

# Installation for Microsoft Hyper-V

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## Introduction

Virtualization technology allows running software products in insulated environments allowing full control over installation and preventing host system pollution. Prepared images are ready to run with preinstalled OS and other required elements.

Many companies install software in isolated environments, however, preparing and installing system takes time. Corporate IT usually installs MS Windows OS in virtual environment, and then installs SW. However, graphical OS often requires much more resources than headless systems. Thus, to get optimal configuration and performance we have pre-installation virtual disk images based on Alpine Linux 3.12. specially built for virtualization engines.

Pre-installation images contains self-install scripts that will install runtime environment and **Green Screens Terminal Service for IBM I** by downloading required files from Internet.

Benefit of pre-installation images versus ready-to-run images are in size and latest version automatic installation. Pre-installation images we provide are only 30MB zipped virtual drives in average while ready-to-run images might be between 1GB to 10GB in size depending on virtual drive format.

We distribute images in several most common formats: VMDK, VHD, VHDX

- VMDK – interchangeable format supported by QEMU, Virtual Box, VMWare
- VHD – interchangeable format supported by QEMU, Virtual Box, Hyper-V
- VHDX – improved VHD format supported by Microsoft Hyper-V

Supported formats can be converted in different formats for other virtualization engines.

Images can be imported into various cloud providers also. For an example:

- Amazon Cloud – VHD, VHDX, VMDK
- Google Cloud – VHD, VMDK
- IBM Cloud – VHD, VMDK
- Microsoft Azure - VHDs

## 1. Quick Start

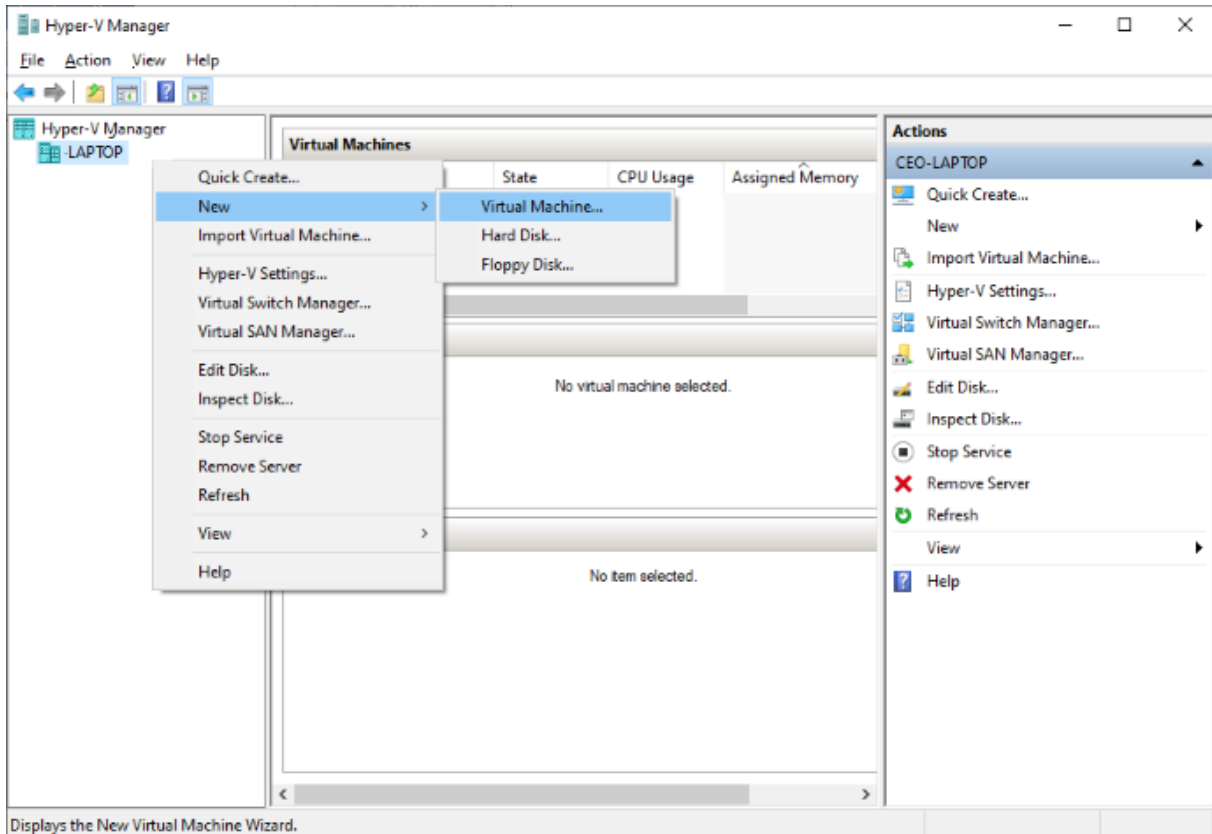
If you are already familiar with Microsoft Hyper-V, then follow these few steps to get up and running.

