




NVIDIA GRID™ ENTERPRISE SOFTWARE

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Quick Start Guide



REQUIREMENTS

 **IMPORTANT:** This Quick Start Guide is intended for those who are technically comfortable with minimal instructions.

Read the release notes to verify that you have the correct build numbers for all of the virtualization software that has been tested for the specific NVIDIA GRID™ Software release you are downloading. Other important version-specific information and known issues can also be found in the release notes.

 You must be a registered on the NVIDIA® Licensing Portal to access the release notes.

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Before You Begin

The NVIDIA GRID (version 2.0 and above) enterprise software is designed to run on select NVIDIA Tesla® GPUs. Read through the following list before you begin the software installation:

- ▶ NVIDIA GRID Certified Servers. For a complete list of GRID certified servers, go to: <http://www.nvidia.com/object/grid-certified-servers.html>
- ▶ Required GPU hardware:
NVIDIA Tesla M10, M6 or M60
- ▶ A supported virtualization software stack

Product Activation Keys (PAK)

Once your order is processed, you will receive an Order Confirmation message containing your product activation keys.

The following is an example of an Order Confirmation message:

Thank you for your NVIDIA GRID order!

The Product Activation Keys for your order are as follows:

GRID vApps Perpetual License, 1 CCU, 8, Product Activation Key: 6 [REDACTED]

GRID Virtual Workstation Edition, Perpetual License, 1 CCU, 8, Product Activation Key: 6 [REDACTED]

Download your license file and NVIDIA GRID software by logging into the NVIDIA Licensing Portal here:

Already have an account? Please log in & use the Redeem Product Activation Keys - [Login](#)

New Customer? If this is your first time visiting the NVIDIA Licensing Portal, you will be required to register. [Register](#)

Following registration, you will receive access information for the NVIDIA Enterprise Support Portal in a separate email.

Questions? Please visit our [enterprise support portal](#) or contact us at enterprisesupport@nvidia.com.

If you are an OEM or Reseller, please forward this message to the appropriate end customer for order number [REDACTED], PO# [REDACTED]

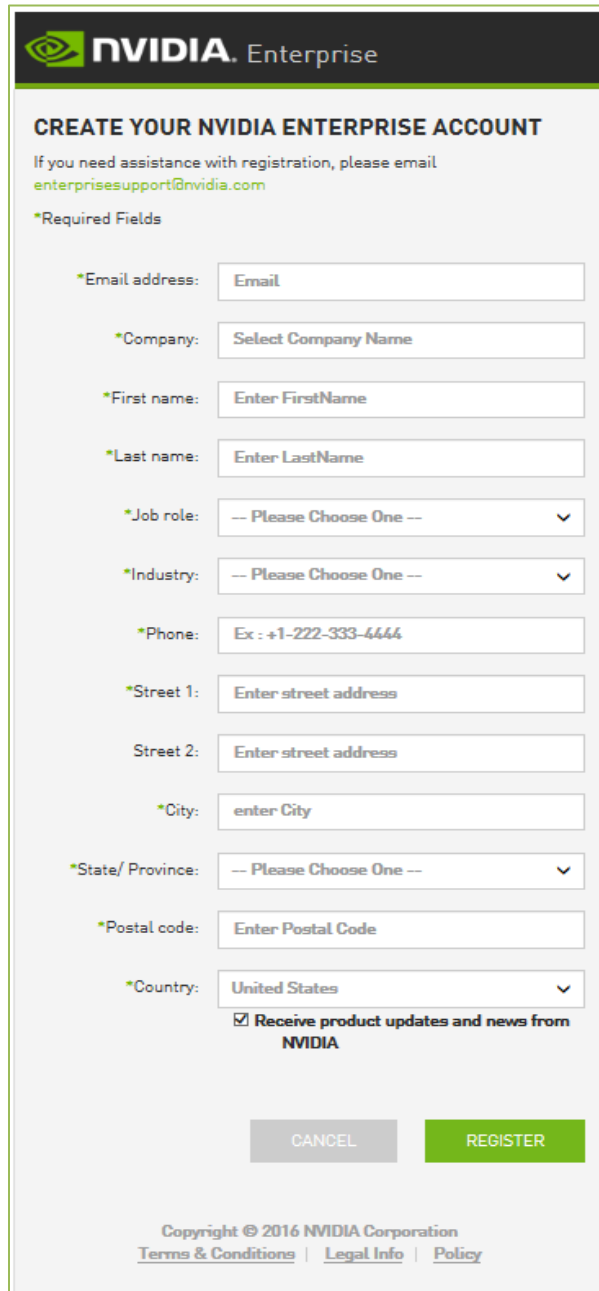
Thank you!

NVIDIA Customer Support Team

PAK Registration

1. If you already have an account on the NVIDIA Licensing Portal, select the [log in](#) link in the email.

If you do not have an account, select [Register](#) in the email to create an account. You must log in to gain access to your licenses and NVIDIA GRID software downloads.



The screenshot shows the 'CREATE YOUR NVIDIA ENTERPRISE ACCOUNT' registration form. At the top, the NVIDIA logo and 'Enterprise' text are displayed. Below the title, there is a note about assistance and the email address 'enterprisesupport@nvidia.com'. The form includes several required fields marked with an asterisk: Email address, Company, First name, Last name, Job role, Industry, Phone, Street 1, Street 2, City, State/Province, Postal code, and Country. There are also checkboxes for receiving product updates and news from NVIDIA. At the bottom, there are 'CANCEL' and 'REGISTER' buttons, and a footer with copyright information and links to Terms & Conditions, Legal Info, and Policy.

