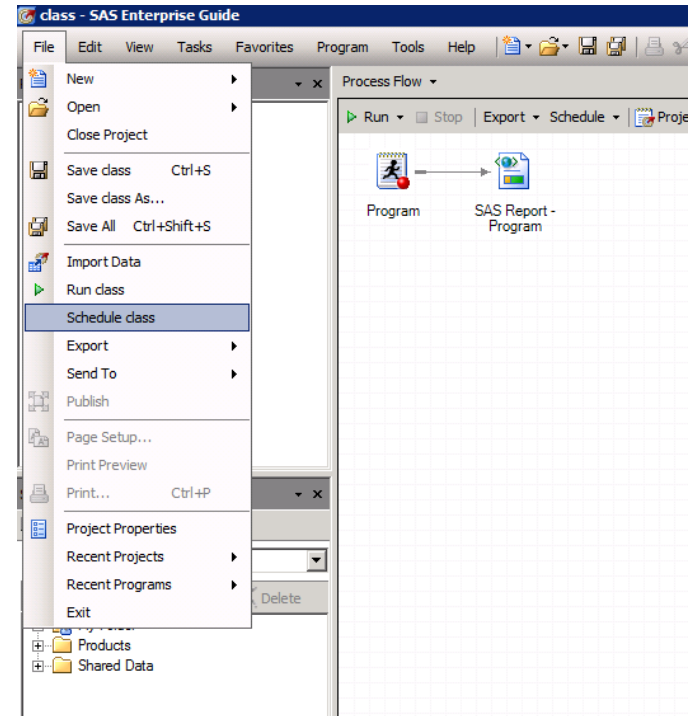
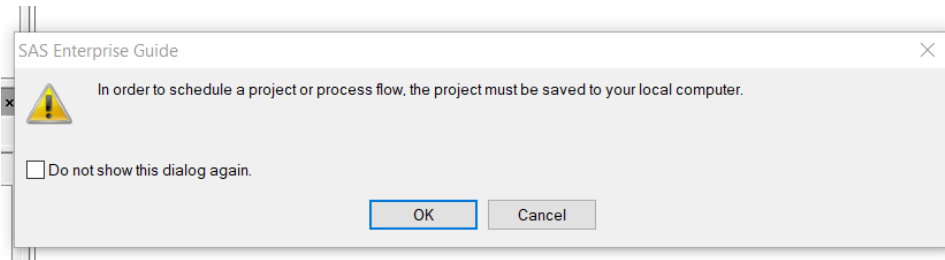




SAS Enterprise Guide: Scheduling Projects

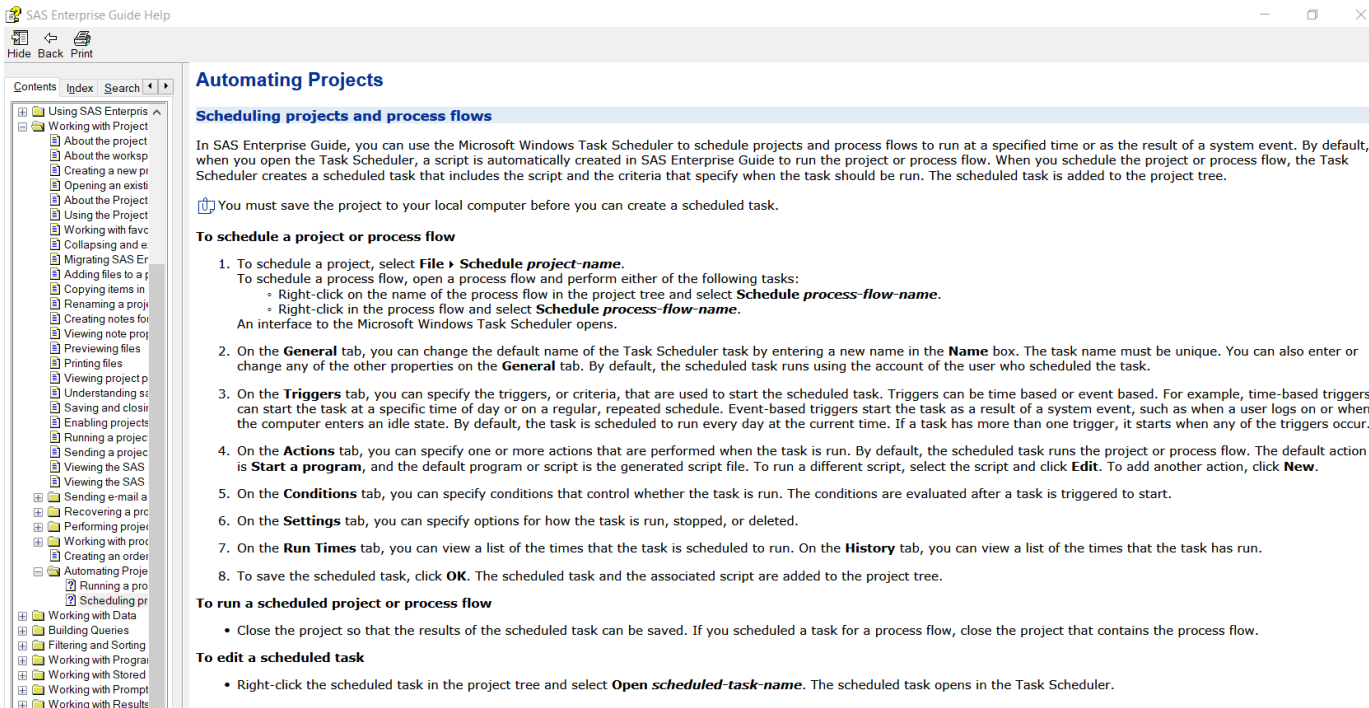
What is SAS Enterprise Guide scheduling?

