
Installing IBM InfoSphere Guardium in a Virtual Machine

The IBM InfoSphere Guardium Virtual Machine (VM) is a software-only solution licensed and installed on a guest virtual machine such as VMWare ESX Server.

This document is only an outline of the steps necessary to install the IBM InfoSphere Guardium in a virtual machine. Full and detailed documentation is available online and that document must be consulted. Please refer to the section titled “More Information” later in this document.

Setup the virtualization software

IBM InfoSphere Guardium has tested and verified installation of the Guardium appliance in VMWare ESX server and that is the supported and recommended configuration. While installing the appliance in a regular VMWare virtual machine will work, its performance may suffer, leading to backlog and possible instability of the Guardium components like the sniffer.

The appliance must not be installed in a Windows PC that is shared for other purposes, owing to performance considerations. The appliance must be installed in a PC that is dedicated for it.

This document does not address installing and setting up the virtualization software such as VMWare. Please refer to the documentation that accompanied the virtualization software.

Install an empty Virtual machine

The Guardium image, installs a new operating system. However, it requires certain setup that is specific to it. Since it is based on Linux, VMWare may try to auto-configure for Linux. This feature of VMWare is not desirable for Guardium. Therefore, when installing using VMWare, it is important to create an empty virtual machine by selecting “I will install the operating system later”.

When VMWare asks for the Operating System and version, select Linux and Version Red Hat Enterprise Linux 5. In the following set of screens, select the name, location, size and storage mode (single disk or split disk) of the Virtual Machine. You may opt to remove hardware such as sound card and floppy to avoid those device drivers and processes from cluttering the appliance Virtual Machine. Setup the Network Adapter at this stage as appropriate for your site and finish.

Install the IBM InfoSphere Guardium image

1. Edit the Virtual Machine settings of the newly created empty VM and verify that the CD/DVD is correctly set. It is best, if a set of physical disks is used, rather than using ISO images, as it is easy to change the disks, but that is your choice.
2. Play the virtual machine.
3. The system will boot up from the disk and initialize the system, asking for further disks, as necessary.
4. During the installation:
 - a. The system asks for the CLI Password, It will be set to “guardium” automatically after 10 seconds if no input is provided. If you miss it, you can change it after installation is complete.
 - b. Choose and enter the password for the GUI Admin user. Repeat this password a second time to confirm it.
 - c. Choose and enter the password for the Access Manager user. Repeat this password a second time to confirm it.
 - d. CLI and GUI passwords will need to be changed again on first login.

There is no visible output when entering the passwords.

- e. The installation process will now ask you to choose if this is a collector or aggregator. Please be alert and select accordingly. It will be set to “Collector” automatically after 10 seconds if no input is provided. If you miss it, this cannot be changed from the CLI command and a reinstall from scratch is necessary. This is because the database layout for an aggregator is different from that of a collector.**
 - i. Pay attention to the wording of the on-screen question:
 1. For Collector – answer YES.
 2. For Aggregator – answer NO.
5. The system will automatically reboot at this point to complete the installation.

Setup Initial & Basic Configuration

The initial step should be the network configuration and must be done locally through the Command Line Interface (CLI) accessible through the serial port or the system console. Enter the temporary *cli* password you supplied previously. In the following steps, you will supply various network parameters to integrate the IBM InfoSphere Guardium into your environment, using *cli* commands. In the *cli* syntax, variables are indicated by angled brackets, for example: **<ip_address>** Replace each variable with the appropriate value for your network and installation (but do not include any brackets).

Set the primary System IP Address

The primary IP address is for the ETH0 connection, and is defined using the following two commands:

```
store network interface ip <ip_address>
store network interface mask <subnet_mask>
```

Optionally, a secondary IP address can be assigned, but this can only be done from the GUI after the initial configuration has been performed. The remaining network interface cards on the appliance may be used to monitor database traffic, and do not have an assigned IP address.

Set the Default Router IP Address

```
store network routes def <default_router_ip>
```

Set DNS Server IP Addresses

Set the IP address of one or more DNS servers to be used by the appliance to resolve host names and IP addresses. The first resolver is required, the others are optional.

```
store network resolver 1 <resolver_1_ip>
store network resolver 2 <resolver_2_ip>
store network resolver 3 <resolver_3_ip>
```

SMTP Server

An SMTP server is required to send system alerts. Enter the following commands to set your SMTP server IP address, set a return address for messages, and enable SMTP alerts on startup.

```
store alerter smtp relay <smtp_server_ip> 13
store alerter smtp returnaddr <first.last@company.com>
store alerter state startup on
```

Set Host and Domain Names

Configure the hostname and domain name of the appliance. This name should match the hostname registered for the appliance in the DNS server.

```
store system hostname <host_name>
store system domain <domain_name>
```

Do not change the hostname and the time zone in the same CLI session. Change hostname, reboot system, login as CLI and change Time Zone.

