EnGenius®

Installation Guide

Neutron Series ezMaster

OCTOBER 2015

This document provides guidelines and procedures for installing and operating ezMaster.

Table of contents

Before You Begin

For ezMaster to manage an AP or switch, the device must be able to communicate with the ezMaster server. Make sure that the ezMaster server, EWS AP and EWS switch can all be reachable via HTTP/HTTPS from outside your internal network.

System Requirements

Recommended environment for managing up to 500 APs

CPU: Intel i3 3.6GHz dual core or above
RAM: 4GB minimum
HDD: 500GB (actual requirement depending on log size)
OS: Microsoft Windows 7 or later + VirtualBox 4.3.30 (or similar virtualization products)

Recommended environment for managing up to 1000 APs

CPU: Intel i5 3.2GHz quad core or above
RAM: 4GB minimum
HDD: 500GB (actual requirement depending on log size)
OS: Microsoft Windows 7 or later + VirtualBox 4.3.30 (or similar virtualization products)

Browser Requirements

Internet Explorer 10 or better
Firefox 34.0 or better
Chrome 31.0 or better
Safari 8.0 or better

Network Topology Requirements

At sites where APs are deployed: a DHCP enabled network for APs to obtain IP address

Firewall Configuration

Depending on how your network is designed, you may need to open ports on your firewall.

The following **outbound** ports MUST be opened in the firewall at the site where the ezMaster server is located in order for ezMaster to register with the ezReg server.

Port	Description
TCP 80	HTTP port, ezReg communication
UDP 53	DNS port, ezReg communication

The following **inbound** ports MUST be opened in the firewall at the site where the ezMaster server is located in order for remote access points to communicate with the ezMaster server.

Port	Description
UDP 1234	Custom port, CAPWAP protocol
TCP 80 (default)	HTTP port, Captive Portal, *port can be defined by user*

The following **outbound** ports MUST be opened in the firewall at the remote site where the AP/switch is deployed in order to communicate with ezMaster.

Port	Description
UDP 1234	Custom port, CAPWAP protocol
TCP 80	HTTP port, ezReg communication
UDP 53	DNS port, ezReg communication
TCP 80 (default)	HTTP port, Captive Portal, *port can be defined by user*

ezMaster Image Installation Instructions

The instructions below will guide you through the process of installing ezMaster VM.

I. Getting a Virtualization Product

ezMaster VM is distributed as an Open Virtualization Appliance (OVA) which should be compatible with these virtual machine products.

- VirtualBox (v4.3.30 recommended*)
- VMWare

Note: At the time of release, VirtualBox v5.0.6 (latest version) has known issues with bridging NICs: https://www.virtualbox.org/ticket/14558. We recommend using v4.3.30.

II. Getting the ezMaster Virtual Machine Image

The ezMaster VM file can be downloaded at EnGenius' website. Due to the size, it may take some time to download.

III.   Importing the ezMaster VM Image

Each virtualization product has different methods for using a VM appliance. The tested methods are as below. Procedures for launching ezMaster on other virtualization products are similar.

Launching the ezMaster VM image using VMware Workstation Player 12

1. Start *VMware® Workstation Player* and click on "***Open a Virtual Machine".***

2. Locate and select the ezMaster VM image file (.ova), then press ***"Import"***.
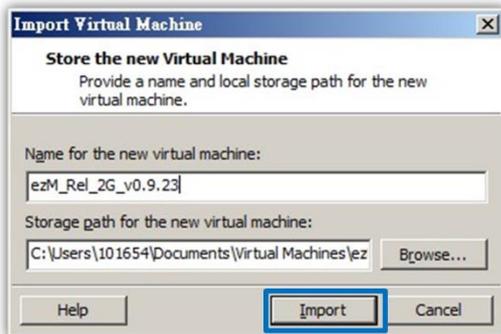
Additional Information

When importing the .ova file, you may see this error:

*The import failed because .ova did not pass the OVF specification conformance or virtual hardware compliance checks.*

