Windows Deployment Guide

Quest Data Quality V3.1.3

Prepared by

Introduction

This document provides a comprehensive, step-by-step process for installing DQLabs V3.1.3 in a Windows environment. It is designed for personnel with technical knowledge of Windows Operating Systems.

This guide provides step-by-step instructions for installation, ensuring you understand the process and any Windows-specific prerequisites. By following it, you can successfully set up the DQLabs application and utilize its features in your environment.

System Requirements

This section provides the minimum system and mandatory requirements that are needed to install the DQLabs application in the Linux environment successfully.

Category	Recommended
Operating system	Windows Server 2022 64-bit
Processor	64-bit processor
Disk Space	Minimum 100 GB (C drive is not recommended, and ensure the disk is dedicated only to DQLabs)
Nested Virtualization	Enabled

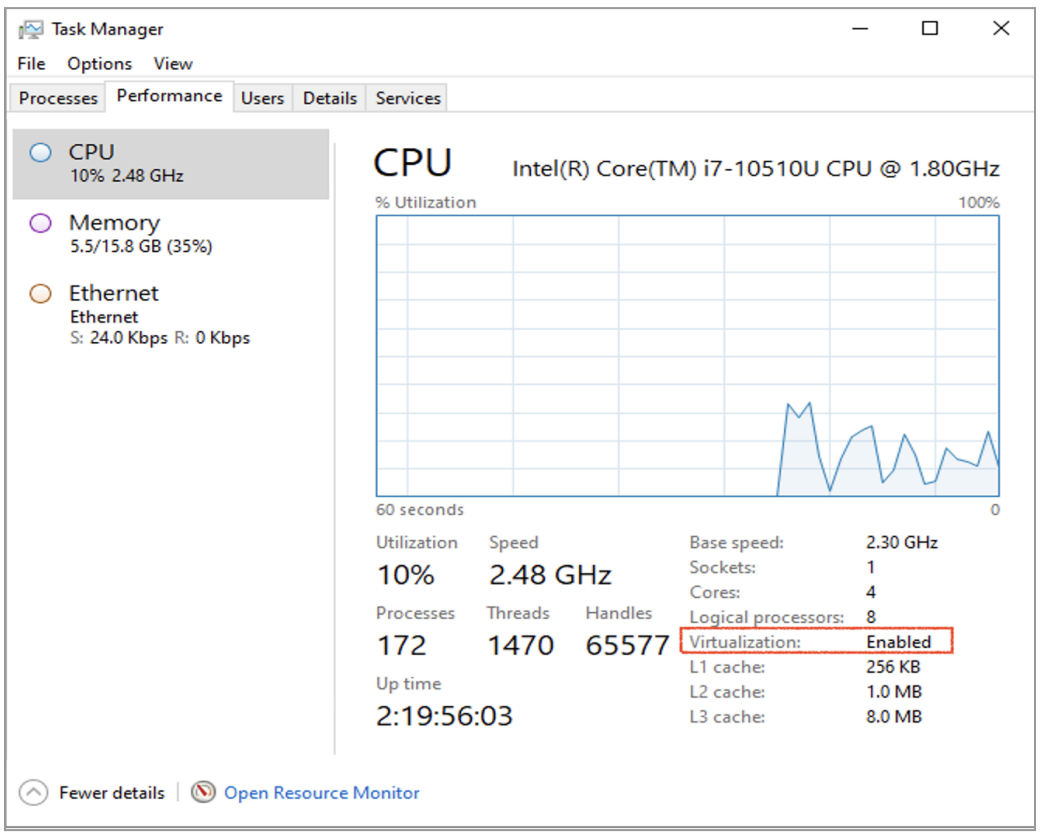
Package	Core and RAM Specifications
Bronze	4 Core 8 GB RAM
Silver	4 Core 8 GB RAM
Gold	8 Core 16 GB RAM
Platinum	16 Cores 32 GB RAM
Titanium	32 Cores 64 GB RAM

Postgres Server Prerequisites (Only in case of DB Isolated Deployments)

Operating System	Windows Server 2022 64-bit
CPU Core	4 Cores or more
RAM	8GB or more

Virtualization Checks

- To check if Virtualization is enabled, go to Start > Task Manager> Performance and check for virtualization enabled as shown below:



- If the Windows 2022 server is hosted on an Azure VM and Virtualization is not enabled, run the command below from PowerShell to enable it.

```
None
Enable-WindowsOptionalFeature -Online -FeatureName VirtualMachinePlatform
```

PS: For non-Azure servers, please reach out to your server admins to enable the Virtualization

---

Pre-requisites

1. **Dedicated Server:** DQLabs needs a dedicated server for installation(Windows OS should be up to date).
2. **Internet Access:**

URL	Purpose	Required during
https://license-qa.dqlabs.cloud	This URL must be whitelisted to activate and manage the validity of the license key. In case of an Offline license, raise a request with the MAC ID of the server	Required after Installation.
https://s3.us-east-1.amazonaws.com/erwin-2.0/code/windows/application-code/3.1.3/on-premise/packages_3.1.3/Erwin-Windows-Packages/Dqlabs-offline-installer-py-3.1.3-bundle.zip	This URL must be whitelisted to allow binaries to be downloaded from the DQLabs repository.	Required only before installation. The file can be downloaded externally and moved to the server if needed

3. **License key:** A new DQ license key is required for activating the product upon installing the product
4. **User:** Install using a Service account, and the DQLabs application must be maintained under the same service account. Services must be restarted only from the installed user account.
5. **Administrator Privileges:** The user should be able to run Windows PowerShell ISE with administrator privileges
6. **Dedicated Drive:** Any drive other than C
7. **Ports to be opened:** Ports Used for Internal Communication within the Application:

PostgreSQL	5432 (Mandatory)
Airflow	8080
HTTP	80
HTTPS	443

Software Requirements (Manual)

PostgreSQL Installation (Only applicable for DB isolated Deployment)

Skip this Step if the application and PostgreSQL should be installed on the same Server.

Follow the steps below to install PostgreSQL on your secondary server:

Step 1: Log in to the Secondary Server and ensure the user account is provided with the necessary privileges

Step 2: Download the binary and extract the zip file

```
None

https://s3.us-east-1.amazonaws.com/erwin-2.0/code/windows/application-code/3.1.3/on-premise/packages_3.1.3/Erwin-Windows-Packages/Dqlabs-offline-installer-py-3.1.3-bundle.zip
```

Details about the config file

Step 3: Open the CONFIG.txt file with administrator access and update the following:

Server Configuration

A. **drive=** Define the drive letter where PostgreSQL has to be installed
Example - (F)

B. **dqlabsserverip=** Define the DQLabs application server private IP for communications
Example - (10.10.10.2)

C. **PSQL_Host=** Define the Postgres database server private IP

D. **PostgresMasterusername=**<Postgres_username>
Example - postgres

E. **PostgresMasterPassword=**<Postgres_password>
Example - postgres

Note: If the Postgres server is installed using the DQLabs script, the username and password input should be '`postgres`'

DQLabs Access Information

F. **DNS_NAME:** `nodns`

G. **ACCESS_MODE**: `public` or `private`
   a. Public: When the server is connected to the internet, it is public. Here, the user will be able to connect to the DQLabs application outside the network.
   b. Private: When the server is connected to the intranet, it is private. Here, the user will be able to connect to the DQLabs application using the organization network.

H. **SSL_PROTOCOL:** `http` or `https`
If the server is SSL-certified, provide the input as `https`, else `http`

Note: If the user has provided the DNS_name, ACCESS_MODE needs to be empty

Administrator Information

I. **ADMIN_EMAIL:** Administrator's email address (Ensure valid email format)
Example - (admin@dqlabs.ai)

J. **ADMIN_PASSWORD**: Administrator's password
Example - (Dql@b$)

Postgres database credentials(Do not use special characters and spaces in your username, dbname, and passwords)

K. **PG_USERNAME=**<Postgres_username>

L. **PG_PASSWORD=**<Postgres_password>
M. **PG_DB_NAME=**<databse_name>
N. **PG_PORT_NO=**5432

Do not customize the values below

O. **AIRFLOW_USERNAME=**airflow
P. **AIRFLOW_PASSWORD=**airflow
Q. **AIRFLOW_DB_NAME=**airflow_db
R. **DATABASE_ONLY_INSTALLATION=**yes
yes -> Install only the Postgres database
no -> Install DQLabs application along with Postgres database
dqlabs -> Install DQLabs without Postgres database

Step 4: Open PowerShell ISE as an administrator. (Press the Win key and search for PowerShell ISE > Right Click on Windows PowerShell ISE and click on "Run as administrator")

Step 5: In the PowerShell ISE window, click on File > Open. Locate the **prerequisites-installation-script**

