Magic Cube and Magic Cube Pro User Guide

The Innovo Hardware is a special middleware hardware that connects Elan to Home Assistant. The unit extends Elan to use hundreds of drivers only available on the Home Assistance platform using Innovo's special drivers



MagicCube



MagicCube Pro

home / Entry Level device / industrial SD card (25 x the life of standard SD cards) To install, plug in network, plug in included power supply into the OTG port.

What out for those big fingers while plugging in the power. The SD card is spring loaded and can be accidentally triggered. Do NOT remove the SD Card or the Gold USB key.

Industrial level / advanced device / advanced browser / eMMC flash / 2GB RAM / HDMI output for local administration / USB output for keyboard / mouse

To install, plug in network, plug in included power supply into the PWR port. If you will administer this locally, plug in HDMI and USB Keyboard / Mouse.

Do NOT remove the SD Gold USB key. If you need to plugin Keyboard and Mouse, use a USB Hub

The Magic Cube devices allow the drives to use Secure Websockets for real-time communications between Elan and Drivers. Polling is a thing of the past with Innovo's Hardware. This means its fast, realtime fast, and uses very little resources on the Elan Controller.

Each device has the same basic software and each device is equipped with a pre-configured backup USB drive.

The device not only offers hardware to run Home Assistant, but it also offers remote desktop with a full web browser that allows you to administer any system inside the network. In essence, it's like installing a dedicated PC for remote access. The administration section is accessible from Elan's Discovery tab.

We configure each device specifically to run a secure version of Home Assistant that is compatible with our Elan Drivers. We also add Management tools including auto update and auto backup to make maintenance a lot easier.

A single Magic device is needed per LAN (regardless of of VLAN's). A Magic device can run multiple drivers and multiple instances of the same driver. Some drivers that are available as of this release are:

- 1. Apple TV 3, Apple TV 4, Apple TV 4K with up to OS 15.X.X
- 2. Lighting
 - a. Insteon lights,
 - b. YeeLight,
 - c. Xiaomi Light,
 - d. Tuya Light,
 - e. Philips dynalite,
- 3. Climate
 - a. Trane Thermostats
 - b. Honeywell Thermostats
- 4. Many more to follow

Universal username: root , universal password: Inn0v0 (capital letter I, and zeros instead of o's)

The Base OS of the Magic devices is DietPi.

There is detailed documentation on the dietpi website for each of the below components.

In this guide we provide the minimum information required to get your system up and running for usage with our Elan Drives.

The Innovo Magic device can be administered using

- 1. LAN Connection using Windows Remote Desktop
- 2. LAN Connection using SSH with Putty or Terminal
- 3. Web Browser from any LAN PC / MAC / Linux
- 4. WAN Connection using Remote.it and RDP (Recommended setup)
- 5. WAN Connection using port forward (Not recommended)
 - a. Forward Port 80 to access the web admin
 - b. Forward Port 3389 to access it via Remote Desktop

First Launch

Plug in your unit, power it up, wait roughly 3 minutes for it to appear on the network.

IMPORTANT: The System maybe accessible but it takes a full 3 minutes for all services to start. So be patient.

You should be able to access the device using: (if you cannot access the unit using the names below, replace the name with the IP address.)

It is recommended that you setup a DHCP reservation for the Magic Cube. If the IP address changes, all drivers will stop working.

We do NOT recommend setting a static IP address on the device in case of migration. However, if necessary, use the guide at the end to set the IP address to static.

Launch any web browser from a PC or MAC on the LAN and connect to:

http://magiccubepro.local:8005 (if you are using the Magic Pro Unit)

http://magiccube.local:8005 (if you're using the Magic Cube Unit)

You'll be presented with tiles that will take you to each service. (this is accessible if you're using any MAC or PC web browser or Remote Desktop either via LAN or port forwarded WAN connection.)





