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1 Introduction

This document describes the *Best Practice* for use of the server in ELVOX IP video door entry systems (EIPVDES- Elvox IP Video Door Entry System).

1.1 Criteria

Use of the server is necessary when the system meets at least one of the following conditions:

- There are more than 200 EIPVDES devices connected to the system.
- There are more than 3 porter switchboards in the system.
- The video voicemail service must be able to save more than 10 messages.
- The number of users managed for access control functions is greater than 500.

1.2 Hardware requirements

The physical machine on which the server resides must meet the following criteria:

- Processor: Intel® Core i7 6700 (Quad Core @ 3.4GHz) or faster.
- RAM: 8 GB or more.
- Mass storage: 500 GB or more, RAID recommended.
- 1 x Gigabit Ethernet Network Adapter.

1.3 Server

The server is released in the form of a *ISO 9660 bootable image* file, and can be executed as a *live CD* in a virtual machine that meets the following requirements:

- x86 64bit, 2 core processor or more.
- 2 GB RAM or more.
- Hardware Clock in UTC time, with *timekeeping* function.
- IDE controller with CD/DVD drive associated to the file containing the ISO image supplied.
- SATA controller with HD drive associated with an empty virtual disk with a capacity of 100 GB or more.
- Gigabit Ethernet Network Adapter configured in *bridged* mode to the physical network interface, to virtualize an Intel® PRO/1000 MT Adapter.

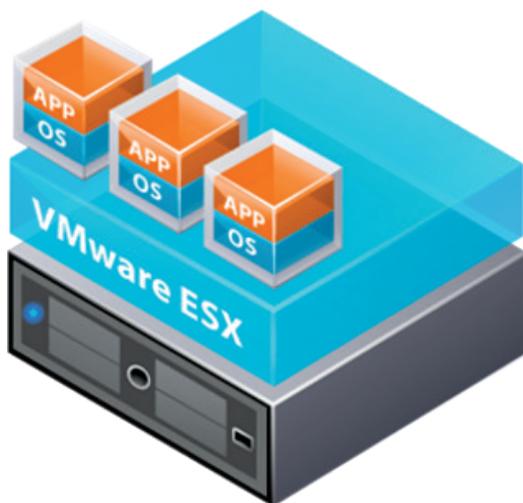
In a virtualization system, the timekeeping function is the ability of the virtual hardware clock of the virtual machine to keep the date/time of the hosted operating system, also when the virtual machine is restarted and if it is stopped.

The virtual disk is used by the server to store all the system configuration data, as well as the log files and any other information that needs to be persistent.

For the virtualization environment, we recommend the use of VMware ESXi (described below). However, the image of the EIPVDES server is potentially compatible with any virtualization infrastructure, provided that it complies with the requirements specified previously.

2 VMware ESXi

ESXi is a software product developed by VMware for the creation of virtualized systems in an *enterprise* environment. As it is a *type-1 hypervisor*, it can be installed directly on the physical server, thereby allowing it to be partitioned into multiple logical servers implemented by virtual machines. It therefore does not require the support of an operating system, as it includes all the basic components of one. The *bare-metal* architecture provides better performance than other virtualization solutions (Oracle VM VirtualBox, VMware Workstation) while using less resources.



ESXi is the main component of the VMware vSphere virtualization platform (previously known as VMware Infrastructure): the complete solution includes additional tools and functions that can be particularly useful in an enterprise environment (SAN/NAS support, High Availability, etc.).

ESXi can be used free of charge with the vSphere Hypervisor solution. For details and further information, refer to the VMware documentation (www.vmware.com).

2.1 Installation

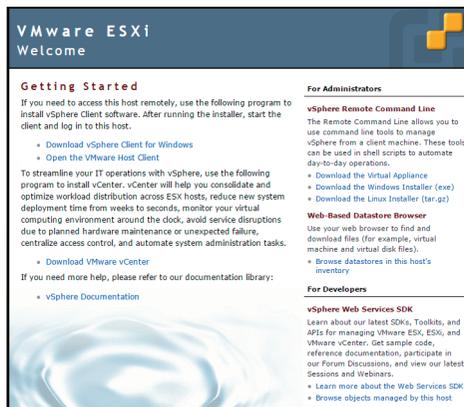
First check that the hardware of the physical server on which you intend to install ESXi is compatible by referring to the web page <http://www.vmware.com/resources/compatibility/search.php>.

