SQL Server SlipStream Installation

A SQL Server Slipstream installation is a process that integrates service packs, cumulative updates, and other updates with the original SQL Server installation media. This allows you to install SQL Server along with the updates in a single step, saving time and ensuring that the server is up-to-date immediately after installation. Below are the detailed steps for performing a SQL Server Slipstream installation:

1. Prepare the SQL Server Installation Media

- Obtain the SQL Server installation media (ISO or extracted files).
- Extract the contents of the ISO or installation media to a local directory on your server (e.g., `C:\SQLServerMedia`).

2. Download Service Packs and Cumulative Updates

- Service Pack (SP): Major updates that include security fixes, hotfixes, and other improvements.
- Cumulative Update (CU): Smaller, more frequent updates that build upon the service packs.

Visit the [Microsoft SQL Server Downloads](https://www.microsoft.com/en-us/sql-server/sql-server-downloads) page to obtain the latest service pack and cumulative update for your SQL Server version.

3. Organize the Installation Files

You need to place the downloaded updates in specific folders within the extracted SQL Server installation media.

- Create a Folder Structure:
  - Navigate to the directory where you extracted the SQL Server media (e.g., `C:\SQLServerMedia`).
  - Create two new subdirectories:
    - `C:\SQLServerMedia\Updates\GDR`
    - `C:\SQLServerMedia\Updates\CU`

- Copy the Update Files:
  - Place the `.exe` files for the service pack and cumulative updates into the corresponding folders:
    - Service Pack: Copy the service pack installer into the `GDR` folder.
    - Cumulative Update: Copy the cumulative update installer into the `CU` folder.

4. Extract the Update Files

The update packages must be extracted so that the setup process can apply them during installation.

- **Extract the Service Pack**:
  - Open Command Prompt as Administrator.
  - Run the following command to extract the service pack:

    C:\SQLServerMedia\Updates\GDR\<ServicePackName>.exe /X:C:\SQLServerMedia\Updates\GDR
    Replace `<ServicePackName>` with the actual name of the service pack file.

- **Extract the Cumulative Update**:
  - Similarly, extract the cumulative update:

C:\SQLServerMedia\Updates\CU\<CumulativeUpdateName>.exe /X:C:\SQLServerMedia\Updates\CU
Replace `<CumulativeUpdateName>` with the actual name of the cumulative update file.

5. Create a Slipstream Installation Command

You can now run the SQL Server setup with the slipstreamed updates.

- Open Command Prompt as Administrator.
- Navigate to the SQL Server Media Directory:

cd C:\SQLServerMedia

- Run the Slipstream Installation:
Use the following command:

setup.exe /ACTION=Install /UpdateEnabled=True /UpdateSource="C:\SQLServerMedia\Updates" /IACCEPTSQLSERVERLICENSETERMS /Q

- `/ACTION=Install`: Specifies that this is an installation.
- `/UpdateEnabled=True`: Enables the application of updates during installation.
- `/UpdateSource`: Specifies the path where the updates are located.
- `/IACCEPTSQLSERVERLICENSETERMS`: Accepts the SQL Server license terms.
- `/Q`: Runs the installation in quiet mode (no user interaction).

6. Customize the Installation (Optional)

You can include additional parameters to customize the installation, such as the instance name, features, directories, and accounts.
Example:

setup.exe /ACTION=Install /UpdateEnabled=True /UpdateSource="C:\SQLServerMedia\Updates" /INSTANCENAME="MSSQLSERVER" /FEATURES=SQLENGINE,REPLICATION,FULLTEXT /SQLSVCACCOUNT="NT Service\MSSQLSERVER" /SQLSYSADMINACCOUNTS="DOMAIN\Administrator" /IACCEPTSQLSERVERLICENSETERMS /Q

7. Monitor the Installation Process

- Logs: The installation process will generate log files in the `C:\Program Files\Microsoft SQL Server\150\Setup Bootstrap\Log` directory.
- Post-Installation: Once the installation is complete, verify that SQL Server and its updates were installed correctly by checking the version in SQL Server Management Studio (SSMS).

8. Validate the Installation

- Check SQL Server Version:
  - Connect to the SQL Server instance using SSMS.
  - Run the following query to check the installed version:

SELECT @@VERSION;

- This should reflect the SQL Server version along with the service pack and cumulative update versions.

- Review Event Logs: Ensure there are no errors or warnings related to the SQL Server installation.

9. Automate the Slipstream Installation (Optional)

- PowerShell/Bash Script:
  - You can create a PowerShell or batch script to automate the entire slipstream installation process, especially useful for deploying SQL Server across multiple servers.

10. Cleanup

- Once the installation is complete and validated, you can delete the extracted files and updates from your system to free up space.

By following these steps, you can successfully perform a SQL Server Slipstream installation, ensuring that your SQL Server instance is up-to-date with the latest patches and service packs right from the start.