If you see this error, click **Retry** with lower specifications to relax the specification and start the import.
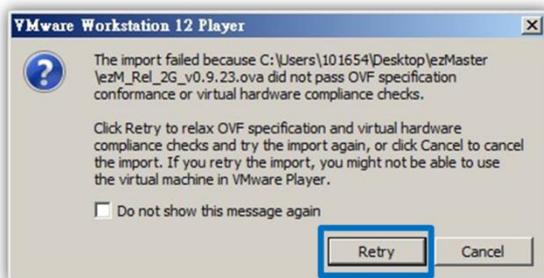
3. The VM should now be visible in the list. Click on **"Edit virtual machine settings"**.
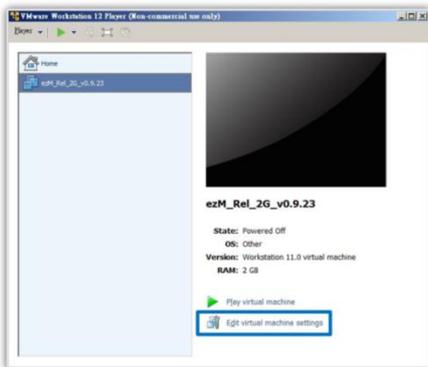
Under the *Hardware* tab, click on *Network Adapter* and select *Bridged: Connect directly to the physical network.*
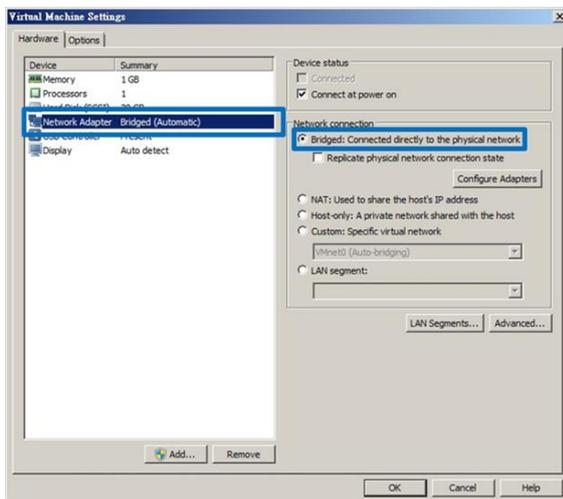
Additional Information

If your PC has more than one network adapter, click on *Configure Adapters* and choose the network adapter that your computer uses to connect to the Internet (WAN). Choose only one wired LAN adapter. DO NOT select a Wireless LAN adapter or other virtual adapters.
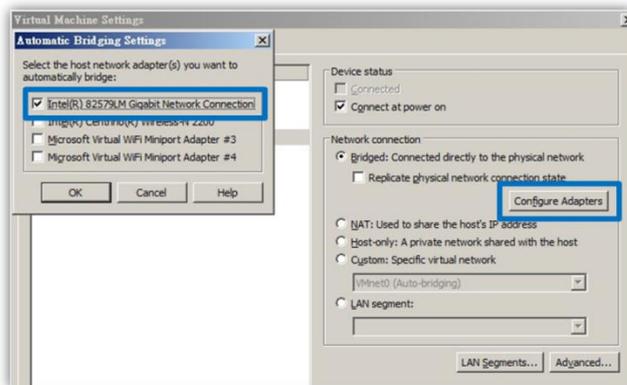
4. Click on **OK** to save and apply settings.

5. After setting up your network adapter, press **"Play Virtual Machine"** to launch the ezMaster image.
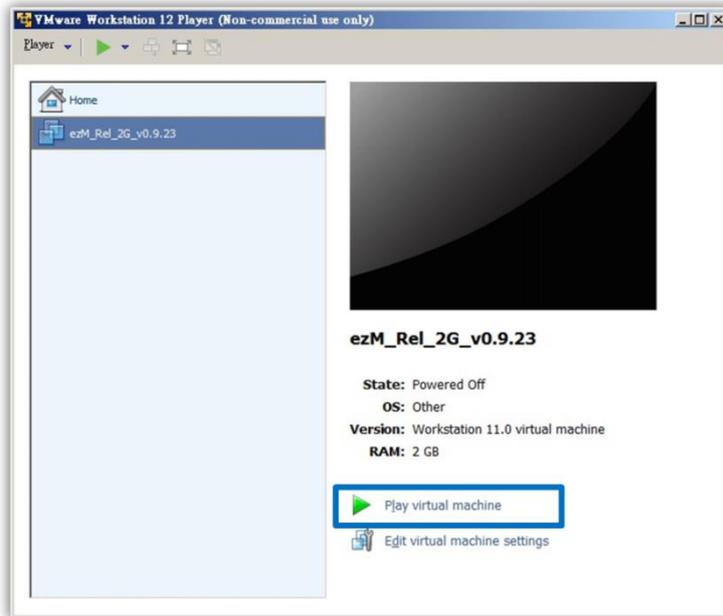
Launching the ezMaster VM image using VirtualBox

