

Manage AVD Shutdown

Tuesday, May 2, 2023 9:31 AM

This solution is for a use case where:

Azure Virtual desktops assignments are dedicated /personal desktops

- Users have certain workloads that may continue running after the work shift has ended
- Desktops need to be shutdown when all work is done or jobs have completed to save on compute usage costs
- User personas vary on types of jobs or work is performed
- User may change shifts and have different working hours

Solution Ask

- Allow users to identify when the Desktop can be shutdown
- Have an process/monitor that will run and check on when it can be safely shutdown and deallocated based user selection

GAP

- Azure virtual desktop cannot distinguish selection of critical task running and completion without gaining access to the desktop active running profiles
- Auto shutdown schedule is not flexible enough to manage shift changes for user based on ad-hoc needs

Proposed solution (POC)

- Create a time based monitor where the user will select a some point during the working day of a time when they expect to have their work or jobs completed
- When the user selected time has been reached, the monitor will shutdown and deallocated the Desktop (VM)
- The Azure Virtual Desktop Scheduler will need to wake up the VM when the next shift or user needs the desktop

Work flow and deployment

- Three scripts (also can be compiled into .exe)
 - o **Deploy_audit_scheduled_tasks_intervals_15minute.ps1**
 - This scripts will read in local Service principal /or local admin credentials from an azure keyvault
 - Source the monitor job Manage_Shutdown_Timebased from c:\programdata\jobs folder (hidden folder) or can be on a shared folder
 - Create a schedule task to run every Xxx minutes to check on the current date/time and the time the user selected to shutdown from the Registry
 - o **Manage_Shutdown_Timebased**
 - This script is the monitor that will (as mentioned above) get launched every xxx minutes,
 - Check current date time
 - Compare it to the time selected by the user for shutdown
 - ◆ If time has been reached
 - ◇ Script will :
 - ▶ write to the event log ID#6666 that time has been reached and the shutdown and deallocation will be executed
 - ▶ Write to the registry a flag noting that the time to stop the VM flag is NO (a reset for from Yes when the user sets a time) to prevent shutdown again upon boot up. If the flag is set to NO , the monitor will not shutdown the VM and it will stay running until a manual shutdown is executed or the TimeToStop flag is set to YES with a time. If the time is in the past it will automatically shutdown again. A precaution is built in to the Manage_Shutdown_Timebased_set script to prevent this scenario
 - o **Manage_Shutdown_Timebased_Set**
 - This script is to be run by the user when they want to set a time to automatically shutdown their assigned desktop/VM
 - It will:
 - ◆ Get the current time at execution
 - ◆ Provide a list of times to be selected from a UI pop-up
 - ◆ Create/update the desktop/VM registry with a Key and settings that the Manage_Shutdown_Timebased Monitor will be checking.
 - ◇ "HKLM:\SOFTWARE\MANAGE_SHUTDOWN"-Name "Timetostop"-Value "time to be set"
 - ◇ "HKLM:\SOFTWARE\MANAGE_SHUTDOWN"-Name "Timecheck"-Value "time to be set"
 - ◇ "HKLM:\SOFTWARE\MANAGE_SHUTDOWN"-Name "Timeleft"-Value " "
 - ◇ "HKLM:\SOFTWARE\MANAGE_SHUTDOWN"-Name "Timetostopset"-Value "YES"
 - ◆ Write to the event log "Manage_shutdown_monitor" -EventID 6666 that a time to shutdown has been set

Pre-Requirements

- The following are requirements to set up and use this solution
 - o Working and assigned Azure Virtual Desktop instance/session host
 - o Pre-install azure modules for VM management calls to Azure
 - **install-module -name az -allowclobber**
 - o A managed identity for (user or system) with :
 - **Desktop Virtualization Power On Off Contributor** - This role allows users to manage the virtual machine and perform tasks such as starting and stopping the virtual machine.
 - [Configure managed identities on Azure VM using Azure CLI - Microsoft Entra | Microsoft Learn](#)
 - [Configure managed identities on an Azure VM using PowerShell - Microsoft Entra | Microsoft Learn](#)

In PowerShell (as Admin) run:

```
$vm = Get-AzVM -ResourceGroupName myResourceGroup -Name myVM
```

