

- when it has to be **right**



Leica Geosystems

TruView Enterprise

Installation & Deployment Guide

Product Leica TruView Enterprise 2.6

Date 30 June 2017



TruView
Enterprise

Contents

1	<i>Introduction</i>	<i>4</i>
2	<i>Supported Virtualization Platforms</i>	<i>4</i>
3	<i>Licensing</i>	<i>5</i>
4	<i>Deploying TruView Enterprise VM in VMware Workstation</i>	<i>5</i>
5	<i>Deploying TruView Enterprise for Oracle VirtualBox.....</i>	<i>7</i>
6	<i>Preparing TruView Enterprise</i>	<i>13</i>
7	<i>Logging into TruView Enterprise for the First Time.....</i>	<i>14</i>
8	<i>Integrating LDAP/Active Directory with TruView Enterprise.....</i>	<i>18</i>
9	<i>Common Linux Administration Tasks</i>	<i>21</i>
9.1	IP Address of TruView Enterprise Server	21
9.2	Setup VM Network Configuration (optional).....	22
9.3	Log Out.....	23
9.4	Power Off VM.....	23
9.5	Changing the Console Password.....	23
9.6	Changing the TruView Enterprise Administrator Password.....	23
9.7	Checking Disk Space Usage.....	24
9.8	Removing Temporary Files and Logs to Free Disk Space	25
9.9	Restarting the TruView Enterprise Application	25
10	<i>Updating TruView Enterprise.....</i>	<i>26</i>
11	<i>Updating Node.js to version 4.x</i>	<i>27</i>
12	<i>Activating Remote Access for Leica Geosystems Support</i>	<i>28</i>
13	<i>Disabling Remote Access</i>	<i>29</i>

14	<i>Allow Access from the Internet (Port Forwarding)</i>	29
15	<i>Securing TruView Enterprise with Existing SSL/TLS Certificate</i>	30
16	<i>Securing TruView Enterprise with Let's Encrypt</i>	32
17	<i>Notes on Using Free Email SMTP Servers</i>	35
18	<i>Troubleshooting Common Problems</i>	36
18.1	Symptom: Cannot open TruView Enterprise site. Browser displays one of the error messages below:	36
18.2	Symptom: License Status is Invalid	37
18.3	Symptom: Error message "502 Bad Gateway" is shown when attempting to open a TruView Enterprise Site.....	40
18.4	Symptom: user cannot log in because of Access refused error.	40
18.5	Symptom: failed to import a TVG file.	41
18.6	Symptom: an error "This webpage is not available" is shown while opening the TruView Enterprise website.....	42
18.7	Symptom: TruView Enterprise website is very slow	43
18.8	Symptom: Site fails to update due to a connection error.	43
18.9	Symptom: TruView Enterprise failed to create a backup.	43
18.10	Symptom: an error message "e is null" is shown when attempting to open a TruView	45
18.11	Symptom: TruView Enterprise displays solid blue background when trying to open a station.....	45
18.12	Symptom: users cannot share a site because the share button is disabled.....	46
18.13	Symptom: user changed the admin's password but forgot the new password	46
18.14	Symptom: error configuring SMTP server	47

1 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 Enterprise is based on transforms software delivery by making it simpler and less costly to install and manage.

A TruView Enterprise 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 Enterprise server. The use of a virtual machine eliminates the need to for customers to manually install and configure the operating system and various applications.

2 SUPPORTED VIRTUALIZATION PLATFORMS

Platform	Supported Host Operating System	Download Link
Hyper-V	Windows Server 2012 Windows Server 2012 R2 Windows Server 2008 Windows 8 Windows 8.1 Windows 10 Enterprise Windows 10 Professional	https://scanswfs.leica-geosystems.com/dl/yOslmRRW48/TVG268_HyperV.zip
VMware Workstation 11 VMware Workstation 12	Windows Server 2012 Windows Server 2012 R2 Windows 7 Windows 8 Windows 8.1 Windows 10	https://scanswfs.leica-geosystems.com/dl/QFabWNuYSj/TVG268_VM11.zip
Oracle VirtualBox 5.0 OVF VM Image	Windows Server 2012 Windows Server 2012 R2 Windows 7 Windows 8 Windows 8.1	https://scanswfs.leica-geosystems.com/dl/yFfljHI5kE/TVG268_OVF.zip
VMware vSphere ESXi 5.0	N/A	https://scanswfs.leica-geosystems.com/dl/VA08L9MI7e/TVG268_OVA.zip

VMware vSphere ESXi 5.5		
VMware vSphere ESXi 6.0		
OVA VM Image		
Open Virtualization Format (OVF)	N/A	https://scanswfs.leica-geosystems.com/dl/yFfljHI5kE/TVG268_OVF.zip

3 LICENSING

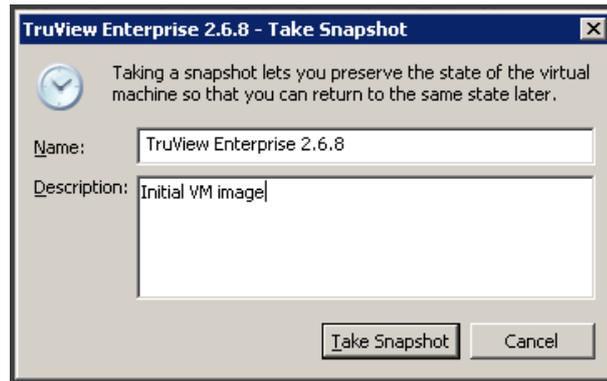
TruView Enterprise is licensed by the Leica Client License Manager (CLM). This licensing system is fully explained in the Software Licensing Introduction & Installation document which can be downloaded from [here](#).

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

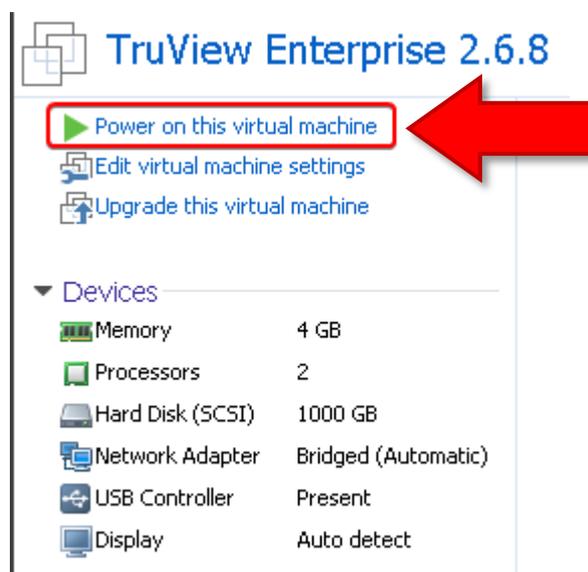
4 DEPLOYING TRUVIEW ENTERPRISE VM IN VMWARE WORKSTATION

Once you've downloaded a TruView Enterprise VM image for your virtualization platform from the [Leica TruView Enterprise product page](#), unzip it to a hard drive with minimum 300 GB free space. Initially TruView Enterprise VM uses less than 6 GB of disk space but the amount of disk usage will increase as you upload more TruView Enterprise data onto the site. The following instructions are for VMWare Workstation 10 and 11. For other platforms, 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 **truviewglobal.vmx** file and click **Open**. A new tab for TruView Enterprise 2.6 is added to VMWare Workstation's list of available VMs.
4. Create a snapshot of the VM in its initial clean state. Select the menu **VM** → **Snapshot** → **Take Snapshot**. Enter a Name and Description. Click **Take Snapshot**. This original VM image snapshot provides a quick recovery method to a working TruView Enterprise VM should your VM encounter critical errors.



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



6. The VM may take a few minutes to start. When the VM is ready, you will see a login prompt. Login using the default username **truview** and password **labolg01** (both are case-sensitive).
7. Upon logging in, the server information including its IP address. Write down the hostname and the IP address for reference. In this example, the IP address is 10.41.0.181 (yours may be different). You're now logged in to TruView Enterprise console. To log off, type **logout** and **press Enter**. The system will display a log in prompt.

```
Ubuntu 14.04.2 LTS truviewglobal tty1

truviewglobal login: truview
Password:
Last login: Wed May 11 22:01:41 PDT 2016 from aoakdskusam03.lgs-net.com on pts/0
Welcome to Ubuntu 14.04.2 LTS (GNU/Linux 3.16.0-30-generic x86_64)

* Documentation:  https://help.ubuntu.com/

System information as of Tue May 17 13:22:35 PDT 2016

System load: 0.52           Memory usage: 3%    Processes:      438
Usage of /:  0.9% of 312.61GB  Swap usage:  0%    Users logged in: 0

Graph this data and manage this system at:
https://landscape.canonical.com/

Welcome to TruView Global Server

Hostname is truviewglobal
IP address is 10.41.0.181

truview@truviewglobal:~$ _
```

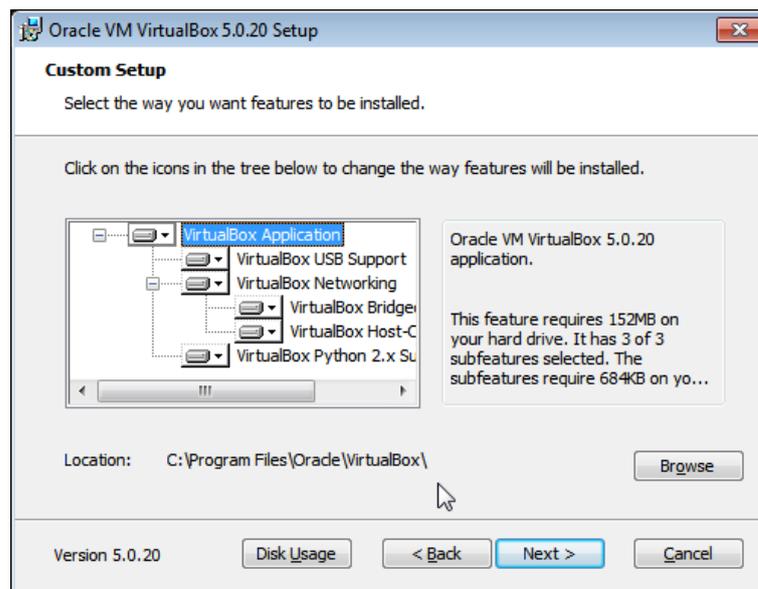
5 DEPLOYING TRUVIEW ENTERPRISE FOR ORACLE VIRTUALBOX

Another VM platform that you can use to run TruView Enterprise is Oracle VirtualBox which is freely available as Open Source software. In this section, we'll cover VirtualBox installation and deploying TruView Enterprise VM image in VirtualBox.

