

Timing is Everything:
Using the Platform Suite
for SAS[®] for Scheduling

Agenda

- What is Scheduling?
- Components of the Platform Suite for SAS®
Scheduling Process
- Description of the Platform Suite for SAS®
Scheduling Process
- Triggers
- Conclusion

What is Scheduling?

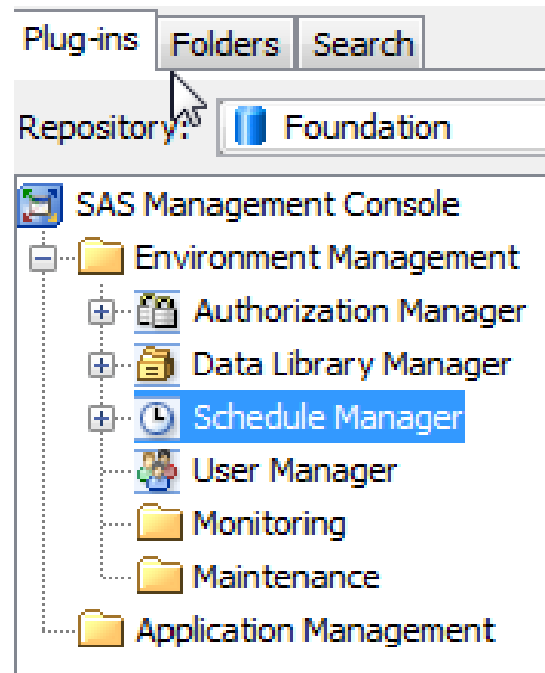
- Scheduling is the automated execution of a task or series of tasks upon the occurrence of a certain condition.
 - Example 1: a payroll program being run every two weeks.
 - Example 2: a file processing program that is run every time a certain file is created.
 - Example 3: PVR

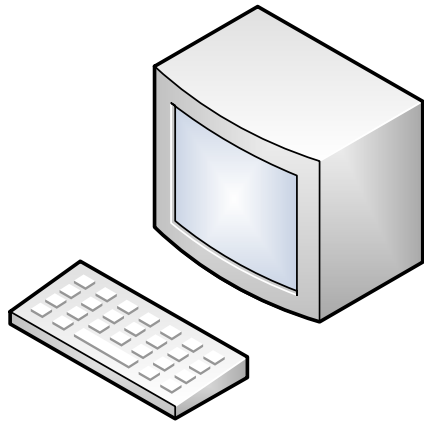
Timing is Everything

- More and More corporations are told to do more with less.
- Scheduling allows people to run their jobs at off peak hours and make use of computing resources that might not otherwise be used at those off-peak hours.
- Thus, proving if you want to do more with less regarding computing resources, “Timing is Everything” in regards to scheduling your jobs.

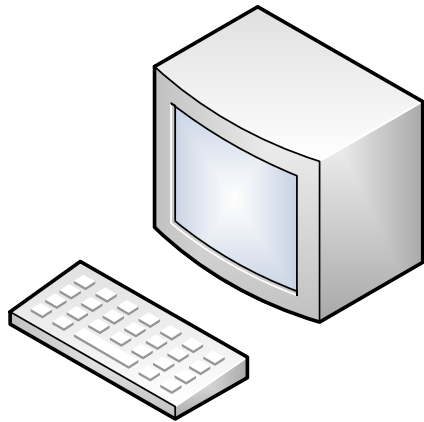
What is SAS[®] Scheduling?

- Simply put, it is SAS[®]'s implementation of an Enterprise Scheduler
- Accessed through a SAS[®] Management Console Plug-in called Schedule Manager.





SAS Application



Scheduling Server

4
components
involved in
the
Scheduling
Process



Scheduling Manager



Batch Server

Scheduling Manager

- Plug-in for SAS[®] Management Console
- The user interface for the LSF Scheduler
- Gives the user a “canvas” on which to construct their job
- Used to specify the scheduling server.

