F5® iWorkflow™ and Linux KVM: Setup

Version 2.0.2

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Getting Started with iWorkflow Virtual Edition

What is iWorkflow Virtual Edition?

iWorkflow® is a multi-tenant platform for deploying application delivery policy onto BIG-IP® devices. Only available as a virtual appliance, it accelerates the deployment of application-oriented services, simplifies architecture, and reduces exposure to operational risk.

iWorkflow Virtual Edition (VE) is a version of the iWorkflow system that runs as a virtual machine in specifically-supported hypervisors.

About iWorkflow VE compatibility with KVM hypervisor products

Each time there is a new release of iWorkflow™ Virtual Edition (VE) software, it includes support for additional hypervisor management products. The iWorkflowVirtual Edition and Supported Hypervisors Matrix on the AskF5™ website, 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 iWorkflow 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 iWorkflow™ 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 iWorkflow 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 iWorkflow 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 iWorkflow Virtual Edition

About VE KVM deployment

To deploy the iWorkflow™ Virtual Edition (VE) system on KVM, you perform these tasks:

- Verify the host machine requirements.
- Deploy an iWorkflow™ system as a virtual machine.
- Deploy a BIG-IP® system.
- After you have deployed the virtual machines, log in to the iWorkflow 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 iWorkflow system and the BIG-IP device.

Host machine requirements and recommendations

To successfully deploy and run the iWorkflow™ 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™ 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 an iWorkflow VE virtual machine

The first steps in deploying iWorkflow® 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`).
2. Download the iWorkflow v2.x/Virtual Edition file package. The file name ends in `.qcow2.zip`.

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

3. Extract the two files from the Zip archive and save them where your `qcow2` files reside on the KVM 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 `iWorkflow-<version_number>.<build_number>.qcow2`.
- The name of the smaller file is similar to `iWorkflow-<version_number>.<build_number>.DATASTOR.LTM.qcow2`.

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4. Use VNC to access the KVM server, and then start Virt Manager.

5. Right click **localhost (QEMU)**, and from the popup menu, select **New**.
   The Create a new virtual machine, Step 1 of 4 dialog box opens.

6. In the **Name** field, type a name for the connection.

7. 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

8. Type in the path to the larger of the two extracted `qcow` files, or click **Browse** to navigate to the path location; select the file, and then click the **Choose Volume** button to fill in the path.

   The file name will be similar to `iWorkflow-<version_number>.<build_number>.qcow2`.

9. 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.

10. 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.

11. Select **Customize configuration before install**, and click the **Advanced options** arrow.

12. Select the network interface adapter that corresponds to your management IP address, and click **Finish**.
    The Virtual Machine configuration dialog box opens.

13. Click **Add Hardware**. When The Add New Virtual Hardware dialog box opens, select **Network** to access controls for specifying a new network interface device.

14. 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**.

15. Repeat the last two steps, but this time select the network interface adapter that corresponds to your internal network.

16. From the left pane, select **Disk 1**.

17. Click the **Advanced options** button.

18. From the **Disk bus** list, select **Virtio**.

19. From the **Storage format** list, select **qcow2**.

20. Click **Apply**.

21. Click **Add Hardware**. When The Add New Virtual Hardware dialog box opens, select **Storage** to access controls for specifying a new storage device.
    You will be prompted for the disk file name.

22. Type in the path to the smaller of the two extracted `qcow` files, or click **Browse** to navigate to the path location; select the file, and then click the **Choose Volume** button to fill in the path.

    The file name will be similar to `iWorkflow-2.0.0.0.0.<build_number>.DATASTOR.LTM.qcow2`.

23. From the left pane, select **Disk 2**.

24. Click the **Advanced options** button.

25. From the **Disk bus** list, select **Virtio**.

26. From the **Storage format** list, select **qcow2**.

27. Click **Apply**.

28. Click **Begin Installation**.
Virtual Machine Manager creates the virtual machine just as you configured it.

Power on the iWorkflow VE virtual machine

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

1. Open Virtual Machine Manager.

2. 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.

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 iWorkflow VE management user interface

If your network has DHCP, an IP address is automatically assigned to iWorkflow™VE during deployment. You can use this address to access the iWorkflowVE user interface or `tmsh` command-line utility.

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

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.

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 iWorkflow VE user interface, and license and provision iWorkflow VE.

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Publication Date

This document was published on August 22, 2017.

Publication Number

MAN-0634-01

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