T_O_O_L Introduction

T_O_O_L Introduction

About TOOL

T_O_O_L (Toolkit for Operational Optimization and Learning) is a customized PowerShell script used:

- To prepare the following courses in the way I like to deliver the courses (OTC-001, STC-001, ETC-001, MC-ACT-001, OTC-002, and STC-002). This is highly customized but could be edited according to other trainers' needs.

- Work In Progress – Exam marking for OTC-001, STC-001, and ETC-001, the idea for this is to grade exam VMs automatically.

- It is also used for preparing the OTC-001 and STC-001 courses for the students' exam, this saves the hassle of creating dedicated VMs for the exam and/or going into Server Admin and creating a new Directory DB, for the STC-001 course the simulator is not deleted, further saving time and hassle! Note: all default entities (user groups/users/roles) are not removed, all ghost cameras are removed.

Instructions for Use

TOOL is a zipped folder, put the zipped file on the C drive (C:\) and extract, the path for TOOL should be 'C:\TOOL'.

Do not edit any of the internal folders or files within TOOL they are:

- Folder: **TOOL_DBs** – This contains database backups for **MC-ACT-001** and **STC-002** (general use and troubleshooting VMs), the naming of these backup files does not matter, the location however does (there should only ever be 1 x backup file in each location). If the software is on a new version i.e., 5.12, take the existing backup files and restore them in the current software version, upgrade to the newest version, back up the database and replace the backup file in this folder.

- Folder: **TOOL_Functions** – This contains a number of .ps1 scripts that are called by the 'main' TOOL.ps1 script, do not edit these.

- Folder: **TOOL_Logs** – This by default is blank, when you run TOOL, any relevant logs can be found here.

- File: **TOOL.ps1** – This is the 'main' script for TOOL, do not edit this.

- File: **TOOL_Launcher.bat** – This is the file used to 'launch the application', this can be sent to your desktop as a shortcut if needed.

T_O_O_L Usage

Main Menu

[1] This launches the 'Course Setup' process.

[2] This will (eventually) launch the 'Exam Marking' process

[3] This launches the 'Exam Ready' process

[4] This launches the 'About TOOL' menu

[5] This exits TOOL and closes the terminal window

T_O_O_L Usage

[1] Course Setup

```
Administrator: C:\Windows\system32\cmd.exe                          —   □   ×
##################################################################
#                                                                #
|                    WELCOME TO T_O_O_L                          |
#                                                                #
##################################################################

Select an option:
    [1] Course Setup
    [2] Exam Marking (WIP)
    [3] Make Servers 'Exam Ready'
    [4] About 'T_O_O_L'
    [5] Exit 'T_O_O_L'

Enter the number of your choice (1-5): _




[1] Course Setup

Select the course you wish to setup for:
    [1] OTC
    [2] STC
    [3] ETC
    [4] OTC2
    [5] STC2
    [6] MC

Enter the number of your choice (1-6): _
```

Any choice leads you to:

```
Enter the VM Range (type 'help' for more information)
VM Range: _
```

Note: The ranges are like so: 100,102-105,110

Any choice leads you to:

```
Enter the VM password, ensure this is correct!
VM Password: _
```

[1] OTC, [2] STC, [3] ETC, [6] MC
all end here, the process will begin.

Note: if any VMs are offline, you will be told, and the script will exit back to the Main Menu.

[4] OTC2
Here you will choose the type of VM either **General Use** or **Exam**.

