

# BIG-IQ<sup>®</sup> Cloud and Linux<sup>®</sup> KVM: Setup

Version 1.0





# Table of Contents

<b>Legal Notices.....</b>	<b>5</b>
Legal notices.....	5
<b>Getting Started with BIG-IQ Virtual Edition.....</b>	<b>7</b>
What is BIG-IQ Virtual Edition?.....	7
About BIG-IQ VE compatibility with KVM hypervisor products.....	7
About the hypervisor guest definition requirements.....	7
<b>Deploying BIG-IQ Virtual Edition.....</b>	<b>9</b>
About VE KVM deployment.....	9
Host machine requirements and recommendations.....	9
Deploying a BIG-IQ VE virtual machine.....	9



# Legal Notices

---

## Legal notices

---

### Publication Date

This document was published on December 02, 2015.

### Publication Number

MAN-0600-00

### Copyright

Copyright © 2015, F5 Networks, Inc. All rights reserved.

F5 Networks, Inc. (F5) believes the information it furnishes to be accurate and reliable. However, F5 assumes no responsibility for the use of this information, nor any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent, copyright, or other intellectual property right of F5 except as specifically described by applicable user licenses. F5 reserves the right to change specifications at any time without notice.

### Trademarks

AAM, Access Policy Manager, Advanced Client Authentication, Advanced Firewall Manager, Advanced Routing, AFM, APM, Application Acceleration Manager, Application Security Manager, AskF5, ASM, BIG-IP, BIG-IP EDGE GATEWAY, BIG-IQ, Cloud Extender, Cloud Manager, CloudFucious, Clustered Multiprocessing, CMP, COHESION, Data Manager, DDoS Frontline, DDoS SWAT, Defense.Net, defense.net [DESIGN], DevCentral, DevCentral [DESIGN], DNS Express, DSC, DSI, Edge Client, Edge Gateway, Edge Mobile, Edge Mobility, Edge Portal, ELEVATE, EM, ENGAGE, Enterprise Manager, F5, F5 [DESIGN], F5 Agility, F5 Certified [DESIGN], F5 Networks, F5 SalesXchange [DESIGN], F5 Synthesis, f5 Synthesis, F5 Synthesis [DESIGN], F5 TechXchange [DESIGN], Fast Application Proxy, Fast Cache, FCINCO, Global Traffic Manager, GTM, GUARDIAN, iApps, IBR, iCall, iControl, iHealth, Intelligent Browser Referencing, Intelligent Compression, IPv6 Gateway, iQuery, iRules, iRules OnDemand, iSession, L7 Rate Shaping, LC, Link Controller, Local Traffic Manager, LROS, LTM, Message Security Manager, MobileSafe, MSM, OneConnect, Packet Velocity, PEM, Policy Enforcement Manager, Protocol Security Manager, PSM, Ready Defense, Real Traffic Policy Builder, SalesXchange, ScaleN, SDAS (except in Japan), SDC, Signalling Delivery Controller, Solutions for an application world, Software Designed Application Services, Silverline, SSL Acceleration, SSL Everywhere, StrongBox, SuperVIP, SYN Check, SYNTHESIS, TCP Express, TDR, TechXchange, TMOS, TotALL, TDR, TMOS, Traffic Management Operating System, Traffix, Traffix [DESIGN], Transparent Data Reduction, UNITY, VAULT, vCMP, VE F5 [DESIGN], Versafe, Versafe [DESIGN], VIPRION, Virtual Clustered Multiprocessing, WebSafe, and ZoneRunner, are trademarks or service marks of F5 Networks, Inc., in the U.S. and other countries, and may not be used without F5's express written consent.

All other product and company names herein may be trademarks of their respective owners.

### Patents

This product may be protected by one or more patents indicated at: <https://f5.com/about-us/policies/patents>

### **Export Regulation Notice**

This product may include cryptographic software. Under the Export Administration Act, the United States government may consider it a criminal offense to export this product from the United States.

### **RF Interference Warning**

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

### **FCC Compliance**

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This unit generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

Any modifications to this device, unless expressly approved by the manufacturer, can void the user's authority to operate this equipment under part 15 of the FCC rules.

### **Canadian Regulatory Compliance**

This Class A digital apparatus complies with Canadian ICES-003.

### **Standards Compliance**

This product conforms to the IEC, European Union, ANSI/UL and Canadian CSA standards applicable to Information Technology products at the time of manufacture.