Set the Time Zone, Date, and Time

There are two options for setting the date and time for the appliance. Do one of the following:

Date/Time Option 1: Network Time Protocol

Provide the details of an accessible NTP server and enable its use.

```
store system ntp server <ntpserver_name>
store system ntp state on
```

Date/Time Option 2: Set the time zone, date and time

Use the following command to display a list of valid time zones:

```
store system clock timezone list
```

Choose the appropriate time zone from the list and use the same command to set it

```
store system clock timezone <selected time zone>
Store the date and time, in the format: YYYY-mm-dd hh:mm:ss
store system clock datetime <date_time>
```

Set the Initial Unit Type

An appliance can be a standalone unit, a manager or a managed unit; In addition, an appliance can be set to capture database activity via network inspection or STAP or both. The standard configuration would be for a standalone appliance (for all appliances), and the most common setting would use STAP capturing (only for collectors).

```
store unit type standalone ? all appliances
```

```
store unit type stap ? for collectors 14
```

Unit type standalone and unit type stap are set by default. Unit type manager (if needed) must be specified.

Note: unit type settings can be done at a later stage, when the appliance is fully operational.

Reset Root Password

Reset your root password on the appliance using your own private passkey by executing the following CLI command (requires access key: "t0Tach"):

```
support reset-password root <N>|random
```

Save the passkey used in your documentation to allow future Technical Support root accessibility. To see the current pass key use the following CLI command:

```
support show passkey root
```

Validate All Settings

Before logging out of CLI and progressing to the next configuration step, it is recommended to validate the configured settings using the following commands:

```
show network interface all
show network routes defaultroute
show network resolver all
show system hostname
show system domain
show system clock timezone
show system clock datetime
show system ntp all
show unit type
```

Reboot the System

Reboot the system to complete the basic configuration. If the system is not in its final location, now is a good time to shut the system down, place it in its final network location, and start it up again. Remove the installation DVD before rebooting the system. To reboot the system, enter the following command in CLI:

```
restart system
```

The system will shut down and reboot immediately after the command is entered. Upon startup, the system should be accessible (via CLI and GUI) through the network, using the provided IP address and hostname. 15

What to do next

This section details the steps of verifying the installation by logging on to the appliance; setting unit type, installing license keys, and other installations – patches, S-TAPs, Inspection Engines, CAS.

Verify Successful installation

1. Login to CLI - `ssh cli@<ip of appliance>`
2. Login to GUI - `https://<ip of appliance>:8443`

Login to the IBM InfoSphere Guardium web-based interface and go to the embedded online help for more information on any of the following tasks:

Set Unit Type

To set up a federated environment, configure one of the appliances as the *Central Manager* and all the other appliances should be set to be managed by the management unit. See “store unit type” command in the Appendices help book, under the CLI topic

Install License Keys

See System Configuration in the Guardium Administration help book. (Note: in federated environments, license keys are installed only on the Central Manager)

Specific product keys, which are based on the customer’s entitlements, must be installed through CLI or the GUI as described below.

From the GUI:

1. Log in as “admin” to the IBM InfoSphere Guardium console.
2. Navigate to **Administration Console -> Configuration -> System**
3. Enter the License Key(s) in the **System Configuration** panel

From the CLI:

Log in to the CLI

Issue the **store license console** CLI command to store a new license.

1. Store license console
2. Copy and paste the new license at the cursor location. Make sure to type an equal sign (=) at end of license code.
3. Press Enter and then CTRL-D.

Install maintenance patches (if available)

Patches can be installed through CLI (see “store system patch” command) or through the GUI. See the *Central Patch Management* topic in *Aggregation and Central Management* help book. (Note: in federated environments, maintenance patches can be applied to all of the appliances from the Central Manager)

There may not be any maintenance patches included with the installation materials. If any are included, apply them as described below. Log in to the IBM InfoSphere Guardium console, as the *cli* user and do one of the following:

- **If installing from a patch CD**, Insert the CD into the IBM InfoSphere Guardium CD drive, enter the following command, and skip ahead to step 3:

store system patch install cd

- **If installing from a network location**, enter the following command (selecting either **ftp** or **scp**):
 1. store system patch install [ftp | scp]
 2. respond to the following prompts for hostname, username , password and location.
 3. You will be prompted to select the patch to apply:
 4. Type the number of the patch to apply, and then press Enter or 'q' to quit.

If a patch has a pre-requisite, then that pre-requisite patch must already have been installed. If there is a jumbo patch, then that patch has all the preceding patches applicable for that version. For instance patch p50, if it is a jumbo patch contains all the released standard patches up to p50.

Additional Steps (optional)

CLI command store language

Use the CLI command "**store language**" to change from the baseline English and convert the database to the desired language. Installation of Guardium is always in English. A Guardium system can only be changed to Japanese or Chinese (Traditional or Simplified) after an installation. **The "store language" command is considered a setup of the appliance and is intended to be run during the initial setup of the appliance.** Running this CLI command after deployment of the appliance in a specific language can change the information already captured, stored, customized, archived or exported. For example, the psmls (the panes and portlets you have created) will be deleted, since they need to be recreated in the new language.

More Information

All the product manuals are available online accessible from the appliance GUI. Please click on the "?" icon at the top right corner. You can download specific material as PDF files are browse online. For further information, please connect to:

IBM InfoSphere Guardium home page: <http://www.ibm.com/software/data/info/guardium/>
Technical Support home page: <http://www.ibm.com/software/support>