NVIDIA. Enterprise

CREATE YOUR NVIDIA ENTERPRISE ACCOUNT

If you need assistance with registration, please email enterprisesupport@nvidia.com

***Required Fields**

*Email address:

*Company:

*First name:

*Last name:

*Job role:

*Industry:

*Phone:

*Street 1:

Street 2:

*City:

*State/ Province:

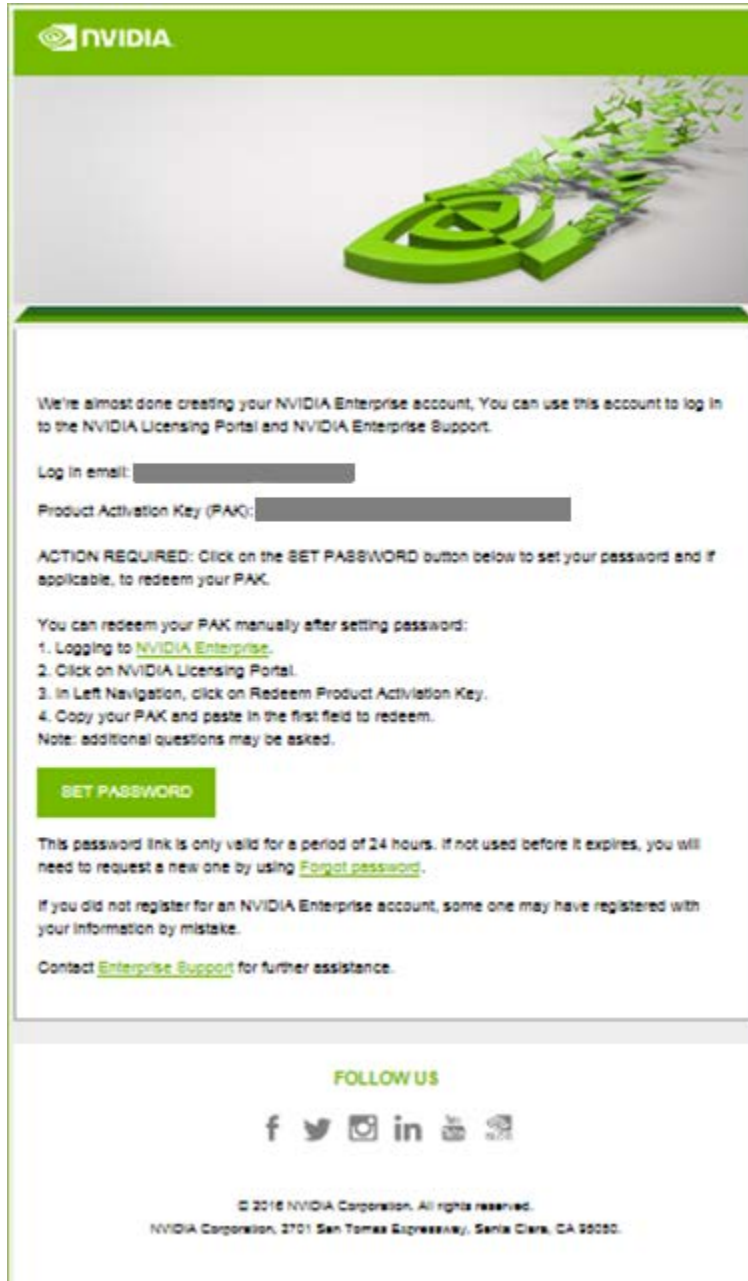
*Postal code:

*Country:

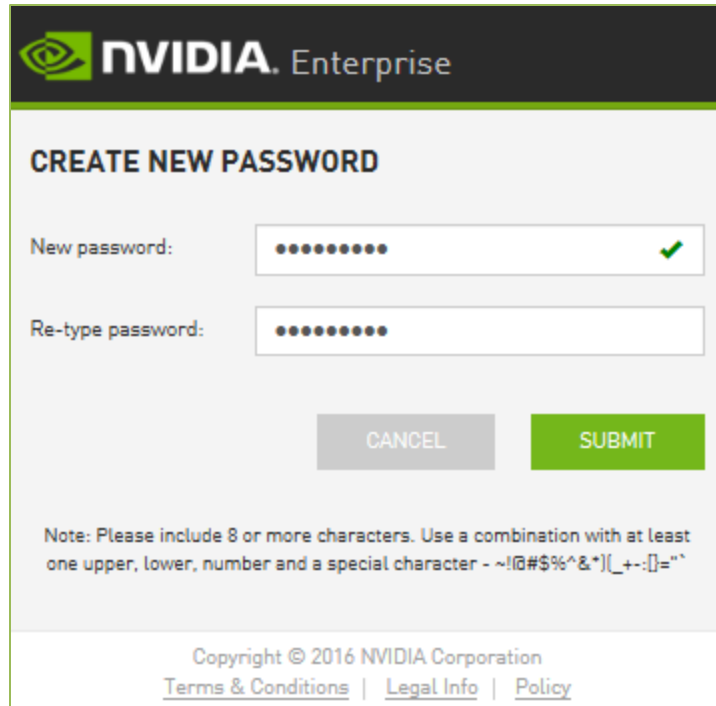
Receive product updates and news from NVIDIA

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[Terms & Conditions](#) | [Legal Info](#) | [Policy](#)

2. Fill in the License Key Registration page and select **Register**.
3. You will see a message confirming that an account has been created.
4. You will receive an email to **set your NVIDIA password**. Click **SET PASSWORD** in the email. For your account security, the link in this email is set to expire in 24 hours.