1. Extract downloaded image
2. Create new Virtual Machine
3. Attach extracted image as main disk drive
4. Add networking and enable static MAC address
5. Open Hyper-v connection – click Start button.
6. Login with user **server** and password **server**
7. If DHCP is available in your network, skip to step 8.
  - a. Follow chapter 3. Setup Networking
  - b. After restart, login as noted in step 6.
  - c. Then jump to step 9.
8. From Linux command line call **gssetup** – system will restart.  
Upon restart, system will start downloading and installing required modules.  
Once finished, Green Screens server should be up and running.
9. You should be able to connect to Green Screens Server through web browser from any computer inside your network to standard port 80 for HTTP or 443 for HTTPS.

## 2. Creating Virtual Machine

Start Hyper-V Manager. It is located in **Windows Administrative Tools**. Please note, Hyper-V must be enabled through **Turn Windows Features On / Off** option.

Right click on local computer (LAPTOP on image below) and select New -> Virtual Machine

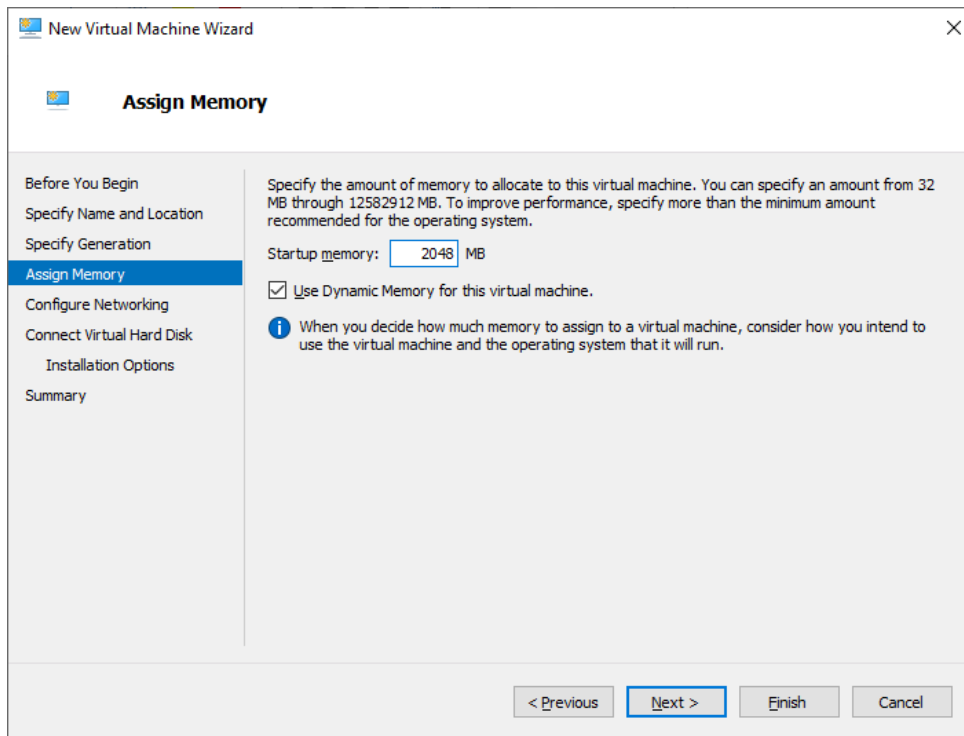


Then follow wizard to create new Virtual Machine.