You will then be prompted for the day, either; **1**, **2**, or **3**

Note: if any VMs are offline, you will be told, and the script will exit back to the Main Menu.
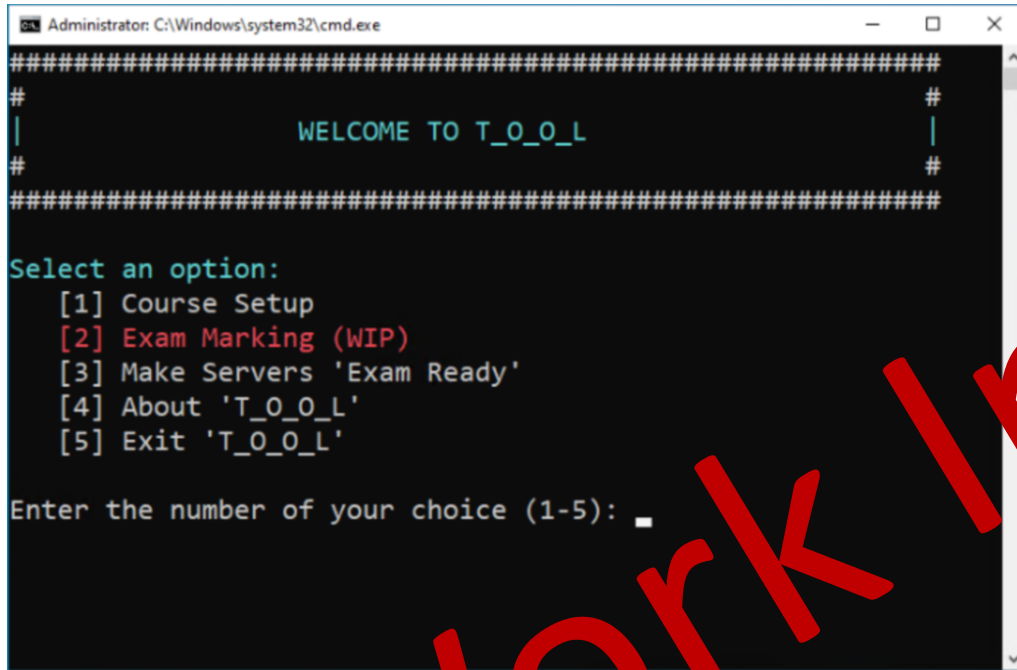
[5] STC2
Here you will choose the type of VM either **General Use**, **Troubleshooting**, or **Exam**.

You will then be prompted for the day, either; **1**, or **2**.

Note: if any VMs are offline, you will be told, and the script will exit back to the Main Menu.

T_O_O_L Usage

[2] Exam Marking

T_O_O_L Usage

[3] Make Servers 'Exam Ready'

Any choice leads you to:

```
Enter the VM Range (type 'help' for more information)
VM Range: _
```

Note: The ranges are like so: 100,102-105,110

Any choice leads you to:

```
Enter the VM password, ensure this is correct!
VM Password: _
```

```
Administrator: C:\Windows\system32\cmd.exe                    —  □  ×
##############################################################
#                                                            #
|                 WELCOME TO T_O_O_L                          |
#                                                            #
##############################################################

Select an option:
    [1] Course Setup
    [2] Exam Marking (WIP)
    [3] Make Servers 'Exam Ready'
    [4] About 'T_O_O_L'
    [5] Exit 'T_O_O_L'

Enter the number of your choice (1-5): _



[3] Make Servers 'Exam Ready'

Note: This is designed to make OTC-001 and STC-001 machines r
eady for exam use.
        There is no need for the students to re-license or add
the ACS simulator.

Enter the VM Range (type 'help' for more information)
VM Range: _
```

The script will then run, and the machines will be blank, ready for the exam

Note: if any VMs are offline, you will be told, and the script will exit back to the Main Menu.

T_O_O_L 'Functions'

T_O_O_L Usage

[1] Course Setup → [1] OTC

Functions ran =

```
#WORKING
DesktopConfiguration -ArrayofVMs $vmArray -Password $vmPassword

#WORKING
GUSTAVConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType
```

Results =

DesktopConfiguration

- All desktop icons removed (except 'Recycle Bin'), and SC icons added to the desktop.

GUSTAVConfiguration

- All cameras stopped and 'OTC specific cameras' started; OTC uses the following GUSTAV cameras:
    - CAM2 - Reception Area
    - CAM3 - Staff Ent. Lobby
    - CAM4 - Office Ent.
    - Student Camera
    - *+1 camera used from my resource server (CAM1 - Main Ent. Lobby)*

Approximate time taken for x 10 VMs == 147 seconds

T_O_O_L Usage

[1] Course Setup → [2] STC

Functions ran =

```
#WORKING
DesktopConfiguration -ArrayofVMs $vmArray -Password $vmPassword

#WORKING
GUSTAVConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType
```