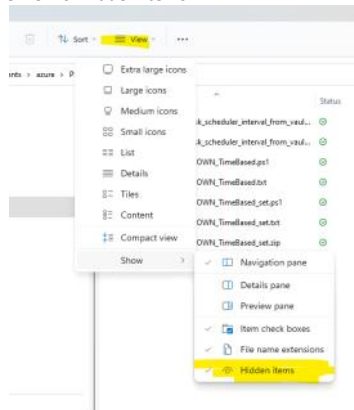
```
Update-AzVM -ResourceGroupName myResourceGroup -VM $vm -IdentityType SystemAssigned
```

***** Replace Myvm with the name of the Host session VM

- A startup schedule to bring the Desktop/VM back online for users to start work

Deployments instructions

- 1) Download or save zip file MANAGE_SHUTDOWN_TimeBased_set.zip to a folder or storage account container or Fileshare
- 2) Unpackage **MANAGE_SHUTDOWN_TimeBased.zip** to the destination folder/container
- 3) In File explorer on the Host/VM to be managed
 - a. Enable view of hidden items



- b. Navigate to the c:\programdata folder
 - a. Create a new folder named : **Jobs**
 - b. **Copy file named : MANAGE_SHUTDOWN_TimeBased_gui.ps1** extracted from the zip collection to the c:\programdata\Jobs folder
- c. Navigate to Home directory "sl ~" or cd ~
 - a. Create a new folder named **tools**
 - b. **Copy file named: MANAGE_SHUTDOWN_TimeBased_set_gui.ps1** extracted from the zip collection to the ~\tools folder (c:\users\xxxx\documents\tools)

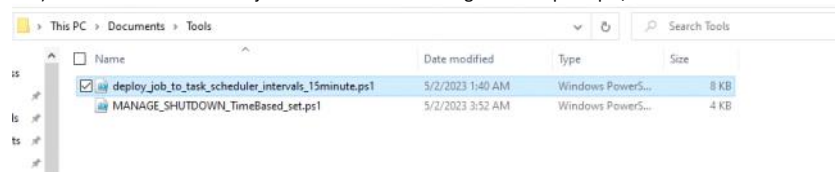
4) Optional deployments

- a. If user is allowed to the change task schedule:
 - i. Copy file named: Deploy_audit_scheduled_tasks_intervals_15minute.ps1 extracted from the zip collection to the ~\tools folder (c:\users\xxxx\documents\tools)
 - 1) **This will allow redeployment of the job to the task scheduler - It Will not create a duplicate !!! Access to the Service Principal or service account will be required to deploy the job.**

Name	Status	Date modified	Type	Size
Deploy_audit_scheduled_tasks_intervals_15minute.ps1		5/19/2023 12:32 PM	PS1 File	8 KB
MANAGE_SHUTDOWN_TimeBased.ps1		5/20/2023 12:11 AM	PS1 File	7 KB
MANAGE_SHUTDOWN_TimeBased_set.ps1		5/20/2023 12:05 AM	PS1 File	5 KB

b. If centrally managed

- i. Execute this script on the host using the administrator privileges - to set and create the job (see screenshots below) - **or add to an session host image fully deployed**
 - 1) This will:
 - a) Read the c:\programdata\jobs folder for any scripts stored in that folder
 - b) Create a scheduled task job with run intervals using a service principal/Service account stored in the keyVault created (see pre-requisites)



5) To Deploy (if all prerequisites are in place) :

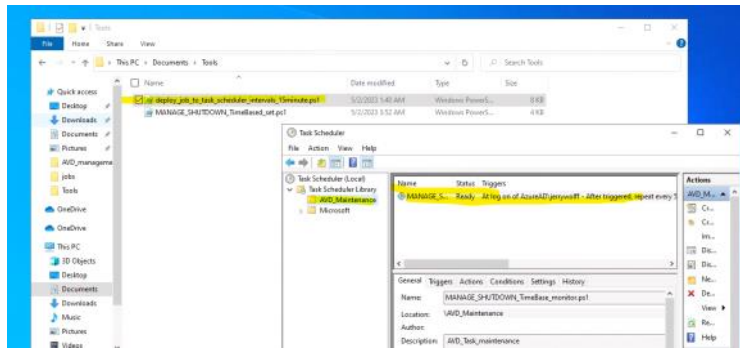
- a. As administrator Run PowerShell
 - i. Replace the values in the **Deploy_audit_scheduled_tasks_intervals_15minute.ps1** with the setting for your environment (.exe version is also available)

```
$sub = get-azsubscription -SubscriptionName "<Subscriptionname>"
```