The screenshot shows the 'Specify Name and Location' step of the 'New Virtual Machine Wizard'. The left sidebar contains a list of steps: 'Before You Begin', 'Specify Name and Location' (highlighted), 'Specify Generation', 'Assign Memory', 'Configure Networking', 'Connect Virtual Hard Disk', 'Installation Options', and 'Summary'. The main area contains the following text: 'Choose a name and location for this virtual machine. The name is displayed in Hyper-V Manager. We recommend that you use a name that helps you easily identify this virtual machine, such as the name of the guest operating system or workload.' Below this, there is a 'Name:' field with the text 'GreenScreensServer'. Further down, it says 'You can create a folder or use an existing folder to store the virtual machine. If you don't select a folder, the virtual machine is stored in the default folder configured for this server.' There is a checkbox for 'Store the virtual machine in a different location' which is currently unchecked. Below that is a 'Location:' field with the path 'C:\ProgramData\Microsoft\Windows\Hyper-V\' and a 'Browse...' button. A warning icon and text state: 'If you plan to take checkpoints of this virtual machine, select a location that has enough free space. Checkpoints include virtual machine data and may require a large amount of space.' At the bottom, there are four buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

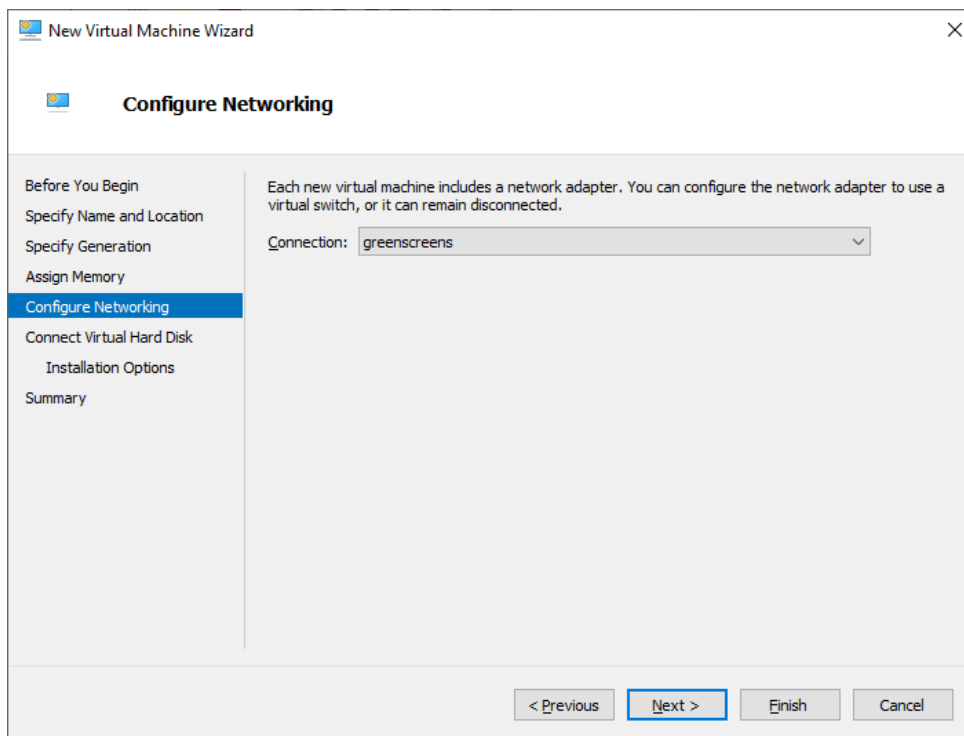
The screenshot shows the 'Specify Generation' step of the 'New Virtual Machine Wizard'. The left sidebar contains a list of steps: 'Before You Begin', 'Specify Name and Location', 'Specify Generation' (highlighted), 'Assign Memory', 'Configure Networking', 'Connect Virtual Hard Disk', 'Installation Options', and 'Summary'. The main area contains the following text: 'Choose the generation of this virtual machine.' There are two radio button options: 'Generation 1' (selected) and 'Generation 2'. Below 'Generation 1', it says 'This virtual machine generation supports 32-bit and 64-bit guest operating systems and provides virtual hardware which has been available in all previous versions of Hyper-V.' Below 'Generation 2', it says 'This virtual machine generation provides support for newer virtualization features, has UEFI-based firmware, and requires a supported 64-bit guest operating system.' A warning icon and text state: 'Once a virtual machine has been created, you cannot change its generation.' At the bottom, there is a link: 'More about virtual machine generation support'. At the bottom right, there are four buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