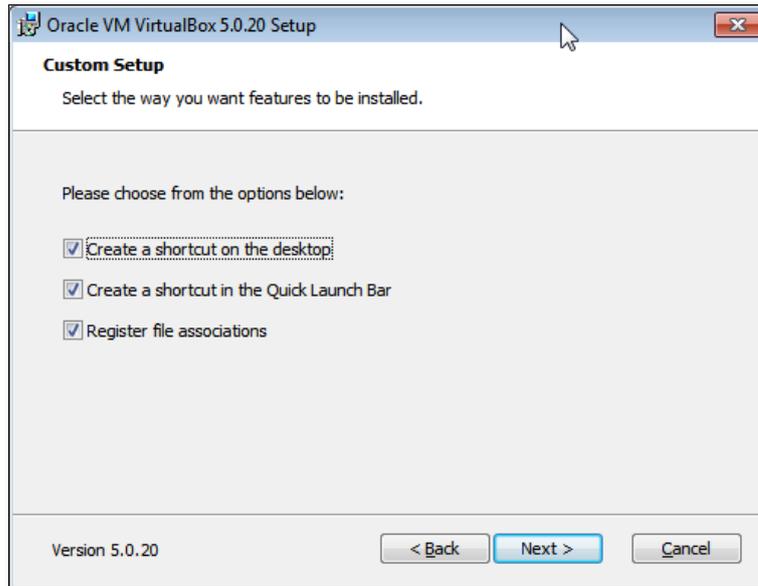
1. Download the latest version of Oracle VirtualBox Windows Installer for Windows (32-bit/64-bit) at <http://www.oracle.com/technetwork/server-storage/virtualbox/downloads/index.html>
2. Double click the setup program to start installation
3. Click **Next**



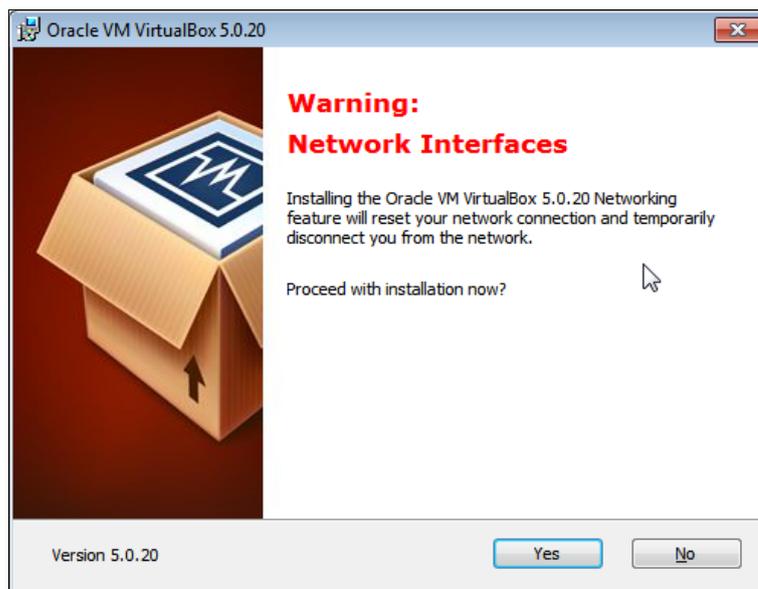
4. Accept default values and click **Next**.



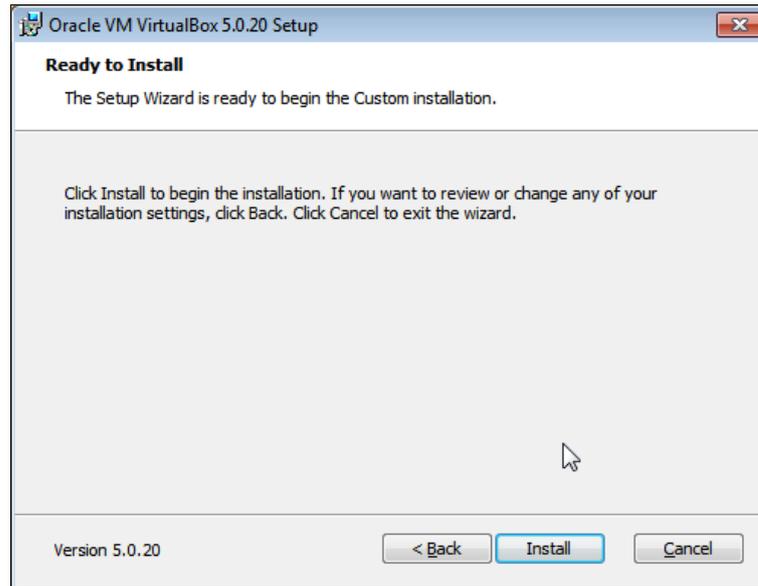
5. Accept default values and click **Next**.



6. Click **Yes**.



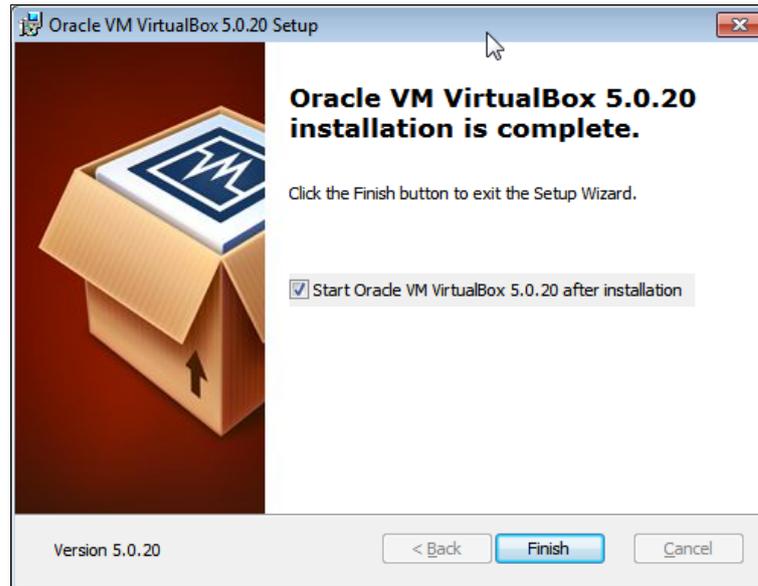
7. Click **Install**.



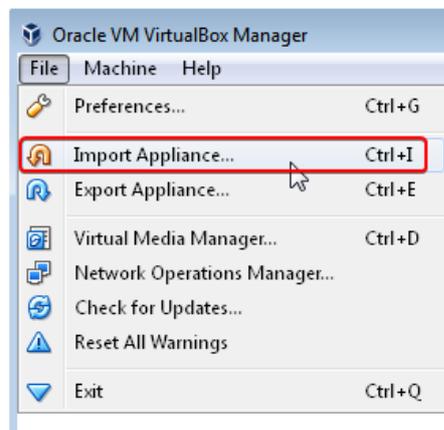
8. Check 'Always trust software from "Oracle Corporation"' box if prompted. Click **Install**.



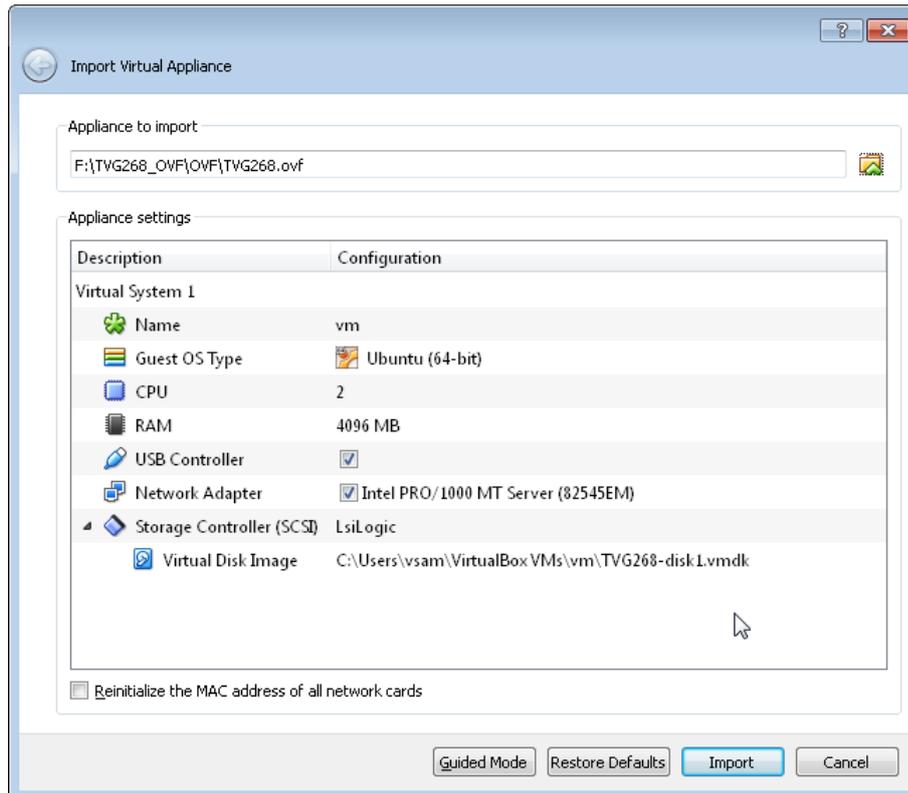
9. Check the box to "Start Oracle VM VirtualBox after installation". Click **Finish**.



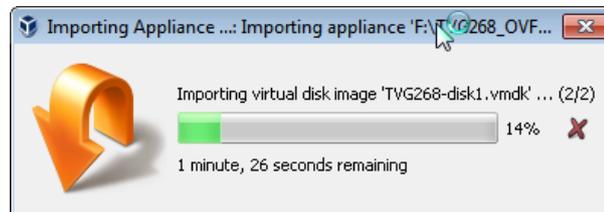
10. "Oracle VM VirtualBox Manager" window will automatically start. You can also start VirtualBox manually by clicking **Start** → **All Programs** → **Oracle VM VirtualBox**.
11. Download "TruView Enterprise for VirtualBox" VM image from the [Leica TruView Enterprise product page](#) or from the Leica Geosystems myWorld customer porta. Unzip the file to your local hard drive.
12. Select the menu **File** → **Import Appliance**.



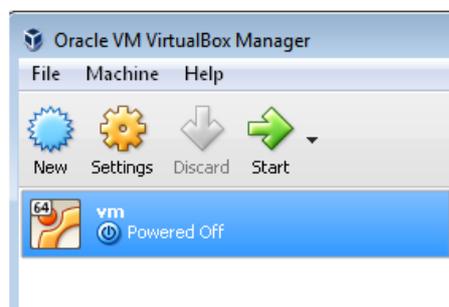
13. Select the OVF file. Verify that your settings are similar to the ones below. Click **Import**.



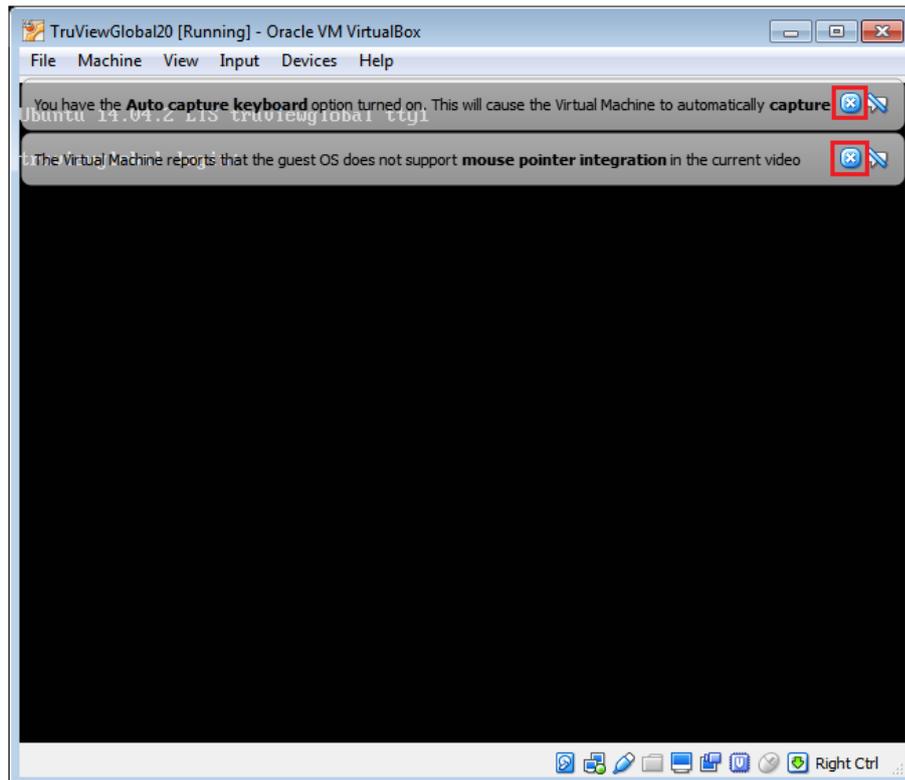
14. The import will take a moment and you will see the import progress status bar.



