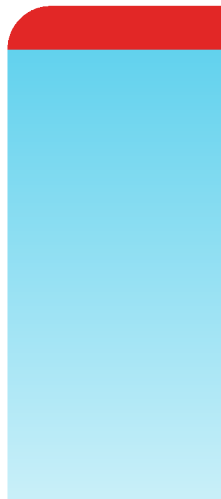


KVM Deployment Guide

FortiVoice Phone System 6.4.5



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FortiVoice Phone System 6.4.5 KVM Deployment Guide

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Change Log

Date	Change Description
2022-07-06	Initial release.

Overview

The FortiVoice phone system enables you to completely control your organization's telephone communications. Easy to use and reliable, the FortiVoice phone system delivers everything you need to handle calls professionally, control communication costs, and stay connected everywhere.

This guide describes how to install the FortiVoice virtual machine (VM) on a Kernel Virtual Machine (KVM) server using the VMware version of FortiVoice phone system.

This section includes the following topics:

- [Licensing on page 5](#)
- [Requirements on page 5](#)
- [Registering FortiVoice VM on page 6](#)
- [Downloading FortiVoice VM software on page 7](#)
- [Deployment package contents on page 7](#)
- [Deploying the FortiVoice VM on page 7](#)

Licensing

The base license of FortiVoice VM allows the connection of 50 phones.

There are no other restrictions to the license other than the number of active phones. For example, there is no restriction on the number of virtual CPUs and disk space.

After placing an order for FortiVoice VM, a license registration code is sent to the email address used in the order form. Use the license registration code provided to register your FortiVoice VM with [Customer Service & Support](#).

Upon registration, you can download the license file. You will need this file to activate your FortiVoice VM. You can configure basic network settings from the CLI to complete the deployment. Once the license file is uploaded, the CLI and web-based manager are fully functional.

Trial mode

When FortiVoice VM is first installed, it will be in trial mode. Trial mode supports a maximum of 50 active phones for 45 days.

Requirements

This documentation assumes that before deploying the FortiVoice VM on the KVM virtual platform, you have addressed the following requirements:

Virtual environment

You have installed the KVM software on a physical server with sufficient resources to support the FortiVoice VM and all other VMs deployed on the platform.

Connectivity

An Internet connection is required for the FortiVoice VM to contact FortiGuard to validate its license.

Registering FortiVoice VM

To obtain the FortiVoice VM license file, you must first register your FortiVoice VM with Fortinet [Customer Service & Support](#).

To register your FortiVoice VM:

1. Log in to the [Fortinet Customer Service & Support portal](#) using an existing support account or select *Register* to create a new account.
2. On the dashboard, click *Register Now*.
The *Registration Wizard* opens.
3. Enter the license registration code from the FortiVoice VM License Certificate that was emailed to you.
4. Select the end user type.
5. Click *Next*.
A registration form will appear. You must specify the IP address that you will use to access the FortiVoice VM.
6. Follow the instructions to finish the registration.



As a part of the license validation process, FortiVoice VM compares its IP addresses with the IP information in the license file. If a new license has been imported or the FortiVoice's IP address has been changed, the FortiVoice VM must be rebooted in order for the system to validate the change and operate with a valid license.



The [Customer Service & Support](#) portal currently does not support IPv6 for FortiVoice VM license validation. You must specify an IPv4 address in both the support portal and the port1 management interface.

7. After completing the form, a registration acknowledgment page will appear.
8. Select the *License File Download* link. You will be prompted to save the license file (.lic) to your local computer. See [Uploading the FortiVoice VM license file on page 10](#) for instructions on uploading the license file to your FortiVoice VM using the web-based manager.

To edit the FortiVoice VM IP address:

1. In the toolbar select *Products > Product List*.
The *View Products* page opens.
2. Select the FortiVoice VM serial number.

The product details display.

3. In *Product Information*, click the *Edit* icon to change the description, partner information, and IP address of your FortiVoice VM.
4. Click *Save*.



You can change the IP address five (5) times on a regular FortiVoice VM license. There is no restriction on a full evaluation license.

5. Select the *License File Download* link. You will be prompted to save the license file (.lic) to your management computer. See [Uploading the FortiVoice VM license file on page 10](#) for instructions on uploading the license file to your FortiVoice VM using the web-based manager.

Downloading FortiVoice VM software

FortiVoice deployment packages are included with FortiVoice firmware images on the [Customer Service & Support](#) site.

To download the FortiVoice VM deployment package

1. Go to the [Customer Service & Support](#) website.
2. Log in to your account or create one.
3. Select *Support > Firmware Download*.
4. In *Select Product*, select *FortiVoiceEnterprise*.
5. Click the *Download* tab and navigate to the 6.4.0 folder.
6. Review the list to locate the FVE_VMKV-64-v64-buildnnnn-FORTINET.out.kvm.zip file.
7. To download the file, go near the end of the row and click *HTTPS*.
8. Extract the contents of the deployment package to a new file folder.