Installation is very easy; simply follow the guided procedure. The only information you need to provide are the network parameters that will be assigned to the physical server:

- IP address
- Subnet mask
- Pre-defined gateway
- Hostname

Once the installation is complete, the ESXi server can be managed via vSphere Host Client, a web-based interface that allows virtual machines to be created and configured from a browser on any PC capable of connecting via HTTP to the IP address assigned to the server.

Connect to the IP address and select *Open the VMware Host Client*.



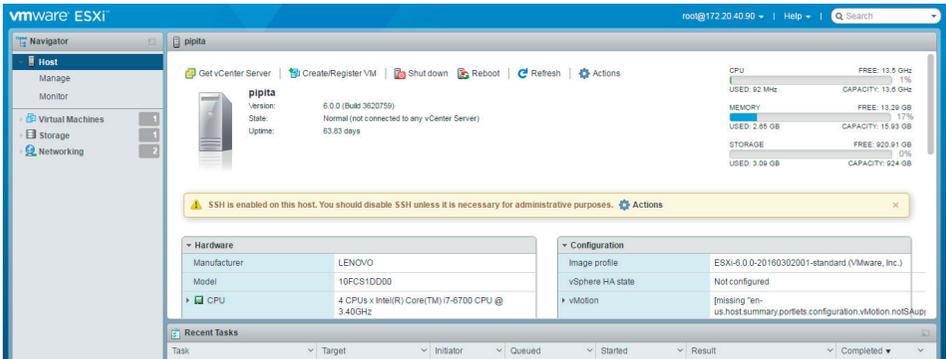
Alternatively, for versions of ESXi prior to 6.5, it is possible to use vSphere Client, a software application available exclusively for Windows that can be downloaded directly from the server (*Download vSphere Client for Windows*).

2.2 Virtual machine

The EIPVDES server can be installed and activated using one of the previously mentioned ESXi client managers. This procedure is described below relative to the vSphere Host Client, which can be accessed at:

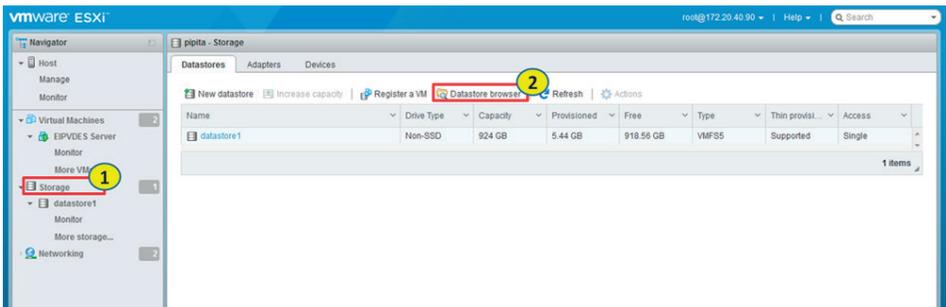
https://<IP_address_of_the_Server>/ui/#/login

The process is extremely simple and can be initiated from the wizard *New Virtual Machine*.

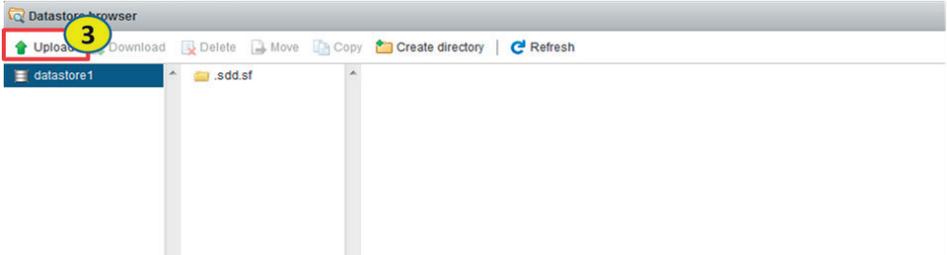


2.2.1 Loading the ISO file

Before creating a virtual machine it is necessary to load the file containing the ISO image onto the ESXi server host, in order to enable the EIPVDES server guest to access it.