Scheduling Server

- Is the “decision maker” of the SAS® scheduler.
- It decides when the events that were created in the Scheduling Manager have occurred and launches the associated job

Scheduling Server

- Could be:
 - **Process Manager Server**
 - Is part of “Platform Suite for SAS® which includes: Platform Flow Manager,
Platform Calendar Editor
Platform Load Sharing Facility
 - Operating System Scheduling Server
 - In-Process Scheduling Server.

Batch Server

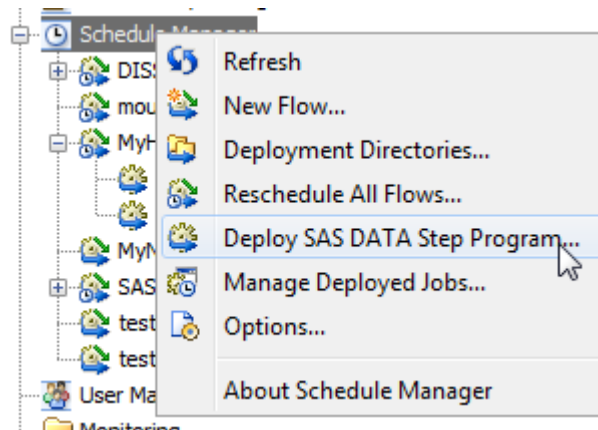
- Supplies the command to run the scheduled program to the Scheduling Server.
- Different Types of Batch Server Exist.
 - SAS® Java Batch Server
 - SAS® Data Step Batch Server
 - SAS® Generic Batch Server

5 Step Process of Scheduling a SAS[®] Program

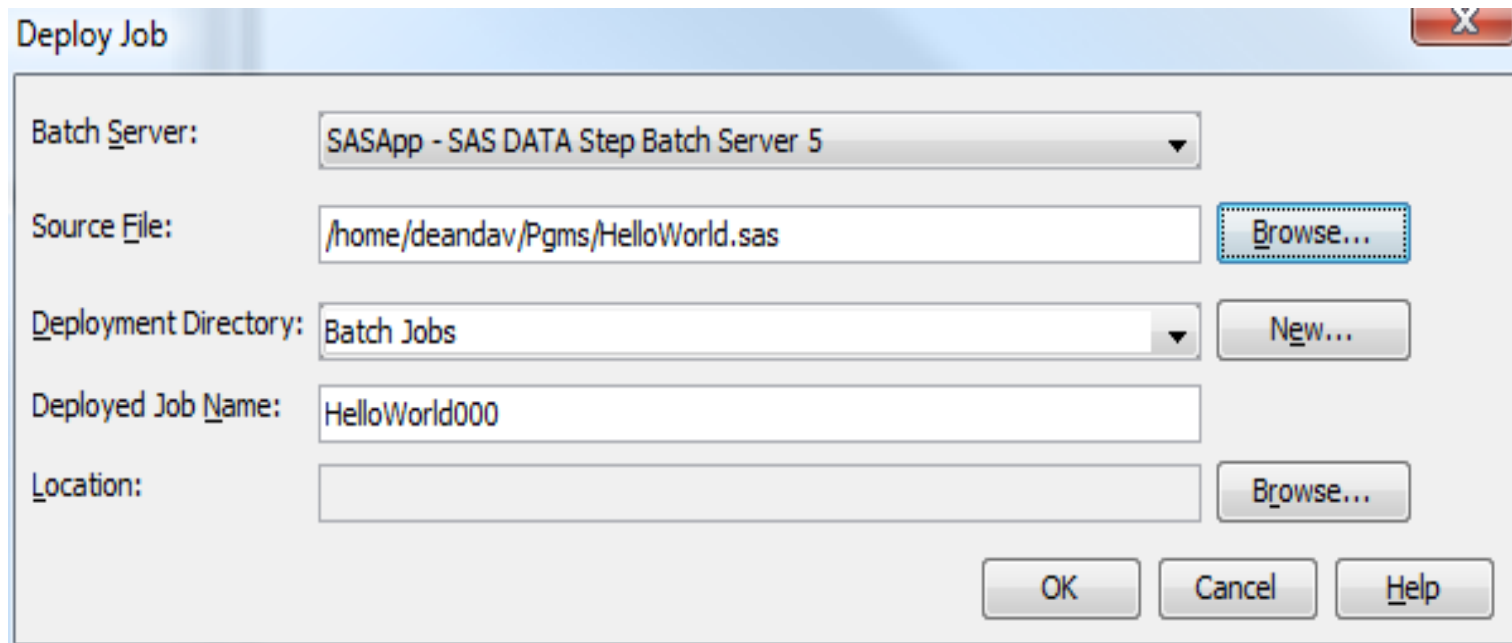
- For this presentation, I will use an example of scheduling a data step program
- There are five steps
 1. Deploy a SAS[®] job.
 2. Create a job flow
 3. Edit the job flow
 4. Set up your triggers.
 5. Schedule the job flow.

