License Server
Process Automation and Imaging

Quick Start Guide

Extreme Protocol Solutions

www.enterprisedataerasure.com

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Icons Used Throughout License Server

The icons in the following tables are from the main screen of **License Server** and include most of the icons that appear throughout the windows discussed. Further details about **License Server** along with in depth explanations of all its features and their respective icons can be found in the **License Server User Guide**.

License Server Features (Main Window)			
Left Side (Top To Bottom)		**Top Row (Left To Right)**	
	Display / Access Licensing Information		
	PXE Configuration		Configure / Access DHCP Settings
	BIT (Burn In Testing)		Take Remote Control Of Client / End Point
	Reimaging Operating Systems		XView IP Monitoring Tool (overview of the PXE network segments)
	Access Device Drivers		
	Database Services		
	Reporting		

Table 1 *License Server Icons For Its Main Features*

Action Buttons			
Common		XErase	
	Save/Update		Login User
	Save As		Display / View Sectors
	Add Element		Start Erasure
	Remove Element		Stop Erasure
	Build Report(s)		
	Settings (LC) Erasure Methods (XErase)	License Server	
	Refresh Information (LC) Rescan Devices (XErase)		Set Profile as The Default
	Configure Setting (LC) Edit User Fields (XErase)		Scale View Up (+) or Down (-)

Table 2 *License Server Action Icons / Buttons*

Introduction

Welcome to **License Server** by Extreme Protocol Solutions, the completely automated solution for network based data erasure, component testing and software re-imaging.

This solution eliminates the need for several steps in your current process by combining data erasure, component testing and system re-imaging, into a single customizable process. This solution supports whatever sanitization standard required whether it be DoD, NAVSO, NIST or any one of the various methods included with our software. The software can easily adapt to accommodate any future data erasure or disk sanitization standards.

Component testing automates Passmark's™ **Burn In Test** which imports the results for seamless testing. If re-imaging systems is part of the refurbishment process, the customization and automation aspects of the product will prove to be a step up from current methods. Features such as dynamic driver and program injection will significantly increase the efficiency of the refurbishment process.

There is no other software product on the market today that has the capabilities and controls, many of which are included at no extra charge, that are found in **Extreme Protocol's**, **License Server**.

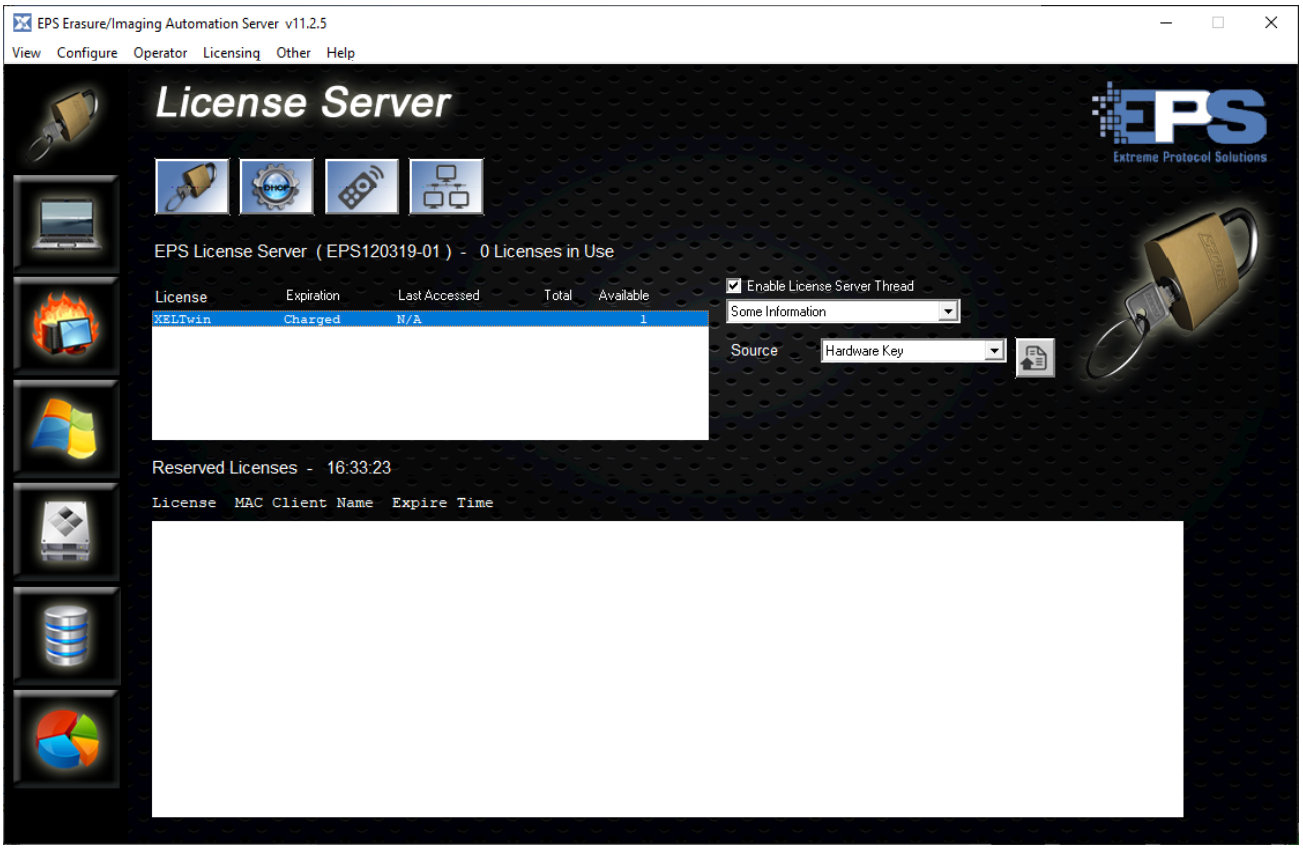

Figure 1 *License Server - Main Screen Displaying Licensing*

Features At A Glance

Erasure

The main feature of **License Server** which is to run erasures on devices after they are booted. It features all the power and functionality of our industry leading erasure software, **XErase Enterprise Data Erasure**, in an integrated platform.

Component Testing

Under license from Passmark™, **EPS** has integrated the industry leading capabilities of their **Burn In Test** (BIT) component testing into License Server. Once licensed, this feature enables the testing of most of the major components built into devices such as systems and laptops (i.e., processor, memory, keyboard, etc.) according to accepted industry and refurbisher standards.

Imaging

EPS has developed a superior methodology for implementing the principals of the Microsoft Refurbisher program. What was a two or three step process has been automated to become a single network based process that saves time and reduces cost as well as manpower needs.

Device Drivers

This feature can be used to customize various drivers for devices that will be erased or tested.

Database Services

Included with XErase is the ability to interface to various ERP databases (i.e., Makor, Razor, CycleLution, to name a few; additional licensing may be required) with information related to assets and the results of their erasure and/or testing. Refer to the **XErase User Guide** for further details.

Reporting

Reports can be generated for completed erasures, BIT and reimaging in various formats (i.e., PDF, HTML, CSV, etc.). Sample report templates are provided from which company specific reports can be customized and created according to requirements.

Remote Control And XView IP Monitoring Tool (Built In)

This tool displays a consolidated view of all the successfully booted endpoints from a network (segment) perspective. The minimized view will show the status (i.e., running erasures, BIT, etc.) of the end point from which the remote control window for the endpoint can be started once the minimized view is opened. It is a convenient way to manage multiple end points on multiple PXE networks.

