

# Windows Systems Services

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# Lesson Plan

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# Introduction

- ▶ A Windows Service is an application that usually serves a core operating system function running in the background and has no user interface.
- ▶ The Windows operating system makes use of these applications or services to do what an OS does, such as manage network connections, play sound, provide file system functionality, provide security and authentication, display colours and interact with the user through the GUI.
- ▶ These services can be automatically started with the operating system or started manually when specific applications need the service and can even be disabled. But core services such as the Service Control Manager cannot be disabled and access to it is restricted to the OS alone.

# Introduction Cont.

- ▶ There are third-party services that are installed together with the applications that need them.

Eg: Third-party security applications and virus/malware protection software, which install their own constantly running service to actively monitor the system, usually eat up valuable system resources.

# Importance of Knowing About Services

- ▶ Knowing what a service does or when it does something can be useful. If you know you will not need its features, you can disable it to speed up your system.

Eg: If you have a Router installed to manage your local network, you do not need the Internet Connection Sharing service. Also, if you need a service to run, but it's not that important, you can set it to start a little later, after Windows, startup apps, or other, more critical services are launched.

- ▶ Services can be deleted by a user with administrative privileges, but as doing so can render the operating system unstable, it should be done only when necessary and with caution.

# Examples for Windows Services

## ► Active Directory Service

Active Directory is a service Microsoft developed for Windows networks. It is included by default in most Microsoft Windows Server systems. Active Directory oversees centralised domain management and identity-related functions.

## ► Prefetch and Superfetch Service

Speeds up the operating system and application startup by caching to RAM frequently used files, libraries and application components. It does this by monitoring application usage and behaviour.

# Examples for Windows Services Cont.

- ▶ **Background Intelligent Transfer Service**

This service facilitates controlled, prioritised and asynchronous file transfer between machines via idle bandwidth. It plays a key role in the delivery of software updates from servers to clients.

- ▶ **Computer Browser Service**

It allows users to easily locate shared resources on neighbouring computers. All information is aggregated on one of the computers and other computers contact this machine for information on shared resources.

# Examples for Windows Services Cont.

- ▶ **DNS Client Service**

This service resolves domain names to IP addresses and locally caches this data.

- ▶ **Internet Connection Sharing (ICS) Service**

ICS enables the use of one device connected to the internet as an access point for other devices. Access could be through Ethernet broadband, cellular service or another gateway.

- ▶ **Routing and Remote Access Service**

This service makes it possible to create applications that manage the remote access and routing capabilities of the Windows operating system. It allows the machine to act as a network router.



# Windows Services Vs Regular Applications

## ► Launch Mechanism

A regular application is manually launched by the end user from the Desktop or Start Menu. Windows Services start when the machine is switched on. But regular applications can be added to the Startup folder in the Start Menu to start automatically once the operating system startup is complete.

## ► Multiple Instances

Only one instance of a Windows Service runs on a device. Regular applications can allow multiple copies if several users are logged into the same machine.

# Windows Services Vs Regular Applications Cont.

## ► User Interface

Unlike regular applications, Windows Services do not have a user interface and the user does not directly interact with them. A Windows Service does not stop when a user logs off the computer, but a regular application will.