15. Once the import is finished, click **Start** to start the TruView VM.

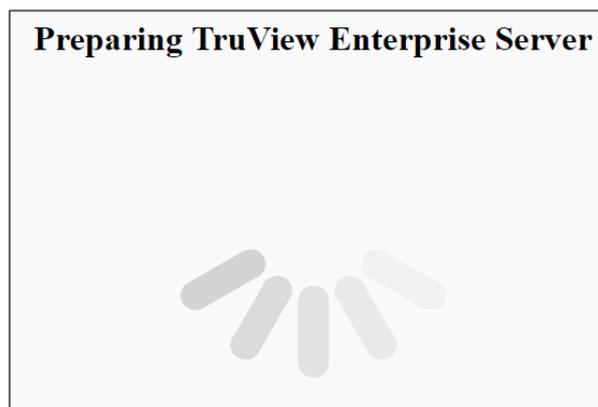


16. Hide the message boxes by clicking the X icons.



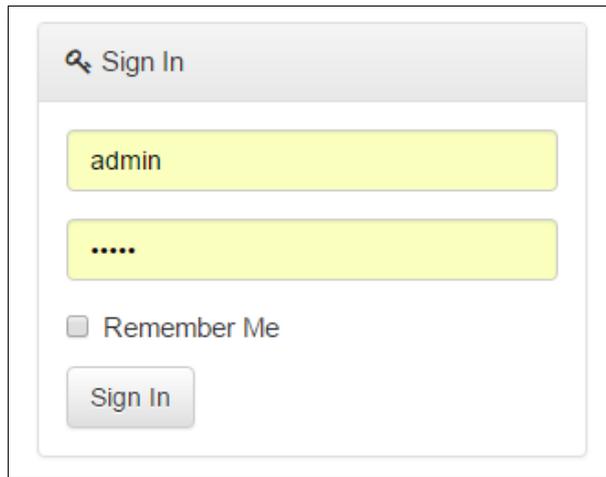
6 PREPARING TRUVIEW ENTERPRISE

You may see the loading page as shown below if you open TruView Enterprise website while it is still checking for license information. This process may last several minutes. You will be automatically redirected to the log in page once the license check is complete.



7 LOGGING INTO TRUVIEW ENTERPRISE FOR THE FIRST TIME

1. Open "http://<IP address or hostname of your server>" in your browser. If you are using TruView Global 1.x VM image, you have to specify port 9000 when accessing TruView Enterprise site (eg. http://internal.acsconsulting.com:9000).
2. Read and accept the License Agreement.
3. Log in using the default administrator username **admin** and password **admin**.



Sign In

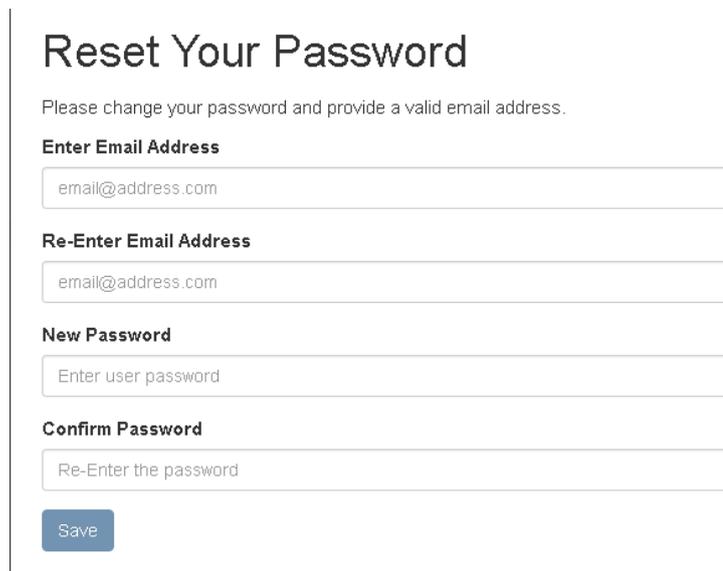
admin

.....

Remember Me

Sign In

4. TruView Enterprise 2.6 requires that you must change the administrator password the first time you log on to mitigate risks of unauthorized access using the default password. Enter valid email and password on the Reset Your Password.



Reset Your Password

Please change your password and provide a valid email address.

Enter Email Address

email@address.com

Re-Enter Email Address

email@address.com

New Password

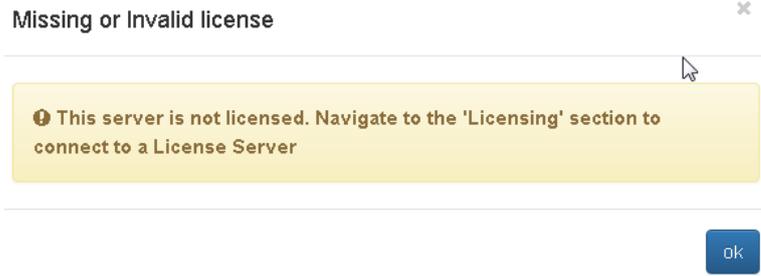
Enter user password

Confirm Password

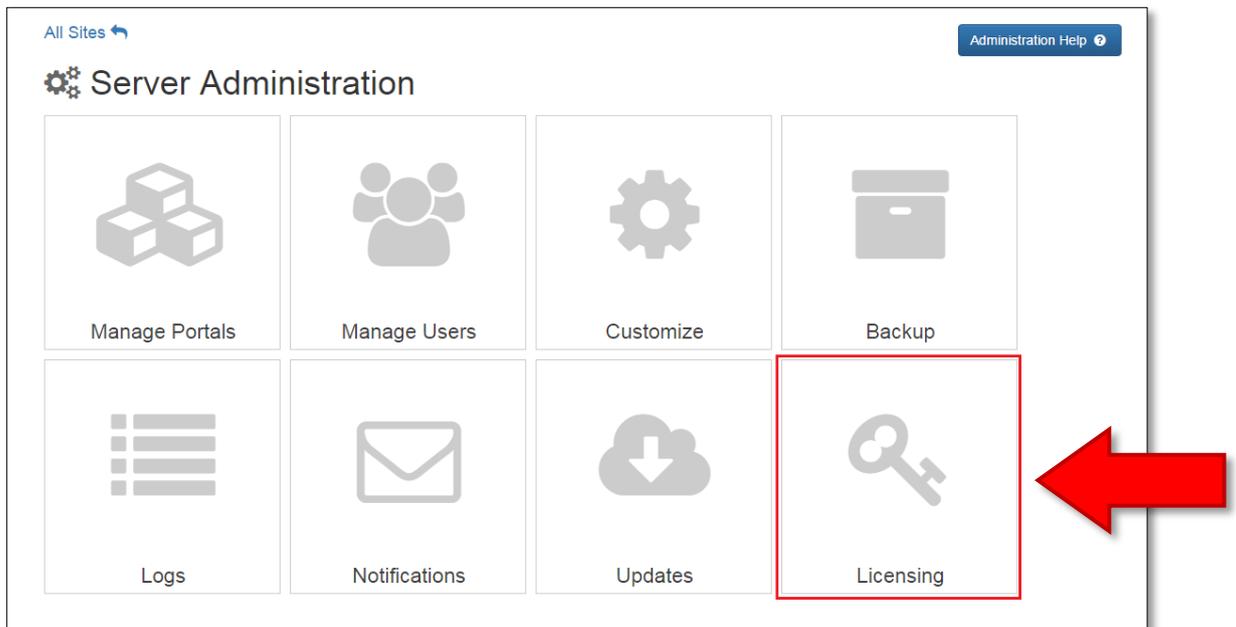
Re-Enter the password

Save

5. Next a message indicating that the server is not licensed is shown. Click **OK** to dismiss.



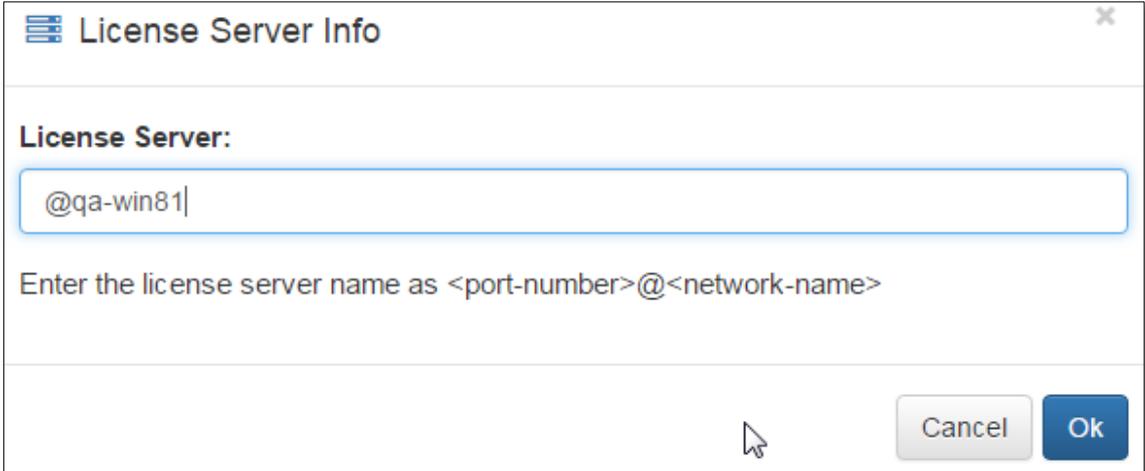
6. Click **Licensing** on the Server Administration page.



7. On the License Management page, click **License Server Info**.



8. Enter your CLM server hostname. Note that a valid CLM server must have a leading @ character (e.g., @qa-win81). Click **OK**.



The image shows a dialog box titled "License Server Info" with a close button (X) in the top right corner. Below the title, there is a section labeled "License Server:" followed by a text input field containing "@qa-win81". Below the input field, there is a hint text: "Enter the license server name as <port-number>@<network-name>". At the bottom right of the dialog, there are two buttons: "Cancel" and "Ok".

9. On License Management page, click **Acquire License**. The system will now check for a TruView Enterprise license on your license server.



The image shows the "License Management" page. On the left, there is a "License" section with a key icon. It displays the following information: License Status: Invalid, Importing: Disabled, User Accounts: No Portals, Portals: No Portals, Expiration Date: ?, and License Server: @localhost. On the right, there are two buttons: "License Server Info" and "Acquire License". A red arrow points from the "License Server Info" button to the "Acquire License" button, which is highlighted with a red border.

! It may take several minutes for TruView Enterprise to acquire a license from the license server.

If the license configuration is correct and the CLM server has a valid TruView Enterprise license, you will see a success message and information related to the license you have.

License Management

License

License Status: Valid

Importing: Enabled

User Accounts: Unlimited available per Portal

Portals: 10 available

Expiration Date: 2016.0826

License Server: @qa-win81



License Server Info



Acquire License

✓ **Success**

↻ License Acquired successfully. The new license is being applied to the server.

The license information is also shown at the footer area of the web page.

- TruView Enterprise 2.6.8 running on node v4.5.0 - © 2017 [Leica Geosystems](#) - [Terms of Use](#) - [Help](#)

✎ Importing Enabled ✓
🔗 10 Portals - 🚫 Unlimited Users ✓

In the event that TruView Enterprise fails to verify a license, an error similar to the screenshot below will be shown. Try to refresh the page by pressing the **F5** key. If the error persists, contact your local Leica Geosystems HDS support team for assistance.

License Management

License

License Status: Invalid

Importing: Disabled

User Accounts: No Users Allowed

Expiration Date: ?

