Blog – Use Integration Services Environments to Set Multiple Values with a Single Selection when Scheduling SSIS Packages

Introduction

In my last SSIS blog I explained how to easily set the value of a single parameter at execution time. Here we look at how to take a set of parameter values that may often be used together depending which mode you want to run your job in. The classic usage of this is the choice of production environment (development, test, QA, production etc) where you want to output to a different database, potentially with a different logon, or possibly importing different source files, depending on the mode you want to run the job in.

The Integration Services Catalog (SSIS DB Catalog) provides a capability called Environments for this purpose – basically a collection of parameters with specific values. The environment is then chosen at execution time

For the purposes of this example I have taken the parameter created in the last blog (initial catalog, to specify the target database) to add to the environments I will create, but the same method holds true for any number of parameters.
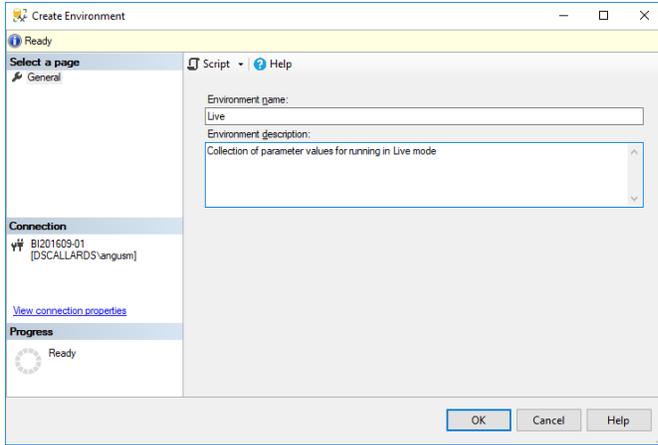
Create the Environments

In SQL Server Management Studio, connect to the server where you have deployed your Integration Services project and expand the Integration Services Catalog node. Expand the SSISDB node, then the folder you created to deploy your project to.

Right click on Environments and select Create Environment:
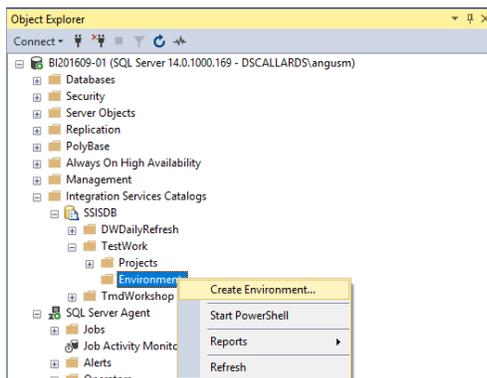
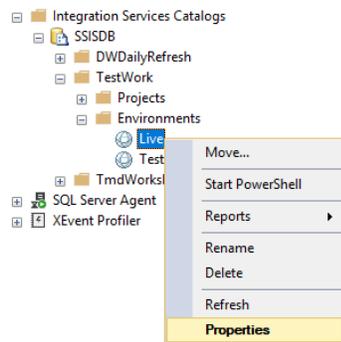In this exercise I am going to create a Live and a Test environment

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Once they are created you will see them under the node:


Create Variables

Next you need to create variables in each environment for all of the parameters you want to set. Right click on the environment and select Properties:

Then click on the Variables page and define variables to map to the respective parameters. For the purposes of illustration I am only creating one variable but in practice it would be many. The name of the variable does not need to match the name of the parameter as we will associate them manually.