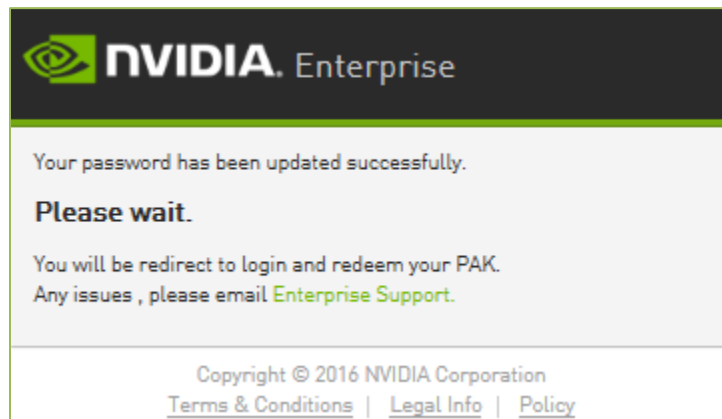


5. Create a new password and click **SUBMIT**

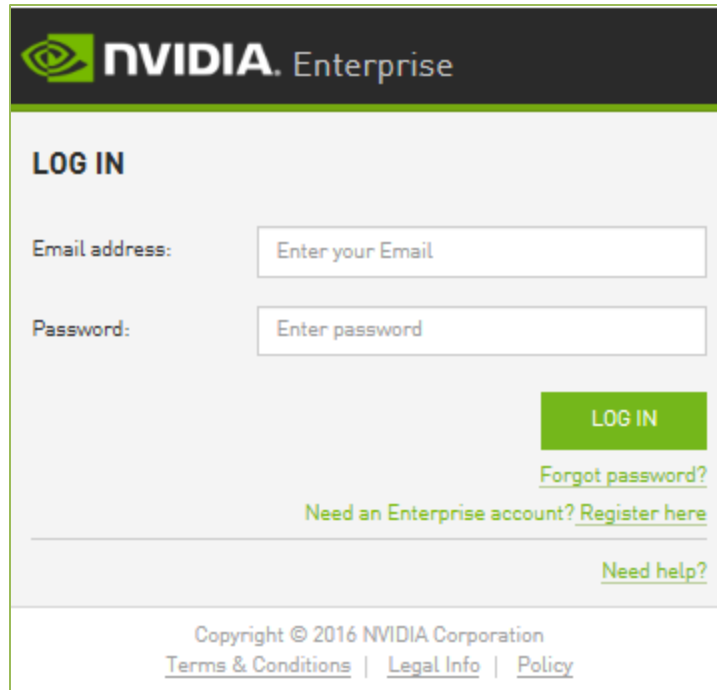


The screenshot shows the 'CREATE NEW PASSWORD' form in the NVIDIA Enterprise interface. It features two input fields: 'New password:' and 'Re-type password:'. The 'New password:' field contains a green checkmark, indicating the password is valid. Below the fields are 'CANCEL' and 'SUBMIT' buttons. A note specifies password requirements: 'Please include 8 or more characters. Use a combination with at least one upper, lower, number and a special character - ~!@#\$%^&*](_+-.:|=``'. The footer includes 'Copyright © 2016 NVIDIA Corporation' and links for 'Terms & Conditions', 'Legal Info', and 'Policy'.

6. You will see a message confirming the password has been set successfully. You will be automatically directed to login with your new password.