Select amount of memory as minimum 1GB, optionally, leave Dynamic memory usage.



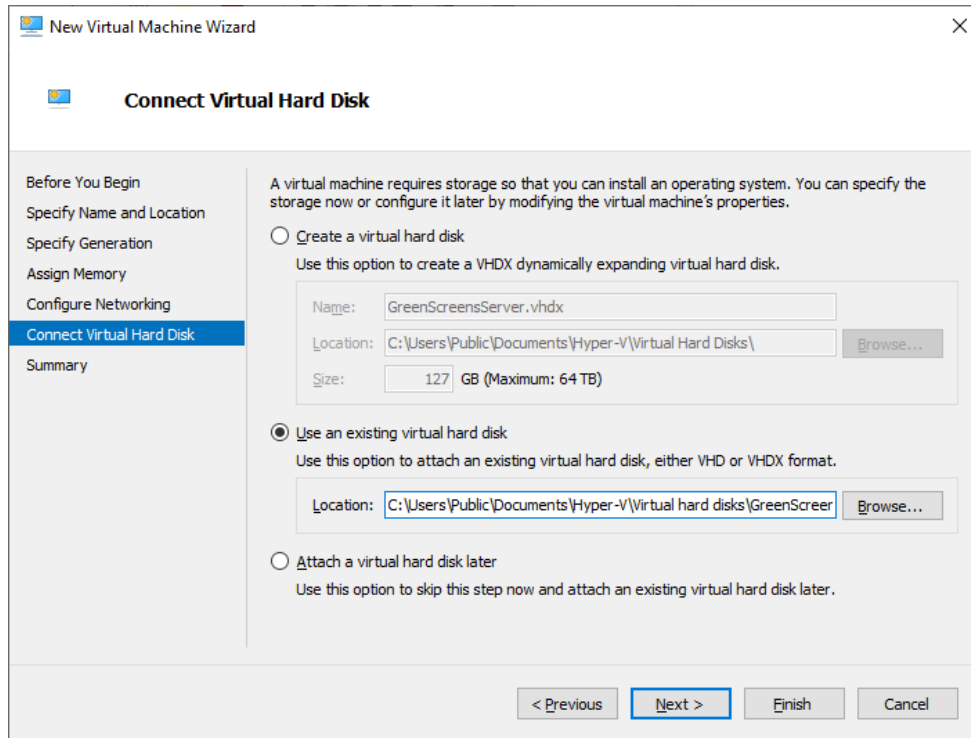
The screenshot shows the 'Assign Memory' step of the 'New Virtual Machine Wizard'. The left sidebar contains a list of steps: 'Before You Begin', 'Specify Name and Location', 'Specify Generation', 'Assign Memory' (highlighted), 'Configure Networking', 'Connect Virtual Hard Disk', 'Installation Options', and 'Summary'. The main area contains the following text: 'Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB through 12582912 MB. To improve performance, specify more than the minimum amount recommended for the operating system.' Below this, there is a 'Startup memory:' field with '2048' entered and 'MB' to its right. A checkbox labeled 'Use Dynamic Memory for this virtual machine.' is checked. An information icon (i) is followed by the text: 'When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.' At the bottom, there are four buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

Select previously configured virtual network.