- Schedule task on the File menu in SAS Enterprise Guide (EG)
- Schedule task creates a VBScript file
- VBScript file allows the EG project to run “batch”



What is SAS Enterprise Guide scheduling?

- Developed for use with Windows Task Scheduler
- Tested using Windows Task Scheduler before release




The screenshot shows the SAS Enterprise Guide Help window. The title bar reads 'SAS Enterprise Guide Help'. The window has a navigation pane on the left with a 'Contents' tab selected. The main content area is titled 'Automating Projects' and contains the following text:

Automating Projects

Scheduling projects and process flows

In SAS Enterprise Guide, you can use the Microsoft Windows Task Scheduler to schedule projects and process flows to run at a specified time or as the result of a system event. By default, when you open the Task Scheduler, a script is automatically created in SAS Enterprise Guide to run the project or process flow. When you schedule the project or process flow, the Task Scheduler creates a scheduled task that includes the script and the criteria that specify when the task should be run. The scheduled task is added to the project tree.

 You must save the project to your local computer before you can create a scheduled task.

To schedule a project or process flow

1. To schedule a project, select **File > Schedule project-name**.
To schedule a process flow, open a process flow and perform either of the following tasks:
 - Right-click on the name of the process flow in the project tree and select **Schedule process-flow-name**.
 - Right-click in the process flow and select **Schedule process-flow-name**.An interface to the Microsoft Windows Task Scheduler opens.
2. On the **General** tab, you can change the default name of the Task Scheduler task by entering a new name in the **Name** box. The task name must be unique. You can also enter or change any of the other properties on the **General** tab. By default, the scheduled task runs using the account of the user who scheduled the task.
3. On the **Triggers** tab, you can specify the triggers, or criteria, that are used to start the scheduled task. Triggers can be time based or event based. For example, time-based triggers can start the task at a specific time of day or on a regular, repeated schedule. Event-based triggers start the task as a result of a system event, such as when a user logs on or when the computer enters an idle state. By default, the task is scheduled to run every day at the current time. If a task has more than one trigger, it starts when any of the triggers occur.
4. On the **Actions** tab, you can specify one or more actions that are performed when the task is run. By default, the scheduled task runs the project or process flow. The default action is **Start a program**, and the default program or script is the generated script file. To run a different script, select the script and click **Edit**. To add another action, click **New**.
5. On the **Conditions** tab, you can specify conditions that control whether the task is run. The conditions are evaluated after a task is triggered to start.
6. On the **Settings** tab, you can specify options for how the task is run, stopped, or deleted.
7. On the **Run Times** tab, you can view a list of the times that the task is scheduled to run. On the **History** tab, you can view a list of the times that the task has run.
8. To save the scheduled task, click **OK**. The scheduled task and the associated script are added to the project tree.