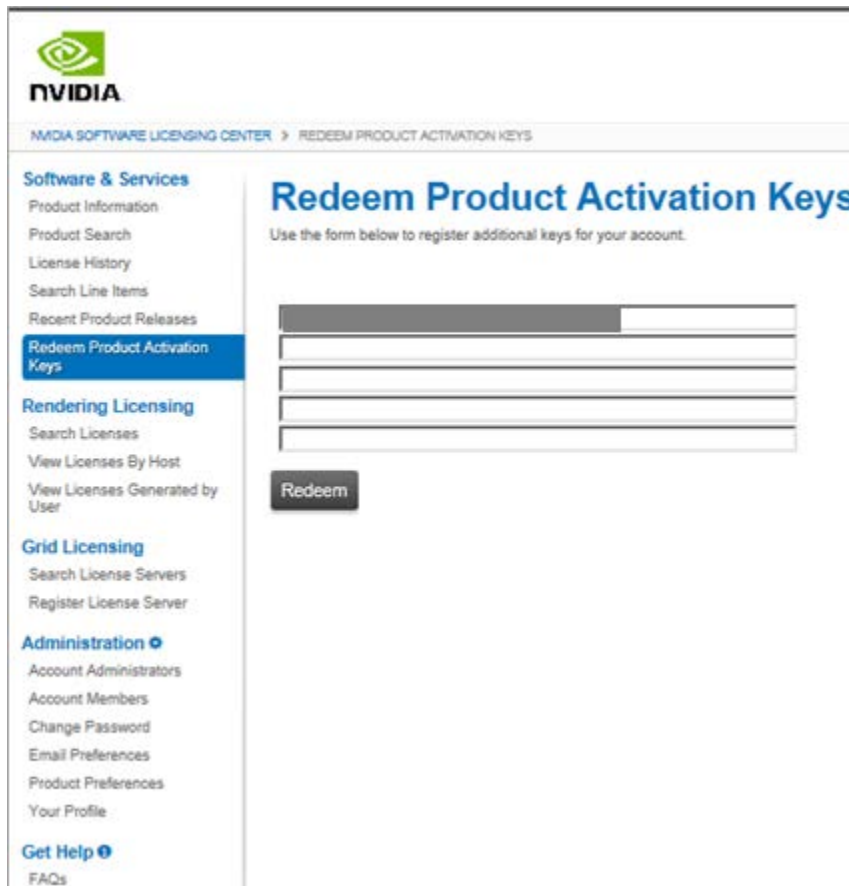


The screenshot shows a success message in the NVIDIA Enterprise interface. The message reads: 'Your password has been updated successfully. Please wait. You will be redirect to login and redeem your PAK. Any issues , please email [Enterprise Support](#).' The footer includes 'Copyright © 2016 NVIDIA Corporation' and links for 'Terms & Conditions', 'Legal Info', and 'Policy'.



The image shows the NVIDIA Enterprise login page. At the top, there is the NVIDIA logo and the text "NVIDIA Enterprise". Below this, the heading "LOG IN" is displayed. There are two input fields: "Email address:" with the placeholder text "Enter your Email" and "Password:" with the placeholder text "Enter password". A green "LOG IN" button is positioned to the right of the password field. Below the button, there are two links: "Forgot password?" and "Need an Enterprise account? Register here". At the bottom right, there is a link "Need help?". The footer contains the copyright notice "Copyright © 2016 NVIDIA Corporation" and three links: "Terms & Conditions", "Legal Info", and "Policy".

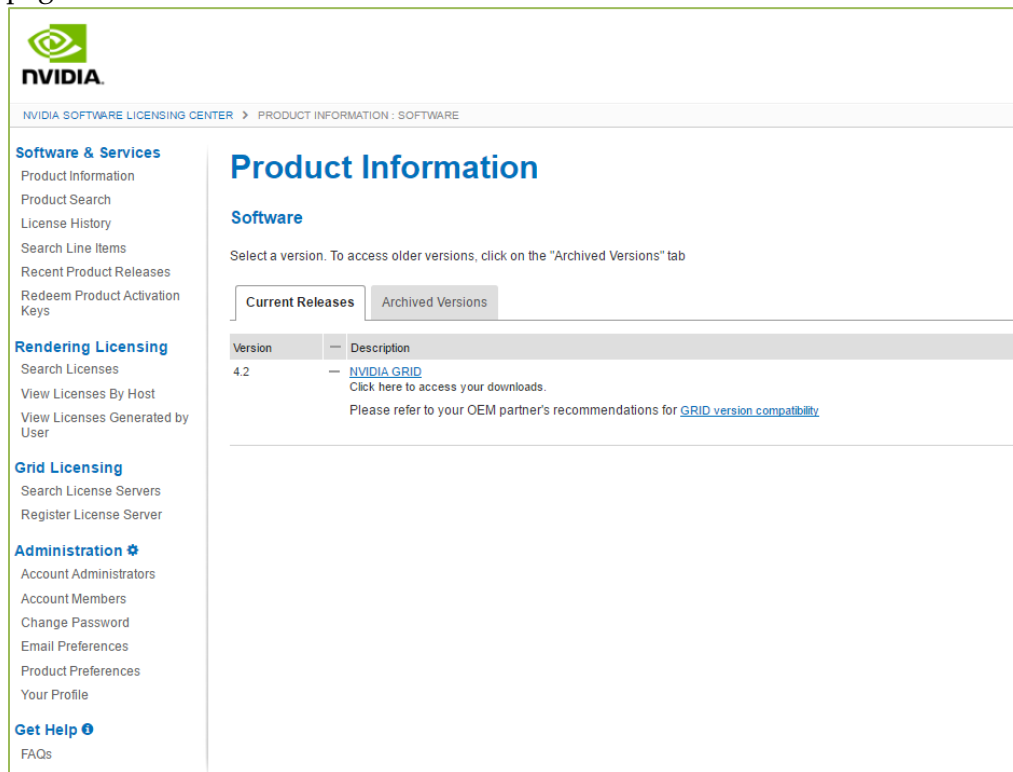
7. Select **Redeem Product Activation Keys** to register PAK.



The image shows the "Redeem Product Activation Keys" page in the NVIDIA Software Licensing Center. The page has a navigation sidebar on the left with categories: "Software & Services", "Rendering Licensing", "Grid Licensing", "Administration", and "Get Help". The "Redeem Product Activation Keys" option is highlighted in blue. The main content area has the heading "Redeem Product Activation Keys" and the instruction "Use the form below to register additional keys for your account." Below this is a form with five input fields and a "Redeem" button.

