

F5[®] BIG-IQ[®] Centralized Management and Linux Xen Project: Setup

Version 5.0



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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 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.

About BIG-IQ VE compatibility with Xen Project 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 Xen Project virtual machine guest environment for the BIG-IQ[®] Virtual Edition (VE), at minimum, must include:

- 2 x virtual CPUs
- 4 GB RAM

Important: *When you provision the amount of RAM allocated to the virtual machine, it must match the amount of reserve RAM.*

- 1 x virtual network adapter
- 1 x 95 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.*

Deploying BIG-IQ Virtual Edition

About VE Xen Project deployment

To deploy the BIG-IQ® Virtual Edition (VE) system on Xen Project, 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 Xen Project package. The *BIG-IQ Virtual Edition and Supported Hypervisors Matrix*, published on the AskF5™ web site, <http://support.f5.com> identifies the Linux versions that are supported.
- 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 the BIG-IQ VE virtual machine

The primary task in deploying BIG-IQ® VE on the open source Xen Project 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 Xen Project 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. On the Downloads Overview page, select **Find a Download**.
3. Under Product Line, select **Centralized Management**.
4. Under Name, select the release you want to install.

5. If the End User Software License is displayed, read it and then click **I Accept**.
6. Determine which BIG-IQ v5.x/Virtual Edition file package to download.
 - If you are installing a BIG-IQ, download the file name that ends in `.qcow2.zip`
 - If you are installing a Logging Node, download the file name that ends in `LARGE.qcow2.zip`

The BIG-IQ file package creates a 95GB disk footprint at installation.

The Logging Node file package creates a 500GB disk footprint at installation.

7. Extract the two files from the Zip archive and save it where your `qcow2` files reside on the Xen Project server.

Important: Two files are created when you extract the `qcow` file. You must install the larger file first.

- The name of the larger file is similar to `BIG-IQ-<version_number>.<build_number>.qcow2`.
- The name of the smaller file is similar to `BIG-IQ-<version_number>.<build_number>.DATASTOR.LTM.qcow2`.

8. 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/>).

9. 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 = [ 'tap:qcow2:/<vdisk_path>/BIG-IQ-
<version_number>.<build_number>.qcow2,hda,w',
        'tap:qcow2:/<vdisk_path>/BIG-IQ-
<version_number>.<build_number>.DATASTOR.LTM.qcow2,hdb,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",
```



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

10. 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).

11. 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>
```

Power on the BIG-IQ VE virtual machine

Power on the virtual machine so that you can begin assigning IP addresses.

Please consult the Xen Project documentation for the specific steps required for powering on the virtual machine.

There are two default accounts used for initial configuration and setup:

- The root account provides access locally, or using SSH, or using the F5 Configuration utility. The root account password is `default`.
- The admin account provides access through the web interface. The admin account password is `admin`.

You should change passwords for both accounts before bringing a system into production.

Accessing the BIG-IQ VE management user interface

If your network has DHCP, an IP address is automatically assigned to BIG-IQ[®] VE during deployment. You can use this address to access the BIG-IQVE user interface or `tmsh` command-line utility.

If no IP address was assigned, you can assign one by using the BIG-IQConfiguration utility.

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.

You can use a hypervisor generic statement, such as `tmsh list sys management-ip` to confirm that the management IP address has been properly assigned.

You can now log into the BIG-IQ VE user interface, and license and provision BIG-IQ VE.

Legal Notices

Legal notices

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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.

Legal Notices

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

Standards Compliance

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