Results =

DesktopConfiguration

- All desktop icons removed (except 'Recycle Bin'), and SC icons added to the desktop.
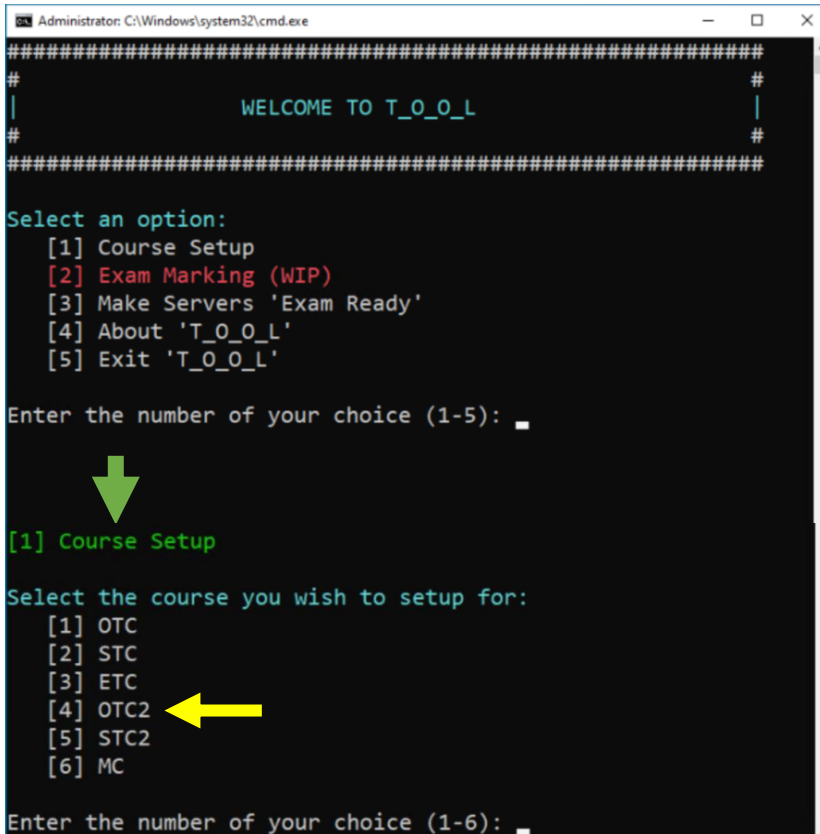
GUSTAVConfiguration

- All cameras stopped and 'STC specific cameras' started; STC uses the following GUSTAV cameras:
  - CAM1 - Main Ent. Lobby
  - CAM2 - Reception Area
  - CAM3 - Staff Ent. Lobby
  - CAM4 - Office Ent.
  - CAM5 - Server Room

Approximate time taken for x 10 VMs == 147 seconds

T_O_O_L Usage

[1] Course Setup →[3] ETC

Functions ran =

```
#WORKING
DesktopConfiguration -ArrayofVMs $vmArray -Password $vmPassword

#WORKING
GUSTAVConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType
```

Results =

DesktopConfiguration

- All desktop icons removed (except 'Recycle Bin'), and SC icons added to the desktop.

GUSTAVConfiguration

- All cameras stopped and 'ETC specific cameras' started; ETC uses the following GUSTAV cameras:
  - CAM1 - Main Ent. Lobby
  - CAM2 - Reception Area
  - CAM3 - Staff Ent. Lobby
  - CAM4 - Office Ent.

Approximate time taken for x 10 pair of VMs == 302 seconds

T_O_O_L Usage

[1] Course Setup → [4] OTC2
General Use – Day 1

Functions ran =

```
#WORKING
DesktopConfiguration -ArrayofVMs $vmArray -Password $vmPassword

#WORKING
GUSTAVConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType

#WORKING
FirewallConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType

#WORKING
ServerIssuesConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType
```

Results =

DesktopConfiguration
- All desktop icons removed (except 'Recycle Bin'), and SC icons added to the desktop on both the **S100** machine and the **S200** machine.

GUSTAVConfiguration
- All GUSTAV cameras stopped on both the **S100** machine and the **S200** machine.

FirewallConfiguration
- Firewall switched on both the **S100** machine and the **S200** machine.
- Net Logon (TCP:445) allowed on both the **S100** machine and the **S200** machine.