\$serviceprincipal = '<local VM Admin account name or ad Domain Admin Account>' when a pop up appears to allow the creation of the Task # Note

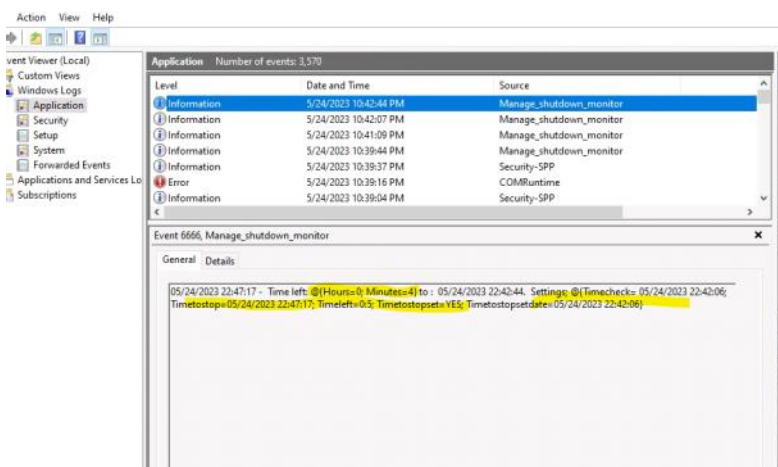
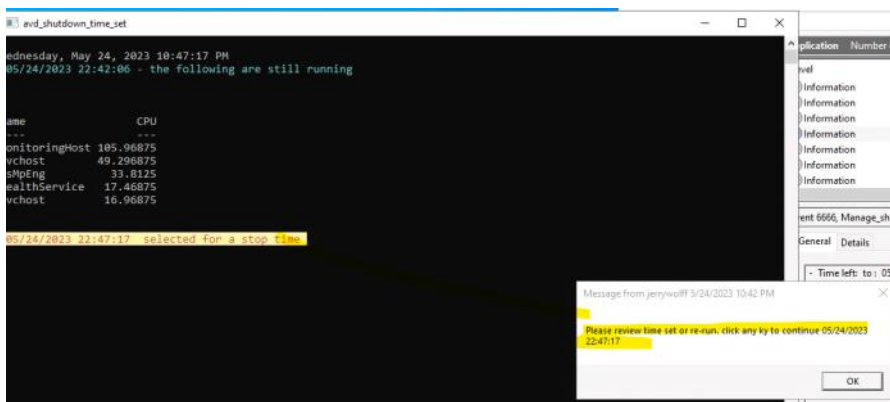
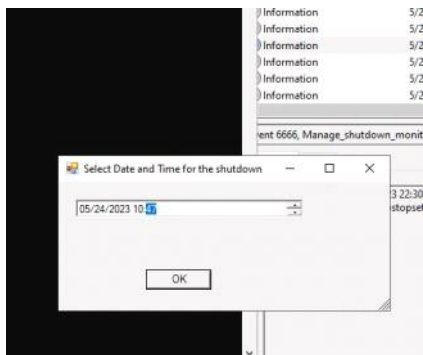
- ii. Execute **Deploy_audit_scheduled_tasks_intervals_15minute.ps1**

iii. Verify Job/task creation



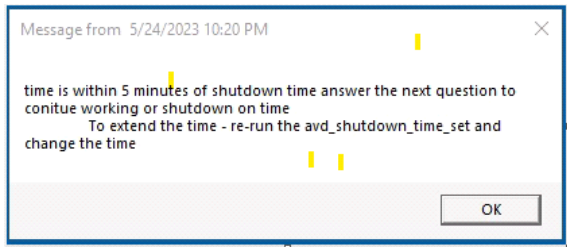
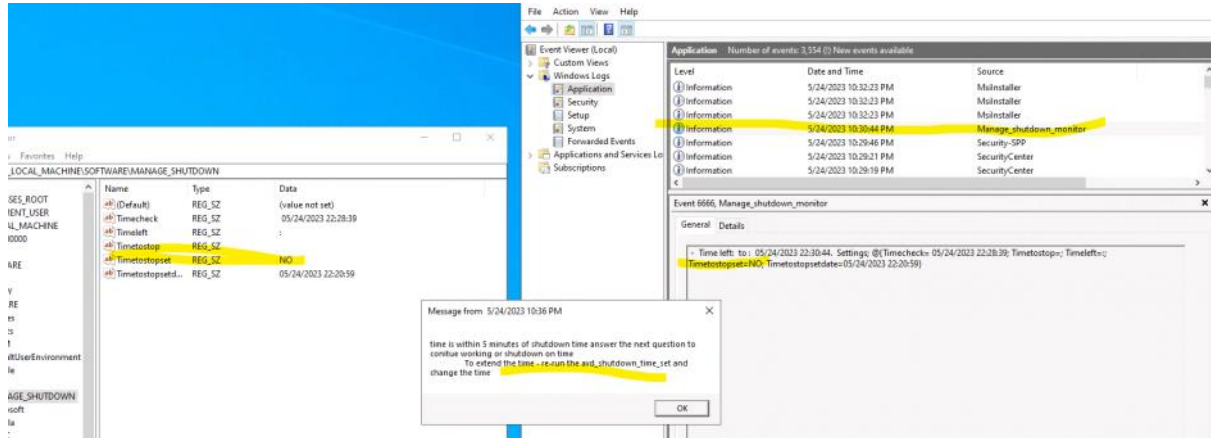
b. For end user:

- Execute `c:\users\xxxx\documents\tools\Manage_shutdown_Timebased_set_gui`
- Select desired date/Time/hours from selection provided in the UI (see screen shot below)

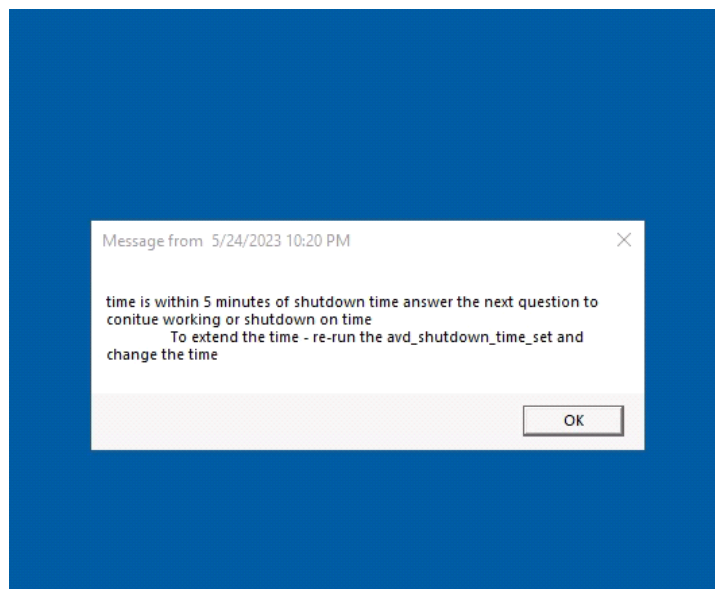




- c. If end user does not set a time when they log on, the prompt will be triggered every 3 minutes
And the Registry control is not update and indicates that a Time to Stop has not been set yet
End user will continue to be prompted but not shutdown.



- a. When the time set is reached, a message will pop-up for all users with a 5 minute User delay.



After the message is acknowledged, an additional 1 minute delay is imposed to allow for:

- **Resetting** the time to **shut down** to a later time by running **Manage_shutdown_Timebased_set_gui** **again and selecting a new time**
- **To cleanup and save work**
- **Once that final 1 minute delay has been reached, the VM will be shutdown and deallocated.**

iff

Connect Start Restart Stop Capture Delete Refresh Open in mobile Feedback CLI / PS

Essentials

Resource group (move) : wolffentpavdrg

Status : Deallocating

Location : West US

Subscription (move) : wolffentpSub

Subscription ID : 5755893a-8056-4ba8-9916-1133c80a80f3

Operating system : Windows

Size : Standard D4s v3 (4 vcpus, 16 GiB memory)

Public IP address : -

Virtual network/subnet : wolffentpnet/wolffentpavdsn

DNS name : -

Health state : -

Tags (edit) : owner : Jerry wolff purpose : AVD suicide poc cm-r... : /subscriptions/5755893a-8056-4ba8-9916-1133c80a80f3/r...

