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# **Visual Capacity Optimization Manager Visual Power Manager**

***OVF Appliance Installation Guide***

**Release 6.9.0**

**January 2023**



**Eaton**

**Proprietary and Confidential**

[www.Eaton.com/VCOM](http://www.Eaton.com/VCOM)

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- Online and telephone contact information for technical assistance and customer services
- Product and documentation downloads
- Other helpful resources appropriate for your product

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# 1. Installing the OVF (Appliance)

## 1.1. Resources for VPM and VPM Essential OVF

The VPM and VPM Essential OVF has the following default resources to support approximately 1,000 Rackmount Assets (RMA) with a 5-minute polling interval.

Operating System	Oracle Linux 8.7 (64 bit)
Disk Space	400 GB
CPU	4 CPU (For the VCOM OVF it installed the Superset, it changes to 6CPU) It is strongly suggested that each VM host CPU/Core have a passmark rating of 8000 or above: <a href="https://www.cpubenchmark.net/cpu_list.php">https://www.cpubenchmark.net/cpu_list.php</a>
Memory	16GB (For the VCOM OVF it installed the Superset, it change to 24GB)
Database	PostgreSQL 13.5 server (included with application)
Web Server	Tomcat 9.0.64 (included with application)
Virtual Server	VMware Workstation or ESXi 6.7 U2 and above with the Virtual Hardware Version 15 format

## 1.2. Resources for VCOM OVF

The VCOM OVF has the following default resources to support approximately 1,000 Rackmount Assets (RMA) with a 5-minute polling interval.

Operating System	Oracle Linux 8.7 (64 bit)
Disk Space	400 GB
CPU	6 CPUs It is strongly suggested that each VM host CPU/Core have a passmark rating of 8000 or above: <a href="https://www.cpubenchmark.net/cpu_list.php">https://www.cpubenchmark.net/cpu_list.php</a>
Memory	24GB
Database	PostgreSQL 13.5 server (included with application)
Web Server	Tomcat 9.0.64 (included with application)
Virtual Server	VMware Workstation or ESXi 6.7 U2 and above with the Virtual Hardware Version 15 format

## 1.3. Before You Install the OVF

Before you install the OVF please ensure you are prepared as to the items below.

### 1.3.1. Licensing

There are two licensing options for your application. The application license uses hardware signature information.

- **Generic License** – The generic license does not allow for vMotion on the VM. If the server moves with vMotion then the license will break. If you can turn off vMotion for your VM then use this license option.
- **vCenter (vMotion) License** – If your VM has vMotion then you must use the vCenter license.
  - For the vCenter License you will need a
    - **IP Address for vCenter Server**
    - **vCenter read-only service account**
    - **Static password for service account** (password cannot change)
  - **How the vCenter License Works**

To protect Eaton product license against possible abuse in the virtualized environment with technologies, such as vMotion (for example, running multiple unauthorized VM copies), it is necessary for our products to perform basic license validation with the following 2 simple rules:

    1. In a vCenter environment, given a specific license, only one product instance with that license is allowed to be running.
    2. The running product instance must match the IP, hostname and VM guest ID for which the license is issued.
  - The actual license validation algorithm is simple and straightforward:
    - When the license is generated in a vCenter environment, the IP, hostname and VM guest ID is embedded in the license file which we issue for the customer.
    - When running the application, our license validation method calls vCenter to check if there is one and only one IP + hostname + VM guest ID combination existing in vCenter that matches the specification in the license.
    - Nothing else is read from vCenter other than the IP + hostname + VM GuestID combination. Typically, this has not been a security concern.

### 1.3.2. URL

You will need a unique DNS qualified URL for the new server. When prompted enter the complete URL minus http/https.

### 1.3.3. HTTP vs HTTPS

If you are going to use HTTPS follow the steps for Self-Sign.

If desired, you can generate your own certificates at a later time.