ServerIssuesConfiguration
The following server issues are created for the **S100** machine.
- SQL: Directory DB in 'Single User' mode
- Server Admin: Change password to Letmein123!
- Services: STOP & DISABLE: "GenetecWatchdog", "GenetecServer"

The following server issues are created for the **S200** machine.
- Server Admin: Alter from 'Expansion' to 'Main' server
- Services: STOP & DISABLE: "GenetecWatchdog", "GenetecServer"

> **Approximate time taken for x 10 pair of VMs == 470 seconds**

T_O_O_L Usage

[1] Course Setup → [4] OTC2
General Use – Day 2

Functions ran =

```
#WORKING
ServerIssuesConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType
```

Results =

ServerIssuesConfiguration

The following server issues are created for the **S100** machine.

- SQL: SC admin password changed to Letmein123!
- SQL: NT AUTHORITY\SYSTEM -- deny connect -- disable logon
- Services: STOP & DISABLE: 'MSSQL$SQLEXPRESS'

No server issues are created for the **S200** machine.

Approximate time taken for x 10 pair of VMs == 120 seconds

T_O_O_L Usage

Functions ran =

#WORKING
FirewallConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType

#WORKING
ServerIssuesConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType

Results =

FirewallConfiguration
- GenetecRedirector deleted on the **S100** machine.
- **S200** machine not touched.

ServerIssuesConfiguration
The following server issues are created for the **S100** machine, as expected.
- o Media Router: RTSP port altered from 554 to 555
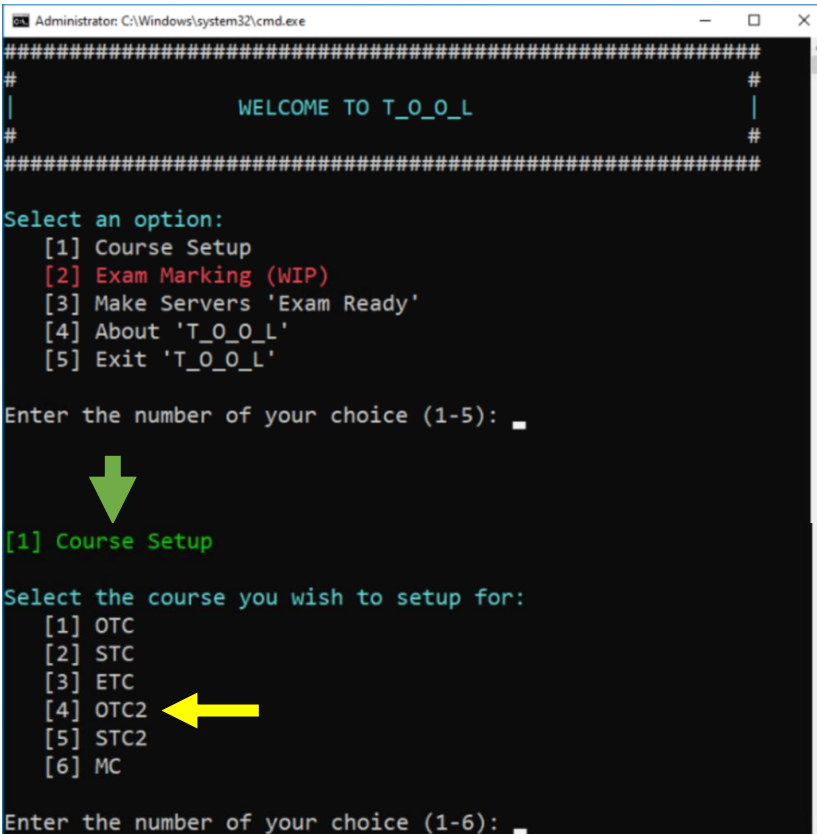- o Server Admin: Network private port changed from 5500 to 550

The **S200** machine is not touched.

Approximate time taken for x 10 pair of VMs == 144 seconds

T_O_O_L Usage

[1] Course Setup →[4] OTC2
Exam Use – Day 1

Functions ran =

```
#WORKING
DesktopConfiguration -ArrayofVMs $vmArray -Password $vmPassword

#WORKING
GUSTAVConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType

#WORKING
FirewallConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType

#WORKING
ServerIssuesConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType
```

Results =

DesktopConfiguration
- All desktop icons removed (except 'Recycle Bin'), and SC icons added to the desktop on both the **S100** machine and the **S200** machine.

GUSTAVConfiguration
- All GUSTAV cameras stopped on both the **S100** machine and the **S200** machine.

FirewallConfiguration
- Firewall switched on both the **S100** machine and the **S200** machine.
- Net Logon (TCP:445) allowed on both the **S100** machine and the **S200** machine.