## ► Administrator Rights

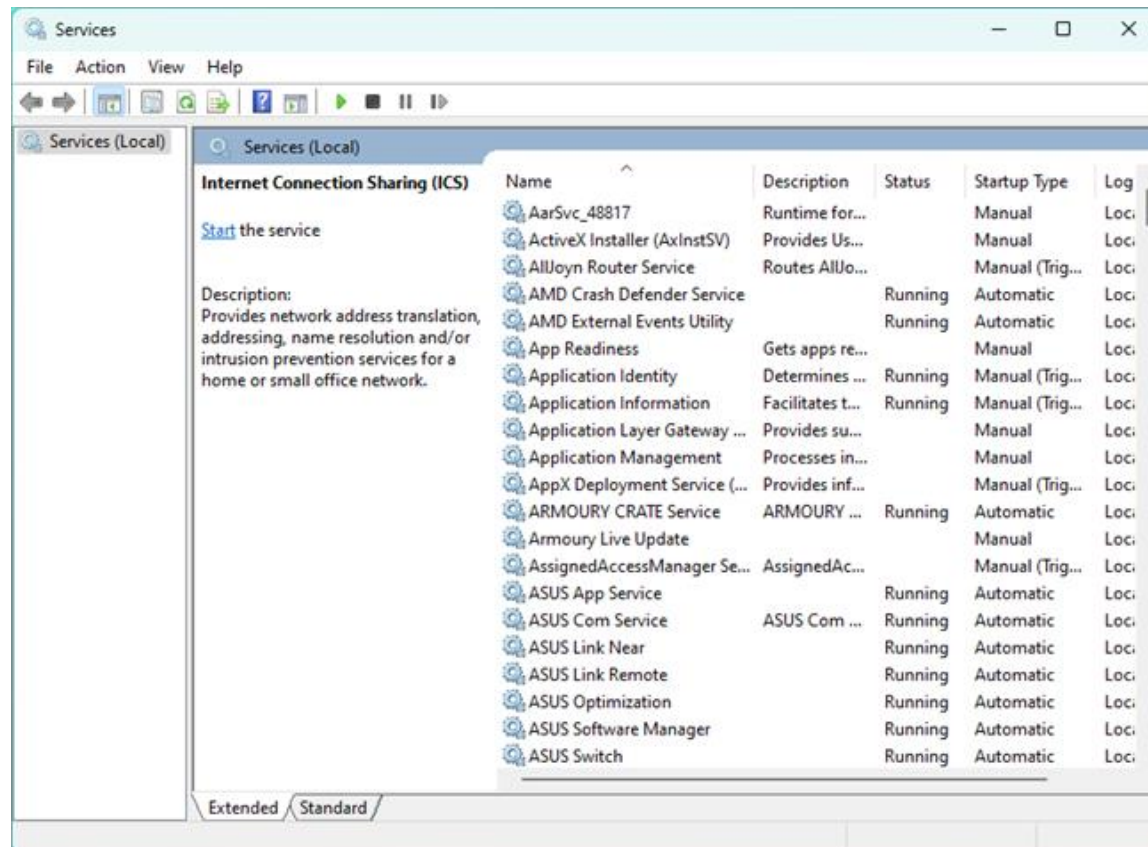
Windows Services usually run under administrative privileges even when a non-administrator user is logged in and using the computer. The average Windows Service has more control over the machine compared to a regular application.

# Windows Services Control Manager

- ▶ Windows Services are managed via the Services Control Manager panel.
- ▶ The panel shows a list of services and for each, name, description, status (running, stopped or paused) and the type of service.
- ▶ Double clicking on a service reveals its properties in greater detail. That allows to stop, pause, start, delay start, or resume each service as appropriate.
- ▶ We can also modify the start mechanism (Manual or Automatic) or specify an account.
- ▶ Windows Services broadly fall into three categories depending on the actions and applications they control. **Local Services, Network Services and System Services.**

# Windows Services Control Manager Cont.

- To open Windows Service Control Manager type *services.msc* in the run box or Type *Services* in then Search box next to start button.

