

BIG-IQ™ Systems and Linux® KVM: Setup

Version 4.2



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Chapter

1

Getting Started with BIG-IQ Virtual Edition

- *What is BIG-IQ Virtual Edition?*
-

What is BIG-IQ Virtual Edition?

BIG-IQ™ Virtual Edition (VE) is a version of the BIG-IQ system that runs as a virtual machine in specifically-supported hypervisors. BIG-IQ VE emulates a hardware-based BIG-IQ system running a VE-compatible version of BIG-IQ™ software.

Note: The BIG-IQ VE product license determines the maximum allowed throughput rate. To view this rate limit, you can display the BIG-IQ VE licensing page within the BIG-IQ Configuration utility. Lab editions have no guarantee of throughput rate and are not supported for production environments.

About BIG-IQ VE compatibility with KVM hypervisor products

BIG-IQ™ VE is compatible with Red Hat Enterprise Linux 6.3 and CentOS 6.3 with their KVM package.

Important: Hypervisors other than those identified in this guide are not supported with this BIG-IQ version; any installation attempts on unsupported platforms might not be successful.

About the hypervisor guest definition requirements

The KVM virtual machine guest environment for the BIG-IQ™ Virtual Edition (VE), at minimum, must include:

- 2 x virtual CPUs (up to 9 are supported)
- 4 GB RAM
- 2 x virtual network adapters (minimum); more if configured with the high availability option

Important: The number of virtual network adapters per virtual machine definition is determined by the hypervisor.

- 1 x 100 GB IDE disk

Important: Not supplying at least the minimum virtual configuration limits will produce unexpected results.

For production licenses, F5® Networks suggests using the maximum configuration limits for the BIG-IQ VE system. Reservations can be less for lab editions. For each virtual machine, the KVM virtual machine guest environment permits a maximum of 8 network adapters or 1 legacy virtual Network Adapter as a management port and 8 network adapters as dataplane ports. The Legacy Network Adapter is not supported for the dataplane. For peak performance, F5® recommends using only network adapters.

There are also some maximum configuration limits to consider for deploying a BIG-IQ VE virtual machine, such as:

- CPU reservation can be up to 100 percent of the defined virtual machine hardware. For example, if the hypervisor has a 3 GHz core speed, the reservation of a virtual machine with 2 CPUs can be only 6 GHz or less.
- To achieve licensing performance limits, all allocated RAM must be reserved.
- For production environments, virtual disks should be deployed Thick (allocated up front). Thin deployments are acceptable for lab environments.

Important: *There is no longer any limitation on the maximum amount of RAM supported on the hypervisor guest.*

Chapter 2

Deploying BIG-IQ Virtual Edition

- *About VE KVM deployment*
-

About VE KVM deployment

To deploy the BIG-IQ™ Virtual Edition (VE) system on KVM, you perform these tasks:

- Verify the host machine requirements.
- Deploy a BIG-IQ™ system as a virtual machine.
- Deploy a BIG-IP® system.
- After you have deployed the virtual machines, log in to the BIG-IQ VE system and run the Setup utility. Using the Setup utility, you perform basic network configuration tasks, such as assigning VLANs to interfaces.
- Configure secure communication between the BIG-IQ system and the BIG-IP device.

Host machine requirements and recommendations

To successfully deploy and run the BIG-IQ™ VE system, the host system must satisfy minimum requirements.

The host system must include:

- RHEL 6.3, CentOS 6.3, with their KVM package
- Virtual Machine Manager
- Connection to a common NTP source (this is especially important for each host in a redundant system configuration)

Important: *The hypervisor CPU must meet the following requirements:*

- Use a 64-bit architecture.
 - Have support for virtualization (AMD-V or Intel VT-x) enabled.
 - Support a one-to-one thread-to-defined virtual CPU ratio, or (on single-threading architectures) support at least one core per defined virtual CPU.
 - Intel processors must be from the Core (or newer) workstation or server family of CPUs.
-

Deploying a BIG-IQ VE virtual machine

The first steps in deploying BIG-IQ™ VE are to download the Zip file and then extract the .qcow2 file, and save it to the KVM server. Next, you configure the virtual machine using Virtual Machine Manager.