ADMIN DASHBOARD

You will see the DietPi Dashboard, this is used for general administrative tasks. Login with the same password as listed above

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📙 Local Devices 📙 Email 📙 hosting	online training	📙 Tech news	🦲 Android Stix	Morpheus	Uindows Server	🌖 iRule Manager	📙 Health 🚦	Dubai	😚 Facebook	Dictionar	y a	C)
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🗰 Processes	System Diag											Sys
≡ Services												
🛢 Software												
>_ Terminal												
🖁 Management												
File Browser												
									Please log	in:		
									Login			
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Once logged in, click on Terminal on the left side of the Dashboard Menu

DietPi Dashboard	=
Statistics	
Processes	DietPi v8.6.1 : 06:12 - Thu 07/07/22
≡ Services	
🛢 Software	
≻_ Terminal	I/
💄 Management	 Device model : Odroid C2 (aarch64) Uptime : up 11 hours, 39 minutes CPU temp : 57 °C / 134 °F : Running warm, but safe
File Browser	 LAN IP: 192.168.0.11 (eth0) WAN IP: 70.175.138.242 California US Freespace (RootFS): 11G Freespace (userdata): 11G Welcome: Innovo MagicPro - For support email support@innovo.net MOTD: DietPi v8.6 has been released, check out all changes: https://dietpi.com/docs/releases/v8_6/
	<pre>dietpi-launcher : All the DietPi programs in one place dietpi-config : Feature rich configuration tool for your device dietpi-software : Select optimised software for installation htop : Resource monitor opu : Shows CPU information and stats root@MagicPro:~# dietpi-config</pre>

It is important to set the time zone information. All nightly backup and update processes happen based on time zone information.

- 1. From terminal type: dietpi-config [Enter]
- 2. Use the up /down / left / right / space bar to navigate and select 3. Choose 5 : Language/Regional option



Please select an option:		DietPi-Config	
		Locale : [C.UTF-8] Timezone : [Europe/London] Keyboard : [gb]	
	<0k>		<back></back>

4. Select a region

Flease select the geographic area in which you live. Subsequent configuration questions w	Configuring tzdata will narrow this down by presenting a list of citie
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	America
	Antarctica Australia
	Arctic Asia
	Atlantic Europe
	Indian
	US
	Etc
<010>	<cancel></cancel>

5. Select location and click OK

	Configuring tzdata	
Please select the city	or region correspondi	ng to your time zone.
Time zone:		
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Ju	neau	Ξ
Kei	ntucky/Louisville	Ξ
Kei	ntucky/Monticello	Ξ
Kra	alendijk	Ξ
La	Paz	=
Li	na	E
Lo	s_Angeles	=
Lot	ver_Princes	

6. Click Back, Exit, OK to save and

Remote Desktop Administration

You can also administer your device using Windows Remote Desktop Client on any Windows or Mac.

Launch RDC, put in the local name or the ip address, agree to the identity warning and login in.

You can also forward a port on your router to device. Forward requests on TCP port 3389 and UDP port 3389 to your device's IP address.

SECURITY WARNING: You should open this port as needed. Do NOT leave it forwarded all the time. If you want a constant 24 / 7 opening, use our guide below for secure remote administration.

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ser name:	None specified		
ou will be a	sked for credentials when you	connect.	
🕤 Show C	ptions	Connect	Help
Remote	Desktop Connection		×
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- 1. Using Windows Remote Desktop, connect using the LAN to your hardware device.
- 2. Sign in with the username: root , password: Inn0v0 (capital letter I, and zeros instead of o's)

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Run	File Manager	Torminal	
Logout	File Manager	Terminal	

Double Click the Icon to view the configuration menu options.

Note: For Magic Cube, to access the web browser, click on the bird icon, Internet, PaleMoon (very light weight browser). For Magic Cube Pro, use the built in FireFox.

Set Up Home Assistant

- From a web browser on your MAC or PC, go to (Note that the Innovo device uses HTTPS for Home Assistant not HTTP. This enables the drivers to use Web Sockets for real time communication. https://ip.address.of.Magic:8123 or use the https://devicename.local:8123
- 2. You will receive a warning that this site is unsafe. Proceed and trust the site.
- 3. You will then see the setup screen.
- 4. Enter Home assistant username and password. This is different that the system username and password. 5. Name the Home, DETECT Location, Choose Units, Set Currency then Click Next

Home A Are you ready to awaken your home, re join a worldwide community of tinkere Let's get started by creating a user acc	SSIStant eclaim your privacy and rs? count. 7	Hello root, welcome to Home name your home? Name of your Home Assistant Inst Home	ne Assistant Assistant. How would you like to tatation	Note: If after clicking next, the Home Assistant screen is taking longer than 30 seconds, Refresh the Page.
Name* Username*		We would like to know where with displaying information at automations. This data is nev We can help you fill in this info one-time request to an extern Time Zone America/Los_Angeles	you live. This information will help nd setting up sur-based reshared outside of your network. commation by making a al service. DETECT Etervation 0 meters	If you get Failed to save: click Ok The system will continue with the setup and ask you to login. This will not affect the installation
Password*	•	Unit System	Metric Celsius, kilograms Imperial Fahrenheit, pounds	192.168.0.33:8123 says
Confirm Password*	CREATE ACCOUNT	Currency Find my value	Currency USD	Failed to save: undefined