DOWNLOAD GRID SOFTWARE

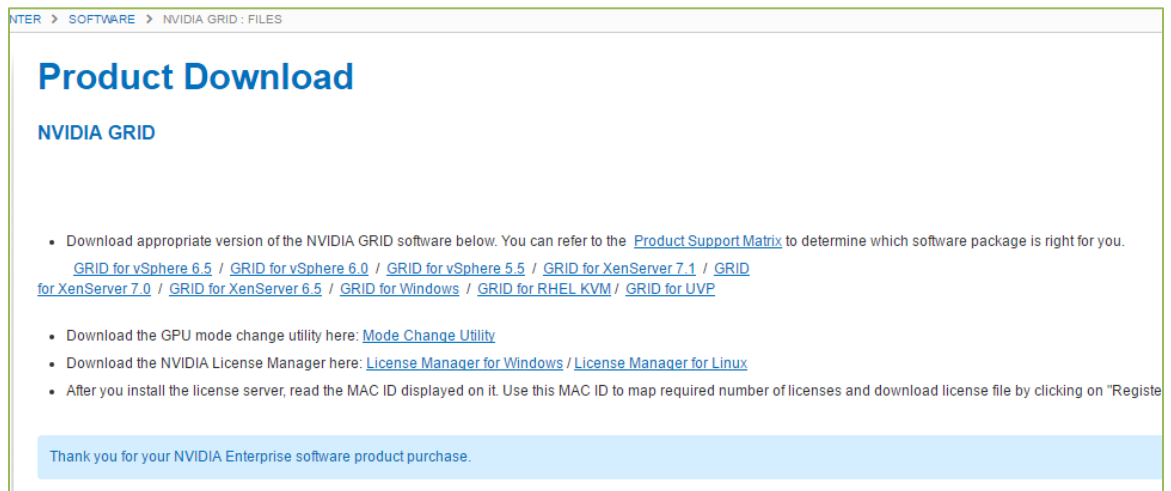
1. Go to the [NVIDIA SOFTWARE LICENSING CENTER](#) e to display the Product Information page.



The screenshot shows the NVIDIA Software Licensing Center interface. The top navigation bar includes the NVIDIA logo and the breadcrumb "NVIDIA SOFTWARE LICENSING CENTER > PRODUCT INFORMATION : SOFTWARE". The left sidebar contains several menu categories: "Software & Services" (Product Information, Product Search, License History, Search Line Items, Recent Product Releases, Redeem Product Activation Keys), "Rendering Licensing" (Search Licenses, View Licenses By Host, View Licenses Generated by User), "Grid Licensing" (Search License Servers, Register License Server), "Administration" (Account Administrators, Account Members, Change Password, Email Preferences, Product Preferences, Your Profile), and "Get Help" (FAQs). The main content area is titled "Product Information" and "Software". It includes a sub-header "Software" and a note: "Select a version. To access older versions, click on the 'Archived Versions' tab". Below this are two tabs: "Current Releases" (selected) and "Archived Versions". A table lists the current releases:

Version	Description
4.2	NVIDIA GRID Click here to access your downloads. Please refer to your OEM partner's recommendations for GRID version compatibility

2. Select the [Current Releases](#) tab for latest GRID version. Older versions are available under the [Archived Versions](#) tab.
3. Select the [NVIDIA GRID](#) link to access the Product Download page containing the following software download links:
 - GRID Software: Select the host driver software based on the hypervisor brand and version you are running. Refer to the **Product Support Matrix** for the specific version.
 - NVIDIA License Manager Software: The license manager software is required to enable the Guest OS to utilize the NVIDIA GRID vGPU profiles by checking out a license at boot time. Please refer to the GRID License Server User Guide for details on installing and using the license manager.



License Server Creation, Installation, and Management

The NVIDIA GRID License Server manages a pool of floating licenses to enable NVIDIA GRID licensed products. It is installed onsite and configured with licenses generated and retrieved from NVIDIA's Licensing Portal website (see Figure 1). The NVIDIA GRID vGPU profiles are licensed features on NVIDIA Tesla GPUs. These features are activated during a Guest OS boot by acquiring a software license issued from an NVIDIA GRID license server. The license is returned to the license pool on the server when the Guest OS shuts down.

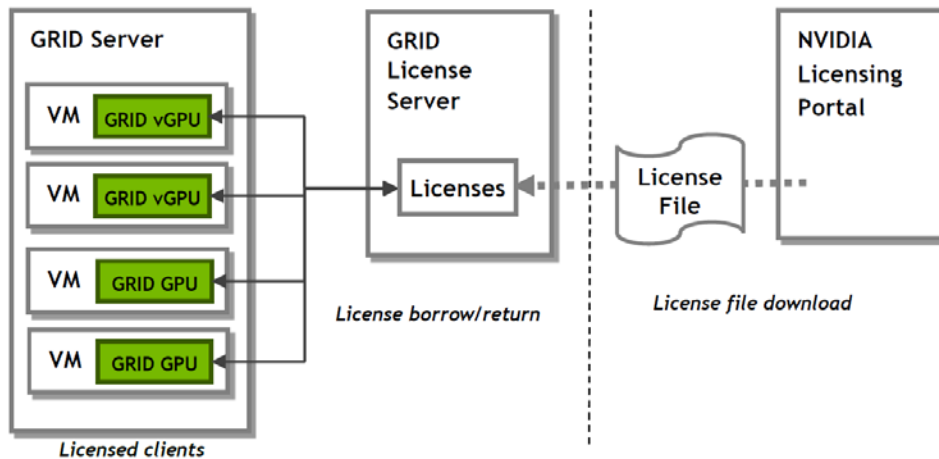


Figure 1. NVIDIA License Server

The license server requires a fixed IP address. The IP address may be assigned through DHCP or can be statically configured. The server's Ethernet MAC address is used as a unique identifier when registering the server and generating licenses in NVIDIA's licensing portal. The server runs on either Windows or Linux.



