SSiS Package Execution Action Pack 3.0

This Action Pack is intended to execute Microsoft SQL Server Integration Service (SSIS) Packages. The SSIS Packages must be deployed in the Integration Services Catalogs

Please note that SSIS accept requests from Windows users which uses Windows Authentication only. Please make sure that the SQL Agent accordingly configured.

The Action Pack consists of four different Actions

- Executes a SSIS package – Package/Project Parameters could be provided
- Retrieve the SSIS result report from the SSIS package execution
- Update the internal SSIS system information lists.
- Retrieve SSIS Environment information: Read from the SSIS Database the configuration parameters necessary to use the 'Execute SSIS Package' Action

Special thanks to Leonard Olteanu and the other Blogs available in the Web. This action based on their inputs.

Contents

Tested SSIS Version

The Action Pack is developed and tested with Microsoft SQL Server 2014

Setup

The Action Pack expects an Automic SQL Agent which is configured to use Window Authentication which is not the case by default.

It is recommended to install the SQL Agent on the same machine which runs the SSIS.

Configure the SQL Agent to use the Windows Authentication

Install the SQL Agent as described in the documentation. In addition to the usual SQL Agent configuration changes in the ucxjsqlx.ini file. Make sure that the setting 'type' is set to MSSQL and the 'WindowsAuthentication' is to '1'. Both settings are located in the [SQL] section.

The SQL Agent binary has to be executed with a Windows user which has the permission to access SSIS. When using the Automic Service Manager you might have to use the 'Log On As' settings of the properties.
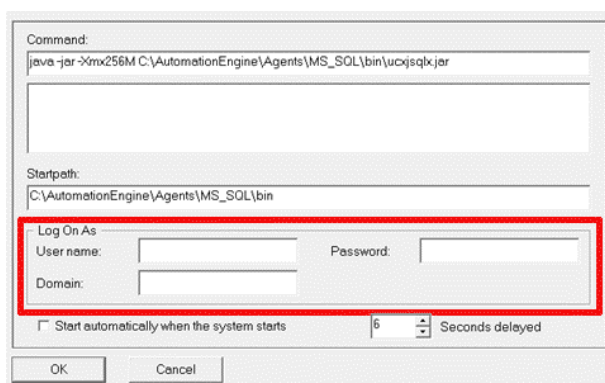
Configuring Anonymous Access for the SQL Agent

(SQL) Agents using Windows Authentication have to use the Anonymous mode. In order to activate the Anonymous mode it is necessary to duplicate UC_HOSTCHAR_DEFAULT in client 0. Use as new name (e.g.) UC_HOSTCHAR_ANONYMOUS. Change following settings

Name	Description
ANONYMOUS_JOB	Running Jobs using the Anonymous mode. Works with SQL, Win/Unix Jobs.
ANONYMOUS_FT	Using the Anonymous mode for Automic Manage File Transfer (JOBF)
ANONYMOUS_FE	Using the Anonymous mode for File Events

Next you have to modify the UC_EX_HOSTCHAR Configuration VARA object. There you find as key the name of the new SQL Agent and as 'Value1' the value 'DEFAULT'. Change the value from DEFAULT to ANONYMOUS (or the name of the duplicated UC_HOSTCHAR_DEFAULT.

Configure the Automic SQL CONNection Object

You have to configure 'PKG.CONN.SQL.SSISDB.WIN.AUTH' Connection object.

Name	Description
Database Type	MS-SQL Server.
Server:Port	Hostname and port of the database server which runs SSIS

Database Name	Name of the Database Instance. Usually it is 'SSISDB'.
Alternative User Name	Name of a user with the permission to access SSIS using 'Windows Authentication' It is the same user which runs the SQL Agent.
Alternative Password	Enter a dummy password since the Agent is running in the Windows Authentication mode.

The 'Test' button of the connection object might not work. It may fires always an error message.

Configure SSIS Scale Out Worker configuration

This configuration task is **only necessary** if SSIS is using one or more Scale Out Workers.