## 1.4. Steps to Install the OVF

Download OVF zip package

Unzip the package and import OVF to your VM Infrastructure using all of the files from the package

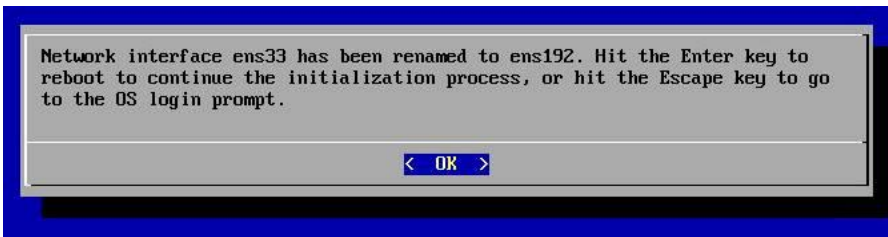
**NOTE: BEFORE BOOTING THE VIRTUAL MACHINE, PLEASE MAKE SURE YOU HAVE A RESERVERD OR STATIC IP FOR THIS VM AND ALSO A DNS ENTRY CREATED FOR THE WEB URL YOU WOULD LIKE TO USE TO ACCESS THE APPLICATION WEB INTERFACE. THESE ARE HARD REQUIREMENTS AND BOTH WILL BE APPLIED DURING THE NEXT STEPS OF THE INSTALLATION WIZARD.**

Start your VM Guest server which is running the application. **Do not add or remove a network interface to the VM Guest prior to startup.**

1. If the machine is slow, you may see this message. Click the Enter key to continue with the initialization process.

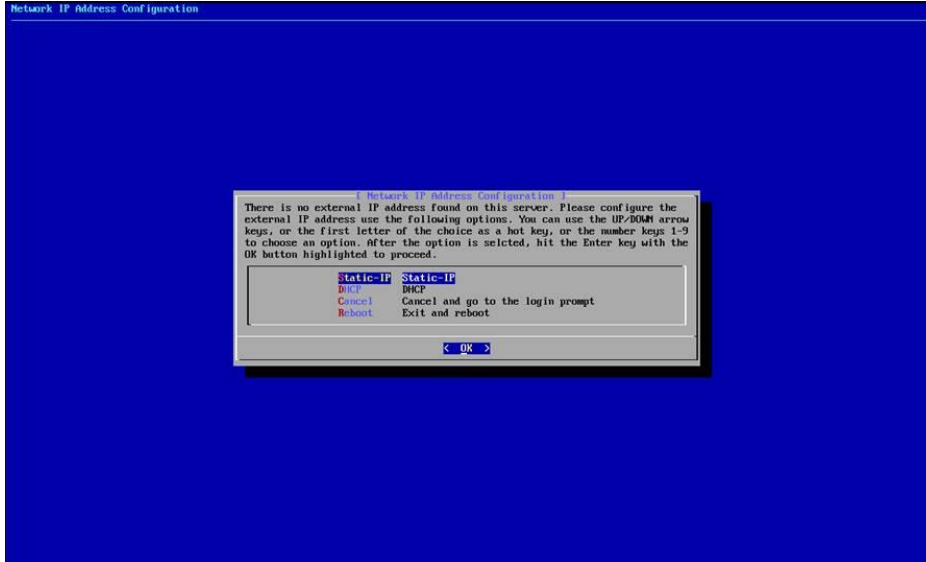


2. If the VM Host renames the network interface, then this message may appear. If you see this message, then hit Enter to continue with the initialization process.



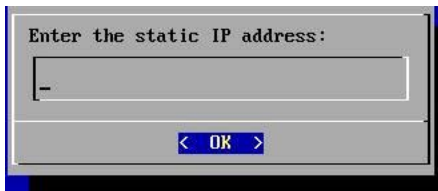
Choose an IP Configuration from the Network IP Address Configuration Menu

- a. Static IP – Configure the VM Guest with a Static IP Address
- b. DHCP – Use DHCP to dynamically assign an IP Address to the VM Guest
- c. Cancel – The Network IP Address Configuration Menu window will be closed, and the user will be shown the OS login prompt.
- d. Reboot – The VM Guest will be rebooted.