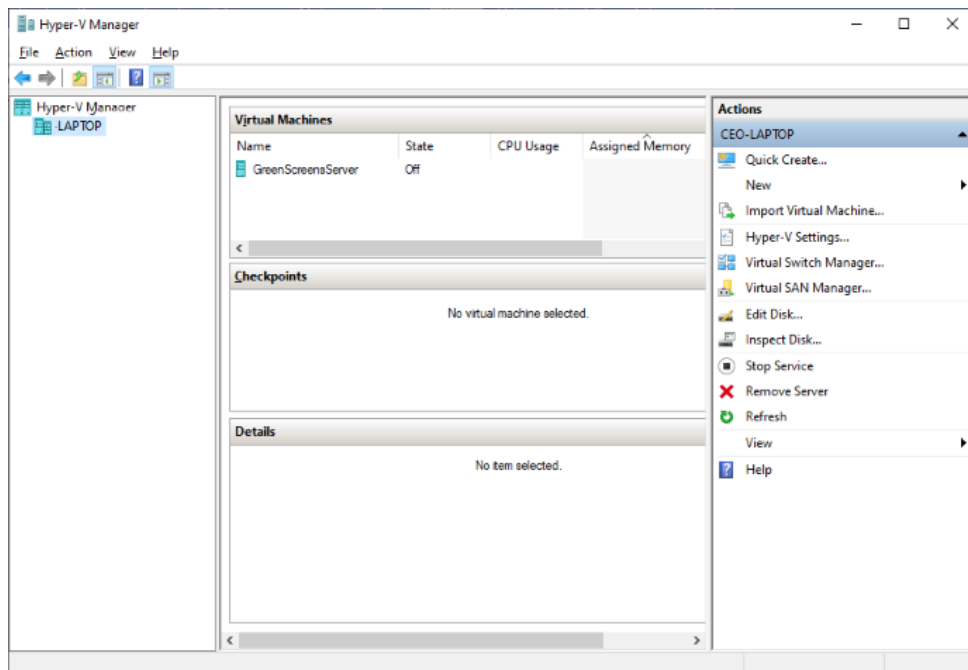


The screenshot shows the 'Configure Networking' step of the 'New Virtual Machine Wizard'. The left sidebar contains a list of steps: 'Before You Begin', 'Specify Name and Location', 'Specify Generation', 'Assign Memory', 'Configure Networking' (highlighted), 'Connect Virtual Hard Disk', 'Installation Options', and 'Summary'. The main area contains the following text: 'Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.' Below this, there is a 'Connection:' dropdown menu with 'greenscreens' selected. At the bottom, there are four buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

Select “Use existing virtual hard disk” option and select Green Screens downloaded image and click Finish button to create Virtual Machine configuration.



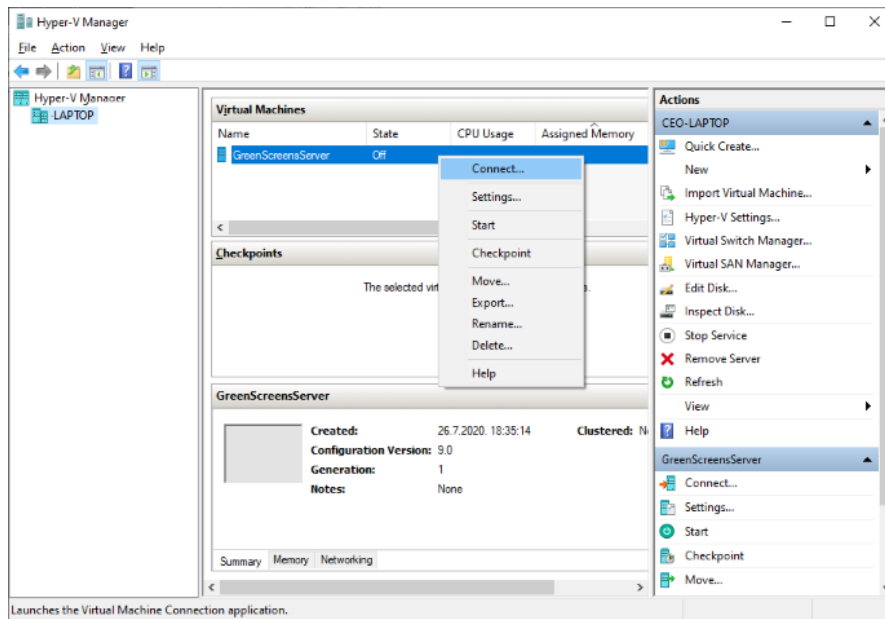
Final result should look as on image below.