Important: *Do not modify the configuration of the KVM guest environment with settings less powerful than the ones recommended in this document. This includes the settings for the CPU, RAM, and network adapters. Doing so might produce unexpected results.*

1. In a browser, open the F5 Downloads page (<https://downloads.f5.com>).
2. Download the F5 VE file package ending with `qcow2.zip`.
3. Extract the file from the Zip archive. Extract the file where your qcow2 files reside on the KVM server.
4. VNC in to the KVM server, and then start Virt Manager.
5. Right click **localhost (QEMU)**, and from the popup menu, select **New**.
The Create a new virtual machine, Step 1 of 4 dialog box opens.
6. In the **Name** field, type a name for the connection.

7. Select **import existing disk image** as the method for installing the operating system, and click **Forward**.
The Create a new virtual machine, Step 2 of 4 dialog box opens.
8. Type in the path to the extracted `qcow` file, or click **Browse** to navigate to the path location; select the file, and then click the **Choose Volume** button to fill in the path.
9. In the **OS type** setting, select **Linux**, for the **Version** setting, select **Red Hat Enterprise Linux 6**, and click **Forward**.
The Create a new virtual machine, Step 3 of 4 dialog box opens.
10. In the **Memory (RAM)** field, type the appropriate amount of memory (in megabytes) for your deployment. (For example `4096`, for a 4GB deployment) . From the **CPUs** list, select **2**, and click **Forward**.
The Create a new virtual machine, Step 4 of 4 dialog box opens.
11. Select **Customize configuration before install**, and click the **Advanced options** arrow.
12. Select the network interface adapter that corresponds to your management IP address, and click **Finish**.
The Virtual Machine configuration dialog box opens.
13. Click **Add Hardware**. When The Add New Virtual Hardware dialog box opens, select **Network** to access controls for specifying a new network interface device.
14. From the **Host device** list, select the network interface adapter that corresponds to your external network, and from the **Device model** list, select **virtio**. Then click **Finish**.
15. Repeat the last two steps, but this time select the network interface adapter that corresponds to your internal network.
16. From the left pane, select **Disk 1**.
17. Click the **Advanced options** button.
18. From the **Disk bus** list, select **Virtio**.
19. From the **Storage format** list, select **qcow2**.
20. Click **Apply**.
21. Click **Begin Installation**.
Virtual Machine Manager creates the virtual machine just as you configured it.

Powering on the virtual machine

You must power on the virtual machine before you can begin assigning IP addresses.

1. Open Virtual Machine Manager.
2. Right click the virtual machine that you want to power on, and then from the popup menu, select **Open**.
The virtual machine opens, but in a powered-off state.
3. From the toolbar, select the **Power on the virtual machine** (right-arrow) button.
The virtual machine boots and then displays a login prompt.
4. Log in as root, and then type `config`.
The Configuration utility starts so that you can set up the IP address for the management interface. Once the management IP address is set, you can use a browser and the web interface to configure the BIG-IP system.

Assigning a management IP address to a virtual machine

The virtual machine needs an IP address assigned to its virtual management port.

Tip: The default configuration for new deployments and installations is for DHCP to acquire the management port IP address.

1. At the login prompt, type `root`.
2. At the password prompt, type `default`.
3. Type `config` and press Enter.
The F5 Management Port Setup screen opens.
4. Click **OK**.
5. If you want DHCP to automatically assign an address for the management port, select **Yes**. Otherwise, select **No** and follow the instructions for manually assigning an IP address and netmask for the management port.

Tip: F5 Networks® highly recommends that you specify a default route for the virtual management port, but it is not required for operation of the virtual machine.

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