· when it has to be **right**

Leica Geosystems

Leica Geosystems

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Introduction

In this new cloud era, delivering complex solutions to customers with traditional PC-based installation paradigm has become time consuming and costly. The virtualization technology TruView Global is based on transforms software delivery by making it simpler and less costly to install and manage.

A TruView Global Virtual Machine Image is a virtual machine (VM) containing a full software stack that is pre-installed, pre-configured, and ready to use. Simply download and import an Image into your virtualization software, and then launch a new instance of a VM in order to use the pre-configured TruView Global server. The use of a virtual machine eliminates the need to for customers to manually install and configure the operating system and various applications.

Supported Virtualization Platforms

Leica Geoesytem offers VM images for a wide selection of virtualization platforms:

- VMware Workstations 10 and 11
- VMware vSphere 5.0 and 6.0
- Microsoft Hyper-V on Windows Server 2012 and Enterprise editions of Windows 8 and 8.1
- Oracle VirtualBox 5.0
- Amazon Elastic Compute Cloud (Amazon EC2)

All Virtual Machines are fully configured with the latest version of TruView Global.

Licensing

TruView Global is licensed by the CLM or Client License Manager. This new license mechanism is fully explained in Software Licensing Introduction & Installation document which can be found *at http://www.leica-geosystems.com/en/page_register_1.htm?downloadId=21313*.

Customers with PC-based virtual machine deployment (e.g. VMware Workstation) can install and run the CLM software on the same host computer.

TruView Global customers with Amazon EC2 deployment needs to have a second EC2 instance running Windows Server and the CLM software. Please refer to TruView Global AWS Deployment document for more information related to the CLM software. This document can be found at *http://www.leica-geosystems.us/en/Leica-TruView-Global_106856.htm*.

Deploying Truview Global VM in VMware Workstation

Once you download a TruView Global VM image for your virtualization platform from Leica Geosystems site, unzip it to a hard drive that has more than 160 GB free space. Initially the VM uses less than 5 GB of disk space but the VM's size will grow as you add more data.

The following instructions are for VMWare Workstation 10 and 11. For other platforms, please consult their documentation for importing and running a VM image.

1. Run VMWare Workstation 11.
2. Click **File > Open**.
3. Navigate to the folder where you unzipped the VM image. Choose the file **TruViewGlobal100_VMWare11.vmx** and click Open. A new tab is added to VMWare Workstation's list of available VMs (figure 1).

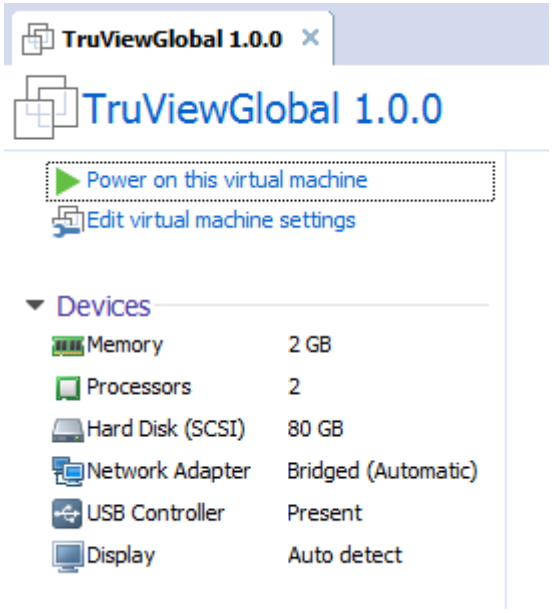


Figure 1

4. Create a snapshot of the VM in its initial clean state. Click **VM > Snapshot > Take Snapshot**. Enter Name and Description. Click **Take Snapshot**. The clean snapshot provides a quick recovery method to working TruView Global VM should your VM encounter critical errors.

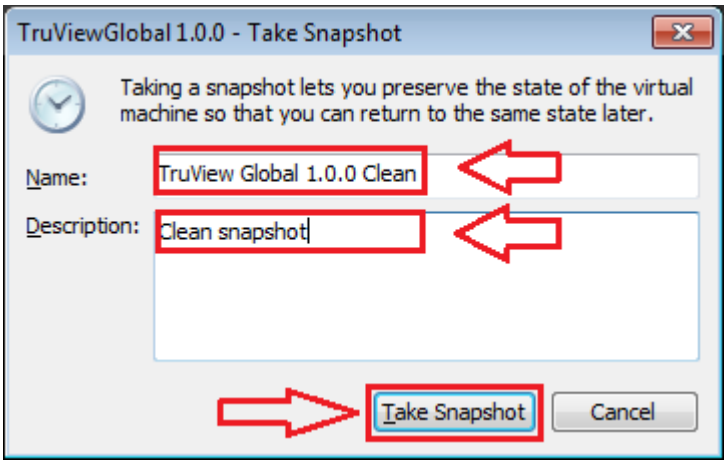


Figure 2

5. Click **Power on this virtual machine**.

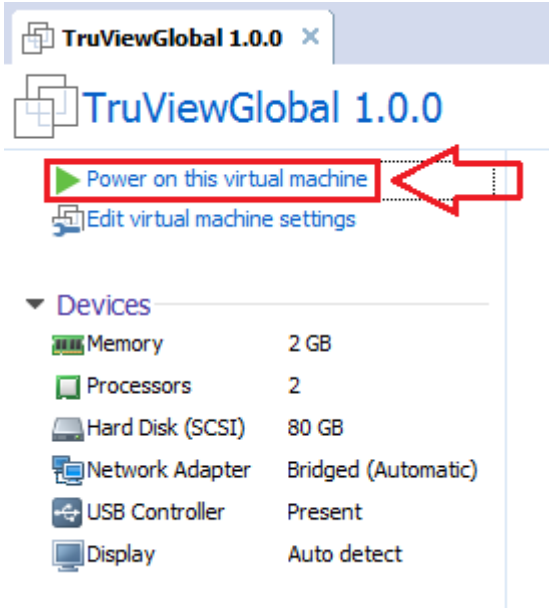


Figure 3

6. The VM may take a few minutes to start. When the VM is ready, you will see a login prompt (figure 4). Login using the default username **Truview** and password **labolg01**.

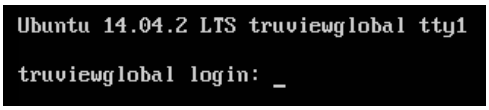


Figure 4

7. The following screen will show basic information about your TruView Global server. Please write down the hostname and the IP address. In this example, the IP address is 10.41.0.194.

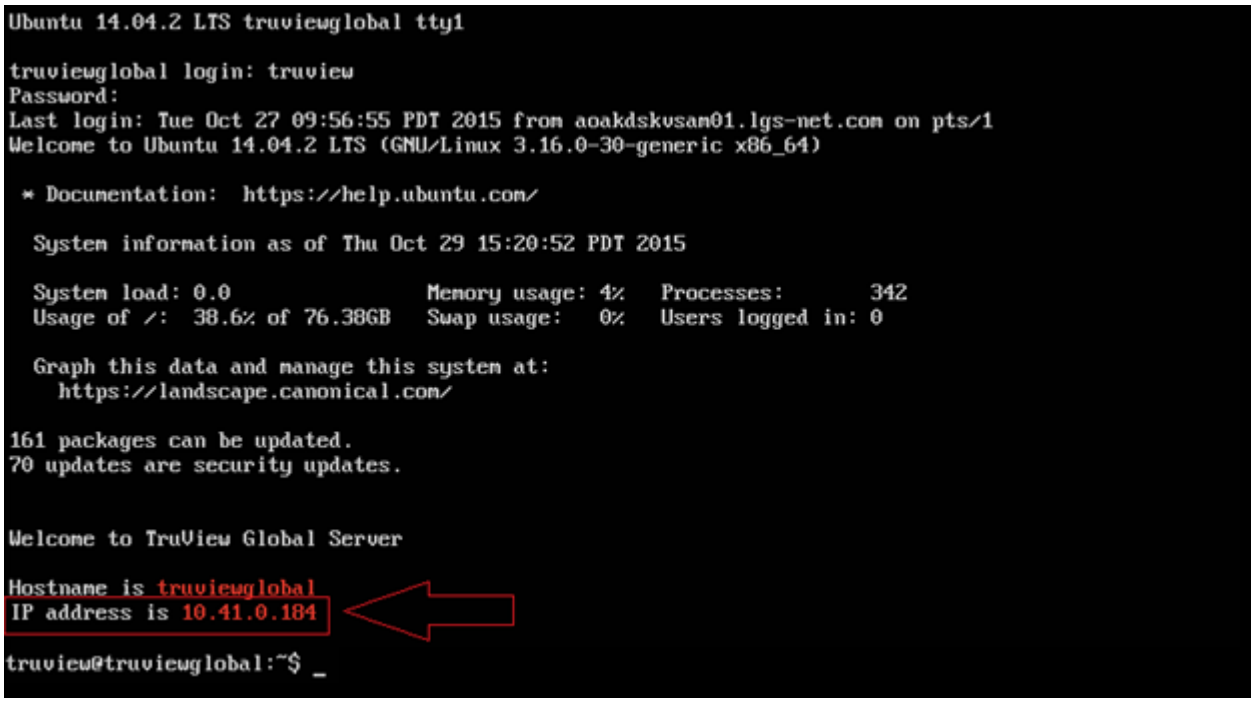


Figure 5

8. You're now logged in to TruView Global Linux console. To log off, type **logout** and press Enter. The system will show a login prompt.

Setting Up License Server

Starting with TruView Global 1.1, administrator users can conveniently configure the CLM server for TruView Global via the new Administration page.

1. Open TruView Global website in a browser. You can either use **http://truviewglobal:9000** or **http://VM _IP_address:9000**.