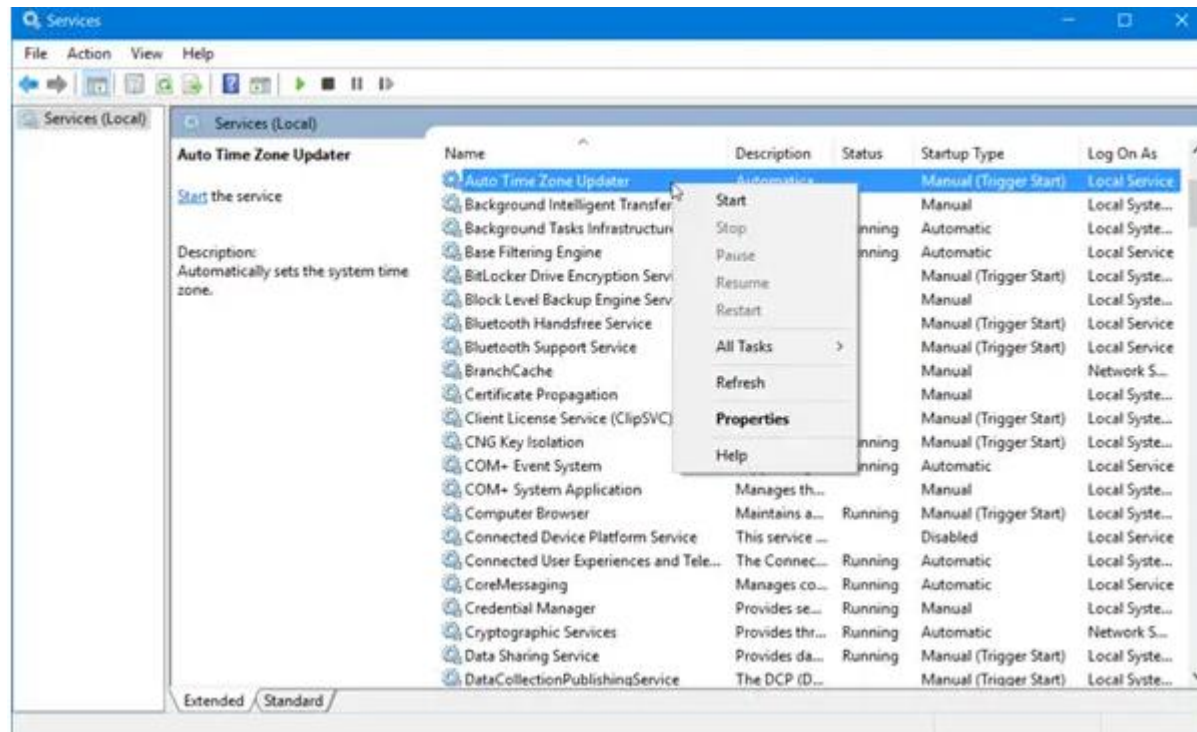


# Windows Services Control Manager Cont.

- ▶ Here, under the **Name** column, there is the list of Services running on the system, along with their **description**. Also, their **Status** (whether they are running or stopped), along with the Startup types are displayed.
- ▶ **Startup Type** shows how that service is started by Windows. Services can be launched automatically, automatically but with a delay, manually, or they can be disabled, which means that they are never started.
- ▶ There is another column **Log On As**. This lets the user select whether the service is started using the Local System account or another user account that manually specify.

# Windows Services Control Manager Cont.

- To start or stop a service, right-click the service from the control manager and select the desired action from the subsequent menu.

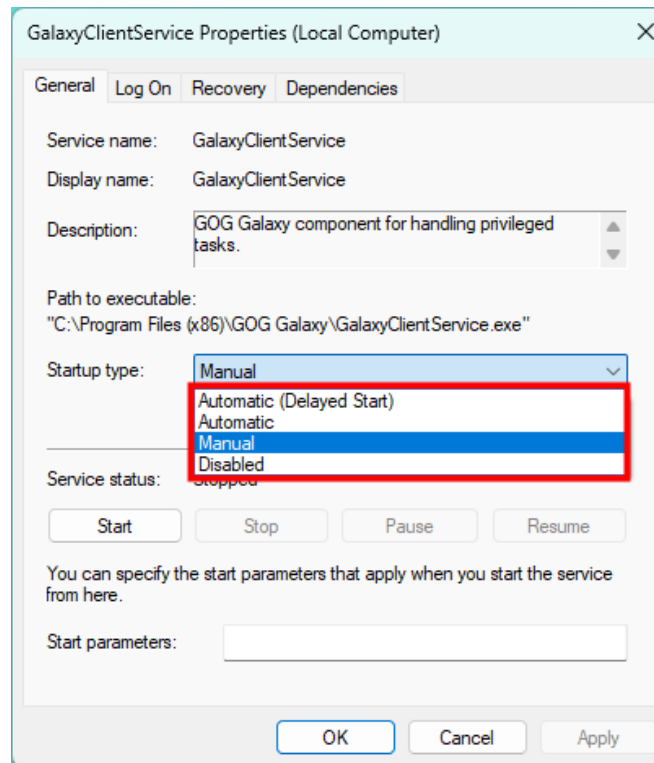


# Windows Services Control Manager Cont.

- ▶ Besides Start and Stop, there are some other options available. Users can also Pause, Resume, or Restart the selected Windows service.
- ▶ The action you take is applied only to your current computing session. After you restart Windows, the selected service resumes its default state.
- ▶ To change the Startup Type of a Windows service, first, open its Properties by right-clicking on the service and then selecting Properties.
- ▶ Startup type of a Windows service...
  - Automatic - the service starts at boot time.
  - Automatic (Delayed Start) - the Windows service starts only after the system has loaded all the other services set to start automatically.

# Windows Services Control Manager Cont.

- Manual - the Windows service starts only when it is needed.
- Disabled - the service never starts, even when its operation is requested by other Windows services





# Manage Windows Services using Command Line

- Command Prompt can be used to start, stop, pause, and resume service. To use it, open Command Prompt (Admin) and execute one of the following commands.

To start a service:

```
net start [service name]
```

To stop a service:

```
net stop [service name]
```

To pause a service:

```
net pause [service name]
```

# Manage Windows Services using Command Line

To resume a service:

```
net continue [service name]
```

To disable a service:

```
sc config "[service name]" start= disabled
```

- It is recommended that you not change the default settings unless you know what you are doing, as this can cause some parts of your operating system to stop working.

# Q&A

- ▶ Time for your questions and queries ...

# Thank you!