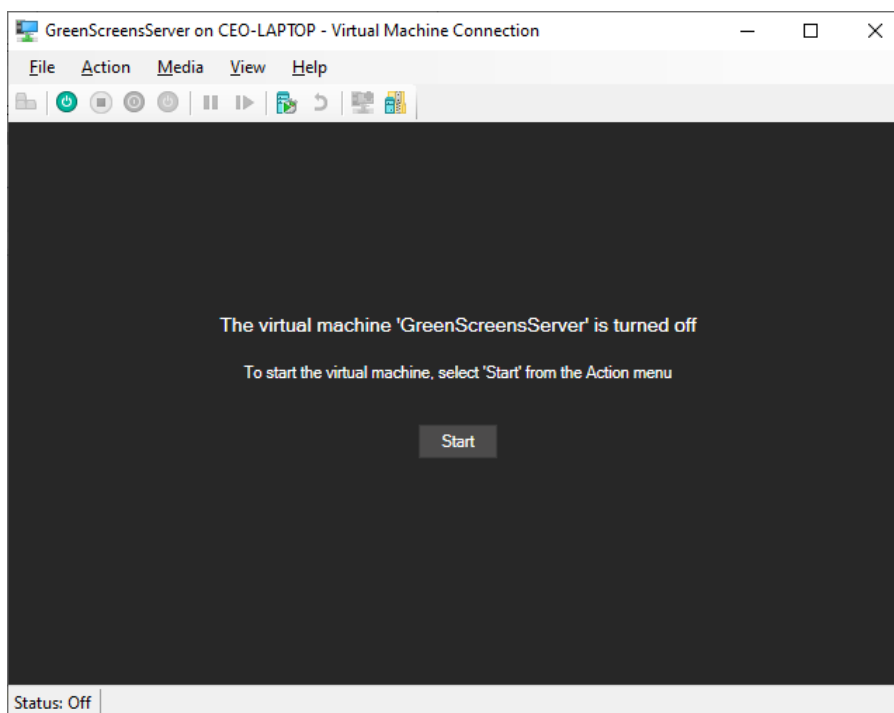


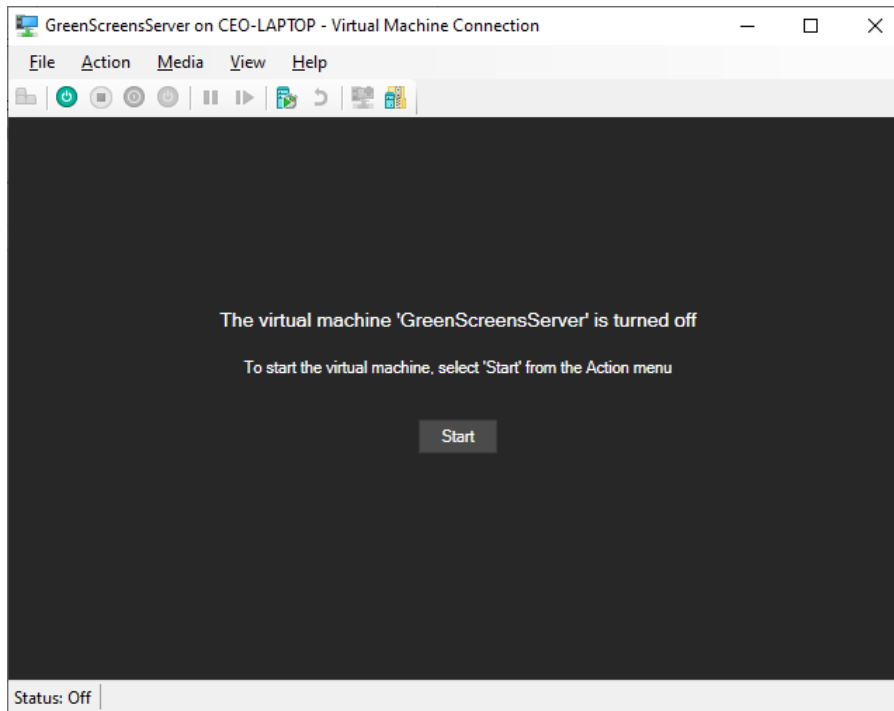
### 3. First start

Right click on newly created virtual image and select Connect.

