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Chapter 1. RELEASE NOTES

These Release Notes summarize current status, information on supported platforms, and known issues with NVIDIA vGPU software License Server, version 2020.05.

*If the version of your current license server software is 2015.12 or earlier, you must uninstall any previous version of NVIDIA vGPU software License Server before installing this release. For details, see Upgrade installation does not operate correctly.*

Installed NVIDIA vGPU software licenses are not retained across an uninstallation followed by reinstallation. You must reinstall your licenses after reinstalling the license server software.

All releases of the License Server are compatible with all releases of NVIDIA vGPU software.

1.1. Supported Platforms

1.1.1. Operating Systems Supported

This release of NVIDIA vGPU software License Server has been tested on several releases of the Windows and Linux operating systems.

*Support for installation in console mode on Windows and Linux was introduced in license server release 2018.06. It is not supported in earlier license server releases. The license server installer for earlier releases must be run in a graphical desktop environment. Installation in silent mode is not supported in any release.*

1.1.1.1. Windows Operating Systems Supported

- Windows 10 64-bit
- Windows Server 2019
- Windows Server 2016
Windows Server 2012 R2

On Windows, the license server supports only the English locale.

1.1.1.2. Linux Operating Systems Supported

- Red Hat Enterprise Linux 7.6 64-bit
- Red Hat Enterprise Linux 7.3 64-bit
- CentOS 7.6 64-bit
- CentOS 7.3 64-bit
- Ubuntu 18.04 64-bit
- Ubuntu 16.04 64-bit

1.1.2. Java Runtime Environment Requirements

NVIDIA vGPU software License Server requires one of the following Java Runtime Environment (JRE) versions:

- Oracle Java SE JRE version 1.8 or 11
- OpenJDK JRE version 1.8 or 11

For information about the licenses under which these JRE releases are provided, see Oracle Java SE Licensing FAQ.

JRE should be installed before the License Server installer package is run, as described in the Virtual GPU License Server User Guide.

1.1.3. .NET Framework Requirements

On Windows platforms, NVIDIA vGPU software License Server requires .NET Framework 4.5 or later.

1.1.4. Apache Tomcat Server Requirements

The License Server’s management interface requires Apache Tomcat version 8.5.x or 9.x. An Apache Tomcat package is included with the License Server installer package for Windows. For Linux, Tomcat should be installed before running the License Server installer package, as described in Virtual GPU License Server User Guide.

1.1.5. Web Browser Requirements

The license server’s web browser–based management interface supports the following browsers:

- Mozilla Firefox versions 17 and later
- Google Chrome versions 27 and later
- Microsoft Internet Explorer version 9 and later
1.2. Changes in this Release

- An updated Apache Tomcat version (8.5.54) is included with the license server installer package for Windows.
- The license server installer warns users if the path in the JAVA_HOME system environment variable appears to be incorrect.
- Miscellaneous bugs have been fixed.

1.3. Security Updates

A new version of Apache Tomcat (8.5.54) is included with the license server installer package for Windows.
Chapter 2.
RESOLVED ISSUES

No issues that have been previously noted as known issues have been resolved in this release.
3.1. License feature usage reports a negative number of available licenses

Description
For a license server configured for high availability, license server feature usage sometimes reports a negative number of available licenses on the secondary license server. This issue occurs after failover of the primary license server because the primary license server can no longer synchronize the secondary license server with its state information.

This issue does not affect the actual number of licenses that users can check out.

After failover of the primary license server, the secondary license server fulfills license checkout requests from clients. However, by design, the primary license server is not updated with information from the secondary server about licenses that were served while the primary license server was out of service.

As a result of this design, the counts of available and checked out licenses on the primary and the secondary license servers might be different. For example, the counts of available and checked out licenses are different if the clients served by the secondary license server are different than the clients served by the primary license server when it returns to service after a failure. How long the counts are different depends on the synchronization interval or the license borrow period.
**Known Issues**

**Workaround**

In most situations no action is required. This issue should resolve itself over multiple synchronization operations either when the clients renew their licenses or the licenses that are causing the difference in counts are released or expire.