License Server: @127.0.0.1



License Server Info



Acquire License

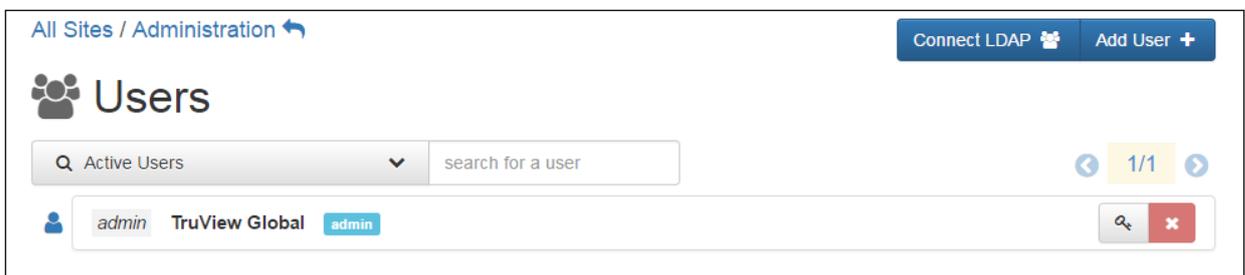
✓ **Error**

⚠ License Not Acquired or not Valid. Check the server log for more information.

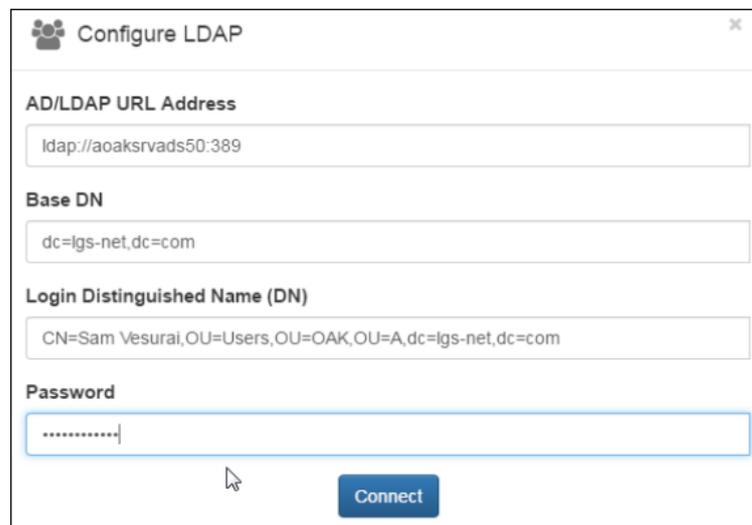
8 INTEGRATING LDAP/ACTIVE DIRECTORY WITH TRUVIEW ENTERPRISE

With TruView Enterprise 2.6, you can connect TruView Enterprise to an LDAP/Active Directory server for authentication. This feature allows centralized user management and greatly simplifies system configuration. See the Administration Help page for details.

1. Log in to TruView Enterprise website using an administrator user.
2. On the top navigation bar, select **Administration**. Then select **Manage Users** button. The Users page will be displayed as shown below.



3. Select **Connect LDAP**. The Configure LDAP dialog is shown.

The 'Configure LDAP' dialog box is shown with the following fields:

- AD/LDAP URL Address:** ldap://aoaksvads50:389
- Base DN:** dc=lgs-net,dc=com
- Login Distinguished Name (DN):** CN=Sam Vesurai,OU=Users,OU=OAK,OU=A,dc=lgs-net,dc=com
- Password:** A masked password field with a cursor.

A 'Connect' button is located at the bottom right of the dialog.

4. All fields are required. You may have to consult your IT Manager/Department to find out the settings for your LDAP/AD server. After you enter all values, click **Connect** to establish connection to your LDAP/AD server.

If the connection parameters are correct, two additional boxes will appear. These two parameters let you define LDAP/AD users that can access TruView Enterprise website.

- Specify the group parameter and search filter according to your LDAP/AD hierarchical structure. Select the **Search** icon. Here is an example output for our Active Directory server. Click **Save** to close the LDAP configuration dialog.

First Name	Last Name	User Name	Email
Eric	Richie	rier	eric.richie@leica-geosystems.com
Ken	Smith	SMKE	ken.smith@hds.leica-geosystems.com
Derik	Schroeter	sder	derik.schroeter@leicaus.com

- On the Users page, you will see a list of users that matched your search filter. Use the < and > buttons to navigate to next/previous pages. Click the + icon to add a user to TruView Enterprise website.

Avatar	Username	Full Name	Action
	wumi	Peter Wu	+
	demm	Michael Dembroge	+
	BAWS	Sandeep Baweja	+
	BKAL	Kalyani Bora	+

- The following dialog will be shown. Choose a TruView Enterprise role for this user and enable it. Click **Save Changes** to save the new user.

New User: Sam Vesurai

First Name
Sam

Last Name
Vesurai

Username
vsam

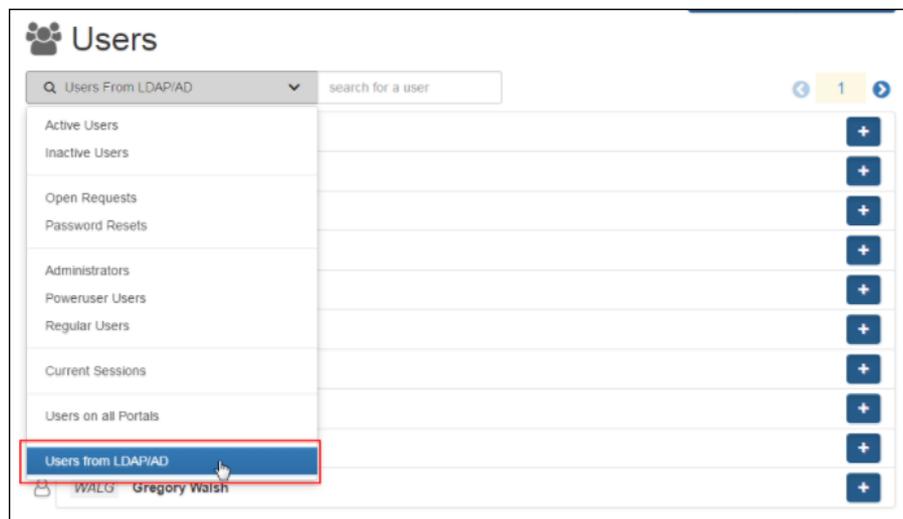
Email Address
sam.vesurai@hds.leica-geosystems.com

Role
 User
 Power User
 Administrator

New User: Sam Vesurai
Enabled

Close Save Changes

8. Log out and try to log in using your LDAP/AD user and password.
9. To add additional LDAP/AD users, open the Users page and select Users from LDAP/AD from the drop-down box.



10. Enter the password when prompted. This is the password of the LDAP/AD user you used when you configured LDAP/AD. Then select **Connect**.

Configure LDAP

LDAP admin user

CN=Sam Vesurai,OU=Users,OU=OAK,OU=A,dc=lgs-net,dc=com

Password

.....| I

Cancel Connect

11. The user list will be displayed. Select additional users to add to TruView Enterprise as described earlier.

9 COMMON LINUX ADMINISTRATION TASKS

9.1 IP ADDRESS OF TRUVIEW ENTERPRISE SERVER

After you successfully log in to TruView Enterprise console, the system displays its current IP address. Depending on network configuration, your TruView Server may get a different IP address when it restarts. Consult your local IT if you prefer a static IP address.

```
Ubuntu 14.04.5 LTS truviewglobal tty1
truviewglobal login: truview
Password:
Last login: Tue Dec 6 11:36:13 PST 2016 on tty1
Welcome to Ubuntu 14.04.5 LTS (GNU/Linux 4.4.0-31-generic x86_64)

* Documentation:  https://help.ubuntu.com/

System information as of Tue Dec 6 11:36:13 PST 2016

System load:  0.18           Processes:            126
Usage of /:   1.0% of 290.99GB Users logged in:     0
Memory usage: 9%           IP address for eth0: 10.41.0.194
Swap usage:   0%

Graph this data and manage this system at:
  https://landscape.canonical.com/

17 packages can be updated.
16 updates are security updates.

New release '16.04.1 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Welcome to TruView Global Server

Hostname is truviewglobal
IP address is 10.41.0.194

truview@truviewglobal:~$ _
```

Alternatively, you can use the command "ifconfig eth0" to find out the current IP address. The IP address will be shown next to "inet addr" field.

```
truview@truviewglobal:~$ ifconfig eth0
eth0      Link encap:Ethernet  HWaddr 00:0c:29:dc:fc:4d
          inet addr:10.41.0.184  Bcast:10.41.1.255  Mask:255.255.254.0
          inet6 addr: fe80::20c:29ff:fedc:fc4d/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:33646 errors:0 dropped:1 overruns:0 frame:0
          TX packets:519 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:4325282 (4.3 MB) TX bytes:48535 (48.5 KB)
```

9.2 SETUP VM NETWORK CONFIGURATION (OPTIONAL)

TruView Enterprise 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 Enterprise VM network setup:

- [VMware Workstation Configuring Network Connections](#)
- [Configuring Virtual Networking for Microsoft Hyper-V](#)
- [VirtualBox Virtual Networking](#)

9.3 LOG OUT

To log off the console, type **logout** and press **Enter**. The log in prompt will be displayed.

9.4 POWER OFF VM

! Ensure 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 Enterprise VM for maintenance, you must first shut down TruView Enterprise VM.

1. Log in to Linux console.
2. Type the command **sudo shutdown -P now**
3. The system will ask for your password, type your password and press **Enter**.
4. Once the VM is powered off, you can then safely shut down the host computer.

9.5 CHANGING THE CONSOLE PASSWORD

After you log in as **truview** with the default password **labolg01**, issue the command **passwd**.

You will be prompted to enter the current password and the new password as shown below.

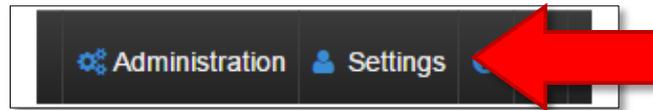
Keep the new password in secure location. If you lost the new password, it is not possible to recover a lost/missing password and you will no longer be able to log into TruView Enterprise console.

```
truview@truviewglobal:~$ passwd
Changing password for truview.
(current) UNIX password:
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
truview@truviewglobal:~$
```

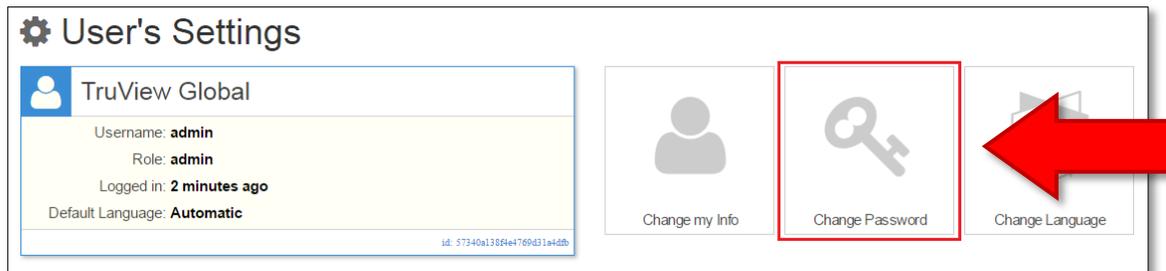
9.6 CHANGING THE TRUVIEW ENTERPRISE ADMINISTRATOR PASSWORD

1. Open “<http://<IP address or hostname of your server>>” in your browser. If you are using a TruView Global 1.x VM image, you have to specify port 9000 when accessing the TruView Enterprise site (e.g., <http://truviewenterprise:9000>).