Preparation

Licensing

Ensure that an active license is available for the desired features. This guide describes the basic configuration using just the **XELTwin** (**XErase** light) license. Questions related to licensing should be referred to sales@extremeprotocol.com.

Feature	License		Type	Use
	Name	Number (min.)		
License Server	XELTWin	1	Required	PXE Server
XErase Light				XErase on the client
Burn In Test	XEBITwin	1	Optional	Testing internal components
Reimaging	XEIMGwin	1	Optional	Reimaging the client with its operating system
Verification	3RDVFYwin	1	Optional	3rd Party Verification

Table 3 *License Server Licensing*

Windows Requirements

- Systems running Windows 7 – 10 can handle a maximum of up to 20 endpoints.
- Windows Server has no PXE limitations and is set to boot up to 250 IP addresses (endpoints). Many systems designed to act as a "server" (i.e., not a desktop, workstation, laptop, etc.) have 4 ethernet ports which, if used, can expand the capability. Contact your local IT team(s) for further details.

Terms, Concepts, Prerequisites

Networking - A working knowledge of networking concepts and configuring ethernet ports is highly recommended. Consult with the local IT networking team for any issues or technical questions specific to your environment.

DHCP (**D**ynamic **H**ost **C**onfiguration **P**rotocol) – **License Server's** integration of PXE boot uses DHCP to assign addresses automatically to the endpoints on the designated ethernet interfaces. Ensure the system to be used as the "server" (where **License Server** will be installed/running) has at least one (1) unused ethernet adapter to which DHCP will assign the address.

The default addresses will be:

Network:	**10.100.1**
Server:	**10.100.1.2**
First Client:	**10.100.1.10**
Range for all possible clients:	**10.100.1.10 to 10.100.1.254**

If a static address is required, refer to the "how to" file which is added during the installation of License Server.

PXE (**P**reboot **E**xecution **E**nvironment) – Methods that allow a computer without a running operating system to be configured and booted remotely. It is built into the hardware (BIOS) and should work by default without any modification to its configuration.

Network Switch - Device which enables a network connection between the server and client once the cables have been connected into each of their respective ethernet ports.

TFTP (**T**rivial **F**ile **T**ransfer **P**rotocol) – The means for transferring (copying) the files required to boot a client from the server to the client / end point.

Server – The system on which **License Server** is installed. Review the system to determine which ***unused*** ethernet port can be configured for the PXE network and ensure the following are set for the selected interface. Consult your local IT team for technical assistance as/if necessary.

Settings Location (->Tab)	Attribute	Setting
Properties	Client For Microsoft Networks File and Printer Sharing For Microsoft Network Internet Protocol Version 4 (TCP/IPv4)	Enable/select
	All others	Disable/deselect
Configure -> Power Management	Allow the computer to turn off this device to save power	Disable/deselect
Configure -> Advanced	Interrupt Moderation	Disable/deselect
	Priority & QoS	Disable/deselect
Network -> Firewall	All network related	Turn off/disable

Table 4 PXE Interface - Recommended Attributes

Note: Many systems will have an ethernet **IPMI** (**I**ntelligent **P**latform **M**anagement **I**nterface) port. Do not use this dedicated single purpose port. It is not designed to be used for normal TCPIP traffic.

Client / End point – The device (system, laptop, etc.) which will have its resources erased/tested/etc. For the purposes of this document, the client will be a laptop and an erasure with the default settings will be initiated. It is assumed the reader knows how to invoke the BIOS and/or begin the network boot process once the client is powered on.

Install License Server

The following describes a fresh installation. Refer to **Appendix B – Troubleshooting And Hints** for details on how to reinstall License Server.

1. Download and launch the installer.
2. Once the installer is opened, confirm that **Web** is (pre)**selected**. If anything other than **Web** is preselected by default or the installer is all "grayed out", the system the installer is running on may not be connected to the network (i.e., "the internet"). Close the installer and correct the issue before proceeding.
3. Click in the field (or the dropdown arrow) to the right of **Product** and select **EPS License Server / PXE platform** from the choices.

Figure 2 *The EPS Installer For License Server*

4. Ensure **Version** is still defaulted to **Official Release**, then click Install.

   Watch the installer as it may update itself, then restart. If that happens, once it is (re)started, and the selections are confirmed, click Install.

5. Close the installer once the desired product is installed using either **File -> Exit** or by clicking the **X** in the upper right corner of the window.

Figure 3 *EPS Installer – Post Installation*

Start License Server

1. Start **License Server** either as specified in the installer (dialogue field of **Figure 3**) or open File Explorer, navigate to **c:\LCServer** and double click LCServer .

   During startup, **License Server** checks to see if updates are available. If any exist, a window labeled, **Product Updates Are Available**, will appear.

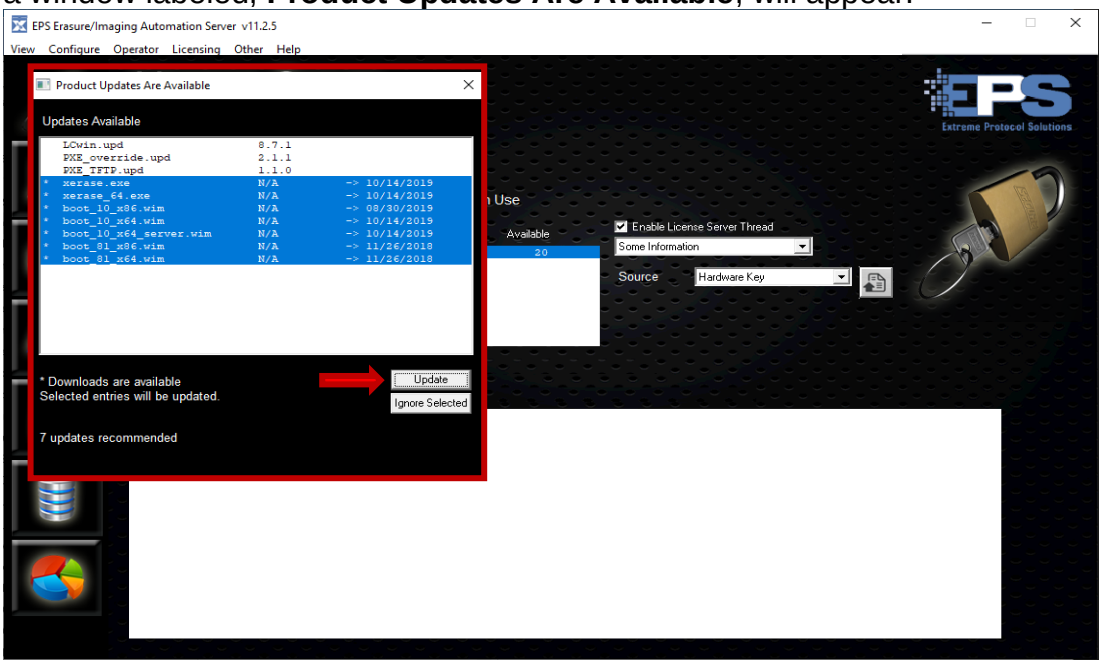

Figure 4 *Notification That Updates Are Available*

2. Click Update and allow the installation to complete. The window will close itself once it is done.

3. Click  and confirm the source for the license. If it needs to be changed, select the correct source from the list in the drop down next to **Source**, then, before clicking another action/icon or any other area of the window, remember to save the update with  . At least one (1) license to "**XELTwin**" must be installed and available for use after the client is booted.

   Refer to Prerequisites for further assistance.

Configure DHCP

The following assumes the reader is familiar with the hardware as well as how to interpret the output of basic Windows commands of the server (where License Server is installed), endpoint and network switch.