ServerIssuesConfiguration
The following server issues are created for the **S100** machine.
- o SQL: Directory DB in 'Single User' mode
- o Server Admin: Change password to Letmein123!
- o Services: STOP & DISABLE: "GenetecWatchdog", "GenetecServer"

The following server issues are created for the **S200** machine.
- o Server Admin: Alter from 'Expansion' to 'Main' server
- o Server Admin: Change password to Letmein123!
- o Services: STOP & DISABLE: "GenetecWatchdog", "GenetecServer"

Approximate time taken for x 10 pair of VMs == 459 seconds

T_O_O_L Usage

[1] Course Setup → [4] OTC2
Exam Use – Day 2

TO DO

```
Administrator: C:\Windows\system32\cmd.exe
########################################################
#                                                      #
|                 WELCOME TO T_O_O_L                   |
#                                                      #
########################################################

Select an option:
    [1] Course Setup
    [2] Exam Marking (WIP)
    [3] Make Servers 'Exam Ready'
    [4] About 'T_O_O_L'
    [5] Exit 'T_O_O_L'

Enter the number of your choice (1-5): _

[1] Course Setup

Select the course you wish to setup for:
    [1] OTC
    [2] STC
    [3] ETC
    [4] OTC2    ⟵
    [5] STC2
    [6] MC

Enter the number of your choice (1-6): _
```

Functions ran =

```
#WORKING
ServerIssuesConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType
```

Results =

ServerIssuesConfiguration

The following server issues are created for the **S100** machine.

o ARCHIVER:	Change 'RTSP port' to 554
o ARCHIVER:	Change 'Min Free Space' to 75,000
o ARCHIVER:	Change 'Continous Recording' 4 days
o ARCHIVER:	Turn OFF Archiver Encryption
o MEDIA ROUTER:	Change DB to (local)\SQIEXPRESS
o CAMERA:	Set ONE camera to network connection type 'Multicast' (doesnt matter which one)
o NETWORK:	Change capability to 'Multicast'
o HEALTH MONITOR:	Deactivate the role
o USER:	New admin user created day 1 of the exam - alter password to Letmein123! and remove from administrators user group
o USER:	Change the supervisor user password to Letmein123! and Deny the privilege 'view live footage'
o SERVICES:	STOP & DISABLE: 'MSSQL$SQLEXPRESS'

No server issues are created for the **S200** machine.

> ### Approximate time taken for x 10 pair of VMs == 92 seconds

[1] Course Setup →[4] OTC2
Exam Use – Day 3

Functions ran =

#WORKING
FirewallConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType

#WORKING
ServerIssuesConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType

Results =

FirewallConfiguration
- GenetecRedirector deleted on the **S100** machine.
- Outbound firewall rule blocking TCP 5500 created on the **S200** machine.

ServerIssuesConfiguration
The following server issues are created for the **S100** machine, as expected.
- o MEDIA ROUTER: change 'RTSP Port' from 554 to 555
- o VIDEO UNITS: change so units are to 'use default logon' - cameras should go offline
- o USER: for the supervisor user - DENY the 'Change Workspace' privilege
- o Recorded Footage: create orphan files
- o SQL: NT AUTHORITY\SYSTEM -- deny connect -- disable logon

The **S200** machine is not touched.