Open the PKG.VARA.SCALE.OUT.WORKERS VARA object and enter data to following columns.

The SSIS Administrator should know the Scale Out Agent Ids. However the ids can be found in the 'worker_agents' table of the SSISDB.

Column Name	Description
Key	This number defines the order the Scale Out Workers are displayed to the user. You should not use the values 1 and 2.
Value 1	Name / ID of the Scale Out Worker. A Scale Out Worker ID looks like this: 64c020e2-f819-4c2d-a22f-efb31a91e70a

Configuring the SSIS internal update job

In order to make the user experience as smooth as possible, it is necessary to do following configuration steps.

The Extended version of the SSIS package Execution Action using static VARA objects to display the SSIS system information. These VARA object needs to be periodically updated in order to display the correct system information.

Accessing **only one** SSIS System

1. Open the Static VARA object 'PKG.VARA.AGENTS.SQL.LIST.SSIS' which is located in the PACKAGES/PCK.CUSTOM_EXECUTE_SSIS_PACKAGES/CONFIG folder and enter the name of the SQL Agent to be used for the SSIS automation.
2. Create a Standard Workflow object use a name which follow your naming concept. E.g. JP.SSIS.PERIOD.UPDATE.SYS.INFO
3. Add to this Workflow Object the Action **Update Internal SSIS Information**
4. Configure the Prompt of the **Update Internal SSIS Information** Action

Name	Description
SSIS Database Name	Name of the SSIS Database. It is usually SSISDB.
Automic SQL Agent	Name of the Automic SQL Agent to be used for the communication with SSIS
SQL CONNection Object	The name of the Automic SQL Connection object. You may keep the default 'PKG.CONN.SQL.SSISDB.WIN.AUTH'

5. Store the Workflow.

6. Execute the Workflow periodically using 'Execute – Execute Recurring' or a Schedule object.
   It is not necessary to execute the Job too often. However it depends how often SSIS Packages get created or removed. Note an update of a SSIS Package does not require the execution of this update Workflow.
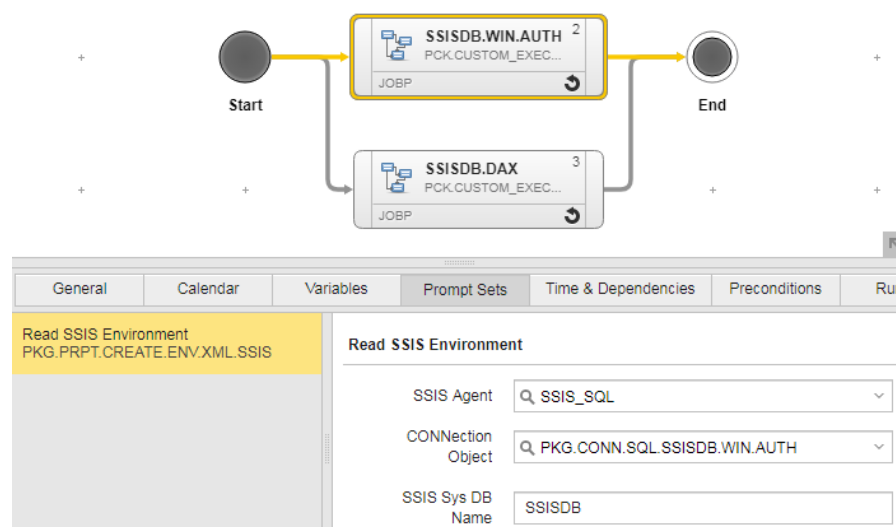
Accessing **more than one** SSIS System

1. Open the Static VARA object 'PKG.VARA.AGENTS.SQL.LIST.SSIS' which is located in the PACKAGES/PCK.CUSTOM_EXECUTE_SSIS_PACKAGES/CONFIG folder. Add for each SQL Agent to be used for the SSIS access a new row and enter in the key a number (for sorting purposes) and column 1 the name of SQL Agents. Two rows are required for two SQL Agents.

