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Advice for Using DAT/EM Stereo Applications from Home

October 20, 2020

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Working from home poses some challenges for photogrammetrists who need to see stereo in DAT/EM stereo applications and access a network hardware lock license. When making the decision to work at home, DAT/EM users think of two ways to do this: Use a home computer to VPN in to work or take a stereo workstation home. We recommend taking the stereo workstation home if at all possible.

There are some main challenges to overcome:

1. **Contacting the DAT/EM network lock, if you have one.** We'll show you how to do this below.
2. **Getting a normal stereo display.** If you use a typical home computer, even if you coax it into contacting a network lock back in the office, the problem remains that you can't get OpenGL stereo over the Internet. Most home computers lack an nVidia Quadro K-, M-, or P-series (or sometimes high-end AMD for PluraView) video card and special external monitor to do their own local stereo. This leaves you with the **dreaded anaglyph stereo**.
3. **Getting proper 3D digitizer/mouse input.** DAT/EM applications that take digitizer position and button input, such as Summit Evolution and LandScape, won't work correctly with the input device if you launch the application on the remote (office) computer from a VPN session. DAT/EM software will always* need to be installed locally on the computer at home. The only thing the Internet and VPN session is used for is to contact a network lock.
4. **Windows 10 Home Edition.** If you use a typical home computer with Windows 10 Home Edition, it may not work. DAT/EM software may not work on Home Edition and you may have VPN issues with Home Edition not being able to join a domain.

For full-time photogrammetrists, the only viable plan is as follows:

To avoid having to view anaglyph stereo:

- **Take your stereo workstation home.**
- **Also take home your stereo display, side monitor(s), stereo glasses, and any of the following that you might have: Stereo emitter, 3D input device, local (single) DAT/EM hardware lock if you use one, and your project data.**

* There are several Universities whose students need to do assignments using a home computer and anaglyph stereo. This can be done, but the students should use a DAT/EM version 8.0 beta (or higher) and install it locally. They can set anaglyph in Summit > Tools > Options > Main View. Version 8.0 beta offers a setting for using Windows Messaging system mouse communication, which is the only way to digitize a point in Summit over the Internet. Use these instructions for help contacting the University's network lock.

We Do Not Wish Anaglyph Stereo on Anybody (except maybe short-term viewers)

Anaglyph stereo will give you a headache (we are not kidding!), and it is very difficult to put the cursor on the ground to get an accurate elevation while viewing in anaglyph. If you use anaglyph stereo for more than 20 minutes, you will not only have to be concerned about the corona virus, but also blindness and insanity (now we are kidding... or are we?). Your digitized data accuracy will also suffer.

Existing DAT/EM Workstations with a Single-License, Local Sentinel Lock

You do not need to worry about the network license setup if your computer has a **local** (single license) DAT/EM hardware lock plugged into the computer's own USB port and DAT/EM software is already installed. The advice below is only for contacting a DAT/EM **network lock** located back in your office.

Contacting the Remote Network Lock

The following is an overview of the steps you will need to do to use a DAT/EM network lock remotely:

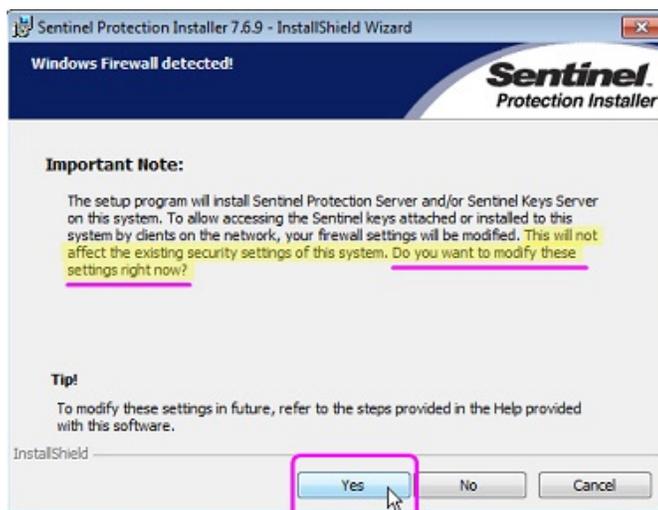
1. If you have a DAT/EM network lock (dongle) license back at the office, set up a VPN connection.
2. If the stereo workstation (preferred) or home computer doesn't already have DAT/EM software on it, install the Sentinel driver, DAT/EM software (you may need to do item 3. now), any driver for a 3D input device, and set up stereo viewing. Contact DAT/EM Support separately for the driver and stereo setup instructions, if necessary.
3. Set DAT/EM software to gain access to the network dongle through VPN. (In some cases, this may be done already.)