If this issue does not resolve itself, reset the secondary license server without disrupting the primary license server by performing the following sequence of tasks on the secondary license server only:

1. Delete the trusted storage database.
2. Start the `flexnetls-nvidia` service.
3. Reinstall your licenses.

For information about how to perform these tasks, see *Virtual GPU License Server User Guide*.

After the secondary license server comes online, its first successful synchronization with primary license server causes the license counts to be the same on both servers.

**Status**

Not a bug

**Ref. #**

2778609

---

3.2. The license server installation path name cannot contain white spaces

**Description**

The path name to the folder where the NVIDIA vGPU software license server is installed must not contain white space. The license server installer prevents you from installing the license server in a folder whose path name contains white space as follows:

- For a new license server installation, the license server installer proposes a default installation location with no white space in its path name.
- For an upgrade to a license server that was installed at a location with white spaces in its path name, the license server installer prompts you to exit.

*If the license server was installed at a location without spaces in its path name, the installer overwrites the existing version in its current location with the new version. The installer does not warn you to install the license server at a location with no white space in its path name.*
Known Issues

Version
NVIDIA vGPU software license server 2020.05.

Workarounds

For a new license server installation, click Yes when prompted to continue with the installation at the default installation location without white space in its path name that the license server proposes.

For an upgrade, follow these steps:
1. When prompted, click Yes to exit the installation.
2. Uninstall your existing license server.
3. If you were using a 32-bit license server, uninstall the Apache Tomcat software and replace the existing 32-bit JRE with a 64-bit JRE.
4. Install the license server 2020.05 and Apache Tomcat software.

For more information, see Virtual GPU License Server User Guide.

Status
Open

3.3. License server installer unexpectedly quits during upgrade on Windows

Description
During an upgrade of an existing license server installation, the installer might quit unexpectedly, throwing an InvocationTargetException.
The application exception details are as follows:

C:\Users\lsuser\AppData\Local\Temp\I1559058258\Windows_Pure_64_Bit\resource\iawin32.dll not found
at Flexeraaw7.af (Unknown Source)
at Flexeraaw7.aa (Unknown Source)
at com.zerog.ia.installer.LifeCycleManager.init (Unknown Source)
at com.zerog.ia.installer.LifeCycleManager.executeApplication (Unknown Source)
at com.zerog.ia.installer.Main.main (Unknown Source)
at sun.reflect.NativeMethodAccessorImpl.invoke0 (Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke (Unknown Source)
at sun.reflect.DelegatingMethodAccessorImpl.invoke (Unknown Source)
at java.lang.reflect.Method.invoke (Unknown Source)
at com.zerog.lax.LAX.launch (Unknown Source)
at com.zerog.lax.LAX.main (Unknown Source)

This error occurs if you attempt to install the 64-bit license server software for Windows on a host where a 32-bit license server with 32-bit JRE is installed. Because the 64-bit license server installer requires a 64-bit JRE, the installer fails if a 32-bit JRE is installed.

**Workaround**

Uninstall and reinstall the license server and associated software as explained in Virtual GPU License Server User Guide.

**Status**

Not a bug

**Ref. #**

2609471

**3.4. Occasional errors in loading the Configuration page**

**Description**

Sometimes, the Configuration page fails to load and the license server management interface reports the following error:

Error occurred: Please contact the administrator with the detailed steps to reproduce this issue.
The following error messages are written to the license server log file:

```
14:44:00,964 ERROR Trust startup failure:Unable to read anchor, status:FATAL.
14:44:00,964 ERROR Trust break detected at startup time:Unable to read anchor, status:FATAL.
```

When this issue occurs, any attempt by a license server client to acquire a license fails.