Properties Monitoring Capabilities (7) Recommendations Tutorials

Virtual machine

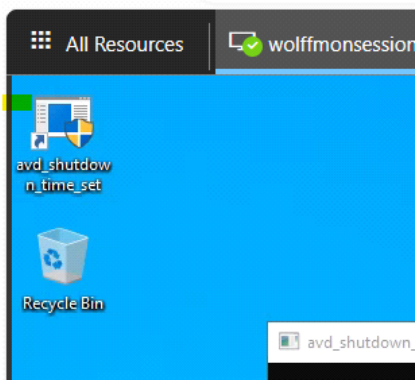
Computer name wolffmon-0

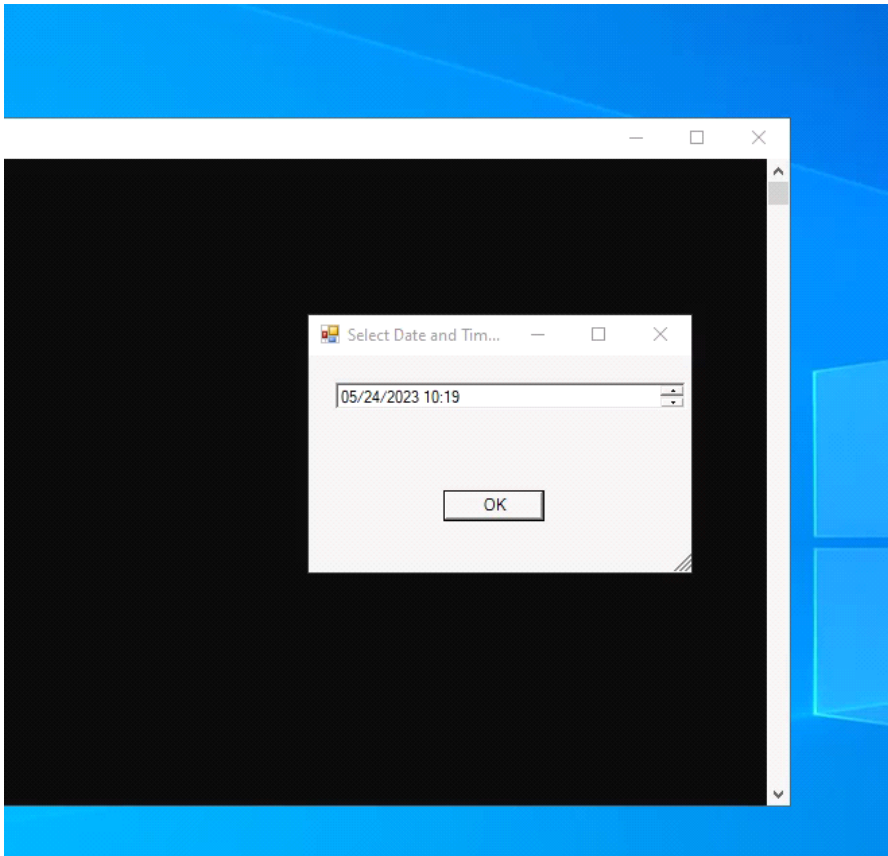
Networking

Public IP address -

Screen shots

Manage_shutdown_Timebased_set

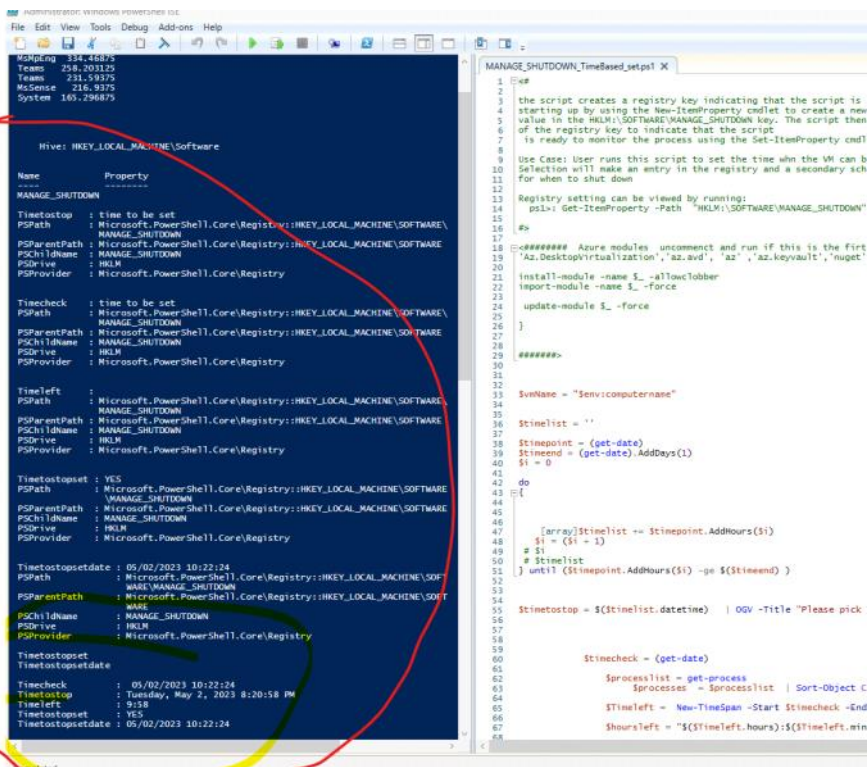