Approximate time taken for x 10 pair of VMs == 120 seconds
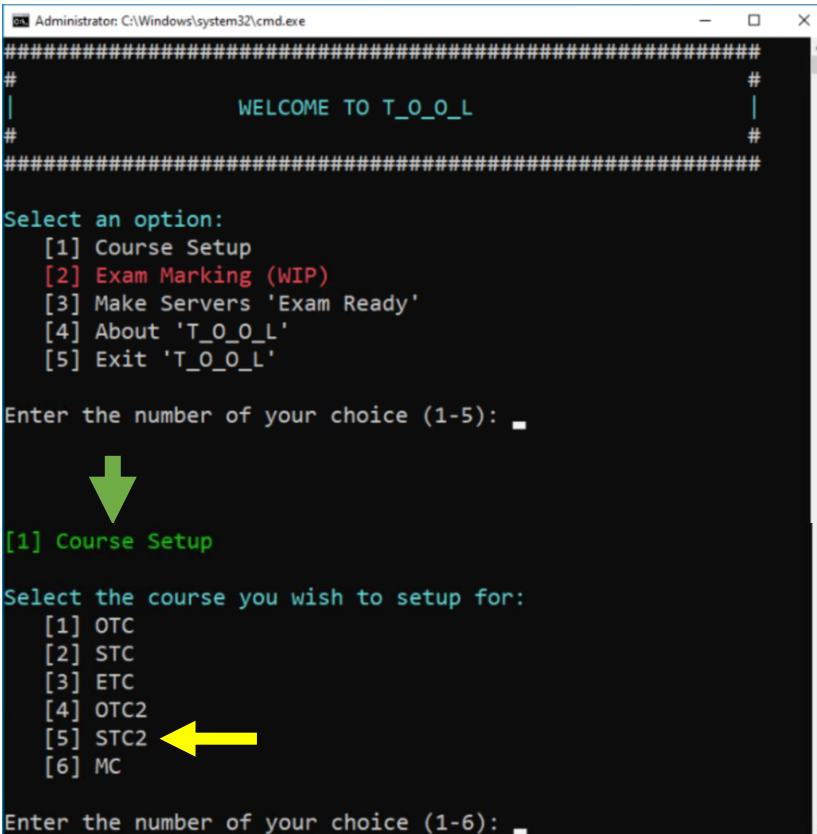
T_O_O_L Usage

[1] Course Setup → [5] STC2
General Use

Functions ran =

```
#WORKING
DesktopConfiguration -ArrayofVMs $vmArray -Password $vmPassword

#WORKING
GUSTAVConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType

#WORKING
FirewallConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType

#WORKING
DatabaseConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -VMType $vmType

#WORKING
ServerIssuesConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType
```

Results =

DesktopConfiguration
- All desktop icons removed (except 'Recycle Bin'), and SC icons added to the desktop.

GUSTAVConfiguration
- All GUSTAV cameras stopped.

FirewallConfiguration
- Firewall switched on.
- Net Logon (TCP:445) allowed.
- GenetecRedirector and GenetecVideoUnitControl32 disabled.

DatabaseConfiguration
- The STC-002 General use backup located 'C:\TOOL\TOOL_DBs\STC002_GeneralUse' is restored to the VM.

ServerIssuesConfiguration
The following server issues are created.
- o SQL: Directory DB in 'Single User' mode
- o SQL: NT AUTHORITY\SYSTEM -- deny connect -- disable logon
- o Server Admin: Alter DB Name to (local)\SQLExpres
- o Server Admin: Change password to Letmein123!
- o Services: STOP & DISABLE: "GenetecWatchdog", "GenetecServer", 'MSSQL$SQLEXPRESS'

Approximate time taken for x 10 VMs == 325 seconds

T_O_O_L Usage

[1] Course Setup → [5] STC2
Troubleshooting

Functions ran =

```
#WORKING
DesktopConfiguration -ArrayofVMs $vmArray -Password $vmPassword

#WORKING
GUSTAVConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType

#WORKING
FirewallConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType

#WORKING
DatabaseConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -VMType $vmType

#WORKING
ServerIssuesConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType
```

Results =

DesktopConfiguration
- All desktop icons removed (except 'Recycle Bin'), and SC icons added to the desktop.

GUSTAVConfiguration
- All GUSTAV cameras stopped.

FirewallConfiguration
- Firewall switched on.
- Net Logon (TCP:445) allowed.
- GenetecServer, 5500-TCP, and 5500-UDP deleted.

DatabaseConfiguration
- The STC-002 Troubleshooting backup located 'C:\TOOL\TOOL_DBs\STC002_Troubleshooting' is restored to the VM.