On Linux clients, error messages similar to the following example are logged in the standard activity log (`/var/log/messages` for distributions based on Red Hat or `/var/log/syslog` for distributions based on Debian):

```
Jun 19 14:04:43 localhost nvidia-gridd: Error: Error processing capability response. Server URL : http://10.31.20.45:7070/request - #012[1,7E2,2,0(70000001C,7100002E,250137)]#012Server was not able to process request correctly.#012Server status: (Back office server error.)
```

On Windows clients, no error messages are logged.

**Workaround**

On Linux, this workaround requires system administrator privileges.

1. Restart the license server service.
   - On Windows, in the **Services** application, context-click the **FlexNet License Server - nvidia** service and choose **Restart**.
   - On Linux, restart the **flexnetls-nvidia.service** service from the command line.

   ```
   [nvidia@localhost ~]$ systemctl restart flexnetls-nvidia.service
   ```

2. Confirm that the **Configuration** page now loads by accessing the license server management interface and clicking **Configuration**.

   This error occurs when the license server service is started or restarted. Therefore, the error might persist after the license server service is restarted. If the error persists, restart the license server service again.

**Status**

Open
3.5. On Windows, upgrading the License Server removes HTTPS configuration

Description
If you are upgrading from a 64-bit license server and your earlier version of the license server was configured to use HTTPS, the HTTPS configuration is removed during the upgrade.

- Files for configuring HTTPS for connections between the management interface are stored in a subfolder of the license server installation folder. The installer deletes the entire contents of any existing license server installation folder, including files that were added after the license server software was installed, such as the SSL certificate that the license server was configured with.
- The HTTPS connector for connections from a web browser to the license server management interface is defined in the Tomcat configuration file `server.xml`. The installer overwrites the existing `server.xml` file and any custom configuration specified in the file is lost.

Workaround
1. Before installing the new version of the license server software, copy the files that are necessary to re-instate the configuration after the upgrade.
   - If HTTPS is configured for connections between the management interface and the license server, copy the SSL certificate that the license server was configured with.
     
     Copying an SSL certificate might corrupt it. To determine if the certificate is corrupted, run this command:
     ```
     $JAVA_HOME/bin/keytool -list -keystore certificate-file-name.jks -storepass certificate-password
     ```
     
     If the certificate is corrupted, contact the CA that issued your certificate to obtain a new certificate.
   - If HTTPS is specified for connections from a web browser to the license server management interface, copy the Tomcat configuration file `server.xml`.

2. After installing the new version of the license server software, re-create the HTTPS configuration as explained in *Virtual GPU License Server User Guide*. 
Status
Not a bug

Ref. #
‣ 200500532
‣ 200521319

3.6. Apache Tomcat Servlet/JSP Container Default Files Vulnerability (Nessus ID: 12085)

Description
The License Server requires an Apache Tomcat server. On Windows, Apache Tomcat is included with the License Server installer package. On Linux, Apache Tomcat must be installed separately.

By default, files such as documentation, the default index page, example JSP files, and example servlets are installed on the host where the Apache Tomcat software is installed. These files may help an attacker uncover information about the Apache Tomcat installation or the host where the Apache Tomcat software is installed. Furthermore, the files may themselves contain vulnerabilities that might allow attacks such as cross-site scripting attacks.

Mitigations
‣ Review the files and delete the files that are not needed.
‣ Provide a custom error page for common HTTP errors such as error 404 or 500.

See Also
‣ Securing Tomcat from the Open Web Application Security Project (OWASP)
‣ How do I get a customized error page? FAQ on the Tomcat wiki

3.7. Time stamps in the License Server Management Interface and log files are inconsistent

Description
The time shown in the Client Expiry field on the Client Details page is inconsistent with the time stamps in the license server log files.
For example, the log files might show these time stamps:

- License acquired time is - Wed May 30 16:18:23 2018
- Borrow interval is 1440 mins

From these time stamps, the expected client expiry time is 2018-05-31 16:18:23. However, on the Client Details page, the Client Expiry field shows 2018-05-31T10:48:59.999Z.

This inconsistency occurs because the time of day in the license management interface is given in Coordinated Universal Time (UTC), not the local time of the license server host.