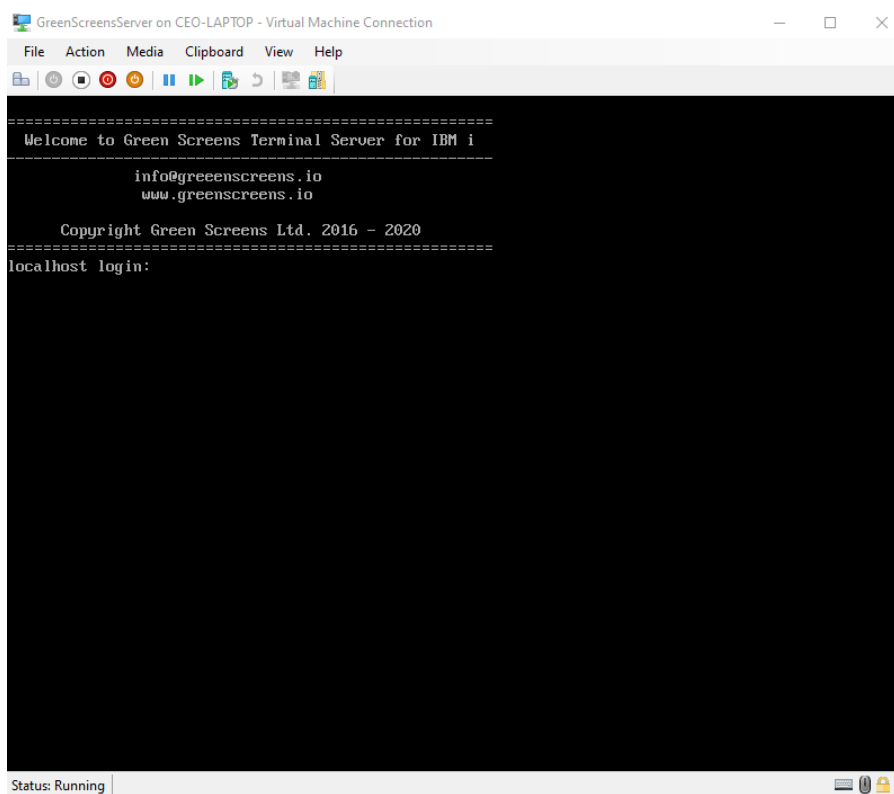


New window will open, Virtual Machine Connection – select Start button to start virtual machine.





Following image should show with login screen. Enter **server** as user and **server** as password to login. System will let you in and position to `/home/server` directory.