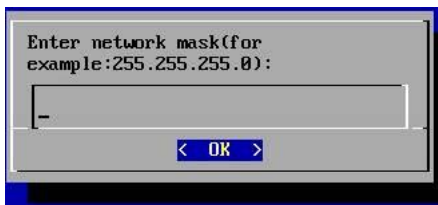


### 1.4.1. Static IP

1. Enter the Static IP Address to be configured for the VM Guest



2. Enter the network mask to be used for the Static IP Address



3. Enter the gateway address to be used with the Static IP Address



4. Enter the DNS Server to be used with the Static IP Address





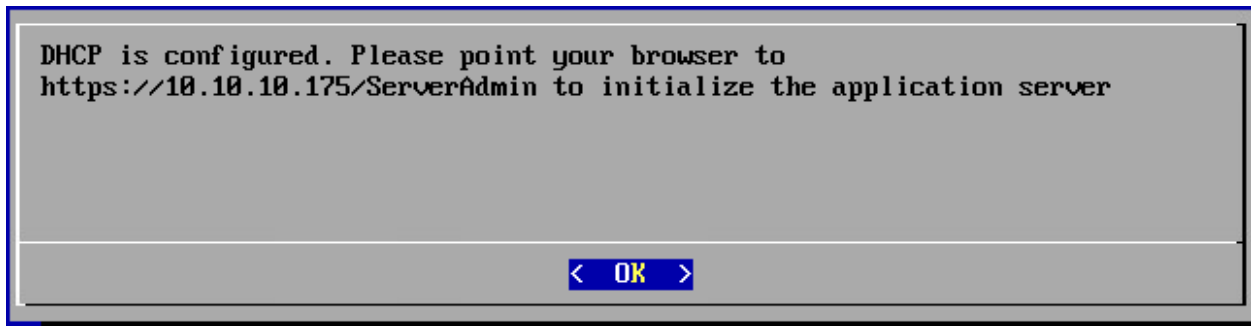
5. The configuration of the server will be updated based on the information provided. After 20-30 seconds, the following message will be presented to the user. Access the URL specified and login with the user/password combination to continue with the initialization of the server.

### 1.4.2. DHCP

When the DHCP option is selected the configuration of the server will be updated. After 20-30 seconds, the following message will be presented to the user. Access the URL specified and login with the user/password combination to continue with the initialization of the server.

### 1.4.3. Wait 5 Minutes Before Attempting ServerAdmin

Please wait 5 minutes before attempting to connect to the Server Admin tool to continue configuration.



## 2. Finish Configuration in the Server Admin tool

1. Using a web browser application, access the <https://IPAddress/ServerAdmin> address which was specified in the IP Address Configuration message.
2. Use the admin / Monit@r#1 user/pw combination to login to this Server Admin interface.
3. Server Admin will recognize the server has not been fully initialized and will present the initialization screen. It needs to accept the Eula then will show the initialization steps page.

**EATON Visual Capacity Optimization Manager** Logout

Initialization

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**2. LICENSES**

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**Initialization**

**Step 1: Set Parameters**

IP

Host URL

Timezone

Current Date Time   :  (HH:MM) +08:00

**Step 2: SSL Certificate (Optional)**

HTTP  HTTPS

Type  Self Sign  Upload Certificate

Certificate File

Certificate Key File

Certificate Chain File

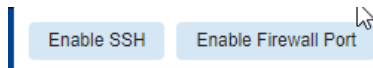
**Step 3: Select License Type**

Generic License  vCenter License

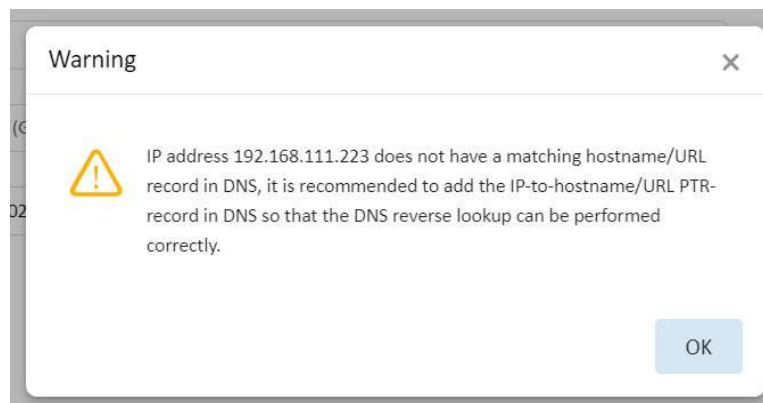
**Step 4: Upload License**

Upload License File:

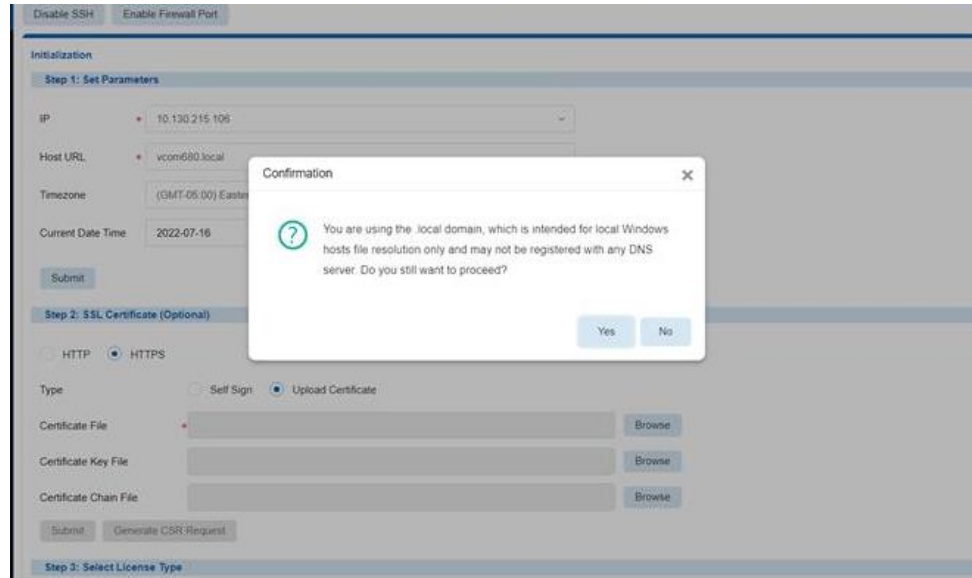
4. Initialize page will auto disable SSH and firewall port.



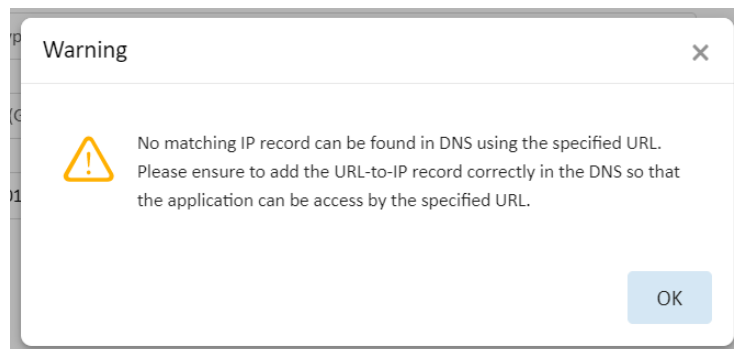
- a. Disable SSH means user can't access server by SSH command. Please click Enable SSH.
  - b. Disable Firewall means server will close 12001-12006 ports. Please click Enable Firewall Port.
5. Define the IP Address of the server – Dropdown list will display IP Address found on the server automatically.
    - a. Note, the following message may appear and will require attention from the network administrator.



6. Define the Host URL to be used to access the application.
  - a. The system will preferentially retrieve the URL corresponding to the current IP from the DNS server. Note: we recommend users register IP and URL on the DNS server first.
  - b. If the system cannot retrieve the URL from the DNS server, it will try to retrieve the URL from the application configuration file. The default URL is vcom680.local. In this case, the following message will appear, and users need to click Yes to continue.



7. Define the Time zone to be used for the server
8. Confirm the current time fields
9. Click Submit to process configuration updates on the server and application.
  - a. Note, if DNS does not have the specified URL registered, the following message will appear. Click OK to continue with the initialization process. You will need to register the specified URL with the DNS system to be able to access the application login page when initialization is complete.
  - b. Alternatively, the computer performing the installation may configure the local Windows hosts file with the IP and URL combination. This will allow the initialization process to complete, but end users would also need to configure hosts files to access the login page. Please make sure the URL is registered in the DNS system.