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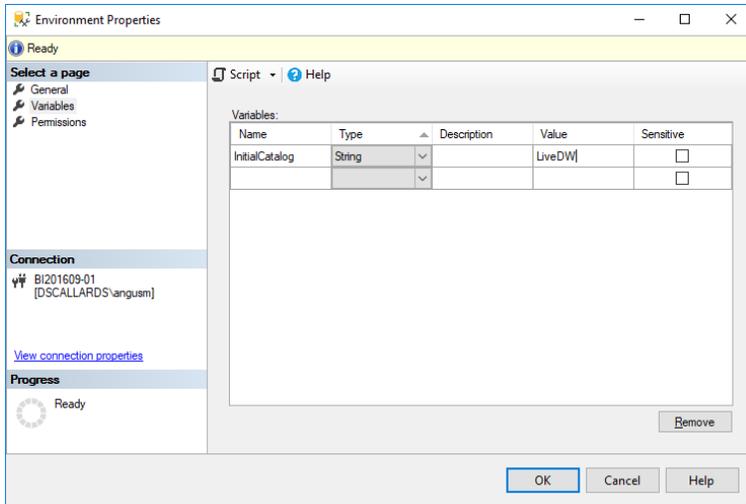
Create the same variable name but with the relevant different value in the other environment(s):
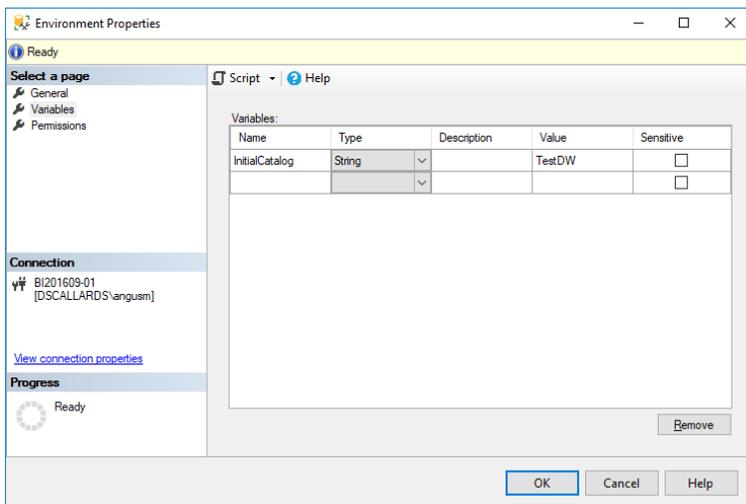
NB the variable must have the same name in each environment.

Map the Environments to the Project

Now to add the association that lets your parameter(s) access the variable values defined in your environments, navigate to your project in the Integration Services Catalog, right click and select Configure:
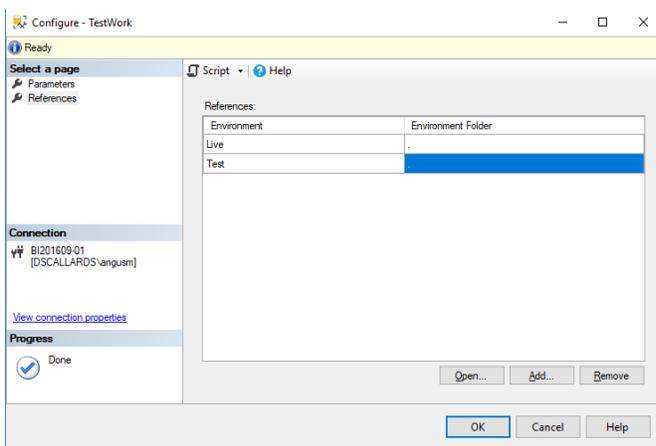
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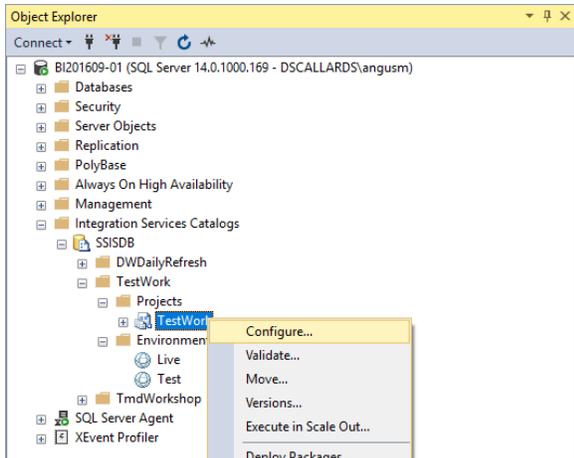
NB because this is mapped at project level the selection will work for scheduling any package within that project (here I have a single package but in most cases you will multiple packages within a project).