2. Log in using the administrator username and password.
3. Click **Settings** on the top navigation bar



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



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

🔑
Set new password for TruView Global
✕

Current Password

New Password

Confirm Password

Close
Change Password

9.7 CHECKING DISK SPACE USAGE

1. Log in to the Linux console.
2. Type **df -h** and press **Enter**.
3. 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 918 Gigabytes of disk space available.

```

truview@truviewglobal:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            2.0G  4.0K  2.0G   1% /dev
tmpfs           394M  3.0M  391M   1% /run
/dev/dm-0       981G  20G  918G   3% /
none            4.0K   0  4.0K   0% /sys/fs/cgroup
none            5.0M   0  5.0M   0% /run/lock
none            2.0G   0  2.0G   0% /run/shm
none            100M   0  100M   0% /run/user
/dev/sda1       236M  40M  184M  18% /boot
truview@truviewglobal:~$

```

9.8 REMOVING TEMPORARY FILES AND LOGS TO FREE DISK SPACE

1. Log in to the Linux console.
2. Type **./freespace.sh** and press **Enter** key.
 - a. The system may ask you to enter your password.
3. The system will display the new Available Disk Space.

```

truview@truviewglobal:~$ ./freespace.sh
Removing temporary files and logs ... done

[sudo] password for truview:
Filesystem      Size  Used Avail Use% Mounted on
udev            2.0G  4.0K  2.0G   1% /dev
tmpfs           395M  416K  394M   1% /run
/dev/dm-0       291G  2.9G  274G   2% /
none            4.0K   0  4.0K   0% /sys/fs/cgroup
none            5.0M   0  5.0M   0% /run/lock
none            2.0G   0  2.0G   0% /run/shm
none            100M   0  100M   0% /run/user
/dev/sda1       236M  40M  184M  18% /boot
truview@truviewglobal:~$

```

9.9 RESTARTING THE TRUVIEW ENTERPRISE APPLICATION

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

1. Log in to the Linux 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.

```

truview@truviewglobal:~$ ./restart.sh
[PM2] restartProcessId process id 0
[PM2] restartProcessId process id 1

```

App name	id	mode	pid	status	restart	uptime	memory	watching
tvimport	0	fork	39812	online	4	0s	23.262 MB	disabled
tvserver	1	fork	39821	online	4	0s	15.961 MB	disabled

Module activated

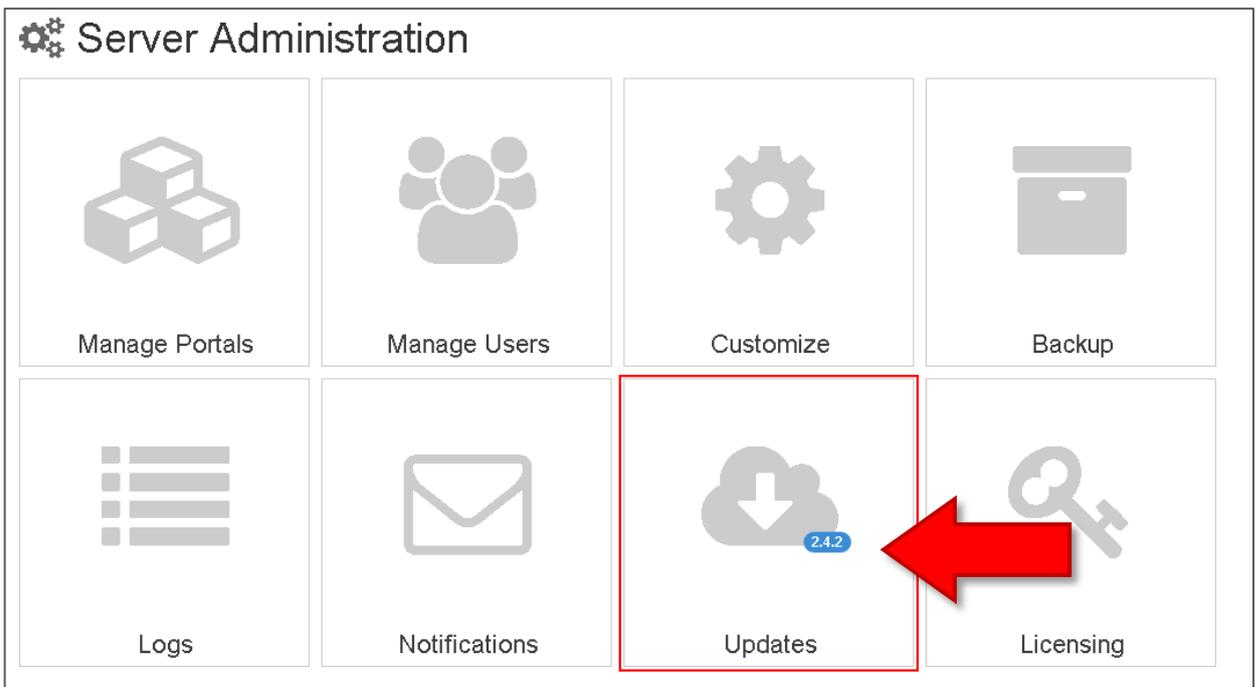
Module	version	target PID	status	restart	cpu	memory
pm2-logrotate	1.3.1	4078	online	4	0%	80.027 MB

Use `pm2 show <idname>` to get more details about an app
truview@truviewglobal:~\$

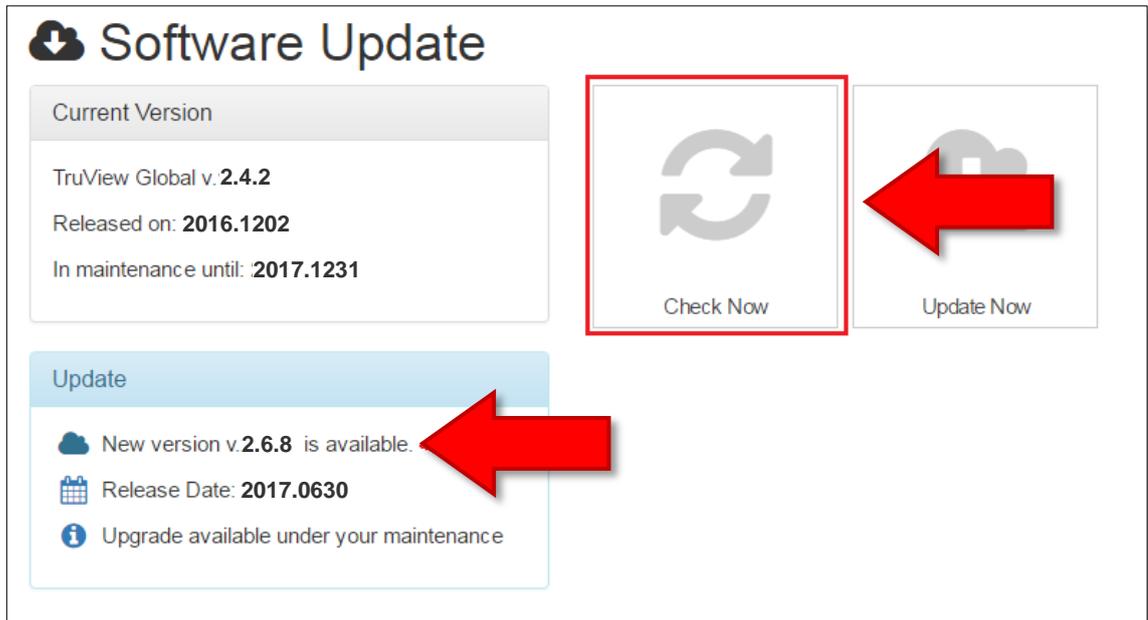
10 UPDATING TRUVIEW ENTERPRISE

Customers with valid CCP are eligible to receive free TruView Enterprise updates. Follow these instructions to update your TruView Enterprise server to the latest version available under your support contract (CCP).

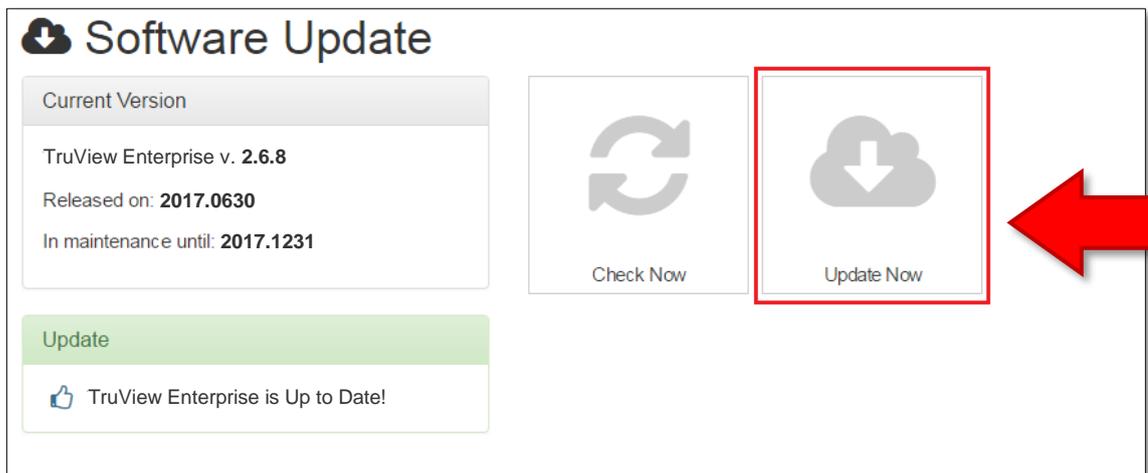
1. Log in to TruView Enterprise using an administrator user account.
2. Open the Server Administration page.
3. Click the **Updates** icon.



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



5. Click **Update Now** to download and install the new update. Note that Updates are only available to customers with valid CCP.



11 UPDATING NODE.JS TO VERSION 4.X

If you are upgrading from TruView Enterprise 2.0.2 or lower, your Virtual Machine appliance is running an older version of Node.js (0.12.x). Follow these steps to update your Node.js to version 4.4.x or higher.

1. Log in to the Linux console.
2. Change the current directory to the utilities directory.

```
cd ~/truview/utilities/
```

3. Set the Node.js update script to be executable.

```
chmod +x stackupdate.sh
```

4. Run the Node.js update script.

```
./stackupdate.sh
```

5. The Node.js update script takes a few minutes to complete. When the update is complete, you can verify the new version by running the following command. The new version is 4.4.5 or higher.

```
node --version
```

12 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 Geosystems support personnel:

1. Log in to the Linux console
2. Execute **./enable_remote_access.sh** and type **Yes** when prompted.

Provide your server public IP address to Leica support team and verify that port 22 at your firewall/router is open for inbound traffic.

```
truview@truviewglobal:~$ ./enable_remote_access.sh
This operation will enable Leica Support to access this system. You can always disable it later.
Do you want to proceed? Type Yes to enable access: Yes
Remote access enabled.
truview@truviewglobal:~$
```

13 DISABLING REMOTE ACCESS

To disable remote access:

1. Log in to the Linux console
2. Execute `./disable_remote_access.sh`

```
truview@truviewglobal:~$ ./disable_remote_access.sh
Remote access disabled.
truview@truviewglobal:~$ _
```

14 ALLOW ACCESS FROM THE INTERNET (PORT FORWARDING)

! For advanced users.

Port Forwarding should be used with caution because it may allow others on the open internet to access devices on your internal network without your knowledge.

Port Forwarding is used to allow incoming data from the Internet onto your intranet. When you set up port forwarding, you set up rules to tell the router to route data sent or received on a port to a specific IP address on your network. You need to use port forwarding if you intend to access your TruView Enterprise server from outside your network.

Specific instructions will vary by router make and model, but the following steps provide a general guide:

1. Verify that TruView Enterprise is functioning properly within the local network.
2. Find the IP address of your TruView Enterprise system using `ifconfig` command as described earlier.
3. Configure your router and/or your firewall to forward TCP port 80 to the VM's IP address. Consult your router's documentation on specific instructions.
4. To access TruView Enterprise from the internet, open `http://< public IP>` in your browser.

15 SECURING TRUVIEW ENTERPRISE WITH EXISTING SSL/TLS CERTIFICATE

TruView Enterprise 2.2 VM image is shipped with NGINX configured as a front-end proxy. NGINX routes incoming traffic from port 80 to port 9000 by default. The default proxy configuration allows users to access TruView Enterprise without specifying port 9000. In addition, TruView Enterprise also utilizes NGINX as its TLS/SSL endpoint for HTTPS connections.

Prerequisites: In order to configure HTTPS support on the TruView Enterprise server, you must already have a registered domain name, a private key, and its corresponding certificate that you've received from a Certificate Authority (CA).

6. Log in to Linux console.
7. Make a backup of the existing *config* file.

```
sudo cp /etc/nginx/sites-available/default /etc/nginx/sites-  
available/default.bak
```

8. Open the *config* file in a text editor. This example uses vim.

```
sudo vim /etc/nginx/sites-available/default
```

9. Replace the existing configuration with the following:

```

client_max_body_size 0;
server {
    listen 443 ssl;

    server_name company.com truview.company.com;
    ssl_certificate /home/truview/public.crt;
    ssl_certificate_key /home/truview/private.rsa;
    ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
    ssl_prefer_server_ciphers on;
    ssl_ciphers 'EECDH+AESGCM:EDH+AESGCM:AES256+EECDH:AES256+EDH';
    server_name localhost;
    location / {
        proxy_set_header    X-Real-IP $remote_addr;
        proxy_set_header    Host      $http_host;
        proxy_pass            http://127.0.0.1:9000;
    }
}

server {
    listen 80;
    server_name company.com truview.company.com;
    return 301 https://$host$request_uri;
}

```

10. Change the value of *server_name* to your registered domain name. Note that there are two locations that you need to modify.
11. Change the values of *ssl_certificate* and *ssl_certificate_key* to point to your certificate and private key respectively.
12. Restart NGINX.

```
sudo service nginx restart
```

16 SECURING TRUVIEW ENTERPRISE WITH LET'S ENCRYPT

Let's Encrypt is a new Certificate Authority (CA) that provides a fast, efficient way to obtain and install TLS/SSL certificates. Best of all, the certificates are provided at no cost. To learn more about Let's Encrypt, visit the Let's Encrypt [website](#). Since TruView Enterprise 2.6 VM image is shipped with the Let's Encrypt client software needed to request a certificate, you can begin the process without having to install any additional software.

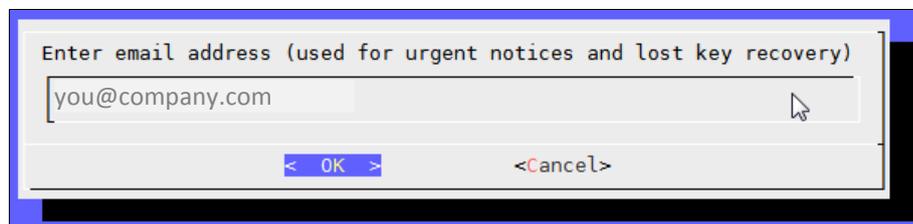
1. Log in to Linux console
2. Stop NGINX

```
sudo service nginx stop
```

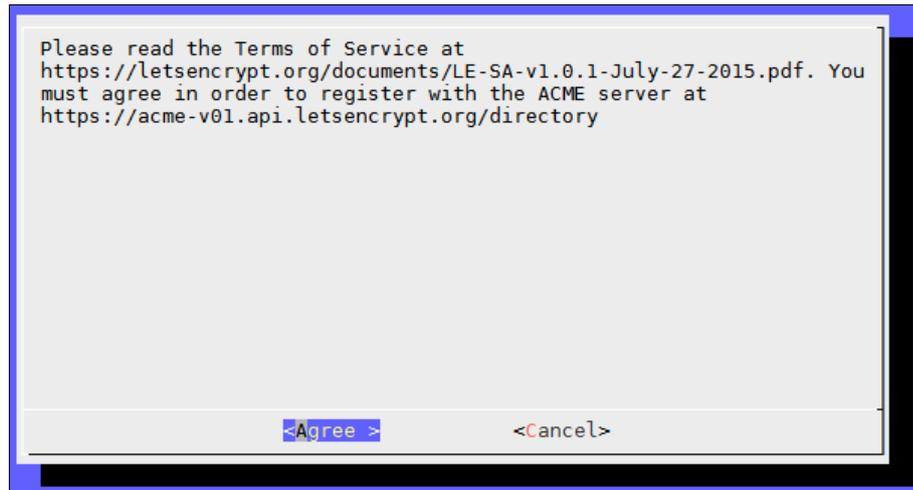
3. Request a new certificate from Let's Encrypt. We'll use a domain name **truview.company.com** in this example.

```
cd /opt/letsencrypt  
sudo ./letsencrypt-auto certonly --standalone -d truview.company.com
```

4. Enter your email address when prompted.



5. Click **Agree** on the next dialog.



6. If everything was successful, you should see an output message that looks something like this:

IMPORTANT NOTES:

- Congratulations! Your certificate and chain have been saved at /etc/letsencrypt/live/truview.company.com/fullchain.pem. Your cert will expire on 2016-08-17. To obtain a new version of the certificate in the future, simply run Certbot again.
- If you lose your account credentials, you can recover through e-mails sent to sam.vesurai@leicaus.com.
- Your account credentials have been saved in your Certbot configuration directory at /etc/letsencrypt. You should make a secure backup of this folder now. This configuration directory will also contain certificates and private keys obtained by Certbot so making regular backups of this folder is ideal.
- If you like Certbot, please consider supporting our work by:
Donating to ISRG / Let's Encrypt: <https://letsencrypt.org/donate>
Donating to EFF: <https://eff.org/donate-le>

! Notes

If you receive an error like **Failed to connect to host for DVSNI challenge**, your server's firewall may need to be configured to allow TCP traffic on port 80 and 443.

If your domain is routing through a DNS service like CloudFlare, you will need to temporarily disable it until you have obtained the certificate.

At this point, you will have the certificate (fullchain.pem) and private key (privkey.pem) files in /etc/letsencrypt/live/truview.company.com directory. Note the path and expiration date of your certificate.

7. Make a backup of your existing NGINX configuration file. Then open NGINX configuration in a text editor. This example will use vim.

```
sudo cp /etc/nginx/sites-available/default /etc/nginx/sites-  
available/default.bak  
  
sudo vim /etc/nginx/sites-available/default
```

8. Replace the existing configuration with the following:

```
client_max_body_size 0;  
server {  
    listen 443 ssl;  
    server_name company.com truview.company.com;  
    ssl_certificate  
/etc/letsencrypt/live/truview.company.com/fullchain.pem;  
    ssl_certificate_key  
/etc/letsencrypt/live/truview.company.com/privkey.pem;  
    ssl_protocols TLSv1 TLSv1.1 TLSv1.2;  
    ssl_prefer_server_ciphers on;  
    ssl_ciphers 'EECDH+AESGCM:EDH+AESGCM:AES256+EECDH:AES256+EDH';  
    server_name localhost;  
    location / {  
        proxy_set_header    X-Real-IP $remote_addr;  
        proxy_set_header    Host      $http_host;  
        proxy_pass            http://127.0.0.1:9000;  
    }  
}  
  
server {  
    listen 80;  
    server_name company.com truview.company.com;  
    return 301 https://$host$request_uri;  
}
```

! There are four lines where the example domain name `truview.company.com` needs to be replaced with your company's valid domain name.

9. Restart NGINX.

```
sudo service nginx restart
```

The Let's Encrypt TLS/SSL certificate is now in place. At this point, you should test that the TLS/SSL certificate works by visiting your domain via HTTPS in a web browser.

10. If everything is working correctly, setup a cron job that will automatically renew a certificate every month.

11. Copy and paste these three lines and save it.

17 NOTES ON USING FREE EMAIL SMTP SERVERS

A number of free email services such as Gmail offer users the ability to send email through their SMTP servers, which implement additional layers of security measures to safeguard user accounts and to prevent spamming. While TruView Enterprise can successfully connect to most free SMTP servers, the email software library¹ we use is not fully compatible with Gmail security protocol. Attempting to configure Gmail SMTP server in TruView Enterprise Notification Email may result in an error.

We recommend that you use a dedicated transactional email service for sending out TruView Enterprise notification emails. Several of them offer free tiers which allow up to 60,000 emails per month. Here are some transactional email providers that offer free tier service:

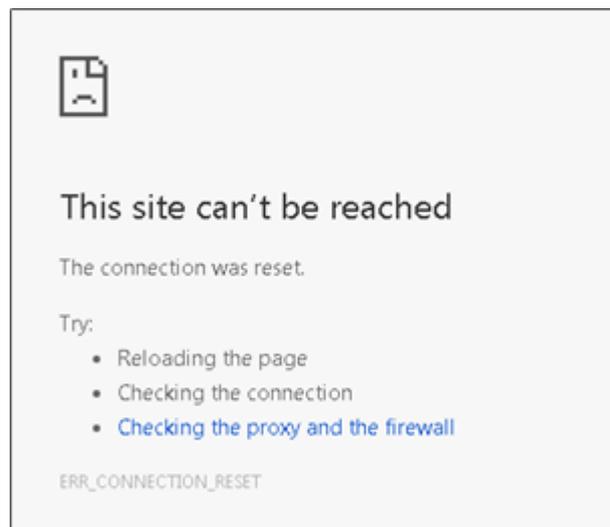
- Mailgun (<http://www.mailgun.com>)
- MailChimp (<https://mailchimp.com>)
- Amazon Simple Email Service (<http://aws.amazon.com/ses>)

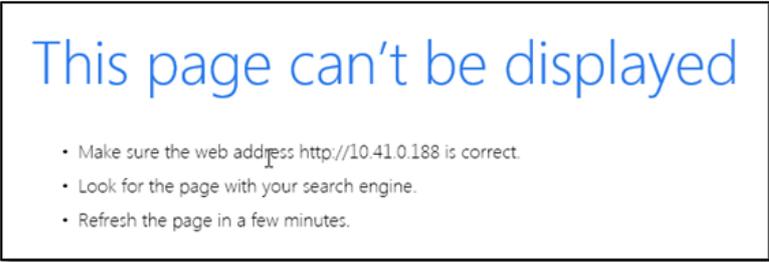
- Sendgrid (<https://sendgrid.com>)

¹ <https://nodemailer.com/using-gmail/>

18 TROUBLESHOOTING COMMON PROBLEMS

18.1 SYMPTOM: CANNOT OPEN TRUVIEW ENTERPRISE SITE. BROWSER DISPLAYS ONE OF THE ERROR MESSAGES BELOW:





All three errors are caused by network connectivity issues. Try these steps:

1. Verify that your TruView Enterprise server is reachable from your computer using ping command (eg. ping 10.0.1.53).
2. Verify that the server's Firewall rules allow inbound traffic on ports 80, 443, or 9000.
3. Verify that NGINX web server is running:
 - i. Login to console
 - ii. Restart NGINX

```
sudo service nginx restart
```

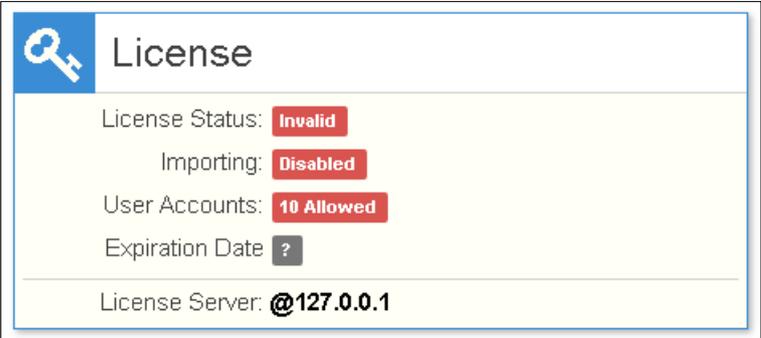
- iii. Wait a few seconds
- iv. Check NGINX status

```
sudo service nginx status
```

You should see:

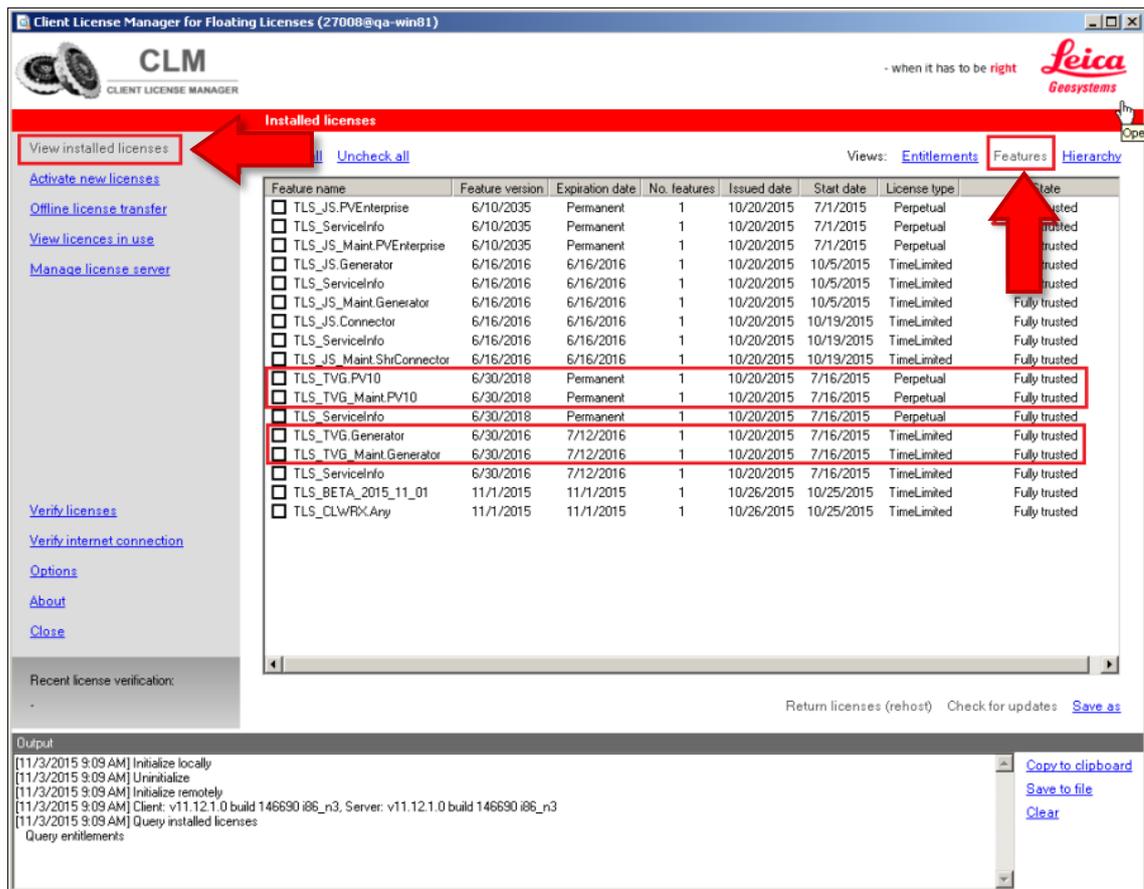
```
truview@truviewglobal:~$ sudo service nginx status
* nginx is running
```

18.2 SYMPTOM: LICENSE STATUS IS INVALID



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 the **CLM for Floating Licenses** tool, click **View Installed Licenses** then **Features**.



Verify that there is at least one pair of TruView Enterprise licenses (TLS_TV.G.PVUnlimited and TLS_TV.G.Maint.PVUnlimited) that are valid and not expired.

3. Click **Manage license server**. Restart the license server by clicking **Stop** and **Start**.
4. Check the network connection between TruView Enterprise and the CLM server.
 - a. Log in to Linux console.
 - b. type **ping <CLM server hostname>** or **ping <CLM server IP address>**.
 - c. 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

```

If ping returns an error, 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 the TruView Enterprise 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 in order to do further troubleshooting of your VM.

```

truview@truviewglobal:~$ pm2 restart all
[PM2] restartProcessId process id 0
[PM2] restartProcessId process id 1

```

App name	id	mode	pid	status	restart	uptime	memory	watching
tvimport	0	Fork	30138	online	2	0s	29.754 MB	disabled
tvserver	1	fork	30147	online	2	0s	12.656 MB	disabled

Module activated

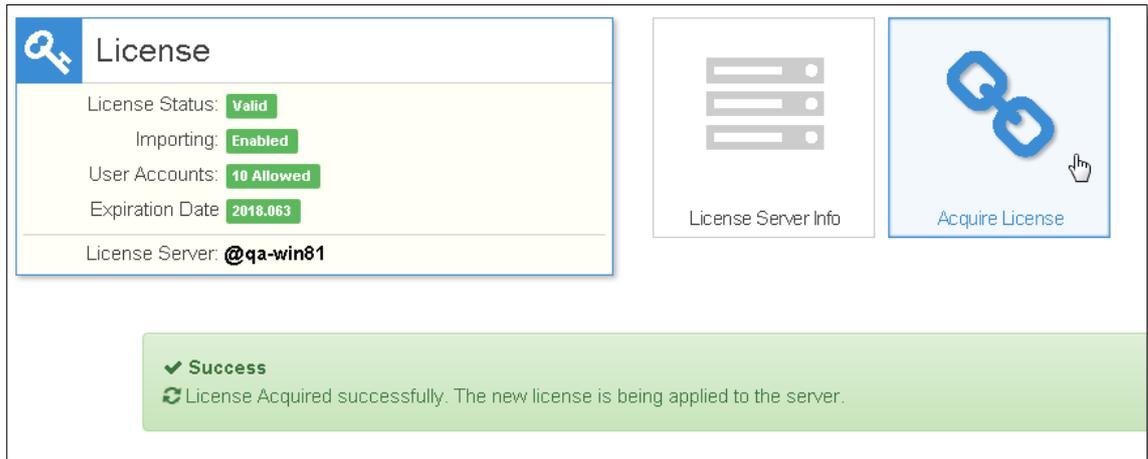
Module	version	target PID	status	restart	cpu	memory
pm2-logrotate	1.3.1	4078	online	4	0%	77.480 MB

```

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

```

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 the TruView Enterprise server and the CLM server.
7. Check licensing.
 - a. Open the TruView Enterprise server in a browser.
 - b. Log in using an administrator user account and open **Licensing** page.
 - c. Click **License Server Info** and verify that the license server hostname is still valid.
 - d. Click **Acquire License**. The following screenshot shows that TruView Enterprise has successfully acquired a license from CLM server. If the problem persists, please contact Leica HDS support.



18.3 SYMPTOM: ERROR MESSAGE “502 BAD GATEWAY” IS SHOWN WHEN ATTEMPTING TO OPEN A TRUVIEW ENTERPRISE SITE.



This error indicates that your TruView Enterprise server has full network connectivity but the TruView Enterprise software is not running. You need to restart the TruView Enterprise software. To restart the TruView Enterprise application:

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

18.4 SYMPTOM: USER CANNOT LOG IN BECAUSE OF ACCESS REFUSED ERROR.

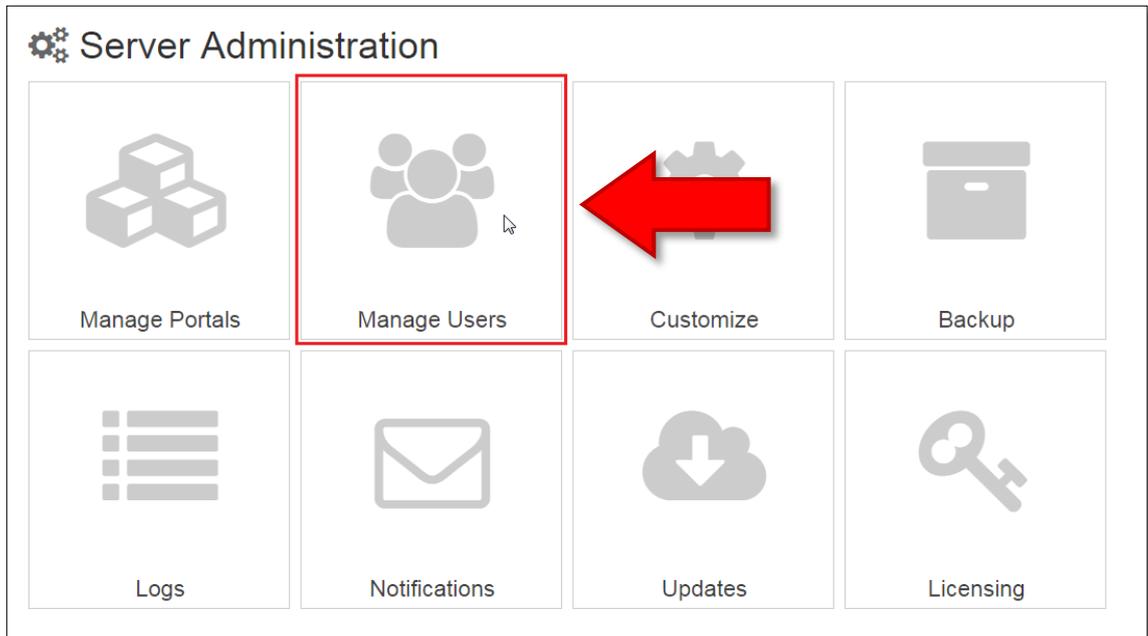


Customers with TruView Enterprise 10-user license may experience this error when the number of concurrent user sessions exceeds the maximum number of users as specified in the license. Due to the nature of web applications, TruView Enterprise keeps a user's session for 30 minutes if the user didn't log off from TruView Enterprise (i.e., the User closes the browser while logged in to TruView Enterprise). After 30 minutes, the session will expire and a license is returned to the CLM

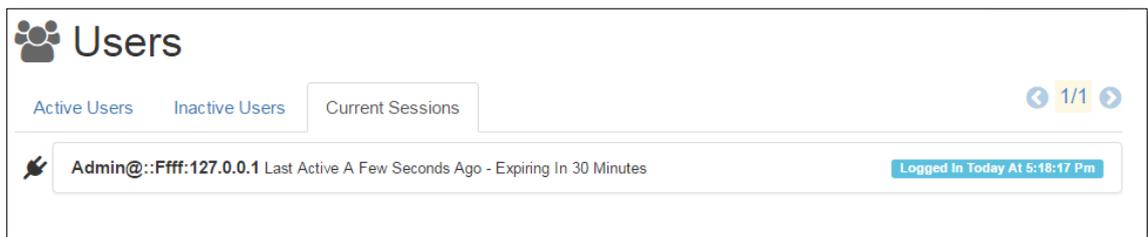
server.

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**



2. Click **Current Sessions** tab. If there are 11 current sessions listed, that means all licenses have been exhausted.



18.5 SYMPTOM: FAILED TO IMPORT A TVG FILE.

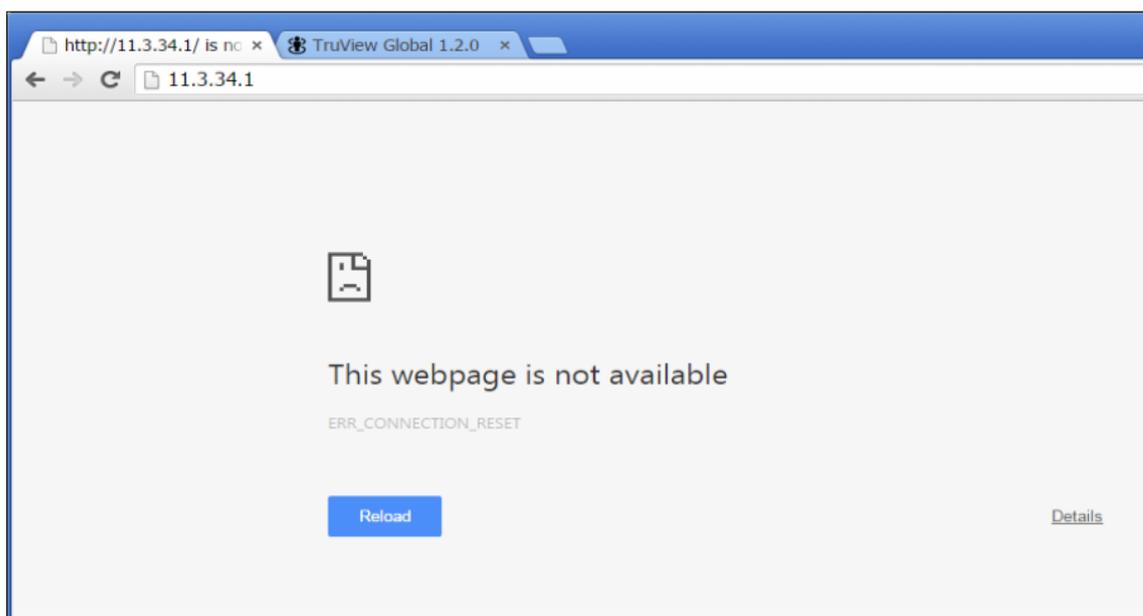
Currently, TruView Enterprise is not able to import a TVG file that uses "Degrees Minutes Seconds" angular unit. Attempting to import such data will result in a failed import. Several error messages will be shown in the Action Log. The error messages for this failure will contain this line:

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

See the example action log below. A workaround is to change the Angular Unit in Cyclone to Degrees and re-publish the data.

#	Time	Message
1	a few seconds ago	Waiting for new Tasks on [truview.import] ...
2	a few seconds ago	END Task: ERROR - Failed importing [undefined] - ERROR while importing ./zips/admin/443b1a83-0c2b-477f830b-9d5bd4242854 as Location/Site: Invalid attribute nameLine: 2Column: 171Char.
3	a few seconds ago	ERROR - Import Failed: ERROR while importing ./zips/admin/443b1a83-0c2b-477f830b-9d5bd4242854 as Location/Site: Invalid attribute nameLine: 2Column: 171Char.
4	a few seconds ago	ERROR - Failed importing [undefined] - ERROR while importing ./zips/admin/443b1a83-0c2b-477f830b-9d5bd4242854 as Location/Site: Invalid attribute nameLine: 2Column: 171Char.
5	a few seconds ago	Error while parsing XML: Error: Invalid attribute nameLine: 2Column: 171Char.
6	a few seconds ago	ERROR while importing ./zips/admin/443b1a83-0c2b-477f830b-9d5bd4242854 as Location/Site: Invalid attribute nameLine: 2Column: 171Char.
7	a few seconds ago	WARNING: Could not read SceneGeoTags.xml - ENOENT, no such file or directory ./zips/admin/443b1a83-0c2b-477f830b-9d5bd4242854/SceneGeoTags.xml
8	a few seconds ago	IMPORT START [443b1a83-0c2b-477f830b-9d5bd4242854] - ./zips/admin/443b1a83-0c2b-477f830b-9d5bd4242854
9	a few seconds ago	The archive is directly a site or a scan (no sub-dir). Importing it as P40 Crescent Hotel ...
10	a few seconds ago	Extracted 930 files from P40 Crescent Hotel.tvg

18.6 SYMPTOM: AN ERROR "THIS WEBPAGE IS NOT AVAILABLE" IS SHOWN WHILE OPENING THE TRUVIEW ENTERPRISE WEBSITE.



This error means the browser could not open the TruView Enterprise website. Try the steps below to resolve the issue:

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 the TruView Enterprise site from another device. If it works on a second device, the problem is caused by an incorrect configuration.
5. Follow the instructions on this page: <https://support.microsoft.com/en-us/kb/956196>
6. Try to restart the TruView Enterprise application by logging in to Linux console and execute **.restart.sh**

18.7 SYMPTOM: TRUVIEW ENTERPRISE WEBSITE IS VERY SLOW

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

1. Log in to console
2. Execute **.restart.sh**

18.8 SYMPTOM: SITE FAILS TO UPDATE DUE TO A CONNECTION ERROR.



This error is shown if there is a network connection issue when Software Update is executed. If the error persists for more than one day, check to see if your firewall/router blocks ports 22 and 443. Both ports must be open for TruView Enterprise to get the latest update.

18.9 SYMPTOM: TRUVIEW ENTERPRISE FAILED TO CREATE A BACKUP.

Backup was not created and the Server Logs contained error messages similar to:

Error while copying file .../tvserver/data/scans/<...>

As shown in the following screenshot:

All Sites / Administration

Server Logs

Server Log | Action Log | Action Queue

#	Time	Message
1	9 minutes ago	▲ Error while copying file/tvserver/data/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_512.JPG to /tmp/TVGBackup_2279aefc-fe34-4ea1-82e1-334631f02242/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_512.JPG
2	9 minutes ago	▲ Error while copying file/tvserver/data/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_256.JPG to /tmp/TVGBackup_2279aefc-fe34-4ea1-82e1-334631f02242/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_256.JPG
3	9 minutes ago	▲ Error while copying file/tvserver/data/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_256.PNG to /tmp/TVGBackup_2279aefc-fe34-4ea1-82e1-334631f02242/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_256.PNG
4	9 minutes ago	▲ Error while copying file/tvserver/data/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_128.JPG to /tmp/TVGBackup_2279aefc-fe34-4ea1-82e1-334631f02242/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_128.JPG
5	9 minutes ago	▲ Error while copying file/tvserver/data/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_128.PNG to /tmp/TVGBackup_2279aefc-fe34-4ea1-82e1-334631f02242/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_128.PNG
6	9 minutes ago	▲ Error while copying file/tvserver/data/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_1024.PNG to /tmp/TVGBackup_2279aefc-fe34-4ea1-82e1-334631f02242/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_1024.PNG
7	9 minutes ago	▲ Error while copying file/tvserver/data/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_1024.JPG to /tmp/TVGBackup_2279aefc-fe34-4ea1-82e1-334631f02242/scans/003354cf-d51f-4152-a9d8-76ed9c7c4f45/img_0_1024.JPG
8	9 minutes ago	● Copying server data files ...
9	9 minutes ago	● Waiting for new Tasks on [truviev.import] ...

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

To fix this problem:

1. Login to Linux console.
2. Execute `./freespace.sh`.
3. The Avail column on the first row indicates free disk space.