Step 6: Click the "Run Script" button in PowerShell (as shown in the reference image below). If the script throws a digitally not signed error, run the following command and select **yes to all**.

```
None
Set-ExecutionPolicy -Scope Process -ExecutionPolicy Bypass
```

```
PS C:\Users\dqlabs> F:\prerequisites-installation-script.ps1
File F:\prerequisites-installation-script.ps1 cannot be loaded. The file F:\prerequisites-installation-script.ps1 is not digitally signed. You
cannot run this script on the current system. For more information about running scripts and setting execution policy, see
about_Execution_Policies at https:/go.microsoft.com/fwlink/?LinkID=135170.
    + CategoryInfo          : SecurityError: (:) [], ParentContainsErrorRecordException
    + FullyQualifiedErrorId : UnauthorizedAccess

PS C:\Users\dqlabs> Set-ExecutionPolicy -Scope Process -ExecutionPolicy Bypass
```

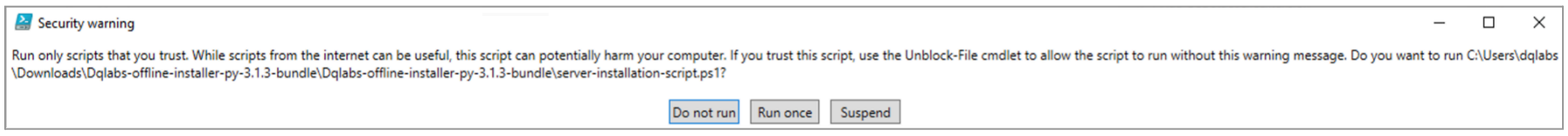
Step 7: Run the script. The user gets a prompt to confirm the installation type, confirm the type, and provide the input as yes.

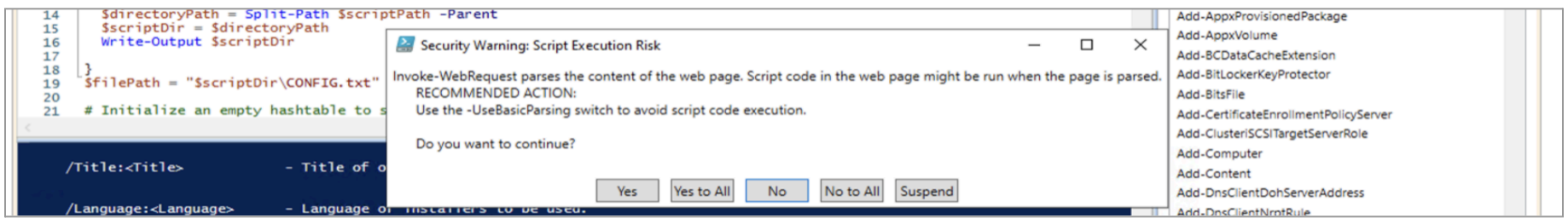
```
PS C:\Users\Administrator> C:\Users\Administrator\Downloads\Dqlabs-offline-installer-py-3.1.3-bundle\Dqlabs-offline-installer-py-3.1.3-bundle\prere
File C:\Users\Administrator\Downloads\Dqlabs-offline-installer-py-3.1.3-bundle\Dqlabs-offline-installer-py-3.1.3-bundle\prerequ
isites-installation-script.ps1 cannot be loaded. The file C:\Users\Administrator\Downloads\Dqlabs-offline-installer-py-3.1.3-bu
ndle\Dqlabs-offline-installer-py-3.1.3-bundle\prerequisites-installation-script.ps1 is not digitally signed. You cannot run
this script on the current system. For more information about running scripts and setting execution policy, see
about_Execution_Policies at https:/go.microsoft.com/fwlink/?LinkID=135170.
    + CategoryInfo          : SecurityError: (:) [], ParentContainsErrorRecordException
    + FullyQualifiedErrorId : UnauthorizedAccess

PS C:\Users\Administrator> set-ExecutionPolicy -Scope Process -ExecutionPolicy Bypass

PS C:\Users\Administrator> C:\Users\Administrator\Downloads\Dqlabs-offline-installer-py-3.1.3-bundle\Dqlabs-offline-installer-py-3.1.3-bundle\prere
Drive is set to: D
Drive D: is available.
Connection string updated with SSL protocol: http
Wish to install postgres (yes/no):: yes
```

Step 8: When the pop-up below appears while executing the script, click **Run Once**. Also, whenthe Security Warning pop-up appears, click on **Yes to All**





Step 9: Once the script execution is successful, the following status message will appear.

```
Go to the following link for a set of online examples of how to use
WebPiCmd.exe: http://go.microsoft.com/fwlink/?LinkId=232878


Ok.

VERBOSE: Performing the operation "Remove File" on target "F:\Prerequisites\ChromeStandaloneSetup64.exe".


PS C:\Program Files\Microsoft\Web Platform Installer>
```

Software Requirements (Auto Install)

The requirements mentioned below are auto-installed with the script; the user should not manually install any of the software requirements in the DQServer. Manually installed software may conflict with the script, leading to failure.

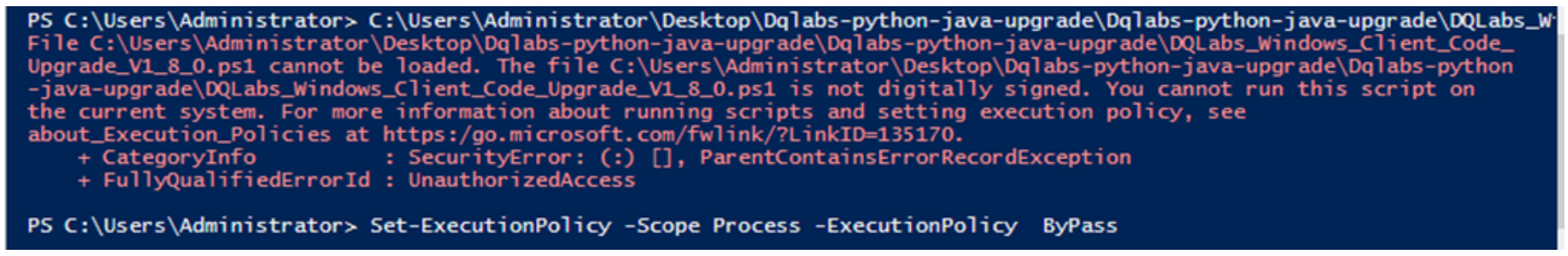
Services	Version
PostgreSQL	15.11
Python	3.11.9
IIS Server	NA
Airflow	2.8.1
Drivers	MSSQL, Oracle, PostgreSQL, MySQL ODBC/JDBC
Java	11 Open JDK 64-bit
Spark	3.5.1

Before proceeding with Single Server Deployments, ensure the following:

1. The server is free from any pre-installed applications.
2. PostgreSQL should not be manually installed for single-server deployments.
3. No third-party or external applications should be present on the server.

Pre-Installation Setup

Please note that at any point during the execution of Scripts, if the user faces the below error, execute the below command:




```
None
#Execute the below command to digitally sign the script
Set-ExecutionPolicy -Scope Process -ExecutionPolicy Bypass
```

Step 1: Log in to the application server and download the binary to the server.

```
None

https://s3.us-east-1.amazonaws.com/erwin-2.0/code/windows/application-code/3.1.3/on-premise/packages_3.1.3/Erwin-Windows-Packages/Dqlabs-offline-installer-py-3.1.3-bundle.zip
```

Step 2: Move the downloaded file to the drive where DQLabs should be installed (Other than C) and extract the Zip file

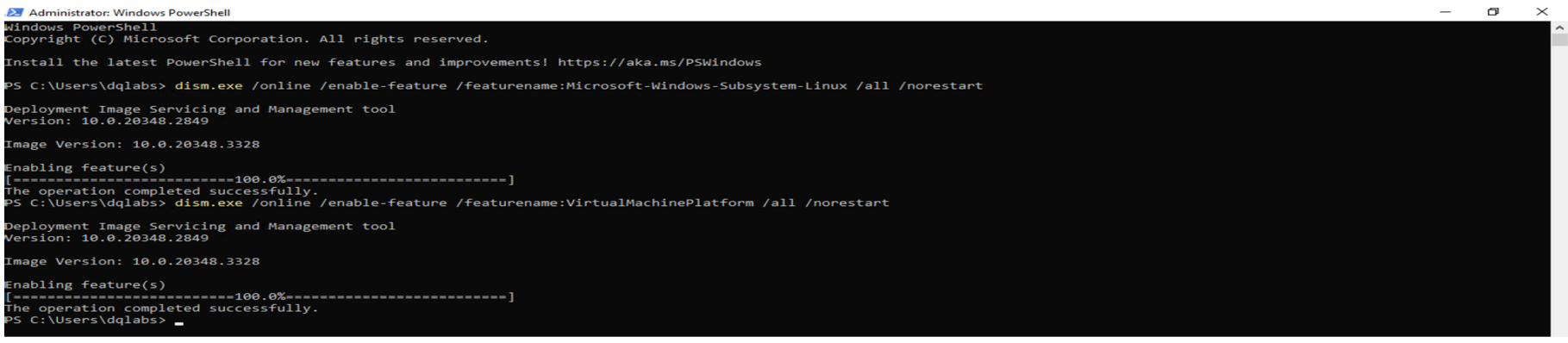
WSL and Ubuntu Install

Step 3: Enable the Windows Subsystem for Linux using the following steps:

- Open Command Prompt as an Administrator (Start menu > Command Prompt > Run as Administrator) and run the following commands one after the other.

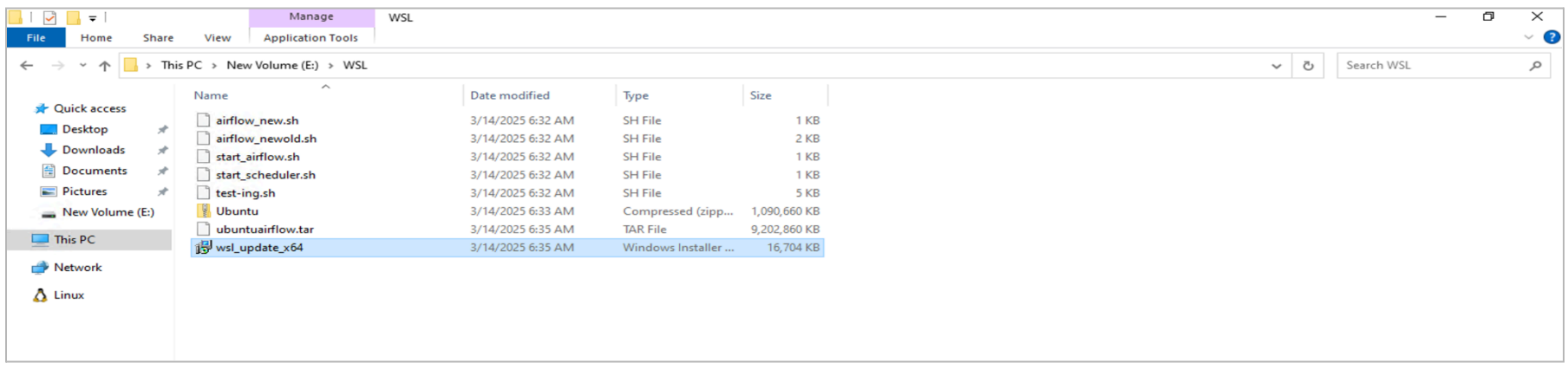
```
None
dism.exe /online /enable-feature /featurename:Microsoft-Windows-Subsystem-Linux /all /norestart

dism.exe /online /enable-feature /featurename:VirtualMachinePlatform /all /norestart
```

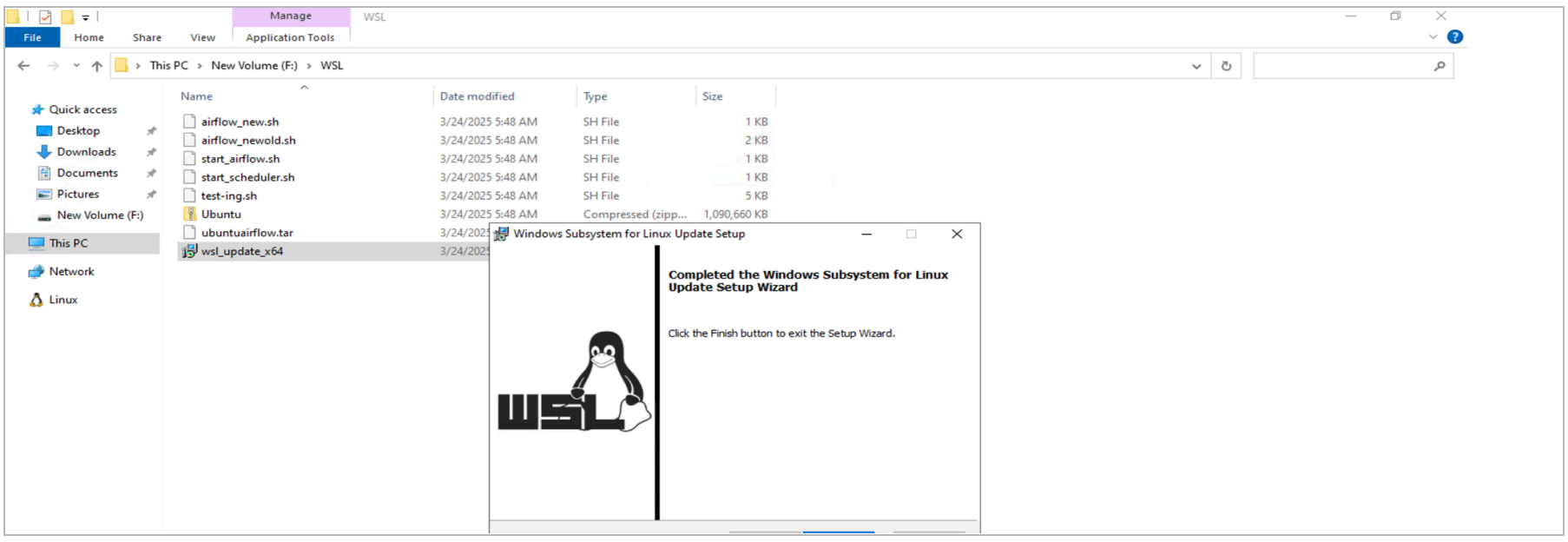


Step 4: Restart your machine to complete the WSL installation.

Step 5: Navigate to the extracted directory > WSL



Step 6: Double-click on **`wsl_update_X64`** to install > Next > click Finish to complete the installation



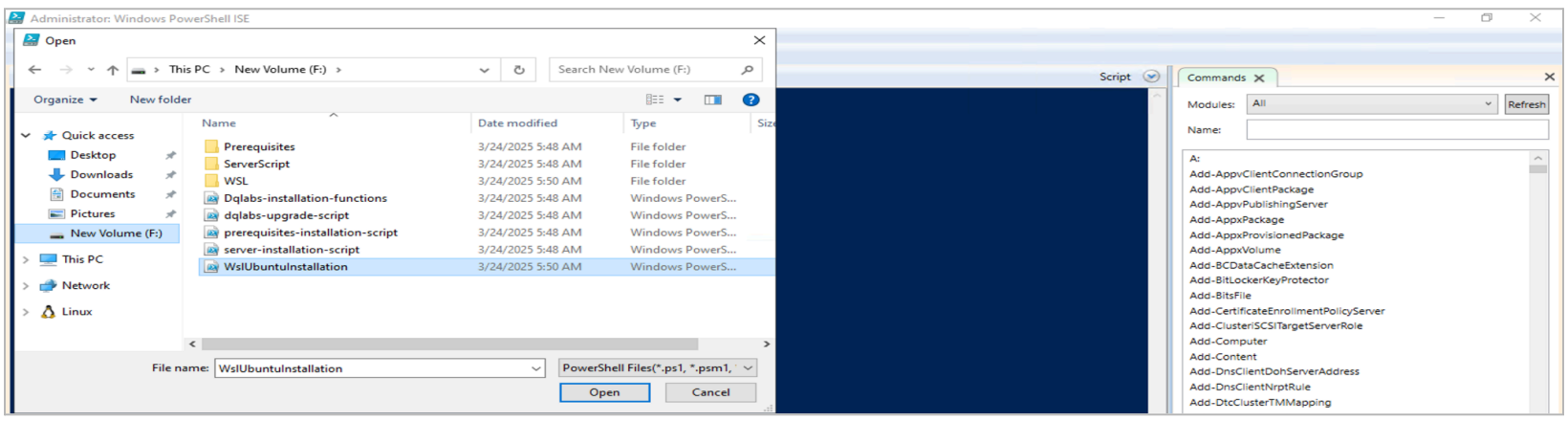
Step 7: Installation steps for Ubuntu

Online Installation

- Open the command prompt as an administrator.
- Run the command `wsl --update`

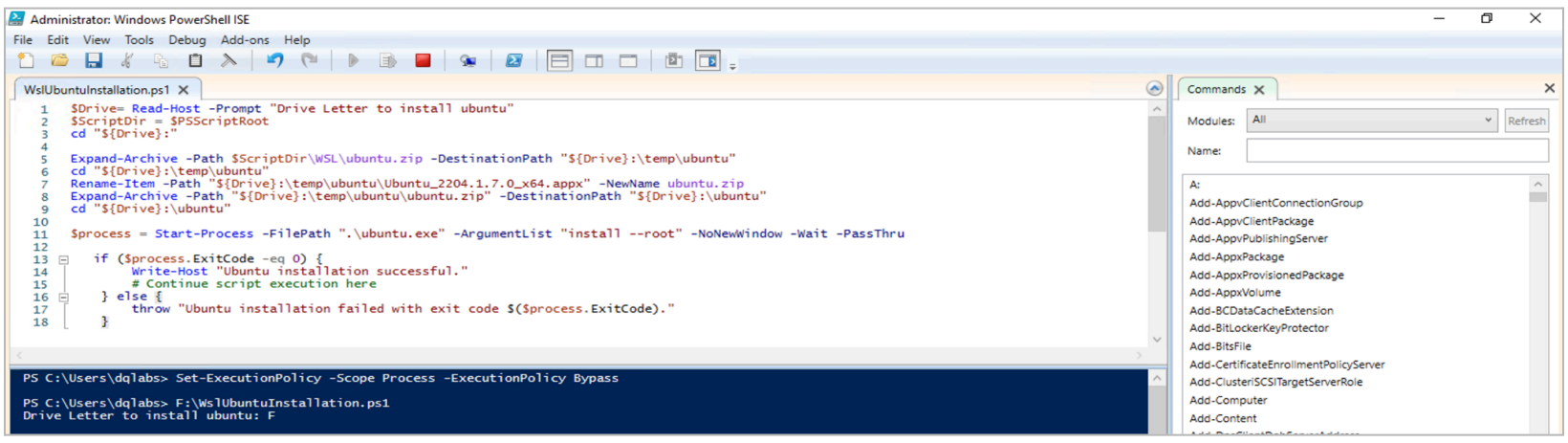
Offline Installation

- Open “PowerShell ISE” as an administrator (Press Win key and search for “PowerShell ISE”)
- In the PowerShell ISE window, click on File > Open and open the `WslUbuntuInstallation` script from the extracted directory



Note: The user should not change the location of the script from the zip file.

- Enter the Disk Drive name where the DQLabs application will be installed (For Example, F as shown in the image above). The best practice is to install it on any drive other than C.



- Once Ubuntu is installed, the user will get a "Ubuntu installation successful" message

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Configuration Setup

Step 1: Open the CONFIG.txt file with administrator access

Ensure that the `config.txt` and `Erwin-installer.sh` are in the same directory

Server Configuration

A. **drive=** Define the drive letter where DQLabs has to be installed(Any drive other than C, do not use colon)
Example - (F)

B. **dqlabsserverip=** Define the DQLabs server private IP
Example - (10.10.10.2)

C. **PSQL_Host=** Define the Postgres database server private IP (If PostgreSQL needs to be installed on the same server, provide the same server private IP)

D. **PostgresMasterusername=**<Postgres_username>
Example - postgres

E. **PostgresMasterPassword=**<Postgres_password>
Example - postgres

Note: If the Postgres server is installed using the DQLabs script, the username and password input should be '`postgres`'

DQLabs Access Information

F. **DNS_NAME:** e.g., foo.subdomain.com

G. **ACCESS_MODE**: `public` or `private`
   a. Public: When the server is connected to the internet, it is public. Here, the user will be able to connect to the DQLabs application outside the network.
   b. Private: When the server is connected to the intranet, it is private. Here, the user will be able to connect to the DQLabs application using the organization network.

H. **SSL_PROTOCOL:** `http` or `https`
If the server is SSL-certified, provide the input as `https`, else `http`

Note: If the user has provided the DNS_name, ACESS_MODE needs to be empty

Administrator Information:

I. **ADMIN_EMAIL:** Administrator's email address (Ensure valid email format)
Example - (admin@dqlabs.ai)

J. **ADMIN_PASSWORD**: Administrator's password
Example - (Dql@b$)

Postgres database credentials:(Do not use special characters and spaces in your username, dbname, and passwords)

K. **PG_USERNAME=**<Postgres_Username>
L. **PG_PASSWORD=**<Postgres_Password>
M. **PG_DB_NAME=**<Database_name>
N. **PG_PORT_NO=**5432

Do not customize the values below

O. **AIRFLOW_USERNAME=**airflow
P. **AIRFLOW_PASSWORD=**airflow
Q. **AIRFLOW_DB_NAME=**airflow_db
R. **DATABASE_ONLY_INSTALLATION=**
yes -> Install only the Postgres database
no -> Install DQLabs application along with Postgres database
dqlabs -> Install DQLabs without Postgres database

CONFIG - Notepad

File Edit Format View Help

```
############  DQLabs  ############
# 1. Please provide drive letter to install DQLabs(Do not provide colon, Example F)

drive=F

# 2. Please provide DQLabs installing server private ip(Example: 10.0.0.4)

dqlabsserverip=10.0.0.4

# 3. Please provide Postgres database server private ip(Example: 10.0.0.5)

PSQL_Host=10.0.0.4

# 4. Postgres master username and password (User with permission to create user, database and grand permission).
# If Postgres server is installed using DQLabs script, user should not change the value 'postgres'.

PostgresMasterusername=postgres
PostgresMasterPassword=postgres

# Note after prerequisites installation completed, PostgresMasterPassword will changed to user defined password "PG_PASSWORD"

# 5. DQLabs access information
# If dns name is available, replace nodns with dns value (Example: foo.foo.com)
# If the user has provided the DNS_name, ACESS_MODE needs to be empty

DNS_NAME=nodns

# 6. Run DQLabs in public ip or private ip (Please consider point 5, also ACCESS_MODE input should be public/private)

ACCESS_MODE=public

# 7. Run DQLabs in http or https (mandatory)

SSL_PROTOCOL=http

# 8. Admin Login Credentials(Example: ADMIN_EMAIL=admin@dqlabs.ai, ADMIN_PASSWORD=DQLabs!@#)
ADMIN_EMAIL=admin@dqlabs.ai
ADMIN_PASSWORD=dqlabs

# 9. Postgres database credentials(For DQLabs application)

PG_USERNAME=dqlabs
PG_PASSWORD=DQL@bs
PG_DB_NAME=dqlabs_db
PG_PORT_NO=5432

# 10. Postgres database credentials(For Airflow)
# AIRFLOW_USERNAME and AIRFLOW_DB_NAME value should not have upper case

AIRFLOW_USERNAME=airflow
AIRFLOW_PASSWORD=@irflow
AIRFLOW_DB_NAME=airflow_db


# 11. Installation options: (mandatory)
# yes     -> Install only the Postgres database
# no      -> Install DQLabs application along with Postgres database
# dqlabs  -> Install DQLabs without  Postgres database

DATABASE_ONLY_INSTALLATION=no
```

Prerequisites Deployment

Step 1: Open `PowerShell ISE` as an administrator. (Press the Win key and search for `PowerShell ISE` > Right Click on `Windows PowerShell ISE` and click on “Run as administrator”)

Step 2: In the PowerShell ISE window, click on File > Open, locate the `prerequisites-installation-script`

Step 3: Click the “Run Script” button in PowerShell (as shown in the reference image below). If the script throws a digitally not signed error, run the following command and select yes to all.

```
None
Set-ExecutionPolicy -Scope Process -ExecutionPolicy Bypass
```

```
PS C:\Users\dqlabs> F:\prerequisites-installation-script.ps1
File F:\prerequisites-installation-script.ps1 cannot be loaded. The file F:\prerequisites-installation-script.ps1 is not digitally signed. You
cannot run this script on the current system. For more information about running scripts and setting execution policy, see
about_Execution_Policies at https:/go.microsoft.com/fwlink/?LinkID=135170.
    + CategoryInfo          : SecurityError: (:) [], ParentContainsErrorRecordException
    + FullyQualifiedErrorId : UnauthorizedAccess

PS C:\Users\dqlabs> Set-ExecutionPolicy -Scope Process -ExecutionPolicy Bypass
```

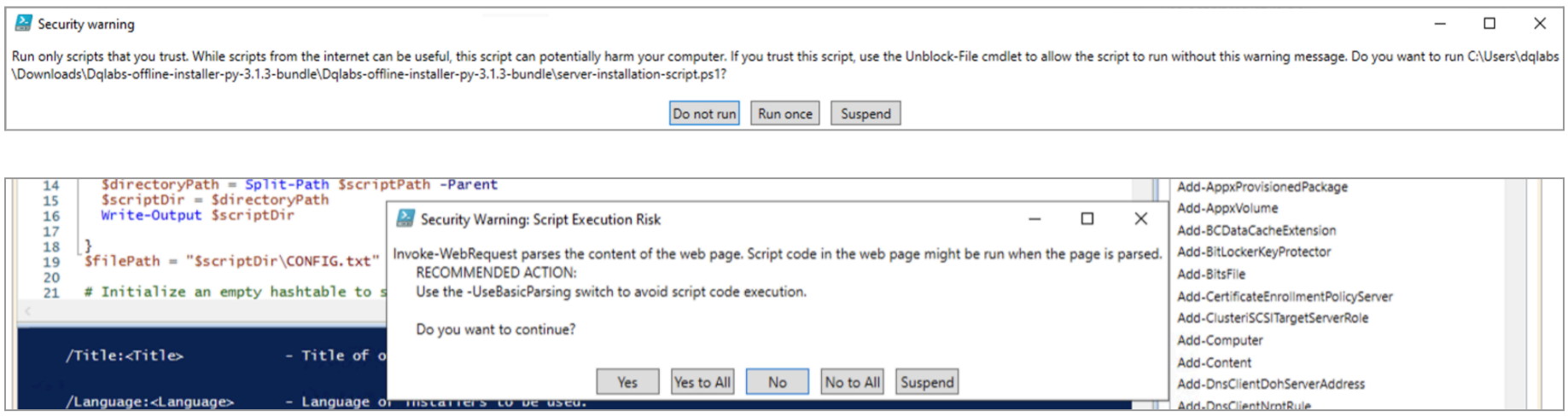
Step 4: Run the script. The user gets a prompt to confirm the installation type, confirm the type, and provide the input as yes.

```
PS C:\Users\dqlabs> F:\prerequisites-installation-script.ps1


    Directory: F:\


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----         3/24/2025   6:11 AM                tmp
Drive is set to: F
Drive F: is available.
Connection string updated with SSL protocol: http
Wish to install Dqlabs-with-postgresql (yes/no):: yes
```

Step 5: When the pop-up below appears while executing the script, click **Run Once**. Also, whenthe Security Warning pop-up appears, click on **Yes to All**

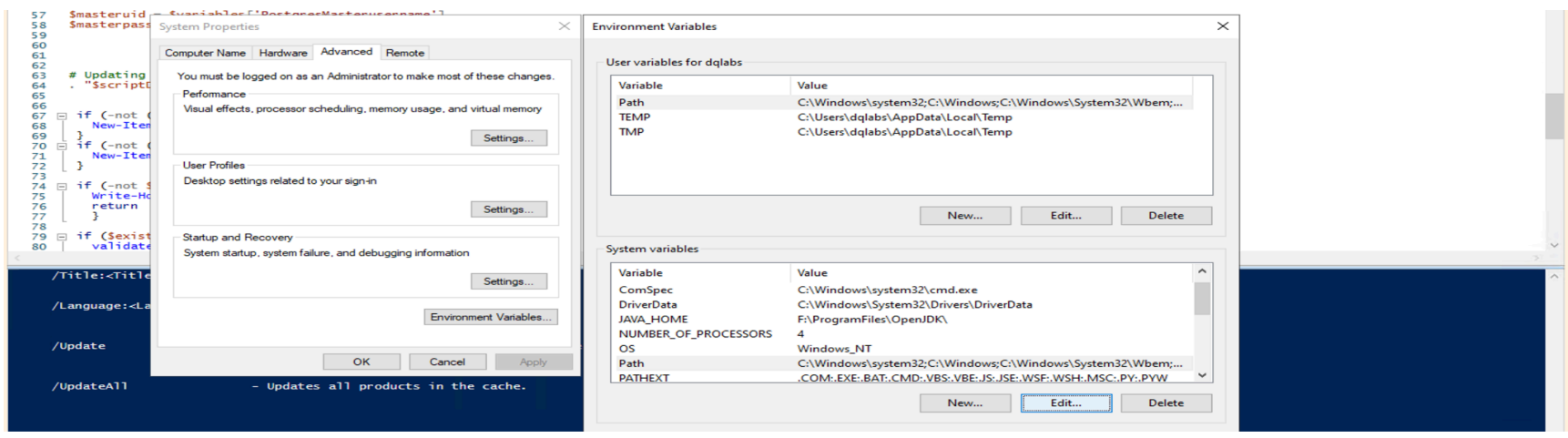


Step 6: Once the script execution is successful, the following status message will appear.

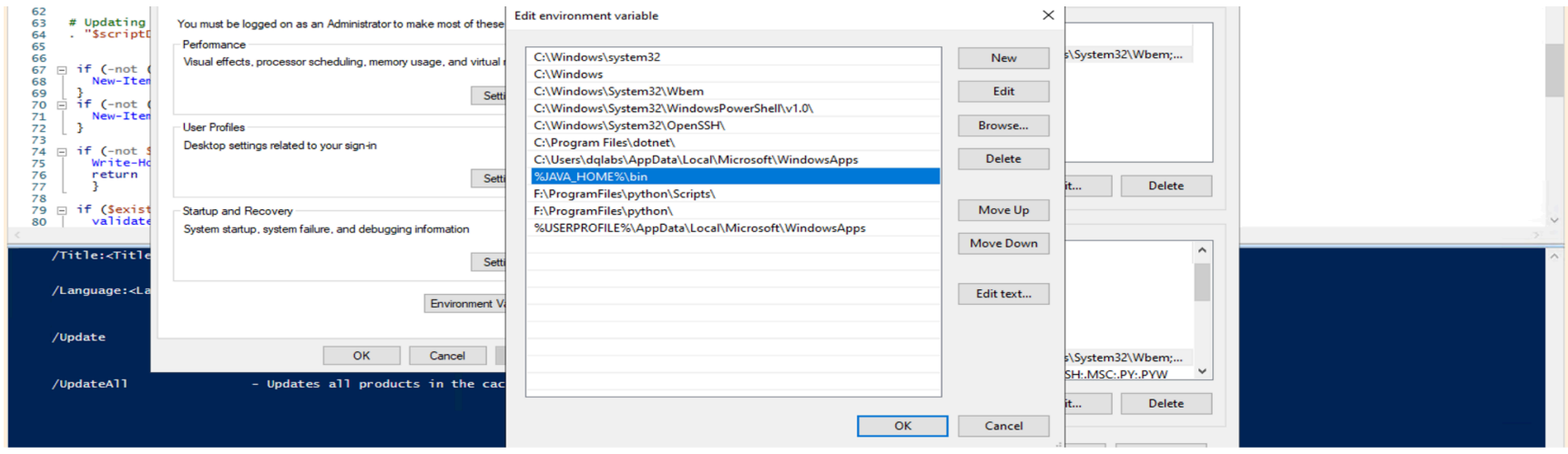
Prerequisite Deployment - Validation

Step 1: Environment Variables

- Click on Start > Search for Advanced System settings.
- On the Advanced tab, click Environment Variables. On the Environment Variables window, select Path under the System Variables section and click on Edit



- Ensure you see “JAVA_HOME” as shown in Fig, then click on ‘OK’ and exit.



Step 2: Java and Python Version check

- Open a new Command Prompt window with Administrator privileges.

- Type `java --version` and hit enter. You should see Java 11 as the major version number.

```
C:\Users\dqlabs>java --version
openjdk 11.0.18 2023-01-17
OpenJDK Runtime Environment OpenLogic-OpenJDK (build 11.0.18+10-adhoc..jdk11u)
OpenJDK 64-Bit Server VM OpenLogic-OpenJDK (build 11.0.18+10-adhoc..jdk11u, mixed mode)
```

- Then type `python -V` and hit enter to check the Python version. You should see 3.10 as the major version number.

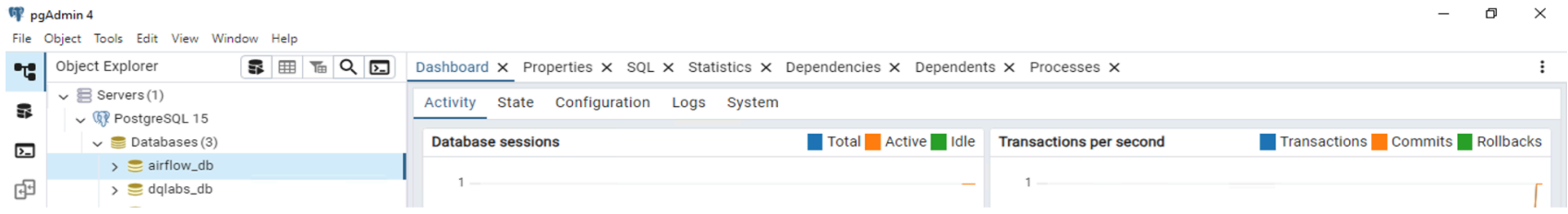
```
C:\Users\dqlabs>python -V
Python 3.11.9
```

Please note that if you do not see the correct Java major version and Python major version, do not proceed with the installation

Step 4: PostgreSQL Login

- Click on the Start and search "pgadmin"
- Open pgAdmin and enter the following credentials to connect:
  - General authentication password: `postgres`

    (or)
  - Localhost PostgreSQL server authentication password: `<user-defined password>`
- Verify if the databases are created and listed under the databases section, as in the image below:



- Close the pgAdmin application.

If the dqlabs/airflow database is not created, stop the installation process and reach out to the support or professional services team for further assistance

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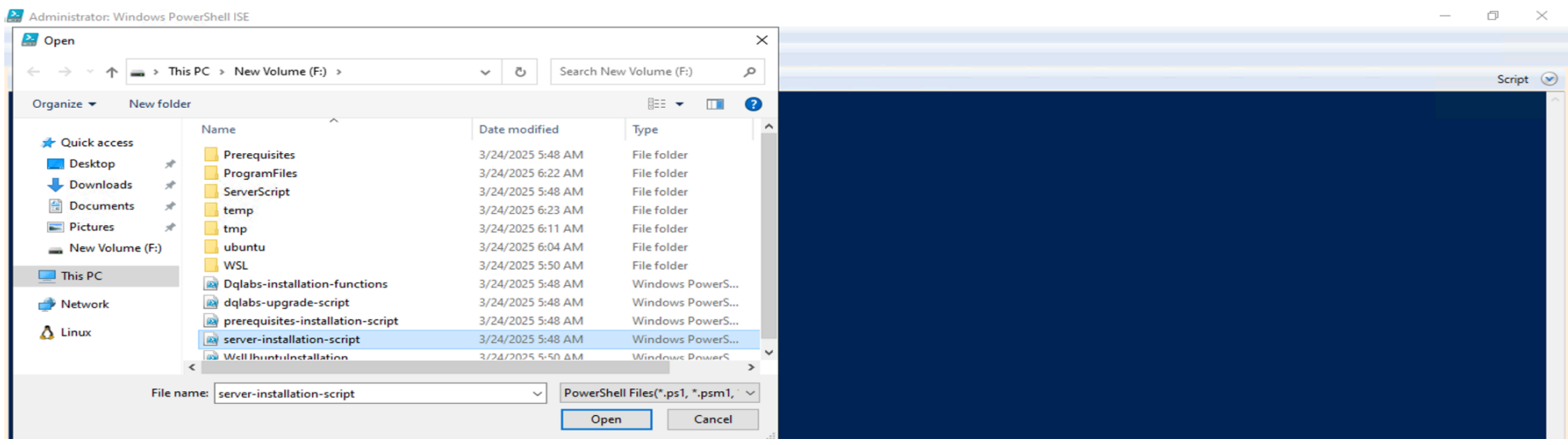
Server Deployment

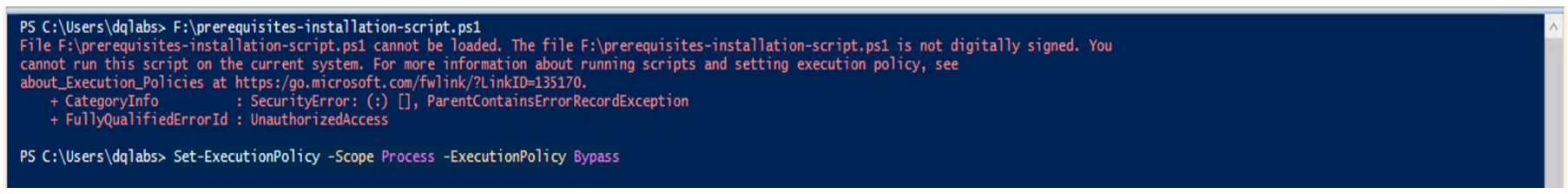
Step 1: Open "PowerShell ISE" as administrator (Press Win key and search for "PowerShell ISE")

Step 2: In the PowerShell ISE window, click on File > Open to open a PowerShell script file. Locate the Server deployment installation script "`server-installation-script`"



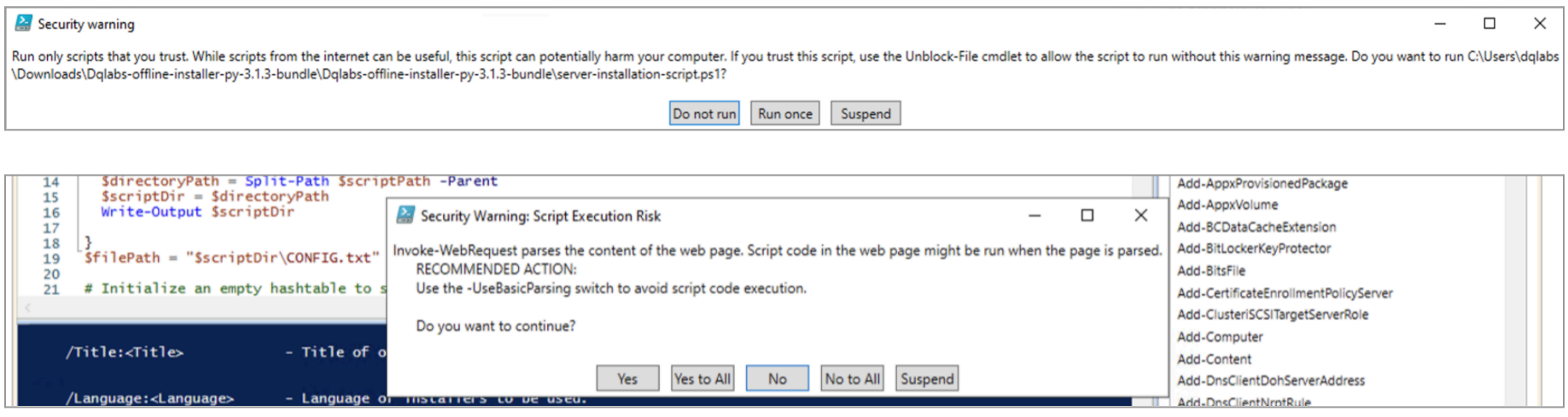
Step 3: Click the "Run Script" button in PowerShell (as shown in the reference image below). If the script throws a digitally not signed error, run the following command and select yes to all.

```
None
Set-ExecutionPolicy -Scope Process -ExecutionPolicy Bypass
```

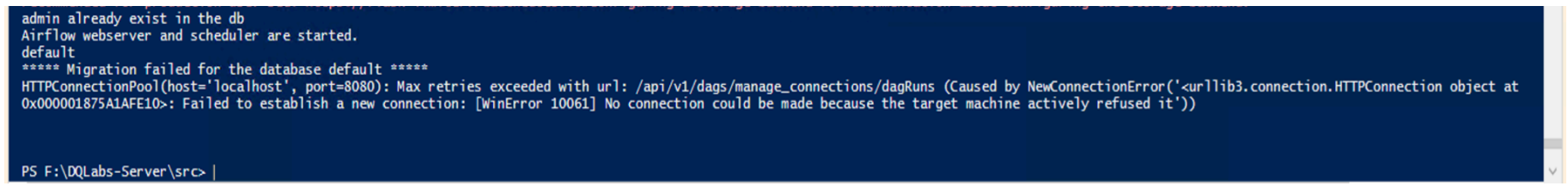


Step 4: Run the script.

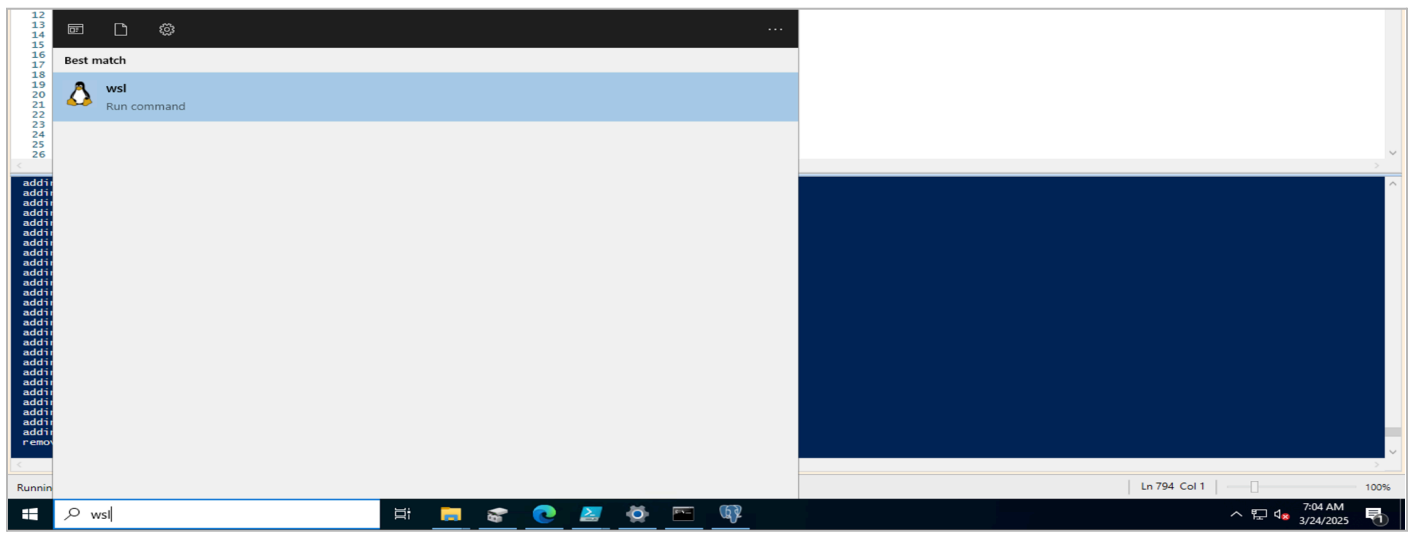
Step 5: When the pop-up below appears while executing the script, click **Run Once**. Also, when the Security Warning pop-up appears, click on **Yes to All**



Step 6: Once the script execution is successful, the following status message will appear.



Step 7: Search and open wsl window.



Step 8: Open PowerShell ISE with administrator access and run the following commands (Ensure to replace the <DQ_Drive> Ex: cd “F:\DQLabs-Server\src”).

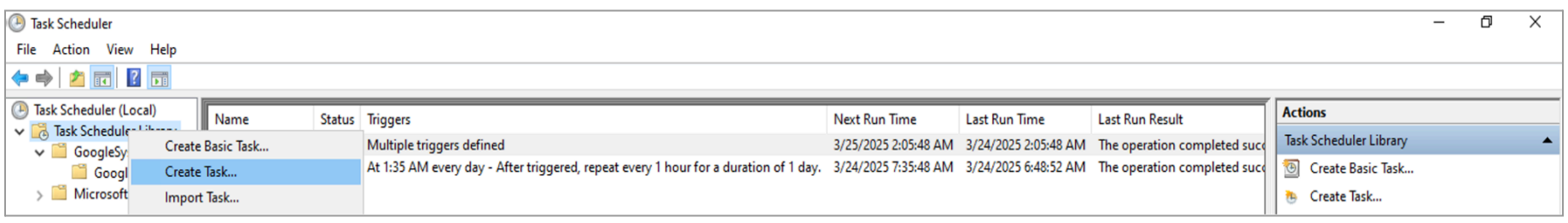
```
None
cd “<DQ_Drive>:\DQLabs-Server\src"
python manage.py migrate_airflow_connection
```

Post-Installation Procedure

Airflow Auto Start Setup Instructions (Task Scheduler):

Follow the instructions provided below to set up a task in the Windows Scheduler:

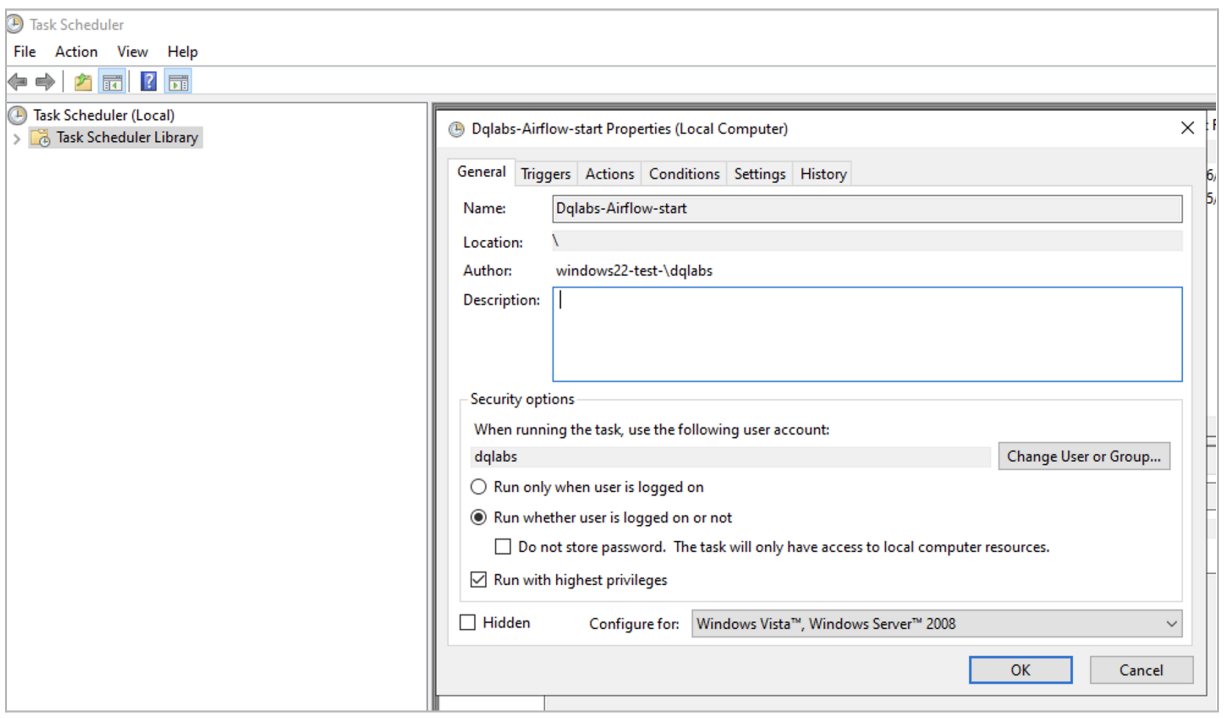
Step 1: Search for “Task Scheduler” in your Windows Server and open the application



Step 2: Right-click on the Task Scheduler Library on the left pane and click Create Task

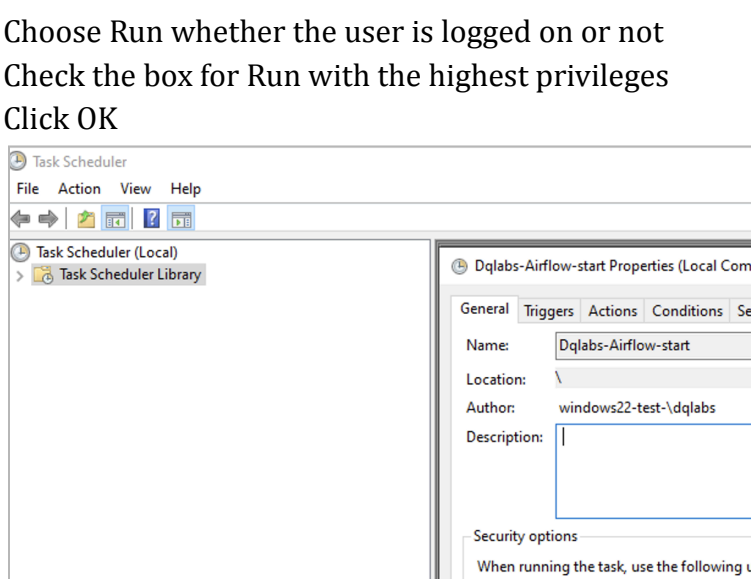
Step 3: On the pop-up window, carry out the following actions:

- Provide the Task a name
- Choose Run whether the user is logged on or not
- Check the box for Run with the highest privileges
- Click OK



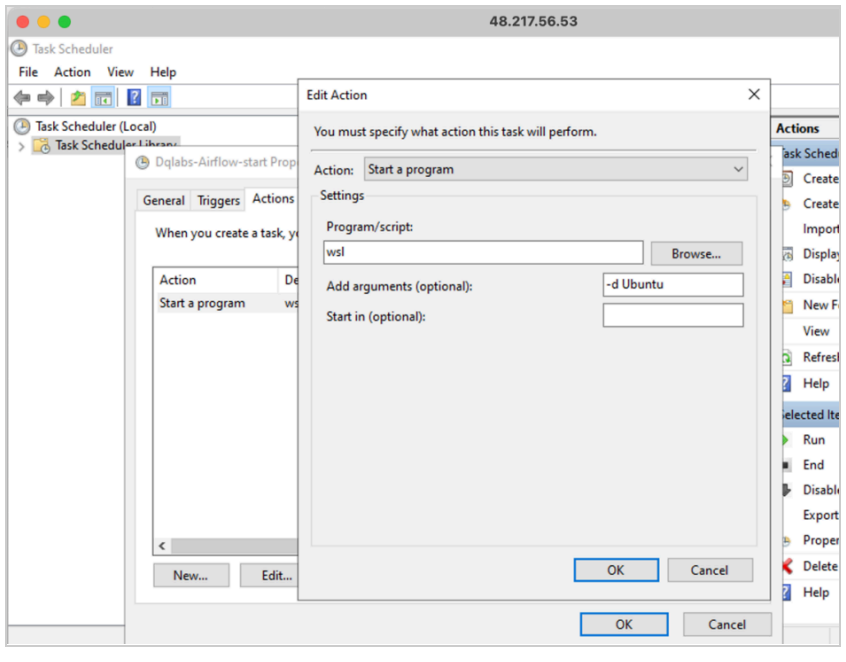
Step 4: Switch to the Triggers tab and perform the following actions:

- Click New
- Begin the task: At startup
- Click **Ok**



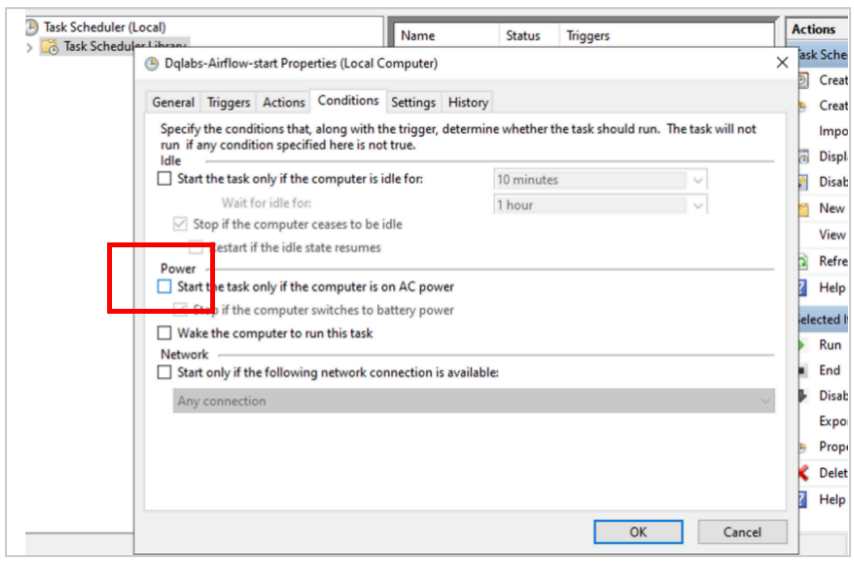
Step 5: Switch to the Actions tab and perform the following actions:

- Click New
- Under Program/script, enter wsl
- Under Add arguments, enter -d Ubuntu
- Click Ok



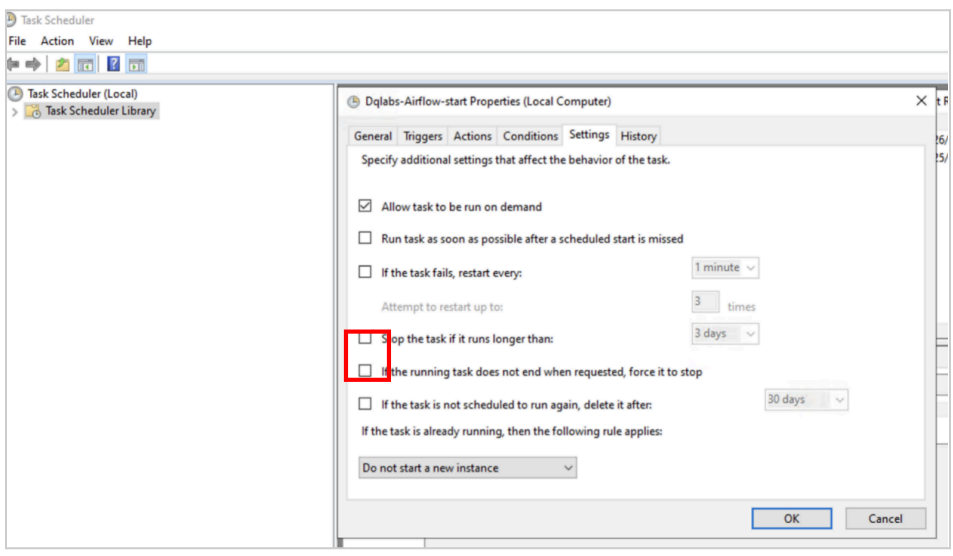
Step 6: Switch to the Conditions tab and perform the following actions:

- Click New
- Uncheck the box - Start the task only if the computer is on AC power
- Click Ok



Step 7: Switch to the Settings tab and perform the following actions:

- Uncheck the box - Stop the task if it runs longer than
- Uncheck the box - if the running task does not end when requested, force it to stop
- Click Ok



Step 8: Follow the steps below to autostart Airflow through WSL:

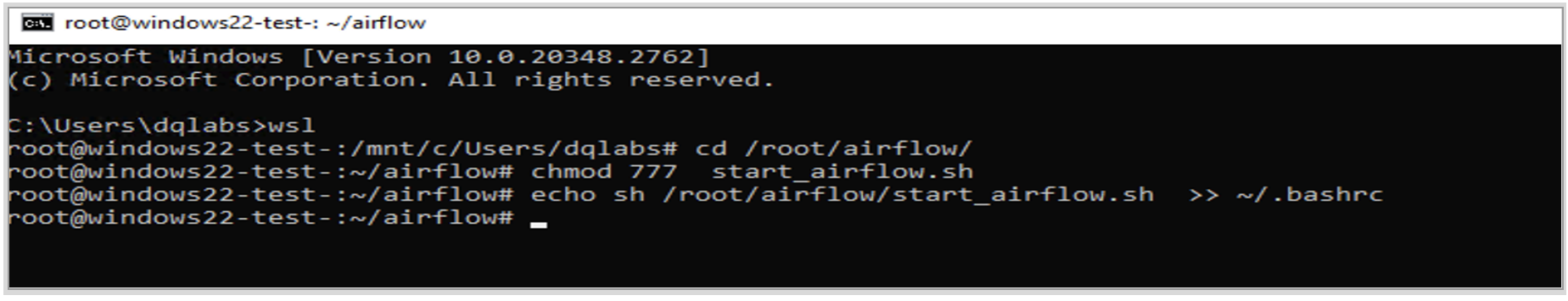
1. Open Command Prompt as an administrator and run the following commands one after the other:

```
None
wsl

cd /root/airflow/

chmod 777  start_airflow.sh

echo sh /root/airflow/start_airflow.sh  >> ~/.bashrc
```



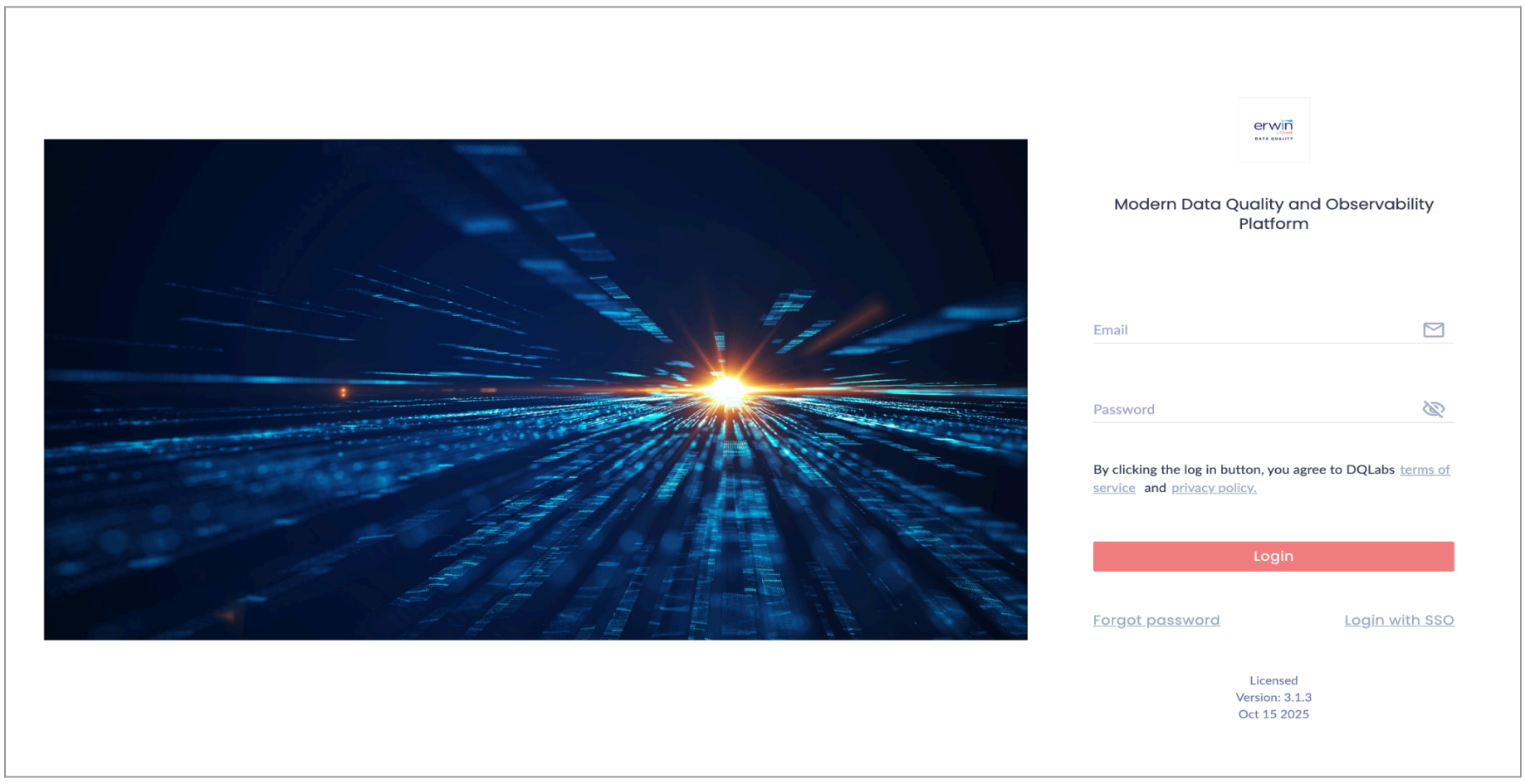
2. Now, reboot the Windows server and test if airflow starts automatically with a time delay of 2 minutes. To test if airflow has started:
    a. After reboot, run localhost:8080 on the server browser to check if the Aiflow UI appears
    b. Execute jobs from the Application UI. Running jobs/tasks implies that Airflow has started.

UI Validation

Step 1: Launch any supported web browser on your machine

Step 2: In the address bar of the browser, enter the IP address or DNS name used during installation

Step 3: The browser will load the DQLabs application, and you will be presented with the login page



Step 4: After logging in to the application, you will be prompted to add the license. Once the license has been activated, the platform is ready to use.