Click on References then Add to add the environment:
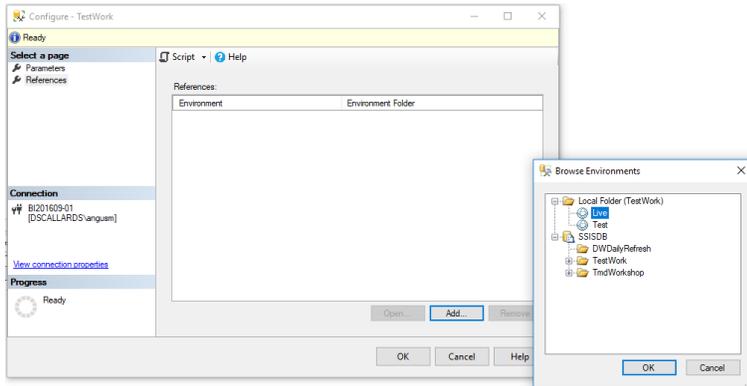
Do this for both environments, so they are both shown in the Environment window:

Map the Parameter(s) to the Variable(s)

Because the environments are scoped at project level, any packages within the project can access their variables.

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Now you can map each parameter (in this example only one) to the variable. To do this switch to the Parameters page and click the ellipsis next to each parameter:
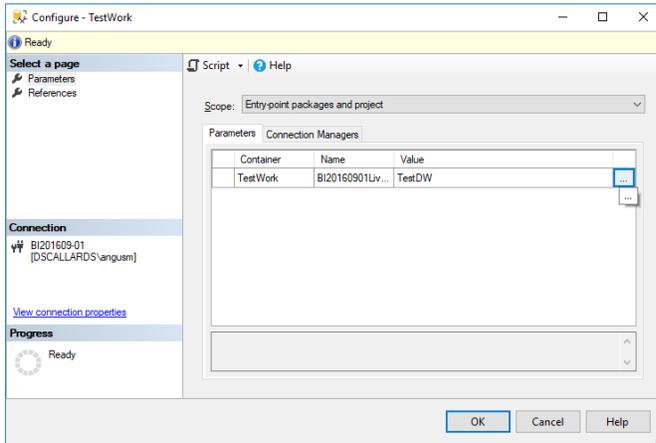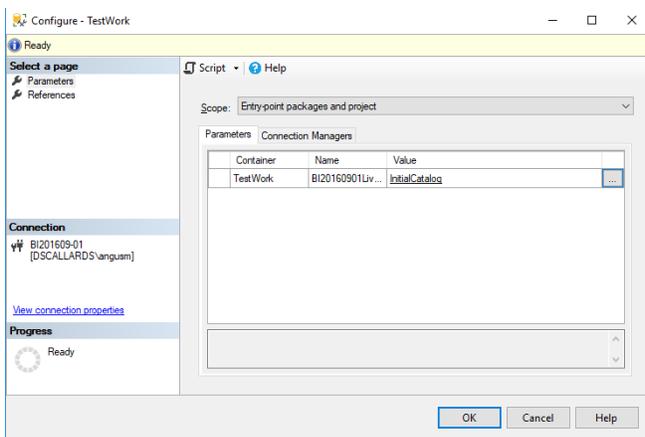

In the Value box at the bottom, select 'Use environment variable' instead of 'Use default value from package' and from the dropdown select the relevant variable:
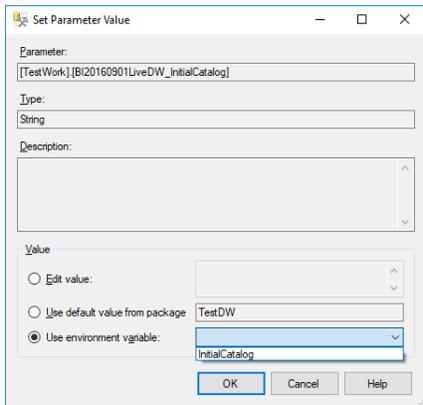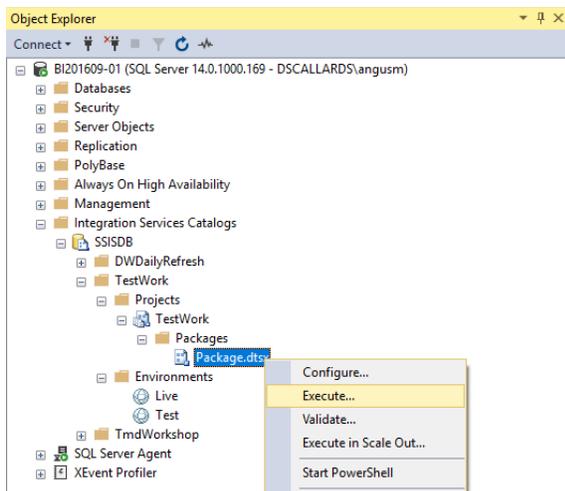