Deployment package contents

The FORTINET.out.kvm.zip contains:

- fortivoice-kvm.qcow2: the FortiVoice system hard disk in qcow2 format
- nnnnb.qcow2 files: the qcow2 files for the virtual storage disk

Deploying the FortiVoice VM

Prior to deploying the FortiVoice VM, the VM platform must be installed and configured so that it is ready to create virtual machines. The installation instructions for FortiVoice assume that

- You are familiar with the management software and terminology of your VM platform.
- An Internet connection is available for FortiVoice to contact FortiGuard to validate its license.

For information on deploying FortiVoice, see [Deploying KVM on page 9](#). You might also need to refer to the documentation provided with your VM server. The deployment chapter is presented as an example because for any particular VM server there are multiple ways to create a virtual machine. There are command line tools, APIs, and even alternative graphical user interface tools.

Before you start your FortiVoice appliance for the first time, you may need to adjust virtual disk sizes and networking settings. Depending on your network settings, the first time you start FortiVoice, you may have access only through the console window of your VM server environment. After you configure one FortiVoice network interface with an IP address and administrative access, you can access the FortiVoice web-based manager. For details, see [Connecting to the FortiVoice VM web-based manager on page 11](#).

Deploying KVM

After you have downloaded the install file and extracted the package contents to a folder on your local computer, you can create the virtual machine in your KVM environment.

The procedures in this section are based on the Virtual Machine Manager (virt-manager) interfaces.

This section contains the following topics:

- [Creating the FortiVoice VM on page 9](#)
- [Configuring FortiVoice hardware settings on page 10](#)
- [Turning on the FortiVoice VM on page 10](#)
- [Uploading the FortiVoice VM license file on page 10](#)
- [Connecting to the FortiVoice VM web-based manager on page 11](#)
- [Configuring FortiVoice VM on page 11](#)

Creating the FortiVoice VM

To create the FortiVoice VM:

1. Launch the Virtual Machine Manager (virt-manager) on your KVM host server.
2. In the toolbar, select *Create a new virtual machine*.
3. Enter a *Name* for the VM, FortiVoice-VM for example.
4. Ensure that *Connection* is *localhost*. (This is the default.)
5. Select *Import existing disk image*.
6. Select *Forward*.
7. In *OS Type*, select *Linux*.
8. In *Version*, select *Generic 2.6 and later kernel*.
9. Select *Browse*.
10. If you copied the `fortivoice-kvm.qcow2` file to `/var/lib/libvirt/images`, it will be visible on the right. If you saved it somewhere else on your server, select *Browse Local* and find it.
11. Select *Choose Volume*.
12. Select *Forward*.
13. Specify the amount of memory and number of CPUs to allocate to this virtual machine.
14. Select *Forward*.
15. Expand *Advanced options*. A new virtual machine includes one network adapter by default. Select a network adapter on the host computer. Optionally, set a specific MAC address for the virtual network interface. Set *Virt Type* to *virtio* and *Architecture* to *qcow2*.
16. Select *Finish*.

Configuring FortiVoice hardware settings

Before turning on your FortiVoice, you must add the storage disk and configure the virtual hardware of your FortiVoice unit.

To configure settings for FortiVoice on the server:

1. In the Virtual Machine Manager, locate the name of the virtual machine and then select *Open* from the toolbar.
2. Select *Add Hardware*. In the *Add Hardware* window, select *Storage*.
3. Browse to the storage disk file that matches your license, for example, 250.qcow2 (250 GB storage space) and click *OK*.
4. Select *Network* to add more network interfaces. The *Device type* must be *Virtio*.
A new virtual machine includes one network adapter by default. You can add more by using the *Add Hardware* window. FortiVoice requires four or six network adapters. You can configure network adapters to connect to a virtual switch or to network adapters on the host computer.
5. Select *Finish*.

Turning on the FortiVoice VM

You can now proceed to turn on the FortiVoice.

Select the name of the FortiVoice in the list of virtual machines. In the toolbar, select *Console* and then select *Start*.

Uploading the FortiVoice VM license file

The FortiVoice VM comes with a 45-day trial license. During this time, the FortiVoice VM operates in trial mode (see [Trial mode on page 5](#)). Before using the FortiVoice VM you must enter the license file that you downloaded from the [Customer Service & Support](#) portal upon registration.

To upload the FortiVoice VM licence file:

1. In the *License Information* widget on the FortiVoice VM web-based Manager, click the *Update License* link to the right of *VM*.
2. Brows for the license file (.lic) you downloaded earlier from Fortinet.
3. Click *Open*.
4. Follow the system prompts to update the license.
The system will reload and log out after the update finishes.
5. Log in again if prompted using `admin`, as the user name.