# Getting Started with BIG-IQ Virtual Edition

---

## What is BIG-IQ Virtual Edition?

---

BIG-IQ<sup>®</sup> 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<sup>®</sup> 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

Each time there is a new release of BIG-IQ<sup>®</sup> Virtual Edition (VE) software, it includes support for additional hypervisor management products. The Virtual Edition and Supported Hypervisors Matrix on the AskF5<sup>™</sup> website, <http://support.f5.com>, details which hypervisors are supported for each release.

---

***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<sup>®</sup> Virtual Edition (VE), at minimum, must include:

- 2 x virtual CPUs
- 4 GB RAM
- 3 x virtual network adapters
- 1 x 55 GB disk

---

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

---

***Important:** Although you can successfully deploy BIG-IQ software with as few as 2 CPUs and 4 GB RAM, this configuration should only be used for evaluation purposes. For production use, F5 Networks recommends either 4 CPUs and 16 GB RAM, or (for higher performance) 8 CPUs and 32 GB RAM.*

---

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 optimum performance limits, all allocated RAM must be reserved and virtual disks should be deployed Thick (allocated up front).



# Deploying BIG-IQ Virtual Edition

---

## About VE KVM deployment

---

To deploy the BIG-IQ<sup>®</sup> Virtual Edition (VE) system on KVM, you perform these tasks:

- Verify the host machine requirements.
- Deploy a BIG-IQ<sup>®</sup> system as a virtual machine.
- Deploy a BIG-IP<sup>®</sup> 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<sup>®</sup> VE system, the host system must satisfy minimum requirements.

The host system must include these elements:

- RHEL, Ubuntu, Debian, or CentOS with the KVM package. The *Virtual Edition and Supported Hypervisors Matrix*, published on the AskF5<sup>™</sup> web site, <http://support.f5.com> identifies the Linux versions that are supported.
- 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<sup>®</sup> 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>).

- Download the BIG-IQ Cloud 1.X Virtual Edition file package.

There are two options to choose from.

Option	Description
<b>Large: the file name ends in .LARGE - qcow2.zip</b>	The large option creates a 500GB disk footprint at installation. This choice supports larger log files required for data analytics.
<b>Normal: the file name ends in .qcow2.zip</b>	The standard option creates a 95GB disk footprint at installation. This choice should be the normal working BIG-IQ installation unless data analytics functionality is required.

- Extract the file from the Zip archive. Extract the file where your qcow2 files reside on the KVM server.
- VNC in to the KVM server, and then start Virt Manager.
- Right click **localhost (QEMU)**, and from the popup menu, select **New**.  
The Create a new virtual machine, Step 1 of 4 dialog box opens.
- In the **Name** field, type a name for the connection.
- 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
- 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.
- 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.
- 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.
- Select **Customize configuration before install**, and click the **Advanced options** arrow.
- Select the network interface adapter that corresponds to your management IP address, and click **Finish**.  
The Virtual Machine configuration dialog box opens.
- Click **Add Hardware**. When The Add New Virtual Hardware dialog box opens, select **Network** to access controls for specifying a new network interface device.
- 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**.
- Repeat the last two steps, but this time select the network interface adapter that corresponds to your internal network.
- From the left pane, select **Disk 1**.
- Click the **Advanced options** button.
- From the **Disk bus** list, select **Virtio**.
- From the **Storage format** list, select **qcow2**.
- Click **Apply**.
- 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.

- Open Virtual Machine Manager.
- 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-IQ 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.*

---



# Index

## A

Automatic Shutdown Action [9](#)

## B

BIG-IQ Virtual Edition  
and KVM host machine requirements [9](#)

## C

CPU  
and guest definition [7](#)  
and host machine requirements [9](#)

## D

default route for virtual management port [11](#)  
deployment overview [9](#)

## E

environment, for guest [7](#)

## G

guest environment [7](#)

## H

host machine, CPU requirements [9](#)  
hypervisor, See guest environment.  
hypervisor guest definition [7](#)

## I

IP address, management port [11](#)

## K

Kernel-based Virtual Machine  
and compatible versions [7](#)  
KVM virtual machine  
creating [9](#)

## L

log in  
assigning management IP address [11](#)  
deploying BIG-IQ VE virtual machine [9](#)

## M

management port IP address, assigning [11](#)  
maximum allowed throughput rate [7](#)

## N

network adapter  
adding [9](#)

## P

power-on procedure, virtual machine [10](#)  
product license [7](#)

## R

redundant system configuration  
and host machine requirements [9](#)  
and NTP requirement [9](#)

## S

Setup utility [9](#)

## T

task list  
for deploying on virtual machine [9](#)

## V

VHD file [9](#)  
virtual configuration, and hypervisor guest definition [7](#)  
virtual machine, powering-on [10](#)  
virtual machine settings [7](#)  
virtual management port [11](#)