Step 1: Deploy a SAS[®] Data Step Job

- This task copies the job to a directory on the SAS[®] application server. This will be the job that is executed by the scheduling server.
- The SAS[®] application server on which this directory resides must contain a SAS[®] Data Step Batch Server



Step 1: Deploy a SAS[®] Data Step Job



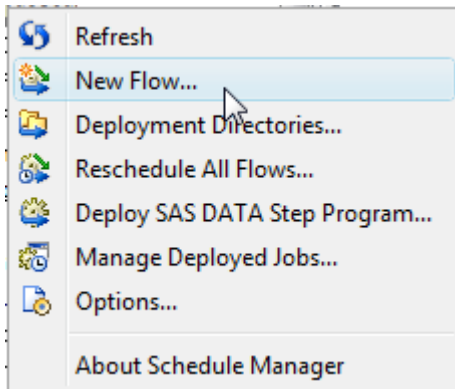
The screenshot shows a 'Deploy Job' dialog box with the following fields and controls:

- Batch Server:** A dropdown menu with the selected value 'SASApp - SAS DATA Step Batch Server 5'.
- Source File:** A text input field containing '/home/deandav/Pgms/HelloWorld.sas' and a 'Browse...' button to its right.
- Deployment Directory:** A dropdown menu with the selected value 'Batch Jobs' and a 'New...' button to its right.
- Deployed Job Name:** A text input field containing 'HelloWorld000'.
- Location:** An empty text input field and a 'Browse...' button to its right.

At the bottom of the dialog box are three buttons: 'OK', 'Cancel', and 'Help'.

Step2: Create a Job Flow

- What is a Job Flow?



Step2: Create a Job Flow

New Flow

Name:

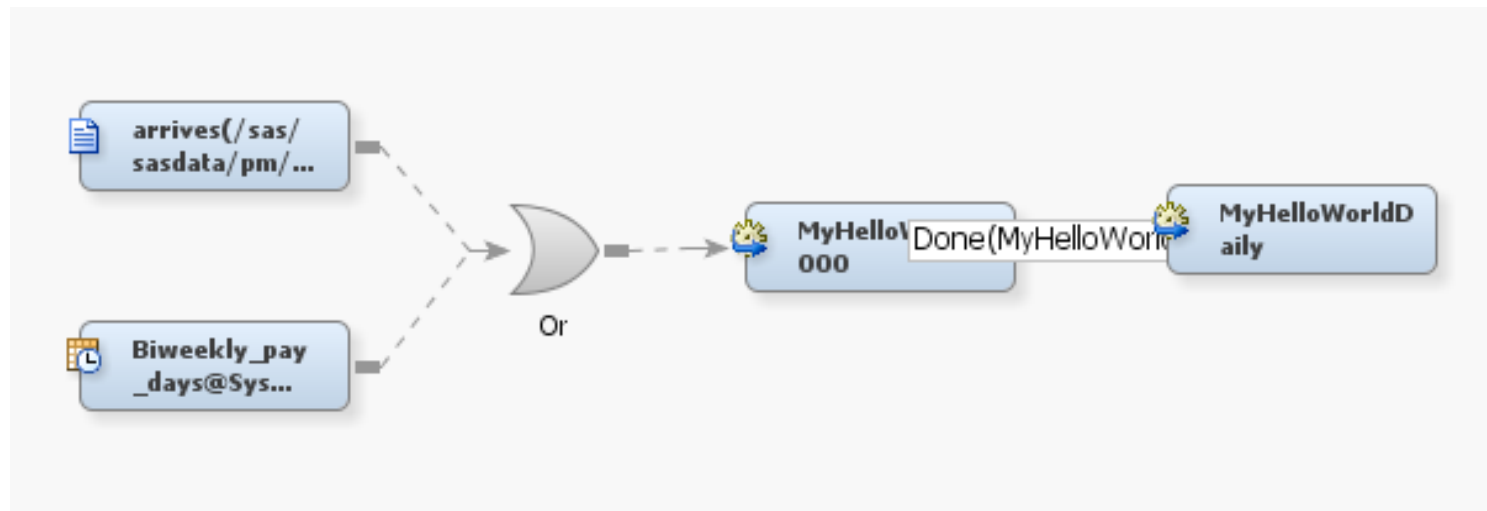
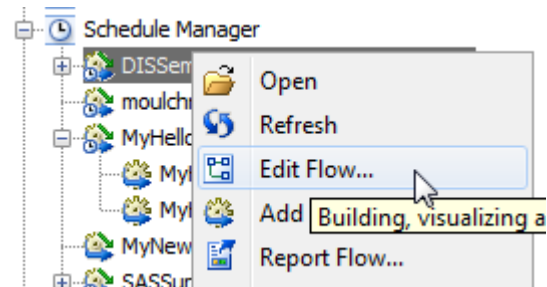
Location:

Scheduling Server:

Select the items to include in this flow

Available Items	Selected Items
MyHelloWorld000	
MyHelloWorld	
MyHelloWorldDaily	
UpdateSASFormat_20112A	
UpdateSASFormat_20132B	

Step 3: Edit the Newly, Created Flow



Step 4: Edit the Newly, Created Flow (Time Trigger)

New Time Event X

Specify the date by selecting a calendar and time zone then specify the time in hours and minutes.

Calendar Name:

Time zone:

- The time zone of this host (Eastern Time)
- The time zone of the Process Manager server host
Current server time is Tue Sep 27 13:58:19 GMT-04:00 2016.
- UTC
- A specific time zone

Hours: (e.g. * or 1,6 or 1-7)

Minutes: (e.g. * or 10,40 or 20-30)

Duration of event: minutes

End after: occurrences

Step 5: Schedule the Flow

Choose the trigger(s) that will start the flow "SASSupportTst". Select Manage to create, edit, or delete triggers for this flow.
The flow is already scheduled to be run. Selecting "Run Now" will run the flow immediately and preserve the existing schedule.
Using scheduling server (Platform Process Manager - sg-v2-n00), flows may be triggered by time events or file events defined here.

Run Now
 Manually to the scheduling server
 Select one or more triggers for this flow