- 6. You can choose to opt in to Home Assistant reporting or you can opt out. Click Next.
- 7. Home Assistant will show all discovered devices on the network. At this point you don't need to add any integrations. Follow the Integration Note for the driver you're trying to install in Elan.
- 8. Click Finish.
- 9. You are now ready to install the Elan Drivers.



Setup Token in Home Assistant

To use the device in any Elan Driver, you need to setup a long lived token. Create the toke and save it somewhere safe, you will need to connect the drivers.

• Login to Home Assistant, click on the name you gave the device all the way bottom right of menu



Scroll to the bottom of and click on CREATE TOKEN.

Long-Lived Create long-lived ac instance. Each toke access tokens are o You have no long-live	Access Tokens ccess tokens to allow your scripts to interact with you in will be valid for 10 years from creation. The followi currently active. Learn how to make authenticated rec ved access tokens yet.	ur Home Assistant ing long-lived quests.
CREATE TOKEN	211111-21111 21111 2	0.01
Give the token a name	Elan	×
Name Elan	Copy your access toker iR7mOt7lNkb1Cw	n. It will not be shown again. YvushVtae5MWkda06EA0iK6bFc
CANCEL	OK GE	INERATE QR CODE

Token Example:

eyJ0eXAiOiJKV1QiLCJhbGciOiJlUz11NiJ9.eyJpc3MiOiJiMDl3OGJlOGU2Yjk0OTM1YjImZTU3OTAwMWE1NDhlMClsImlhdCl6MTY1MTUwNDEwMSwiZXhwljoxO TY2ODY0MTAxfQ.4X_6R7mOt7lNkb1CwYvushVtae5MWkdaO6EA0iK6bFc

IMPORTANT, the token will only appear once and if you click off the page, it will disappear, so highlight (Ctrl + A) then copy. If you miss it, delete the token and create a new one.

Break up the Token into three parts separated by the ".", you'll need that information for the driver. Example: Part 1: eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9

Part 2: eyJpc3MiOiJiMDI3OGJIOGU2Yjk0OTM1YjImZTU3OTAwMWE1NDhIMCIsImIhdCl6MTY1MTUwNDEwMSwiZXhwIjoxOTY2ODY0MTAxfQ Part 3: 4X_6R7mOt7lNkb1CwYvushVtae5MWkdaO6EA0iK6bFc

IMPORTANT: REBOOT device after creating the token.

Change the USERNAME in Home Assistant

We don't recommend changing the username for Home Assistant, but if you need to do it, here are the steps.



HACS (Home Assistant Community Store).

HACS extends Home Assistant to use non-official Home Assistant apps and drivers. Use it on your own risk.

The Magic Cube system comes with HACS pre-installed. However, it does have to be setup individually. It also requires that user to have a github account. For more information email support@innovo.net

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- 2. To Start a Remote Desktop Connection, Log into your online account, Click on the Desired Service (RDP) Then Click on ADD TO NETWORK + LAUNCH.
- 3. The RDP program will automatically launch and start the connection to the desktop 6. Login with your device credentials.



Automated Backup



The system runs a back up every night at 1:30 a.m. During the backup the system will not be available. Backup can take anywhere between 2 minutes – 2 hours. Most backups are less than 5 minutes.

The Back up location is the Innovo Gold USB key plugged into the device.

- 1. Do NOT unplug this unless instructed by Innovo Support
- 2. If it is unplugged while the device is still running, plug it in, reboot the device. It is important to reboot the device.