10. The application default it set to HTTPS Self Sign, if there are doesn't want to change it, please turn to step3. If want to change to HTTP or HTTPS Upload Certificate, please submit changes. After clicking the Submit, it will restart the server admin and it takes about 10 seconds. Please do not close the tab after it started it will show the server admin page.

**Step 2: SSL Certificate (Optional)**

HTTP  HTTPS

Type  Self Sign  Upload Certificate

Certificate File \*

Certificate Key File \*

Certificate Chain File

11. In the Initialization Window Step 3: Select License Type , click the radio button for Generic License and click Generate License Request button.

**Step 3: Select License Type**

Generic License  vCenter License

12. For a vCenter license enter the following information in the fields shown below:

- The IP address for the vCenter server
- A read-only username and its Password for the vCenter server

**Step 2: SSL Certificate (Optional)**

HTTP  HTTPS


Type  Self Sign  Upload Certificate

Certificate File \*

Certificate Key File \*

Certificate Chain File

**Step 3: Select License Type**

Generic License  vCenter License 

IP \*

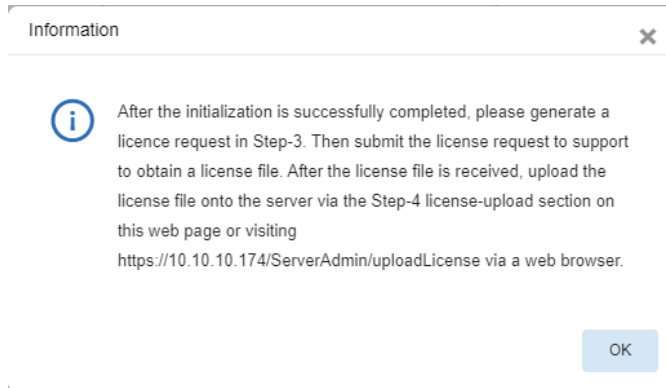
User Name \*

Password \*

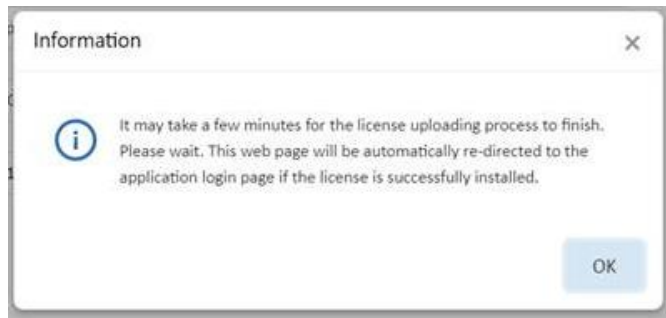
**Step 4: Upload License**

13. Click the Generate License Request button

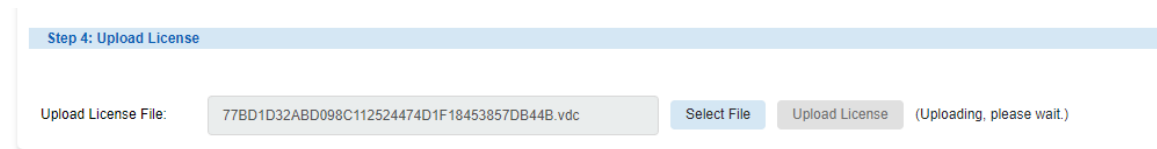
A message will appear which explains the need to obtain a license activation key for the application. Click OK and wait for the License Request File to be automatically downloaded to the laptop/PC and it can be found in the Downloads folder.



14. Send the License Request File to the support team. The Support team will generate a License Activation File which can be used for the application server.
15. When the License Activation File has been received, use Step 4 of the Initialization web page on Server Admin to upload the license file. Use the Select File button to choose the License Activation File. Click Upload License to apply the License Activation File to the server.
16. The license will be applied to the server. Click OK to close the message window.



