

The background of the page is a dark blue gradient with a complex, abstract network graphic. It consists of numerous small black dots connected by thin, light grey lines, forming a dense, interconnected web that resembles a globe or a data network. The lines and dots are more concentrated in the center and become sparser towards the edges.

Virtual Machine Service User Guide

For Sentinel units

Revision 05

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Basic Virtual Machine Actions

Stopping the Virtual Machine

Steps

- 1) Go to **System > VM**.
- 2) In the **Virtual Machine Configuration** table, click  located on the **same** row as the **VM** you wish to stop.

Result

The virtual machine is stopped. In the **Virtual Machine Status** table, **Stopped** will be displayed under the **State** column.

Stopping the Virtual Machine - Graceful Stop

Steps

- 1) Open the VNC Client located on a computer located on the network connected to the unit.

Note:

UltraVNC Viewer, TightVNC Viewer and VNC Viewer are presently supported.

- 2) Enter the **Unit.IP.Address: VNCid** .
- 3) In the VNC console, shutdown the OS using the recommended OS method.

Result

The virtual machine is stopped. In the **Virtual Machine Status**, **Stopped** will be displayed under the **State** column.

Rebooting a VM

Information

If the virtual machine you wish to start requires resources equivalent to the available resources on the unit, then it will not be possible to start another virtual machine. It is only possible to start a virtual machine if there are enough resources on the unit.

Note: Rebooting a virtual machine does not have the same effect as Restarting the virtual machine.

Steps

- 1) Go to **System > VM**.
- 2) Click .

Result

The virtual machine is restarted. In the **Virtual Machine Status**, **Started** will be displayed under the **State** column.

Rebooting a VM - Graceful Reboot

Information

Although the virtual machine can be rebooted via the Web page, rebooting the virtual machine using a VNC Client is the preferred way to reboot the virtual machine.

Note: Rebooting the virtual machine does not have the same effect as restarting the virtual machine.

Steps

- 1) Open the VNC Client located on a computer located on the network connected to the unit.

Note:

UltraVNC Viewer, TightVNC Viewer and VNC Viewer are presently supported.

- 2) Enter the **Unit.IP.Address: 5900+VNCid** .
- 3) In the VNC console, shutdown the OS using the recommended OS method.

Result

The virtual machine is restarted. In the **Virtual Machine Status**, **Started** will be displayed under the **State** column.

Deleting a VM

Steps

- 1) Go to **System > VM**.
- 2) In the **Virtual Machine Configuration** table, click  located on the same row as the virtual machine you wish to delete.

Result

The virtual machine and its configuration are deleted.

Setting the Virtual Machine to Automatic Start

Before you start

If you are not familiar with the meaning of the fields, click **Show Help**, located at the upper right corner of the Web page, to display field description when hovering over the field name.

Information

If the virtual machine you wish to start requires resources equivalent to the available resources on the unit, then it will not be possible to start another virtual machine. It is only possible to start a virtual if there are enough resources on the unit.

Steps

- 1) Go to **System/VM**.
- 2) In the **Virtual Machine Configuration** table, from the **Startup** dropdown list, select **Auto**.
- 3) Click **Apply**.

Result

When the Vm Service is started, the virtual machine will also be started.

Virtual Machine Configuration						
Vm Name	Iso Name	MAC Address	Vnc Id	Usb	Startup	Actions
Kali	<input type="text"/>	<input type="text" value="00:90:f8:ff:ff:17"/>	<input type="text" value="0"/>	<input type="text" value="None"/>	<input type="text" value="Auto"/>	

Setting the Virtual Machine to Manual Start

Before you start

If you are not familiar with the meaning of the fields, click **Show Help**, located at the upper right corner of the Web page, to display field description when hovering over the field name.

Information

Manually starting the virtual machine can be useful when installing the virtual machine to check if the installation was done properly. However, on a day to day usage, the virtual machine should be set to start automatically. Refer to [Setting the Virtual Machine to Automatic Start \(p. 6\)](#).

Note: If the virtual machine you wish to start requires resources equivalent to the available resources on the unit, then it will not be possible to start another virtual machine. It is only possible to start a virtual machine if there are enough resources available on the unit.

Steps

- 1) Go to **System/VM**.
- 2) In the **Virtual Machine Configuration** table, from the **Startup** dropdown list, select **Manual**.
- 3) Click **Apply**.

Result

The virtual machine will be started only if it is started manually. In the **Virtual Machine Status**, **Started** will be displayed under the **State** column.

Virtual Machine Configuration							
Vm Name	Iso Name	MAC Address	Vnc Id	Usb	Startup	Actions	
Kali		00:90:f8:ff:ff:17	0	None	Manual	▶ ■ ▶ ○ -	

RAM Allocation to Virtual Machines

To reduce the wear-and-tear of the Solid State Drive, make sure to allocate the maximum amount of RAM possible to the virtual machine.

Installed RAM on Mediatrix Units	Available RAM for Virtual Machine
2 Gb	1.5 Gb
4 Gb	3.5 Gb
8 Gb	7 Gb (87.5% of available RAM)

Deleting a VM

Steps

- 1) Go to **System > VM**.
- 2) In the **Virtual Machine Configuration** table, click **■** located on the same row as the virtual machine you wish to delete.

Result

The virtual machine and its configuration are deleted.

Virtual Machine Installation

Adding a Virtual Machine

Before you start

The **VirtualSwitch** parameter must be configured to enable the link you wish to use to contact the virtual machine. Refer to [Configuring a Link as a Virtual Switch \(p. 9\)](#).

You must have a virtual machine licence and the VM service must be started.



Caution: It is a best practice to create the Virtual Machine in a test environment. If not enough memory is allocated and swap is disabled, the Virtual Machine will stop, and the installation will need to be restarted from the beginning.

Information

If you are not familiar with the meaning of the fields, click **Show Help**, located at the upper right corner of the Web page, to display field description when hovering over the field name.

Steps

- 1) Go to **System/VM**.
- 2) In the **Virtual Machine Creation** table, complete the **Vm Name** field.

Note: Vm names must be unique.

- 3) In the **Ram(Mb)** field, enter the amount of RAM required to run the virtual machine.



Caution: To reduce the wear-and-tear of the Solid State Drive, make sure to allocate the maximum amount of RAM possible to the virtual machine.

Note: For instance, 87.5% of the actual available RAM, or 1.5 Gb for units with 2 Gb of RAM, 3.5 Gb with 4 Gb of RAM and for 7 Gb with 8 Gb of RAM.

- 4) Complete the **Storage(Gb)** field.

Note: 10 Gb is the maximum value one can allocate in a typical Sentinel equipped with a 16 Gb Solid State Drive.

- 5) From the **Nb Cores** selection list, select the number of cores the virtual machine will be using.

IMPORTANT: It is not possible to modify the settings (RAM, name, etc.) once the virtual machine has been created. The only way to change the settings, is to delete the virtual machine and to create it once again.

- 6) Click **+**.

Note: A maximum of 2 virtual machines can be added.

Result

The virtual machine will be displayed in both the **Virtual Machine Configuration** and the **Virtual Machine Status** tables.

Virtual Machine Creation				
Vm Name	Ram(Mb)	Storage(Gb)	Nb Cores	
<input type="text" value="Unique_Vm_Name"/>	<input type="text" value="xxx(Mb)"/>	<input type="text" value="Storage(Gb)"/>	<input type="text" value="1"/>	+

Configuring a Link as a Virtual Switch

Steps

- 1) Go to **Network/Interfaces**.
- 2) In the **Ethernet Link Configuration** table, from the **Virtual Switch** selection list, select **Enable** located on the same row as the link you wish to enable for the virtual switch.
- 3) Click **Apply**.

Result

Ethernet Link Configuration					
Link	MTU	802.1x Authentication	EAP Username	EAP Certificate Validation	Virtual Switch
eth1	<input type="text" value="1500"/>	<input type="text" value="Disable"/>	<input type="text"/>	<input type="text" value="Trusted And Valid"/>	<input type="text" value="Enable"/>
eth2-5	<input type="text" value="1492"/>	<input type="text" value="Disable"/>	<input type="text"/>	<input type="text" value="Trusted And Valid"/>	<input type="text" value="Disable"/>

Importing an ISO Image Larger than 10mb to the Unit File Management System

Before you start

Only the http and https protocols are supported to import the large files. If you are not familiar with the meaning of the fields, click **Show Help**, located at the upper right corner of the Web page, to display field description when hovering over the field name.

Steps

- 1) Go to **Management/File**.
- 2) In the **Import File Through URL** table, from the **Destination** selection list, select the destination directory on the unit where to save the file.
- 3) In the **URL** field, indicate the file server's URL where the iso image to import is located.

Note: For larger files you must use the http or https protocols. For example `http://www.myserver.com/myfile`

- 4) Complete the **User Name** and **Password** fields if the file server requires authentication.
- 5) Click **Import**.

Result

The ISO image file will be displayed in the **Interface Files** table, under **Management > File**.

Import File Through URL	
Last Import File Result:	None
Import File Parameters	<input type="button" value="Import"/>
Destination:	<input type="text" value="Choose directory"/>
URL:	<input type="text" value="http://www.myserver.com/ myfile"/>
Username:	<input type="text" value="username"/>
Password:	<input type="password" value="....."/>

Importing an ISO image to the Unit File Management System

Information

If the ISO Image is larger than 10mb, use the [Importing an ISO Image Larger than 10mb to the Unit File Management System \(p. 10\)](#). If you are not familiar with the meaning of the fields, click **Show Help**,

located at the upper right corner of the Web page, to display field description when hovering over the field name.

Steps

- 1) Go to **Management/File**.
- 2) If you are not using HTTPS, click **Activate unsecure file transfer through web browser** located at the top of the page.
- 3) In the **Import File Through Web Browser** table, from the **Path** selection list, select **VM/Drives**.
- 4) Browse to the location of the ISO file containing the operating system (OS) to install on the virtual machine.
- 5) Click **Import**.

Note: A factory reset will remove the file from the **Internal File** table.

Result

The imported ISO file will appear in the **Internal File** table, under **Management > File**.



Installing the OS on the Virtual Machine Using an ISO image

Before you start

The [Importing an ISO image to the Unit File Management System \(p. 10\)](#) procedure must be completed. When downloading an OS that provides architecture choices you need to choose either AMD64 (64 bit OS) or i386/i686 (32 bit OS). Basically you need to choose the architecture for an INTEL processor

Information

If you are not familiar with the meaning of the fields, click **Show Help**, located at the upper right corner of the Web page, to display field description when hovering over the field name.

Steps

- 1) Go to **System > VM**.
- 2) In the **Virtual Machine Configuration**, in the **Iso Name** field, indicate the name of the ISO file containing the OS.
- 3) In the **Vnc Id** field, indicate the unique id used with the VNC Client to connect to the virtual machine console.
- 4) From the **Usb** field, select **None**.

- 5) Click .
- 6) Open the VNC Client located on a computer of the network connected to the unit.

Note:

UltraVNC Viewer, TightVNC Viewer and VNC Viewer are presently supported.

- 7) Enter the IPAddressOftheUnit:VNCid.

Note: For example 192.168.0.12:1

- 8) Follow the on-screen instructions.



Caution: To reduce the wear-and-tear of the Solid State Drive,

- On Linux OS, disable memory swapping or at least set swappiness to 0.
- On Windows OS, disable the virtual memory.

Note: If the Solid State Drive fails because it is inadequately used by a third party software or the operating system, the warranty of the Mediatrix unit will no longer be valid.

Note: The installation can take more than an hour depending on the image you are installing.

Result

The virtual machine will be started only if it is started manually.

Virtual Machine Configuration						
Vm Name	Iso Name	MAC Address	Vnc Id	Usb	Startup	Actions
Kali	iso_file_name	unit MAC address	Unique id	None	Manual	    

Installing the Virtual Machine OS using a USB External Device

Before you start

Make sure your USB external device contains the Operating System installation media, is bootable, and is connected. When downloading an OS that provides architecture choices you need to choose either AMD64 (64 bit OS) or i386/i686 (32 bit OS). Basically you need to choose the architecture for an INTEL processor.

IMPORTANT: The use of USB3 and USB2 devices are not supported on USB1.1 hubs.

Information

If you are not familiar with the meaning of the fields, click **Show Help**, located at the upper right corner of the Web page, to display field description when hovering over the field name.

Steps

- 1) Go to **System/VM**.
- 2) In the **Virtual Machine Configuration** table, in the **Vnc Id** field, indicate the unique id of the virtual machine.
- 3) From the **Usb** field, select **All**.
- 4) Click .
- 5) Open the VNC Client located on a computer of the network connected to the unit.

Note: UltraVNC Viewer, TightVNC Viewer and VNC Viewer are presently supported.

- 6) Enter the **IPAddressOftheUnit:VNCid**

Note: For example 192.168.0.12:1

- 7) [Adding a Virtual Machine \(p. 8\)](#)
- 8) If the virtual machine does not boot from your external device, reboot the virtual machine by sending a CTRL-ALT-DEL and pressing F12 to see the Boot Menu, then select the wanted device.
- 9) Follow the on screen instructions.



Caution: To reduce the wear-and-tear of the Solid State Drive:

- On Linux OS, disable memory swapping or at least set swappiness to 0.
- On Windows OS, disable the virtual memory.

Note: If the Solid State Drive fails because it is inadequately used by a third party software or the operating system, the warranty of the Mediatix unit will no longer be valid.

Note: The installation can take more than an hour depending on the image you are installing.

Result

The virtual machine will be started only if it is started manually

Virtual Machine Configuration						
Vm Name	Iso Name	MAC Address	Vnc Id	Usb	Startup	Actions
Kali	<input type="text"/>	<input type="text" value="unit MAC address"/>	<input type="text" value="Unique id"/>	All 	Manual 	    

Disabling Swap on Linux

Information

Disabling swapping in the Operating System will optimise the virtual machine in such a way to reduce the wear-and-tear of the Solid State Drive.

Note: If the Solid State Drive fails because it is inadequately used by a third party software or the operating system, the warranty of the Mediatrix unit will no longer be valid.

Steps

- 1) Open the VNC Client located on a computer of the network connected to the unit.

Note: UltraVNC Viewer, TightVNC Viewer and VNC Viewer are presently supported.

- 2) Open `.../etc/sysctl.conf` file
- 3) Add `vm.swappiness = 0` to the file.
- 4) Open `... /etc/fstab`.
- 5) Add `noatime` to the following lines
 - a) `§ UUID=32b414c0-This-is-an-example / ext4 defaults, noatime 1 1`
 - b) `§ UUID=b4598e44-This-is-an-example /boot ext4 defaults, noatime 1 2`
- 6) Comment out
 - a) `§ # UUID=72355f7a-497d-This-is-an-example swap swap defaults 0 0`
- 7) Use the Shutdown command and then restart the Virtual Machine.

IMPORTANT: Do not use the Linux “reboot” command as the filesystem may not get mounted properly.

Virtual Machine Modification

Modifying the Virtual Machine Configuration

Steps

- 1) Go to **System/VM**.
- 2) In the **Virtual Machine Configuration** table, modify the fields as required.
- 3) Click **Apply**.

Result

The next time the virtual machine will be used, the new parameter values will be applied.

Parameters

Although the services can be configured in great part in the web browser, some aspects of the configuration can only be completed with the MIB parameters by:

- using a MIB browser, such as the Mediatix Unit Manager Network (UMN);
- using the CLI;
- creating a configuration script containing the configuration parameters.

System > VM Parameters

Min Severity

Refer to **Vm.Min Severity** in the [Reference Guide](#).

Need Restart Info

Refer to **Vm.NeedRestartInfo** in the [Reference Guide](#).

Configuration notes

These documents are created to facilitate the configuration of a specific use case. They address a configuration aspect we consider that most users will need to perform. However, in some cases, a configuration note is created after receiving a question from a customer. They provide standard step by step procedures detailing the values of the parameters to use. They provide a means of validation and present some conceptual information. The configuration notes are specifically **created** to guide the user through an aspect of the configuration.

To access the configuration notes, go to [Configuration notes](#).

Virtual Machine Configuration Notes

- [Installing a FreePBX Virtual Machine](#)
- [Installing a VM using an iso image](#)
- [Installing a VM using an USB external device](#)

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