Change the System Password

You can change the default password for the system, but there are several places that passwords need updating if changed from default

1. They must be changed in the Dietpi-Config menu

a. Launch the dietpi-config menu using a method from above (terminal, or RDP) b. Choose 6 : Security Options

- c. Choose Passwords: Change Software and user password
- d. Follow the prompts, click OK, Back, Exit
- 2. They must be changed in Home Assistant (use the above guide)
- 3. The password must be changed for File Manager under settings

Forgot Password

If you forget the username/password and need to reset the network on the device, contact Support@innovo.net

RESETTING HOME ASSISTANT

In case you need to reset Home Assistant, to recover password or to move locations of device, go the web interface of the device and click on the RESET HOME ASSISTANT Link. Reset takes about 30 seconds and doesn't require a reboot



TROUBLESHOOTING METHODS

Issue: Browser does not give Advanced Option to open private SSL sites. Try:

In Chrome Follow the instructions on this page to import the SSL certificate

https://peacocksoftware.com/blog/make-chrome-auto-accept-your-self-signed-certificate

In Firefox

Go to Settings or Preferences \rightarrow Privacy and Security \rightarrow Certificates \rightarrow View Certificates \rightarrow Serves \rightarrow Add Security Exception \rightarrow Get Certificate \rightarrow Confirm Security Exception \rightarrow Reload the Home Assistant Web UI



Issue: You receive an error message after entering the username / password and after hitting Detect on the Location page

Solution: Click Reload on the web browser and continue. This doesn't not affect the final install.

Issue: You don't have control.

Solution: Reboot Elan Controller, Reboot Magic Device. Wait 3 minutes for full startup. Try again.

SETTING STATIC IP ADDRESS

Access the Admin Dashboard then click on Terminal on the left side.

- 1. From terminal type: dietpi-config [Enter]
- 2. Use the up /down / left / right / space bar to navigate and select
- 3. Select No 7 : Network Options: Adapters, then use the keyboard to navigate to OK 4. Select Ethernet then OK



5. Navigate to Change Mode, then Enter. The field will change to STATIC.

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Ethernet Details:	
Usage : Sent = 172 MiB Recieved = 629 M	iB
Address : IP = 192.168.0.204 Mask = 255.2	55.255.0 Gateway = 192.168.0.1 DNS = 192.168.0.1
	- DHCP/STATIC IP
Change Mode	: [DHCP]
	 Additional Options ————•
Link Speed	: [auto (default)]
Disable	: Disable Ethernet adapter
	• Apply•
Apply	: Save all changes and restart networking
	<back></back>
	DietPi-Config
Ethernet Details:	
Usage : Sent = 173 MiB Recieved = 630 M	li B
Address : $IP = 192.168.0.204 \mid Mask = 255.2$	55.255.0 Gateway = 192.168.0.1 DNS = 192.168.0.1
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Change Mode Copy Static IP Static Mask Static Gatewa Static DNS Link Speed	<pre> DHCP/STATIC IP : (STATIC) : Copy current address to "Static" : [192.168.0.100] : [255.255.255.0] y: [192.168.0.1] : [192.168.0.1] Additional Options : [auto (default)]</pre>
Change Mode Copy Static IP Static Mask Static Gatewa Static DNS Link Speed Disable	<pre>- DHCP/STATIC IP : [STATIC] : Copy current address to "Static" : [192.168.0.100] : [255.255.255.0] Vy : [192.168.0.1] : [192.168.0.1] - Additional Options : [auto (default)] Disable Ethernet adapter</pre>
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Change Mode Copy Static IP Static Mask Static Gatewa Static DNS Link Speed Disable Apply	<pre>- DHCP/STATIC IP : (STATIC) : Copy current address to "Static" : [192.168.0.100] : [255.255.255.0] y: [192.168.0.1] : [192.168.0.1] - Additional Options : [auto (default)] : Disable Ethernet adapter - Apply : Save all changes and restart networking</pre>
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Change Mode Copy Static IP Static Mask Static Catewa Static DNS Link Speed Disable Apply <0k>	<pre>- DHCP/STATIC IP</pre>

- 6. Navigate to the appropriate filed and enter the information for your IP address
- 7. Navigate to Apply, then OK
- 8. Back out all the way, Exit, then exit OK. Reboot the device.
- 9. If you forget the IP address and need to reset the network on the device, contact Support@innovo.net

NOTE ABOUT DIETPI

Innovo's Magic Devices uses DietPi as a root OS. DietPi is a robust minimalist OS that uses little resources and has excellent performance.

While we use a stock DietPi installation, we do customize the OS to be ready to go on delivery. We do add special scripts and programs to make the device very compatible with Elan.

If the device fails or you need support, do not flash with a stock image from the DietPi website. Please contact support@innovo.net for recovery instructions. We fully support the device and it's OS.

DietPi comes with an extensive user manual. If you need any more advanced topics about the installed software, use

the following links for details https://dietpi.com/forum/ https://dietpi.com/docs/software/ https://dietpi.com/docs/software/