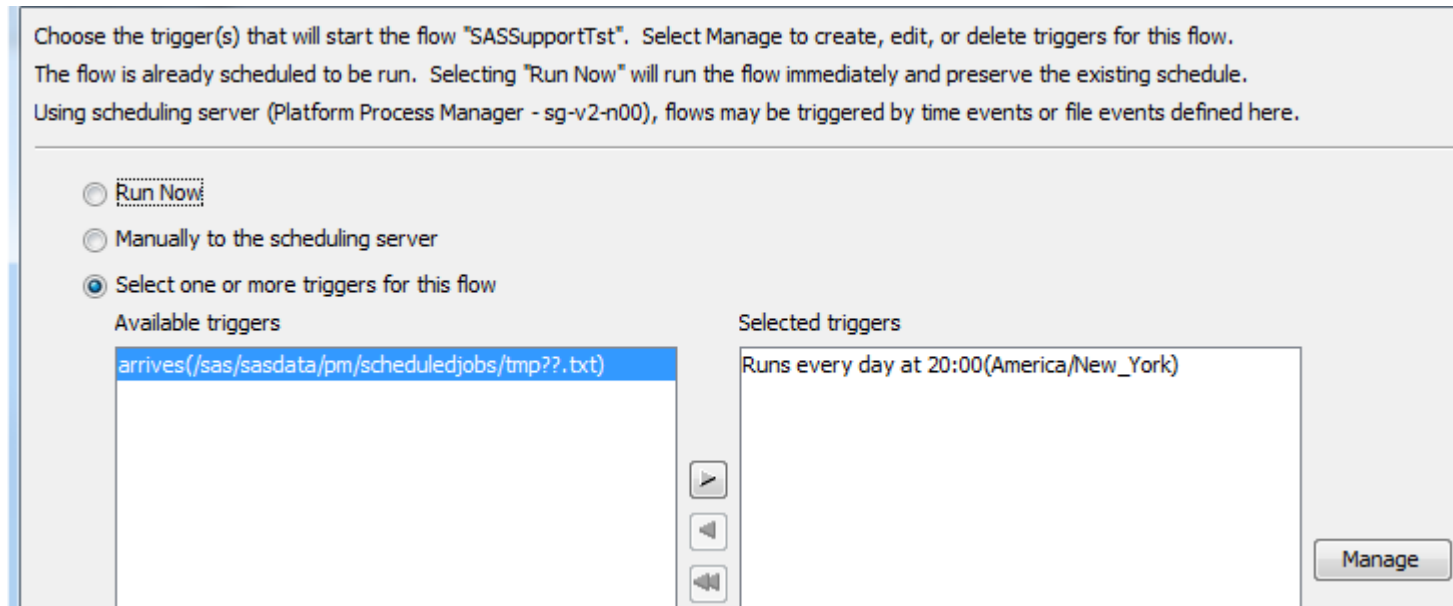
Available triggers

arrives(/sas/sasdata/pm/scheduledjobs/tmp?? .txt)

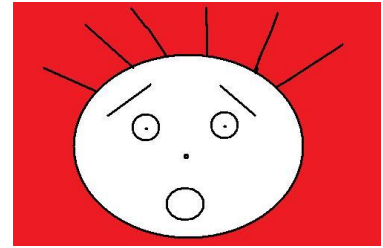
Selected triggers

Runs every day at 20:00(America/New_York)

Manage

The image shows a software interface for scheduling a flow. At the top, there is instructional text explaining that the user should choose triggers for the flow "SASSupportTst" and that the flow is already scheduled. Below the text are three radio button options: "Run Now", "Manually to the scheduling server", and "Select one or more triggers for this flow", with the third option selected. Under "Available triggers", there is a list box containing the text "arrives(/sas/sasdata/pm/scheduledjobs/tmp?? .txt)". To the right of this list box are three small buttons: a right-pointing arrow, a left-pointing arrow, and a double left-pointing arrow. Below the list boxes is a "Selected triggers" list box containing the text "Runs every day at 20:00(America/New_York)". At the bottom right of the interface is a "Manage" button.

You are not alone!!!!