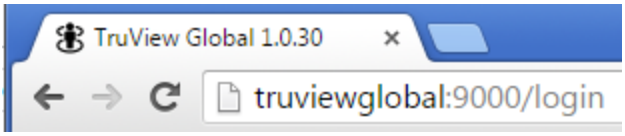


Figure 6

2. Login using the default administrator username **admin** and password **admin**.

Figure 7

If this is the first time you login to TruView Global, you will see an error message indicating that there is no license. Click **Administration** link.

Figure 8

3. Click Licensing on the Server Administration page

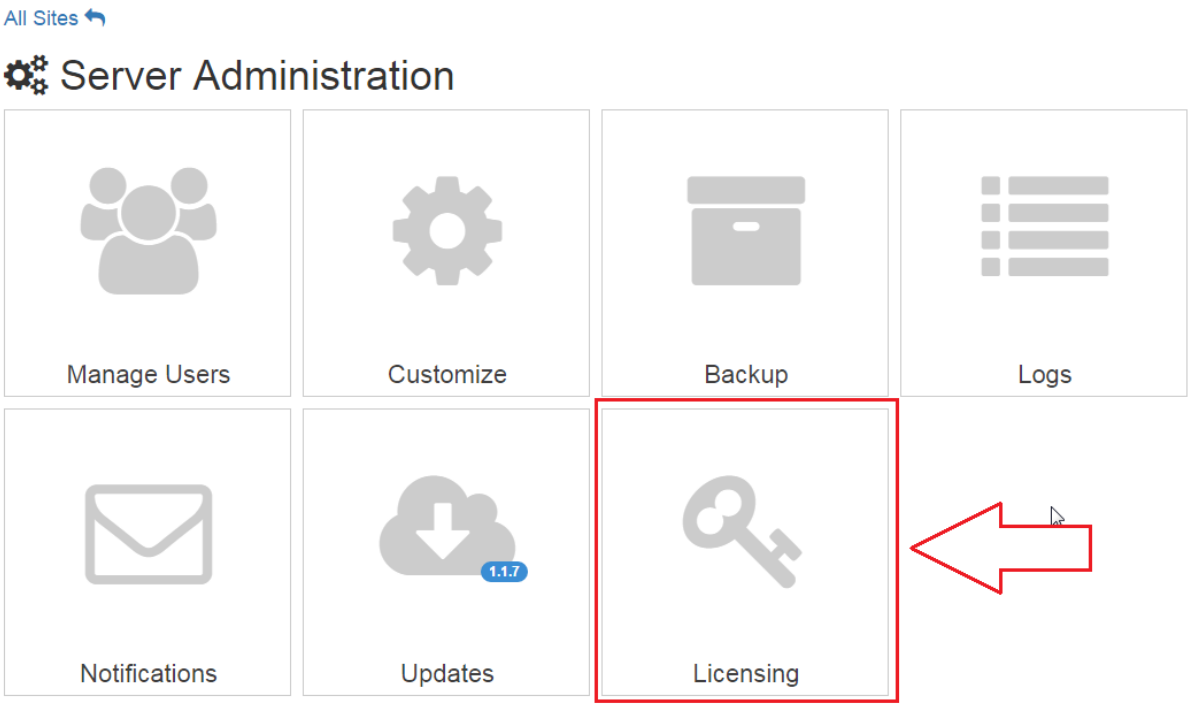


Figure 9

4. On the License Management page, click License Server Info.

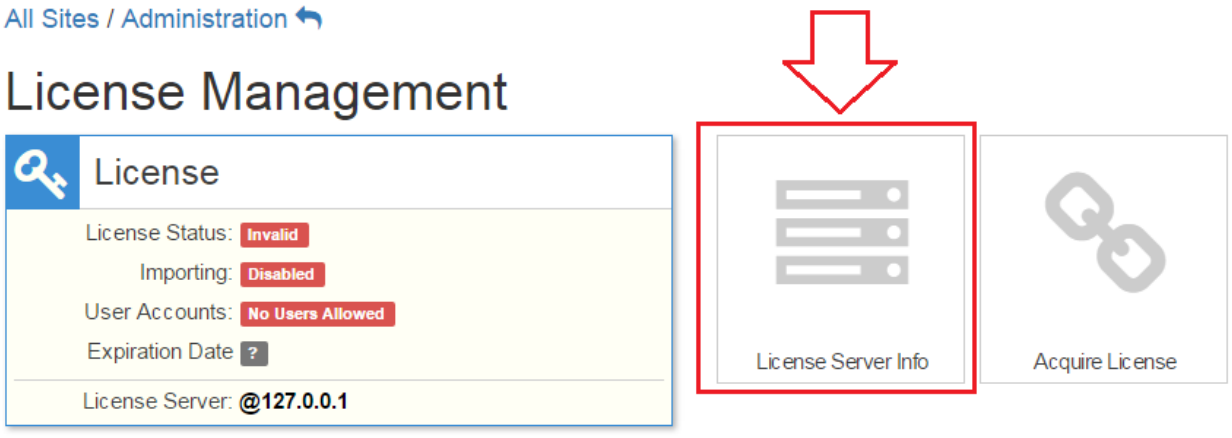


Figure 10

5. Enter your CLM server hostname. Note that a valid CLM server must have a leading @ character (e.g. @cy335). Click OK.

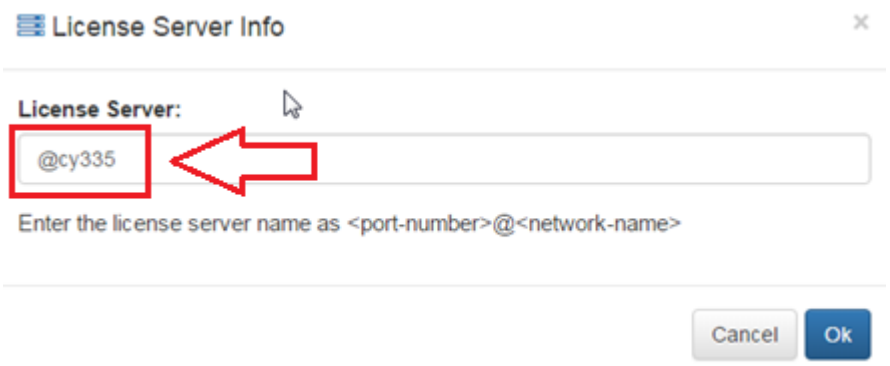


Figure 11

6. On License Management page, click Acquire License. The system will now check for licenses. This process can take up to two minutes.

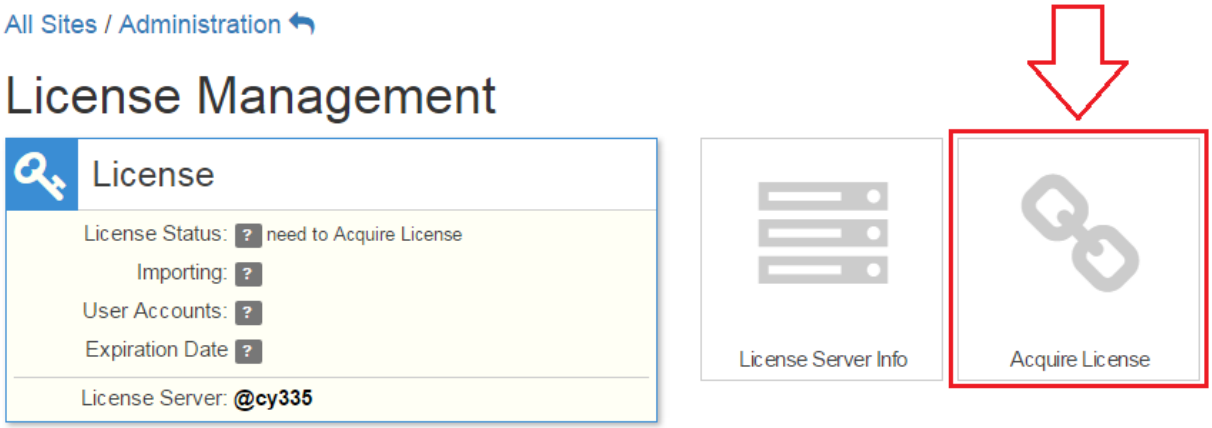


Figure 12

If the license server setting is properly configured and the CLM server has a valid TruView Global license, you will see a message stating that the license acquired successfully.

Figure 13

In the event that TruView Global fails to verify a license, an error similar to the image below will be shown.

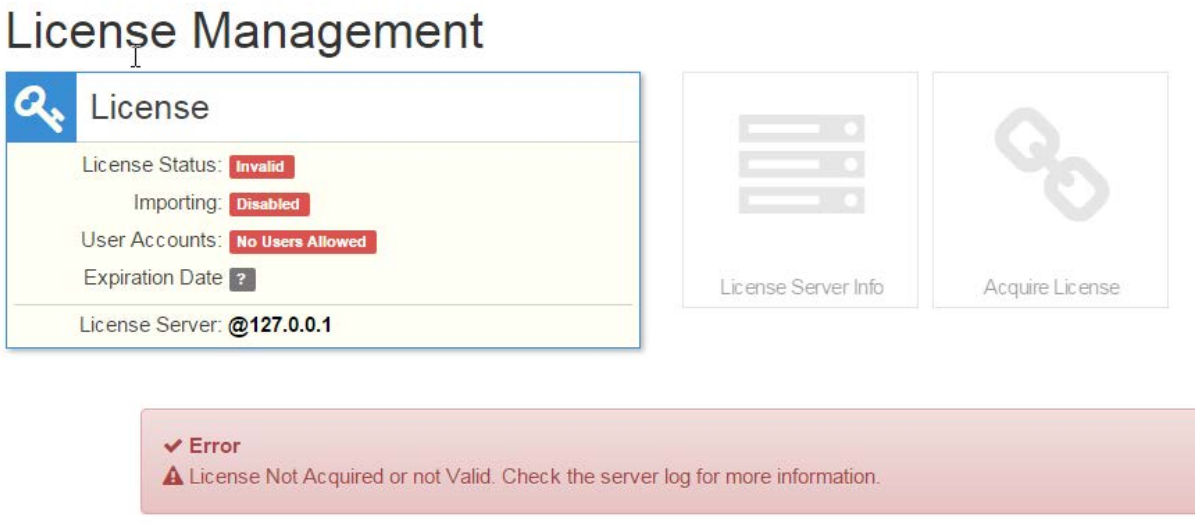


Figure 14

Common Linux Administration Tasks

Find Out IP Address With ifconfig

You can also find out the IP address of TruView Global VM by running **ifconfig eth0** in Linux console. The IP address will be shown next to inet addr field.