1. Determine which ethernet port on the system ("server") will be used. Do not select the wireless or Bluetooth adapter.
2. Open the network settings (properties) for the desired ethernet adapter, select **Internet Protocol Version 4 (TCP/IPv4)**, click the **Properties** button and confirm that **Obtain an IP address automatically** and **Obtain DNS server address automatically** are selected.

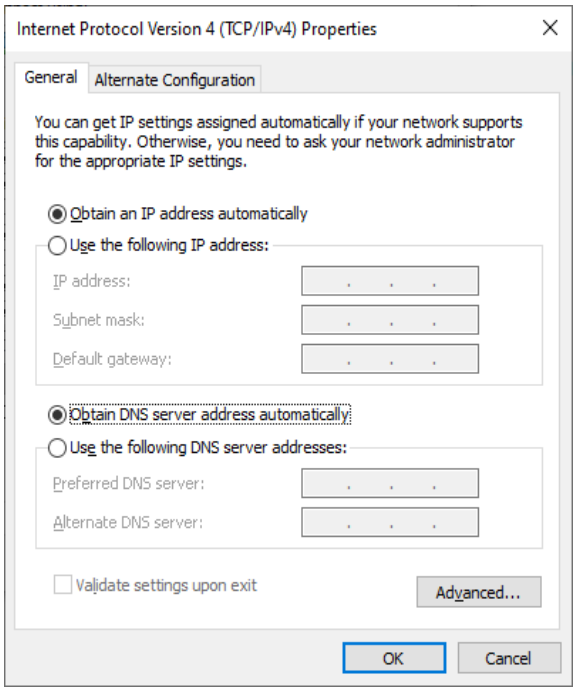

Figure 5 *Checking The PXE Ethernet Interface*

Note: If a static address is desired, refer to the file, **c:\LCServer\HOW_TO_DHCP_Manual.txt**.

3. Verify that the server and client have an (known working) ethernet cable connected to their respective ethernet port as well as in a port on the switch, and that a green LED is displayed on the switch port each is connected to. The client's port will only be lit if a power cord is plugged into it or the battery is good and has enough charge on it. Using the power cord is recommended. Some older models may need to be powered on to the BIOS/setup screen before an LED is lit.

4. Click the drop down under **Enable License Server Thread** and select the desired level of information to display.
5. Click  and respond to the prompt to autoconfigure DHCP/TFTP.
6. Review the list of ethernet interfaces and select the one to use (i.e., the one from step 2). Do not select the interface the system is currently using to connect to the infrastructure (i.e, the "internet"/corporate network).
7. To the right of the listing of interfaces, click the top field and select **Active**.
8. Unless there is a known issue (conflict), leave the field beneath set to **10.100.1.2**.
9. Click to  update and save the DHCP information.

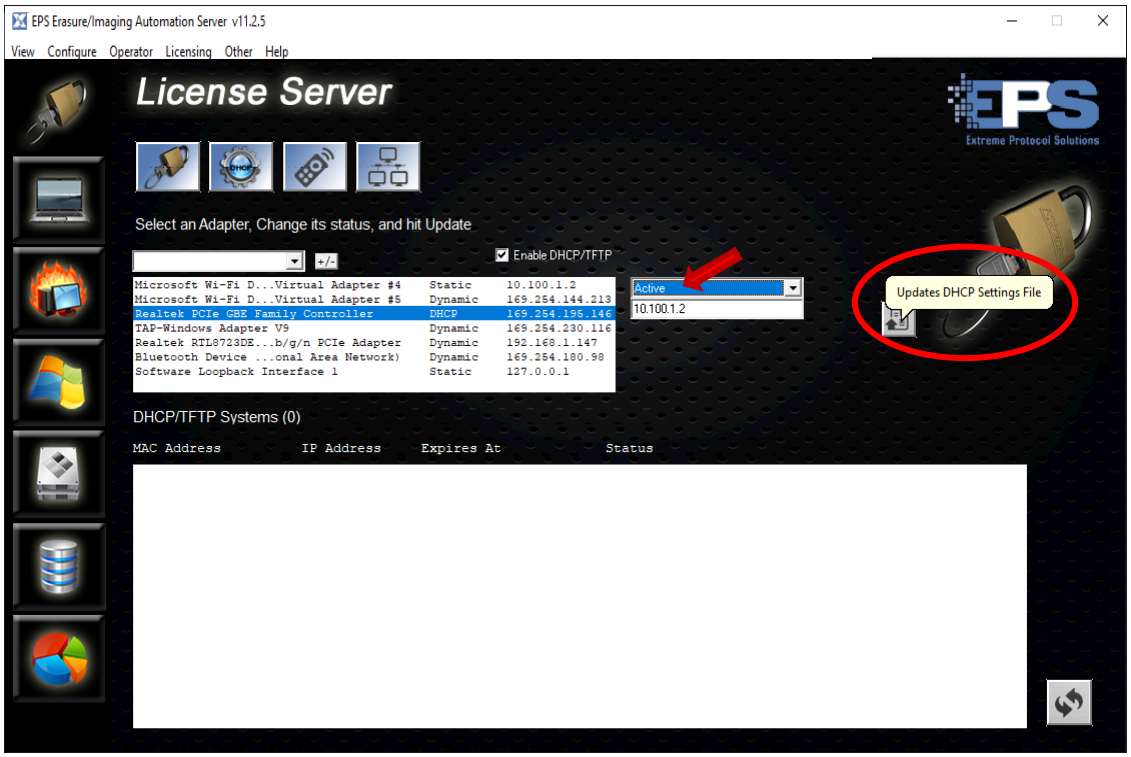

Figure 6 *The DHCP Configuration Screen*

10. After the system updates its DHCP configuration, the status of the DHCP based connection will be displayed. Anything other than **Ready** for both DHCP and TFTP

means DHCP was not successfully configured. Refer to **Appendix A** for suggestions that may help resolve the issue.

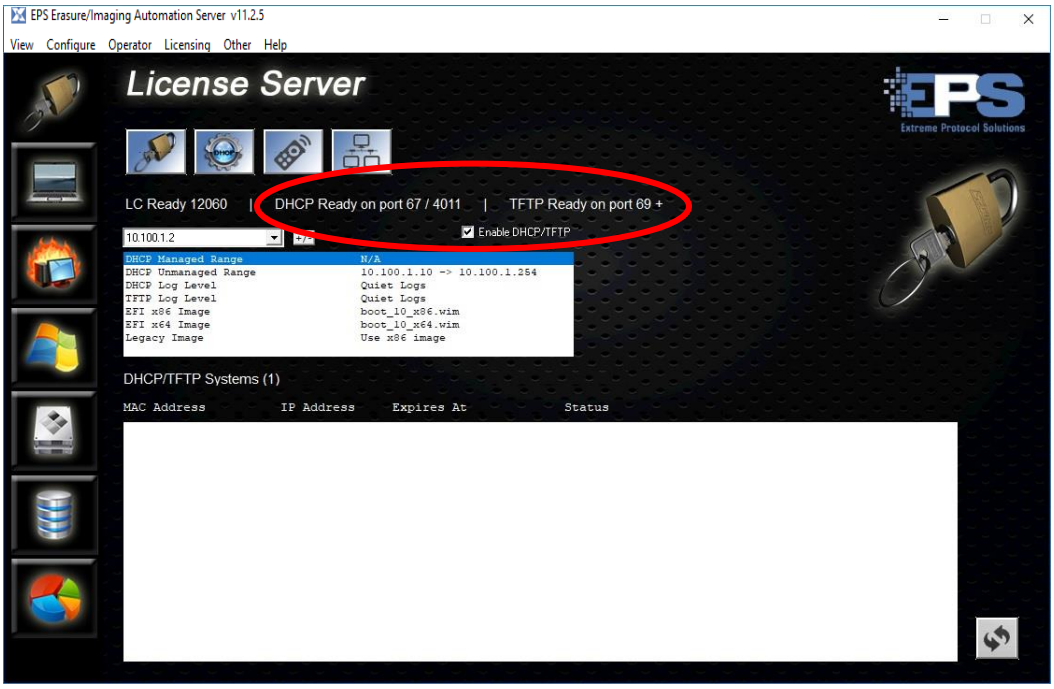

Figure 7 *Displaying The Status Of DHCP*

Set / Select The PXE Profile

Most of the devices that **License Server** was designed to manage are those which are not or should not be directly accessible, primarily laptops. In its simplest form, the **PXE Profile** replaces the need to manually launch **XErase** after the device is power up and PXE booted. Several sample profiles are included with **License Server** which can be modified and used or, once you are more familiar with how the profiles work, one can be created to fit your organization's requirements and used. Refer to the **License Server User Guide** for further details.

