# Windows Services, PowerShell & NSSM Guide for DevOps

## Introduction

This guide explains the concept of Windows Services, the role of PowerShell in DevOps tasks for managing Windows VMs, and the use of NSSM (Non-Sucking Service Manager) to run scripts as services.

## What is a Windows Service?

A Windows Service is a special type of program that runs in the background. It can start automatically when the system boots, run without user login, and can be controlled (start, stop, restart) by Windows Service Control Manager (SCM).

## Why Scripts Can't Be Services Directly

Scripts like 'python app.py' or 'node server.js' are regular programs. They don't register with the Windows Service Control Manager. Windows can't control them as services unless they use the Windows Service APIs or are wrapped by a tool like NSSM.

## Why NSSM is Needed

Tools like sc.exe and srvany.exe are older, manual, and error-prone ways to run apps as services. NSSM solves these issues by providing an easy, stable, and user-friendly way to run any executable as a Windows service with logging and recovery support.

## Example: Running Python Script as a Service with NSSM

Suppose you have a Python app at C:\apps\mybot.py. You want it to always run, even after reboot. With NSSM:
1. Run: nssm install MyBot
2. Choose python.exe as the application, and 'C:\apps\mybot.py' as argument
3. NSSM registers it as a Windows service.
Now it's controlled by 'services.msc' like any real service.

## Daily PowerShell Use for DevOps on Windows

PowerShell is essential for DevOps engineers on Windows. Tasks include:
- Creating users and groups
- Managing services (start/stop/restart)
- Scheduled tasks
- File system automation
- Monitoring system performance
- Running scripts remotely
Example:
Get-Service -Name 'Spooler' | Stop-Service

## Examples of Windows Services Managed by SCM

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Windows SCM supports services like:
- Windows Update (wuauserv)
- Print Spooler (Spooler)
- Windows Defender (WinDefend)
- MySQL, PostgreSQL (if installed with service support)
- Apache, nginx (if configured to run as service)

These services are visible in 'services.msc' or with PowerShell using Get-Service.

## Summary

Summary:
- Windows Service: Background task, managed by SCM
- Scripts are not services: Use NSSM to convert
- PowerShell: Vital for automation
- NSSM: Clean solution to run scripts reliably as services