As a part of the license validation process FortiVoice VM compares its IP address with the IP information in the license file. If a new license has been imported, the FortiVoice VM must be rebooted in order for the system to validate the change and operate with a valid license.

6. If the IP address in the license file and the IP address configured in the FortiVoice VM do not match, you will receive an error message dialog box when you log back into the VM.
If this occurs, you will need to change the IP address in the [Customer Service & Support](#) portal to match the management IP and re-download the license file.



After an invalid license file is loaded to FortiVoice VM, the web-based Manager will be locked until a valid license file is uploaded.

Connecting to the FortiVoice VM web-based manager

Depending on your network settings, the first time you start the FortiVoice VM, you may have access only through the console window of your KVM server environment. You can access the FortiVoice VM web-based manager for easy configuration and operation of your FortiVoice VM.

Connect to the web-based manager by using the IP address, administrative access protocol, administrator account, and password that you have already configured during the FortiVoice VM deployment.

For details about the recommended web browsers, see the [FortiVoice Phone System Release Notes](#).

To connect to the web-based manager

1. Start a web browser and enter the URL: `https://<IP_address>/admin`
Where <IP_address> is the IP address of the FortiVoice VM that you want to connect to. If the FortiVoice VM configuration is using a non-default HTTPS port, then add `:<port_number>` after the IP address. For example:
`https://<IP_address>:446/admin`
2. Enter the name and password associated with the account.
3. Click *Log In*.
The web-based manager page of the FortiVoice VM opens.

Configuring FortiVoice VM

After the FortiVoice VM license has been validated, you can begin to configure the FortiVoice VM. For more information on configuring your FortiVoice VM, see the [FortiVoice Phone System Administration Guide](#).



In VM environments, Fortinet recommends that you use the VMware *Snapshot* utility to backup the VM instance. In the event of an issue with a firmware upgrade or the configuration, you can use the *Snapshot Manager* to revert the VM instance to a previous *Snapshot*. To create a *Snapshot*, right-click the VM instance and select *Snapshot > Take Snapshot*.

Upgrading FortiVoice VM

When configuring your FortiVoice VM, you can upgrade the firmware image.

To upgrade the FortiVoice VM firmware, complete the following tasks:

1. Identify the firmware version that is running on FortiVoice VM on page 12
2. Identify the latest software release that is available for the FortiVoice VM firmware on page 12
3. Backup the configuration file on page 12
4. Upgrade the firmware on page 13
5. Verify that the firmware is successfully installed on page 13

Identify the firmware version that is running on FortiVoice VM

1. In the FortiVoice VM web-based manager, go to *Dashboard > Status*.
2. In the *System Information* widget, review the *Firmware version* row.
3. Take note of the firmware version and build number.

Identify the latest software release that is available for the FortiVoice VM firmware

1. Go to the [Fortinet Support](#) website.
2. Log in to your existing account or register for an account.
3. In *Support*, select *Downloads > Firmware Download*.
4. In *Select Product*, select *FortiVoiceEnterprise*.
5. On the *Release Notes* tab, review the list to identify the latest 6.0 firmware build.
6. Compare the build number with the firmware version that is running on FortiVoice VM. Based on the result, perform the applicable steps:
 - If the firmware version running on FortiVoice VM matches the one on the Fortinet Support website, then you do not need to perform an upgrade. You have completed this procedure.
 - If the firmware version running on FortiVoice VM is an earlier build, then you need to prepare for an upgrade:
 - i. Review the FortiVoice Phone System 6.4.5 Release Notes. This document includes the most current upgrade information such as supported upgrade paths and may contain details that were unavailable at the time this procedure was created.
 - ii. In the *Download* tab, navigate through the 6.4 directories to locate the firmware image file. For example, FVE_VMKV-64-v64-buildnnnn-FORTINET.out.
 - iii. To download the firmware image file to your management computer, click *HTTPS*.
 - iv. Save the file on your management computer and take note of the location where you save the file.

Backup the configuration file

1. In the FortiVoice VM web-based manager, go to *Dashboard > Status*.
2. In the *System Information* widget, go to the *System configuration* row.
3. Click *Backup*.
4. Save the file on your management computer and take note of the location where you save the file.

Upgrade the firmware

1. In the FortiVoice VM web-based manager, go to *Dashboard > Status*.
2. In the *System Information* widget, go to the *Firmware version* row.
3. Click *Update*.
4. Locate the firmware file and then upload that file.
Your web browser uploads the firmware file to the FortiVoice VM.
5. To confirm the upgrade, click *Yes*.
The FortiVoice VM installs the firmware and restarts.
6. To make sure that the FortiVoice VM web-based manager reloads correctly and displays all changes, clear the cache of your web browser and restart it.

Verify that the firmware is successfully installed

1. In the FortiVoice VM web-based manager, go to *Dashboard > Status*.
2. In the *System Information* widget, go to the *Firmware version* row.
3. Make sure that the firmware version is the one that you upgraded to.



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