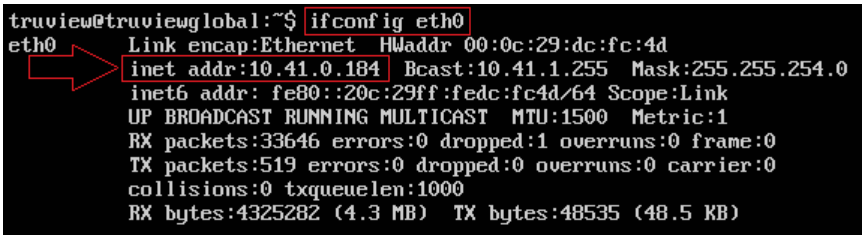


Figure 15

Setup VM Network Configuration (optional)

All TruView Global VMs are setup with bridged networking. Your local network configuration may require you to change the VM network configuration to fit your requirements.

We recommend that you consult your VM platform documentation before making changes to the TruView Global VM network setup:

- VMware Workstation Configuring Network Connections
- Configuring Virtual Networking for Microsoft Hyper-V
- VirtualBox Virtual Networking

Logout

To log off the console, type **logout**. The login prompt will be displayed.

Power Off VM

Make sure there is no job in the Action Queue before shutting down the VM to prevent data loss.

If you have to turn off the host computer running TruView Global VM for maintenance, you must first shut down VM. First login to Linux console. Then type the command **sudo shutdown -P now**. The system will ask for your password, type your password and press Enter.

Once the VM is powered off, you can then safely shut down the host computer.

Change Passwords

The first thing to do once the VM is up and running is to change the passwords for the Linux's truview account and the TruView Global administrator user.

Change Ubuntu "truview" User Password

After you login as **truview** with the default password **labola01**, issue the command **passwd**. You will be prompted to enter the current password and the new password as shown below.

Figure 16

Change TruView Global Administrator Password

1. You can change TruView Global Administrator password by simply pointing your browser to either http://truviewglobal:9000 or http://VM _IP_address:9000.

2. Login using the administrator username and password.

3. Click Settings on the top navigation bar

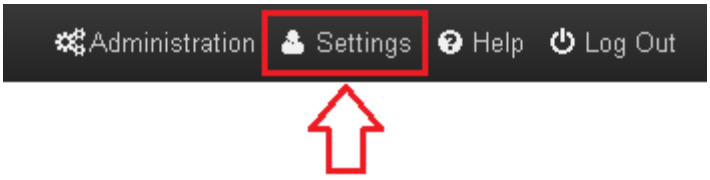


Figure 17

4. Click Change Password icon on the Users' Settings page

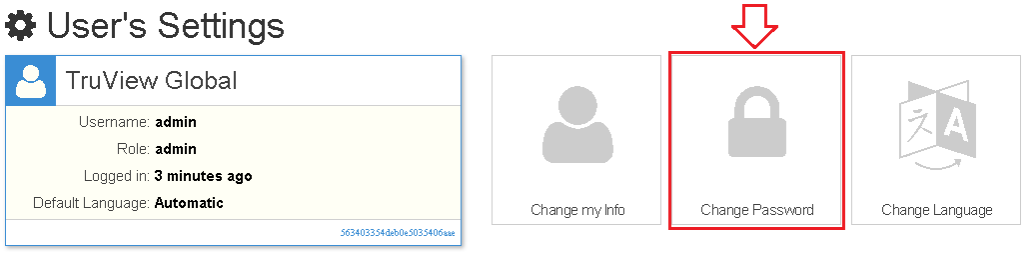


Figure 18

5. Enter your current password and the new password. Then, click **Change Password** button.

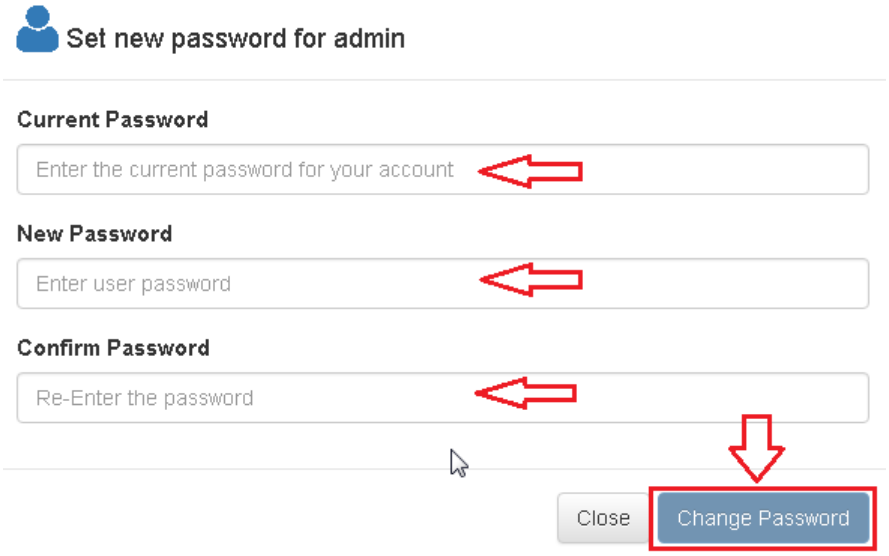


Figure 19

Check Disk Space

Login to Linux console. Type **df -h** and press Enter key. The first line in the output table shows Total Disk Space, Used Disk Space, and Available Disk Space. An example below indicates that there is 62 Gigabytes of disk space available.

```
truview@truviewglobal:~$ df -h
Filesystem                          Size  Used Avail Use% Mounted on
/dev/mapper/truviewglobal--vg-root   77G   11G   62G  15% /
none                                4.0K     0  4.0K   0% /sys/fs/cgroup
udev                                983M  4.0K  983M   1% /dev
tmpfs                               199M  968K  198M   1% /run
none                                5.0M     0  5.0M   0% /run/lock
none                                994M     0  994M   0% /run/shm
none                                100M     0  100M   0% /run/user
/dev/sda1                           236M   38M  186M  17% /boot
truview@truviewglobal:~$
```

Figure 20

Remove Temporary Files and Logs to Free Disk Space

Login to Linux console. Type **./freespace.sh** and press Enter key. The system will display a new Available Disk Space.

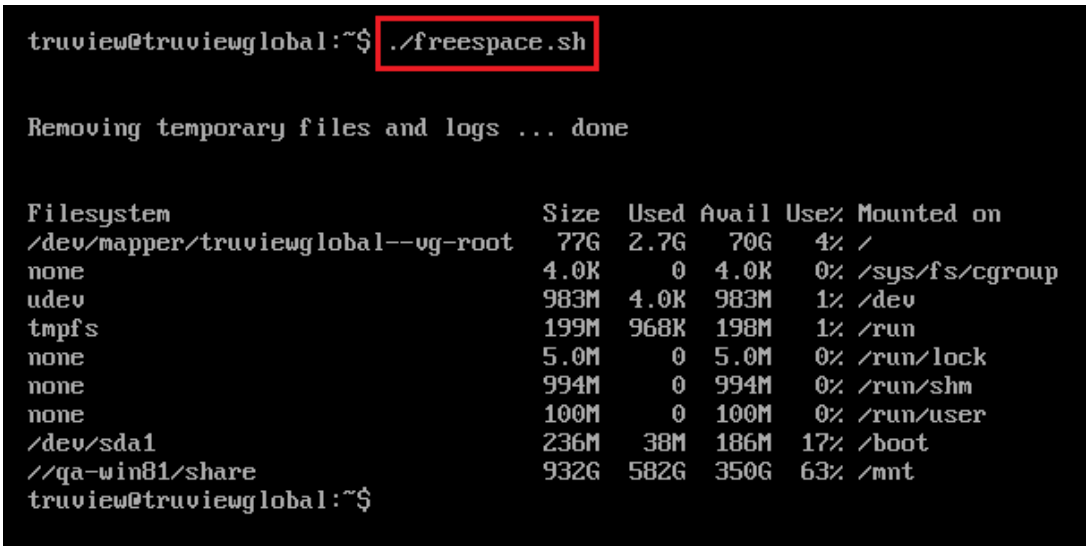


Figure 21

Restart TruView Global Application

An application restart may be required in a situation where TruView Global site stops responding or there is a hanging task in the Action Queue. To restart TruView Global application:

1. Login to console
2. Execute **./restart.sh**

The restart column indicates how many times the application has restarted since the VM started. Each time the application starts the number of restart increases by one.