1. Download and install VirtualBox 4.3.30 for Windows.
   https://www.virtualbox.org/wiki/Download_Old_Builds_4_3

2. Start VirtualBox and click on *File > Import Appliance…*
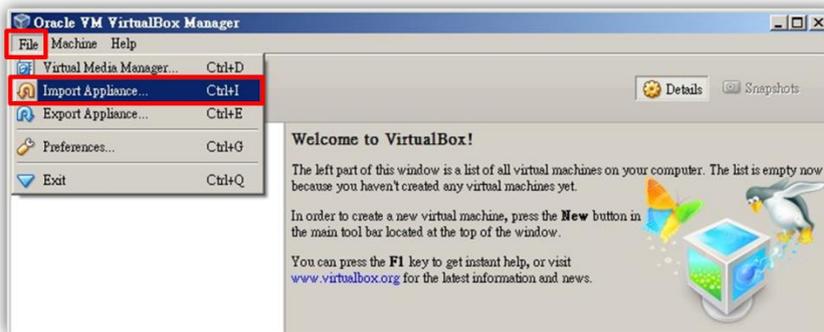
3. Locate and select ezMaster image, select the *"Reinitialize the MAC address of all network cards"* checkbox, then click on *Import*.
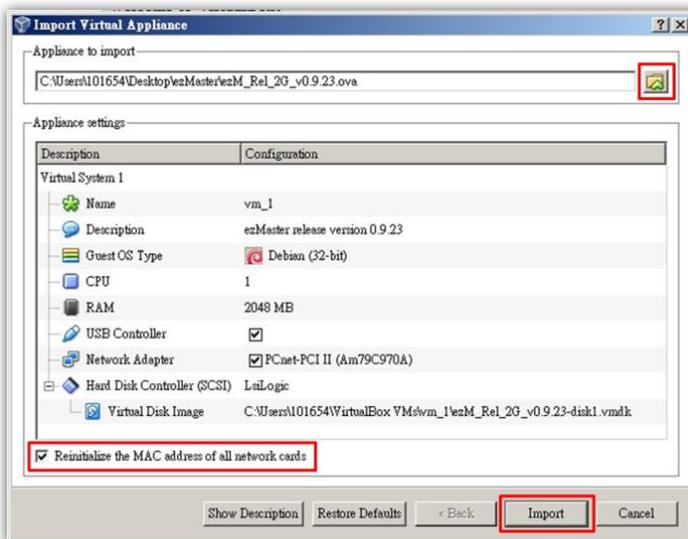
4. Click on **Network**.
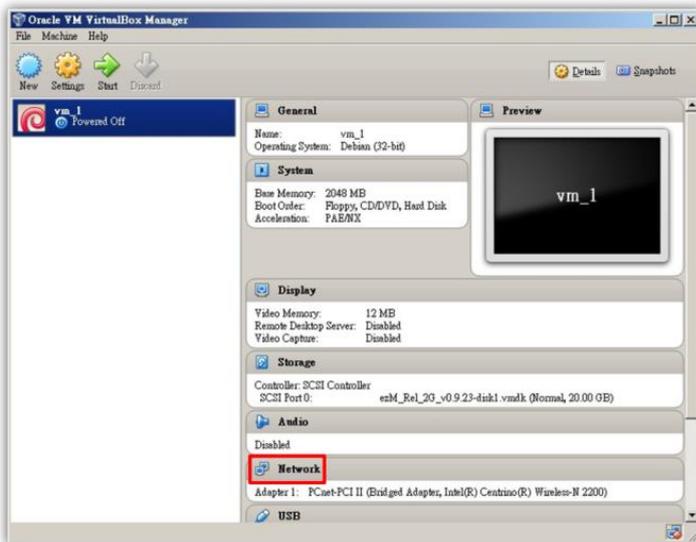
5. From the drop-down box, select the network adapter that your computer uses to connect to the Internet (WAN). DO NOT select a Wireless LAN adapter or other virtual adapters. Click on **OK** to continue.
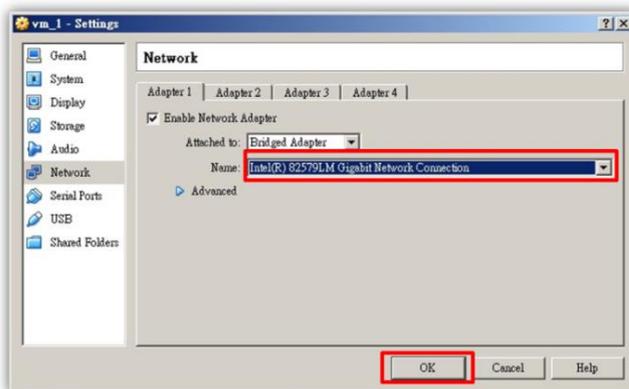
6. Click on the **Start** button to launch the ezMaster image.
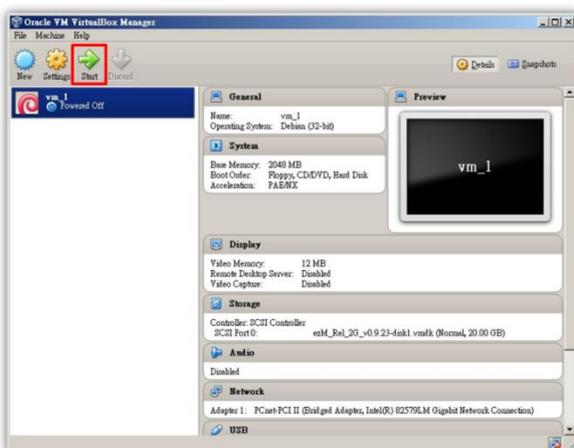
IV.   Setting up ezMaster Server