Date Changeable items include:

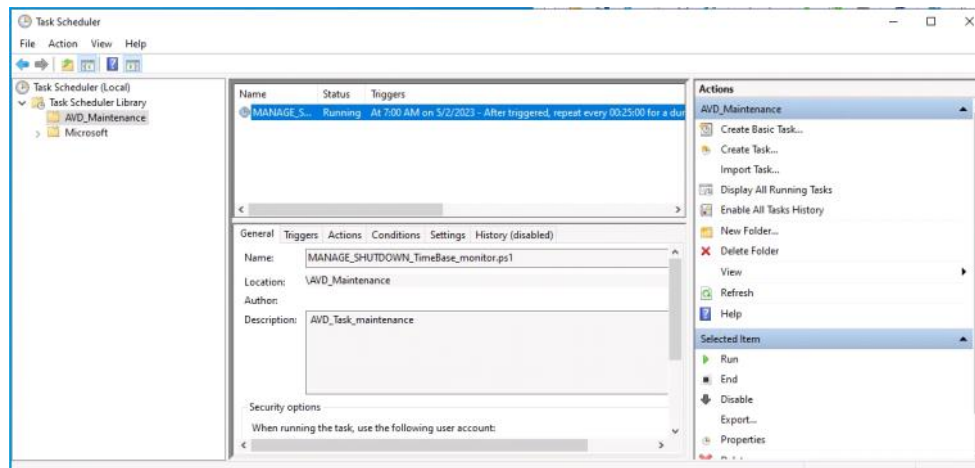
- Month
- Day
- Year
- Hour
- Minutes

c. A verification of the time selected for the **auto shutdown** will be printed to the results screen (see sample below)

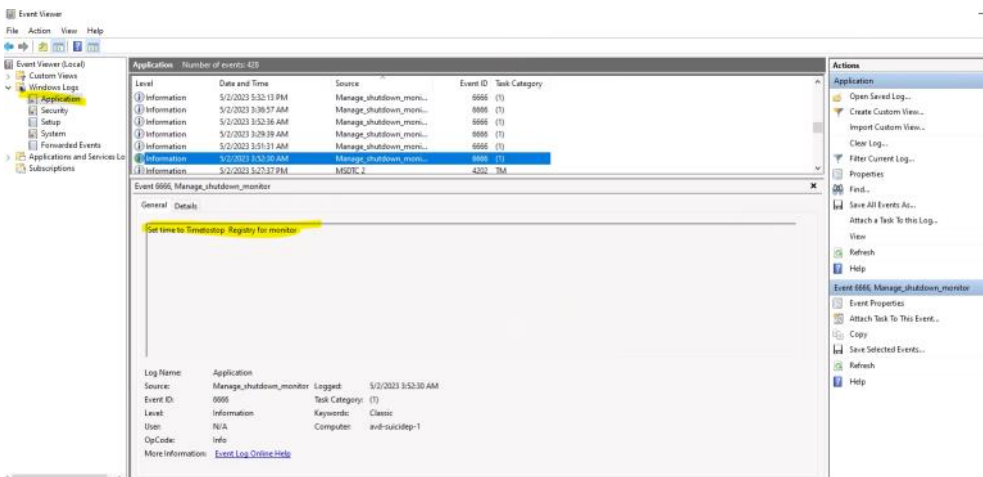
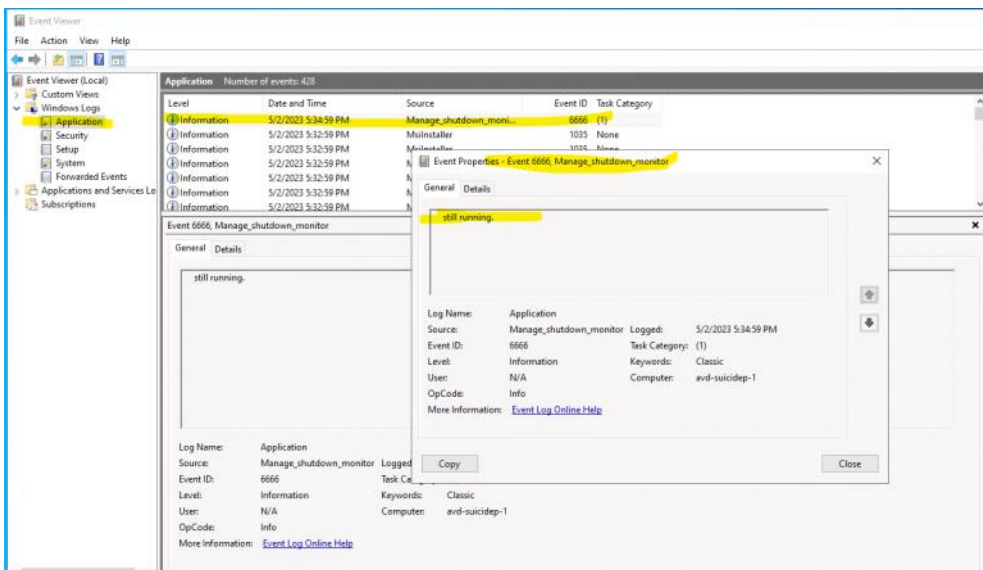