The steps to configure and contact the remote DAT/EM network lock are as follows:

- Set up VPN (Virtual Private Network) on the computer that will be used at home. (Note that several clients reported that the Citrix NetScaler products do not work for this purpose.) Please ask your IT department to help. DAT/EM will not be able to help you set up your VPN.
- The Sentinel software must be installed on both the network lock server and the remote computer. An existing DAT/EM workstation will already have the Sentinel driver on it.

If you're setting up a new workstation that doesn't already have DAT/EM software installed on it, and you need to install the Sentinel hardware lock driver before installing DAT/EM software, get the DAT/EM prerequisites installation file here:

http://datemsystems.com/download/Datem_PreReqs_blt_06_29_2020.exe. This installs the Microsoft C++ redistribution files and the Sentinel v.7.6.9 driver that is used by DAT/EM v.7.6 and 7.7 beta. During the Sentinel driver installation, you must answer Yes to the firewall and restart questions:



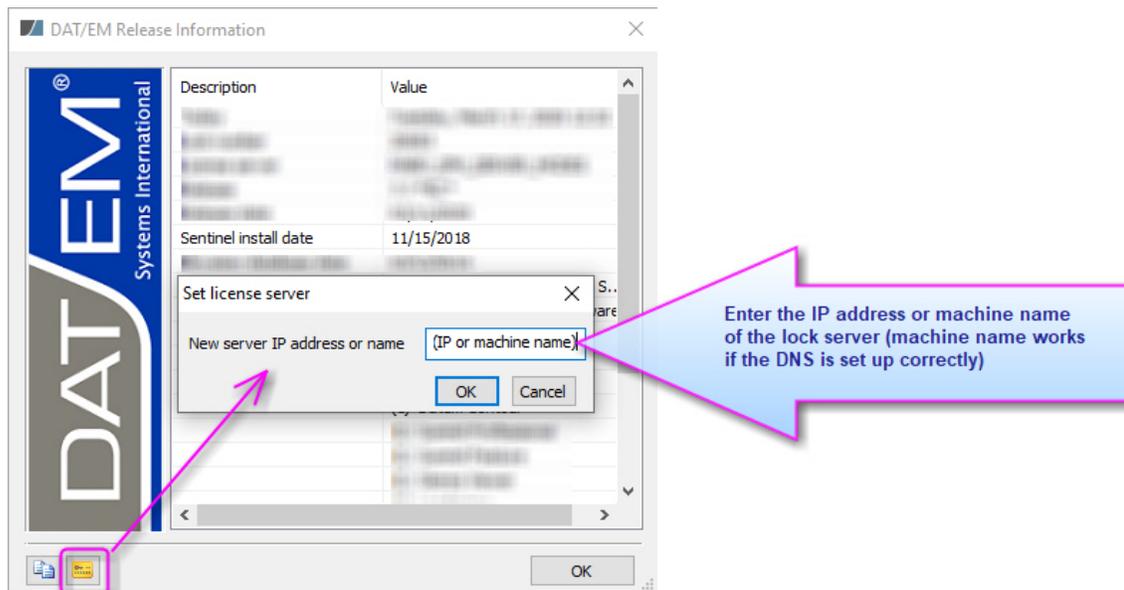
Always answer "Yes" to these questions!

Note: Running a DAT/EM version Setup executable one time will also install the C++ redistribution files and the Sentinel driver on the computer. It is your choice whether to run the DAT/EM Prerequisites or Setup.

- Connect to VPN.
- **For a computer that doesn't already have DAT/EM software on it**, once you have successfully connected to VPN, you can install DAT/EM software locally. Use your latest DAT/EM version Setup with your company's DAT/EM installation keycode. It will look for the hardware lock locally, and when it doesn't find it, it will ask if you are using a network lock. Answer "Yes" and enter the machine name. If it doesn't take the machine name, try the IP address of the lock server.
- **For a computer that already has DAT/EM software on it** and was already using a network lock back in its previous life in the office, start Summit Evolution or another DAT/EM locked application, such as LandScape or MicroStation with MapEditor. If your DNS is set up correctly, it may find the lock using the existing settings, and you are finished setting up.