To run a scheduled project or process flow

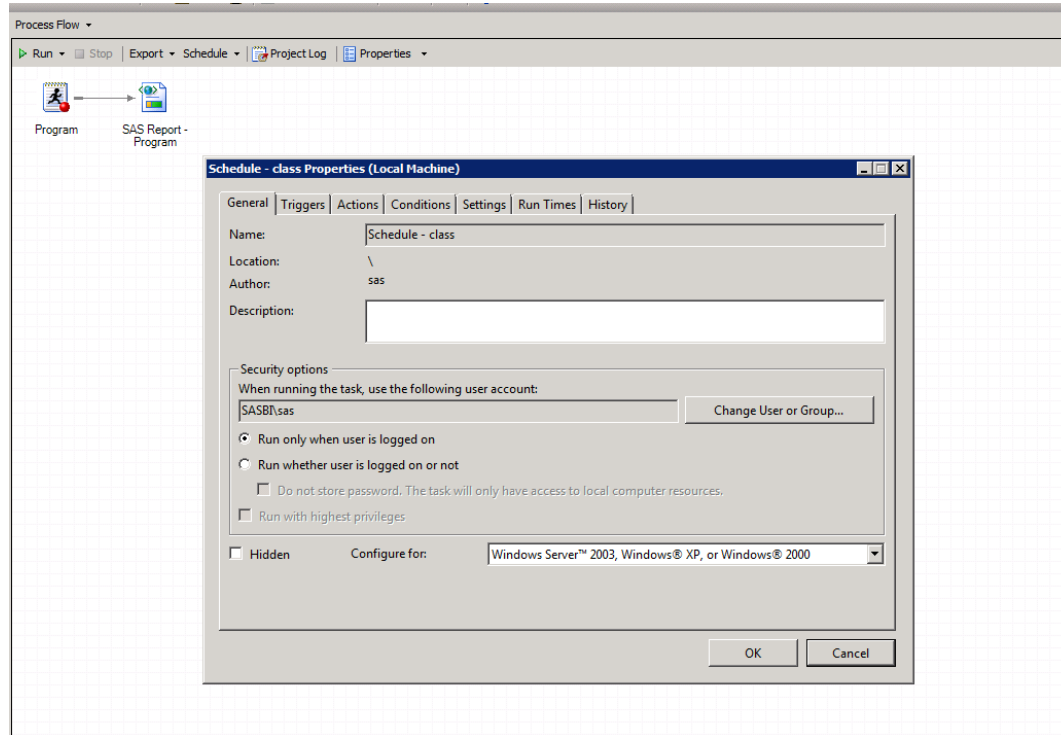
- Close the project so that the results of the scheduled task can be saved. If you scheduled a task for a process flow, close the project that contains the process flow.

To edit a scheduled task

- Right-click the scheduled task in the project tree and select **Open scheduled-task-name**. The scheduled task opens in the Task Scheduler.