NB if the 'Use environment variable' option is greyed out it is because you have not yet added the environment as a project reference (see above).

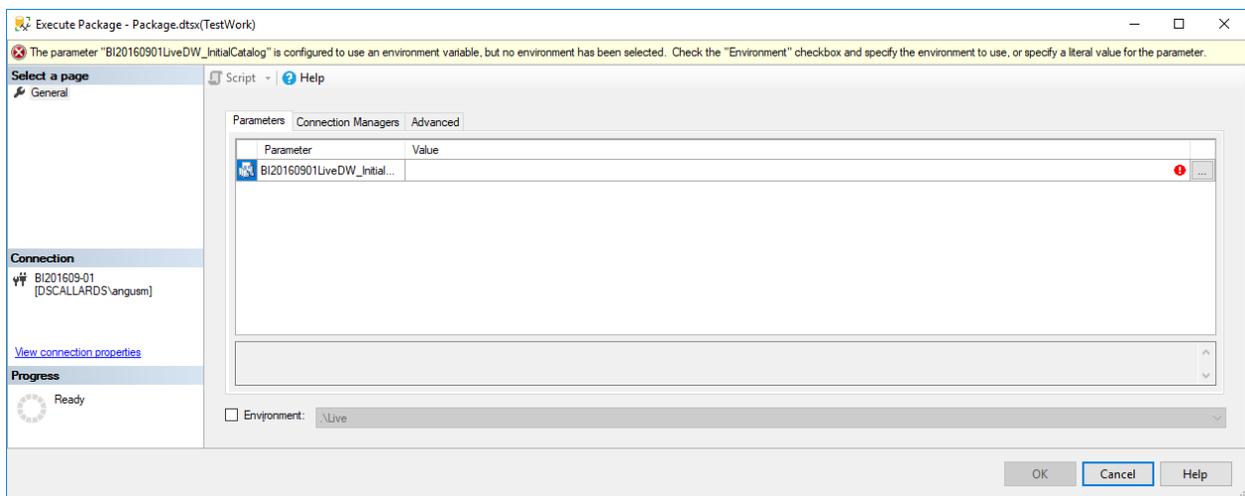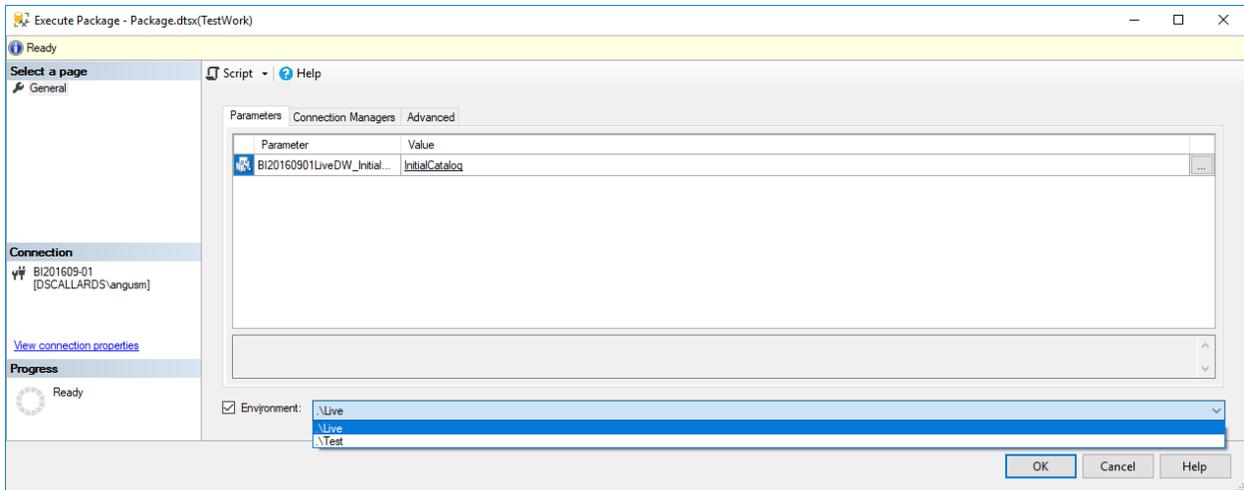It is then displayed in the parameters page:

Test the Package Execution

You can test the package execution by right clicking on the node in the Integration Services tree and selecting Execute:
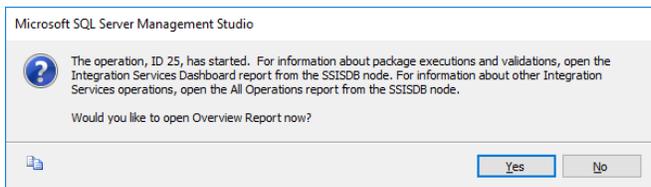

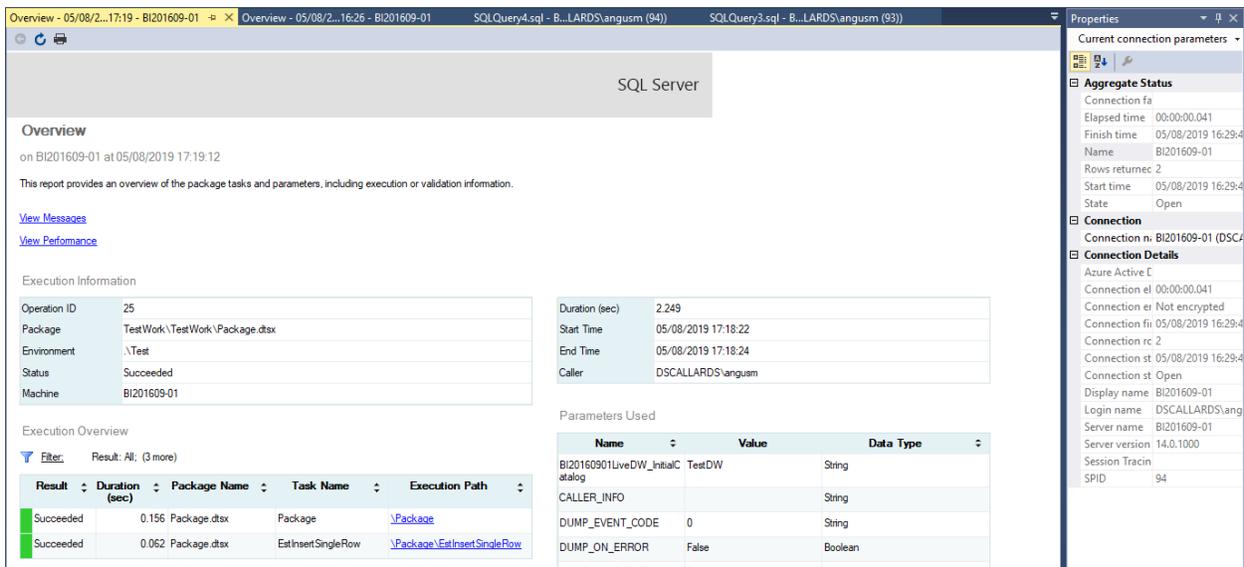This returns a message that a value is required for the environment.

