Secure File Transfer Protocol (SFTP | FTPS) SSIS Task

Purpose: This tool extends SQL Server Data Tools SSIS capabilities by allowing a user to introduce this task into a deployable package. The tool itself can be configured to download or upload individual files, or folders to and from an FTP server.

Install Requirements: Installation of this tool requires a pc that has SQL Server 2012 or later installed. As well as the Global Assembly Cache utility tool available (typically located at C:\Program Files (x86)\Microsoft SDKs\Windows\v10.0A\bin\NETFX 4.8 Tools).

The installer must be run as an Admin and check that the previous elements are present on the local machine. If an element is not present before installation the installer will output which element is not present and not proceed with installation.

Installation: Executing the Installer as Admin will generate an installation folder with the necessary files on at C:\. Files and directories will be created within the SQL Server 32 and 64bit program files. A batch script will run the GAC utility tool to install each dll to the GAC. After completion of file creating and GAC installation. A completion prompt will be available. Allowing the user to press “Y” to retain the installation folder and files for reference.

Usage: This tool is available to use within Visual Studio Integration Services Projects and is in the Common section of the SSIS toolbox (right click the Control Flow background to access SSIS toolbox). Drag and drop the SFTP | FTPS Task onto the control flow to add to project. To adjust its setting double, click to access a GUI. Or else right click the Task and select its properties.

The Task properties has some fields set to typical default values for convenience. The label for each field can be hovered over to view a tooltip about the field. As well as further examples and explanations available by pressing the Help button on the Task Editor GUI. Save changes by pressing Done or discard changes by pressing Cancel.

Once the Task is configured. Press the start button on the top bar of Visual Studio. If problems occur or the Task has improper configuration values. Errors will be displayed to the user or may be in the execution results tab of the package.

Code Structure: The SFTP | FTPS task consists of two class libraries. Both libraries are contained within a single Visual Studio solution (SecureFTP). One of the libraries contains the logic and validation for the Task. And inherits from the SQL Server Dts Runtime class allowing it to be recognized by Visual Studio as an SSIS Task. The other library contains the user interface for the Task. Utilizing a WinForms GUI that is linked via TaskHost to the first Task Library. Allowing it to pass information back and forth between the GUI and Task.

The Task library uses the WinSCP dll to add to it the ability to perform secure file transfers. Within the Task is a few key methods. ValidateProperties makes sure value types and nulls aren’t introduced into the Task. A Validate method to help prevent bad configurations that don’t establish a proper connection. An Execute method that combines all the validated information, creates a connection, perform transfer, then tells Visual Studio if that execution was successful.

The UI library contains two forms. A task editor UI and a help page. The library references the Task library and uses a TaskHost object to get and set the Task properties. There is basic validation built into the editor form. And a class that handles passing forms to and from the Task.

Outside the previously discussed solution is a Console Application that installs the SFTP | FTPS Task. This application contains the three dlls (Task, TaskUI, WinSCP). The installer does validation. If the Validation is successful, then it creates a folder with the dlls and a batch file. A VerifyAndInstall method writes the dlls to proper locations with SQL server program files. Then a batch script is executed that installs the three dlls into the GAC. If the starting validation was unsuccessful then the installation process isn’t executed.

File List:

* Task.dll (Contains Task logic. Must be installed in GAC and located in DTS/Task)
* TaskUI.dll (Contains Task UI. Must be installed in GAC and located in DTS/Task)
* Task\_Install.exe (Deploys and installs dlls on machine)
* SecureFTP (Contains solution for SFTP Task and its UI)
* SFTP\_Deploy (Contains solution for SFTP Task installer)
* FTP\_Secure (Contains solution for FTPS Task and its UI)
* FTPS\_Deploy (Contains solution for FTPS Task installer)