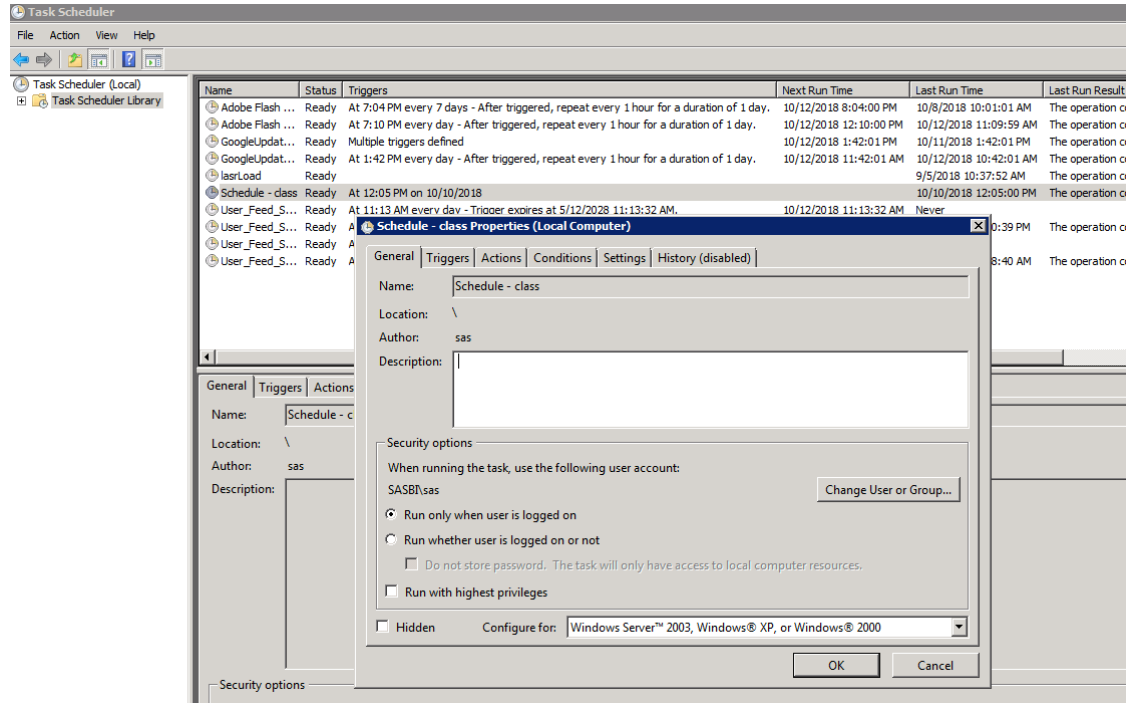
What is SAS Enterprise Guide scheduling?

- Schedule task opens Windows Task Scheduler 'Create Task' dialog



What is SAS Enterprise Guide scheduling?

- ‘Create Task’ dialog in Windows Task Scheduler
- Job runs under current Windows ID



What is SAS Enterprise Guide scheduling? VBScript file

- Correct version of EG Scripting Model, SASEGScripting.dll
- Installed and registered
- Path and name of project

```
EGScript1.vbs * x
Option Explicit
Dim app

Call dowork

'shut down the app
If not (app Is Nothing) Then
    app.Quit
    Set app = Nothing
End If

Sub dowork()
    On Error Resume Next
    '-----
    ' Start up Enterprise Guide using the project name
    '-----
    Dim prjName
    Dim prjObject

    prjName = "C:\Users\sas\Projects\Ask the Expert\class.egp" 'Project Name

    Set app = CreateObject("SASEGObjectModel.Application.7.1")
    If Checkerror("CreateObject") = True Then
        Exit Sub
    End If

    '-----
    ' open the project
    '-----
    Set prjObject = app.Open(prjName, "")
    If Checkerror("app.Open") = True Then
        Exit Sub
    End If
End Sub
```

What is SAS Enterprise Guide scheduling? VBScript file

- When debugging, use the script for help!

```
EGScript5.vbs x
prjObject.Save
If Checkerror("Project.Save") = True Then
    Exit Sub
End If

'-----
' Close the project
'-----
prjObject.Close
If Checkerror("Project.Close") = True Then
    Exit Sub
End If

End Sub

Function Checkerror(fnName)
    Checkerror = False

    Dim strmsg
    Dim errNum

    If Err.Number <> 0 Then
        strmsg = "Error #" & Hex(Err.Number) & vbCrLf & "In Function " & fnName & vbCrLf & Err.Description
        'MsgBox strmsg 'Uncomment this line if you want to be notified via MessageBox of Errors in the script.
        Checkerror = True
    End If

End Function
```

Why schedule an EG project?

- Automate analysis of new data
- Automate report distribution
- Improve project execution performance because UI is not active
- Send automated “good morning” text to your children letting them know how many days are left in the school year
- And many more...



DEMOS

“Help! I can’t schedule SAS Enterprise Guide projects!”