The following steps will use the "**DEMO PROFILE**" to illustrate the process. Refer to the **XErase User Guide** for a description of the **Configuration Categories** and their options.

1. Click  , then  .

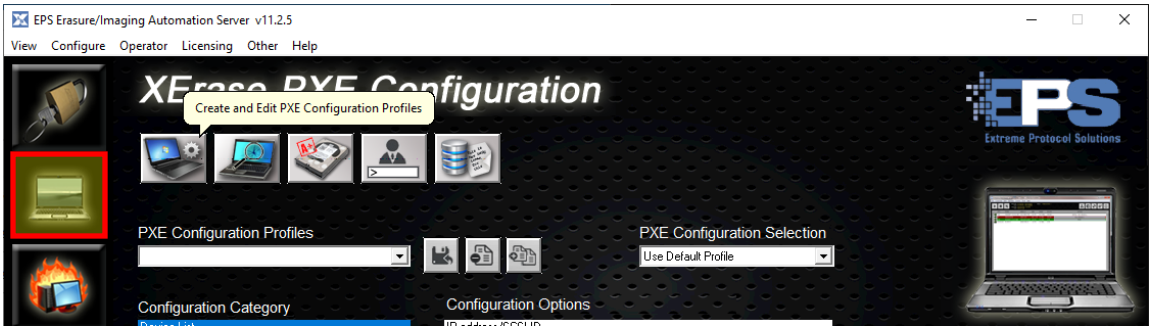

Figure 8 *Selecting The PXE Profile To Use*

2. Assuming it is not already displayed, click the field beneath **PXE Configuration Profiles** and select ***DEMO PROFILE*** (or the profile of your choice).

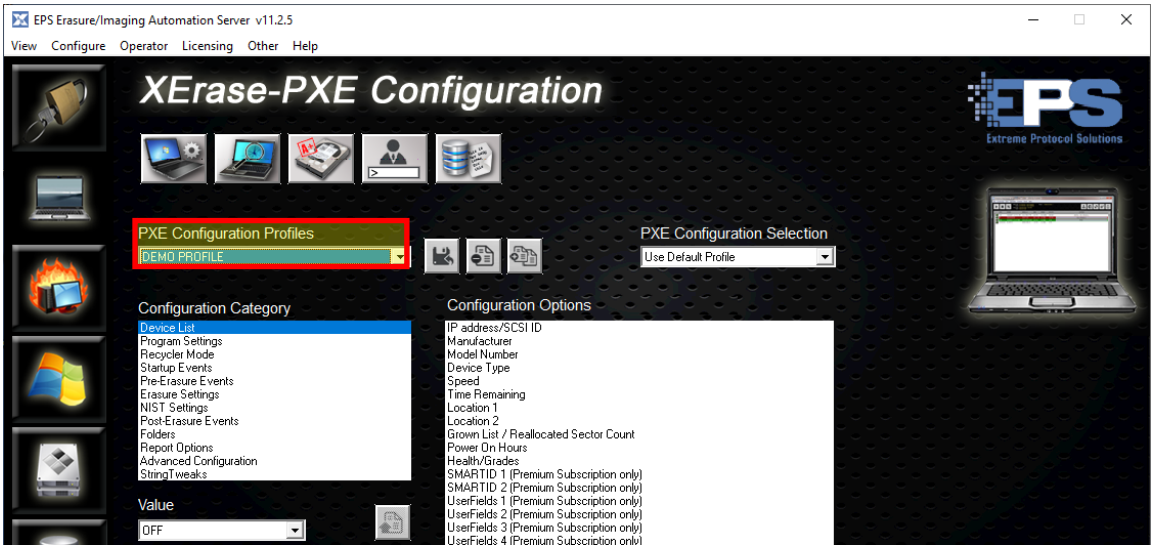

Figure 9 *Displaying The List Of Available PXE Profiles*

Note: The options for the different **Configuration Categories** (on the left) can be viewed and/or updated at this time. If any updates are made that need to be retained, **remember** to save it with  .

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3. If the selected profile is to be the default (i.e., used every time any client is booted), click  .

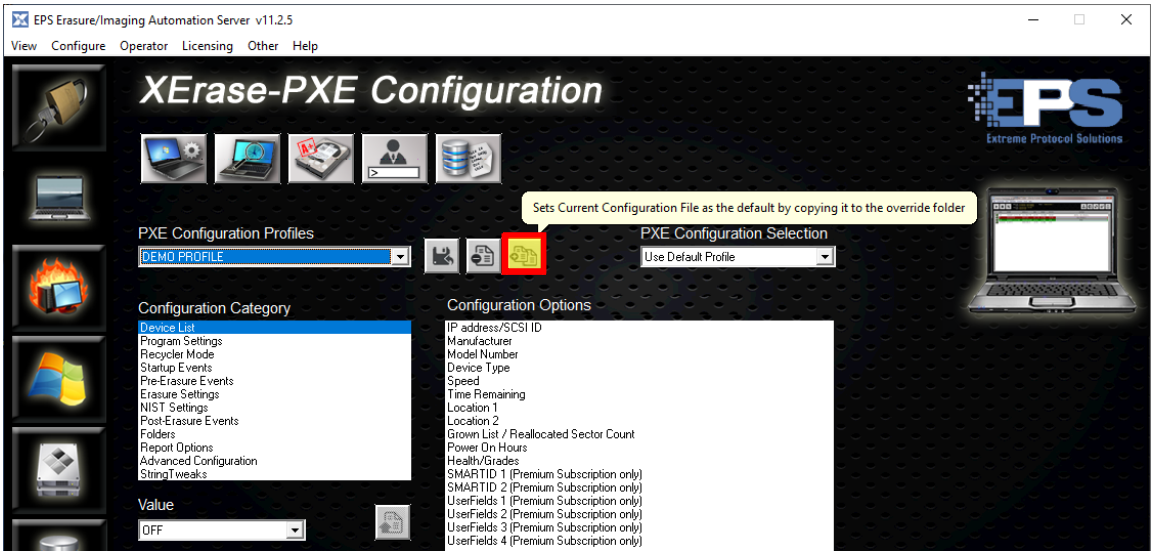

Figure 10 *Setting The Default PXE Profile*

Boot The Client

For the purposes of this section, an IBM Thinkpad T420 laptop will have its internal disk drive selected to be erased. BIT and the other related features are discussed in the upcoming **License Server V11 User Guide**.

1. Confirm a known working ethernet cable is plugged into a working ethernet port on the laptop as well as into a port on the network switch to be used for the PXE network.
2. Power on the laptop and bring it up to the BIOS/setup screen (or start the network boot with the respective **F** key).
3. Once the BIOS menu appears, initiate a network boot.

   It will take a minute or so to transfer the boot image from the server to the client and finish booting the laptop.
4. After the boot image has been transferred, a new window will open on the client showing the status of each stage of the **EPS Bootloader** as it loads. Confirm valid information exists for the **IP Address**, **LC Server** and **Override**. Additional information can be found here.

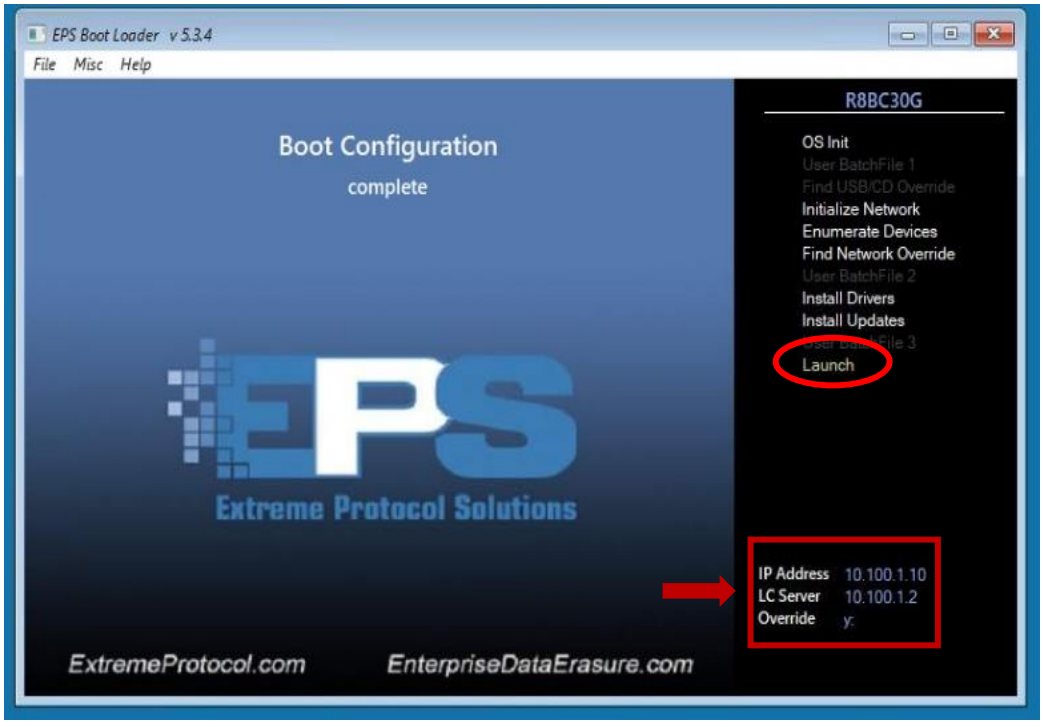

Figure 11 *The Final Stage Of Bootloader On The Client*

> **Note**: When the progress indicator reaches **Launch,** the laptop can be controlled from **License Server** using **Remote Control**.

5. After the bootloader completes, the **XErase** window displaying the disk(s) found on the laptop will be opened. Unless a profile which starts an erasure when launched is used, the disk needs to be manually selected.
6. Click the disk(s) to be erased and start the erasure by clicking ▶. Note the licensing information in the title bar of the following figure. The license will be used once the erasure has been completed (i.e., passed or failed) after which, additional licenses will need to be obtained if additional erasures are to be run.

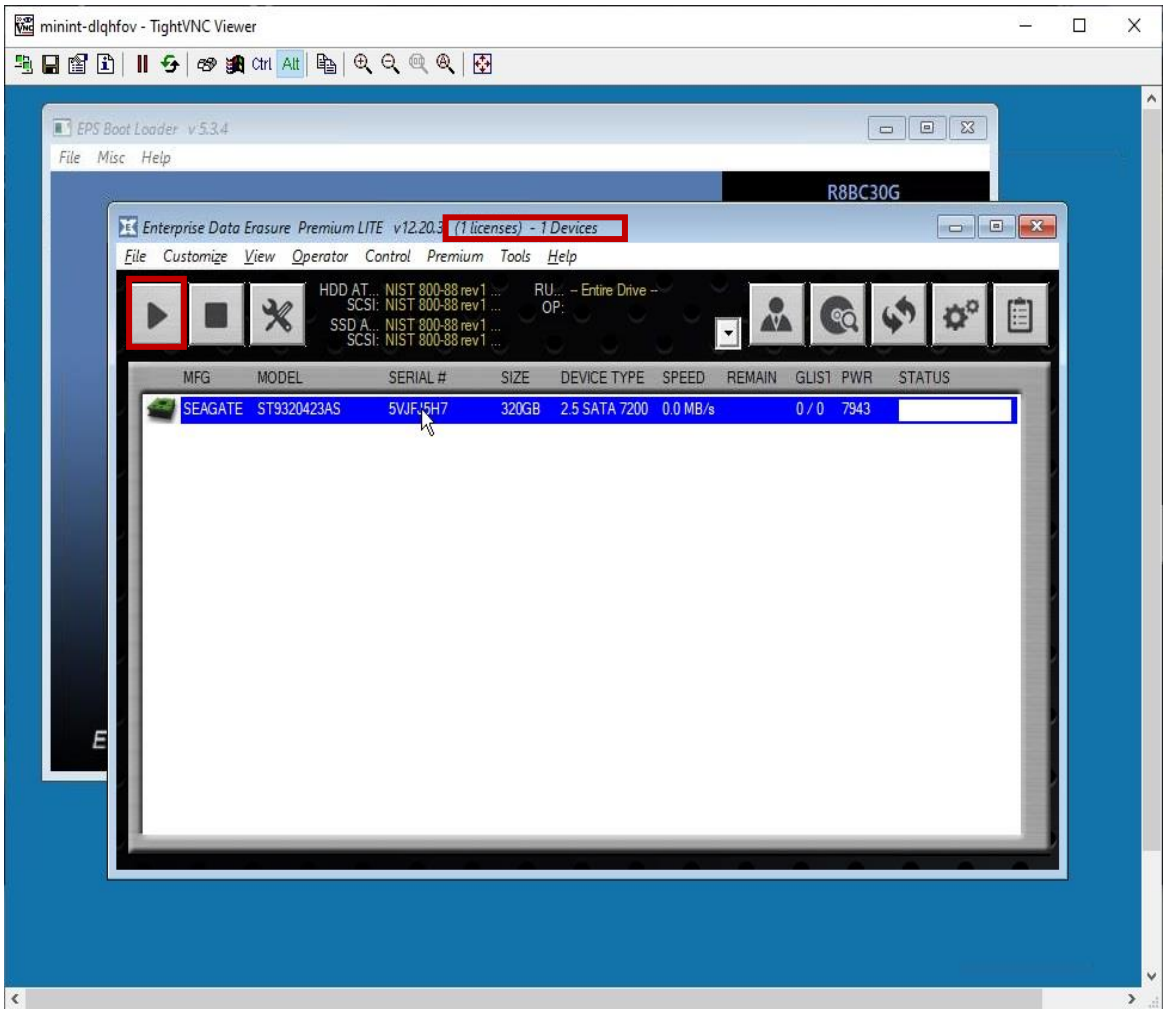

Figure 12 *Starting An Erasure On A PXE Booted Client*

Appendix A – Supplemental Information

Remote Control (Optional)

License Server's Remote Control enables the ability to control booted remote endpoints (a laptop in this document) from the system where **License Server** is running as though the operator was physically at the endpoint(s). It is available when the bootloader (running on the laptop/client/endpoint) reaches the **Launch** stage.

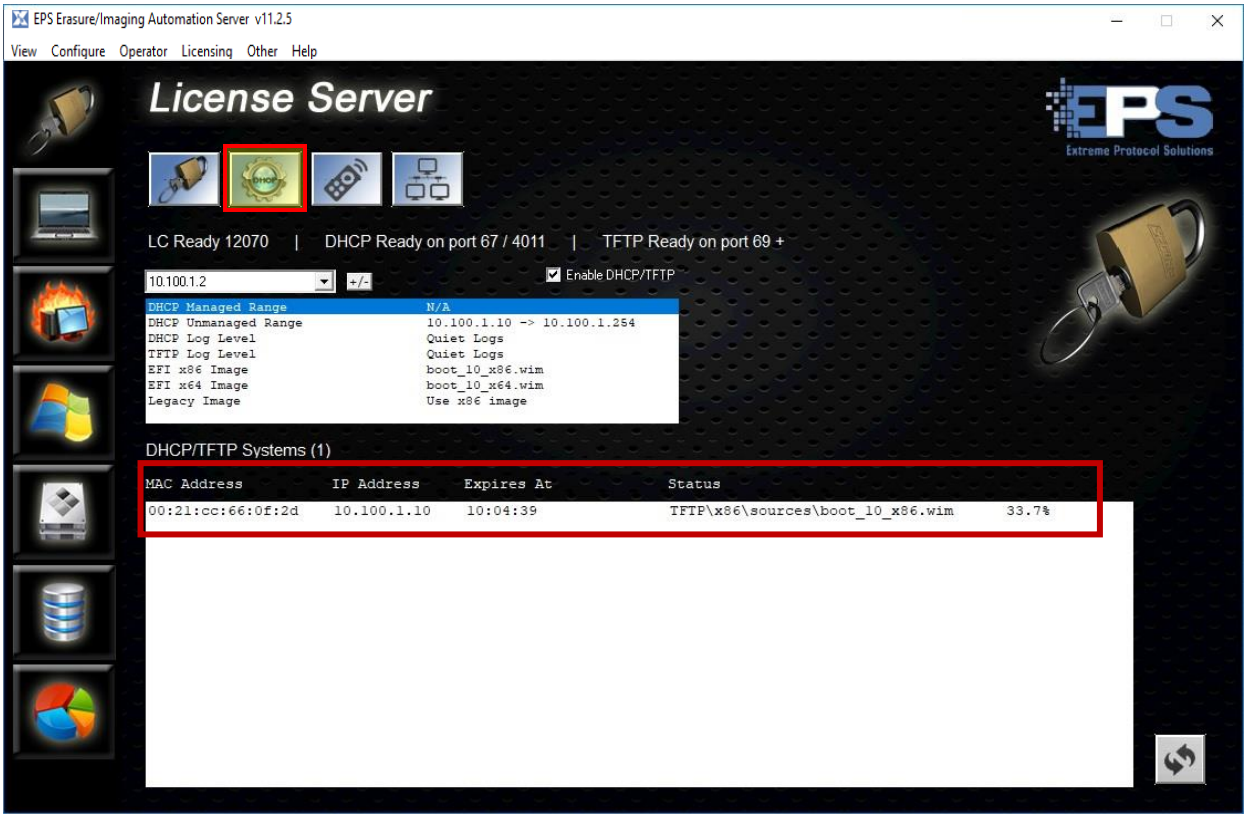

Figure 13 *Displaying The Status Of Booted Clients*

1. The status of the bootloader will be displayed in the lower portion of the DHCP window. Once the bootloader completes (the boot stage on the laptop should show **Launch** at this point), this information will clear from this area.

   The recommendation is to wait until the information is cleared from this screen since the status (percentage on the far right) for the client is displayed. Once it reaches 100%, the client is booted and ready. Otherwise, the client will need to be checked for potential problems related to booting before continuing.

2. **Remote Control** can be opened at any time by clicking  once the DHCP information is cleared or by using XView.

3. On the **Remote Control** screen, all successfully booted endpoints will be shown. Double click the line for the desired endpoint.

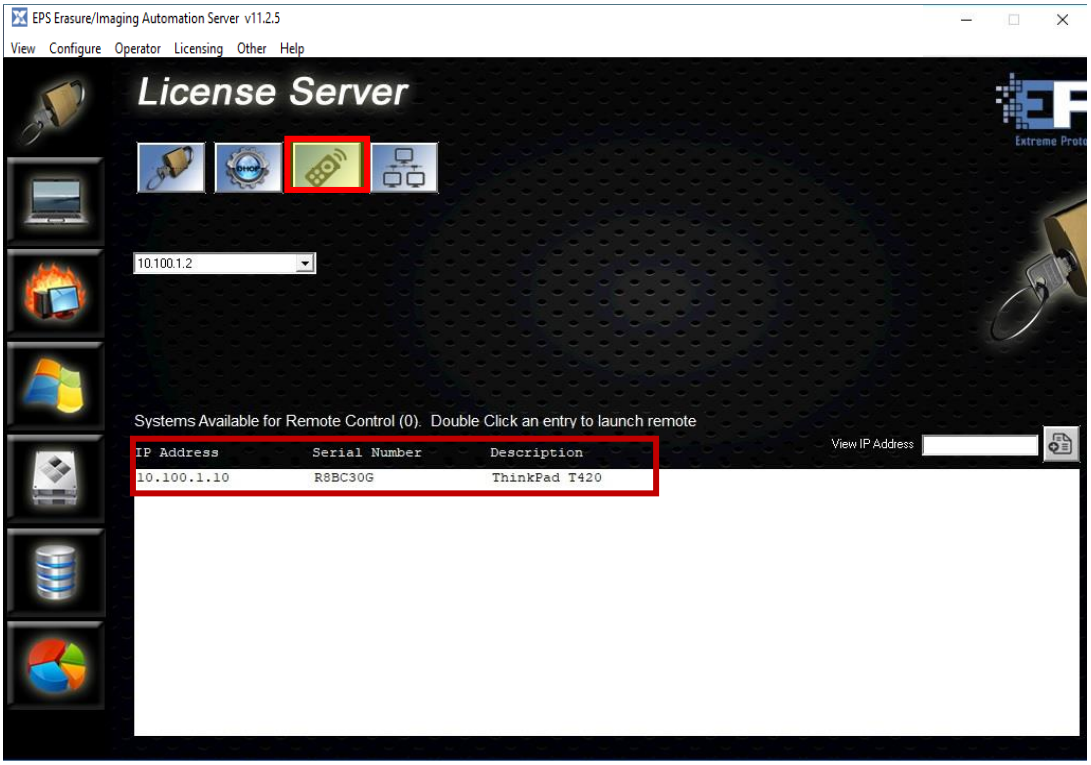

Figure 14 *Displaying The Status Of The Client During PXE Boot*

4. What is displayed on the laptop is now also displayed on **License Server**. To close the view, click the **X** in the upper right corner of the remote control window.