The system clock must to be accurate; NTP is recommended.

Use the following procedure to create a server interface:

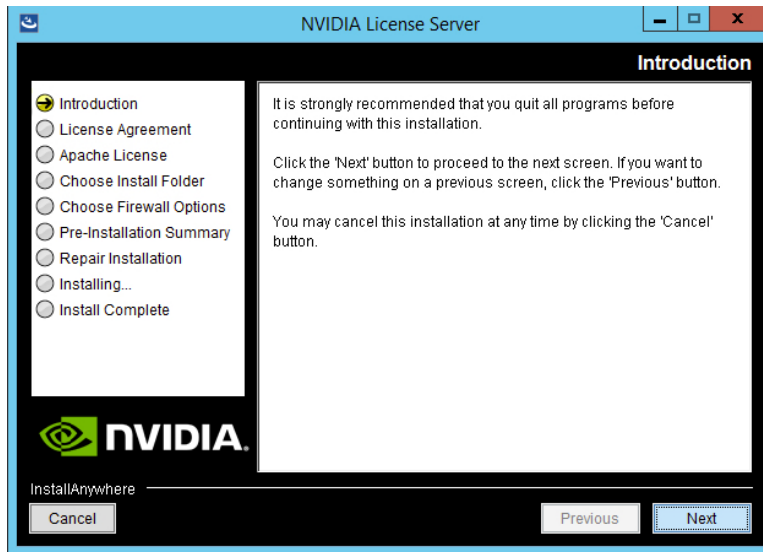
1. Before proceeding, please ensure that you have downloaded and installed the GRID License Server.
2. Copy the MAC address of GRID license server. You will need this address for registering the license server and downloading license file.
3. Select [Register License Server](#) from under [GRID Licensing](#) in the left pane of the NVIDIA Software Licensing Center page to display the Create Server page.

4. Fill in your server details on the Register Server page. Enter the MAC address of the GRID license server in the MAC Address field.
5. Select the server to display View Server page. On this page, select [Map Add-Ons](#) to associate required number of licenses with this server. You can also create multiple servers and distribute your GRID licenses across them by mapping licenses to servers as necessary.

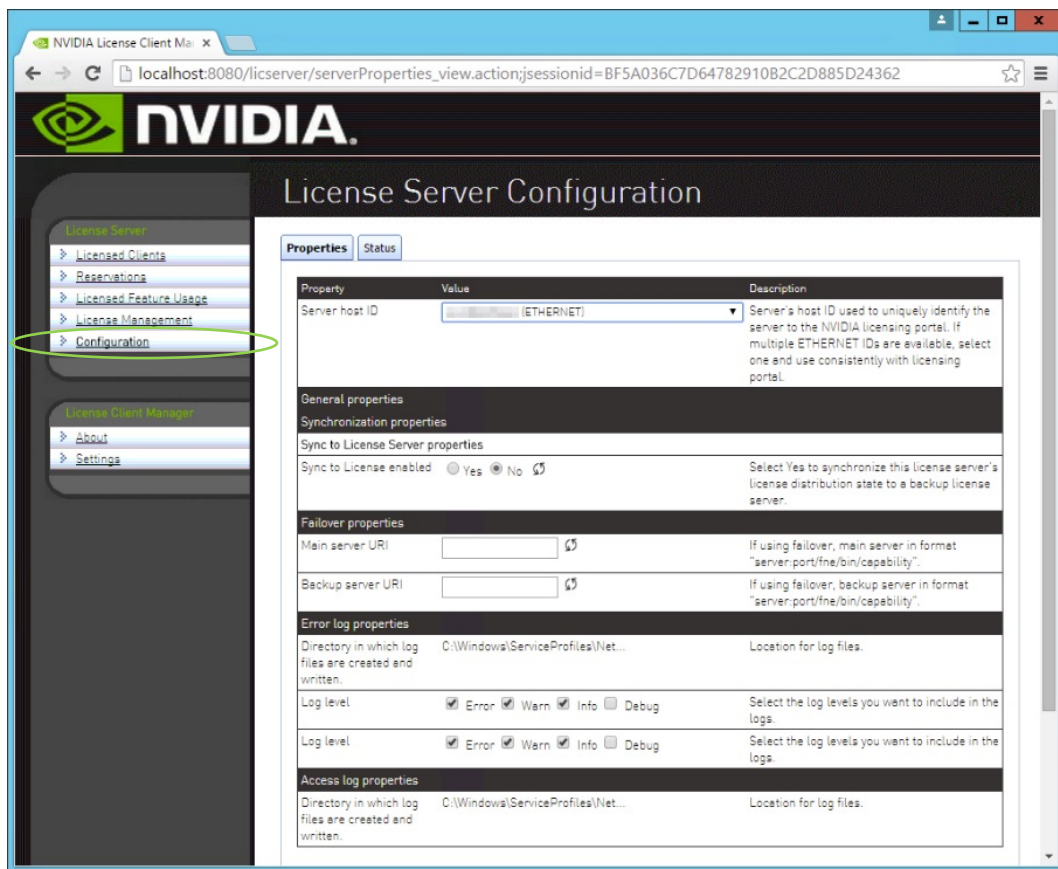
6. Select Download License File and save the **.bin** file onto your license server for installation. Java is required to install the NVIDIA GRID License Server. The package comes in a **.zip** file.