1. Can you execute an EG project in batch?

- Create simple project
- Enable application logging
- Use schedule task to create VBScript
- Uncomment MsgBox in the VBScript file
- Run VBScript outside of scheduler

2. Can your Windows ID execute non-SAS VBScripts?

- Cannot execute a non-SAS VBScript? Then the EG-created VBScript will not execute as well.
- Sample code

```
Call sendmail
Sub sendmail()
  Dim objMessage
  Set objMessage = CreateObject("CDO.Message")
  With objMessage
    .Subject = "Test"
    .From = "your-email@company.com"
    .To = "your-email@company.com"
    .TextBody = "Test email from VBScript is successful."
    .Configuration.Fields.Item ("http://schemas.microsoft.com/cdo/configuration/sendusing") = 2
    .Configuration.Fields.Item ("http://schemas.microsoft.com/cdo/configuration/smtpserver") = "emailservername.company.com"
    .Configuration.Fields.Item ("http://schemas.microsoft.com/cdo/configuration/smtpserverport") = 25
    .Configuration.Fields.Update
  End With
  objMessage.Send
  Set objMessage = Nothing
  Wscript.Quit
End sub
```

3. Can your Windows ID schedule non-SAS VBScripts?

- Use Windows Task Scheduler to schedule the sample code on the previous slide
- If your Windows ID cannot schedule the sample code successfully, talk to your IT department.

4. Can your Windows ID access the EG Automation Interface?

- Sample code taken from <https://github.com/cjdinger/sas-eg-automation/blob/master/vbscript/NewApp.vbs>

```
Option Explicit
```

```
Dim Application
```

```
' Create a new SAS Enterprise Guide automation session
```

```
Set Application = WScript.CreateObject("SASEGObjectModel.Application.7.1")
```

```
WScript.Echo Application.Name & ", Version: " & Application.Version
```

```
Application.Quit
```

4. Can your Windows ID access the EG Automation Interface?

Error caused by one of the following:

1. EG automation object model needs to be registered:
<https://communities.sas.com/t5/SAS-Enterprise-Guide/VBScript-error-could-not-locate-automation-class/td-p/103212>
2. VBScript (.vbs) files are associated with the wrong Windows Script Host on the Windows Machine. The bitness of cscript.exe must match the bitness of SAS Enterprise Guide.
 - Have Admin register .vbs files to correct cscript.exe
 - Use path to correct cscript in command to execute VBScript file
3. Your Windows ID is denied the ability to run scripts.

5. Using “Run only when user is logged on”

SAS Note 56648: Tips for scheduling

<http://support.sas.com/kb/56648>

- The recommended and default Windows Task Scheduler security setting for running SAS Enterprise Guide projects is **Run only when user is logged on**.
- The Windows user must be able to use Windows Task Scheduler. The user must be able to execute VBScript programs independently of SAS Enterprise Guide.
- Metadata credentials must be cached in the SAS Enterprise Guide user's connection profile. To see this information, navigate to **Tools ► Connections**. Choose the active server and click **Modify** to open the Connection profile. Make sure that the **Save login in profile** option is checked and that the selection persists. If it does not persist, contact your SAS® metadata administrator and request the ability to cache metadata credentials.
- Credentials must persist throughout the SAS Enterprise Guide session. To check this setting, navigate to **Tools ► Options ► Security**. The option **Credentials Persistence** must be set to **Persist during EG session**.
- A scheduled project does not execute if the project is open. Ensure that you have saved and closed the project before it is scheduled to execute in batch.
- SAS Enterprise Guide must be installed on the machine where the VBScript file is scheduled to execute.

6. Using “Run whether user is logged on or not”

SAS Note 56648: Tips for scheduling

<http://support.sas.com/kb/56648>

- Use of this security context depends on Windows settings, not SAS Enterprise Guide settings. As these settings vary based on company security policies, it is often difficult to use this Task Scheduler security context. For example, it might be allowed due to company restrictions.
- The Windows user ID that is used to schedule the project must have [Local Administration](#) rights and the **Log on as a batch job** privilege.
- You will likely need to open SAS Enterprise Guide using "Run as Administrator" before using the Schedule task. Windows 8 and later operating systems do not open applications using Administrator privileges by default. Because **Run whether user is logged on or not** requires Administrator privileges, SAS Enterprise Guide must be opened with elevated Admin rights.
- The project and VBScript must be saved to your *local computer* (not a network drive or SharePoint, and so on.) to use the **Run whether user is logged on or not** security option.
- To use the **Run whether user is logged on or not** Task Scheduler security context, select **File ► Schedule Project**. On the **General** tab, deselect the option **Do not store password**. The **Run with Highest Privileges** option might or might not be needed. Test with this option selected and without it selected.