2. Each SSIS system requires an individual SQL CONNection object, you have to duplicate the SQL CONNection object 'PKG.CONN.SQL.SSISDB.WIN.AUTH' because the additional Connection Object is used for the second SSIS System.
   Open the Static VARA object 'PKG.VARA.CONN.OBJECTS.LIST.SSIS' which is located in the PACKAGES/PCK.CUSTOM_EXECUTE_SSIS_PACKAGES/CONFIG folder. Add for each Connection Object as key a number in order to sort the connection object list. Add in 'Column 1' the name of the Connection objects.

☐	1	PKG.CONN.SQL.SSISDB.WIN.AUTH
☐	2	PKG.CONN.SQL.SSISDB.DAX

3. Create a Standard Workflow object use a name which follow your naming concept. E.g. JP.SSIS.PERIOD.UPDATE.SYS.INFO

4. Add for each of the SSIS System the Action **Update Internal SSIS Information** to this Workflow Object.

5. Configure the Prompt of the **Update Internal SSIS Information** Action

Name	Description
SSIS Database Name	Name of the SSIS Database. It is usually SSISDB.
Automic SQL Agent	Name of the Automic SQL Agent to be used for the communication with SSIS
SQL CONNection Object	The name of the Automic SQL Connection object. You may keep the default 'PKG.CONN.SQL.SSISDB.WIN.AUTH'

6. Store the Workflow.

7. Execute the Workflow periodically using 'Execute – Execute Recurring' or a Schedule object. It is not necessary to execute the Job too often. However it depends how often SSIS Packages get created or removed. Note an update of a SSIS Package does not require the execution of this update Workflow.

Setting up useful default values

Since most of the SSIS system environment is mostly fix, it is useful to change the default values directly within the Action prompts. Open the following Automic object and go to 'Variables and Prompts'. Change the prompt values. These values will be used as default values.

- PCK.CUSTOM_EXECUTE_SSIS_PACKAGES.PUB.ACTION.EXECUTE_SSIS_PACKAGE_EXT
- PCK.CUSTOM_EXECUTE_SSIS_PACKAGES.PUB.ACTION.EXECUTE_SSIS_PACKAGES
- PCK.CUSTOM_EXECUTE_SSIS_PACKAGES.PUB.ACTION.RETRIEVE_SSIS_RESULT_REPORT
- PCK.CUSTOM_EXECUTE_SSIS_PACKAGES.PUB.ACTION.RETRIEVE_SSIS_RESULT_REPORT_EXT
- PCK.CUSTOM_EXECUTE_SSIS_PACKAGES.PUB.ACTION.UPDATE_INTERNAL_SSIS_INFORMATION

Updating the SSIS package with a newer version

I am publishing from time to new versions of the SSIS package on the marketplace.

The new version will be updated by using the 'Install pack' button in the Administration pane.

It may happened that object being used in the Action Pack became obsolete. These update procedure will move these objects in the ##INCLUDED_EXTERNALS## folders. These objects, they have 'SSIS' in the name, can be removed.

Please Note. In order to avoid that the Connection objects get deleted during the update, you should copy these objects in the different folder outside the /PACKAGES/PCK.CUSTOM_EXECUTE_SSIS_PACKAGES folder structure.

Using the 'Retrieve SSIS Environment information' Action

The Extended version of the SSIS Action provides the SSIS system environment information via listboxes. However this Action collects all information necessary to run the SSIS Packages and is also a good test for the Automic Connection Object configuration.

The Action expects three parameter

Parameter	Description
SSIS Database Name	Name of the SSIS Database. It is usually SSISDB.
Automic SQL Agent	Name of the Automic SQL Agent to be used for the communication with SSIS
SQL CONNection Object	The name of the Automic SQL Connection object. You should keep the default 'PKG.CONN.SQL.SSISDB.WIN.AUTH'

Once the Action was executed, you find in the four Job reports of the name of the SSIS project, Folder, and Packages.

Difference between the Ext and non Ext version

The 'Extended' version of the Action provides Listboxes for the most relevant configuration settings. It simplifies the configuration but the **Update Internal SSIS Information** Action has to be executed periodically otherwise the listboxes will display outdated information.

Important: Follow the 'Configuring the SSIS internal update job' section to configure the periodically running update Action.

Using the 'Executing SSIS Packages Ext' Action

There are two types of 'Execute SSIS Packages Action', The 'Execute SSIS Package Ext' Action let you choose from a list of values. Please read the section 'Using the 'Execute SSIS Package Ext' Action' carefully.

Configuration Item	Description
SSIS Database Name	Name of the SSIS Database. It is usually SSISDB.
Automic SQL Agent	Name of the Automic SQL Agent to be used for the communication with SSIS
SQL CONNection Object	The name of the Automic SQL Connection object. You should keep the default 'PKG.CONN.SQL.SSISDB.WIN.AUTH'
SSIS Package folder	The name of folders where the SSIS packages are located.
SSIS Project	Name of the SSIS Project
SSIS Package Name	Name of the SSIS package to be executed by the Action.
SSIS Environment	Name of the SSIS Environment to be used. Leave the field empty if no SSIS environment is available or should be used. Note: It displays all available SSIS Environments even those which not belong to the chosen SSIS project.
Retry Count	Number of retries if execution fails (SSIS has to run in Scale Out Mode)

Logging Level	Defines the level of details generated in the Job report. Note that you have to use the 'Retrieve SSIS Result Report' Action to get the report. 0 – None 1 – Basic 2 – Performance 3 – Verbose 4 – Runtime Lineage 100 – Custom See in the Microsoft SSIS Documentation for more details
DUMP ON ERROR	0 – Deactivated 1 –SSIS will generate a DUMP file.
DUMP ON EVENT	0 – Deactivated 1 – Will monitor for the given event code. See SSIS documentation for more details.
DUMP EVENT CODE	Enter a comma separated list of event codes the 'DUMP ON EVENT' functionality should react.

Configure Scale Out Workers

Scale Out workers are an optional feature of SSIS to use multiple worker tools to execute SSIS packages

Configuration Item	Description
Choose the Scale Out Worker	Choose from the provided list the name/id of the SSIS worker. The list is stored in the VARA PKG.VARA.SCALE.OUT.WORKERS

It can be up to 25 parameters provided.

Configuration Item	Description
Parameter Type	Choose from one of the eight data types, depending on the data type the SSIS Package expects Keep this item blank to hide the parameter from the SSIS Package.
Parameter location	An SSIS Parameter can be defined of Package or Project.
Parameter Name	Name of SSIS Package Parameter. '
Parameter Value	Decimal separator of float values can either be comma or point. There are three different format for date value available.

Result Value

The &UCRB_SSIS_EXEC_ID# will include SSIS execution/operation ID which is necessary for the Result report Action.

Using the Retrieve SSIS Result Report' Action

The Action expects following parameters

Parameter	Description
SSIS Execution ID	SSIS execution/operation id where the report should be retrieved from.

	The execution id is optional, if no execution id is set, the latest/newest result report of the given package name will be retrieved. You may use the &UCRB_SSIS_EXEC_ID# variable, see Execution Action for more details.
SSIS Package Name	Name of the SSIS package to be retrieved by the Action. This parameter is optional if the Action is part of a Workflow.
Optional Result Record Filter	A typical result report consist of dozens of records. This filters allows to filter only for the interesting records such as the processed record count.
SSIS DB Name:	Name of the SSIS database. Use the name you might have used for the ''Retrieve SSIS Environment information' Action
SQL Agent for the SSIS communication	Name of the SQL Agent to be used for the communication with SSIS
SSIS Connection Object	The name of the SQL Connection object. You should keep the default 'PKG.CONN.SQL.SSISDB.WIN.AUTH'