- SAS[®] Manual
- SAS[®] Communities
- Other SAS[®] Global Forum Papers

David Dean

Statistics Canada

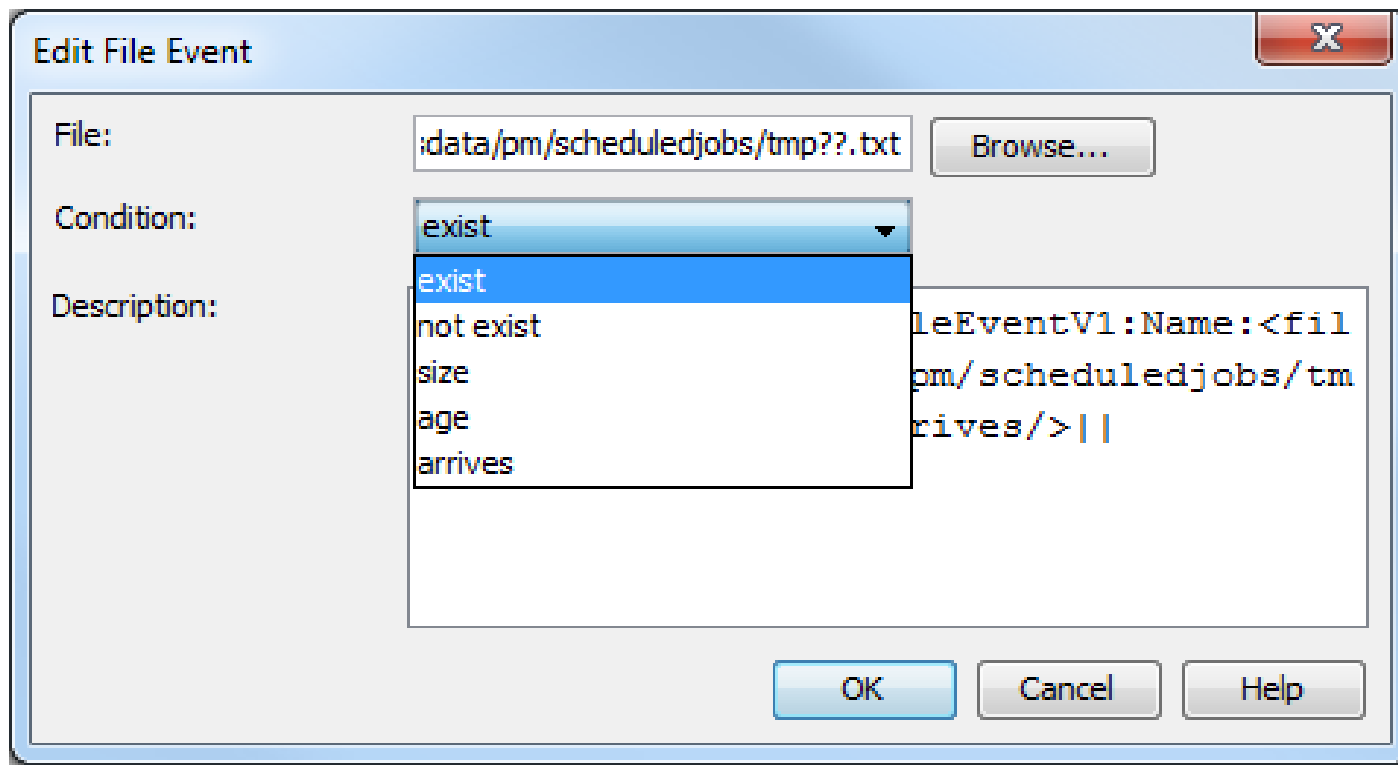
David.Dean@canada.ca

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Questions

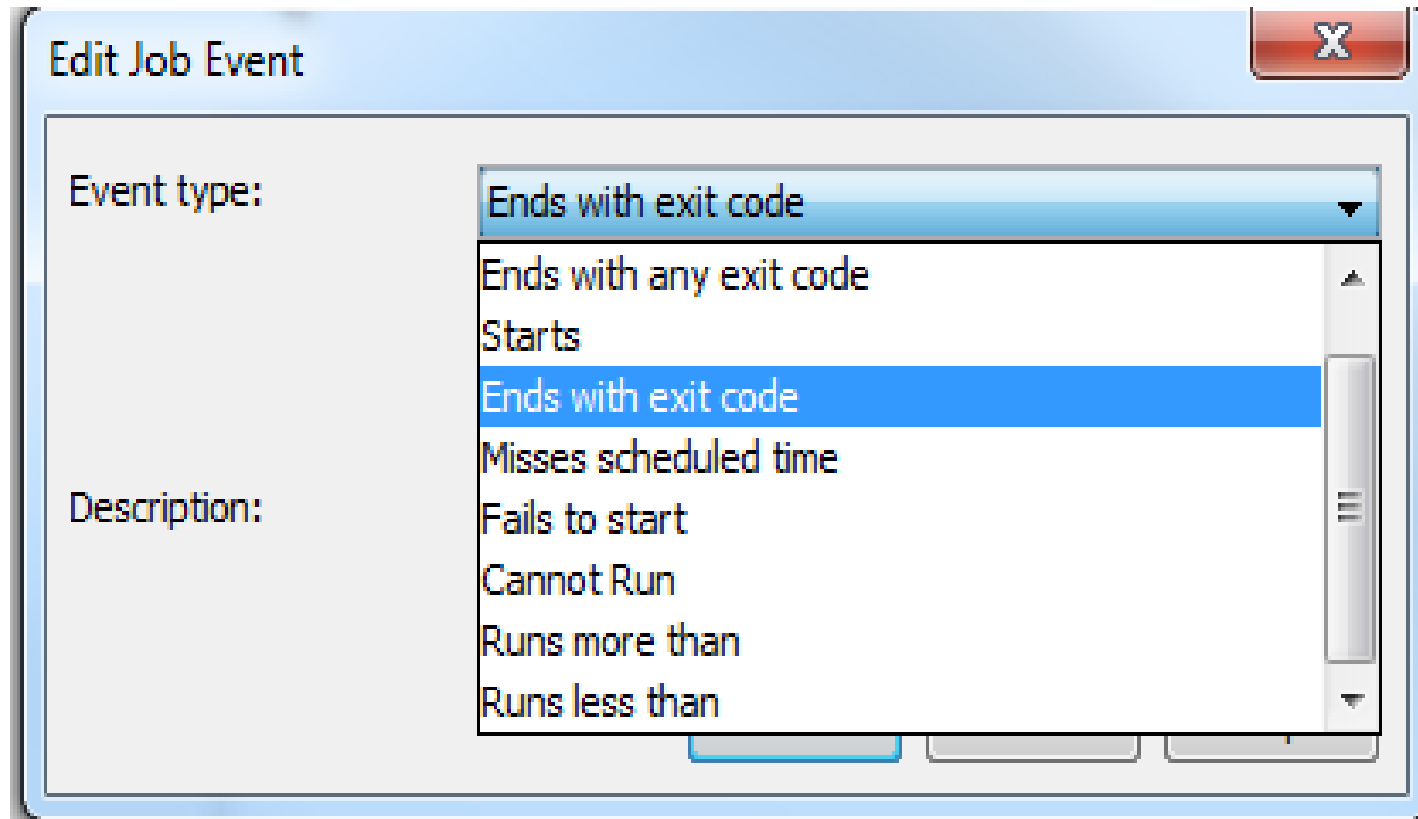
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Step 3: Edit the Newly, Created Flow (File Trigger)



Extra Goodies if I have
time to Present.

Step 3: Edit the Newly, Created Flow (Conditional Execution of Job)



Step 3. Edit the Newly, Created Flow (Job Properties)

- A cornucopia of deployed job properties make the job submission more flexible. Right click on the deployed job and select properties. Here are just a few:

Step 3: Edit the Newly, Created Flow (Job Properties)

Host Limits

Host name or model:

Maximum CPU time: hours and minutes

Maximum run time: hours and minutes

Job Limits

Maximum file size: (Kbytes per process)

Maximum core file size: (Kbytes)

Maximum memory size: (Kbytes per process)

Maximum data size: (Kbytes per process)

Maximum stack size: (Kbytes per process)

Step 3: Edit the Newly, Created Flow (Job Module Properties)

General Submit Processing Resources Limits File Transfer Advanced Exception Handling Description

Define the Job

Name:

Command to run:

Login shell to use: Part of project:

Working directory:

Environment Variables:

Non-zero success exit codes: