For maximum control and convenience, your system should be connected to the Internet via a local network router. For installation, you must be able to access this network through a personal computer.

Internet connectivity allows you to use OvrC, a powerful remote maintenance service. See OvrC.com for details.

If your surveillance system is isolated from the Internet, go to SnapAV.com and download the technical reference manual for this product, which has a chapter that steps you through installation without using the web interface.

**Required Equipment**

- The NVR and all cameras to be installed
- Network connection for the NVR
- Admin rights to a network computer that can access the surveillance system
- Phillips screwdriver
- Two AAA batteries for the remote control

You can acquire a PDF of the full NVR technical reference manual, hard drive installation guide, and other materials from SnapAV.com: visit the product page and click on the support tab.

If you are going to install extra hard drives in the recorder, do so now before beginning installation.

**WARNING:** This product can expose you to chemicals including cadmium, which is known to the State of California to cause cancer, and phthalates, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).
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What’s in the Box

Aside from this guide, your package includes:

- The Luma NVR
- Extra screws for mounting an additional internal hard drive into your NVR
- SATA cables for connecting an additional internal hard drive in your NVR
- Rack ears for installing your NVR into a rack
- Screws for attaching the rack ears to the NVR
- USB mouse
- Remote control
- Power cord
- Stick-on rubber feet for the unit if you will not be installing it in a rack
Safety Tips

- Handle this device with care.
- Do not strike or shake this device.
- Do not operate this device beyond its specified power source ratings.
- Protect the power cord from being stepped on or pinched, particularly where it connects to the device and to the power outlet.
- Do not drop items through the ventilation slots. If something falls inside the device, turn off the power immediately and contact qualified personnel for service.
- Do not expose this device to water or moisture. Moisture may damage the device and cause electric shock.
- Take immediate action if the device becomes wet: turn the power off and contact qualified personnel for service.
- Do not use this device in humidity above 85%.
- Do not use this device near any heat sources such as radiators, heat registers, stoves, or other such heat-generating equipment.
- If mounting in a closed space, include adequate ventilation. Do not block ventilation openings.
- The performance and lifespan of the hard drive is affected by temperature. Use this device in temperatures ranging from 14–131 °F.
- Handle the hard drive with care.
- You can damage the hard drive if this device is moved while the hard drive is still spinning. If you must move the device, even just to reposition it, follow the shutdown procedure in the technical reference manual (available online) and wait at least 30 seconds before moving it.
- If servicing or exchanging the hard drive, protect it from static electricity. Use a grounded static wrist guard and mat to properly ground yourself and the hard drive.
- Do not use an electric screwdriver to remove or install a hard drive.
- Clean this device with a dry cloth. Do not use strong or abrasive detergents when cleaning the device chassis. If dirt is hard to remove, use a mild detergent and wipe gently.
- Make a note of the system settings and save them. This helps when changing the system configuration or with recovery if unexpected failure or trouble occurs.
Set Up the Hardware

Caution: Do not power up the NVR until these steps are complete.

1. If desired, install the NVR in the rack. If not, attach the rubber feet to the bottom corners of the unit.
2. Connect the mouse to the USB port on the rear panel. We suggest that you leave the front USB unused and accessible for later use.
3. If desired, connect a local monitor to the VGA, HDMI, or video out port.
4. Connect your IP surveillance cameras to the camera ports. To connect your cameras through your local network, consult the technical reference manual (available online) for additional setup.
5. Connect your network cable to the Ethernet port.
6. Connect the power cord and turn on the power switch.
Install and Run the Luma Utility

Use the Luma Utility to locate your surveillance hardware and set up communications.

Visit your product page at SnapAV.com and download the Luma Utility installer from the Support tab.

**You must use v3.0.0.53 build 20174026 or later! Earlier versions of the utility will not work!**

Run the installer. You can click through and accept the defaults.

Connect your PC to the network and run the Luma Utility. It searches the local network for all Luma Surveillance devices. If your NVR does not appear, ensure that the network connections are secure and that the unit is powered up, then click the **Refresh** button.

Click on the entry for your NVR to view its details. If the NVR is inactive, use the text boxes at the lower right of the Luma utility window to activate the NVR by creating a new secure password.

- Passwords cannot be longer than 16 characters. To ensure compatibility with the local interface, passwords can only contain numbers, letters, spaces, and the following special characters: . , : - /

- Use a password that is long and easy to remember. A password like *parisinthespring* is much more secure and easier to remember than a password like *D3x^7b*. 
Edit the Network Settings

To change the network settings at a later date, consult the NVR manual.