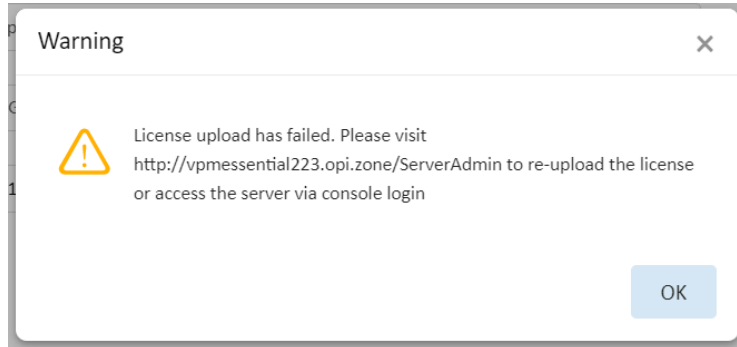
17. The application of the license will require a reboot of the server and a full startup of the application and database processes. This process, depending on the speed of the server, can take up to 15 minutes to complete. A status message will indicate the license is being applied to the server.



18. If the license is applied successfully, the browser session will be forwarded to the application login page. User will be presented the login page for the application.

Login with user = admin and password = Monit@r#1 which is the default user for a new installation.

- a. The following error message will be received if the startup process fails. The most common reason for this issue is related to resolving the specified URL to the IP Address of the server. Please ensure the DNS system is properly configured with the URL so the initialization process is able to complete the system startup processed.



## 3. Server Ports

The application operates on multiple network ports to establish and maintain communication between server components and monitored devices. Customers must enable these ports during the setup of the server architecture for the system to operate as expected. The following summarizes the required ports in the application architecture.

### 3.1. From 3D Client to Master Server

#	Port Type	Port	Port Usage
1	TCP	80/443	Web Services
2	TCP	12003	License Services
3	TCP	12006	Message Queue

### 3.2. From Web Client to Master Server

#	Port Type	Port	Port Usage
1	TCP	80/443	Web Server

### 3.3. From Master Server to Probe Server (Distributed Setup)

#	Port Type	Port	Port Usage
1	TCP	22	Remote Execution
2	TCP	5432	DB Access
3	TCP	12005	Remote Messaging

### 3.4. From Master Server to Master DB (Distributed Setup)

#	Port Type	Port	Port Usage
1	TCP	22	Remote Execution
2	TCP	5432	DB Access if Master DB is on a separate server

### 3.5. From Master DB to Master Server (Distributed Setup)

#	Port Type	Port	Port Usage
1	TCP	80/443	Web Services
2	TCP	12007	Message Queue

### 3.6. From Master DB to Probe Servers (Distributed Setup)



#	Port Type	Port	Port Usage
1	TCP	5432	DB Access

### 3.7. From Probe Server to Master Server (Distributed Setup)

#	Port Type	Port	Port Usage
1	TCP	80/443	Replication to access master services
2	TCP	12006	Message Queue
3	TCP	12007	Message Queue
4	TCP	5432	DB Access if Master is an All-In-One or combined with Master DB

### 3.8. From Probe Server to Master DB (Distributed Setup)

#	Port Type	Port	Port Usage
1	TCP	5432	DB Access if Master DB is on separate sever

### 3.9. From Probe Server to SNMP Monitored Devices

#	Port Type	Port	Port Usage
1	UDP	161	SNMP Query

### 3.10. From SNMP Monitored Devices to Probe Server

#	Port Type	Port	Port Usage
1	UDP	162	SNMP Traps

### 3.11. From Probe Server to Modbus Monitored Devices

#	Port Type	Port	Port Usage
1	TCP	502	Modbus Query

### 3.12. Internal Monitoring Ports on the Server

#	Port Type	Port	Port Usage
1	TCP	4505	Salt Stack
2	TCP	4506	Salt Stack
3	TCP	5000	Node server
4	TCP	5433	BI Dashboard
5	TCP	8082	BACNET SERVER
6	TCP	9991	VDC VDCMON
7	TCP	9992	SYSLOG
8	TCP	12001	BI
9	HTTP	12008	VDC Core Server
10	HTTP	8086	Influx DB