Check the Environment tickbox at the bottom of the screen and choose an environment:

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Hit OK and the job runs and you are prompted whether you would like to see the job report:
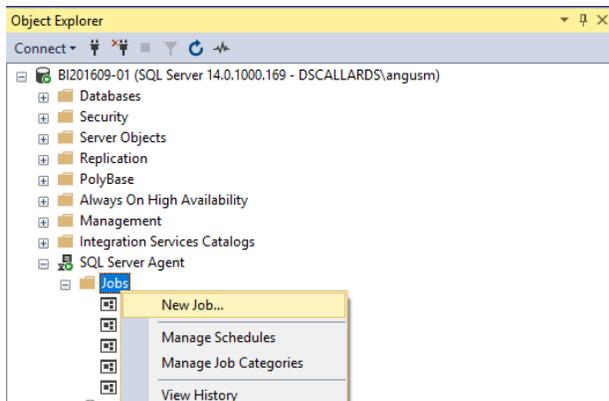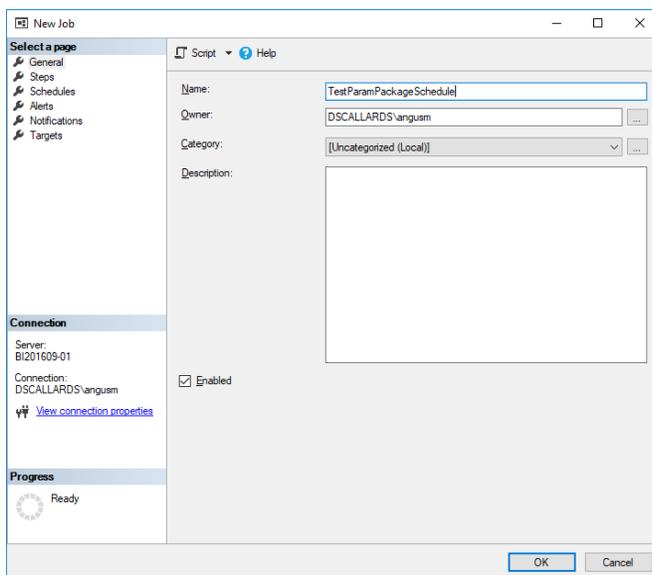

The job report:

You can now check that the correct database was populated

Schedule the Package

To schedule the package using SQL Server Agent, go to the relevant node in the Management Studio navigation tree and select New Job:
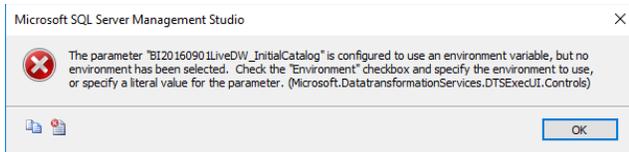
Provide a name:

Then go to the Steps page | click New | provide a Step Name, choose Type 'SQL Server Integration Services Package, choose your SQL Server, click the ellipsis next to Package and choose your package:
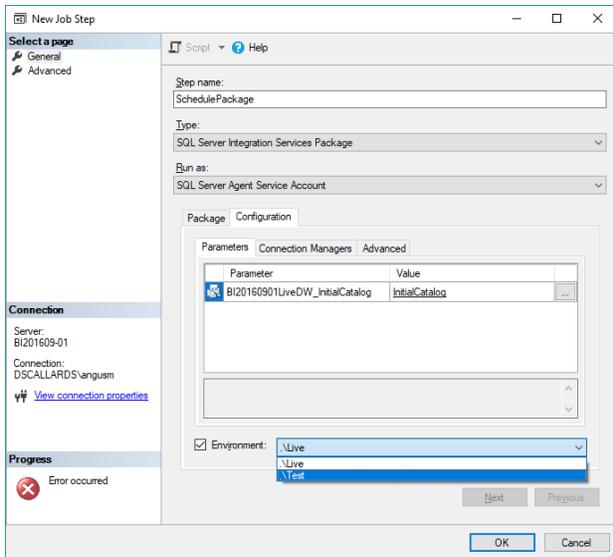
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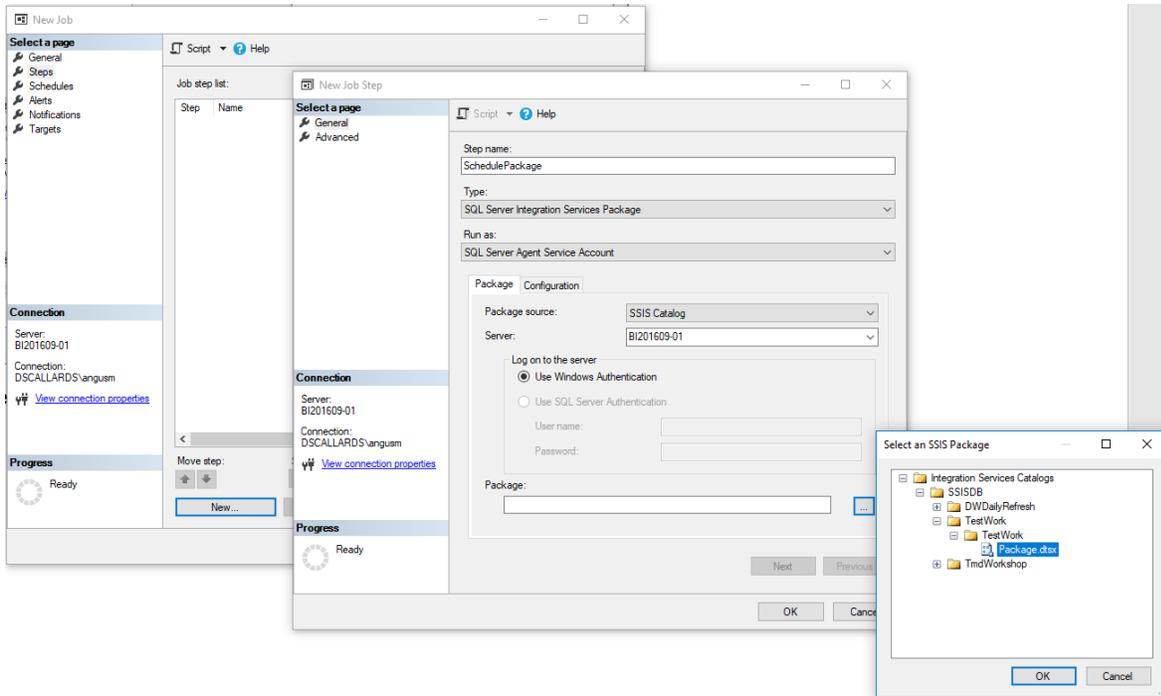
Click OK then OK again you should get a message that no environment has been select to pass a value to the parameter(s):

