Advanced Scripting   
Scheduled Jobs

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# Instructions

Save a copy of this document. Answer all questions directly in this document. You will save and upload this completed document as your homework submission.

# Overview

If you need to run a PowerShell script you can use the task scheduler in windows or cron (or its variants in Linux). PowerShell only provides cmdlets to schedule jobs in Windows. If you would like to schedule a PowerShell script in Linux just user cron like you would any other job to run the PowerShell script. This exercise will focus on Windows.

In this task you will create a job that runs every minute and creates a log file that records the time and the number of processes running at the time the job is run.

# Requirements

* Windows PowerShell

# Setup

Open a Windows PowerShell shell as administrator.

# Task 1—Create and schedule a job

Creating a job is a two-step process. First you create a JobTrigger that defines when and how often the job runs. Then you register the job in the Task Scheduler using the job trigger and the script you want execute.

## Steps

1. First prepare a directory for the log file  
   md c:\programdata\cit361
2. The trigger is easy to setup, depending on how you want your job to run you use different options to create the trigger. For this job we want it to start right away then run every minute for two days. (all one line).  
   $t=New-JobTrigger -at (get-date).AddMinutes(3) -once -RepetitionInterval (New-TimeSpan -Minutes 1) -RepetitionDuration (New-TimeSpan -Days 2)
3. Register the job (all one line)  
   Register-ScheduledJob -Trigger $t -Name LogProcessCount -ScriptBlock {"$(get-date): Process Count: $((get-process).count)">>c:\programdata\cit361\processes.log}

# Task 2—View the Scheduled Jobs

You can Manage you scheduled jobs via PowerShell or the Windows Task Scheduler.

## Steps

1. View the scheduled jobs  
   Get-ScheduledJob
2. If you want a better view enter  
   Get-ScheduledJob logprocesscount |fl
3. You can also view you Jobs with the task scheduler. Open your start menu and type **task s** click on the Task Scheduler. The PowerShell jobs are at **Task Scheduler Library/Microsoft/Windows/PowerShell/ScheduledJob**s   
   Navigate there.
4. Explore the information
   1. From the General tab what account is used to run the job? Logged on user account
   2. From the Settings tab, can this task be run on demand? yes

# Task 3—View Your Log

## Steps

1. To view your log data just read the file in PowerShell  
   Get-Content C:\ProgramData\cit361\processes.log
2. If there is nothing there it either has not been three minutes or your script is wrong. Wait or Fix.
3. To get the last item in the log  
   Get-Content C:\ProgramData\cit361\processes.log -tail 1
   1. How many processes are running? 161
4. Start a few notepad instances  
   1..5|%{notepad}
5. Wait for a minute to see the results.   
   Get-Content C:\ProgramData\cit361\processes.log -tail 1
   1. How many processes are running? 169
6. Get rid of the notepad processes  
   get-process notepad|stop-process
7. Wait for a minute to see the results.   
   Get-Content C:\ProgramData\cit361\processes.log -tail 1
   1. How many processes are running? 163

# Task 4—Managing Scheduled Jobs

## Steps

1. You can enable or disable jobs. Disable your job  
   Disable-ScheduledJob -Name LogProcessCount
2. Wait a minute and check your logfile to make sure it is no longer triggering.
3. Enable the job again  
   Enable-ScheduledJob -Name LogProcessCount
4. Wait a minute and verify it is running again.
5. The log from your scheduled jobs are in the folder,  
   ~\AppData\Local\Microsoft\Windows\PowerShell\ScheduledJobs  
   There will be a folder for each scheduled job by the job name.
6. View your job log data. Change to the log folder  
   cd ~\AppData\Local\Microsoft\Windows\PowerShell\ScheduledJobs\LogProcessCount
7. You should see a folder named output and a file named ScheduledJobDefinition.xml
8. Get a directory of the output folder  
   dir output
9. There should be a folder with the most recent run of the script each run of the script. (max of 32 by default)
10. Explore one of the folders.
    1. What does the folder contain? XML files
    2. Explore the files
       1. What format are they? XML
       2. What kind of data do they contain (hint load into a browser or vscode)? Log information
11. Finally remove your job  
    Unregister-ScheduledJob LogProcessCount
12. Verify it is gone  
    Get-ScheduledJob
13. Wait a minute and view your log file. Did it stop? yes
14. Did unregistering the job remove the ScheduledJobs log data? no

# Wrap-up

Clean up your data file  
rm C:\ProgramData\cit361\ -Force

# Deliverable

Upload this document with completed answers to i-learn.