**R&D: OPC UA and Windows Service Setup**

**What is OPC UA?**

OPC UA (Open Platform Communications Unified Architecture) is an industrial communication protocol that enables secure and reliable data exchange between machines, devices, and systems.

**Required Software**

- Python Version: 3.11.9  
- OPC UA Simulation Server:

<https://downloads.prosysopc.com/opc-ua-simulation-server-downloads.php>  
- NSSM (Non-Sucking Service Manager) for Windows Service Management: <https://nssm.cc/>

**Creating a Windows Service**

**1. Download and Install NSSM**

- Download NSSM from the official website.  
- Extract the NSSM folder to C:\ (C drive).

**2. Creating a Windows Service**

- Open Command Prompt (CMD) as Administrator.  
- Run the following command:  
 C:\\nssm\\nssm.exe install "ServiceName"  
- A GUI will open. Fill in the following details:  
 - Path: C:\\Users\\Super\\Desktop\\Project\\Services\\venv\\Scripts\\python.exe (Your Python path)  
 - Startup Directory: C:\\Users\\Super\\Desktop\\Project\\Services  
 - Arguments: opcua.py  
- Click Install Service.

**3. Starting the Service**

- Open Services (Press Win + R, type services.msc, and press Enter).  
- Find your service by name.  
- Right-click and select Start.

**4. Deleting a Windows Service**

- To remove a service, open Command Prompt as Administrator and run:  
 sc.exe delete "ServiceName"

**Conclusion**

This ensures proper management and automation of the OPC UA script as a Windows service.