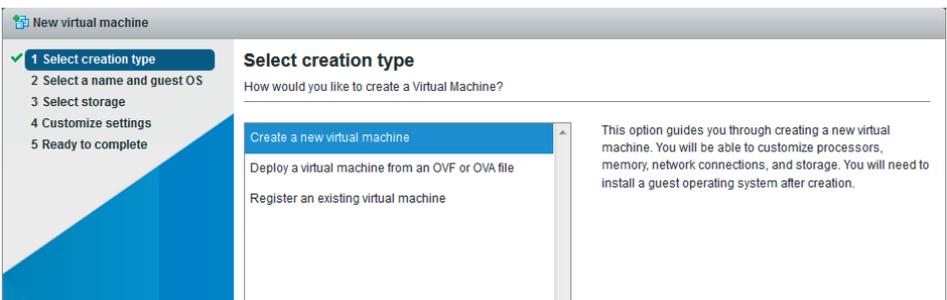
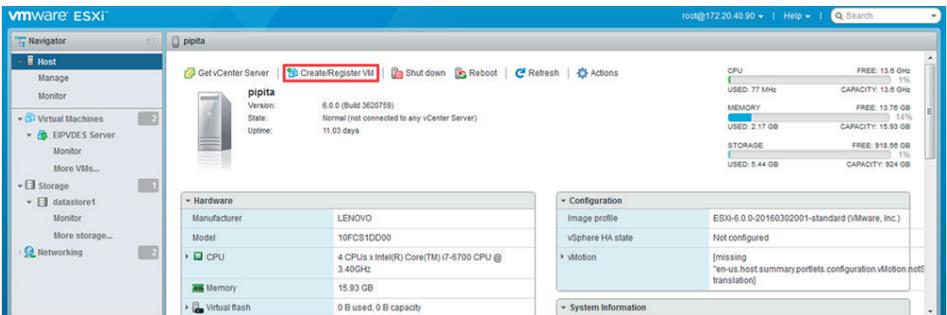


Select *Storage* and then *Datastore browser*. In the next screen, select *Upload* and select the file with the ISO image that will be saved in the local *Datastore*.



2.2.2 Creation

In the main screen, select *Create/Register VM*. Now select *Create a new virtual machine* and proceed to the next step.

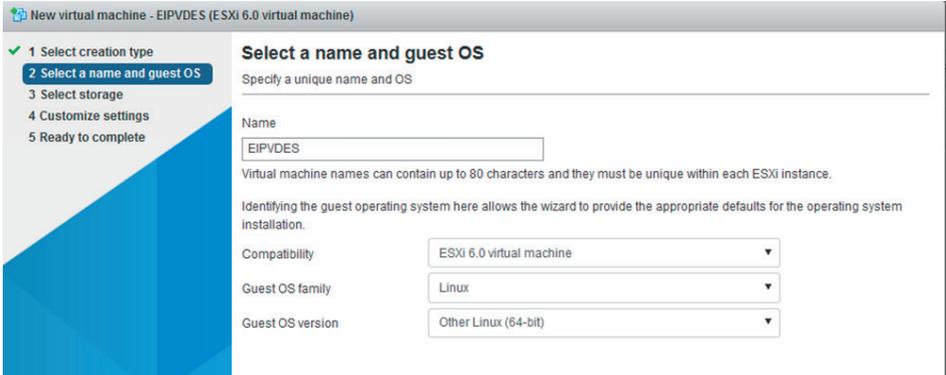


2.2.3 Name and operating system

Enter the name to be assigned to the virtual machine (e.g. EIPVDES) and select the values indicated in the table for the guest operating system.

EIPVDES Server

Parameter	Description	Value
Name	Name of the virtual machine (not the hostname of the server but just the name by which the machine is to be identified in the web client).	EIPVDES (suggestion)
Compatibility	Compatibility information for ESXi servers.	ESXi 6.0 virtual machine
Guest OS family	Operating system of the virtual machine.	Linux
Guest OS version	Version of the operating system of the virtual machine.	Other Linux (64-bit)



New virtual machine - EIPVDES (ESXi 6.0 virtual machine)

- 1 Select creation type
- 2 Select a name and guest OS**
- 3 Select storage
- 4 Customize settings
- 5 Ready to complete

Select a name and guest OS

Specify a unique name and OS

Name

Virtual machine names can contain up to 80 characters and they must be unique within each ESXi instance.