**Status**

Not an NVIDIA bug

**Ref. #**

200418046

### 3.8. Deleting a license reservation deletes the entire reservation group

**Description**

When the management UI is used to delete a single entry from the Reservation page, all entries on the page are deleted because the management UI supports operations only on reservation groups, not individual reservations, specifically:

- Deleting an existing reservation group. Deleting individual reservations within a reservation group is **not** supported.
- Adding reservations to a new reservation group. Adding reservations to an existing reservation group is **not** supported.

**Workaround**

To add or delete reservations in an existing group:

1. Delete the existing group.
2. Re-create the group with the set of reservations that you want:
   - Include the existing reservations that you want to keep and any new reservations that you want to add.
   - Exclude any reservations that you want to remove.
You can re-create the group by using the Add Reservation page or by importing reservations from a JSON file. For instructions, see Virtual GPU License Server User Guide.

If you are importing reservations from a JSON file, ensure that the name attribute of each array of reservations is set to a non-null value. Although the name attribute is optional, any imported reservation groups for which the name attribute is not set cannot be deleted through the management UI.

Status
Not a bug

Ref. #
200418787

3.9. Sudden shutdown of the license server can cause database corruption

Description
If the license server is shut down suddenly and cannot be shut down cleanly, the trusted storage database may become corrupted. If the database is corrupted, it cannot be read and the flexnetls-nvidia service cannot start.

When the flexnetls-nvidia service cannot start because the database is corrupted, messages similar to the following examples for each platform are written to the license server log file:

- **On Windows:**
  ```
  org.h2.message.DbException: General error:
  "java.lang.IllegalArgumentException: File corrupted in chunk ${chunk_number},
  expected page length ${page_length}, got ${actual_page_length}" [50000-193]
  org.h2.message.DbException: General error:
  "java.lang.IllegalStateException: Reading from
  nio:C:/Windows/ServiceProfiles/NetworkService/flexnetls/nvidia/
  flexnetls_licenses.mv.db failed;
  file length ${file_length} read length ${read_length} at ${index}"
  ```

- **On Linux:**
  ```
  org.h2.message.DbException: General error:
  "java.lang.IllegalArgumentException: File corrupted in chunk ${chunk_number},
  expected page length ${page_length}, got ${actual_page_length}" [50000-193]
  org.h2.message.DbException: General error:
  "java.lang.IllegalStateException: Reading from
  nio:/var/opt/flexnetls/nvidia/flexnetls_licenses.mv.db failed;
  file length ${file_length} read length ${read_length} at ${index}"
  ```
On Windows, event 6008 may be written to the event viewer log indicating that the license server was shut down abruptly and could not be shut down cleanly.

**Workaround**

Restore the database from a backup as explained in *Virtual GPU License Server User Guide*.

If the database remains corrupted after it is restored, the backup that you restored it from may also be corrupt. In this situation, delete the trusted storage files, start the `flexnetls-nvidia` service, and reinstall your licenses. For instructions for performing these tasks, see *Virtual GPU License Server User Guide*.

**Status**

Not an NVIDIA bug

**Ref. #**

2104881

### 3.10. License server MAC address cannot be changed in the management interface

**Description**

The management interface of the license server enables the MAC address of the license server to be changed and the change to be saved. However, when the license server host is restarted, the MAC address reverts to its previous setting.

**Workaround**

Change the MAC address by editing the license server settings file, updating the license server settings from the edited file, and restarting the license server.

Before attempting this workaround, ensure that the `JAVA_HOME` or `JRE_HOME` environment variable is set to the directory where the Java runtime environment is installed on the license server host.

This workaround requires system administrator privileges.

**On Windows:**

1. Open the file `license-server-installation-folder\server\flexnetls.settings` in a plain text editor such as WordPad.
**license-server-installation-folder**

The folder in which the license server software is installed. The default license server installation folder is `%SystemDrive%:\NVIDIA\LicenseServer`.

