BIG-IQ® Centralized Management and Linux® Community Xen®: Setup

Version 4.6

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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® Virtual Edition (VE) is a version of the BIG-IQ system that runs as a 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 Community Xen hypervisor products

Each time there is a new release of BIG-IQ® Virtual Edition (VE) software, it includes support for additional hypervisor management products. The Virtual Edition and Supported Hypervisors Matrix on the AskF5™ 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 Community Xen virtual machine guest environment for the BIG-IQ® Virtual Edition (VE), at minimum, must include:

- 2 x virtual CPUs
- 4 GB RAM
- 3 x virtual network adapters

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 reccomends either 4 CPUs and 16 GB RAM, or (for higher performance) 8 CPUs and 32 GB RAM.*

Deploying BIG-IQ Virtual Edition

About VE Community Xen deployment

To deploy the BIG-IQ® Virtual Edition (VE) system on Community Xen, 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 these elements:

- CentOS, Debian, Fedora, RHEL, or Ubuntu with the Community Xen package. The *Virtual Edition and Supported Hypervisors Matrix*, published on the AskF5™ web site, `http://support.f5.com` identifies the Linux versions that are supported.

Deploying the BIG-IQ VE virtual machine

The primary task in deploying BIG-IQ® VE on the open source Community Xen environment is creating and executing a configuration file that sets up most of what you need to get up and running.

Important: *Do not modify the configuration of the Community Xen 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 BIG-IQ BIG-IQ v4.x/Virtual Edition file package.

   There are two options to choose from.

Option	Description
Large: the file name ends in `.LARGE - qcow2.zip`	The large option creates a 500GB disk footprint at installation. This choice supports larger log files required for data analytics.
Normal: the file name ends in `.qcow2.zip`	The standard option creates a 55GB disk footprint at installation. This choice should be the normal working BIG-IQ installation unless data analytics functionality is required.

3. Extract the file from the Zip archive and save it where your `qcow2` files reside on the Community Xen server.
4. Use VNC to access the Community Xen server, and then convert the qcow2 image to the raw format necessary for Community Xen. You can use the following syntax to convert the image.
   `# qemu-img convert <qcow_file_name>.qcow2 <raw_file_name>.raw`
5. Generate a MAC address for the network interface card associated with the management interface.

   Important: *Be sure that the MAC address you create starts with the prefix `00:16:3e:`.*

   To create this address, you can use a tool such as MAC Address Generator (`http://www.miniwebtool.com/mac-address-generator/`).
6. Use an editor to create a BIG-IQ VM definition file that specifies the required parameters for your VM.
   `# vi /etc/xen/<config_file_name>`

   Important: *The sample configuration file provided here serves only as an example of the kinds of parameters you need to specify for your virtual machine. The actual file that you create will likely contain different parameters and settings.*

```
                    name = <config_file_name>
                    maxmem = 4096
                    memory = 4096
                    vcpus = 2
                    builder = "hvm"
                    boot = "c"
                    pae = 1
                    acpi = 1
                    apic = 1
                    hpet = 1
                    localtime = 0
                    on_poweroff = "destroy"
                    on_reboot = "restart"
                    on_crash = "restart"
                    sdl = 0
                    vnc = 1
                    vncunused = 1
                    keymap = "en-us"
                    disk = [
"file:/mnt/xen-bender/bigip/<raw_file_name.raw>,hda,w" ]
                    vif = [
"mac=00:16:<mgmt_interface_mac>,bridge=mgmtbr,script=vif-bridge",

"mac=00:16:3e:<external_interface_mac>,bridge=ext_bridge,script=vif-bridge",


"mac=00:16:3e:<internal_interface_mac>,bridge=int_bridge,script=vif-bridge",]

                    parallel = "none"
                    serial = "pty"
                    #pci = [ '05:10.0', '05:10.1' ]
```

   Important: *The last line of the example configuration file contains an optional entry that specifies the IDs for PCI external and internal network interface cards (NIC). This optional entry is required for SR-IOV support. Naturally, if you use this entry, you omit the external and internal bridges specified in the `vif` section.*

   Once you have perfected and saved your configuration file, you are ready to create the BIG-IQ VM,
7. Run the configuration file using an open source tool such as `xm`.

`xm create /etc/xen/<config_file_name>`
The console should indicate a successful start up by displaying something similar to this: `Started domain <config_file_name>(id=444).`

8. Allow some time for the boot-up process; then, you should be able to connect to the BIG-IQ console.
`# xm console <config_file_name>`

Powering on the virtual machine

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

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.*

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1. At the password prompt, type `default`.
2. Type `config` and press Enter.
The F5 Management Port Setup screen opens.
3. Click **OK**.
4. 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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