Identifying the guest operating system here allows the wizard to provide the appropriate defaults for the operating system installation.

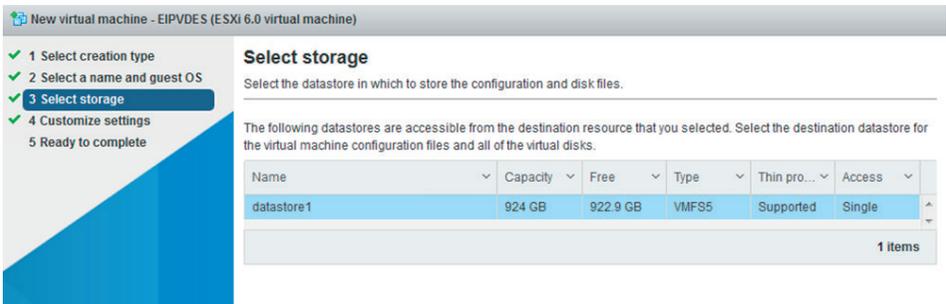
Compatibility:

Guest OS family:

Guest OS version:

2.2.4 Storage

Select the *datastore* in which the physical space required for the virtual disk of the virtual machine is to be allocated. By default, the main *datastore* is used.



New virtual machine - EIPVDES (ESXi 6.0 virtual machine)

- 1 Select creation type
- 2 Select a name and guest OS
- 3 Select storage**
- 4 Customize settings
- 5 Ready to complete

Select storage

Select the datastore in which to store the configuration and disk files.

The following datastores are accessible from the destination resource that you selected. Select the destination datastore for the virtual machine configuration files and all of the virtual disks.

Name	Capacity	Free	Type	Thin pro...	Access
datastore1	924 GB	922.9 GB	VMFS5	Supported	Single

1 items

2.2.5 Configuration

When creating a virtual machine, it is essential that the following parameters are configured correctly. Associate the *Hard Disk* with the *SATA Controller*, suitably modifying the option *Virtual Device Node*.

Remove the *SCSI Controller 1*.

Set the *CD/DVD drive* to *Datastore ISO File* mode and select the ISO file previously loaded in the *datastore* as the *CD/DVD Media*.

Finally set the following parameters with the appropriate values as indicated in the table.

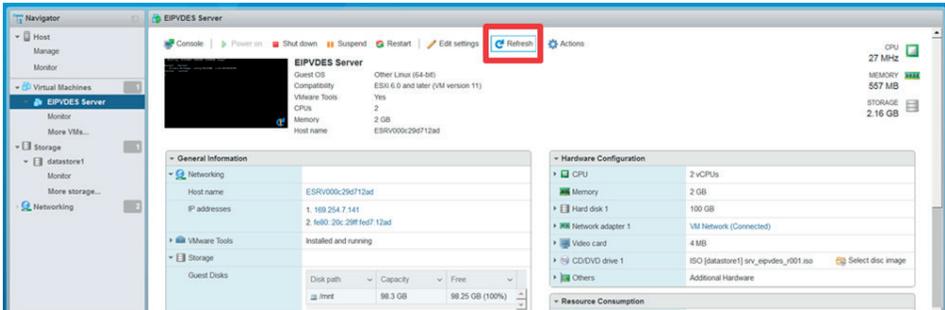
Parameter	Description	Value
<i>Number of CPUs</i>	Number of CPUs allocated for the virtual machine.	2 (minimum)
<i>Memory</i>	Amount of RAM reserved for the virtual machine.	2 GB (minimum)
<i>Network Adapter</i>	Type of card and network connection.	E1000 (suggested): the options may vary according to the hardware characteristics of the machine used.
<i>Hard Disk</i>	Amount of physical mass storage reserved for the virtual machine. The HD <u>must</u> be connected to the SATA controller.	100 GB (minimum)

The virtual machine can now be created. Having completed this phase, press *Power On* to start it.