Suggested Best Practices

Ensure the Enable DHCP box is activated. In your router, reserve an IP address and assign it to the NVR’s MAC address (found on the recorder’s box). See your router’s documentation for details.

Change the Server and HTTP Ports

The HTTP port defaults to 80. This port enables you to access your recorder through a web browser.

The server port defaults to 8000. This port enables the Luma mobile application to access your system.

For security reasons, we suggest you change your ports and record the new numbers on the back page of this guide. Consult your server or router manual for common and reserved port numbers to avoid.

To confirm changes, enter the password that you just created and then click Save.
**Complete Port Forwarding**

Port forwarding setup allows you to access the NVR from the internet for remote viewing and other operations. These settings are entered in your network router, typically in a menu called Port Forwarding or Applications and Gaming. Refer to your router manual for help.

Find the NVR settings you need below, then log in to the router and enter the new port forwarding rules.

Once you’ve finished, your device’s URL (e.g., MyHome.WirepathDDNS.com) gets you to the login page of your NVR, no matter where you are. If you changed your HTTP port from the default location (80), add a colon and the new port number to the URL (e.g., MyHome.WirepathDDNS.com:8402).

<table>
<thead>
<tr>
<th>Port Name</th>
<th>Default Value</th>
<th>New Value</th>
<th>Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTTP</td>
<td>80</td>
<td>TCP/UDP</td>
<td></td>
</tr>
<tr>
<td>Server</td>
<td>8000</td>
<td>TCP/UDP</td>
<td></td>
</tr>
<tr>
<td>RTSP</td>
<td>554</td>
<td>TCP/UDP</td>
<td></td>
</tr>
</tbody>
</table>

**Port Forward Attached Cameras**

If your cameras are attached directly to your NVR and you want to access individual cameras remotely, you’ll also need to set up port forwarding for them.

The cameras are accessed with the IP address of the NVR, modified by port numbers 65001 (for camera 1) through 65016 (for camera 16). Forward these ports on your router. This can also be referenced through the camera management links shown on page 10.
Get the Luma Plug-In

Note that Internet Explorer (PC) and Safari (Mac) are the only browsers supported. Due to their lack of support for plugins, Google Chrome and Firefox are not supported browsers.

Open your browser, type the IP address of the recorder (from page 7) into the address bar, and hit Return.

Below the login window, there may be a link that reads, “Please click here to download and install the plug-in. Close the browser when installing the plug-in.” If so, download the plug-in and close all instances of your browser, including any running in the background.

Install the LumaWebComponents plug-in.

Restart your browser and return to your recorder’s login window.

Enter admin for the user name, and the password you just created on page 6.

You might get a pop-up message that asks you whether you want to run the Luma Web Components plug-in. You must allow the plug-in to access your system.

Be sure to save your recorder’s page as a favorite in your browser.
Check the Cameras

After login, your screen shows the live page, which should look similar to the illustration at right. If a camera is out, check its connection to your NVR, and ensure that it is powered up.

Edit Camera Settings (Optional)

To adjust camera settings, click on the settings icon ( ), then click on Camera Management.

This table displays all IP cameras configured for the NVR (shown below). The right column has a link to each camera. If you are within the network, the link opens a new tab in your browser for your camera’s web interface (see the camera manual for details).

To modify a camera, clicking on its entry to highlight the row. Click the Modify button to edit the camera. Luma cameras use the LUMA protocol; third-party cameras may require the ONVIF protocol.

<table>
<thead>
<tr>
<th>Camera</th>
<th>Protocol</th>
<th>Connect</th>
</tr>
</thead>
<tbody>
<tr>
<td>ne</td>
<td>Wirepath</td>
<td><a href="http://192.168.0.11:80">http://192.168.0.11:80</a></td>
</tr>
<tr>
<td>ne</td>
<td>Wirepath</td>
<td><a href="http://192.168.0.13:80">http://192.168.0.13:80</a></td>
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<tr>
<td>ne</td>
<td>Wirepath</td>
<td><a href="http://192.168.0.14:80">http://192.168.0.14:80</a></td>
</tr>
<tr>
<td>ne</td>
<td>Wirepath</td>
<td><a href="http://192.168.0.15:80">http://192.168.0.15:80</a></td>
</tr>
<tr>
<td>ne</td>
<td>Wirepath</td>
<td><a href="http://192.168.0.16:80">http://192.168.0.16:80</a></td>
</tr>
<tr>
<td>ne</td>
<td>Wirepath</td>
<td><a href="http://192.168.0.24:80">http://192.168.0.24:80</a></td>
</tr>
</tbody>
</table>