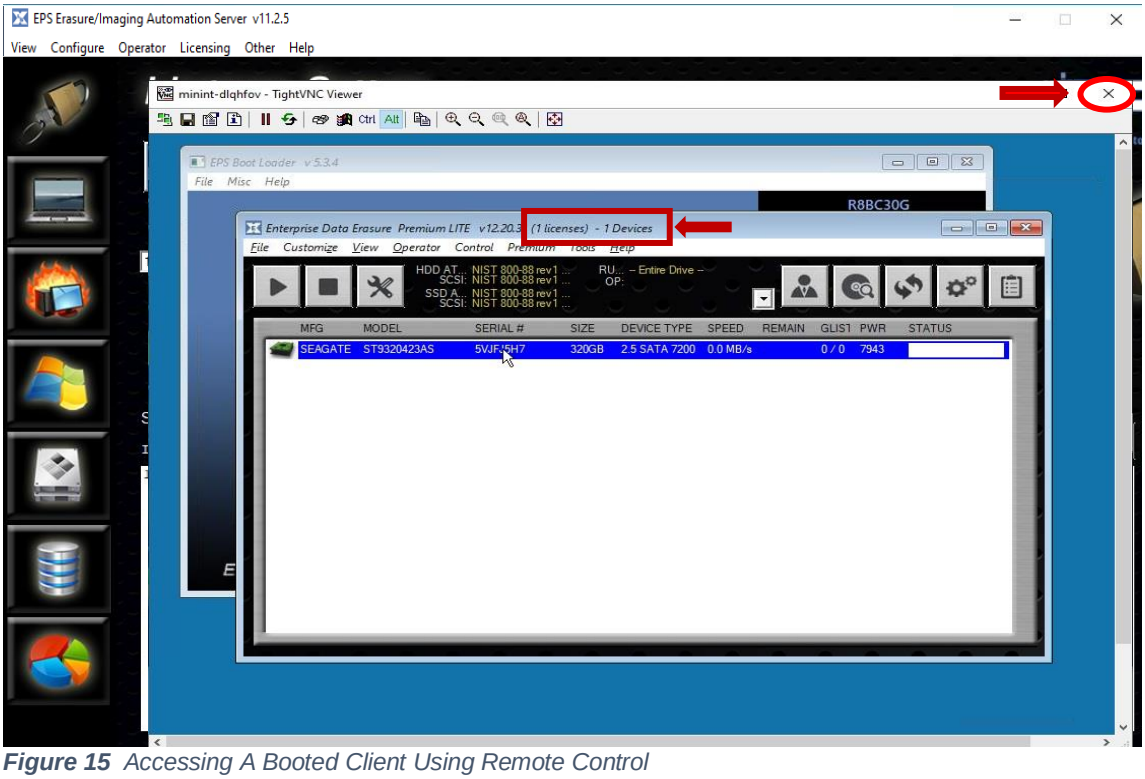

Figure 15 *Accessing A Booted Client Using Remote Control*

XView IP Monitoring Tool (Optional)

XView is another built in feature designed to help make working with multiple endpoints easier. It can be used to monitor as well as control multiple endpoints (much like **Remote Control**) on multiple (preconfigured via DHCP) networks. As of this document, the only limitation to the size of the view is that the system running **License Server** and the client(s)/endpoint(s) must be in the same physical location.

1. Ensure the client has completed the bootloader portion and it shows **Launch** either directly or by opening (then closing) its **Remote Control** view.
2. On **License Server**, click  to open the monitoring tool.
3. Once open, the tool will display all the (pre)configured DHCP based networks with a placeholder for the potential addresses that can be assigned to clients after they are booted and complete their bootloader stage.

   The status on the remote client will be displayed (monitored) in the minimized icon representing that endpoint.
4. To open a remote control session to an endpoint, double click on the icon representing the target endpoint.

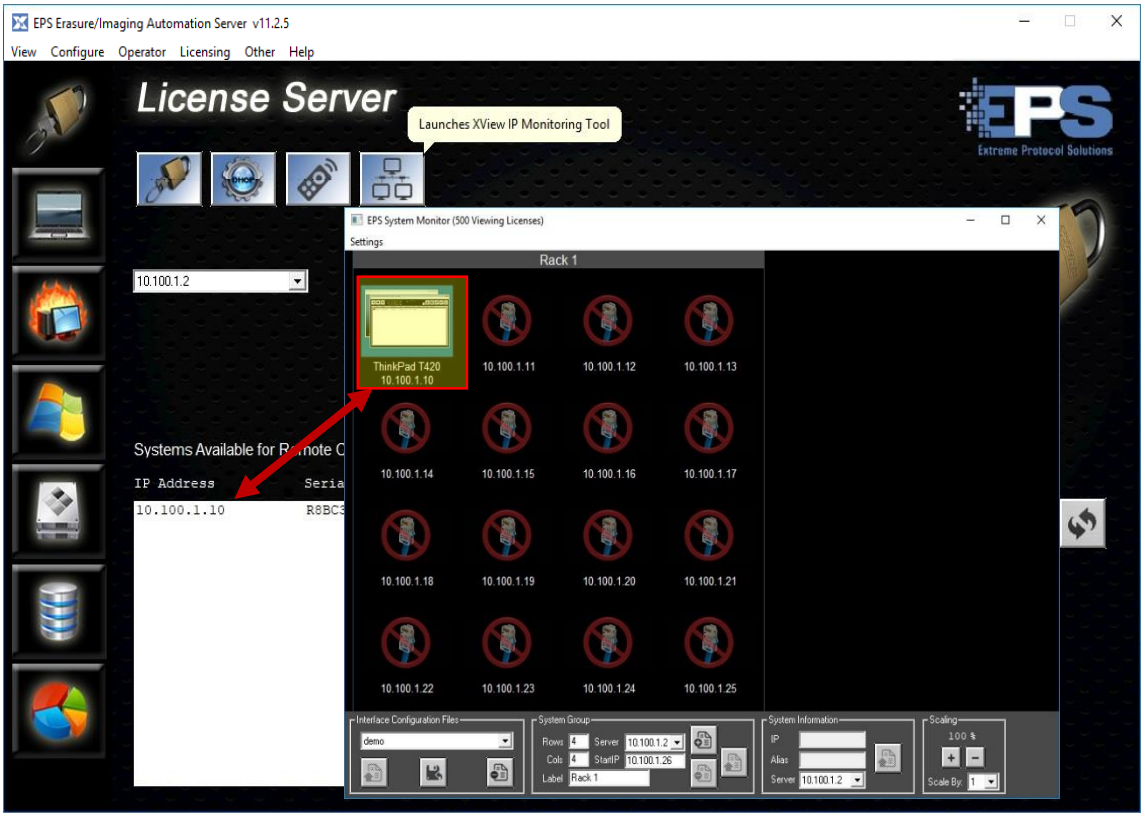

Figure 16 *Accessing A Client With XView*

5. The endpoint's window will be displayed. To close the view, click the **X** in the upper right corner of the remote control window.