IMPORTANT: The **.bin** file downloaded to your server is valid for **24 hours**. If you do not install the **.bin** file within those 24 hours, you need to download the file again.

7. Unzip the license server installer.
8. Run **setup.exe** and follow the installation wizard.




9. Go to <http://<FQDN of the license Server>:8080/licserver> to display the License Server Configuration page. You will need the License Server's MAC Address to generate a license **.bin** file on the portal.



10. Select Configuration from the menu in the left pane.
11. Use the License Server Configuration menu to install the **.bin** file:
 - a) Select Choose File.
 - b) Use the file browser to locate the **.bin** file downloaded from the licensing portal web site.

GPU Mode Switch Utility

Tesla M60 and M6 GPUs support compute mode and graphics mode. GRID vGPU requires GPUs that support both modes to operate in graphics mode.

 NVIDIA Tesla M10 GPUs support graphics mode only.

Recent Tesla M60 GPUs and M6 GPUs are supplied in graphics mode. However, your GPU might be in compute mode if it is an older Tesla M60 GPU or M6 GPU, or if its mode has previously been changed.

If your GPU supports both modes but is in compute mode, you must use the `gpumodeswitch` tool to change the mode of the GPU to graphics mode. If you are unsure which mode your GPU is in, use the `gpumodeswitch` tool to find out the mode.

For more information, see *gpumodeswitch User Guide*.

INSTALL HOST DRIVER

Before NVIDIA GRID vGPU-enabled Guests can be configured, the NVIDIA GRID Host software must be installed into the Hypervisor. Citrix XenServer utilizes an **.rpm** file and VMware vSphere ESXi utilizes a **.vib** file.

Use the following procedure to install the host driver:

1. Copy the NVIDIA Driver file to the Host Server.
2. Install the Driver into the Hypervisor.
3. Reboot the Host Server.
4. Verify successful installation.

Hypervisor-specific Steps

1. Copy the **.vib** file for vSphere to the ESXi host and put the host in Maintenance Mode:

```
$ esxcli system maintenanceMode set --enable true
```

2. Install the **Nvidia vib** file by running the following command:

```
$ esxcli software vib install -v /tmp/NVIDIA**.vib
```



NVIDIA** should be the full NVIDIA **vib** file name.

3. Exit out of the maintenance mode using the following command:

```
$ esxcli system maintenanceMode set --enable false
$ reboot
```

The ESXi host is rebooted.

4. Verify the NVIDIA GPU card after the reboot using the following command:

```
$ nvidia-smi
```

For XenServer, the GRID vGPU Manager runs in XenServer's Control Domain (dom0). It is installed as an RPM file which is copied to the XenServer and installed.

1. Copy the RPM file to the Host Server
2. Use the rpm command to install the package:


```
[root@xenserver ~]# rpm -iv NVIDIA-**.rpm
```
3. Reboot the XenServer host


```
[root@xenserver ~]# shutdown -r now
```
4. Verify that the GRID package has loaded after the XenServer host has rebooted


```
[root@xenserver ~]# lsmod |grep nvidia
nvidia 8152994 0
i2c_core 20294 2 nvidia,i2c_
```

Refer to the appropriate *NVIDIA GRID vGPU Deployment Guide* for detailed instructions.