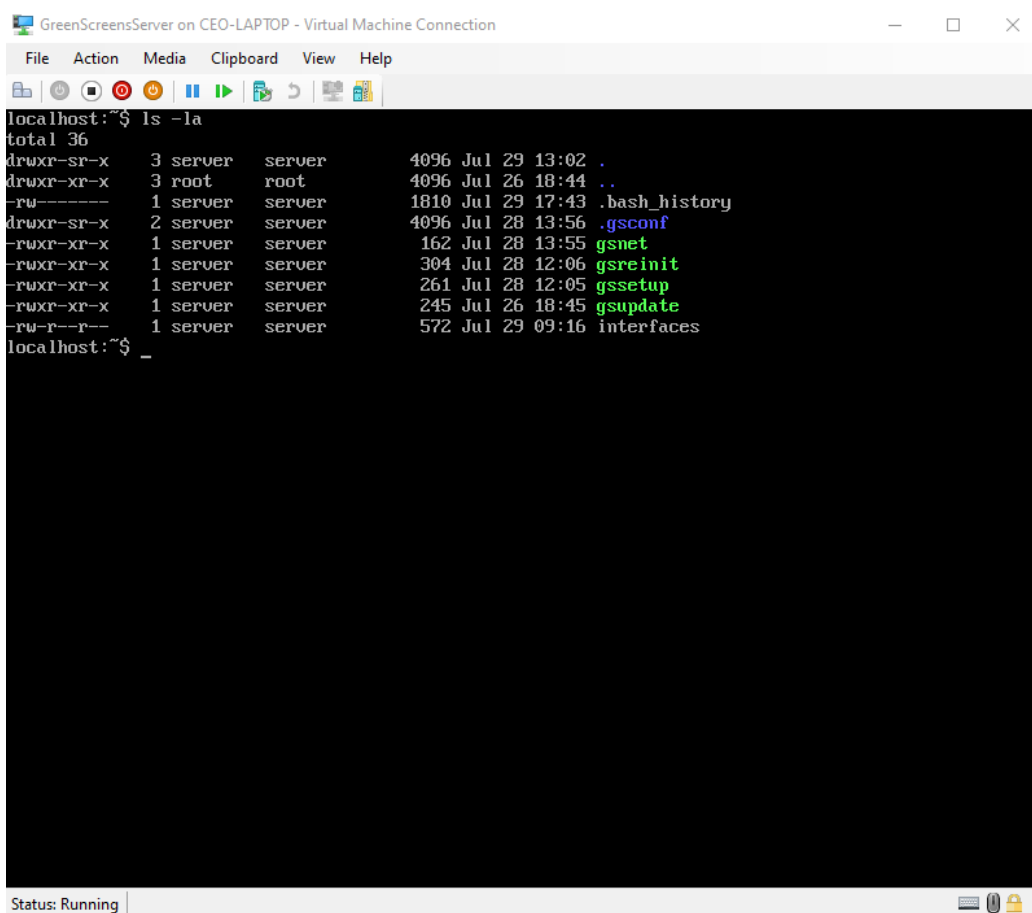
## 5. Activate Self-Install

Provided image is in pre-install state meaning runtime engine and Green Screens Terminal Service for IBM I must be installed from Internet. Few reasons exist why we choose that approach. To reduce initial OS image download size, to enable latest version installation and simply because we do not know about user networking settings requirements.

**NOTE:** Do not start with this step if networking is not setup.

After login, simply call **gssetup** from command line. System will restart and begin installing required files from the Internet. Once finished, instance might restart once more before Greens Screens Server become available for usage.

In a case installation was unsuccessful due to the network error or intentionally terminated installation procedure, try to repeat with **gsinstall** or use **gsreinit** which is similar to **gssetup** except it will delete some of installed modules trying to do clean reinstall. If that does not help either, try to remove broken disk image and re-apply new one from initial download.



```
localhost:~$ ls -la
total 36
drwxr-sr-x  3 server  server  4096 Jul 29 13:02 .
drwxr-xr-x  3 root   root   4096 Jul 26 18:44 ..
-rw-----  1 server  server  1810 Jul 29 17:43 .bash_history
drwxr-sr-x  2 server  server  4096 Jul 28 13:56 .gsconf
-rwxr-xr-x  1 server  server   162 Jul 28 13:55 gsnet
-rwxr-xr-x  1 server  server   304 Jul 28 12:06 gsreinit
-rwxr-xr-x  1 server  server   261 Jul 28 12:05 gssetup
-rwxr-xr-x  1 server  server   245 Jul 26 18:45 gsupdate
-rw-r--r--  1 server  server   572 Jul 29 09:16 interfaces
localhost:~$ _
```

## 6. Update Application

Update function is to update Green Screen Terminal Service modules only.

**NOTE:** Function might stop Green Screens Server if it is running during the update.

After login, call **gsupdate** function. Function will download update pack and replace existing ones on Green Screen Server. After finish, please restart server.

**NOTE:** If **gsupdate** does not work, script might have expired download keys. Download latest version with commands below then try **gsupdate** again.

```
curl -L -o /home/server/update.sh -O https://www.greenscreens.io/updates/alpine/update.sh
```

```
chmod +x /home/server/update.sh
```

```
chown server:server /home/server/update.sh
```