```

truviev@truvievglobal:~$ ./freespace.sh

Removing temporary files and logs ... done

Filesystem                Size      Used Avail Use% Mounted on
/dev/mapper/truvievglobal--vg-root  77G   2.7G   70G   4% /
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
//qa-win81/share          932G   582G   350G  63% /mnt
truviev@truvievglobal:~$

```

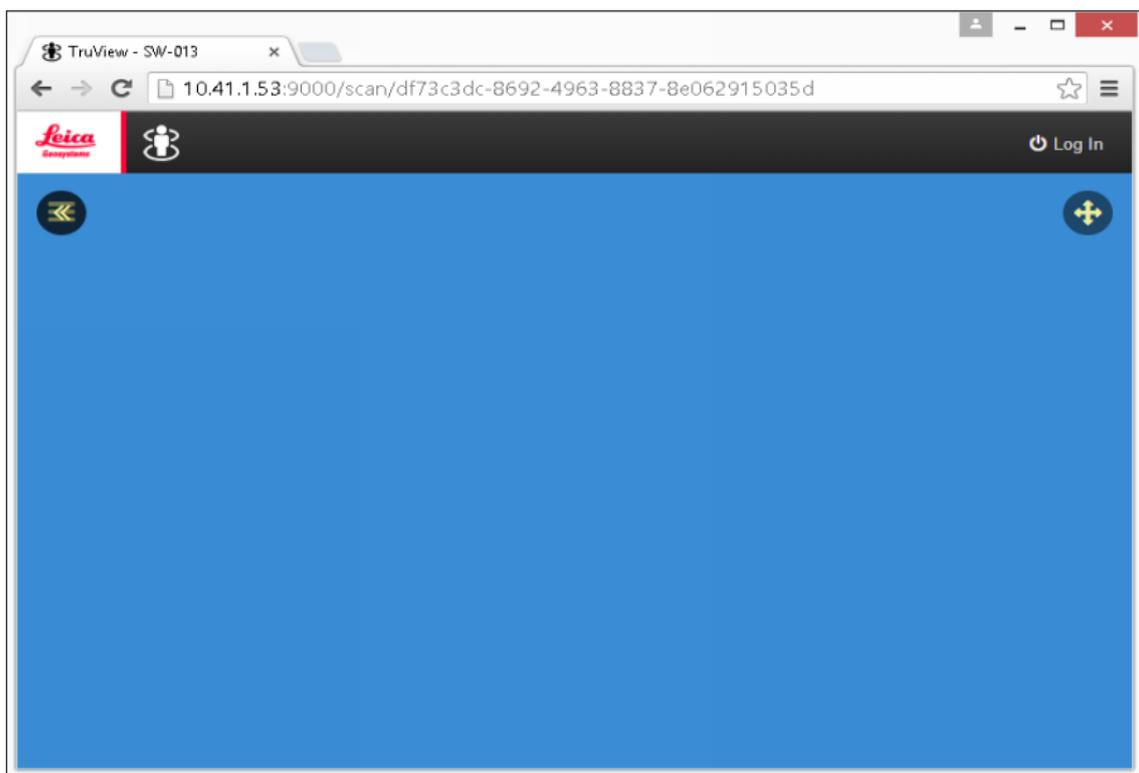
18.10 SYMPTOM: AN ERROR MESSAGE "E IS NULL" IS SHOWN WHEN ATTEMPTING TO OPEN A TRUVIEW



TruView Enterprise utilizes WebGL, a web technology standard for rendering 3D graphics. This issue occurs when a browser does not support WebGL.

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

18.11 SYMPTOM: TRUVIEW ENTERPRISE DISPLAYS SOLID BLUE BACKGROUND WHEN TRYING TO OPEN A STATION.



TruView Enterprise utilizes WebGL, a web technology standard for rendering 3D graphics. This issue occurs when a browser does not support WebGL.

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

18.12 SYMPTOM: USERS CANNOT SHARE A SITE BECAUSE THE SHARE BUTTON IS DISABLED

The Share button is only available to customers with a TruView Enterprise. Customers with an older TruView Global 10 ProjectVault license will not be able to share a site publicly.



18.13 SYMPTOM: USER CHANGED THE ADMIN'S PASSWORD BUT FORGOT THE NEW PASSWORD

Follow these steps to reset the Admin user's password to the default 'admin'. Note that users must be able to login to Ubuntu console to perform these instructions:

1. Log in to Linux console
2. Execute **cd truview/utilities**
3. Execute **mongo resetadmin.js**
4. Execute **pm2 restart all**

See the following screenshot for an example:

```

Welcome to TruView Global Server

Hostname is truviewglobal
IP address is 10.41.0.184

If this is the first time TruView Global Server runs, please type './set_license_server.sh' to setup
a License Server hostname.

truview@truviewglobal:~$ cd truview/utilities/
truview@truviewglobal:~/truview/utilities$ chmod 700 resetadmin.js
truview@truviewglobal:~/truview/utilities$ mongo resetadmin.js
MongoDB shell version: 2.6.10
connecting to: test
TruViewDB Reset Admin Role. (c) 2015 Leica Geosystems.
{
  "_id" : ObjectId("55ddf5431120fb4e97c281ca"),
  "username" : "admin",
  "role" : "admin"
}
truview@truviewglobal:~/truview/utilities$ pm2 restart all
[PM2] restartProcessId process id 0
[PM2] restartProcessId process id 1

```

App name	id	mode	pid	status	restart	uptime	memory	watching
twimport	0	Fork	11200	online	3	0s	20.367 MB	disabled
tvserver	1	Fork	11209	online	3	0s	17.820 MB	disabled

```

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

```

18.14 SYMPTOM: ERROR CONFIGURING SMTP SERVER

After entering the SMTP server info, an error message "SMTP error: Mail command failed" is shown.



Some email services require that both User Name and Send Address fields have the exact same email. To fix this problem, open the SMTP Connection Info page and verify that both fields have the same email address as in the below example:

 Edit SMTP Connection Info ✕

Server Host:

Server Port:

Connection Type:
 Secure Normal

Authentication:
 Plain XOauth2

User Name

Password

Send Address:

Client Name:



These two emails must match.