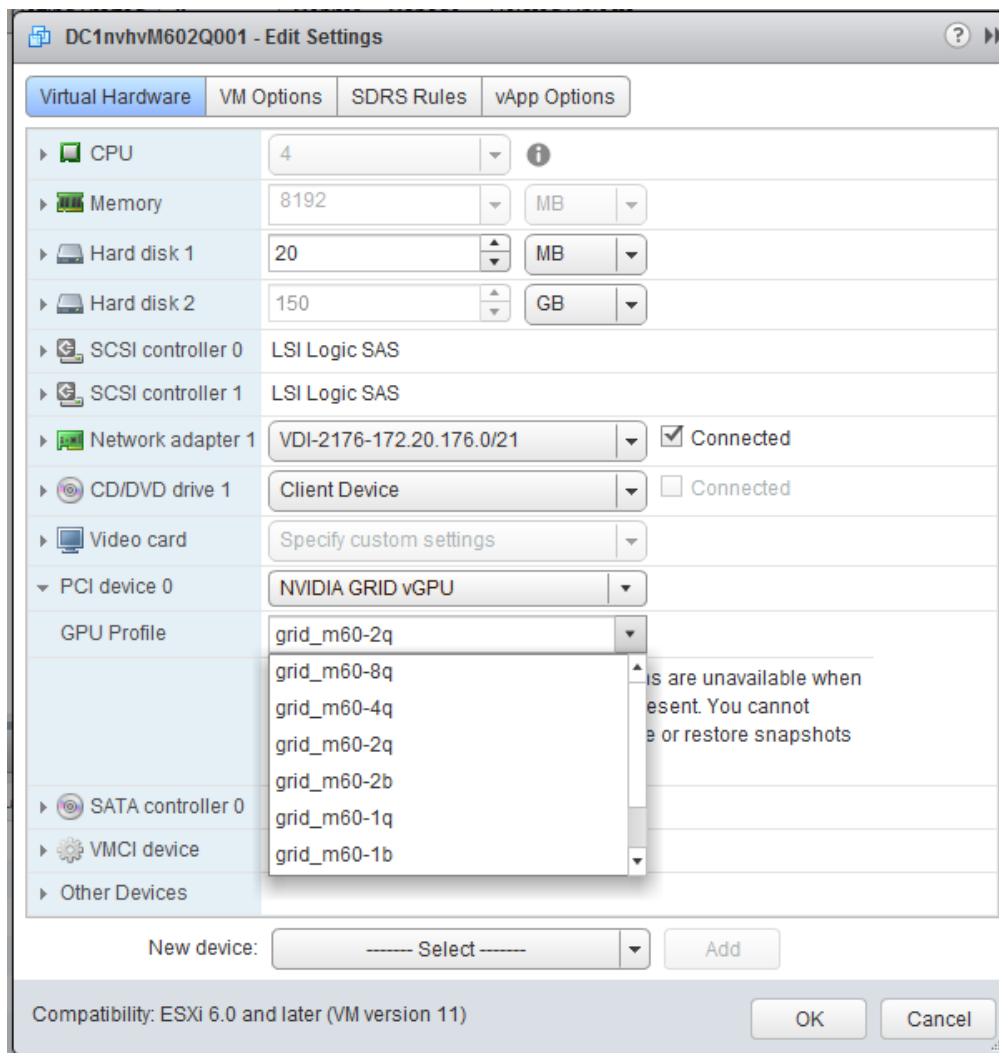
Attach GRID vGPU Profile to a VM

To have an attached GRID vGPU profile, you must configure the Virtual Machine Hardware.

vSphere

For vSphere, use the following procedure:

1. Open vCenter.
2. Go to Edit VM settings.
3. Add Shared PCI Device under New Device.
4. Select Add.
5. Select GPU profile, then select OK.
6. Start VM.



XenServer

For XenServer, use the following procedure:

1. Select New VM using XenCenter and step through the New VM wizard.
2. Select the Installation Media, Home Server, CPU & Memory option. GPU-enabled servers display a GPU configuration page
3. Select either Passthrough whole or a vGPU type from the GPU Type dropdown list (unavailable vGPU types are greyed out).
4. Click Next to configure Storage and Networking
5. Select Create Now when your configuration has completed.

Install the NVIDIA driver into a VM

Before the VM can utilize the GRID vGPU in your VM, you need to install the NVIDIA Graphics Driver into the Guest OS.

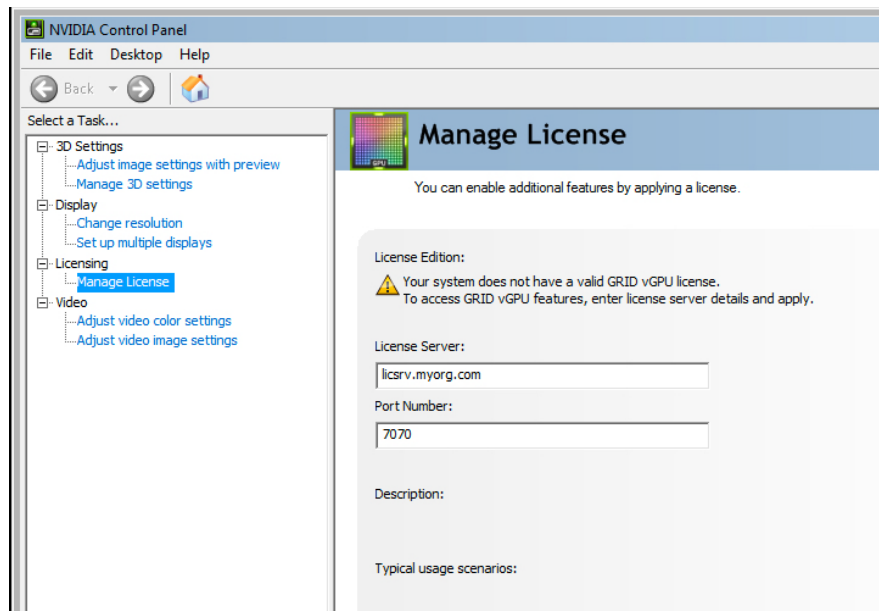
1. Install GRID vGPU driver.
2. Select Custom (Advanced).
3. Select Clean installation.
4. Restart VM and connect to VM.



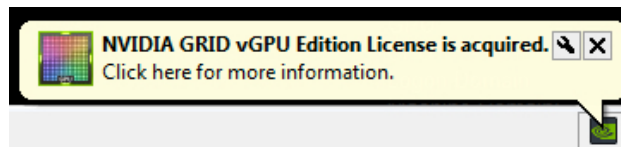
Configure VM for an NVIDIA GRID vGPU License

To enable VM access to an NVIDIA GRID vGPU license, you need to configure the Manage License Feature from the NVIDIA Control Panel (right-click on your desktop to access the NVIDIA Control Panel). Select Manage License from the left pane and enter the license server address and port. These settings can be preloaded through register keys. The license settings persist across reboots. A license is obtained prior to the user logging into the VM.

1. Go to the NVIDIA Control Panel (right-click on your desktop).



2. Select Manage License from the left pane.
3. Enter your license server address and port.
These settings can be preloaded through register keys. The license settings persist across reboots. A license is obtained prior to the user logging into the VM.
4. Select Apply.



Congratulations. You have now completed the installation of the NVIDIA GRID Enterprise software.

Notice

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