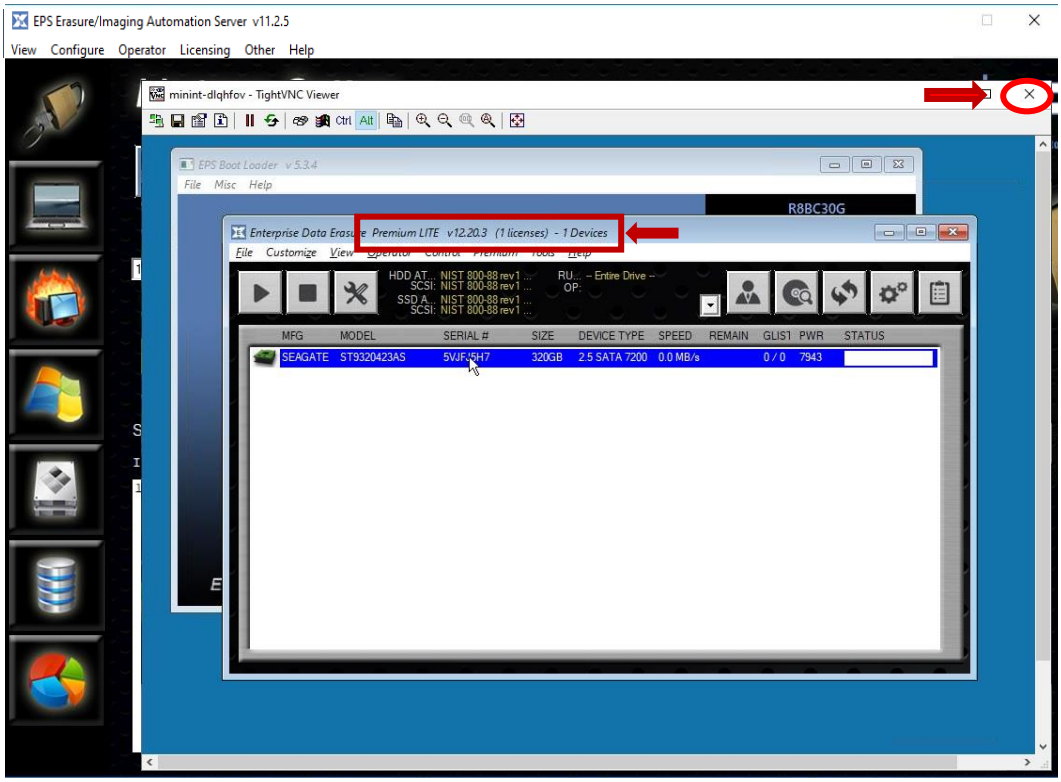

Figure 17 *Remote Control Of A Client VIa XView*

Appendix B – Troubleshooting And Hints

Firewalls – Given the complexity of customizing network firewall rules and the number of underlying ports used by **License Server** for PXE Boot as well as **XErase**, all the firewall rules on the system where **License Server** is running should be turned off until access to the internet (i.e., for installation/updates, network drives, etc.) is no longer required.

Ethernet Interface Used For PXE Boot – Systems that were recently built and shipped by/from EPS should have **License Server** already installed and preconfigured (tested). Use the port that is labeled, **PXE** immediately above it. As long as the correct ethernet port is used, there should be no further effort required to configure DHCP.

DHCP – Problems related to DHCP will usually be reported on the main screen of **License Server** (refer to Figure 7). They will also be displayed on the endpoint's bootloader screen – the fields in the lower right portion of the window of the bootloader on the endpoint/client will either have invalid/missing addresses or the "override" folder was not found/valid. Review the DHCP configuration and retry.

There may be cases where the interface that is to be used for PXE boot cannot be assigned an address by DHCP. One or more of the following suggestions may help in resolving the issue.

- View the interfaces and assigned addresses: **ipconfig**

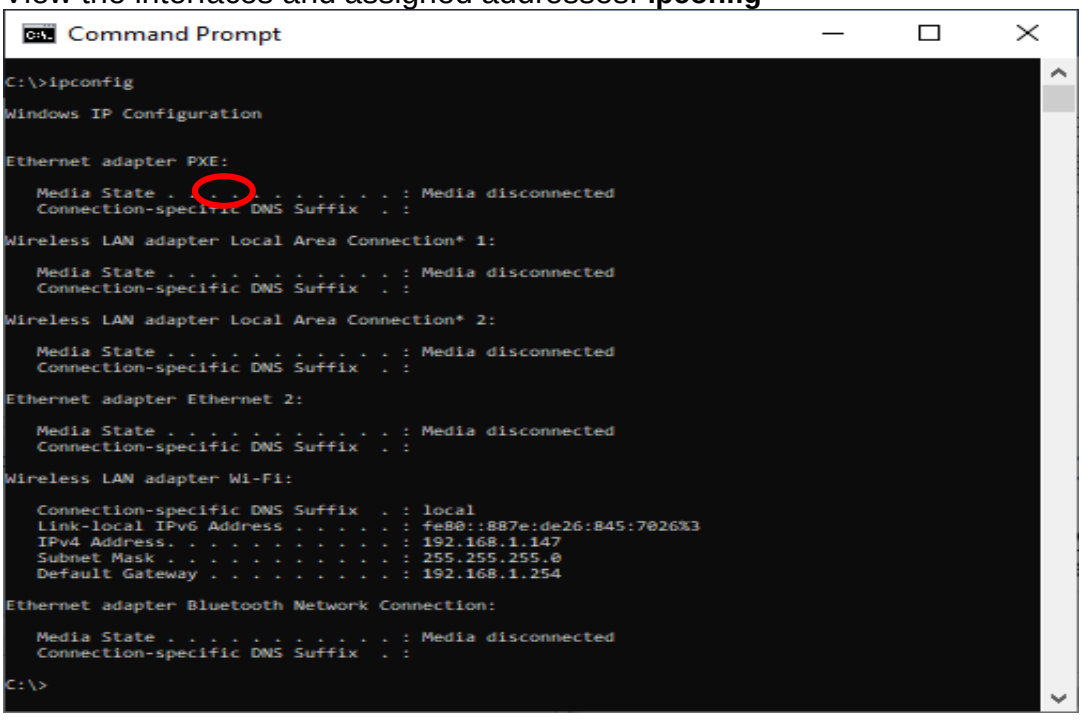

Figure 18 *Output Of ipconfig Via The Command Line*

- Release all addresses: **ipconfig /release**
- Release the address of a *specific interface*: **ipconfig /release $NETCONNECTIONID**
  Display the value of $NETCONNECTI0NID: **wmic nic get Name,NetConnectionID**

- Renew all addresses: **ipconfig /renew**
- Renew the address of a specific interface: **ipconfig /renew $NETCONNECTIONID**
- Review the settings as described here along with the firewall settings on the server.
- If the above does not resolve the issue, disconnect the system from the main network, release all addresses (or reboot, then) confirm with **ipconfig** and attempt to configure with only the **PXE** interface connected.
- As a last resort, the interface may need to be assigned a static address as described in the file, **c:\LCServer\HOWTO_DHCP_Manual.txt**. Contact your local IT support team for assistance.

Licensing

– In order to use any of the features, at least one (1) active license must be found. The active licenses can be found either on the main window of **License Server** or once the client has been booted and **XErase** is launched - look in the title bar on the endpoint. If either location shows, "**DEMO**" or anything other than the number of licenses available, review the licensing requirements.

If "DEMO" appears in the title bar for **XErase**, it is also possible that there was a problem with the required repository (**c:\XERAS_override**) where the images and other critical files related to PXE reside. Review the installation or contact EPS support for assistance.

Reinstalling License Server

– Once License Server is installed, a setup (aka, updates) executable specific to **License Server** is placed into **c:\LCServer**.

1. Open **File Explorer**, navigate to **c:\LCServer** and delete LCServer
2. In the same folder, navigate to **updates** and erase/delete:
   - lc_files.upd
   - LC_win.upd
   - TOOLSwin.upd
3. Navigate back up one level (to **c:\LCServer**) and launch/double click setup
4. Begin the installation at **Install License Server**, step 3.

Optionally, for a reinstallation "from scratch":

1. Open **File Explorer** and erase the folder **c:\LCServer** as well as **c:\XERAS_override**.
2. Follow the steps in Install License Server.

EPS Support

– Use one of the following methods:

- Phone: (508) 278-3600
- Email: support@extremeprotocol.com
- Web: http://www.enterprisedataerasure.com/support-request
- Knowledge Base: http://www.enterprisedataerasure.com/knowledge-base