Steps to install PySpark on windows

To install PySpark on Windows, you can follow these steps:

1. **Install Java Development Kit (JDK):**

Download and install the latest version of JDK from the Oracle website or any other reliable source.

2. **Set up the JAVA_HOME environment variable:**

Right-click on 'This PC' or 'Computer' and select 'Properties'.
Click on 'Advanced system settings'.
Click on the 'Environment Variables' button.
Under 'System Variables', click 'New' and add JAVA_HOME as the variable name and the path to your JDK installation as the variable value (e.g., C:\Program Files\Java\jdk1.8.0_291).

3. **Install Apache Spark:**

Download a pre-built version of Apache Spark from the official website: https://spark.apache.org/downloads.html.
Extract the downloaded file to a directory of your choice (e.g., C:\spark).

4. **Install Anaconda (Optional):**

Anaconda is a Python distribution that comes with many useful packages pre-installed, including Jupyter notebooks which can be helpful for PySpark development.

5. **Download and install Anaconda from the official website**: https://www.anaconda.com/products/distribution.

During the installation process, make sure to check the box that says "Add Anaconda to my PATH environment variable".

6. **Install FindSpark (Optional):**

FindSpark is a Python library that makes it easy to locate Spark within the Python environment.

7. **Open the command prompt and run:**

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```
pip install findspark
```

8. **Configure Environment Variables:**

Add Spark's bin directory to the system's PATH environment variable:
Right-click on 'This PC' or 'Computer' and select 'Properties'.
Click on 'Advanced system settings'.
Click on the 'Environment Variables' button.
Under 'System Variables', select the 'Path' variable and click 'Edit'.
Click 'New' and add the path to Spark's bin directory (e.g., C:\spark\bin).

9. **Start Using PySpark:**

You can now start using PySpark either in a Python script or in a Jupyter notebook:
In a Python script, you can start by importing PySpark:
python
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```
from pyspark.sql import SparkSession
```

In a Jupyter notebook, start by importing PySpark and initializing a SparkSession:
python
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```
import findspark
findspark.init()
from pyspark.sql import SparkSession
spark = SparkSession.builder.master("local[*]").getOrCreate()
```

10. **Test Your PySpark Installation:**

    You can test your PySpark installation by running a simple PySpark script or executing PySpark commands in a Jupyter notebook.