1. After launching the image, once the installation script finishes running, you will be prompted to enter login and password for ezMaster. For login enter **admin**, for the password enter **password**.

2. Once the **ezmaster#** command prompt appears, start entering network settings for your ezMaster server.
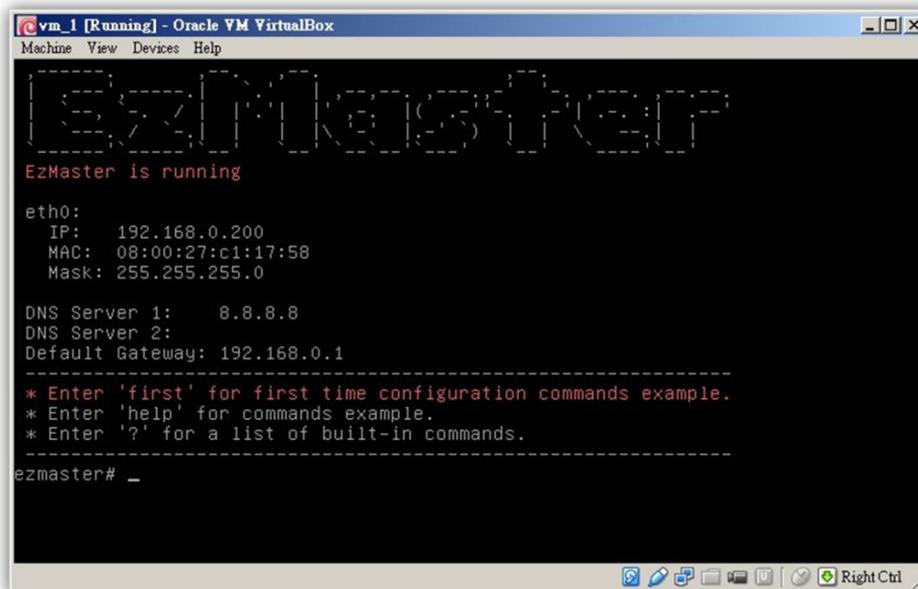
(Tip: Use *Network Adapter Properties* to check the info of your network adapter.)
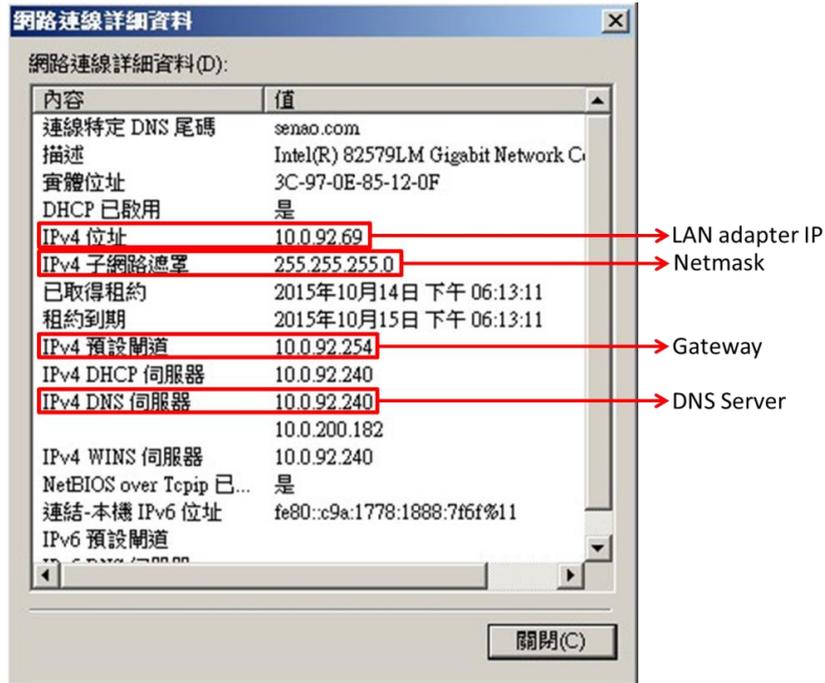
*network settings below are for reference example use.

a) Enter ezMaster *Server IP* and *Netmask*:

config ip eth0 *10.0.92.70 255.255.255.0*

(eg. LAN Adapter IP is *10.0.92.69* so an unused IP Address *10.0.92.70* is chosen to be used as ezMaster's server IP address)

b) Enter ezMaster Server gateway:

config gateway *10.0.92.254*

c) Enter ezMaster DNS Server:

config dns *10.0.92.240*

3. You have completed installing ezMaster. Open a web browser and type the IP address of the ezMaster server. Once the log in screen appears, enter the username (**admin**) and password (**password**) to log in.
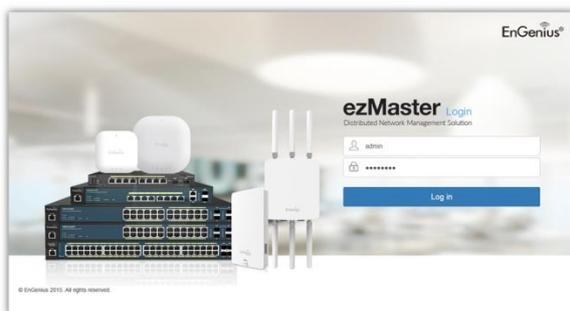
V. Registering ezMaster to the ezReg Server

In order to manage remote device using ezMaster, you must first register ezMaster to the ezRegistration server. You may skip this section if you are managing only local devices or if you are manually redirecting each AP to ezMaster.

1. In the ezMaster user interface, click on the *'Global Settings'* menu.

2. Under *'Admin Account'*, fill in the fields and click **Apply** to register your ezMaster to the ezReg server. Take note that a valid email address is required for you to unregister your devices in the event of ezMaster server failure.

Getting Started with ezMaster

Before ezMaster is able to manage a Neutron device, the access point/switch must be running with the required firmware version. All Neutron devices will need to be running firmware version **c1.6.x or later**. Refer to the AP/switch user manual for detailed instructions on firmware upgrading.

Adding Devices to ezMaster Device Inventory

Before managing a remote AP/switch, you must first bind the AP to ezMaster's Device Inventory by 'registering' the device.