3 Testing the installation

3.1 Using vSphere Host Client

After starting the machine, wait about 40 seconds, then update the page by pressing *Refresh*. The result must be similar to that shown in the image below.



In particular, in the section *General Information*, check the following parameters:

- In the field *VMware Tools*, if the EIPVDES server is running correctly, the message *Installed and running* will be displayed.
- In the field *Networking/IP addresses*, if the *Network Adapter* and the network have been configured correctly, then the IP address assigned to the interface will be shown (for example, an IPv4 link-local address).
- In the field *Storage/Guest Disks*, if HD has been correctly configured, 1 disk is shown, with the capacity and available space as specified.

3.2 Using Video Door IP Manager

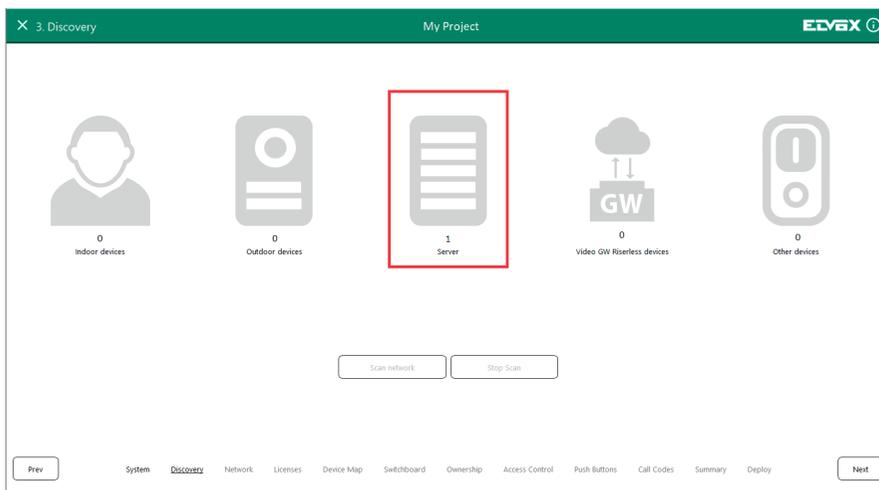
It is also possible to test that the EIPVDES server is running and operational using VDIPM (*Video Door IP Manager*), the configuration and management software for ELVOX IP video door entry systems. Proceed as follows:

- Connect the PC on which VDIPM is installed on the same network (same broadcast dominion) to which the EIPVDES server is connected.
- Start VDIPM.
- Create a new project using the default values proposed in the System Configuration (these parameters values only serve for the purpose of testing whether the server is running).
- Access the next section and start a scan. There are three possible results, as described in the table and shown in the following images.

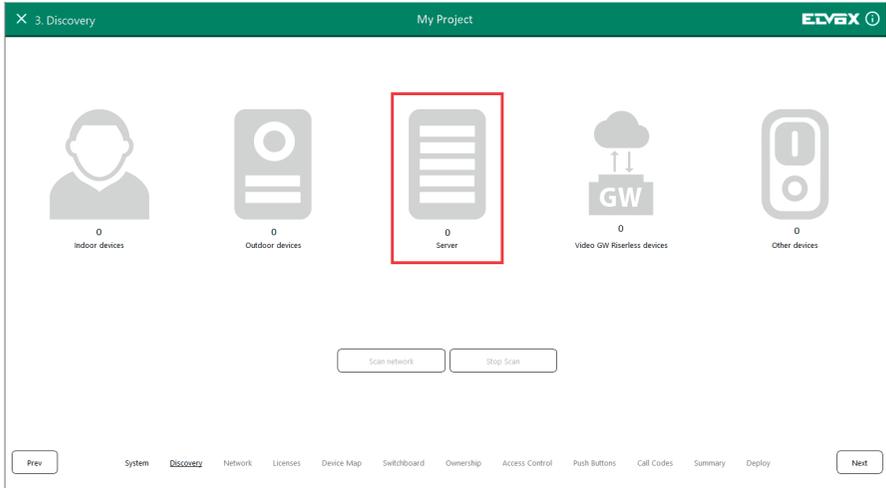
Result	Possible causes
Server detected	The EIPVDES server has been installed correctly, is running and is operational.
Server not detected	The cause may be one of the following: the server is not running; the network card has not been configured correctly; the server and VPIPM do not belong to the same network.
Server detected in error condition	The server is running but detects problems and therefore is not operational. One possible cause is that the <i>Hard Disk</i> has been incorrectly configured or not configured at all.