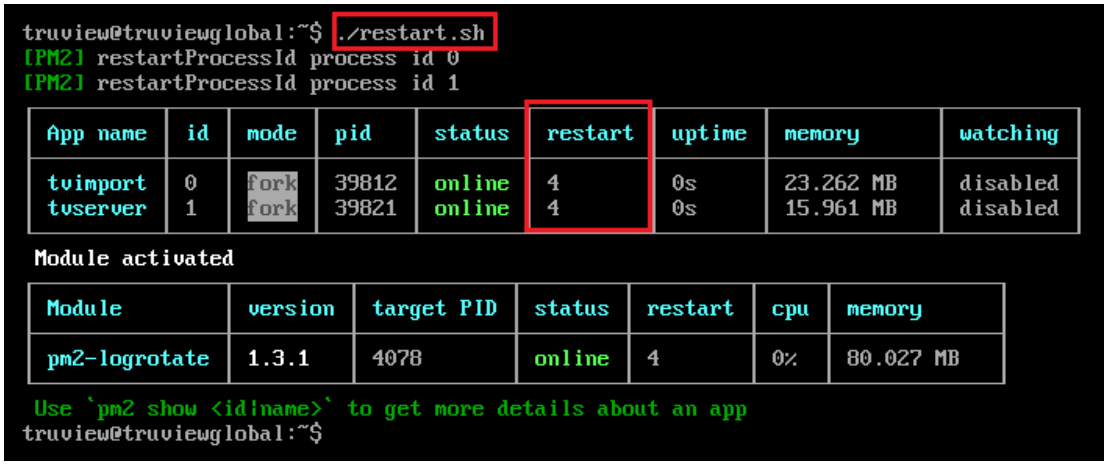


Figure 22

Updating from TruView Global 1.0.1 to 1.2.0

Customers who have downloaded a new TruView Global 1.2.0 VM Image can skip this section because the new VM image already contains these updates.

Login to Ubuntu console, run the command **./truview/update.sh** as shown in the figure below.

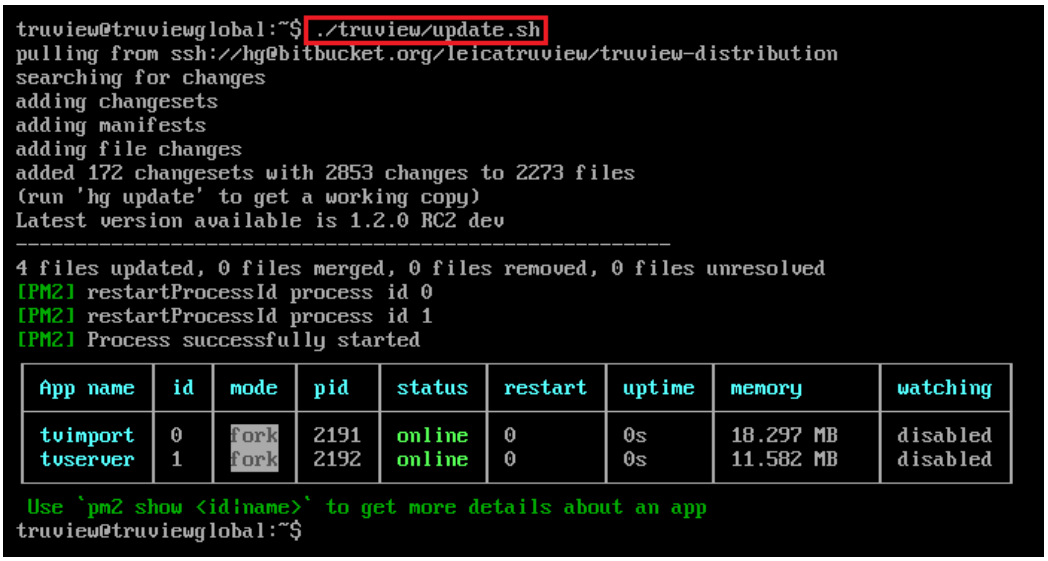


Figure 23

Then run the following command to enable support for TVG files larger than 4 GB:

```
sudo apt-get install -y p7zip-full
```

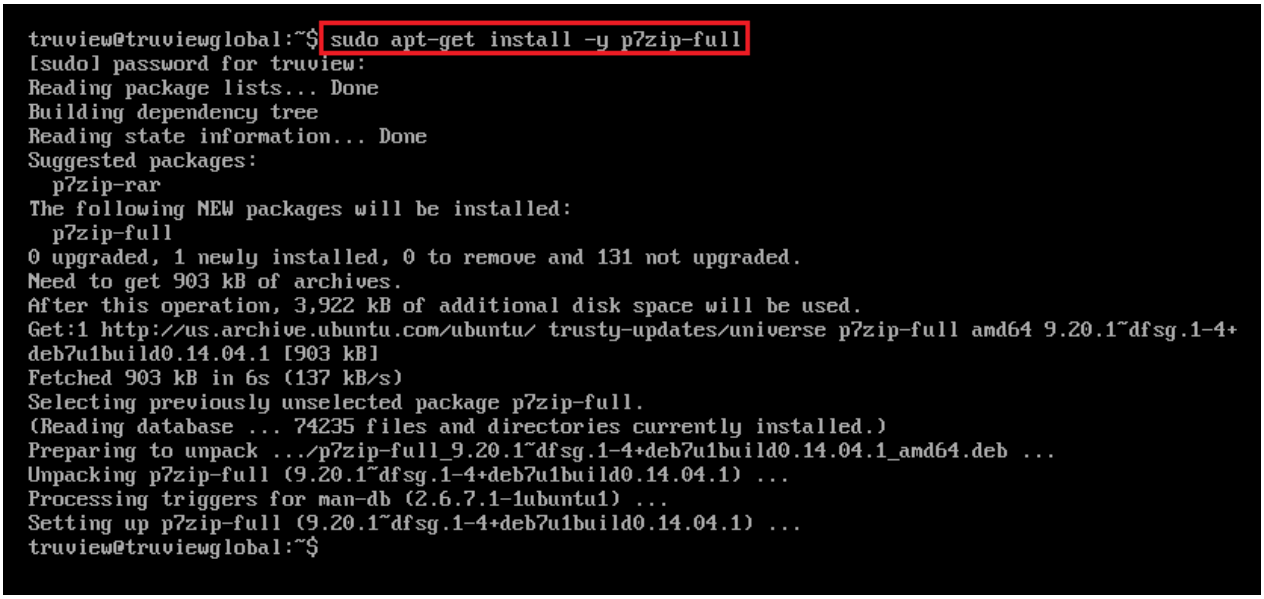


Figure 24

Install log management tool by running the following commands (optional):

`sudo pm2 install pm2-logrotate` (figure 23)

`pm2 set pm2-logrotate:max_size 10M` (figure 24)

`pm2 set pm2-logrotate:interval_unit 'DD'` (figure 25)

`pm2 set pm2-logrotate:interval '1'` (figure 26)

`pm2 set pm2-logrotate:retain '10'` (figure 27)

```
truview@truviewglobal:~$ sudo pm2 install pm2-logrotate
[sudo] password for truview:
[PM2][Module] Installing module pm2-logrotate
[PM2][Module] Processing...
....npm WARN peerDependencies The peer dependency bower@* included from rolex will no
npm WARN peerDependencies longer be automatically installed to fulfill the peerDependency
npm WARN peerDependencies in npm 3+. Your application will need to depend on it explicitly.
.....npm WARN optional dep failed, continuing fsevents@1.0.2
..................pm2-logrotate@1.3.1 .pm2/node_modules/pm2-logrotate
├── pmx@0.5.5 (json-stringify-safe@5.0.1, debug@2.2.0)
├── moment@2.10.6
├── pm2@0.15.9 (ikt@0.0.0, isbinaryfile@2.0.4, eventemitter2@0.4.14, pidusage@0.1.1, safe-clone-deep
@1.0.5, debug@2.2.0, semver@5.0.3, commander@2.9.0, async@1.5.0, pm2-multimeter@0.1.2, chalk@1.1.1,
pm2-deploy@0.2.1, shelljs@0.5.3, pm2-axon-rpc@0.3.6, vizion@0.2.11, mkdirp@0.5.1, pm2-axon@2.0.8, ns
socket@0.5.3, cli-table@0.3.1, coffee-script@1.9.3, cron@1.0.9, chokidar@1.2.0)
├── bower@1.6.5
└── rolex@0.0.1 (present@0.0.3)
[PM2][Module] Module downloaded
[PM2] Process launched
[PM2][Module] Module succesfully installed and launched
[PM2][Module] : To configure module do
[PM2][Module] : $ pm2 conf <key> <value>
```

App name	id	mode	pid	status	restart	uptime	memory	watching
tvimport	0	fork	2491	online	0	37m	91.172 MB	disabled
tvserver	1	fork	2494	online	0	37m	205.723 MB	disabled

Module activated

Module	version	target PID	status	restart	cpu	memory
pm2-logrotate	N/A	3841	online	0	50%	11.160 MB

```
 Use `pm2 show <id|name>` to get more details about an app
truview@truviewglobal:~$
```

Figure 25

```
truview@truviewglobal:~$ pm2 set pm2-logrotate:max_size 10M
[PM2] Restarting module pm2-logrotate
[PM2] restartProcessId process id 2
[PM2] Module pm2-logrotate restarted

== pm2-logrotate ==
```

key	value
max_size	10M

```
truview@truviewglobal:~$ _
```

Figure 26

```
truview@truviewglobal:~$ pm2 set pm2-logrotate:interval_unit 'DD'
[PM2] Restarting module pm2-logrotate
[PM2] restartProcessId process id 2
[PM2] Module pm2-logrotate restarted

== pm2-logrotate ==
┌──────────────┬──────────┐
│ key          │ value    │
├──────────────┼──────────┤
│ max_size     │ 10M      │
│ interval_unit│ DD       │
└──────────────┴──────────┘
truview@truviewglobal:~$
```

Figure 27

```
truview@truviewglobal:~$ pm2 set pm2-logrotate:interval '1'
[PM2] Restarting module pm2-logrotate
[PM2] restartProcessId process id 2
[PM2] Module pm2-logrotate restarted

== pm2-logrotate ==
┌──────────────┬──────────┐
│ key          │ value    │
├──────────────┼──────────┤
│ max_size     │ 10M      │
│ interval_unit│ DD       │
│ interval     │ 1        │
└──────────────┴──────────┘
truview@truviewglobal:~$
```

Figure 28

```
truview@truviewglobal:~$ pm2 set pm2-logrotate:retain '10'
[PM2] Restarting module pm2-logrotate
[PM2] restartProcessId process id 2
[PM2] Module pm2-logrotate restarted

== pm2-logrotate ==
┌──────────────┬──────────┐
│ key          │ value    │
├──────────────┼──────────┤
│ max_size     │ 10M      │
│ interval_unit│ DD       │
│ interval     │ 1        │
│ retain       │ 10       │
└──────────────┴──────────┘
truview@truviewglobal:~$ _
```

Figure 29

Updating TruView Global

Leica Geosystems periodically releases updates for TruView Global. Use the Administration page to check for and perform an update.