6. Using “Run whether user is logged on or not”

SAS Note 56648: Tips for scheduling

<http://support.sas.com/kb/56648>

- On the **General** tab, select **Windows Server 2003, Windows XP, or Windows 2000** for the **Configure for** option.
- When you click **OK** in the Task Scheduler dialog box, you are prompted to enter a Windows user ID and password. On the **Triggers** tab, specify when Task Scheduler should execute the project. A .vbs file is added to the project. Save the project and close it so that it can be successfully executed in batch as scheduled.
- For a project to **Run whether user is logged on or not**, it might be necessary to copy the **ConfigurationVxx.xml** file, where **xx** is the version of SAS Enterprise Guide, from the **%appdata%\SAS\MetadataServerProfiles** folder into the **C:\Windows\System32\config\systemprofile\AppData\Roaming\SAS\MetadataServerProfiles** folder or the **C:\Windows\SysWOW64\config\systemprofile\AppData\Roaming\SAS\MetadataServerProfiles** folder.
- For access to network resources when **Run whether user is logged on or not** is selected, you must disable the Windows local security option **Network access: Do not allow storage of passwords and credentials for network authentication**.

SAS Enterprise Guide: Scheduling Projects

References

- EG Scheduling Video Tutorial,
<https://video.sas.com/detail/videos/working-with-sas-enterprise-guide/video/3862944641001/use-the-scheduling-features-of-sas-enterprise-guide?autoStart=true&page=1>
- Doing More with EG Automation by Chris Hemedinger,
<https://blogs.sas.com/content/sasdummys/2012/04/17/doing-more-with-sas-enterprise-guide-automation/>
- Windows Task Scheduler documentation (hard to find),
<https://docs.microsoft.com/en-us/windows/desktop/taskschd/using-the-task-scheduler>
- Tips for Scheduling a SAS Enterprise Guide Project, SAS Note 56648,
<http://support.sas.com/kb/56648>



QUESTIONS

What steps do we need to take if the workspace server is configured to prompt for userid and password?

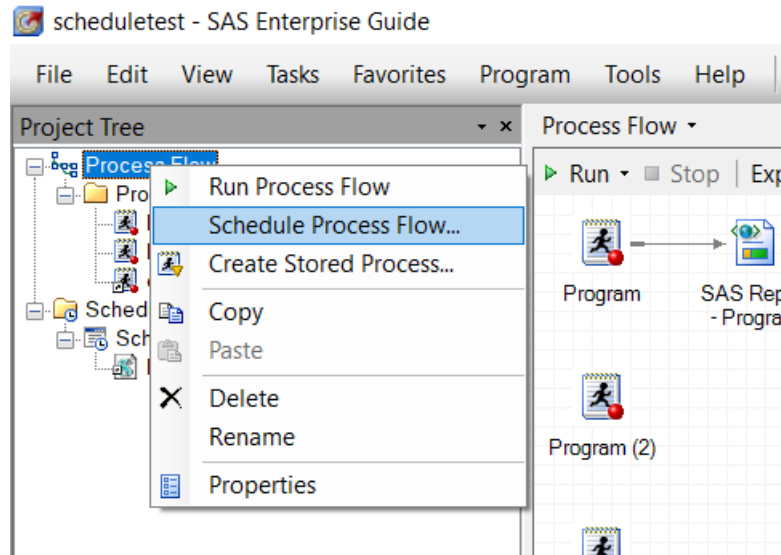
- Follow the instructions in SAS Note 30917 to create a credentials.xml file, <http://support.sas.com/kb/30917>

What do I do if my SAS metadata userid and password will not save in my connection profile?

- Your SAS administrator will need to enable client-side caching for your metadata credentials.
- SASSEC_LOCAL_PW_SAVE option in the omaconfig.xml file on the SAS Metadata Server,
<https://go.documentation.sas.com/?docsetId=bisag&docsetTarget=n070fn7r6yuz53n19c7l80f3hr1g.htm&docsetVersion=9.4&locale=en>

Can I schedule a process flow instead of a project?

- YES!
- Right-click on the Process Flow name in the Project Tree window and choose “Schedule Process Flow”.



I get an “Access Denied” error when I try to schedule a project. What does this mean?

- Either your userid cannot schedule anything in Windows Task Scheduler
- Or your ID needs admin rights to do access Windows Task Scheduler
- Or you need to start EG using “Run as Administrator” before you use the Schedule task, <http://support.sas.com/kb/59079>