Jenkins Installation Script Documentation

This documentation explains the functionality and usage of the Jenkins installation shell script. The script automates the process of installing Jenkins, along with its prerequisites, for multiple operating systems. It supports version-specific installations and includes robust error handling to manage various scenarios.

Features

- **Version-specific Installation**: Installs the specified version of Jenkins.
- **Cross-Platform Support**: Supports major operating systems:
    - Ubuntu/Debian
    - CentOS/RHEL
    - macOS
    - Windows
- **Java Installation**: Installs OpenJDK 17 as a prerequisite for Jenkins.
- **Error Handling**:
    - Prevents null input for required arguments.
    - Displays meaningful error messages for unsupported OS types or installation failures.
- **Service Verification**: Checks the status of Jenkins after installation.

Usage

The script requires two arguments: the Jenkins version and the operating system type.

Command Syntax

```
./install_jenkins.sh <Jenkins_Version> <OS_Type>
```

Arguments

- `<Jenkins_Version>`: Specifies the Jenkins version to install (e.g., `2.361.1`).
- `<OS_Type>`: Specifies the operating system. Supported values:
    - `ubuntu`
    - `debian`
    - `centos`
    - `rhel`
    - `macos`
    - `windows`

Script Functionality

1. Argument Validation

- Ensures both arguments (`<Jenkins_Version>` and `<OS_Type>`) are provided.
- Displays an error message and exits if any argument is missing:
    - Example:

      ```
      Error: Please provide the Jenkins version as an argument (e.g.,
      2.361.1).
      ```

2. Java Installation

Installs OpenJDK 17 as a prerequisite based on the operating system:

- **Ubuntu/Debian**: Installs Java using the `apt` package manager.
- **CentOS/RHEL**: Installs Java using the `yum` package manager.
- **macOS**: Installs Java using Homebrew.
- **Windows**: Provides instructions for manual installation from Oracle's website.

3. Jenkins Installation

Installs Jenkins using OS-specific commands:

- **Ubuntu/Debian**:
    - Adds Jenkins GPG key and repository.
    - Installs Jenkins via `apt` and starts the service.
- **CentOS/RHEL**:
    - Adds Jenkins repository and GPG key.
    - Installs Jenkins via `yum`, enables, and starts the service.
- **macOS**:
    - Installs Jenkins using Homebrew.
    - Provides instructions to start the service manually.
- **Windows**:
    - Downloads the Jenkins MSI file for manual installation.

4. Service Verification

Checks the Jenkins service status based on the operating system:

- **Linux-based systems (Ubuntu/Debian/CentOS/RHEL)**:
    - Uses `systemctl` to display Jenkins service status.
- **macOS**:

- o   Provides the command to list services managed by Homebrew.
- **Windows**:
  - o   Advises users to verify Jenkins installation via the Windows Services Manager.

5. Post-Installation Instructions

- For **Linux-based systems**:
  - o   Access Jenkins at `http://<your-server-ip>:8080`.
  - o   Retrieve the initial admin password from:

    ```
    /var/lib/jenkins/secrets/initialAdminPassword
    ```

- For **macOS**:
  - o   Start Jenkins using:

    ```
    brew services start jenkins-lts
    ```

- For **Windows**:
  - o   Run the downloaded `jenkins.msi` to complete the installation.

Error Handling

The script handles the following errors:

1. **Missing Arguments**:
   - o   Displays an error message and exits if either `<Jenkins_Version>` or `<OS_Type>` is missing.
2. **Unsupported OS**:
   - o   Displays an error for unsupported OS types.
3. **Installation Failures**:
   - o   Catches errors during the installation of Java or Jenkins and exits with descriptive messages.

Sample Commands

1. **Ubuntu/Debian**:

   ```
   ./install_jenkins.sh 2.361.1 ubuntu
   ```

2. **CentOS/RHEL**:

   ```
   ./install_jenkins.sh 2.361.1 centos
   ```

3. **macOS**:

```
./install_jenkins.sh 2.361.1 macos
```

4. **Windows**:

```
./install_jenkins.sh 2.361.1 windows
```