Reference Screen shots

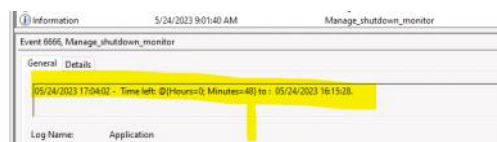
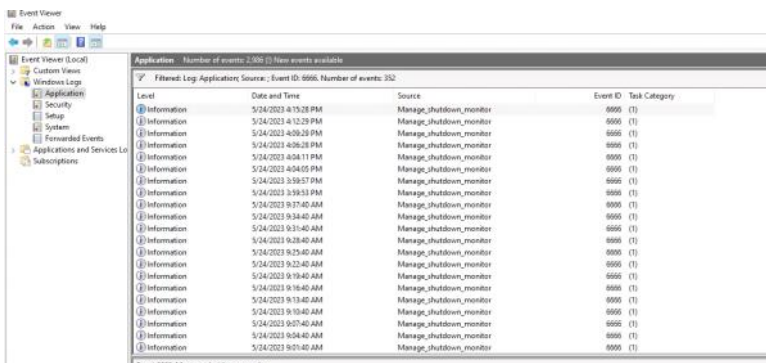
Task Scheduler Job



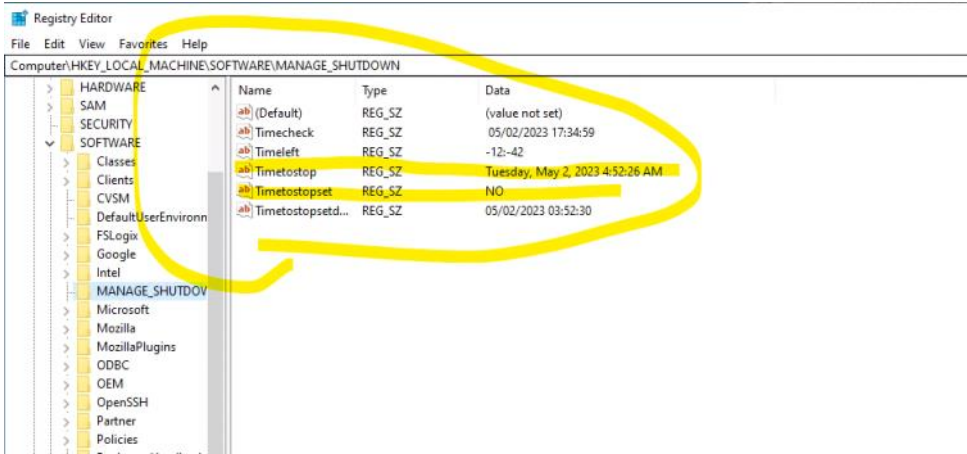
Event Viewer logs



Monitor - Event countdown



Registry entries



Source folder