

F5[®] BIG-IQ[®] Centralized Management and Microsoft Hyper-V: Setup

Version 5.2



Table of Contents

Getting Started with BIG-IQ Virtual Edition.....	5
What is BIG-IQ Virtual Edition?.....	5
About BIG-IQ VE compatibility with Hyper-V hypervisor products.....	5
About the hypervisor guest definition requirements.....	5
Deploying BIG-IQ Virtual Edition.....	7
About VE Hyper-V deployment.....	7
Host machine requirements and recommendations.....	7
Deploying the BIG-IQ VE virtual machine.....	7
Legal Notices.....	11
Legal notices.....	11

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 Hyper-V 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 Hyper-V virtual machine guest environment for the BIG-IQ[®] Virtual Edition (VE), at minimum, must include:

- 4 x virtual CPUs
- 16 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.*

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 Hyper-V deployment

To deploy the BIG-IQ® Virtual Edition (VE) system on Hyper-V, 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:

- Microsoft Windows Server with the Hyper-V role enabled. The *BIG-IQ Virtual Edition and Supported Hypervisors Matrix*, published on the AskF5™ web site, <http://support.f5.com> identifies the 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.
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Deploying the BIG-IQ VE virtual machine

The first steps in deploying BIG-IQ® VE are to download and open the Zip file, extract the virtual hard drive (VHD) file, and then save it to a server running with the Hyper-V® role enabled. Next, you configure the virtual machine using Hyper-V Manager and the Settings window.

Important: *Do not modify the configuration of the Hyper-V 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 (downloads.f5.com).
2. Download the BIG-IQ v5.x/Virtual Edition file package. The file name ends in `.vhd.zip`
The file package creates a 95GB disk footprint at installation.

3. Extract the file from the Zip archive and save it where your VHD files reside on the Hyper-V server.

Important: In some packages there may be two VHD files. The larger of the two is the one that is required. The smaller, if it exists, will have “DATASTORE.LTM” or “DATASTORE.ALL” in its name. It has been deprecated and should not be used.

4. Start Hyper-V Manager, log in to the Hyper-V server, and from the Actions pane, click **New > Virtual Machine**.
The New Virtual Machine Wizard opens.

Note: If the *Before You Begin* screen opens, click **Next** to continue.

5. On the Specify Generation screen, select **Generation 1**, and click **Next**.
6. In the **Name** field, type a name for the F5 VE virtual machine, such as: smith_f5_ve, and click **Next**.
7. In the **Memory** field, type 16384 or 32768, and click **Next**.

Tip: To increase performance, you can specify a value up to 65535.

8. For the **Connection** setting, select the **Management** network, and click **Next**.
9. On the Connect Virtual Hard Disk screen, select the **Use an existing virtual hard disk** check box, browse to the location where you saved your VHD file, select the larger of the two files, open it, and click **Next**.

The file name will be similar to BIG-IQ-*<version_number>*.*<build_number>*.vhd.

10. In the Summary screen, review your settings and click **Finish**.
The New Virtual Machine Wizard closes, and the new F5 VE shows in the Virtual Machines list.
11. From the Virtual Machines list, select the new F5 VE.
The name of the F5 VE appears in the bottom half of the Actions pane.
12. In the lower half of the Actions pane, click **Settings**.
The Settings window for the selected F5 VE opens.
13. From the Hardware list, select **Processor**, and then change the **Number of logical processors** to 4. Increase the **Virtual machine reserve (percentage)** to 100, and then click **Apply**.
14. Decide whether you need a CD/DVD drive for this VE.

Option	Description
If you do not need a CD/DVD drive	<ol style="list-style-type: none"> 1. From the Hardware list, under IDE Controller 1, select DVD Drive. 2. Click Remove, and then Apply.
If you need a CD/DVD drive	<ol style="list-style-type: none"> 1. From the Hardware list, under IDE Controller 1, select DVD Drive. 2. Under Media, select Image file. 3. Click Browse, then select a valid .ISO media file, and click Apply.

Important: You cannot have an empty CD/DVD device attached to a BIG-IQ VE until after the virtual machine has been started for the first time and the virtual disk is successfully initialized. If you need an empty-state CD/DVD device on this BIG-IQ VE, you can add it to the device after start up and initialization.

15. Specify the additional network adapters (NICs) you need for this BIG-IQ VE.

The first NIC (added in step 8) is automatically designated for management traffic. Additional NICs (known as self-IP ports) are required. One additional NIC is needed for BIG-IP device discovery and communication. Another additional NIC is needed if you need a high-availability configuration. You can add as many additional NICs (up to a total of nine) as you need, and name them to suit your requirements.

- a) Click **Add Hardware**, select **Network Adapter**, click **Add**, choose a target network from the **Virtual switch** list, and then click **Apply**.
- b) If the F5 VE will be used in a high-availability configuration, click the third Network Adapter, click **Add**, select the appropriate **Virtual switch**, and then click **Apply**.
- c) Continue adding NICs and network virtual switches until you have as many as you will need, then proceed to the next step.

16. In the Management area, click **Automatic Stop Action and select **Shut down the guest operating system**.**

This setting ensures that the F5 VE virtual machine restarts with all previously-configured virtual hardware, and at the current system time.

17. Click **OK to save your changes and close the Settings window.**

Power on the BIG-IQ VE virtual machine

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

1. Open the Hyper-V Manager client.
2. Select the virtual machine that you want to power on.
3. From the Action menu, choose Start.
The status icon changes to indicate that the virtual machine is on. The virtual machine boots and becomes ready for configuration.

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-IQ VE user interface or `tmsh` command-line utility.

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

1. In the Hyper-V Manager, locate and highlight the virtual machine to which you want to assign the management IP address.
2. In the Actions pane, choose **Connect**.
The console screen opens. After a few seconds, a login prompt appears.
3. At the password prompt, type `default`.
4. Type `config` and press Enter.
The F5 Management Port Setup screen opens.
5. Click **OK**.
6. 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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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.

Legal Notices

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.

Index

A

Automatic Shutdown Action 7

B

BIG-IQ Virtual Edition
and Hyper-V host machine requirements 7

C

CPU
and guest definition 5
and host machine requirements 7

D

deployment overview 7

E

environment, for guest 5

G

guest environment 5

H

host machine, CPU requirements 7
Hyper-V virtual machine
creating 7
Hyper-V, and compatible versions 5
hypervisor, See guest environment.
hypervisor guest definition 5

L

log in
deploying BIG-IQ VE virtual machine 7

M

management user interface
accessing 9
maximum allowed throughput rate 5

N

Network Adapter
adding 7

P

power on 9
product license 5

R

redundant system configuration
and host machine requirements 7
and NTP requirement 7

S

Setup utility 7

T

task list
for deploying on Hyper-V 7
for deploying on virtual machine 7

V

VE virtual machine
starting 9
turning on power 9
VHD file 7
virtual configuration, and hypervisor guest definition 5
virtual machine settings 5