ServerIssuesConfiguration
The following server issues are created.
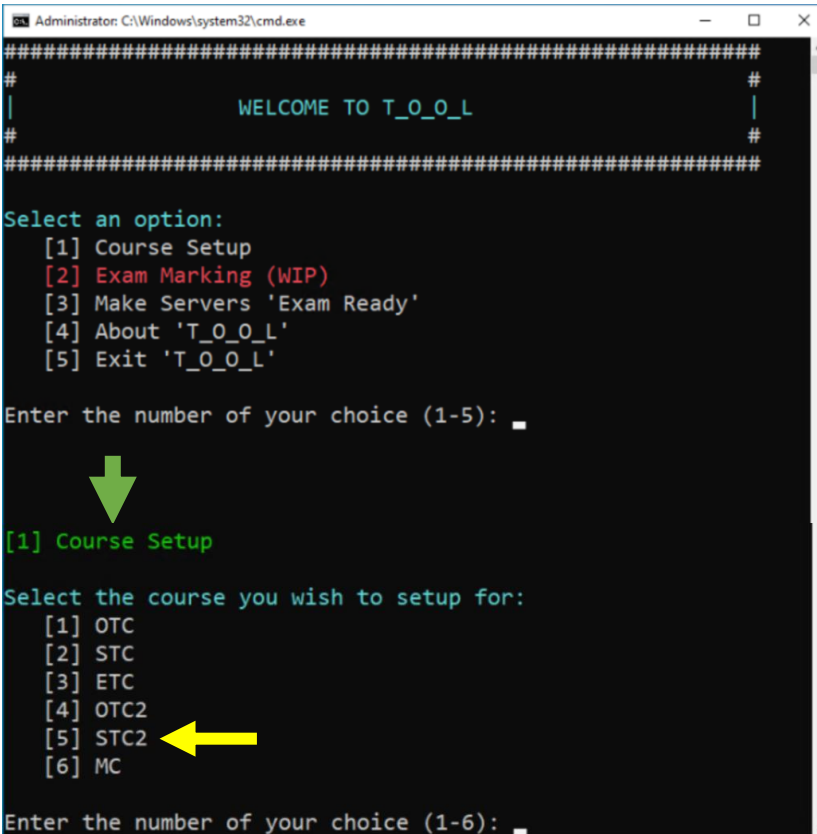- o SQL: Access Manager DB in 'Single User' mode
- o SQL: NT AUTHORITY\SYSTEM -- deny connect -- disable logon
- o Server Admin: Change password to Letmein123!
- o Services: STOP & DISABLE: "GenetecWatchdog", "GenetecServer", 'MSSQL$SQLEXPRESS'

Approximate time taken for x 10 VMs == 325 seconds

T_O_O_L Usage

[1] Course Setup → [5] STC2
Exam (Day 1 and Day 2)

Functions ran (Day 1) =

```
#WORKING
DesktopConfiguration -ArrayofVMs $vmArray -Password $vmPassword

#WORKING
GUSTAVConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType

#WORKING
ServerIssuesConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType
```

Functions ran (Day 2) =

```
#WORKING
ServerIssuesConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -Day $courseDay -VMType $vmType
```

Results =

Day 1 - DesktopConfiguration
- All desktop icons removed (except 'Recycle Bin'), and SC icons added to the desktop.

Day 1 - GUSTAVConfiguration
- All GUSTAV cameras stopped.

Day 1 - ServerIssuesConfiguration
The following server issues are created.
- o Services: STOP & DISABLE: 'MSSQL$SQLEXPRESS'

Day 2 - ServerIssuesConfiguration
The following server issues are created.
- o SQL: Change admin password for SC to Letmein123!
- o SQL: Directory DB in 'Single User' mode
- o SQL: NT AUTHORITY\SYSTEM -- deny connect -- disable logon
- o Services: STOP & DISABLE: "GenetecWatchdog", "GenetecServer"

Day 1: Approximate time taken for x 10 VMs == 171 seconds

Day 2: Approximate time taken for x 10 VMs == 30 seconds

T_O_O_L Usage

[1] Course Setup → [6] MC

Functions ran =

#WORKING
DesktopConfiguration -ArrayofVMs $vmArray -Password $vmPassword

#WORKING
GUSTAVConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType

#WORKING
DatabaseConfiguration -ArrayofVMs $vmArray -Password $vmPassword -Course $courseType -VMType $vmType

Results =

DesktopConfiguration

- All desktop icons removed (except 'Recycle Bin'), and SC icons added to the desktop.

GUSTAVConfiguration

- All cameras stopped and 'MC specific cameras' started; MC uses the following GUSTAV cameras:
  - CAM1 - Main Ent. Lobby
  - CAM6 - Carpark Camera

DatabaseConfiguration

- The MC General use backup located 'C:\TOOL\TOOL_DBs\ACT001_GeneralUse' is restored to the VM and all 'ghost cameras' removed.

Approximate time taken for x 10 VMs == 302 seconds