Reinstalling Network Cameras

If you are taking cameras that were previously attached to a network and plugging them directly into your NVR, you must do a hardware reset on the cameras. See your camera’s manual or the technical reference manual for details.
Set Up Dynamic DNS

This allows you to connect to your surveillance system from anywhere, via the Internet, using a web address that’s easy to remember.

Click on Configure This Recorder > Network Settings > DDNS.

Click the box labeled Enable DDNS, then choose a type from the DDNS Type menu. Next, choose a server address. **We recommend WirepathDDNS.** This service is hosted specifically for use with Luma equipment and requires no additional setup after following these steps.

Enter your desired domain in the Domain box. This creates a personalized server address, which is shown under Device URL.

If someone has already registered your desired domain, the system adds a unique ID (typically two to four digits) to your domain. If you do not like these digits, try another domain or server address.

**Example:** If you choose the domain myhome (as shown), your system’s URL would be myhome.WirepathDNS.com. If someone already had claimed the myhome URL, then your system’s URL would be something like myhome13.WirepathDNS.com.

Click **Save** to finalize the settings here.
Update Camera Passwords

Next you may update the passwords of the cameras attached directly to your NVR to match the password that you created on page 6.

Default passwords represent a security risk after installation. We strongly recommend that you change the password on any camera that has a default password like admin.

Through the local interface:

Click on Camera Management > IP Camera.

At the top of the window, click on the POE Password button.

This opens up a dialog box that lets you change the admin password for all of your PoE connected cameras (that is, camera connected directly to the PoE ports of the NVR). It has no effect on other accounts’ passwords, or on cameras that are not directly connected to the NVR.

Camera passwords cannot be longer than 31 characters. The camera password can only contain numbers and letters; no spaces or special characters.

For added security, use a password that is long and easy to remember.
Create Users and Set Passwords

Click on **Configure This Recorder > User Management**.

Click the **Add** button. Enter the new account’s user name and password. Account names can be up to 32 characters long, and can contain numbers and letters only.

**We recommend that you add accounts by individual users’ names, so that if someone reboots the system or erases a log, you know which user did it.**

Choose the account’s level. There are two levels for users: operator and user. The only difference is the default permissions they are given. You can customize permissions for each account individually. See the technical reference manual (available online) for more details.
Calibrate the System Time

Click on `Configure This Recorder > Device Parameters > Time Settings`.

**Synchronize the Time**

Choose your time zone. North American time zones range from GMT-10:00 (Hawaii) to GMT-03:30 (Newfoundland).

By default, the system uses network time protocol (NTP) to synchronize your system to Coordinated Universal Time. *We strongly recommend using NTP to keep your system well calibrated.*

If you want to use manual time sync, or if your system is isolated from the Internet, see the technical reference manual (available online).

**Disable DST if Necessary**

If you are in a location that does not observe daylight saving time, click the `Enable DST` checkbox to deselect it.

Click `Save` to confirm changes.
You’re Done!

Your system is now operational.

Next Steps

Next, you’ll want to customize your system for your customer’s needs. Using the simple web interface, you can:

- Set protocols for remote computers for when they log in to the surveillance system.
- Change the cameras’ frame rates to manage hard disk space.
- Set a custom recording schedule.
- Arrange for the system to send alert emails when an alarm is triggered.
- Create privacy masks.
- Set up alarms to trigger from the camera, and vice versa.

... and more!

To learn more about these capabilities, go to the product page at SnapAV.com and download the technical reference manual.
Need Help? Contact Tech Support!

If you need further clarification, please email support@SnapAV.com. For more information, instructional videos, support documentation, or ideas, visit our website and view your item’s product page at SnapAV.com.

3-Year Limited Warranty

This Luma Surveillance™ product has a 3-Year Limited Warranty. This warranty includes parts and labor repairs on all components found to be defective in material or workmanship under normal conditions of use. This warranty shall not apply to products that have been abused, modified or disassembled. Products to be repaired under this warranty must be returned to SnapAV or a designated service center with prior notification and an assigned return authorization (RA) number.

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