

Introduction To Windows Services

Done By: **Ghanim Salim Said Al Marzouqi**

Date: 08 – September – 2019

What is a Windows Service?

A Windows Service is a non-UI application that runs in the background. It usually starts when Windows started, but it we can configure it to run automatically or manually.

A Windows Service is used to execute some tasks, for example:

- Windows Updates
- Email Checks
- Document Printing
- SQL Server Agent
- Others

How to check for existing Windows Services?

To check from Service Control:

Right-Click on Taskbar => Task Manager => Services

To check using CMD or POWERSHELL

- `net start` (CMD)
- `Get-Service | Out-GridView` (PowerShell)

How to create a Windows Service in C#?

We need to use **Visual Studio** as our IDE to develop Windows Services. To create a new project in Visual Studio, do the following:

1. File => New => Project
2. Visual C# => Windows Desktop => Windows Service (.NET Framework)
3. In *Service1.cs [Design]*, right-click and choose **Add Installer**

The project structure is as follows:

MyFirstService:

- Properties
- References
- App.config
- Program.cs
- ProjectInstaller.cs
- Service1.cs

Go to ProjectInstaller.cs

```
namespace MyFirstService
{
    [RunInstaller(true)]
    public partial class ProjectInstaller : System.Configuration.Install.Installer
    {
        public ProjectInstaller()
        {
            InitializeComponent();
        }
    }
}
```

Go to *InstallizeComponent()* definition in *ProjectInstaller.Design.cs* and add the following:

```
namespace MyFirstService
{
    public partial class Service1 : ServiceBase
    {
        Timer timer = new Timer();
        public Service1()
        {
            InitializeComponent();
        }

        protected override void OnStart(string[] args)
        {
            WriteToFile("Service is started at " + DateTime.Now);
            timer.Elapsed += new ElapsedEventHandler(OnElapsedTime);
            timer.Interval = 5000; //number in milliseconds
            timer.Enabled = true;
        }

        protected override void OnStop()
        {
            WriteToFile("Service is stopped at " + DateTime.Now);
        }

        private void OnElapsedTime(object source, ElapsedEventArgs e)
        {
            WriteToFile("Service is recall at " + DateTime.Now);
        }

        public void WriteToFile(string Message)
        {
            string path = AppDomain.CurrentDomain.BaseDirectory + "\\Logs";
            if (!Directory.Exists(path))
            {
                Directory.CreateDirectory(path);
            }
            string filepath = AppDomain.CurrentDomain.BaseDirectory +
            "\\Logs\\ServiceLog_" + DateTime.Now.Date.ToShortDateString().Replace('/', '_') +
            ".txt";
            if (!File.Exists(filepath))
            {
                // Create a file to write to.
                using (StreamWriter sw = File.CreateText(filepath))
                {
                    sw.WriteLine(Message);
                }
            }
            else
            {
                using (StreamWriter sw = File.AppendText(filepath))
                {
                    sw.WriteLine(Message);
                }
            }
        }
    }
}
```

Now, rebuild the solution. The service must be ready to be installed.

How to Install The Windows Service inside Windows OS?

1. First, open CMD as an administrator
2. Copy the path of the project. Note, copy the path of the project which is located inside the solution
3. From CMD, cd to **C:\Windows\Microsoft.NET\Framework\v4.0.30319** to use **InstallUtil.exe**
4. Write this in CMD: *InstallUtil.exe + <your copied path> + |<your service name> + .exe*

Example:

InstallUtil.exe C:\Users\Faisal-Pathan\source\repos\MyFirstService\MyFirstService\bin\Debug\MyFirstService.exe

5. Check the status of the installed service by opening RUN => "**services.msc**" or from Task Manager
6. Start, Stop or Restart the service as you wish
7. To Uninstall the service, write the following in CMD:
InstallUtil.exe -u + <your copied path> + |<your service name> + .exe