1. Once ezMaster has been registered with the ezRegistration server, you can start registering your APs and adding them to ezMaster's device inventory by clicking on the **'Device Inventory'** icon.

2. Next, click on the **'Add Device'** button.

3. Enter the MAC Address, Check Code and Description of the device you want to register using a semi-colon (;) to separate each field. eg. **MAC Address;Check Code;Description**
   To register more than one device at the same time, enter the information of one device per row by pressing Enter. Click the **'Register'** button once you are done.
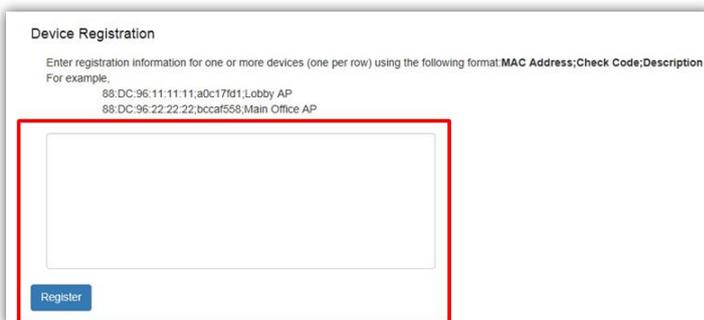
Note: The *'check code'* of the AP can be found on either the device label at the bottom of the AP. If not, access the AP's user interface and find it under the ***Management > Controller Settings***. Contact your local dealer if you are having problems locating the check code.

4. The message below will be displayed upon successfully claiming an AP. Click on ***"OK"*** to proceed.
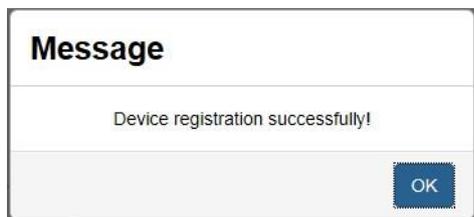
5. The registered AP will be listed in your Device Inventory.
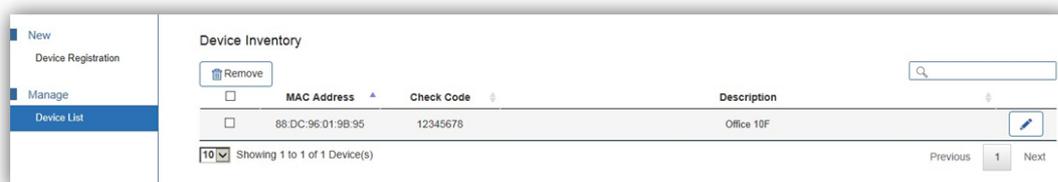
Managing Neutron Devices using ezMaster

1. Make sure that your Neutron device is connected to a network with a DHCP server and can access the Internet.

2. Click on the **"Project"** icon to create a new project. A 'Project' is similar to a 'profile' which can be used to classify/represent different sites or floors of your deployment.

3. Click on **"Create New Project"** and enter a project name and description. Click on **Apply** when you are done.
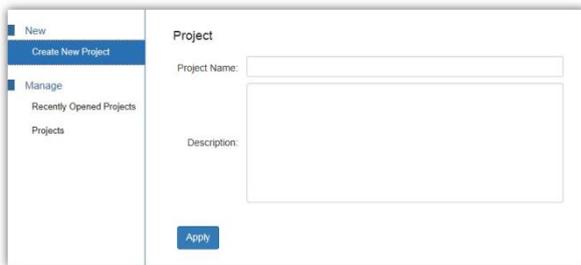
4. You'll be automatically redirected to the **'Pending Approval'** list after successfully creating a profile. The **'Pending Approval'** list will display a list of AP/switches in your local network (same network as ezMaster) and also remote AP/switches claimed by ezMaster.

5. Select the AP(s) you wish to add to your profile by selecting the checkbox and click on the **"Add"** button.

6. You'll be automatically redirected to the device page. Once the AP is online (green), to configure your AP, click on the **'Device Name'** link of your AP to bring up the configuration menu.

Important: In order to manage an EWS Switch, the Controller State of the EWS Switch must be set to **"Disabled"** in the EWS Switch web interface. A switch with Controller State "Enabled" will not be discovered by ezMaster.

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