2. Uncomment the `#ACTIVE_HOSTID=` line and append the MAC address to the line followed by `/Ethernet`.

   For example:
   ```
   ...
   ACTIVE_HOSTID=4E7DBF3A250A/Ethernet
   ...
   ```

3. Save your changes and exit the editor.

4. As an Administrator user, open a Command Prompt window and change to the `license-server-installation-folder\server` folder.

   For example:
   ```
   C:\>cd C:\NVIDIA\LicenseServer\server
   C:\NVIDIA\LicenseServer\server>
   ```

5. In the Command Prompt window, run the command to update the license server settings from the edited file.

   ```
   C:\NVIDIA\LicenseServer\server>flexnetls.bat -update
   Updating service FNLS-nvidia
   Service FNLS-nvidia successfully stopped
   Uninstalling service FNLS-nvidia
   Installing service FNLS-nvidia
   ```

6. In the Command Prompt window, run the command to restart the license server.

   ```
   C:\NVIDIA\LicenseServer\server>flexnetls.bat -start
   Service FNLS-nvidia successfully started
   ```

**On Linux:**

1. As root, open the file `/opt/flexnetls/nvidia/local-configuration.yaml` in a plain text editor.

2. Uncomment the `#ACTIVE_HOSTID=` line and append the MAC address to the line followed by `/Ethernet`.

   For example:
   ```
   ...
   ACTIVE_HOSTID=4E7DBF3A250A/Ethernet
   ...
   ```

3. Save your changes and exit the editor.

4. As root, restart the `flexnetls-nvidia` service.

   ```
   # sudo systemctl restart flexnetls-nvidia.service
   ```
3.11. The logging threshold can only be uppercase

**Description**

The logging threshold under **Logging properties** on the **Configuration** page accepts input only in uppercase. When a valid logging threshold value in lowercase is entered, an error message similar to the following message is displayed:

```
The value "error" for "Logging Threshold" is not valid. [Logging Threshold, error]
```

**Workaround**

Enter logging threshold values in all uppercase.

**Status**

Not an NVIDIA bug

**Ref. #**

200334630

3.12. License Server upgrade fails

**Description**

An attempt to upgrade from License Server version 2015.12-0001 to the current version fails with the following error:

```
One or more newer versions of the product are installed. An update is not available.
```

**Version**

This issue affects upgrades from version 2015.12-0001.

**Workaround**

1. When the error dialog box opens, click **Abort** to abandon the upgrade.
3. Install the current version of the License Server software.

**Status**
Closed

**Ref. #**
200301811

### 3.13. Log files can exhaust local disk space

**Description**
A long-running license server may fail because the license server log files `flexnetls.log` and `access.log` have exhausted the disk space on the server. Although the license server rotates log files by opening a new log file each day, it does not automatically delete old log files.

**Workaround**
Delete old log files when they are no longer required. On Linux, you can use a cron job to delete files that are more than a specific number of days old.

**Status**
Open

**Ref. #**
1932568

### 3.14. Client in time zone ahead of license server may fail to check out a license close to its expiry time

**Description**
A client located in a time zone that is ahead of the license server’s time zone may fail to check out a license, if the license expiration time has passed in the client’s time zone.
Platform
All

Workaround
Locate the license server in a time zone proximate to the clients it will serve.

Status
Open

Ref. #
1685774

3.15. Upgrade installation does not operate correctly

Description
If the license server is installed on a platform on which license server software version 2015.12 or earlier is installed, the license server installer is incorrectly executed. The upgrade installation is not indicated to the user and, on Windows, the Apache Tomcat installer is erroneously rerun.

Platform
All

Version
This issue affects upgrades from version 2015.12 or earlier.

Workaround
Before installing this release of the license server, uninstall the previous license server software and, on Windows, uninstall the Apache Tomcat software.

Installed NVIDIA vGPU software licenses are not retained across an uninstallation followed by reinstallation. You must reinstall your licenses after reinstalling the license server software.

Status
Closed
Ref. #

1713544, 1713532
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