1. Logon to TruView Global using an administrator user account.
2. Open the Server Administration page. Click Updates icon.

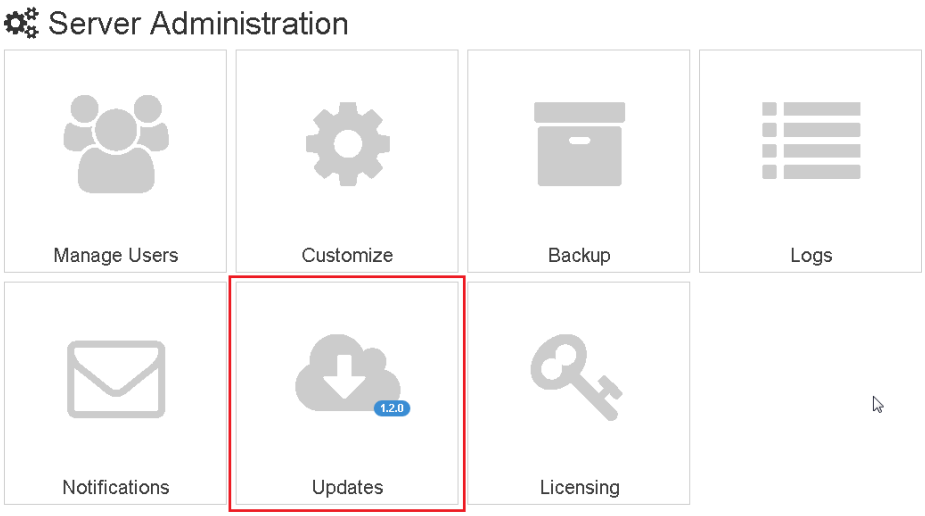


Figure 30

3. Click Check Now icon. If a new update is available, its detail is shown in the Update frame.

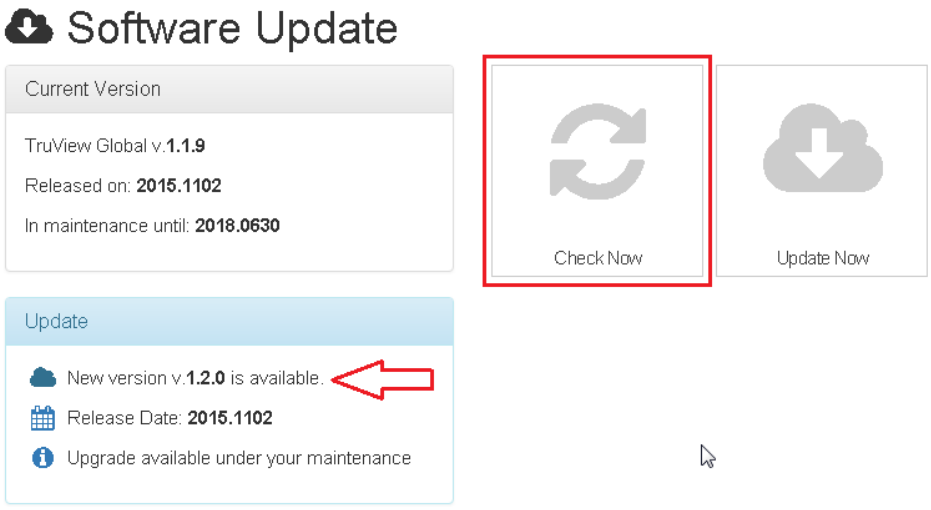


Figure 31

4. Click Update Now to download and install the new update. Note that Updates are only available to customers with maintenance contract.

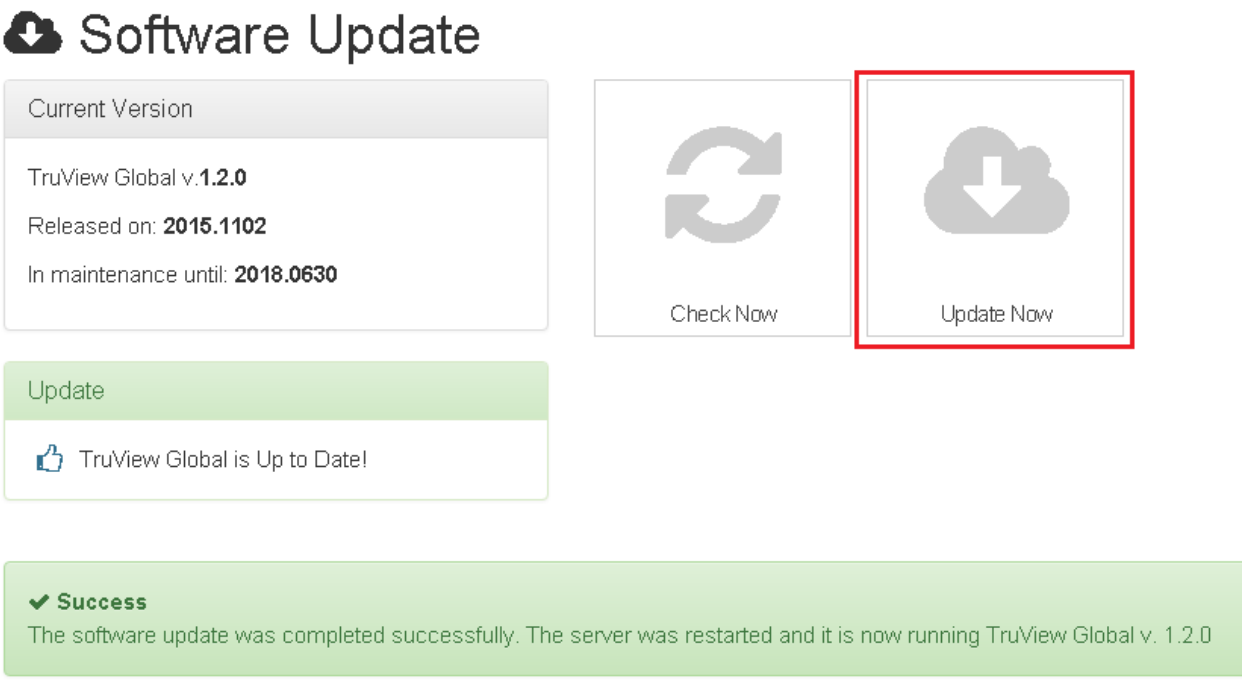


Figure 32

Activating Remote Access for Leica Geosystems Support

During a support call, you may be asked to enable remote access for further troubleshooting of the problem. To enable remote access for Leica support personnel, login to Linux console and execute **./enable_remote_access.sh** and type **Yes** when prompted.

Note that your TruView Global must be accessible from the internet.

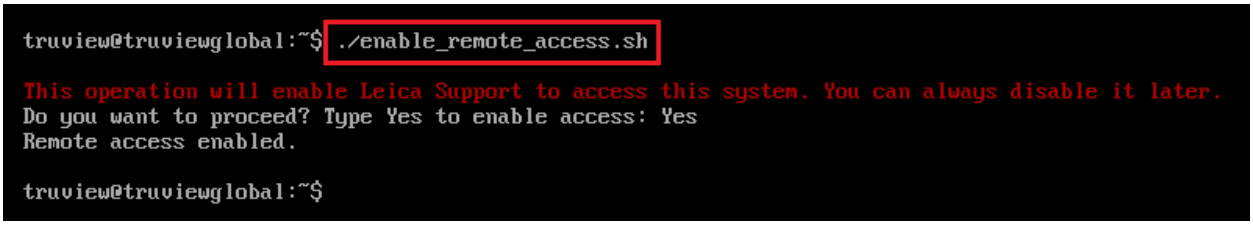


Figure 33

Disabling Remote Access

To disable remote access, type the command './disable_remote_access.sh' at the command line.

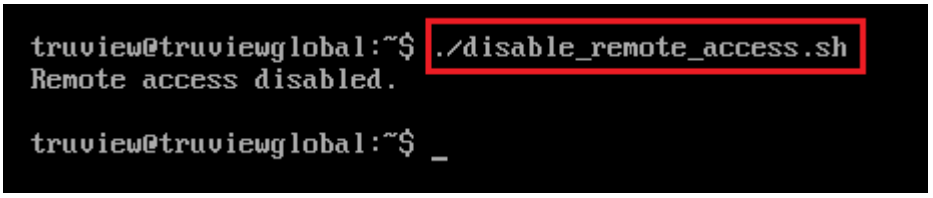


Figure 34

Allow Access from Outside Your Network (From the Internet)

The instructions described in this section are designed for advanced users who are comfortable with changing router configurations. Extreme care must be taken when operating systems accessible from Internet.

1. Verify that TruView Global is functioning properly within the local network
2. Find the IP address of your TruView Global system using **ifconfig** command as described earlier
3. Configure your router and/or your firewall to forward TCP port 9000 to the TruView Global's IP address. Consult your router's documentation on specific instructions.
4. To access TruView Global from the internet, open **http:\\< public IP>:9000** in a browser.

