross. Then, when you access the Activity Center you can see the section corresponding to the detected problem dropped down.

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44. Do you want to be Jackson Pollock? Make up your mind and paint like him.
last screen, you can review the selected settings. Once you click on the **Save Settings and Start Backup Copy** button you will return to the initial screen with the selected configurations.

### Search for Updates

Among the tools offered at the Activities Center for the PC Maintenance, the "Search for Updates" option is available. This feature checks that the **Windows Update** configuration is the right one and that the PC does not find any error when trying to download updates.

#### Troubleshooting

There is a feature running in Windows 7 but silent for the final user. It is a feature that constantly monitors the PC behavior and that, in case any device or application repeatedly fails, it will try, by any means, to find a solution and notify the user.

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**Important!**

Each option within Security and Maintenance can be enabled or disabled and some of them have a change of configuration option. If you handle these configurations and enable or disable any key feature, Windows 7 will notify you in order to promote proper performance of the PC.
How to solve other problems of the operating system

Apart from the issues mentioned before, you may find other problems. In this case, you must click on the Troubleshooting button within the Activity Center. In this way, you can find several problem categories on the screen, such as:

- Programs
- Hardware y Sound
- Networks and Internet
- Appearance and Customization
- System and Security

When you explore these options, you will realize that it is very simple to solve a problem in Windows 7. For instance, if the problem refers to the visual part of Windows, you can choose one of the options within the Appearance and Customization option and follow the instructions on the screen to solve the problem.

In addition, you can find here several problems and other issues to solve that may arise when using your PC:

- Font size and Screen resolution

Probably, some time you may have wanted to increase the size of the icons and fonts on the screen. This is an issue that you can solve from the configuration and related to the screen resolution. Today, monitors have greater resolutions so we can have much more space to work, but at the same time, this makes the fonts on our screen look smaller. Windows 7 allows us to change the font size in a very simple way. To do this, you must type "Increase" in the W7 Start menu and the following option will appear: Increase or reduce the text and other elements size. Once in that screen, you can choose among different sizes: smaller (100%), medium (125%), bigger (150%), or customized. When you select the different options, Windows 7 will change the size of the fonts according to the
percentage indicated. Then, you simply must click on OK and Windows 7 will prompt you to Log off: when you reboot the PC, you will enjoy a high resolution screen with the text that meets your needs.

**System Restore**

In some cases, you may be unable to start the operating system in a normal way, although this kind of situation is not very frequent. If this happens, you will see that the Windows splash screen notifies the user that an error has occurred and gives you the option to enter the Safe Mode (known as Safe Boot Mode in previous operating systems). If you need to do so, you may enter by repeatedly pressing the F8 key in the PC splash screen. By doing so, the System Restore screen will immediately appear.

There, you can make the system return to a previous situation where there were no problems. These previous situations are called Restore Points. Windows 7 automatically creates restore points whenever an critical operation is performed in the PC, such as install or uninstall a component. But apart from this automatic creation of restore points made by the operating system, you can manually create points if you consider it necessary, in order to reinforce your task as part of the technical support team. How can you do this? You must right-click on the PC icon in the Start menu and then go to Properties. A screen will appear containing the basic informa-
tion of your device, such as processor, RAM, name and activation status. On the left, you will see 4 options, one of them is called **System Protection**. Click there and a screen will appear, you must click the **Create** button located at the bottom. Then, the **dialog box prompting to put a name** to the new restore point will appear… ready, your task is complete. This way, you will have manually created a new restore point that you can use in case of problems.

**Smart Search**

Windows 7 offers the user the ability to search files, folders, programs, and even emails from the Start menu using the **Smart Search** feature. If by using this feature, you realize that the results of your searches are not exactly accurate, so you can rebuild the index to improve functionality. You must type **"Indexing" in the Start menu** and an item called **Indexing Options** will appear. Once there, you must click on Advanced Options and the **Rebuild** button will appear within that screen. Take into account that this option may take some time, depending on the amount of information in your PC, and the results of the search may not appear immediately.

**Problems with Devices**

You must already know that Windows 7 has a feature that simplifies the installation of devices. However, you may need to update a driver, or simply detect and solve some error.

Therefore, you must learn to work manually with a specific device. To do so, you must right-click on the **PC** icon in the Start menu and then go to **Properties**. A screen will appear containing the basic information of your PC, such as processor, RAM, name and activation status. Click on **Device Manager** and you will see a screen with all the devices in your PC. Assuming you need to change the configuration of a specific device, you must double click on the category and then on the device and its **Properties** screen will appear. Then, you can go to the **Driver** tab and you will be able to update the driver, uninstall the device, disable it, copy the files, etc.
Find the mistakes!

What options and configurations are not in the right place?

- Backup Copy
- Windows Update
- Antivirus Protection
- Search for updates
- Internet security configuration
- User Account Control
- Network Access Protection
- Search for solutions
- Protection against spyware and unwanted software
- Network Firewall
- System maintenance

ACTIVITY CENTER

SECURITY

MAINTENANCE
A PC’s energy consumption is an important issue to consider in order to protect our planet. Therefore, in accordance with the environmental sustainability principles, the development of Windows 7 took these aspects into account to promote a “greener world”. This operating system features certain technologies tending to control power consumption. For example, when the PC is in standby mode, Windows 7 has control systems to make sure that the PC is not performing unnecessary tasks. When in standby mode, Windows 7 makes the PC lower the activity level of peripherals connected via USB and reduces the screen brightness to the minimum in order to avoid wasting power due to brightness.

It is good to know this information, so you know that Windows 7 is right beside you when acting in a way as to protect the environment!
Consolidate what you have learned with these exercises

A. Have you solved any problem through the Activity Center? Recreate the steps you have followed. If you haven’t done it yet, review the content of the chapter and create a hypothetical case to solve.

Problem detected:

Step 1:

Step 2:

Step 3:

B. Answer the following question in your own words: What does the operating system support consist of?

C. Look up the new features in Windows 7 related to the Activity Center.

D. Review the chapter and create a conceptual network that adds information to the map in page 111 and that describes everything you have learned regarding the operating system support.
Self-assessment
Check how much you have learned in the chapter by answering to the following questions.

1. In Windows 7, operating system support is:
   a. Reactive
   b. Proactive
   c. Pre-active

2. What is the Windows 7 tool by which users can obtain detailed information of their PC’s status related to security and maintenance called?
   a. Control Panel
   b. Troubleshooter
   c. Activity Center

3. In which section of the Activity Center is the User Account Control?
   a. In security configurations
   b. In maintenance
   c. The option does not exist

4. What is the component that allows Windows 7 to be permanently updated called?
   a. Operating System Update
   b. Windows Update
   c. Permanent Update

5. What is the name of the component that controls the input/output traffic in a network?
   a. Antivirus
   b. Spyware
   c. Firewall

6. What is the Windows 7 component for protection against spyware called?
   a. Windows Defender
   b. Windows Antivirus
   c. Windows Firewall

7. What is an antivirus?
   a. A peripheral that protects the PC against external attacks.
   b. A software necessary to protect the PC.
   c. All the answers are correct.

8. To perform backup copies is a way to maintain the PC
   a. True
   b. False
   c. Indistinct

9. Internet Explorer 8 does not have any kind of security configuration
   a. True
   b. False
   c. Indistinct

10. How are system restore points created?
    a. Automatically
    b. Manually
    c. Automatically and/or manually.