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

Version 4.6

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Legal Notices

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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.

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 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:

- 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 reccomends 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 *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.

Deploying the BIG-IQ VE virtual machine

The first steps in deploying BIG-IQ® VE are to open the Zip file and extract the virtual hard drive (VHD) file, and save it to the 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.*

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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 - vhd.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 `.vhd.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 VHD files reside on the Hyper-V server.
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.
5. In the **Name** field, type a name for the F5 VE virtual machine, such as: `smith_f5_ve` and click **Next**.
6. In the **Memory** field, type `4096` and click **Next**.

   Tip: *To increase performance, you can specify a value up to 8192.*

7. For the **Connection** setting, select **Management** and click **Next**.
8. Map the source network **HA** to the name of a high-availability network in your inventory.

   An example of a destination high-availability network is **HA**.
9. Select the **Use an existing virtual hard disk** check box, browse to the location where you saved your VHD file, select the file, open it, and click **Next**.
10. In the Summary page, 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 `2`, and increase the **Virtual machine reserve (percentage)** to `100`.
14. Click **Add Hardware**, select **Network Adapter** and click **Add**. Repeat this for a total of three adapters (or four, for a high-availability configuration).
    a) Click the second Network Adapter, and then from the Network list select **External**.
    b) Click the third Network Adapter, and then from the Network list select **Internal**.
    c) If the F5 VE will be used in a high-availability configuration, click the fourth Network Adapter, and then from the Network list select **HA**.
15. 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.
16. Click **OK** to save your changes and close the Settings window.

Powering on the virtual machine

You must power on the virtual machine before 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.

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. 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 window for opens. After a few seconds, a login prompt appears.
3. At the login prompt, type `root`.
4. At the password prompt, type `default`.
5. Type `config` and press Enter.
   The F5 Management Port Setup screen opens.
6. Click **OK**.
7. 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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