Troubleshooting Common Problems

Symptom: License Status is Invalid

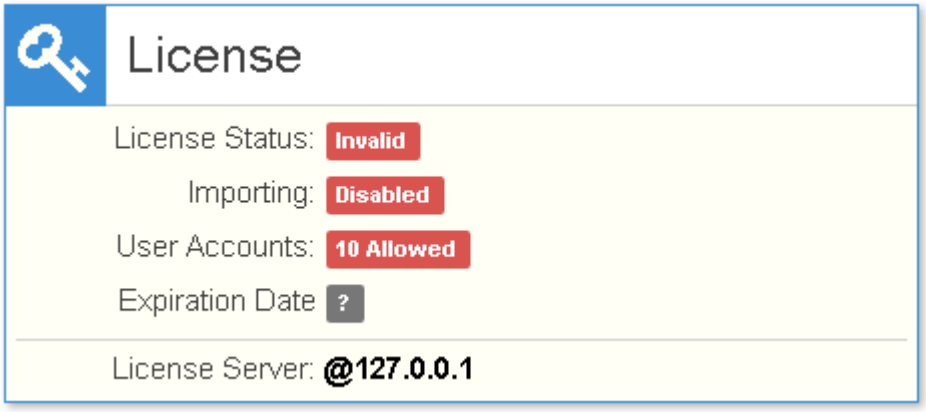


Figure 35

This problem can be caused by a variety of issues. Follow these troubleshooting steps to find out the root cause of the problem:

1. Check that the license server hostname or IP address is correct.
2. On the CLM server, open **CLM for Floating Licenses** tool, click **View Installed Licenses** then **Features**. Verify that there are at least one pair ProjectVault licenses (e.g. TLS_TVG.PV10 and TLS_TVG.Maint.PV10) that are valid and not expired.

TruView Global ProjectVault Unlimited License

TLS_TVG.PVUnlimited

TLS_TVG_Maint.PVUnlimited

TruView Global ProjectVault 10-user License

TLS_TVG.PV10

TLS_TVG.Maint.PV10

TruView Global Generator License

TLS_TVG.Generator

TLS_TVG.Maint.Generator

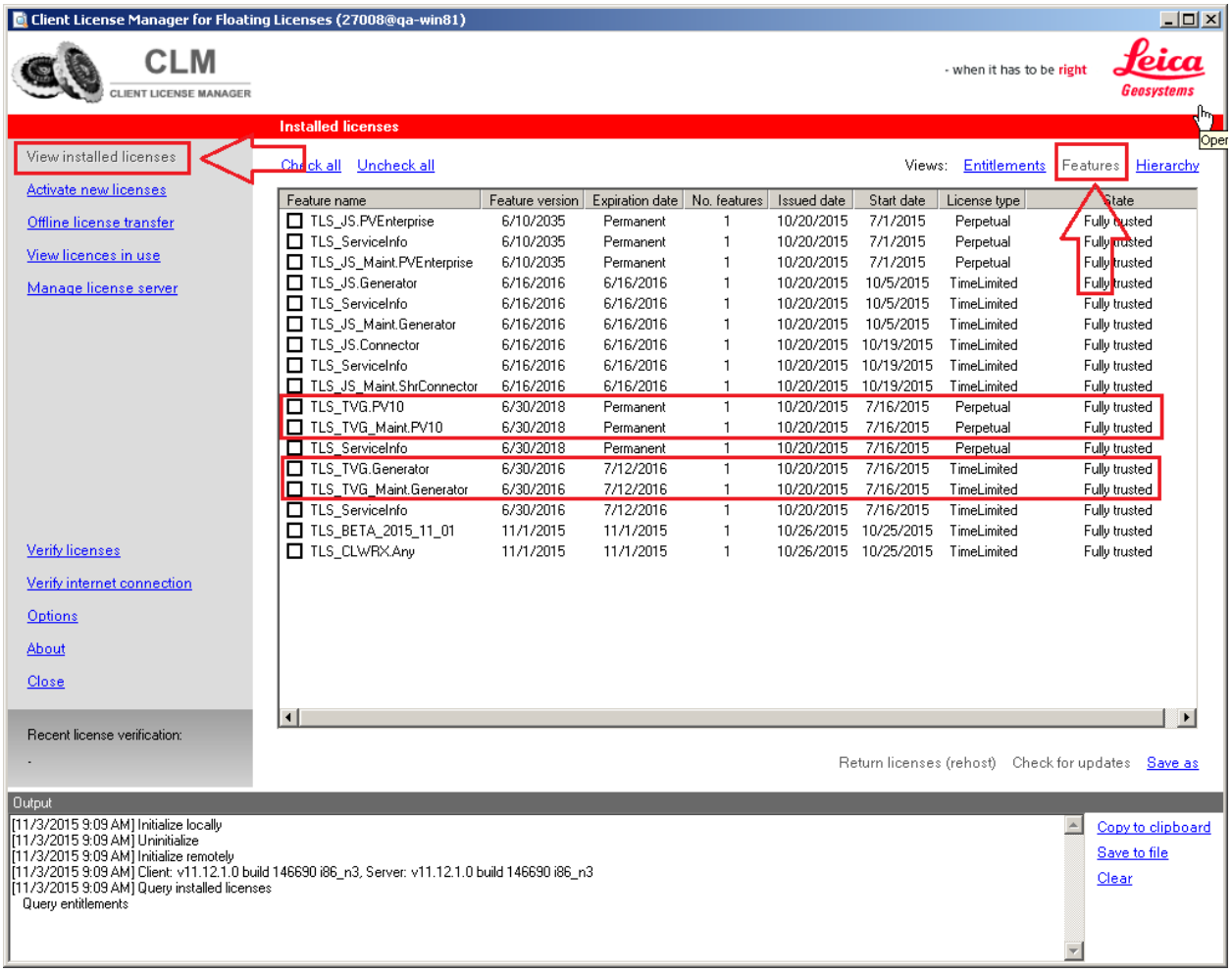


Figure 36

3. Click **Manage license server**. Restart the license server by clicking **Stop** and **Start**.
4. Check network connection between TruView Global and the CLM server. Login to Linux console, type **ping <CLM server hostname>** or **ping <CLM server IP address>**. The output should look like the following screenshot.

```
truview@truviewglobal:~$ ping cy335
PING cy335.lgs-net.com (10.41.0.179) 56(84) bytes of data.
64 bytes from cy335.lgs-net.com (10.41.0.179): icmp_seq=1 ttl=128 time=0.355 ms
64 bytes from cy335.lgs-net.com (10.41.0.179): icmp_seq=2 ttl=128 time=0.427 ms
64 bytes from cy335.lgs-net.com (10.41.0.179): icmp_seq=3 ttl=128 time=0.377 ms
64 bytes from cy335.lgs-net.com (10.41.0.179): icmp_seq=4 ttl=128 time=0.502 ms
64 bytes from cy335.lgs-net.com (10.41.0.179): icmp_seq=5 ttl=128 time=0.428 ms
```

Figure 37

If ping returns an error (egg. unknown host), you have a network connection problem. Contact your IT support and ask them to put the TruView Server VM and the CLM server in the same network.

5. If ping is successful, restart TruView Global application by executing **pm2 restart all** command. You should see an output like the following screenshot. If any of the status values is "error", stop and contact Leica HDS support. We will have to perform a remote troubleshooting of your TruView Global server.

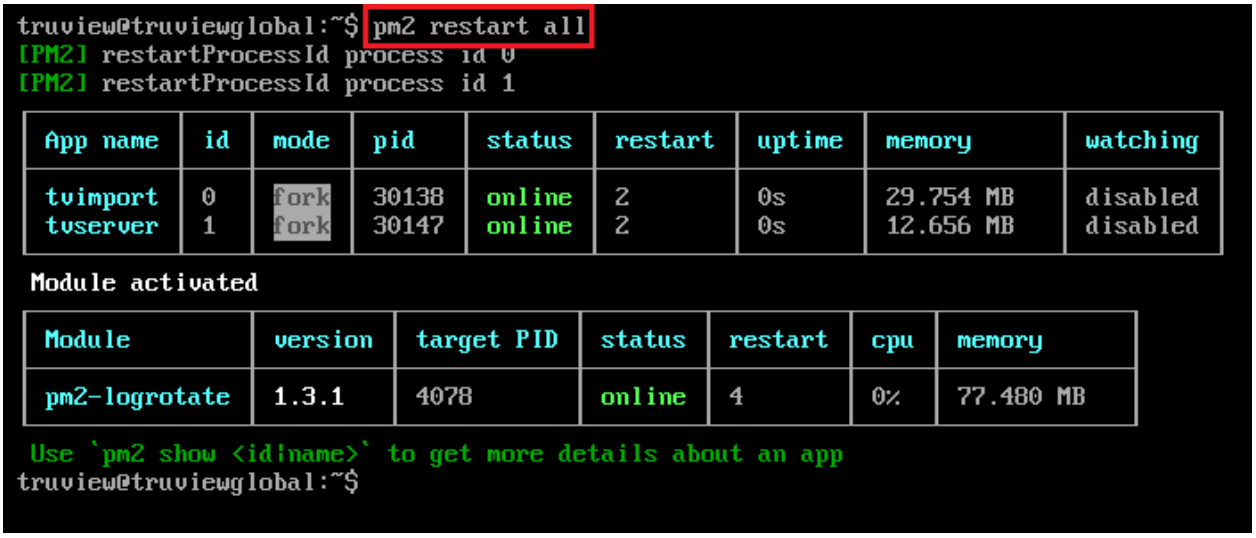


Figure 38

Type **logout** to close the console.