If there are "lock not found" errors, continue.

- (If there are "lock not found errors" **where DAT/EM software is already installed**) Search for and run DAT/EM Release Information. Use the yellow button in the lower left corner and verify the machine name (preferred) or IP address of the Sentinel lock server. The machine name should work if the DNS is set up correctly. You can also try the IP address if the machine name fails. Note that this is the name or IP of the server that holds the Sentinel hardware lock (USB dongle), *not* the local machine.

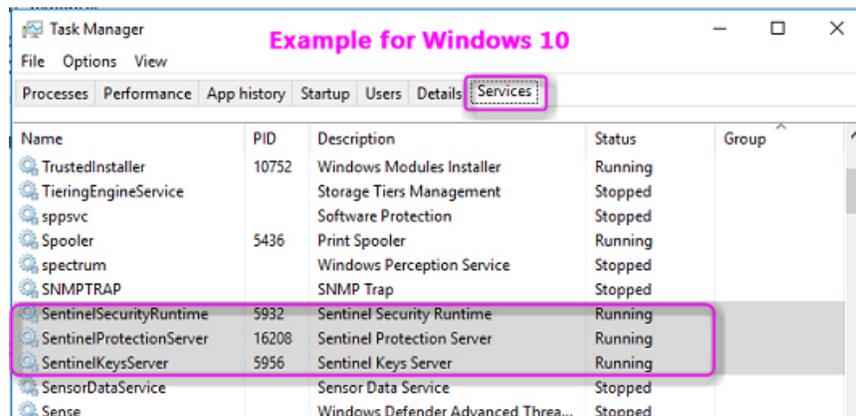


- (If there are “lock not found errors”) While connected to VPN, try to ping (contact) the lock server to make sure it can be found. Use either File Explorer or start a Command window. Enter:

Ping NameOfLockServer

“NameOfLockServer” is the machine name of the computer that holds the hardware lock back at the office. It should report with some “reply from” and “received” messages. If it can't find the lock server, then either the VPN or DNS is not configured correctly and you will need to contact your IT department.

- (If there are “lock not found errors”) Check that all three of the Sentinel Services are running on both the server side and the remote side. To do this, start Task Manager and look at the Services tab, find **SentinelSecurityRuntime**, **SentinelProtectionServer**, and **SentinelKeysServer**. Make sure they all show **Status=Running**:



The three Sentinel Services need to be “Running” on the local computer and network lock server

If any of the services are stopped, you may either right click and select to run or use the DAT/EM batch file that stops and restarts all the Sentinel services:

C:\Program Files\Datem Software\SentinelRestart.bat

Right click on the file and select “Run as Administrator”. This batch file will only be located on the DAT/EM workstation, not the network lock server. If the services are stopping on the network lock server, contact your IT department.

- (If there are “lock not found errors”) Ensure that **Ports 6001 and 6002 are open** on the remote computer and the company (lock server’s) network. These are required by Sentinel.
- (If there are still “lock not found errors”) Check that your VPN is connecting properly.



Always Use DAT/EM Software on the Local Computer

If after all this, you still want to set up a home computer and intend to VPN in to the office computer to run Summit, stop! **DAT/EM software must be installed locally.**

Do not run Summit or another DAT/EM stereo application on an office computer using a VPN connection. It will be slow and the input device will not work. This includes a system mouse or a dedicated 3D input device, such as a Stealth or GGS mouse.

As far as DAT/EM software is concerned, the only thing the VPN should be used for is contacting a network lock. Everything else runs locally.

Additional Hints

Additional hints:

- You will need to take project data (images, DAT/EM projects, etc.) home or use ftp or drives to transfer files. Data transfer should be organized by your company or organization.
- We recommend keeping careful records of who has which hardware components and where they are taking them. That, too, is up to your company or organization.
- If installing nVidia 3D Vision or setting up other non-anaglyph stereo on a new computer, contact DAT/EM for advice. Exception: For PluraView setup, contact Schneider Digital.
- If installing a Stealth mouse on a new computer, remember the wrong driver is always installed when you plug it in for the first time. Go to www.stealth3dmouse.com to download the right driver and contact DAT/EM Support for instructions to install it correctly.