- Close the project and delete it.

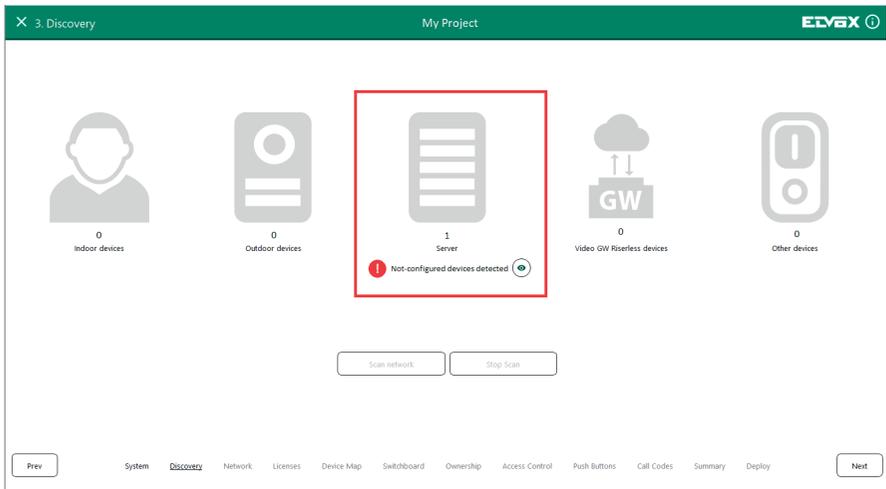
The images below illustrate the three possible scan results.



1 - Server detected.



2 - Server not detected.



3 - Server detected in error condition.

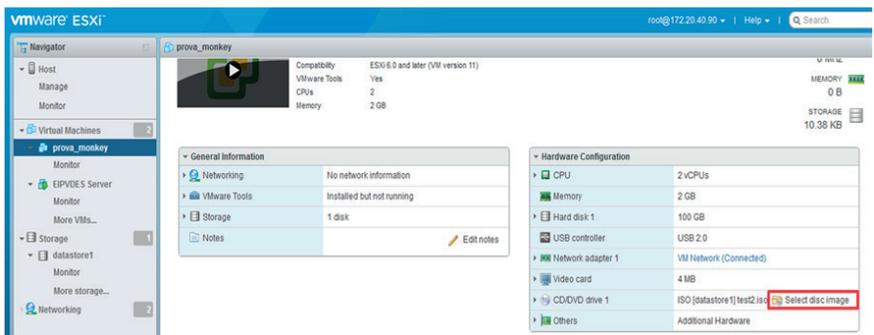
4 Updating the software of the EIPVDES server

Should it be necessary to update the software of the EIPVDES server, proceed as follows.

- Stop the virtual machine in the correct manner by pressing *Shut down*. In this way the EIPVDES server performs all the necessary operations to shut down correctly, thereby avoiding the risk of the data on the *Hard Disk* being corrupted. Do not just use the *Power Off* command: this could result in data loss.



- Replace the existing ISO image of the server with the new ISO image.



- Restart the virtual machine by pressing *Power On*.

The instructions manual can be downloaded from the website www.vimar.com



WEEE - User information

The crossed bin symbol on the appliance or on its packaging indicates that the product at the end of its life must be collected separately from other waste. The user must therefore hand the equipment at the end of its life cycle over to the appropriate municipal centres for the differentiated collection of electrical and electronic waste. As an alternative to independent management, you can deliver the equipment you want to dispose of to the dealer when purchasing a new appliance of an equivalent type. You can also deliver electronic products to be disposed of that are smaller than 25 cm for free, with no obligation to purchase, to electronics retailers with a sales area of at least 400 m². Proper sorted waste collection for subsequent recycling, processing and environmentally conscious disposal of the old equipment helps to prevent any possible negative impact on the environment and human health while promoting the practice of reusing and/or recycling materials used in manufacture.



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