Click OK then click the Configuration tab:
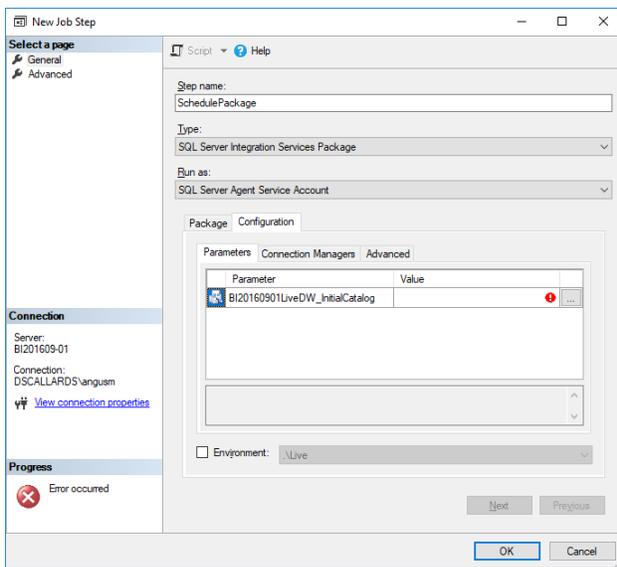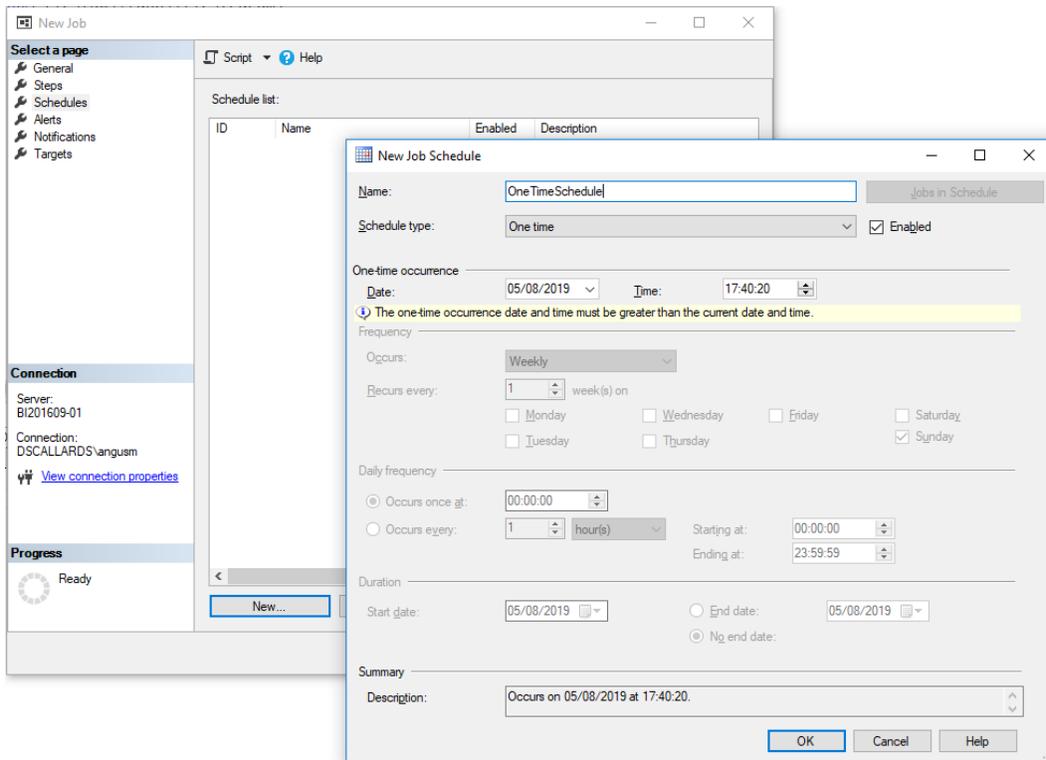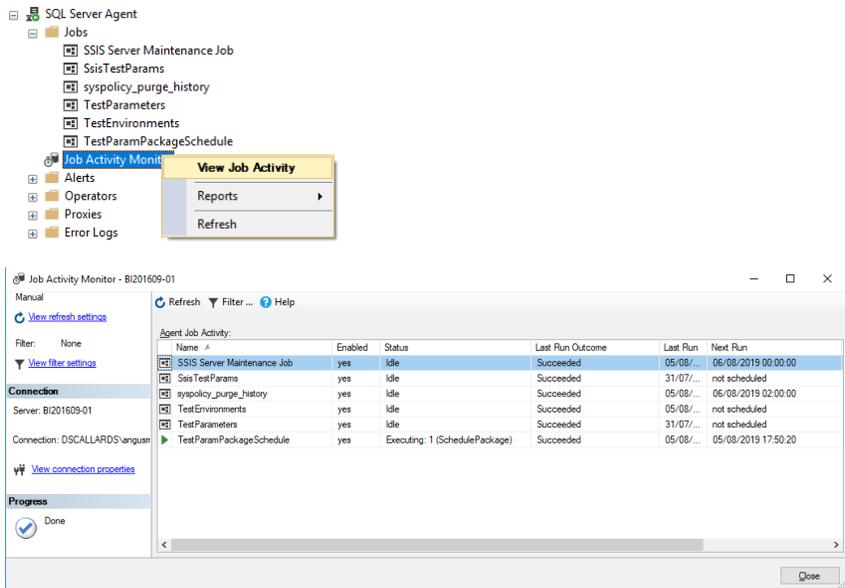

Select the relevant environment:

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Then go to the Schedules page and create a new schedule ensuring that Enabled is checked:

You can check the status from the Job Activity Monitor node:

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You can then check that data has been written to the correct database.

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