

Exinda How To Guide: Virtualization



Exinda ExOS Version 7.4.3
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Using this guide

Before using this guide, become familiar with the Exinda documentation system.

Documentation conventions

These documentation conventions apply across all of the Exinda documentation sets. All instances of the following may not appear in this documentation

Typographical conventions

- **bold** - Interface element such as buttons or menus. For example: Select the **Enable** checkbox.
- *italics* - Reference to other documents. For example: Refer to the *Exinda Application List*. Also used to identify in the various procedures the response the systems provide after applying an action.
- > - Separates navigation elements. For example: Select **File > Save**.
- `monospace text` - Command line text.
- `<variable>` - Command line arguments.
- `[x]` - An optional CLI keyword or argument.
- `{x}` - A required CLI element.
- | - Separates choices within an optional or required element.

Links

With the exception of the various tables of contents, all links throughout the documentation are **blue**. Most links refer to topics within the documentation, but there may be links that take you to web pages on the Internet. In this documentation we differentiate between these types of links by **underlining** only the external links.

Tips, Notes, Examples, Cautions, etc.

Throughout this manual, the following table styles are used to highlight important information:

- **Tips** include hints and shortcuts. Tips are identified by the light blue icon.

**TIP**

text

- **Notes** provide information that is useful at the points where they are encountered. Notes are identified by the pin and paper icon.

**NOTE**

Text

- **Important** notes provide information that is important at the point where they are encountered. Important notes are identified by the amber triangle.

**IMPORTANT**

Text

- **Cautions** provide warnings of areas of operation that could cause damage to appliances. Cautions are identified by the orange triangle.

**CAUTION**

Text

- **Examples** are presented throughout the manual for deeper understanding of specific concepts. Examples are identified by a pale green background.

EXAMPLE

Text

- **Best Practices** are identified by the "thumbs-up" icon.

**Best Practice:**

It is a best practice to

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Virtualization

The Virtualization feature allows Virtual Machines to run on select Exinda appliances, allowing 3rd party operating systems and products to be installed. Once enabled, you can install any standard 32- or 64-bit x86 (Intel-based) operating system onto an Exinda Virtualization Partition (EVP). Most of the virtualization configuration is performed using the "virt" CLI command. In the UI, you can see which virtual machines are configured and can power them on, off, or restart (cycle) them. You can also view the VGA console for each virtual machine.



NOTE

Virtualization requires an additional license before this feature can be configured and used. Please contact Exinda TAC or your local Exinda representative if wish to use this feature.

The Virtualization menu will not appear if the Exinda Virtualization license has not been installed.

Virtual Machines				
	Name	Comment	Status	Actions
<input type="checkbox"/>	Replify	Replify VA	Running - IP Address: 172.16.1.242	Launch VGA Console
<input type="checkbox"/>	WinXP	Windows XP	Running	Launch VGA Console

Figure - List of Virtual Machines providing ability to power on/off, power cycle, and launch the VGA console

The VGA console uses a Java-based applet to launch a secure SSH-based protocol to encrypt the session. You need to have Java installed and enabled as well as direct SSH access to the Exinda appliance in order to use this feature. You also need to authenticate with your username and password.

Where do I find these settings?

Go to **Configuration > System > Virtualization**.



NOTE

This menu does not appear unless you have purchased this feature.

What are the hardware requirements?

- Only selected Exinda 60 series hardware is supported. Currently, the following hardware is available for Virtualization:
 - Exinda 4061
 - Exinda 6060, Exinda 6062
 - Exinda 8060, Exinda 8062
 - Exinda 10060, Exinda 10062
- An Exinda Virtualization license must be purchased for each Exinda appliance for which you want to enable virtualization.



NOTE

Virtualization requires 8 GB of RAM or higher. You may need to purchase a RAM kit.

To configure and install virtualization

1. Ensure the Virtualization Enable checkbox is checked.
2. Configure virtualization through the CLI with the `virt vm` command.

These commands can be used to create virtual machines, configure CPU, storage, memory, install an operating system, etc. See [CLI: Virtualization](#).

To manage your virtual machines, such as power on/off, power cycle

1. Select the desired virtual machine(s) by selecting the checkbox(es) beside the virtual machine(s) in the **Virtual Machines** list.
2. Click the desired action: **Power On**, **Power Off**, or **Power Cycle**.

To launch the VGA console for a virtual machine

1. Click the **Launch VGA Console** button beside the desired virtual machine in the **Virtual Machines** list.

This feature creates a secure SSH connection to the Exinda appliance so that the VGA console can be viewed securely. Therefore, direct SSH access to the Exinda appliance must be available.
2. Since there is not a trusted certificate as part of the secure SSH connection, a warning is presented that asks you to confirm that you trust the site.

Troubleshooting: If the console does not appear

If the console does not appear, you may need to add the web address for the Exinda appliance to

the Java Exception Site List. This is required since the Exinda appliance has a self-signed certificate for https access, which newer versions of Java are blocking.

Troubleshooting: If you are unable to login

If you are unable to log in, it may be due to an enhancement in JDK 7: "The JDK 7 release supports the Server Name Indication (SNI) extension in the JSSE client. The SNI, described in RFC 4366, enables TLS clients to connect to virtual servers." (from the Oracle support page)

If this is the case, the system pops up a java console window with an exception including:

```
Javax.net.ssl.SSLProtocolExceptio: handshake alert: unrecognized_name
```

Options for working around the JDK issue:

- Enable "Use SSL 2.0 compatible ClientHello format" in the Java console under "Advanced" OR
- Set your hostname on the Exinda to the Fully Qualified Domain Name (FQDN) that will be used to access the UI and launch the VGA console.

Enabling Virtualization in the CLI

You can use the `virt` command to create or edit virtual machines.

Configuring virtual machines

```
[no] virt {enable|interface|vm|vnet|volume}
```

To enable the virtualization feature:

```
virt enable
```

To assign an interface to use as a VM access port:

```
virt interface <interface>
```

To configure a virtual machine:

```
virt vm <name>
```

```
{arch|boot|comment|console|copy|feature|install|interface|memory|power|rename|storage|vcpus}
```

- `arch {i386|x86_64}` - Set CPU architecture.
- `boot {auto-power|device}` - Configure boot options.
 - `auto-power {on|off|last}` - Specify power state for VM to have after host boot.
 - `auto-power on` - Always power VM on. If VM was running at last shutdown, restore its state.
 - `auto-power off` - Always leave VM powered off. If VM was running at last shutdown, its state is lost.
 - `auto-power last` - Power VM on only if it was running at last shutdown. In this case, also restore its state.
 - `device order {cdrom|hd}` - Specify order to try devices during boot.
 - E.g. `device order cdrom hd`
 - E.g. `device order hd cdrom`
- `comment <comment>` - Set a comment describing this virtual machine.
- `console {connect|graphics|text}` - Configure or connect to the text or graphical console.
- `copy <new_name> [storage copy-type {shallow|none}]` - Make a duplicate copy of this virtual machine.

- `storage copy-type {shallow|none}` - Make a duplicate copy of this VM's storage.
 - `shallow` - Use the same volumes as the source VM.
 - `none` - New VM will have no attached storage
- `feature {pae|acpi|apic} enable` - Enable/disable certain virtualization features.
 - `pae` - Physical Address Extension
 - `acpi` - Advanced Configuration and Power Interface
 - `apic` - Advanced Programmable Interrupt Controller
- `install {cancel|cdrom}` - Install an operating system onto this virtual machine (temporarily attach a CD and boot from it).
 - `cancel` - Cancel an install already in progress
 - `cdrom file <volume-name> {connect-console|disk-overwrite|timeout|verify}` - Install an operation system from a CD-ROM (ISO) image
 - `connect-console` - Connect to the console during installation
 - `disk-overwrite` - Install even if primary target volume is not empty
 - `timeout {<minutes>|none}` - Specify a timeout for installation (default is no timeout)
 - `verify` - Options for verifying OS installation
- `interface <name> {bridge|macaddr|model|name|order|type|vnet}` - Configure virtual interfaces.
- `memory <MB>` - Set memory allowance.
- `power {cycle|off|on}` - Turn this virtual machine on or off, plus other related options.
- `rename <new_name>` - Rename this virtual machine.
- `storage {create|device}` - Configure storage for this virtual machine.
 - `create disk {bus|drive-number|file|mode|size-max}` - Create new storage device for the VM, with an automatically assigned name.
 - `device {bus|drive-number|move|swap}` - Modify existing storage device, or crate a new one with a specific name.
- `vcpus {count|vcpu}` - Specify number of virtual CPUs.
 - `vcpus count <count>` - Specify number of virtual CPUs
 - `vcpu <vcpu>` - Specify options for a particular virtual CPU

To configure or manage virtual networks:

```
virt vnet <name> {dhcp|forward|ip|vbridge}
```

-
- `dhcp range <low_ip> <high_ip>` - Configure a DHCP range to assign to this vnet.
 - `forward {none|nat|route} interface <name>` - Configure the type of forwarding.
 - `ip address <ip> <netmask>` - Configure the IP address of this vnet.
 - `vbridge name <name>` - Create a virtual bridge.

To manage virtual storage volumes:

```
virt volume {create|fetch|file}
```

- `create disk file <name> size-max <MB>` - Create an empty virtual disk image.
- `fetch <url>` - Fetch a virtual disk image (*.img) or a CD ROM image (*.iso) from the URL.
- `file {create|copy|move|upload}` - Perform basic file operations.