6. Verify that port 27008 is open on the CLM server. For troubleshooting, we recommend that you should contact your IT support and ask them to temporarily disable firewall on both TruView Global server and the CLM server.
7. Open TruView Global server in a browser. Login using an administrator user account and open Licensing page. Click **License Server Info** and verify that the license server hostname is still valid. Click **Acquire License**. The following screenshot shows that TruView Global has successfully acquired a license from CLM server. If the problem persists, please contact Leica HDS support.

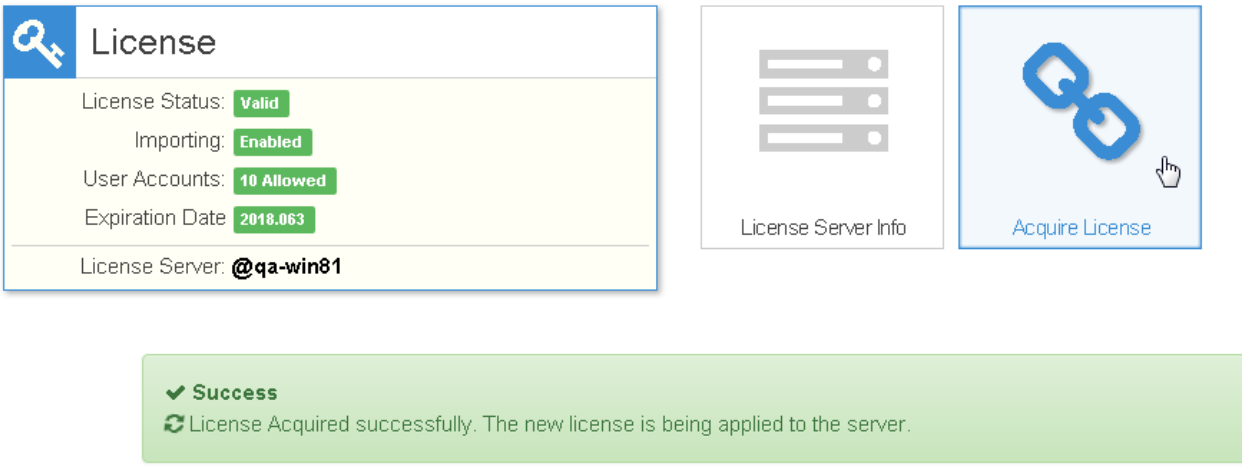


Figure 39

Symptom: user cannot login because of Access refused error.

Figure 40

Customers with TruView Global 10-user license may experience this error when the number of current user sessions exceed the maximum number of users as specified in the license.

Due to the nature of web applications, TruView Global keeps a user's session for 30 minutes if the user didn't log off from TruView Global (i.e. User closes the browser while logged in to TruView Global). After 30 minutes, the session will be destroyed and a license is returned to the CLM server.

If you are still logged in as an administrator user, you can verify the cause of this error by following these steps:

1. Open the Server Administration page. Click Manager Users

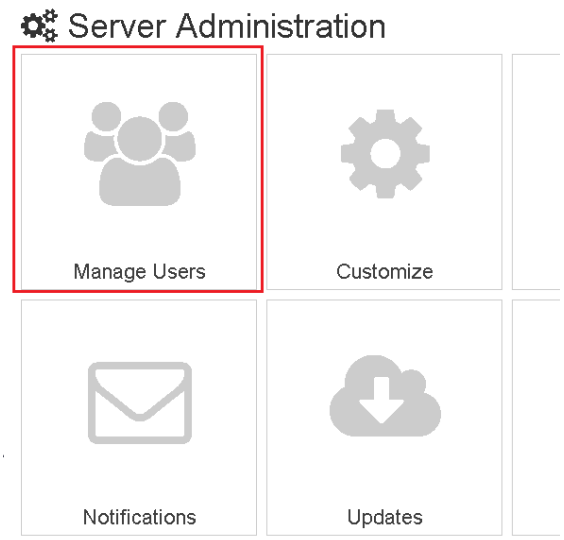


Figure 41

2. Click Current Sessions tab. If there are 11 current sessions listed, that means there is no license available . You can wait until one of sessions expires within 30 minutes or you can restart TruView Global application via console as described earlier.

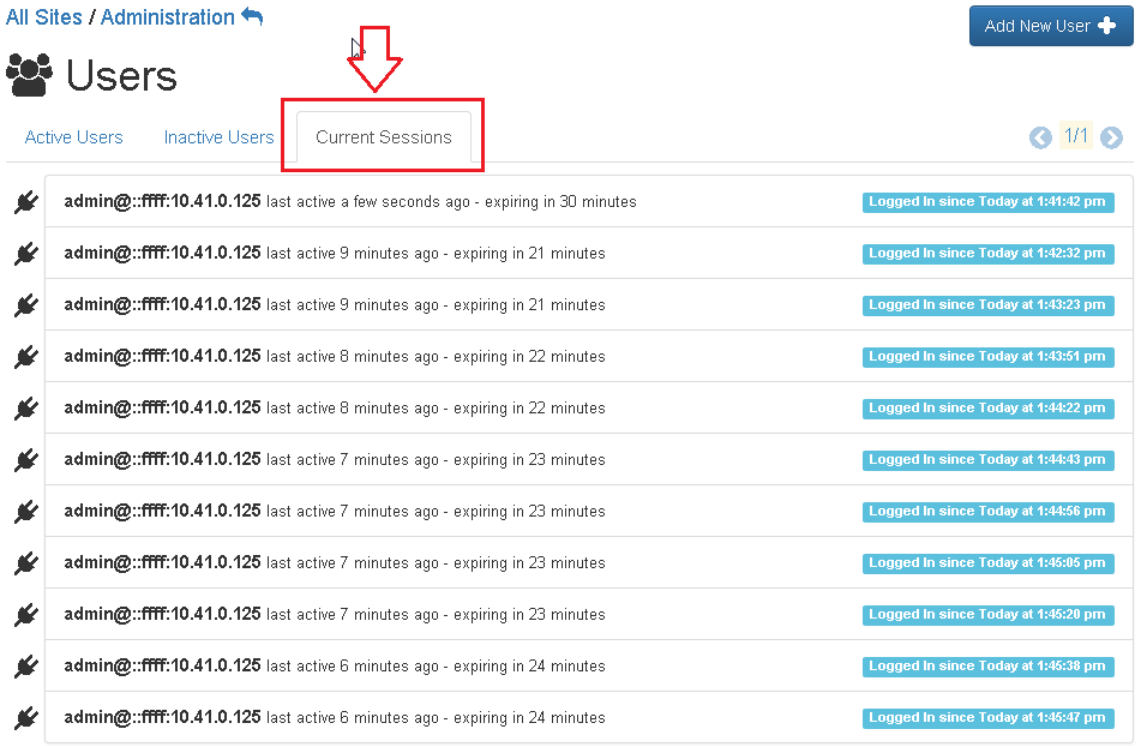


Figure 42

Symptom: failed to import a TVG file.

Currently TruView Global is not able to import a TVG file that uses “Degrees Minutes Seconds” angular unit. Attempting to import such data will result in a failed import. Several error messages will be shown in the Action Log. The error message for this failure will contain this line:

```
ERROR while importing ./zips/admin/<..>  as Location/Site: Invalid attribute nameLine:
<..>Column: <..>Char:
```

Workaround is to change the Angular Unit in Cyclone to Degrees and re-publish the data.

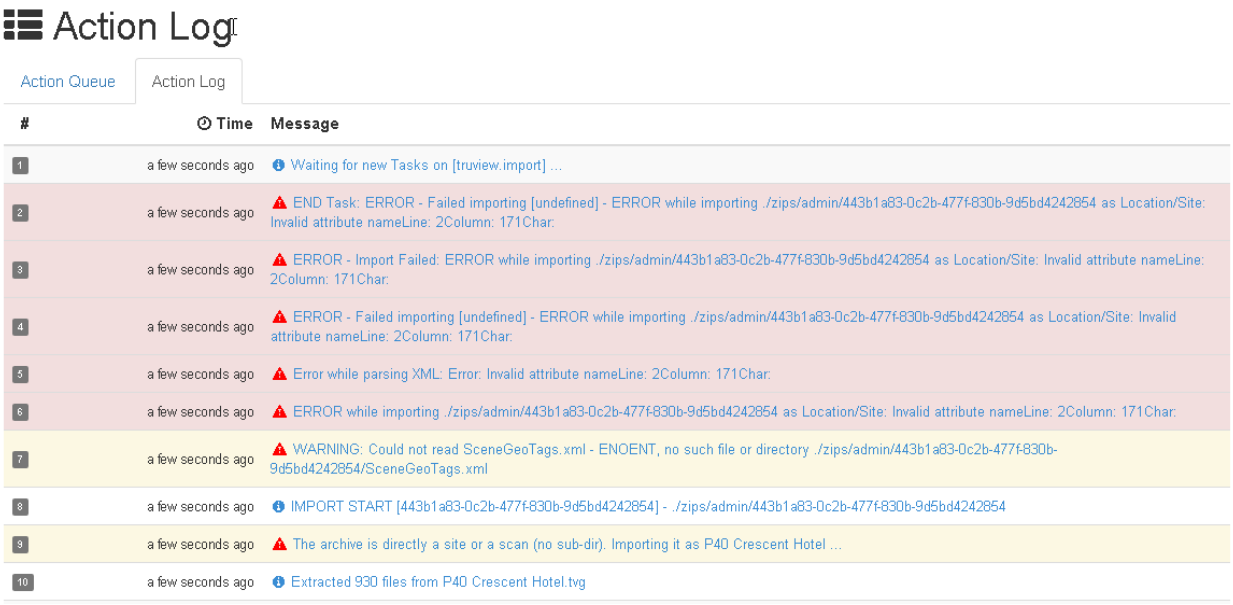
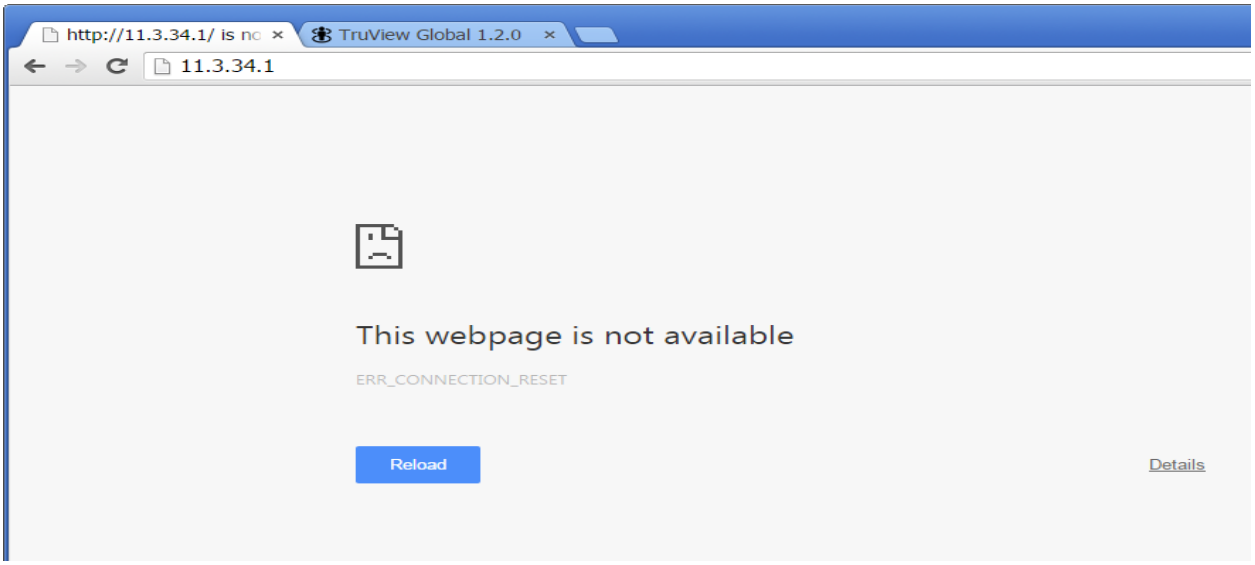


Figure 43

Symptom: an error "This webpage is not available" is shown while opening TruView Global website.



This error means the browser couldn't open TruView Global website. Try the steps below.

1. Check that you have the right hostname and/or IP address.
2. Check that you can ping the server from where you run the browser.
3. Delete your cookies
4. Try to open TruView Global site from another device. If it works on a second device, the problem is caused by some incorrect configuration.
5. Follow the instructions on this page: https://support.microsoft.com/en-us/kb/956196
6. Try to restart TruView Global application by logging in to console and execute **./restart.sh**

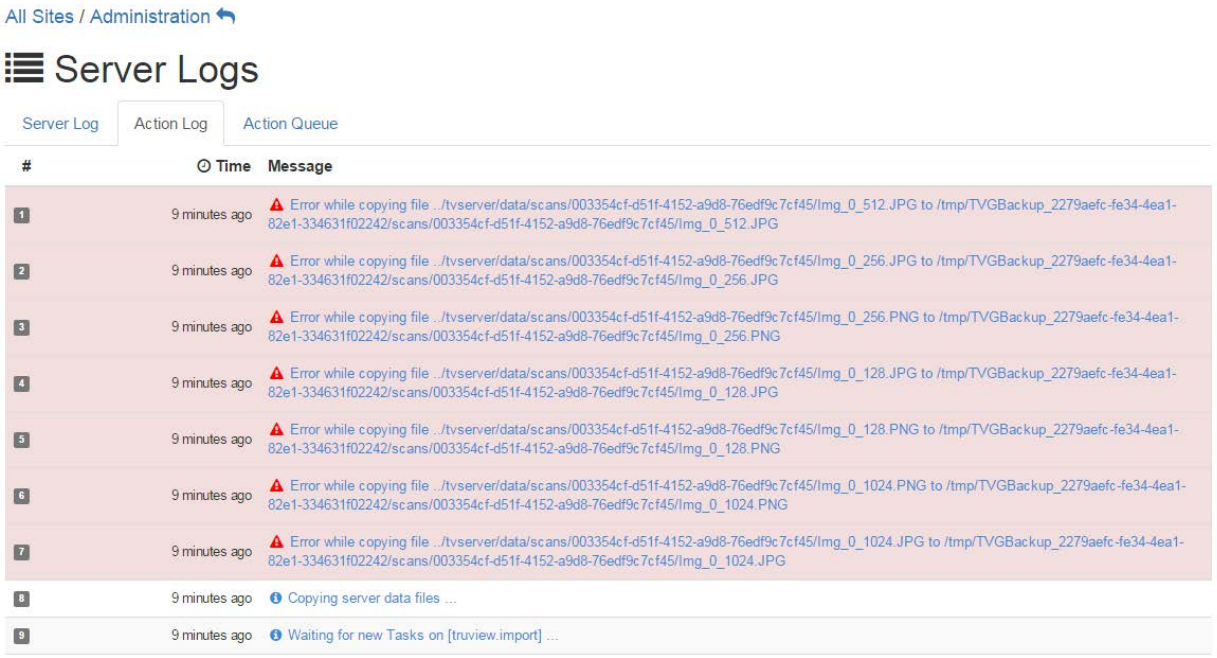
Symptom: TruView Global website is very slow

An application restart may be required in a situation where TruView Global site stops responding or there is a hanging task in the Action Queue. To restart TruView Global application:

1. Login to console
2. Execute **./restart.sh**

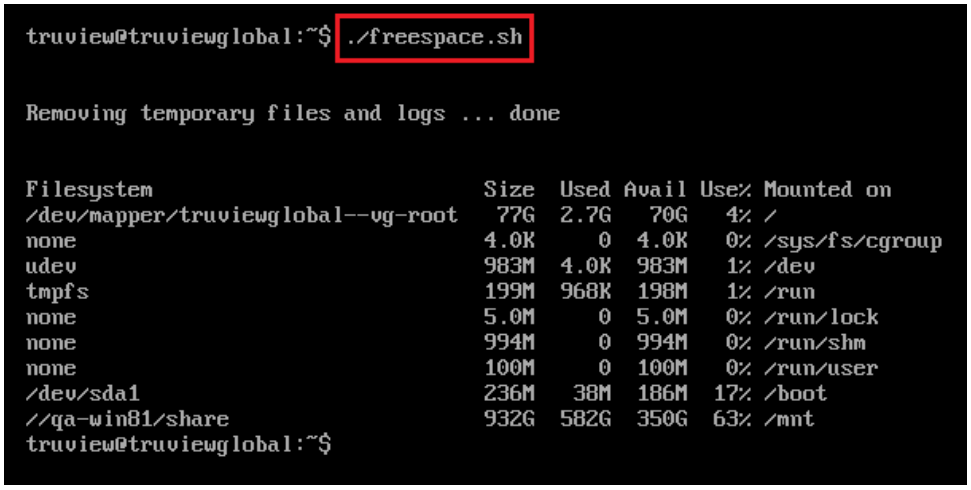
Symptom: TruView Global failed to create a backup.

Backup was not created and the Server Logs contained error messages similar to what is shown in the following screenshot.



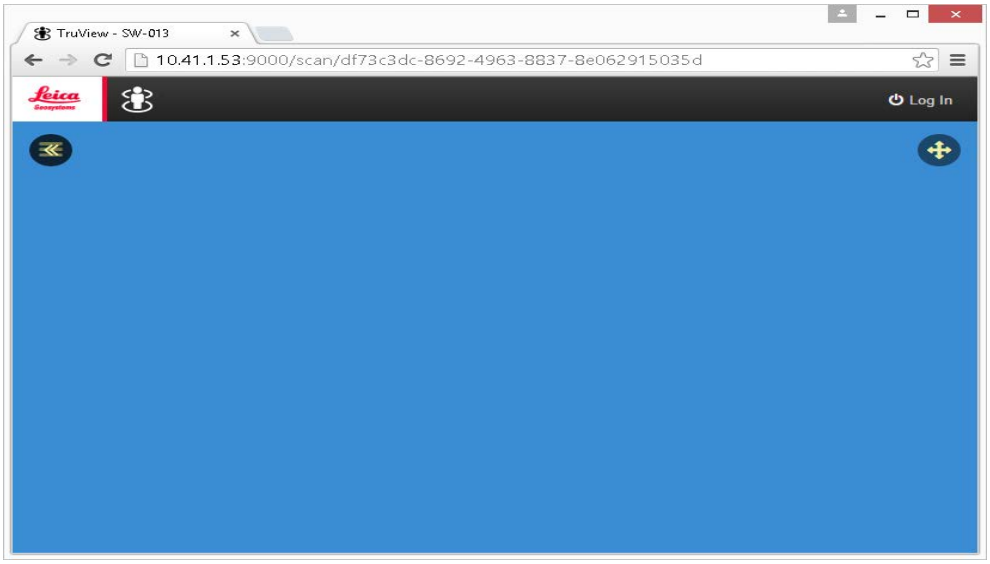
The most likely cause for this error is not enough disk space left.

To fix this problem, login to Linux console. Type **./freespace.sh** and press Enter key. The Avail column on the first row indicates free disk space.



Symptom: TruView Global displays solid blue background when trying to open a station.

TruView Global utilizes WebGL, a web technology standard for rendering 3D graphics. This issue occurs when a browser or a graphics card installed doesn't support WebGL. The screenshot below shows an example of the issue.



To test if your browser has WebGL enabled, open http://get.webgl.org. To troubleshoot WebGL-related issues, visit http://get.webgl.org/troubleshooting.